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University of Michigan, Ph.D., 1960
Anthropology

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EXCAVATION AND INTERPRETATION OF EARLY PUEBLOAN OCCUPATIONS AT TESUQUE BY-PASS SITE AND IN THE UPPER RIO GRANDE VALLEY

by

Charles H. McNutt

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in the
University of Michigan
1959

Doctoral Committee:

Professor James B. Griffin, Chairman
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Professor Horace M. Miner

PREFACE

The outstanding success of the New Mexico Highway Salvage Archaeological Program is known to archeologists throughout the United States. This cooperative project of the New Mexico State Highway Department, Bureau of Public Roads, Department of the Interior, and the Museum of New Mexico has not only preserved a great amount of data from a major section of the southwestern United States, but also has provided a model for a new and important phase of prehistoric research. Many people from many professions have contributed to this project, but Dr. Fred Wendorf and Mr. Stewart Peckham must be given particular credit as the original and present program directors, respectively.

The New Mexico project is particularly fortunate in that it has available the extensive site surveys, collections, and site maps of the Laboratory of Anthropology (Museum of New Mexico), the greatest parts of which are the work of Dr. H. P. Mera and Mr. Stanley A. Stubbs. This does not, of course, preclude the necessity for an additional survey of each new highway right-of-way. It does, however, greatly facilitate this task and frequently saves considerable time in situations wherein time is a vital factor.

The site with which this report is concerned is recorded in the files of the Laboratory of Anthropology as L.A. 3294. (L.A. stands for Laboratory of Anthropology; site numbers are assigned serially and have no spatial significance.) It was discovered during the survey of a highway project designed to by-pass the town (not pueblo) of Tesuque, New Mexico, north of Santa Fe. Because plans of the New Mexico State Highway Department called for removal of most of the sand and gravel ridge upon which L.A. 3294 was located, investigation of the site was included in the New Mexico Highway Salvage Archaeology program. I was in charge of excavations at this site, which were conducted from June 21 through July 31, 1955.

The problems arising from these excavations and treated in this study are five in number. In starkest outline, they are: (1) to present the data obtained from the excavations; (2) to analyze evidences of human occupancy at the site; (3) to interpret such evidences by relating them to data from other occupations in the immediate and adjacent areas; (4) to formulate that general interpretation of prehistoric occupations in the area which is in closest accord with such information as is available; (5) to isolate subjects for future research which will be most pertinent to a more complete understanding of local prehistory.

Three distinctive occupations, or cultural components, were found at the Tesuque By-Pass Site. Each represents a

stage of the early (pre-classic) Puebloan[1] occupation in the Santa Fe-Tesuque portion of the upper Rio Grande Valley. These are both described and analyzed in Part One of this report.

The interpretation of these occupations and determination of their relationships to other cultural manifestations in immediate and adjacent areas involves a discussion of much data and several problems specific to the prehistory of the upper Rio Grande Valley. Certain of my conclusions either supplement or suggest alternatives to current interpretations of the local prehistoric culture-sequence. These are developed at length in Part Two of this report, in order to make explicit the basis of my own conclusions.

In the third and final section of this report (Part Three), these data are summarized, an interpretation of upper Rio Grande Valley prehistory is presented, and particularly vital subjects for future research are suggested.

I would like to express my very sincere appreciation to the New Mexico State Highway Department for providing labor for the excavation, to Dr. Fred Wendorf for his helpful supervision, and to Mr. Stew Peckham for the time, effort, and additional information which he has contributed.

---

[1]"Puebloan" is used in this discussion as a very general reference to the pottery-making people characteristic of the prehistoric period in eastern Arizona, western New Mexico, and adjacent portions of Utah and Colorado to the north. This usage corresponds roughly to Reed's (1942) use of the term.

To Stanley Stubbs, who has ever placed his unequalled knowledge of the area at the disposal of interested students, I am indebted for discussions and ideas which have proved invaluable. Mr. Arthur J. Jelinek has added to this report one of the few extant discussions of mammalian fauna of the early Puebloan period, and his contribution will be welcomed by many. A number of individuals, in addition to those whom I have mentioned, contributed their knowledge and ideas. At the risk of overlooking the many to specify the few, particular thanks are due to Mr. Jerry Dawson (University of New Mexico), Mr. A. E. Dittert, Jr. (Laboratory of Anthropology), Mr. Bruce Ellis (Museum of New Mexico), and Dr. Florence Ellis (University of New Mexico).

Dr. James B. Griffin of the Museum of Anthropology at the University of Michigan made my own participation in this project possible, obtained laboratory space for the artifact analysis, and provided a constant source of encouragement for my efforts.

Finally, I must add that I am one of those most fortunate of archeologists; my wife, Phoebe, can typewrite.

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INTRODUCTION

THE UPPER RIO GRANDE VALLEY

THE SETTING:

Remains of peoples presumably ancestral to the varied Pueblo an groups of Arizona and New Mexico are found in Utah, Colorado, Arizona, New Mexico, and northern Mexico. This study is concerned with only a small portion of this material; specifically, that which is associated with the early Pueblo occupation of the upper Rio Grande Valley in northern New Mexico.

An understanding of human occupancy in any region requires a knowledge of the local environment. This assertion, in danger of becoming an anthropological platitude, is particularly applicable to the southwestern United States. The region is high (mostly above 5,000 feet m.s.l.) and dry (annual rainfall between 8-15 inches in the valley). Altitude and moisture are extremely sensitive indicators of total ecology, and slight local differences in these factors are sufficient to demarcate densely populated areas from uninhabitable wastes. The area is not only ecologically diversified but also physically complex. Characteristics of the Great Plains, Basin and Range, and Southern Rocky Mountain Provinces are to be found (cf. Fenneman 1931). For

this reason, considerable attention is given below to the description of the area and emphasis is not placed on numerical ecological data per se. It is hoped that this approach will assist the reader in forming a mental picture of the region under discussion.

GROSS GEOGRAPHY AND FAUNA:

The headwaters of the Rio Grande rise on the eastern slope of the San Juan Mountains of southwestern Colorado. The waters flow eastward from this complex volcanic range into the broad San Luis Valley, thence south to the New Mexico border. The river continues south and west through its valley in northern and central New Mexico and turns southeast toward El Paso after traversing three-fourths of the state. From El Paso to the Gulf of Mexico, the river is the international boundary between Texas and Mexico. That portion of the Rio Grande drainage between the New Mexico-Colorado border on the north and Isleta Pueblo in the south is of immediate interest to this study. These boundaries coincide with the northern and southern limits of the Northern Rio Grande archeological region, described by Wendorf and Reed (1955).

The Rio Grande in northern New Mexico flows between two, roughly parallel, southern extensions of the Rocky Mountains; the Sangre de Cristo Range on the east or left side of the river and the San Juan-Jemez Ranges on the west or right side.

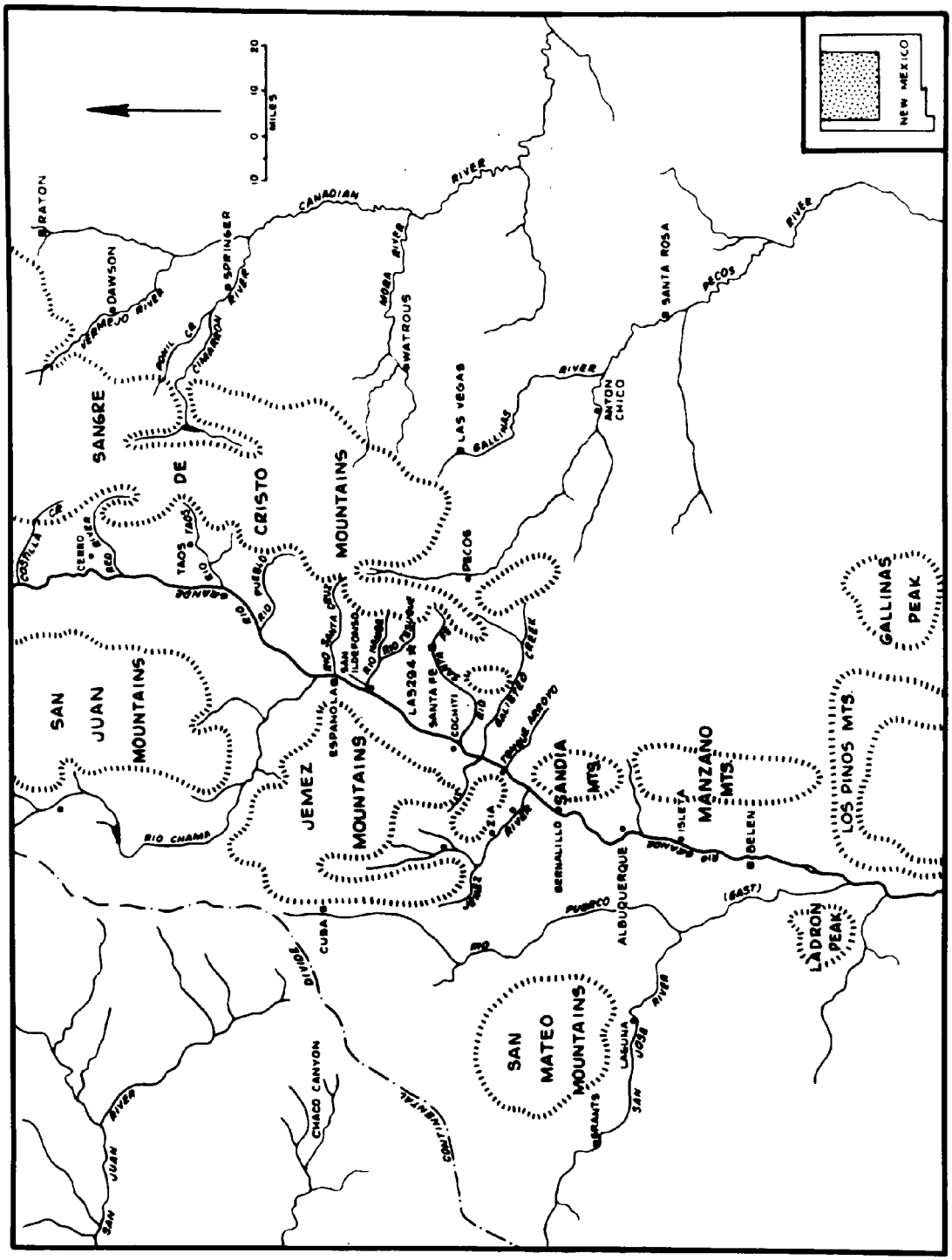


Fig. 1.-The Upper Rio Grande area in New Mexico.

The San Juan mountains extend from southern Colorado south to the deep, narrow canyon of the Chama River in New Mexico, which separates them from the Jemez Range and interrupts what would otherwise be a continuous mountain complex. The San Juans are a wide and relatively low range, rising from basal elevations of 6,000-7,500 feet above mean sea level. They have a broad expanse of plateau top at about 10,000 feet and only a few peaks rise above 11,000 feet. Their middle slopes are covered with yellow pine forests (Transition Zone) and the upper slopes support dense growths of spruce and fir (Canadian Zone), broken by large grassy parks and meadows. The Jemez Range is of approximately the same size and general character as the San Juan and extends southward to the Jemez River. The latter flows into the Rio Grande near Bernalillo, north of Albuquerque, New Mexico.

These mountains are largely volcanic, and their highest peaks are remnants of old crater rims, at elevations between 10,000 and 11,500 feet. A wide plateau separates the mountains from the river valley, and here vegetation is primarily the sage and grama grass of the Upper Sonoran Zone (V. Bailey 1913).

The plateau area between the mountains and the river provides striking evidence of the volcanic action of the San Juan and Jemez Ranges. Thick deposits of basalt were blanketed formerly by a layer of tufa. In the region north of San Ildefonso Pueblo, the tufa is heavily eroded, but much of it remains to the south. The plateau is dissected

into numerous mesas and canyons which dip southeast toward the river. The canyons are stream channels which carry flood waters to the Rio Grande, but are perennial only in their upper courses. The single exception to this drainage pattern is provided by the Chama, which, like the Rio Grande, rises in the San Juan Mountains of southwestern Colorado. This river carries water to the Rio Grande during the greater part of the year.

The dissected plateau and foothill area on the western side of the Rio Grande evidently provided an excellent environment for agricultural-and-hunting communities, for it supported most of the prehistoric inhabitants of the valley. The greatest concentration of aboriginal occupation is found on the eastern slopes of the Jemez Range, between the lower Chama Valley in the north and Jemez River in the south (Hewett 1953).

The Sangre de Cristo Range is a steep anticlinal uplift extending from central Colorado southward to a point between, and slightly beyond, Santa Fe and Las Vegas in northern New Mexico. These mountains are the southernmost extension of the Front Range of the Rocky Mountain System (Fenneman 1931: 104). Thus, the Jemez Mountains on the west and the Sangre de Cristos on the east of the river both extend southward to approximately 35°25' north latitude. The peaks of the Sangre de Cristos rise to elevations surpassing 13,000 feet. The lowest saddle in the range is Taos Pass, at an elevation of 9,250 feet. The Sangre de Cristos

usually display a central crest of sharp peaks and ridges, but in places the range is double, with high interior valleys. Until the midsummer rains begin, the upper mountain slopes are covered with snow, and it is doubtful that snow ever entirely leaves the higher peaks. During July and August, violent showers occur about the mountain tops. As a consequence of the abundant moisture over the upper slopes, from both melting snow and summer rain, there is a relatively vigorous vegetation.

The forests lie in well-marked belts, or zones, around the mountains. Where the peaks exceed 12,000 feet, the upper timber (Hudsonian) zone consists of foxtail pine and stunted spruce and fir, struggling for existence on the barren, rocky slopes at timber-line. In places, this vegetation extends in broad bands down the exposed and cold outer slopes of the range to much lower elevations. In other areas, repeated forest fires have denuded the high slopes, leaving open meadowland and stands of aspen. The lower slopes of the mountains, from approximately 7,500 to 9,000 feet, support the yellow pine (Transition Zone), as do some of the higher and colder mesas nearby. Deciduous oak is scattered throughout this lower zone, and streams are often bordered by narrow-leafed cottonwood. The foothills and the expanse of broken country which leads to the river valley are covered with the ubiquitous grama grass and sage and also support juniper, nut pine, and cacti (Upper Sonoran Zone). This semi-desert vegetation,

alleviated by cottonwoods which mark occasional stream courses, is characteristic of the Rio Grande valley proper, as well as most of the non-mountainous parts of north and central New Mexico. Thus, one can stand on the banks of the upper Rio Grande and, by looking east to the rising slopes of the Sangre de Cristo Range, observe four of the five floral zones represented in New Mexico.

The broken country on the east side of the river, with which we will be particularly concerned, provides striking contrast to the volcanic plateaus on the west. Because the river tends to keep to the western part of its trough, the floodplain on the east is relatively wide, often one to two miles in extent. Between the floodplain and the foothills of the Sangre de Cristos there are from 15 to 20 miles of naked and deeply eroded mesas, hills, and bluffs (see Miller and Wendorf, 1958 for details of local geology). Non-desert vegetation is sparse throughout most of this strip, confined primarily to the stream channels which wind their way through the dissected slopes and gravel-covered hills. The primary tributaries on these eastern slopes are, from north to south, Costilla Creek, Red River, Rio Taos, Rio Pueblo, Rio Santa Cruz, Rio Nambe (or Pojoaque), Rio Santa Fe, Galisteo Creek, and Tonque Arroyo. Many of these streams carry small amounts of water to the Rio Grande during a large portion of the year. The river beds appear disproportionately wide, deep, and dry during most of the year, however, and their contours are explic-

able only after one sees the rivers flowing wildly toward the Rio Grande after a heavy rainstorm in the mountains.

The valley of the Rio Grande is as variable as are its bordering mountains and plateaus. After leaving the San Luis Valley in Colorado, the river entrenches itself in a deep narrow canyon. Much of the channel is cut through the deep volcanic formation characteristic of the west (San Juan-Jemez) side of the valley. Between La Joya and San Ildefonso Pueblo, the river leaves its canyon and flows through the fertile Espanola Valley. The river bed is characteristically wide and shallow in those portions of its course which are not confined by rock canyon walls. Below San Ildefonso, the river again cuts a deep bed through the volcanic formation and emerges from White Rock Canyon near Cochiti Pueblo, west and slightly south of Santa Fe. South from Cochiti to Bernalillo, the river clings to the volcanic mesas and plateaus of the Jemez Range. From this point to the southern limit of the area under consideration, the river bed is typically wide and shallow, flowing through a wide alluvial valley bounded on the east by the Sandia-Manzano Mountains and on the west by high flat sandy country which separates the course of the Rio Puerco from the Rio Grande.

FAUNA:

The several life zones bordering the trench of the Rio Grande provide an unusually diverse fauna and flora

(described in detail by F. M. Bailey 1928; V. Bailey 1913, 1931). Today one finds few game mammals in the area, and the importance of such animals to the prehistoric population has been questioned by some students (Hewett, Henderson, and Robbins, 1913; Luebben, in Wendorf 1953). It is quite apparent, however, that there has been a great decrease in the fauna of the area within the historic period, and other investigators seem to be of the opinion that the faunal resources of the area were quite prolific in the past (e.g., V. Bailey 1931: 4-5). Each life zone has its characteristic flora and fauna, and the inhabitants of the valley should have had access to highly diversified natural resources. Rocky Mountain mammals, such as the bighorn sheep, mule deer, American elk, snow-shoe rabbit, and an occasional bear were present recently in the higher reaches of the mountains. At lower elevations there are extensive Transition and Upper Sonoran faunas, including the pronghorn antelope and numerous species of jackrabbits and cottontails. There is evidence that mule deer and antelope were extensively hunted in recent times (V. Bailey 1931: 22, 29) and contributed significantly to the diets of at least some of the prehistoric pueblos (see Appendix, also Stubbs and Stallings 1953: 7). The area is characterized by an extreme proliferation of rodents, and some of these may also have been used as food.

CLIMATE:

The valley and its immediate environs are typically hot and dry, although there is considerable variation of climatic phenomena (details in Reynolds 1956). As is the case with other drainages in the Southwest, the warmer, drier climate of the southern section of the river basin invades the northern portion of the valley proper. The higher altitudes of the bordering mountains have cooler weather, greater precipitation, and a shorter growing season. In general, temperature and length of the growing season vary inversely and precipitation varies directly with altitude. Yearly temperature usually averages between 45° and 55° Fahrenheit in the valley, at the northern and southern extremes, respectively. The range of average monthly temperatures is approximately 40° F. The growing season varies from 183 days in the south (Los Lunas) to 124 days in the north (Cerro). Annual precipitation in the valley is light, usually between 8 inches in the south and 15 inches in the north. The greatest part of the water in this section of the valley comes, however, from winter snows and summer thunderstorms, and in the high peaks of the mountains and upper reaches of the tributary canyons annual precipitation often approaches 30 inches. Only a small percentage of this precipitation remains on the land, the bulk of it passing turbulently down the stream channels as flash floods. Dry farming can be practiced in some portions of the Rio Grande valley, but most of the present-

day agricultural land in the floodplain is irrigated.

It is hoped that the foregoing paragraphs will give the reader some idea of the gross environmental features of the Rio Grande Valley in northern New Mexico. With this background, I turn to a more detailed discussion of certain cultural phenomena found in this region and, specifically, a description of excavations conducted in the broken country on the east side of the river at the Tesuque By-Pass Site.

PART ONE

THE TESUQUE BY-PASS SITE

(L.A. 3294)

INTRODUCTION:

The Tesuque By-Pass Site is located in Santa Fe County, New Mexico, SE¼ NE¼ Sec. 23 and SW¼ NW¼ Sec. 24, T 18 N, R 9 E. It is approximately 1¼ miles northwest of the town (not pueblo) of Tesuque. The site is located on a high sand and gravel ridge which forms the western boundary of the Rio Tesuque, an intermittent stream which joins the Rio Nambe (or Pojoaque) and empties into the Rio Grande.

The site (Fig. 2) is reached by crossing the usually dry bed of Rio Tesuque and climbing a steep grade up the end of a narrow ridge. The grade begins to level off approximately 55 feet above the bottom of the river bed (elevation of the river bed here is 6,565 feet above mean sea level). Continuing in an upstream direction (southeast), the crest of the ridge rises gradually. Surface indications of the site are first encountered about 100 feet from the northwest end of the ridge. At this point, the habitable portion of the ridge-top is about 90 feet wide. To the northeast, the ridge drops almost vertically, having been eroded and undercut by past water action of the Rio Tesuque.

The site is marked by bits of pottery, occasional points, flakes of stone, and alignments of vertical stone

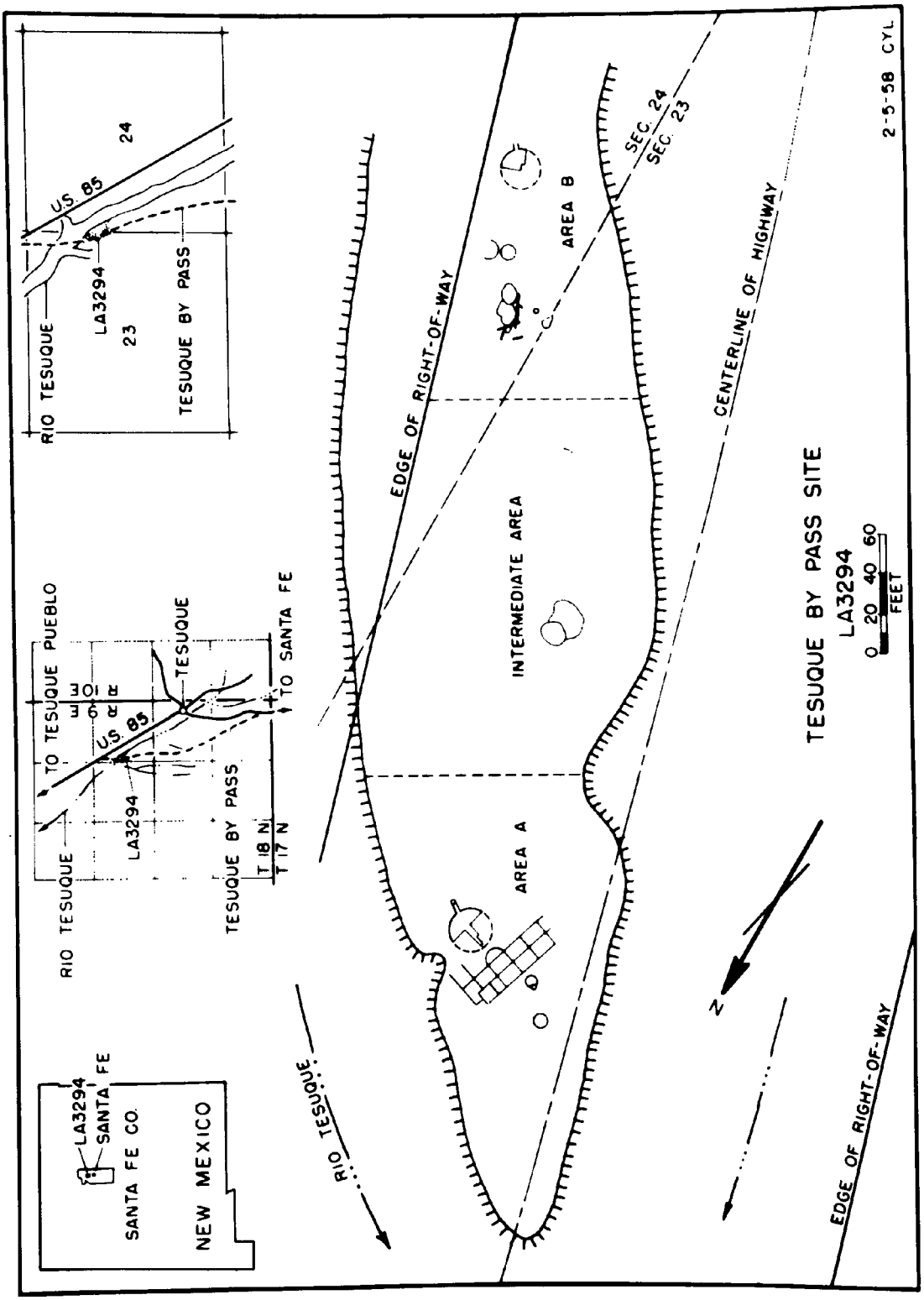

TESUQUE BY PASS SITE
LA3294
0 20 40 60
FEET
2-5-58 CYL
EDGE OF RIGHT-OF-WAY
CENTERLINE OF HIGHWAY
EDGE OF RIGHT-OF-WAY
AREA A
INTERMEDIATE AREA
AREA B
SEC. 24
SEC. 23
RIO TESUQUE
RIO TESUQUE
TESUQUE BY PASS
TESUQUE
TO SANTA FE
TO TESUQUE PUEBLO
US 85
LA3294
T 18 N
T 17 N
R 9 E
R 8 E
RIO TESUQUE
LA3294
23
TESUQUE BY PASS
24
US 85
LA3294
SANTA FE
SANTA FE CO.
NEW MEXICO

Fig. 2.

slabs representing the foundations of old walls. These remains were found for about 200 yards along the top of the ridge.

The site is situated in the broken country between the foothills of the Sangre de Cristos and the Rio Grande, and typical Upper Sonoran flora prevails. Vegetation is sparse, especially on the ridge and hill tops, and consists of sage brush, gamma grass, juniper, and cacti. Cottonwood trees are found occasionally along the edge of Rio Tesuque, becoming more numerous as one procedes downstream.

METHODS OF EXCAVATION:

Indications of human occupancy are not distributed uniformly over the surface of the Tesuque By-Pass Site. Two areas of concentration were noted at opposite ends of the site, about 475 feet apart. Surface collections indicated that Kwahe'e B/W sherds occurred more frequently than other types of painted pottery in the area nearest the northwest (downstream) end of the ridge. In the other area, Santa Fe B/W appeared predominant. As testing proceeded, certain finds were made in the central portion of the site which could not be attributed to either of the major areas. Hence, the site was divided into three areas: "Area A" was used to designate the concentration of remains associated with the Kwahe'e B/W; "Area B" was used to designate the concentration of remains associated with Santa Fe B/W; the intermediate area was designated as such.

Test pits were dug throughout the site. Usually, sterile soil was encountered within 6 to 8 inches of the surface. In other places, excavation continued until sterile soil was reached. These pits were then enlarged to investigate the various features.

Room floors were found at less than a foot below the surface. The only extensive use of stratigraphic control was in the excavation of the kiva in Area A, where a considerable depth of fill and quantity of cultural material was found. In this feature, four levels were distinguished, designated I - IV, from top to bottom. In other cases, finds from the fill were separated from those encountered within 3 to 4 inches above floor level.

After 5½ weeks of excavation, I made my final notes and maps and left the Santa Fe area for a brief period. During this time Mr. Stewart Peckham of the Laboratory of Anthropology engaged in additional excavation at the site. His information has added greatly to the results of this project.

AREA A

ARCHITECTURE:

The remains of eleven rooms, a circular kiva, and four exterior pits were found (Fig. 3). The rooms form an L-shaped block. The longer section of the room-block is composed of 8 rooms, arranged in pairs along a north-south

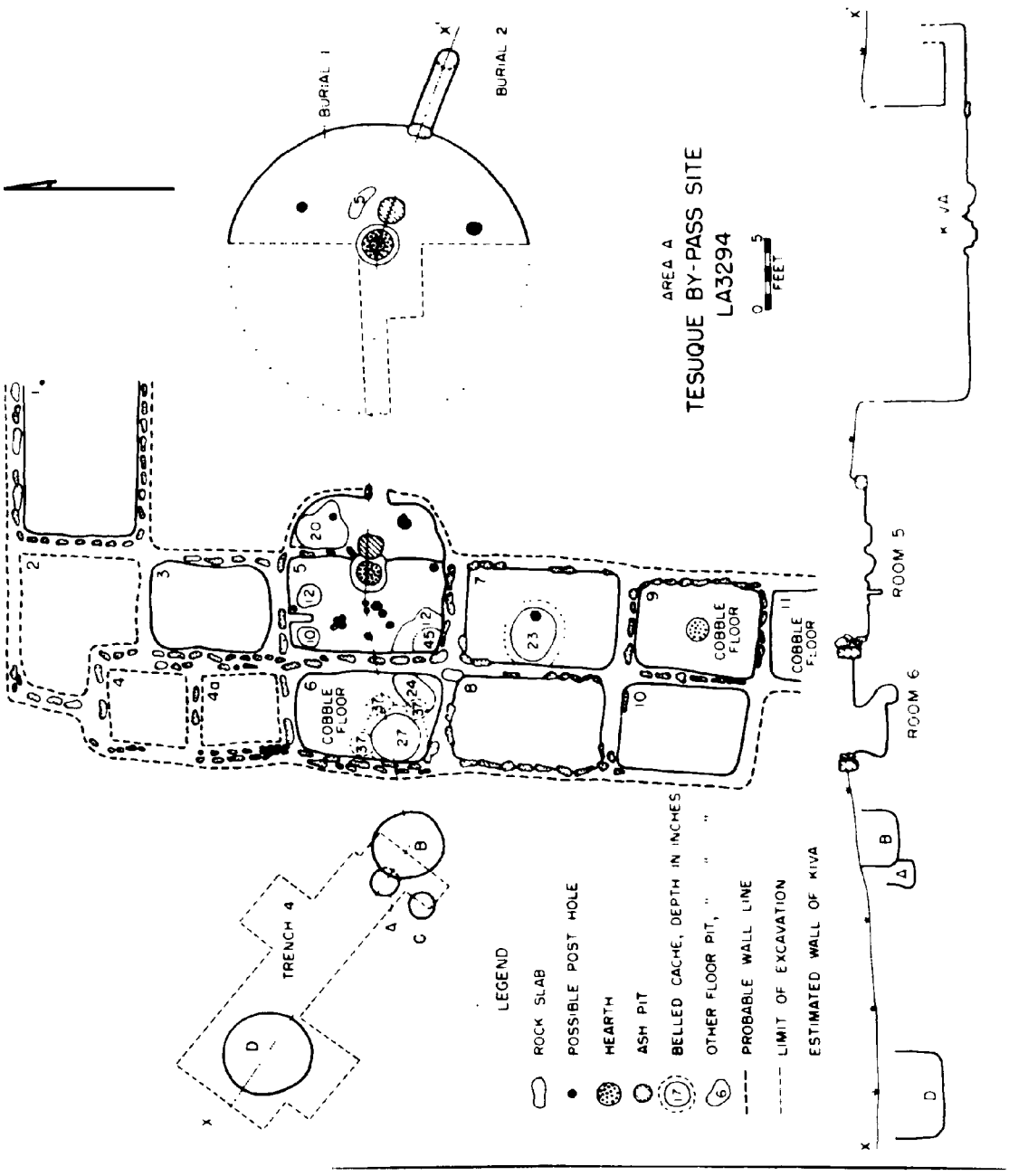

TESUQUE BY-PASS SITE
LA3294
AREA A
0
5
FEET
BURIAL 1
BURIAL 2
TRENCH 4
ROOM 5
ROOM 6
KIVA
COBBLE FLOOR
LEGEND
ROCK SLAB
POSSIBLE POST HOLE
HEARTH
ASH PIT
BELLED CACHE, DEPTH IN INCHES
OTHER FLOOR PIT, " "
PROBABLE WALL LINE
LIMIT OF EXCAVATION
ESTIMATED WALL OF KIVA

Fig. 3.

axis. The greater dimension of the floors is parallel to this axis. At the southern end of this section, a single room extends southward from the eastern row of rooms. It was not completely excavated.

The base of the "L" is formed by what is probably two rooms, placed end to end. These rooms join the line of paired rooms at its northern end, and they extend eastward almost to the edge of the ridge. It is possible that this row of rooms may have extended farther to the east. If so, all traces of the extension have been removed by the erosion of a small wash which drains off the top of the bluff at this point. This wash also removed the eastern wall of room 1 (the northeastern extreme of the room-block).

The kiva is located within the right-angled area set off by the room-block. The pits are on the other side of the room-block, and apparently are placed randomly.

Rooms: Data from the various rooms are presented in Figure 4. Three rooms have roughly cobbled floors (#6, #9, and #11). Other floors are of clay. Hearths were found in only two rooms (#5 and #9). One room (#7) appears to have a single central post. In most cases, wall foundations are of upright stone slabs set into adobe. Considerable variation in the use of the upright stone slabs occurs, especially in those walls common to two rooms. In some cases the slabs appear to function as a facing for an adobe wall, in other cases the slabs are used to form a stone core for the

ROOM NO.	INTERIOR LENGTH	INTERIOR WIDTH	FLOOR	ROOM FEATURES HEARTH	PIT	POST
1	11.4	8.4	clay			
2	?	8.2	unex.			
3	ca. 9.2	ca. 7.2	unex.			
4	ca. 10.9	ca. 5.9	unex.			
5	11.1	7.4	clay	x	x	x
6	8.7	5.8	cobble			
7	11.0	6.8	clay			x
8	10.4	6.1	clay			
9	8.3	6.2	cobble	x		
10	7.4	6.2	clay			
11	?	6.2	cobble			

Fig. 4.-Dimensions of units in the room-block, Area A, Tesuque By-Pass Site. All measurements are in feet.

adobe walls. Floor-pits are common, especially in the western bank of rooms. Most of these pits are excavated into sterile soil and are unplastered.

Room #5 is of particular interest. At first, it appeared to be a rectangular room with a well-made hearth set into the middle of its east wall. Further excavation (by Peckham) disclosed a semi-circular extension of the floor beyond the eastern wall. Evidently the room had been D-shaped at one time, rather than rectangular. This suggests that room #5 was once used for ceremonial purposes.

Kiva: A little more than half of the kiva in Area A was excavated. The kiva is circular, approximately 21 feet in diameter. The wall is constructed of unshaped stones set in adobe. A copious amount of the latter was employed and the stones are aligned in rough courses. This stone and adobe wall, approximately 6 inches thick, stands for five feet above the kiva floor. No reinforcing posts were found in the walls. The wall is plastered with clay, about .25 inches thick.

The floor consists of a thin layer of adobe clay over sterile sand and gravel. The floor was at an average depth of 7 feet 2 inches below the sloping ground level. (6 feet 8 inches min., 7 feet 7 inches max.)

A circular clay-lined hearth is located on an axis passing from the ventilator to the "rear" wall through the center of the kiva. The center of the hearth is 8 feet

6 inches from the ventilator opening and approximately 12 feet from the rear wall. Small slabs of rock had been set upright around the front edge of the hearth. These rocks are ca. 5 inches high, 6 inches in length, and .75 inches thick. Clay mortar holds them in place and forms a coping where no slabs are present. The result is a clay coping 4 inches wide, the front part of which has a vertically projecting stone-slab core. The clay coping stands 2 inches above floor level, the stone slabs 5 inches above floor level. The hearth has an interior diameter of 2 feet 2 inches, and reaches a depth of 4 inches below floor level. In the center of the basin there is a secondary depression. It is circular, 11 inches in diameter, and reaches a depth of 6 inches below floor level. The entire hearth was filled with white ash.

An ashpit is located on the same axis as the hearth, but nearer the ventilator. It is a circular, clay-lined basin 1 foot 7 inches in diameter and 8 inches deep. Its center is 1 foot from the nearest portion of the hearth coping. It was filled with white ash.

Two postholes were found, set approximately 3 feet 6 inches in from the walls. One posthole is in the northeast quadrant of the kiva, the other in the southeast quadrant. Presumably there are two others in the unexcavated section of the kiva, and a regular four-post roof support was employed. The posthole in the northeast quadrant is 6 inches in diameter and 1 foot 7 inches deep. The posthole

in the southeast quadrant had held a double post. The hole is 9 inches in diameter to a depth of 10 inches, and 5 inches in diameter to a depth of 1 foot 6 inches.

A broken sandstone slab was found on the floor near the ventilator opening. The slab was originally 1 foot 4 inches x 9 inches x 1.5 inches. It was probably used as a deflector or a damper. No deflector socket was discovered.

The ventilator opening in the wall is roughly circular, 1 foot 5 inches in diameter. The bottom of the opening is at floor level. The ventilator tunnel turns upward at a point 5 feet 8 inches behind the wall. In the floor of the ventilator passage, a flat stone slab measuring 1 foot 2 inches x 8 inches x 2 inches is set in adobe. The slab projects 6 inches inside the kiva wall-line, making a low step. The adobe mortar, used abundantly, forms a semi-circular clay ridge on the kiva floor which joins the kiva walls on each side of the ventilator opening. The step thus formed rises 4 inches above floor level and is 1 foot 2 inches wide.

A depressed area was found north of the ashpit. It is roughly oval, but one long side is slightly concave. Its longer axis is perpendicular to the hearth-ventilator axis. It is 2 feet 6 inches long, 9 inches wide, and 5 inches deep. It may have been a socket for ladder posts.

A flat rock set into the floor on the south side of the hearth measures 8 inches x 5 inches x 1 inch. Its long axis is parallel to the hearth-ventilator axis. The center

of the stone is 9 inches from the clay rim of the hearth.

The kiva fill consisted of stained earth, ash, trash, and fragmentary artifacts. The kiva was used as a trash pit after its abandonment. Two burials were found, one in the kiva fill and one in a pit just outside the eastern wall of the kiva, south of the ventilator passage. (These are described in a later section.)

Pits: Four pits were found west of the room-block. Their location is shown in Figure 3.

Pit A is a circular bell-shaped cist with a minimum diameter (at top) of 1 foot 5 inches, a maximum diameter (at bottom) of 1 foot 10 inches. The bottom of the pit is 3 feet 8 inches below ground surface; the top of the pit was encountered 1 foot 6 inches below surface. The pit was filled with brown stained earth containing bits of charcoal. No artifacts recovered.

Pit B, a large circular pit, was dug later than Pit A, and cut through one edge of it. Its diameter is 4 feet 11 inches, and it reaches a depth of 2 feet 11 inches below ground surface. It contained brown fill, and its outlines were traced to within 3 inches of the surface. No artifacts recovered.

Pit C is a bell-shaped cist with a maximum diameter of 1 foot 10 inches. Its bottom is 2 feet 10 inches below ground surface. A slight change in the character of the fill 10 inches below ground surface may indicate the original top of the cist. No artifacts recovered.

Pit D is a large circular pit, 6 feet in diameter, which had been clay-lined, at least in part. The clay shows signs of having been burned. The bottom of the pit is 4 feet 6 inches below ground surface, and its top was encountered 1 foot 3 inches below ground surface. It contained brown fill stained with charcoal and a number of fist-sized rocks, apparently burned.

Trenches: A number of exploratory trenches are not associated with any particular feature. Some trenches disclosed little if any material culture and no architectural remnants; other trenches disclosed a number of features. These trench designations have been maintained as descriptive devices in some cases, but in the field they were abandoned whenever an identifiable feature was disclosed. Trench 1 encompassed the northern half of the room-block; when the individual rooms became apparent, it was not possible to reassign all material from "Trench 1" to the individual rooms. Those trenches in which the various architectural features were disclosed are all shallow excavations, none being more than 1.0 feet deep.

Since these trench numbers have been retained to desnate find-spots in some cases, a brief description of them is given below.

Trench 1	encompasses room-block north of rooms 7 and 8
Trench 2	encompasses room-block south of rooms 5 and 6

Trench 3	east of room 9, site debris only
Trench 4	encompasses pits A, B, C, D
Trench 5	above western edge of kiva, shallow
Trench 6	above center of kiva, shallow
Trench 7	east of room 7, southeast of kiva, site debris
Trench 8	east of rooms, south of Tr. 7. Sterile
Trench 9	northeast of Tr. 8. Sterile

POTTERY: (See Fig. 5)

Most of the sherds recovered came from the kiva fill. Analysis suggests that Red Mesa B/W and vessels with neck-banding decreased in popularity but continued to be used during the period of Kwahe'e predominance. The paucity of ceramic remains in the lower levels of the kiva is such that this inference is by no means certain. In brief, stratigraphy offers no definite evidence of major changes in ceramic material through time.

The discussion which follows should be regarded as my considered opinion rather than indisputable fact. Although I have received a great deal of help and excellent advice from Mr. Stanley Stubbs of the Laboratory of Anthropology, I am not yet satisfied with my ability to distinguish the various types of tempering material used in this pottery. In the following sections, small black inclusions possessing a hardness comparable to the paste and larger platy black inclusions are interpreted as "sherd temper"; harder black

	SURFACE	TRENCH 3	TRENCH 7	TRENCH 4	TRENCH 1	TRENCH 2	ROOM 1	RM 5 ROOM, PART	RM 5 "J" PART	ROOM 6	ROOM 7	ROOM 8	ROOM 9	ROOM 10	ROOM 11	SUB, ROOMS	KIVA level 1	KIVA level 2	KIVA level 3	KIVA lev. 4 (floor)	KIVA other	KIVA sum, kiva	AREA A TOTAL
KWAHE'E B/W	9	0	0	1	0	3	0	0	0	0	3	3	1	1	0	8	152	19	2	1	16	190	211
KWAHE'E B/W ?	1	0	0	0	0	2	0	0	0	0	1	1	0	0	0	2	3				2	5	10
RED MESA B/W	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	10			1		11	16
RED MESA B/W ?	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	13	3			1	17	21
GALLUP B/W	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	3			1	1	5	6
FINE PASTE GRAY	6	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	40	3			2	45	53
COARSE PASTE GRAY	5	4	0	0	1	5	0	1	0	0	0	0	0	0	0	1	13	2			1	16	32
TRADE AND INTRUSIVE	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	4					4	6
UNIDENTIFIED B/W	1	7	0	1	0	2	0	0	0	0	0	0	0	0	0	0	11	2	1	1	1	16	27
OTHER (B/W ?)	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6					6	9
POLISHED BROWN	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	4				1	5	9
sum	31	12	0	4	2	14	0	2	0	1	4	5	4	1	0	17	259	29	3	4	25	320	400
CORRUGATED	46	11	1	4	14	96	0	3	5	3	38	27	4	0	1	81	412	46	8	18	38	522	775
NECK-BANDED	17	1	4	5	13	4	3	0	2	2	0	0	3	0	0	10	68	9	2	6	10	95	149
NECK-RIBBED	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1			10		11	11
INCISED	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8					8	9
PUNCTATE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4					4	4
SCORED	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1			1		2	3
HANDLES, MISC.	0	0	1	1	0	2	0	0	0	0	1	2	0	0	0	3	9	3		1		13	20
sum	65	12	6	10	27	102	3	3	7	5	39	29	7	0	1	94	503	58	10	36	48	655	971
PLAIN SURFACE	91	14	5	4	23	50	1	3	5	7	24	42	8	1	0	91	447	39	6	29	30	552	829
SUM (total)	187	38	11	18	52	166	4	8	12	13	67	76	19	2	1	202	1209	126	19	69	103	1527	2200

Fig. 5.-Provenience of potsherds, Area A, Tesuque By-Pass Site.

inclusions and hard white angular flecks (sandstone) are included in the category "crushed rock". Softer gray and yellow globular inclusions (evidently clay) are considered as part of the original paste, not as temper. Fresh breaks showing less than six minute particles of mica and/or one or two grains of rock (round or angular) per sq. cm. are interpreted as clay with little or no tempering added.

The predominant painted pottery is Kwahe'e B/W (Pl. I, a-h; Pl. IV, a-d); Red Mesa B/W (Pl. I, i-k), Gallup-Chaco B/W (Pl. I, l-o), Santa Fe B/W (1 sherd; Pl. I, p), Mancos ? B/W (Pl. I, q), Wingate B/R (1 sherd; Pl. I, r), and unidentified B/W's (Pl. I, s-t) also occur. Culinary wares (Pl. II) are plain-surfaced, neck-banded and corrugated. A few incised and punctate sherds were found. A major part of this discussion is devoted to the Kwahe'e B/W because it differs slightly from Mera's general description of this pottery and I know of no detailed description of the type in print. The discussion applies only to Kwahe'e B/W from this site and, insofar as it concerns jars and ollas, is based on but a few partially reconstructed vessels.

Painted Sherds:

Kwahe'e B/W (Pl. I, a-h; Pl. IV, a-d): For comments on spatial and temporal distribution, see Fig. 20, also Mera 1935; Stubbs and Stallings, 1953. Constructed by coiling and scraping. Thickness from .18 inches to .30 inches, average ca. .22 inches. The paste is quite uniform;

it is homogeneous, gray, hard to medium-hard, with occasional yellow (clay?) inclusions, unground gray clay, bits of mica, sand and/or angular rock. (In this respect the collection apparently differs from the Kwahe'e B/W described by Mera which is usually sherd tempered.) Sherds break with a fracture that varies in appearance from very smooth to somewhat sandy under a ten power glass. The majority (78%) of the sherds have no temper or only occasional grains of sand or rock visible to the naked eye or under a ten power glass; some specimens (17%) have finely ground sherd temper and others (5%) have ground rock temper. These latter materials, when used, were added sparingly. Scraping marks are usually smoothed, especially on bowls and jar exteriors. A thin streaky white slip is applied to bowl interiors and jar exteriors, but not to bowl exteriors or jar interiors. (One bowl sherd of typical paste but atypical design has the thin slip carried over the lip and down the outside for ca. .5 inch.) The pottery is decorated with mineral paint which ranges in color from black to rust-red but is typically a dark reddish black. Designs are of a crudely executed heavy-lined Chaco tradition. The most common decorative element is a band of diagonal hatchure with lines .05 inches to .13 inches wide, averaging ca. .08 - .10 inches, with framing lines of the same width as the hatchure lines or slightly thicker. Series of parallel lines, solid triangles, diagonal bands of parallel lines with exterior pendant right triangles, horizontal bands with

opposed and offset equilateral triangles, checkerboards (with and without dots), wide-line multiple chevrons, and triangles with pendant ticking also occur. Curvilinear designs are very rare. There is only one example of a painted lip.

Bowl interiors are decorated within a horizontal zone which begins at or near the lip (Fig. 6B, a-c). The width of this band varies considerably, but the bottom of bowls is never painted. Two bowl sherds show two short parallel diagonal lines on the exterior just below the lip. Ollas are decorated in a band which begins just below the inflection point of the neck and ends at a point slightly below the maximum diameter of the vessel (Fig. 6B, e). Jars (only 1 definite example) are decorated within a wide band from the lip to a point just below the maximum diameter (Fig. 6B, d). Lineal borders and framing lines usually occur, but are often incorporated into the design.

Although no complete vessels were found, bowls, ollas, and possibly jars, were made. The single jar found is sherd tempered, and fits Mera's description of Kwahe'e. Sherd tempered Kwahe'e is not common at this site however, and the vessel may not be of local manufacture. Of the painted sherds classified as Kwahe'e B/W, 121 (62%) were painted on the concave surface and are presumably from bowls, 74 (38%) are painted on the convex surface and are presumably from ollas or jars. A maximum of 95 bowls and 45 ollas and/or jars is represented; the actual number is probably smaller

in both cases.

Red Mesa B/W (Pl. I, 1-k); Gallup B/W (Pl. I, 1-m); Sherds classified as Red Mesa and Gallup B/W differ in many respects from the Kwahe'e B/W. The paste of the former types is less homogeneous, fresh fractures appear not smooth but jagged or chunky when viewed in cross-section under a ten power glass. Many sherds have a dark central core, others have a uniformly gray cross-section. Crushed rock (including most of the "white flecks") and sherd temper are added in medium amounts; usually both types of temper occur in a single sherd. Mica inclusions appear in but one example. Designs are more finely drawn, bowl exteriors are almost invariably covered with a fair to medium white slip, lips (two exceptions) are painted black.

The distinction between Red Mesa B/W and Gallup B/W rests on design style: following Wendorf (in Wendorf, Fox, and Lewis, 1956: 5-6), sherds with a rather thick-lined Kana-a style decoration are called Red Mesa B/W, sherds with Dogoszhi style decoration are classed as Gallup B/W.

Although sherds of Red Mesa B/W and Gallup-Chaco B/W are found in many early sites in the northern Rio Grande Valley, they presumably represent trade pieces rather than objects of local manufacture.

Other Painted Pottery: Identified intrusives have been listed above. The unidentified B/W sherds are decorated with mineral paint (4 exceptions from a single

vessel which may represent a transitional Kwahe'e-Santa Fe B/W). As a class they are tempered more heavily than Kwahe'e B/W, usually with crushed sherd, and mica inclusions are rare. These sherds show considerable variation in design style, but all differ from those styles characteristic of Red Mesa, Gallup, and Kwahe'e B/W.

Unpainted Gray Sherds; non-culinary: Sherds described as "fine paste, gray" are unpainted fragments possessing a paste similar to that of Kwahe'e B/W. Such sherds are probably unpainted portions of Kwahe'e vessels. No rim sherds of this class were found. "Coarser paste, gray" refers to all other unpainted fragments of non-culinary gray pottery. These could be from unpainted portions of Red Mesa, Gallup-Chaco, and/or unidentified B/W vessels. No rim sherds of this class were found.

Other Unpainted Sherds; culinary: The great majority of the culinary sherds are either neck-banded, corrugated, or plain-surfaced. All of these classes of pottery seem to have been made from a common paste and are tempered with crushed rock. This paste, presumably local, is described below.

Local culinary paste: soft to medium hard; rather porous; fresh break viewed in cross-section is rough, produces a crumbly fracture and, under a ten power glass, frequently shows transverse laminations of the coil. Color

is usually black or dark brown; some tans and grays occur. Brown paste with a black core also appears. Temper is used in medium to liberal amounts. It consists of coarsely crushed rock, primarily quartz and quartzite. Mica inclusions are very common. Surfaces are well smoothed, but temper frequently protrudes and flakes of mica are usually visible on both surfaces. Surface color ranges from black through tan to gray, with blacks and tans most common. Black exteriors are normal (due to use in many cases), interiors are usually black or tan. Sherds range in thickness from .08 inches to .15 inches, averaging .10-.12 inches.

The breaking strength, breaking pattern, types of inclusions, temper, and general appearance of this paste are fairly uniform and I do not feel that type divisions on the basis of paste or temper would be legitimate. All sherds discussed below are of this paste unless noted otherwise.

Neck-banded (Pl. II, a-c): All apparently rim, neck, and side sherds; no bases. Of the 149 sherds, 24 are rim sherds. There are several methods of treating bands. Most commonly, bands are .4-.5 inches wide (from one coil juncture to next, not actual coil width) and are unmodified (Pl. II, a); (65 sherds including 10 rims). One specimen in this class has sherd temper. Often the actual coil juncture was obliterated (Pl. II, b); (46 sherds including 7 rims). Quite a few (35 sherds including 6 rims) have beveled bands (Pl. II, c). The short bevel was produced on

the lower portion of the coil by drawing a flat object around the coil; the plane of the bevel slopes down and inward.

Three sherds, including one rim sherd, have either narrow coils or an unusually great overlap. The neck-bands measure .17-.20 inches between coil lines. These sherds may be no more than small fragments from corrugated vessels with extremely shallow indentations.

Eight sherds (no rims or bottoms) can be described as "banded-incised". These specimens have either a flat exterior surface or very little lateral overlap. Coil (?) lines have been emphasized by incision. Five sherds have incisions ranging from .32 inches to .50 inches apart. Three have incisions from .20 to .25 inches apart. Perhaps these latter could have been called "ribbed-incised" more appropriately.

Of the whole collection of neck-banded sherds, only one indicates that coil overlap was on the inside going up the vessel. All other sherds showing termination of banding indicate that coil overlap was on the outside going up the vessel.

Corrugated (Pl. II, d-e; Pl. VIII, a): Apparently made of the same paste as the neck-banded sherds, the corrugated sherds differ in several respects. The distance between coil lines averages less in the corrugated sherds, sherds from the lower portions and bottoms of vessels are

present, and the amount of temper added seems to be slightly less than that added to the neck-banded sherds.

There is considerable variation in the execution of the corrugation. The typical corrugated sherd (e.g. Pl. II, e) from the collection has shallow (.03 inches or less) finger indentation of coils that are ca. .25 inches wide. Lateral overlap, defined as the distance from the actual coil juncture to the greatest protrusion of the upper coil, is slight, ca. .02 inches. By the very nature of the indentations, their vertical placement is not entirely random; arrangement to produce a pattern is rare however. These patterns occur almost invariably as lineal segments which are either vertical or which incline upward to the right. Coils are overlapped on the outside. Smoothing of the coil lines or the corrugations may or may not be present.

Variation in all characteristics of the "typical corrugated sherd" is to be found; in depth of indentation, width of coil, lateral overlap, degree of regularity in placement of indentations, and amount of post-indentation smoothing. This variation is, for the most part, continuous, and only one sub-group (21 sherds) is distinctive (Pl. II, d). This consists of sherds with deep (.17-.14 inches) and regularly spaced indentations, giving an impression of either vertical lines, diagonals slanting up to the right, or (1 sherd only) diagonals slanting up to the left. There are no basal sherds in this sub-group; one rim sherd is present.

Five corrugated sherds have their coil lines accentuated by incision. These sherds are all of medium band width, have very shallow indentations, and very little lateral overlap.

Three sherds have corrugations which were produced with a blunt stick or some means other than the finger. (It would be difficult to say with assurance how many other sherds were corrugated in a similar fashion.)

One sherd with typical corrugation has been scored with a blunt stick. The scoring marks run perpendicular to the coil lines.

Miscellaneous culinary; surface altered:

Neck-ribs. Eleven sherds from two vessels (Pl. II, g). These ribs differ from neck-bands in having been formed by round coils rather than flat ones. Coil lines have been accentuated by incision, and the ribs themselves appear almost semi-circular in cross-section. The ribs in one vessel range in width from .25-.36 inches, averaging ca. .30 inches; in the other they range from .15-.25 inches, averaging ca. .24 inches. The ribs protrude .07-.11 inches from the coil line.

Incised. Nine sherds from 4 vessels (jars?) have incised exteriors. Seven of these (from 2 vessels) are incised in a herring-bone, or line-of-chevrons design (Pl. IV, e-f). In one case it can be ascertained that the incision covered only the upper portion of a jar. These

incisions are fairly deep and seem to have been made with either a stick or a thumb-nail. One sherd from another vessel shows light linear incision (Pl. II, h). The sherd from the fourth vessel shows incisions in the form of concentric diamonds (Pl. II, i). In the latter, the incisions forming the edges of the diamonds do not meet at the vertices. All of these sherds seem to be of local paste, but the chevron-incised sherds have an unusual amount of mica in them, visible both in fresh breaks and on the surface.

Punctate. Four sherds, probably from the same vessel (jar?) (Pl. II, f). The punctations are teardrop shaped, but pointed at both ends. These impressions are quite uniform; ca. .45 inches long, .20 inches max. width, ca. .08 inches deep. They slant up to the right at an angle of about 45°. These incisions were placed one above another, and the effect produced is that of diagonal lines slanting upward to the right. The impressions may have been made with a stick; more probably, they were made with a thumb-nail. This decoration was confined to the upper portion of the vessel. Apparently of local paste, although two sherds have a gray core with a dark central streak. (Gray cores occur in what is presumed to be local ware, but are not typical.)

Scored. Three sherds, apparently from different vessels, have scored exteriors. No rims; one sherd may be from the bottom of a vessel.

Plain surface: 829 sherds of plain-surfaced

culinary ware, made from local paste, were recovered. 59 of these were rim sherds, 23 were from bases. Other sherds were originally parts of large vessels with gently recurved sides. One sherd indicated a cylindrical neck on a globular vessel, and two sherds were from vessels with a sharp shoulder. No complete vessels were recovered, but an examination of the sherds allows certain generalizations.

All sherds are smooth, although ten specimens have very rough lumpy surfaces and were smoothed just enough to remove the coil lines. Surface color is as described under "local culinary paste". Seven sherds, apparently from unused vessels, have a yellow-tan color similar to that of the present-day culinary ware made in Picuris and Nambe. It may be that many, if not most, of the culinary vessels from this site were of this color originally.

These sherds represent not only plain-surfaced vessels, but also the lower portions of neck-banded, ribbed, corrugated, punctate, and incised vessels. I am unable to assign sherds to any particular category in most cases. Vessels in the five last-named categories have rims that are smooth for .50 inches to ca. 1.25 inches below the orifice. Of the 59 rim sherds classed as "plain surface", only 5 large specimens are definitely from smooth surface vessels. Twenty other rim sherds show a smooth surface finished for 1.0-1.5 inches below the orifice and are probably from plain-surfaced vessels. Two rim sherds are from specialized vessels; a seed-jar and a hand-modeled globular jar with a

cylindrical neck. It is impossible to say whether the remaining 32 "plain rim sherds" are from plain-surfaced vessels, neck-banded vessels, etc.

The following remarks apply equally to any of the six categories of culinary ware mentioned above. Sherds which were from bases of vessels indicate that rounded bases and flat bases predominated. It is possible that slightly pointed bases occurred, but none of the basal sherds recovered were of sufficient size to enforce this supposition. One sherd indicated a flat base with a concave circular indentation into the exterior, at the very bottom of the vessel. Basal sherds range in thickness from .5-.6 inches, side sherds are about half this thick.

All culinary vessels seem to have had slightly flaring rims. As noted above, gently recurved sides were typical; sharp shoulders and definite breaks between body and neck were not.

Miscellaneous, plain surface: Nine sherds of non-local brownware paste were recovered.

Three sherds from one vessel were well-smoothed but not polished. The temper was crushed white rock (probably quartzite); grains were small to medium in size and were added liberally. The paste is fairly homogeneous and brown in cross-section with a slightly darker central streak. Thickness .25 inches. There are no inclusions of mica. The surface color is an orange-brown.

Six sherds were polished on the exterior. They were made of a fairly fine paste, soft to medium hard. A medium amount of crushed rock temper was used. Five of the sherds (all of which may be from different vessels) were .20 inches thick. One of these was a rim sherd. The sixth sherd was .25-.30 inches thick, and apparently came from the side of a vessel. Four of these polished brownware sherds show what appear to be very small flecks of mica on their surfaces.

Handles: Twenty whole or fragmentary handles were recovered: ten strap handles, seven lugs, and three rope handles. The strap handles are, with but one exception, fairly large (Pl. II, j). Outside maximum dimensions vary from 2.5-3.5 inches, width is ca. 1.0 inches. The small strap handle has a maximum dimension of 1.6 inches and is .7 inches wide. One of the large strap handles had been attached vertically, with one end just below the lip of the vessel. Two others seem to have been attached horizontally near vessel shoulders. The orientation and place of attachment of the others could not be ascertained.

Of the seven lugs, five are conical, with a slight downward curve at the tip (Pl. II, m). These were attached to vessels near the rim. A sixth lug was large and elliptical in side view, with the long axis of the ellipse horizontal. This horizontal axis measured 1.25 inches, the vertical axis .7 inches, thickness .5 inches. It was

attached to the vessel by a short (.4 inches) stem, apparently near the lip. The exterior surface of this lug is concave (Pl. II, l). The seventh lug was a curved strip of clay ca. 1.5 inches long, 1.2 inches max. vertical width, .7 inches thick, which was attached to the vessel horizontally (Pl. II, k). The strip had been modelled so that its upper surface was convex, its lower surface concave. The result was a handle similar to those often found on contemporary desk drawers.

The rope handles were fragmentary. Two were single coil with maximum diameters of .68 inches and .69 inches. The third was composed of two parallel coils, each ca. .38 inches in diameter (Pl. II, n).

Artifacts; ceramic:

Scrapers. Seven sherds were recovered which had one or more edges smoothed from use:

Five sherds show that use was probably in a direction perpendicular to the face of the sherd. Kwahe'e B/W (Pl. II, r), corrugated, fine paste gray, and plain sherds are represented. One of these sherds is shaped in the form of an isosceles triangle and has a hole drilled in the vertex opposite the base (Pl. II, s). This sherd is smoothed along all three edges. Two other sherds are square; one shows use along one edge, the other shows use along two adjacent edges. The remaining two sherds are irregularly shaped, and show use on one edge only.

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Scrapers. Seven sherds were recovered which had one or more edges smoothed from use:

Five sherds show that use was probably in a direction perpendicular to the face of the sherd. Kwahe'e B/W (Pl. II, r), corrugated, fine paste gray, and plain sherds are represented. One of these sherds is shaped in the form of an isosceles triangle and has a hole drilled in the vertex opposite the base (Pl. II, s). This sherd is smoothed along all three edges. Two other sherds are square; one shows use along one edge, the other shows use along two adjacent edges. The remaining two sherds are irregularly shaped, and show use on one edge only.

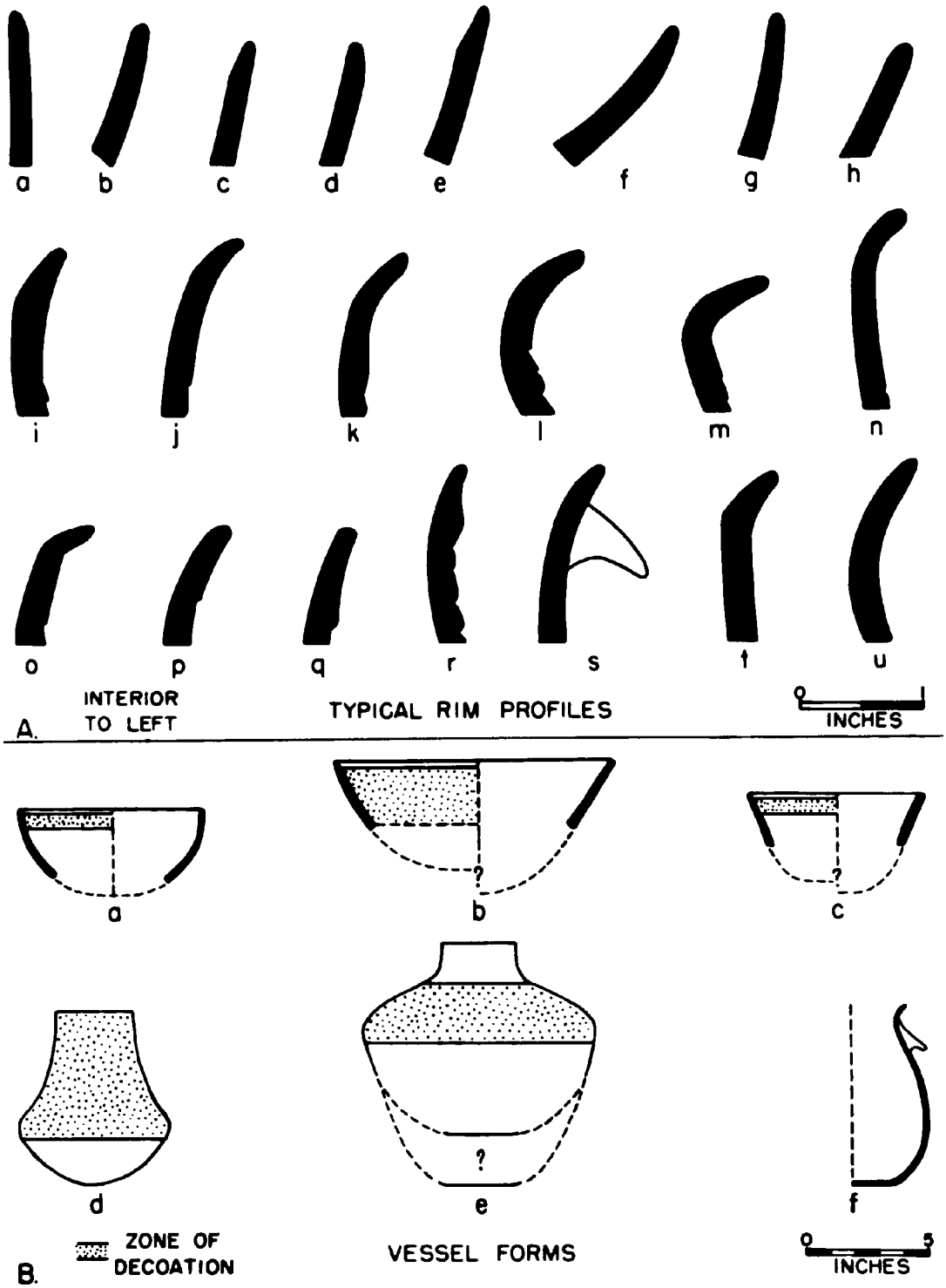


Fig. 6.-A. Typical rim profiles, Area A, Tesuque By-Pass Site. a-e, Kwahe'e B/W; f-g, Red Mesa B/W; h, Gallup B/W; i-n, corrugated; o-q, neck-banded; r, neck-ribbed; s, incised; t-u, plain surface.
B. Vessel forms, Area A, Tesuque By-Pass Site. a-e, Kwahe'e B/W; f, corrugated.

One large Kwahe'e B/W olla sherd, roughly square, shows use along one edge and also on the opposite edge and adjoining exterior surface.

One sherd is semi-circular. It is smooth along the entire arc of the circle and was evidently broken along a diameter.

Pipes:

(1) Room 5. Curved cloud-blower (Pl. II, o), fine culinary paste, exterior well smoothed, undecorated. Length along central axis 3.58 inches. Outside diameter: bit .35 inches, bowl .80 inches. Interior bowl diameter .55 inches, depth of bowl 1.31 inches. Dottle found in bowl.

(2) Room 9, floor. Straight cloud-blower (Pl. II, q), fine culinary paste, exterior well smoothed, undecorated. Length 2.75 inches. Outside diameter: bit .32 inches, bowl .80 inches. Interior bowl diameter .65 inches, depth of bowl .80 inches. Dottle found in bowl.

(3) Kiva, Level I. Straight stubby cloud-blower (Pl. II, p), fine culinary paste, undecorated. Length 1.60 inches. Outside diameter: bit .35 inches, bowl .70 inches. Interior bowl diameter .65 inches. No signs of use.

ARTIFACTS OF STONE:

Projectile Points (Pl. III, a-i): Only notched and/or

stemmed forms are discussed in this category. Descriptive details are given in Figure 7.

Nine whole or fragmentary projectile points were recovered. They are all small (length .57 inches to ca. .90 inches, median .80 inches; width .40 inches to ca. .74 inches; median .50 inches). With the exception of a serrated side-notched point of red chert (Pl. III, b), all specimens appear to be corner-notched, unserrated, with blade edges straight or slightly convex, and are made of obsidian. Most stems and bases are missing; two expanding stems and one straight stem are intact. Two points have blades which are nearly equilateral; the others are elongated.

Other Chipped Stone: See Figure 8 for locus.

A. (flakes showing retouch or use; unshaped. Pl. III, j-k) 4 specimens. All are apparently flakes (three possible exceptions), and all are retouched or show use on one side only (one exception). Specimens of this category may be called random flake scrapers. Six are rounded or oval, with relatively steep retouch. Sixteen are fairly thick flakes with one or more thin edges showing use or retouch on one or more edges. Five have parallel sides, with use or retouch along these edges, and could be called blades.

Only two specimens show retouch or use about a concave edge. No end scrapers were recovered.

REF: Pl. III	NOTCHES CORNER	NOTCHES SIDE	STEM EXPAN.	STEM STR.	STEM CONTR.	BLADE EDGE CONV.	BLADE EDGE STR.	BLADE EDGE CONC.	LENGTH	WIDTH	THICK.	MATERIAL	LOCUS
b		x	?	?	?	s x s			(.90)	.64	.16	red chert	rm. #7, floor
a	?	?	?	?	?	x			(.90)	.50	.10	obsd.	rm. #5
e	x		x				x		(.85)	(.42)	.13	obsd.	surf.
i	?	?	?	?	?		x		(.85)	(.74)	.11	obsd.	surf.
g	x		x			x	x		.80	(.43)	.09	obsd.	surf.
f	?	?	?	?	?	x			(.75)	.40	.10	obsd.	surf.
d	x		x?	x?		x			(.73)	.46	.10	obsd.	kiva, floor
c	x		x					x	.60	(.56)	.10	obsd.	tr. 2
h	x		x			x			.57	(.52)	.14	obsd.	surf.

x present
s x s present, both edges serrate
(-) estimated dimension

Fig. 7.-Projectile point dimensions, Area A, Tesuque By-Pass Site. Dimensions in inches.

B. (flakes retouched and shaped, not pointed) 4 specimens. Each of these specimens is unique; the first three described are obsidian. (a) Small, bifacially flaked, with one corner worked to a circular shape. Badly broken; does not resemble any section of a projectile point (pl. III, l). (b) Elongated, bifacially flaked, coming to a rounded point. Relatively thick in cross-section. Probably a drill (Pl. III, m). (c) Irregular flake worked on one side to a rounded point. Indications of use along one edge and around point (Pl. III, o). Possibly an end scraper for fine work. (d) Rectangular object of quartzite, shallowly flaked on both sides. All edges fairly sharp. Probably a scraper (Pl. III, n).

B'. (flakes shaped and retouched to a point. Pl. III, p-u) 7 specimens. One fairly thick flake worked on one face only; 2 flakes (both obsidian) retouched on one face only; 4 thin flakes worked on both sides, all obsidian. Triangular and quadrangular in shape. No indications of hafting.

C. (unretouched flake, jagged edge) 5 specimens. All of these specimens are fairly large; two may be small cores. No indications of use, but would be suitable for cutting.

D. (random flakes; edges smooth, not sharply pointed, no retouch) 48 specimens.

LOCUS / CLASS	A	B	B'	C	D	E	F	TOTALS
Surface	12	1	3	0	15	0	0	31
Trench 3	1	0	0	1	0	2	0	4
Trench 7	0	0	0	0	0	0	0	0
Trench 4	1	0	0	0	0	0	0	1
Trench 1	2	0	0	0	2	1	0	5
Trench 2	3	0	0	0	2	0	0	5
Room 1	1	0	0	0	0	0	0	1
Room 5, rect. part	3	0	0	0	3	0	0	6
" " "D" part	1	0	0	1	2	0	1	5
Room 6	0	0	0	0	0	0	0	0
Room 7	3	0	0	0	2	0	1	6
Room 8	4	0	0	0	1	1	0	6
Room 9	0	0	0	1	2	1	0	4
Room 10	1	0	0	0	3	1	2	7
Room 11	0	0	0	0	0	0	0	0
Kiva, level 1	4	3	3	1	14	0	0	25
" level 2	0	0	0	0	0	0	0	0
" level 3	2	0	0	0	1	0	0	3
" level 4	2	0	0	0	1	0	2	5
" other	1	0	1	1	0	0	0	3
TOTALS:	41	4	7	5	48	6	6	117

Fig. 8.-Locus of chipped stone artifacts, Area A, Tesuque By-Pass Site.

E. (sharply pointed random flakes, no retouch) 6 specimens. These flakes are of sizes comparable to the specimens in category B', and would have been included therein if they had shown any signs of use.

F. (cores, or possibly thick, heavily chipped flakes) 6 specimens. Five smaller specimens, none with any dimension greater than 1.50 inches. One larger specimen is a crude right circular cone with flake scars along the sides. Height 1.6 inches, diameter of base 1.9 inches to 2.3 inches.

Metates and Manos: No complete metates were found, but some of the fragments permit estimates of original dimensions. All manos and metates are of granite unless noted otherwise.

Trough metates, open at one end.

(1) Kiva, Levels I and II. Fragments of metate originally 2 feet 6 inches long, 1 foot 4 inches wide, (max.) height 5.5 inches. Trough rectangular with rounded ends, 1 foot 9 inches long, 8.3 inches wide; maximum depth below distal end, 4.0 inches.

(2) Kiva, Level I. Fragment of metate originally ca. 1 foot wide. Other dimensions not determinable. Trough rectangular with rounded ends, ca. .10 inches wide and 4 inches deep.

(3) Kiva, Level I. Fragment of metate originally closed at one end, 5 inches thick. No other measure-

ments ascertainable. Trough probably rectangular with rounded ends; may have been elliptical.

(4) Kiva, Level I. Fragment of metate originally closed at one end, 5 inches thick. No other exterior dimensions determinable. Trough elliptical, ca. 10 inches wide.

Trough metates, open at one or both ends.

(5) Kiva, Level III. Proximal fragment of metate, open at end. Its distal portion, also with an open end, was found on floor of kiva. Metate 1 foot 9 inches long, 11.5 inches wide, 7 inches thick. Grinding area, whose surface area had decreased with use, has straight sides converging toward proximal end. Maximum length of grinding surface 1 foot 7 inches, maximum width 8 inches, maximum depth 5 inches.

(6) Kiva, Level IV. Fragment; width at least 1 foot 5 inches, height 6 inches. Trough apparently rectangular with rounded ends, slightly undercut. Trough at least 1 foot wide; 5 inches deep. Lava.

Basin metates.

(7) Fragment of oval metate, ca. 2 feet 3 inches long, 1 foot 3 inches wide, 6.5 inches maximum thickness. Elliptical grinding depression, estimated dimensions 1 foot 3 inches long, 9 inches wide, 3 inches deep.

(8) West of Room 1, at depth 7 inches.

Fragment of oval metate, 6 inches thick. Depression 2 inches maximum depth.

Manos.

(1-4) Kiva. Level I. Four manos, rectangular with rounded corners. Length 8 inches to 10 inches, width 5 inches to 6 inches, thickness 1 inch to 1.5 inches. Two rectangular in cross-section; third has air-foil cross-section; fourth, with one long edge rounded, has thick air-foil cross-section. The thinner air-foil shaped mano appears to have been used on two surfaces, the others on one surface only.

(5) Room 7. Rectangular mano with rounded corners. Air-foil cross-section. 7.5 inches long, 4 inches wide, 1 inch maximum thickness. Convex face shows wear, flat face does not.

Axes and Mauls:

Axe; room 6 (Pl. IV, h). Two side notches .30 inches deep, one butt notch .21 inches deep. Made from flat stone, chipped roughly around edges to shape. Smoothing at one of the side notches and on both faces near the cutting edge. Length from cutting edge to line joining basal extremities 3.65 inches; max. width (above notches) 3.30 inches; max. thickness .65 inches; thickness .25 inches from cutting edge ca. .25 inches.

Mauls; Kiva, Level I. All full-grooved at or near center of maul.

One made from section of lava metate (Pl. IV, i). 4.9 inches long; butt end 3.5 inches high, 3.1 inches thick; front tapers to 2.0 inches in height, 1.7 inches thick. Shaped by pecking.

Second made of lava, fragmentary (Pl. IV, g). Apparently it was fairly symmetrical, 5.0 inches long, 4.0 inches high, 2.0 inches max. thickness. Shaped by pecking and breaking.

Third made from granite boulder, fragmentary (Pl. IV, j). Apparently symmetrical, 3.8 inches long, 3.3 inches high, 2.6 inches thick. Some indication of pecking.

Hammerstone: (Room 7) Battered stone, roughly spherical, with diameters from 2.2 inches to 3.8 inches.

ARTIFACTS OF BONE:

Awls or Flakers; 12. All apparently made from mammal leg-bone.

A. Head of bone intact, 4 specimens. Three are ulnas; two from antelope (Kiva, levels I and IV; Pl. III, ff and ee) and one from a deer (Kiva, level I; Pl. III, dd). The fourth (Kiva, level IV; Pl. III, bb) is a long-bone from a young unidentified mammal, with the epiphesial cap missing

B. Head unaltered except for original splitting. 1 specimen; (Kiva, level I; Pl. III, aa). Evidently a split antelope metapodial.

C. Head partly worked down, 3 specimens; room 5, (Pl. III, y); Kiva, level I, (Pl. III, z); Kiva indeterminate. Made from split long-bones, none identified. Heads are all fragmentary and apparently were worked down to some extent.

D. No awls were found which had the articular head worked completely away.

E. Splinter awls, 2 doubtful specimens; Kiva, level I and Kiva indeterminate (Pl. III, cc). These specimens are formed from split mammal leg-bones and show no sign of being worked beyond the original splitting. If these are truly artifacts, they should be placed in category A above.

F. Unidentified, 2 specimens from room 7 (Pl. III, w-x). Two distal fragments with articular heads missing. Both unidentified mammal long-bone.

Bird Bone Whistle: (Tr. 2; Pl. III, gg). Bone cut perpendicular to long axis and smoothed. 2.81 inches long. Hole cut near center of shaft, diameter .20 inches.

Split Deer Metapodial: (Kiva, level I; Pl. III, ii). Split lengthwise, proximal portion broken off. Bone well smoothed across split, producing fairly sharp edges from a point 2.50 inches below distal end to break. Length 6.60 inches; width below condyle .61 inches, thickness .45 inches. Width at break .81 inches, thickness .26 inches. This specimen could have functioned as a weaving tool.

Cut Bone; from unidentified large bird: (Kiva, level I; Pl. III, hh). Cut perpendicular to long axis at one end, several deep grooves parallel to cut near end. No sign of working.

ARTIFACTS OF SHELL:

One specimen, recovered from Trench 2 (Pl. III, v). A crudely shaped triangular piece of shell, with one vertex broken.

BURIALS:

Two burials were found; one in the kiva fill and one in a pit just outside the southeast edge of the kiva.

Burial 1 was located at a depth of 3.5 feet below surface in the northeast portion of the kiva. The burial had been deposited in a pit dug in the trashy fill of the kiva. The pit was subsequently filled with the same material. The skeleton was flexed on its right side, with its head to the northeast. The head was twisted into an upright position, facing northwest. The burial was that of an infant. There is some indication of lambdoidal or occipital deformation. A small turquoise bead was found near the right ear, and a pierced or "killed" shell was found in front of the shoulder portion of the skeleton.

Burial 2 (excav. Peckham) was located in a pit originally excavated to 5.0 feet below surface just outside the

southeast wall of the kiva. The burial pit was 4.5 feet along an axis roughly parallel to the kiva wall, and 3.2 feet wide. The skeleton was lying on its back, semi-flexed, with its knees up. Its head was to the northeast, looking upward. The skeleton is probably that of an adult female. There is some lambdoidal deformation. No burial goods were recovered.

(Portions of a third burial were recovered from the general site area during subsequent construction activities by the New Mexico State Highway Department. The skeleton was evidently that of a young adult male; no skull was recovered. cf. "3294-3" in Reed 1957: 89, 97.)

AREA B

ARCHITECTURE:

Dwelling area: In Area B there was encountered a conglomeration of architectural remains which were difficult to interpret. Patches of clay floor, bits of walls, and pits were found. Their placement is shown in Figure 9. A kiva was located some 90' southeast of the dwelling area; its eastern quadrant was excavated.

Indications of at least three, and probably four, levels of occupation were encountered. The most recent occupation was marked by slab-based walls and patches of floor. These floor areas were quite near the ground surface and were poorly preserved. I was unable to find a well-defined room-block. From one of these walls several adobe bricks were recovered. One complete (rectangular) brick, which had one flat face and one convex face, measured 5 inches x 4 inches x 3 inches maximum thickness.

A second series of wall-lines was found which passed, in part, beneath the slab-based walls. These walls were of adobe, and were neither parallel nor perpendicular to the slab-based walls. Patches of clay floor were also found in association with these walls.

Four relatively large circular features were found in

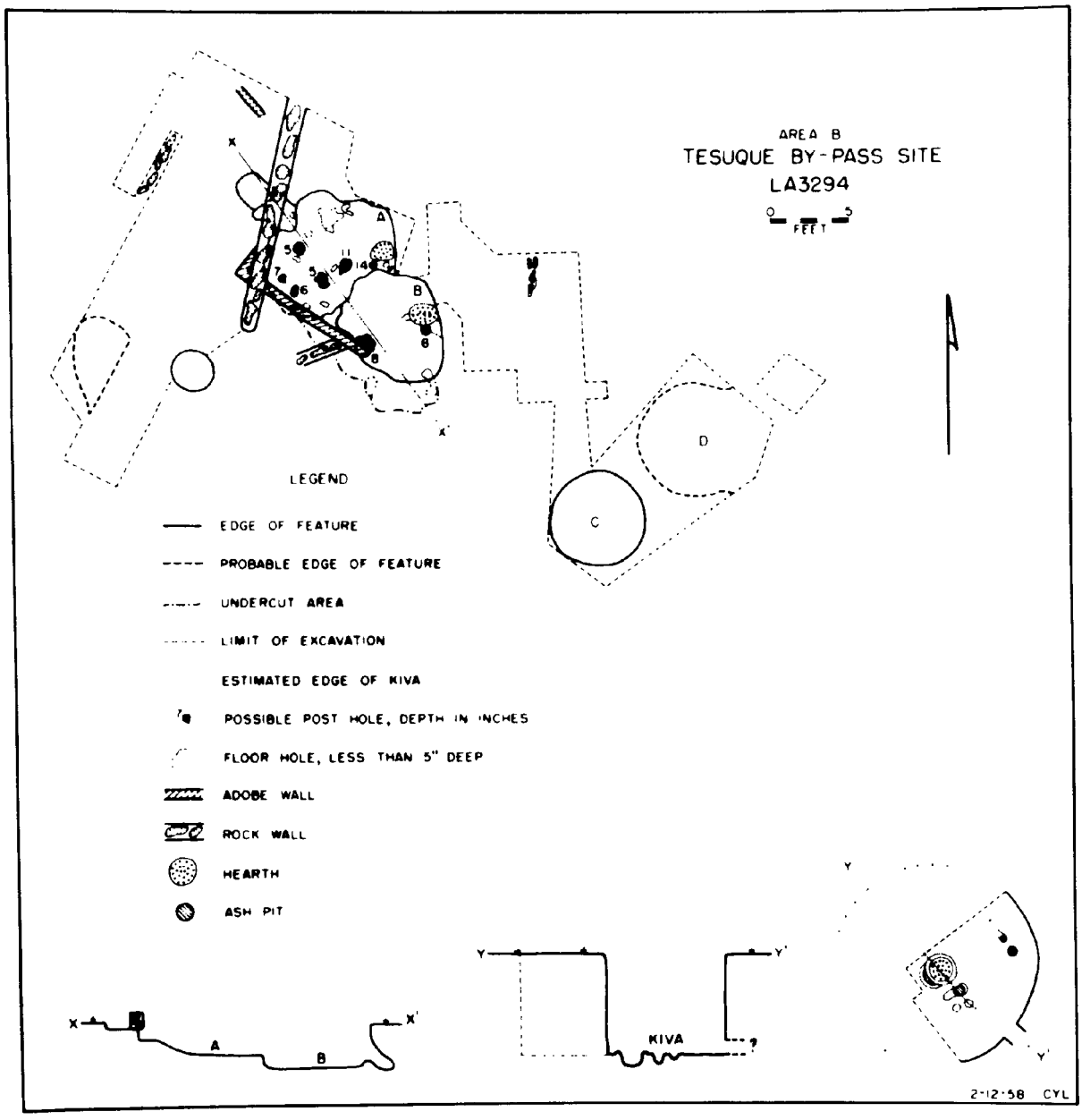

AREA B
TESUQUE BY-PASS SITE
LA3294
0 5
FEET
LEGEND
EDGE OF FEATURE
PROBABLE EDGE OF FEATURE
UNDERCUT AREA
LIMIT OF EXCAVATION
ESTIMATED EDGE OF KIVA
POSSIBLE POST HOLE, DEPTH IN INCHES
FLOOR HOLE, LESS THAN 5" DEEP
ADOBE WALL
ROCK WALL
HEARTH
ASH PIT
A
B
C
D
KIVA
X
X'
Y
Y'
2-12-58 CYL

Fig. 9.

the wall-and-floor area. (Features A - D, Figure 9).

Feature A appears to be the remains of a roundish pit structure. It is located below an adobe wall and its associated floor, and also below a slab-based wall. Its floor is 7.5-8.5 feet in diameter and 2.9 feet below surface.

Two hearth areas were associated with Feature A. One, ca. 1 foot 6 inches in diameter, was located near the wall in the southeast quadrant of the structure. A second hearth area was located above the floor of Feature B and outside the south wall of Feature A. It was found at the floor level of Feature A. Both hearth areas were marked by concentrations of ash and burned rock; no prepared basin or rimmed hearth occurred.

Apparently there was an entrance on the north side of the feature. The pit floor sloped up to the entry floor, and the entry itself terminated in a step. The entrance passage was 3 feet 4 inches long, 2 feet 4 inches wide, and the step was 10 inches high (see Figure 9).

No regular posthole pattern was discovered; there were no peripheral posts. Holes filled with bits of charcoal and wood were concentrated in the central portion of the feature, and there is a suggestion of two short parallel rows of posts, 2-3 feet apart, running east and west.

Feature B is adjacent to Feature A. Its floor is 6.0-8.0 feet in diameter and 1.0 feet below the floor of Feature A. The only floor features were two holes, ca.

10 inches in diameter and 3 inches deep. They were located on opposite ends of a diameter of the feature and were set in from the walls ca. 1 foot 6 inches (see Figure 9). No hearth or entry was found. Some flakes were found in the fill just above the floor of Feature B; no sherds were definitely associated with this structure.

Feature C was a clay-lined saucer-shaped depression. It had a well-defined clay floor which sloped upward at its perimeter. Its diameter was 7 feet 6 inches, and depth below surface was 1 foot 7 inches. No postholes, ash areas, or floor features were found.

Feature D was roughly circular and located a few feet to the northeast of Feature C (Figure 9). Its clay floor was not well-defined, but was approximately 9 feet in diameter. Sterile soil was reached 2 feet 5 inches below ground surface. A fragmentary patch of floor, about 1 foot square, was encountered 1 foot 10 inches below ground surface in this same feature. A flat piece of rock, similar in form to a ventilator slab, was found lying horizontally in the black stained fill at a depth of 1 foot. Several fire-stained fist sized rocks were also found at this depth. No postholes or ash areas were found.

Kiva: The kiva was apparently circular, approximately 16 feet in diameter. The kiva was excavated into sterile soil; walls are of clay, ca. 8 inches thick, and covered

with sandy plaster. No form of wall support (with the exception of a single metate set into the wall) was found. In most places the walls slump badly one foot above the floor.

The floor consists of a thin layer of adobe clay over sterile soil. The floor is 7 feet 11 inches below ground surface.

If a truly circular shape is assumed for the kiva, the hearth was placed somewhat nearer to the ventilator than to the rear wall. (7 feet 4 inches from hearth center to ventilator, 7 feet 11 inches to point on the wall 90° from ventilator, presumably 8 feet 6 inches to rear wall of kiva.) The hearth is clay-lined, circular, and has an adobe rim. The inside diameter of the hearth is 1 foot 11 inches, outside diameter 2 feet 6 inches. The bottom of the hearth is 8 inches below floor level, the top of the adobe rim 3 inches above floor level.

Indications of an older hearth were found. It had been the same shape and of approximately the same dimensions as the one described above. Its center was ca. 5 inches southwest of the center of the later hearth. The southwestern section of its adobe rim was intact. The hearth(s) were filled with white ash.

A posthole was found in such a position as to suggest a four-post roof support. The posthole is 9 inches in diameter, 8 inches deep, and set 2 feet in from the wall. On the northwest side of this hole there is a rodent

passage which has a bulbous end near the posthole. It is possible that this bulbous end marks the position of another post. It is 9 inches in diameter and 6 inches deep.

The remains of a sandstone slab were found on the floor near the ventilator opening. The slab originally measured 1 foot 5 inches x 1 foot x 2 inches. It is rectangular with one of its shorter ends rounded, well-shaped and smoothed. The rounded end appears to have been beveled by grinding. The slab was probably used as a deflector or a damper. No prepared deflector socket was found.

The ventilator opening, southeast of the hearth, consists of a break in the slumping wall. It was either oval or rectangular, 1 foot 7 inches wide at floor level. The ventilator passage was not excavated.

The area between the hearth and ventilator was badly soaked by rain during the excavation. Later examination revealed an oval area of discolored earth and ash measuring 2 feet along an axis perpendicular to the hearth-ventilator line, 11 inches wide, and 8 inches deep. Presumably this is the remains of an ashpit; its center is 1 foot 11 inches southeast of the center of the hearth.

In front of the ashpit area (i.e., toward the ventilator) are vestiges of two circular holes, one 6 inches in diameter, one 7 inches in diameter. They were traced to a depth of 2.5 inches. These holes were placed almost symmetrically on opposite sides of the hearth-ashpit axis, and their centers are 1 foot 2 inches apart. Presumably

they were receiving sockets for ladder posts.

Near the wall and south of the ventilator opening there was a considerable amount of adobe. It is possible, although I think improbable, that a bin or some sort of coping had once been here. Investigation behind the wall in this area did not disclose an old ventilator tunnel.

The fill of the kiva consisted of compact dirt containing charcoal and gravel to a depth of ca. 1 foot 5 inches, then uniform charcoal-stained sand (apparently windblown) to a depth of 7 feet 11 inches, with fragments of adobe becoming numerous below a depth of 6 feet 3 inches.

Pits: Irregular unplastered pits were found throughout the dwelling area. Most of them were round, with diameters up to 2 feet 6 inches, and contained little beside stained fill. In one area (Trench 4) of approximately 30 sq. ft., containing the remnants of two (oval?) floors, 8 of these unplastered pits were found. The significance of these features was not determined.

A single clay-lined pit was found in the southwestern portion of the dwelling area. It is 2 feet 6 inches in diameter, its bottom 3 feet 2 inches below surface, and its top was traced to within 2 feet of ground level.

Trenches: Several exploratory trench and floor numbers have been retained to designate find-spots. In many cases, these "floors" were not well-defined and appeared to have little, if any, architectural significance.

Trench 1 encompasses F II in what was later called the Intermediate Area. No material recovered from trench.

Trench 2 room area, west of large slab-based wall.

Trench 2E room area, east of large slab-based wall. Floor 1, 1 foot below surface, associated with adobe wall; Floor 2, 2 feet 11 inches below surface, associated with Feature A.

Trench 3 encompasses Feature C and area to north. Floor 1, 1 foot 6 inches - 1 foot 10 inches below surface, very doubtful; Floor 2, 3 feet below surface, patches only.

Trench 4 room area, south of large slab-based wall. Floor 1, 1 foot 10 inches below surface; Floor 2, 2 feet 5 inches below surface.

Trench 5 original designation of kiva test.

Trench 6 encompasses Feature D. Floor 1, 1 foot 7 inches - 1 foot 11 inches below surface, very doubtful.

Trench 7 sterile test.

Trench 8 area north of Trench 3, east of Feature B.

POTTERY: (see Figure 10.)

The larger numbers of sherds in Area B come from Trenches 2E, 3, 8, and the kiva. Santa Fe B/W (Pl. V, a-k) is the most common decorated ware; sherds classified as

		TRENCH 2E				TRENCH 3					TRENCH 4				TRENCH 6						KIVA				
	SURFACE	abv fl 1	blw fl 1	misc.	sum	abv fl 1	blw fl 1	misc.	sum	TRENCH 8	abv fl 1	blw fl 1	misc.	sum	abv fl 1	blw fl 1	misc.	sum	TRENCH 2	upper fill	lower fill	misc fill	floor	sum	AREA B TOTAL
SANTA FE B/W	15	1		7	8	38	3	7	48	8			1	1	4			4	1					0	85
SANTA FE B/W ?	1				0		1	1	2	1				0				0	1					0	5
KWAHE'E B/W ?	1				0	1			1	0				0				0	0	1				1	3
RED MESA B/W	0		1		1			1	1	1			1	1				0	0				3	3	7
RED MESA B/W ?	1				0	1			1	2				0			1	1	2				2	2	9
FINE PASTE GRAY	1				0	6	1		7	7			1	1				0	0			2		2	18
COARSE PASTE GRAY	3			3	3	5		2	7	3			2	2	1	1	1	3	1	2	2	2	1	7	29
TRADE AND INTRUSIVE	0			2	2	3			3	0			1	1				0	1					0	7
BISCUIT B ?	0				0	1			1	0				0				0	0					0	1
UNIDENTIFIED B/W	8			2	2	11	1	3	15	8	3		1	4				0	2	1	2		2	5	44
POLISHED BROWN	2				0	2			2	0				0				0	0					0	4
sum	32	1	1	14	16	68	6	14	88	30	3	0	7	10	5	1	2	8	8	4	4	4	8	20	212
CORRUGATED	1				0	2			2	0	1			1				0	0	1		1		2	6
NECK-BANDED	24	1	4	24	29	28	7	5	40	15	8		4	12	3	4	2	9	17	6	1	11	8	26	172
NECK-RIBBED	1				0	1			1	4				0				0	0	1		1		2	8
SMEARED-INDENTED	3	1	2	3	6	41	6	47	94	3	1		2	3				0	5					0	114
PUNCTATE	0				0	1			1	0				0				0	0					0	1
SCORED	0				0				0	0				0				0	0		2	1		3	3
HANDLES	0				0	3	1	1	5	1				0				0	1					0	7
sum	29	2	6	27	35	76	14	53	143	23	10	0	6	16	3	4	2	9	23	8	3	14	8	33	311
PLAIN SURFACE	60	20	14	26	60	46	15	18	79	32	10	0	2	12	1	3	0	4	25	14	10	13	11	48	320
SUM (total)	121	23	21	67	111	190	35	85	310	85	23	0	15	38	9	8	4	21	56	26	17	31	27	101	843

Fig. 10.-Provenience of potsherds, Area B, Tesuque By-Pass Site.

Kwahe'e B/W (Pl. V, l-m) are very rare. Many of the painted sherds are not classified (Pl. V, s-y); these are discussed in a later section. Red Mesa B/W (Pl. V, o-r), possibly Biscuit B (Pl. V, n), and Kwahe'e B/W occur in addition to the Santa Fe and unidentified B/W sherds.

Painted Sherds:

Santa Fe B/W (Pl. V, a-k): Distribution shown in Fig. 20; see also Mera 1935; Stubbs and Stallings, 1953; Wendorf 1953. These sherds conform to published descriptions of the type. The paste used is the same as that described for Kwahe'e B/W in Area A. Of the 85 sherds recovered, 62 (73%) show no temper or only occasional inclusions of mica and/or bits of rock. Twelve sherds (14%) may have been tempered sparsely with finely crushed sherd; an equal number may have been sand-tempered. Of the sherds which may contain sand temper, only one is definitely sand-tempered. The others contain occasional large quartz grains in the paste. None of the sherds was tempered with crushed rock.

Seven bowl sherds (8%) have exterior slip; three of these are rim sherds. Eight bowl sherds (from 4 vessels?) have basket-impressed exteriors. The basketry represented is fairly uniform: eleven stitches and 5.5-6.0 coils to the inch (Pl. V, k). The stitch impressions on the sherd exteriors slant upward to the left.

Of the 18 rim sherds recovered, 16 were from bowls. Of the latter, 10 lips were slipped, 3 painted.

Seventy-nine sherds (93%) are painted on the interior and presumably represent bowls. Three sherds may be from ollas, two are from canteens or small jars, and one is from a small seed jar. No whole or reconstructable vessels were recovered.

Red Mesa B/W (Pl. V, o-r): The Red Mesa B/W from Area B is similar to that from Area A. The 7 sherds of Red Mesa B/W appear to be of non-local paste, with sherd temper predominant. These few sherds represent jars, ollas, ladles and bowls. An additional 9 sherds are classified as Red Mesa ? B/W; 4 are of non-local paste, 3 are of local paste, and 2 are indeterminate.

No sherds are classified as Gallup B/W.

Unidentified B/W (Pl. V, s-y): In many cases it is difficult to place these sherds into categories of local and non-local paste. Such a difficulty was not encountered in Area A. Nine of these sherds are quite probably of fine local paste, with small amounts of sherd and/or rock temper added. Nineteen sherds are apparently of coarser non-local paste. I cannot place 16 of the sherds in either class with any assurance.

All of these sherds are decorated with mineral paint. Decoration of all jar sherds and all but 7 of the bowl sherds is executed in a fairly heavy-lined technique which is more similar to Kwahe'e than Red Mesa decoration. There are 5 examples of curvilinear decoration in this group.

Thirty of these sherds are presumably from bowls, 11 from jars, 2 from ladles, and 1 is from a handle. Of the bowl sherds, all but 2 rim sherds have an exterior slip; many are heavily slipped. All but one of the body sherds have exterior slip. At least 5 of the bowl rim sherds have painted lips.

Six of the bowl rim sherds and 9 of the bowl body sherds are decorated in what can be considered as a somewhat abberant Kwahe'e B/W style, with sherd temper and exterior slip (e.g. Pl. V, t and v). This conforms to Mera's description of Taos B/W and these sherds are probably of this pottery type. The jar, handle (Pl. V, x), and ladle sherds can also be placed in this category.

Two bowl rim sherds (Pl. V, u and y) and 5 bowl body sherds appear to be rather crude local imitations of Red Mesa B/W. The remaining sherds cannot be placed in even these tenuous categories.

The reader should be cautioned that the aoove remarks concerning similarities to Kwahe'e, Taos, and Red Mesa B/W are offered primarily as descriptive notes and are not definite type indentifications.

Unpainted Gray Sherds; non-culinary: The unpainted gray-ware sherds have been divided into fine paste gray (local?) and coarser paste gray (non-local?) as before. Two rim sherds of fine paste and one of coarser paste were recovered. The distinction between the fine and coarse

paste is not as pronounced in Area B as it is in Area A. Only those sherds which could be considered as unpainted fragments of Santa Fe or Kwahe'e B/W are classified as "fine paste gray".

Other Unpainted Sherds; culinary: The great majority of the culinary sherds are either neck-banded, smeared-indented, or plain-surfaced. All of these classes of pottery seem to have been made from the local culinary paste described for Area A. All sherds discussed below are of this paste unless noted otherwise.

Neck-banded (Pl. VI, a-g): All rim and side sherds, no bases. There are also two complete vessels (Pl. VIII, c-d). Both have slightly flaring necks, lack shoulders, and have plain-surfaced lower bodies (Trench 2E, floor 1). One base is flat, one sub-conical. Of the 172 sherds, 25 are rim sherds. These neck-banded sherds are similar to those from Area A, and the same methods of treating the coils were observed. Bands are .4-.5 inches wide. Thirty-three sherds (including 9 rim sherds) have unmodified coils (Pl. VI, a-b). Sixty-five sherds (including 8 rim sherds) have beveled bands (Pl. VI, c). Sixty-eight sherds (including 7 rim sherds) have been beveled and/or smoothed to such an extent that the coil lines are obliterated (Pl. VI, d-e). Six sherds (including one rim sherd) are "banded incised" (Pl. VI, f-g).

In addition, there is one neck-banded sherd of non-

local paste with sand temper (Pl. VI, m). This appears to be typical Kana-a, and is classified as a trade sherd.

Smeared-indented (Pl. VI, h-i): These sherds are quite similar to the Tesuque Smeared-Indented described by Mera (1935: 14). The surface treatment of many sherds, however, resembles that of Cundiyo Micaceous Indented and also that of the culinary ware shown accompanying Gallisteo B/W (see Mera 1935: Pl. XI). Actually there is a transition in surface treatment from highly irregular to fairly regular indentations. In some cases it is difficult to decide whether a sherd is shallowly indented and well smeared, or just poorly smoothed plain-surfaced ware.

Miscellaneous; surface altered.

Corrugated. Six sherds, including one rim sherd (Pl. VI, l). All corrugations are deep and evenly spaced. These sherds represent the sub-type observed in Area A. In addition, there is a single corrugated sherd of non-local paste (gray) with sherd and crushed quartz temper which has a white slip over the corrugations (PL. VI, n). This specimen is probably intrusive.

Neck-ribbed. Eight sherds, no rims (Pl. VI, j). All ribs apparently emphasized by incision. Three or four vessels represented. Five sherds have ribs .20-.25 inches wide, and measure ca. .10 inches from coil juncture to rib surface. Another sherd is similar to these, but shows deep (ca. .13 inches) corrugation on a small part of its surface (Pl. VI, k). Two sherds have ribs .27-.30 inches

wide and measure ca. .15 inches from coil juncture to rib surface.

Punctate. One body sherd. Shallow ovate punctations made with a stick or possibly with finger. Sherd too small to determine whether or not a pattern was formed.

Scored. Three body sherds, probably from two vessels. Two sherds (from the same vessel) are fairly thick and are scored on both interior and exterior. The third sherd is scored on the exterior only (Pl. VI, o).

Plain surface. 320 sherds of plain-surfaced culinary ware, made from local paste, were recovered. Twelve of these were rim sherds, another thirteen were from bases of vessels. Other sherds were quite small, and permit few generalizations concerning vessel shape. No sherds indicating pronounced shoulders were found. No complete or restorable vessels were recovered. The plain-surfaced ware from Area B appears similar to that from Area A; the ware from Area B may be slightly thicker, but I cannot quantify this impression.

These sherds represent plain-surfaced vessels, the lower portions of neck-banded, ribbed, corrugated, punctate, and, less probably, smeared-indented vessels. None of the 12 rim sherds recovered are large enough to indicate that they are from vessels whose entire exterior surface is plain. These rim sherds show straight and everted lips,

similar to those for other types of culinary pottery. Basal sherds indicate both flat and rounded-bottom vessels.

Miscellaneous; plain surface.

Brownware. Four body sherds of non-local paste. These sherds are fairly well polished, with core color black to brown. Crushed rock temper has been added liberally. Thickness varies from .15-.20 inches. One sherd shows red slip on its concave surface. These sherds may be from four different vessels.

Other. A thick (.40-.65 inches), roughly circular sherd ca. 1.8 inches in diameter, from the kiva fill. One surface is convex and smooth, the other concave and rough. This may be a thick sherd from the base of a hand-modelled vessel.

Handles. As is the case with the plain-surfaced sherds described above, it is difficult to ascribe these specimens to any particular type of vessel (i.e., neck-banded, plain-surfaced, etc.). Seven whole or fragmentary handles were recovered. Four were strap handles, two were two-rope handles, and one is too fragmentary to classify.

Three of the strap handles are fairly large (Pl. VI, p-q). Their outside maximum dimensions vary from 2.25-2.5 inches plus, their width is ca. 1.0 inches. The smaller strap handle has a maximum outside dimension of 1.10 inches and is .60 inches wide (Pl. VI, r). It is of local culinary paste, but has a white slip on its exterior surface.

The two-rope handles are of approximately the same size, with maximum exterior dimensions ca. 1.40 inches, width .65 inches. One is complete. It was attached horizontally, and may be a strap handle with a medial incision rather than a true two-coil handle. The other specimen is fragmentary, but is definitely a two-coil handle (Pl. VI, t). Its method of attachment cannot be ascertained.

The unidentified specimen is a body sherd showing a fragmentary stub of a "nubbin", strap, or loop handle, .50 inches in diameter.

Artifacts; ceramic:

Scrapers. Five sherds with one edge smoothed. One with a smooth concave edge (coarse paste, gray; Pl. VI, y); one with a smooth convex edge (coarse paste, gray; Pl. VI, x); one small fragment smoothed on one edge and rounded at a corner (Santa Fe B/W; Pl. VI, u); two fragments with a smooth straight edge (Unident. B/W; Pl. VI, w; and Santa Fe B/W; Pl. VI, v).

Pipe. Trench 2E, below floor 1 (Pl. VI, z). Probably associated with one of pit structures. Short slender cloud-blower. Fine culinary paste, smoothed, undecorated. Length 1.65 inches. Outside diameter: bit .30 inches, bowl .55 inches. Interior bowl diameter .40 inches, depth of bowl .65 inches. No signs of use.

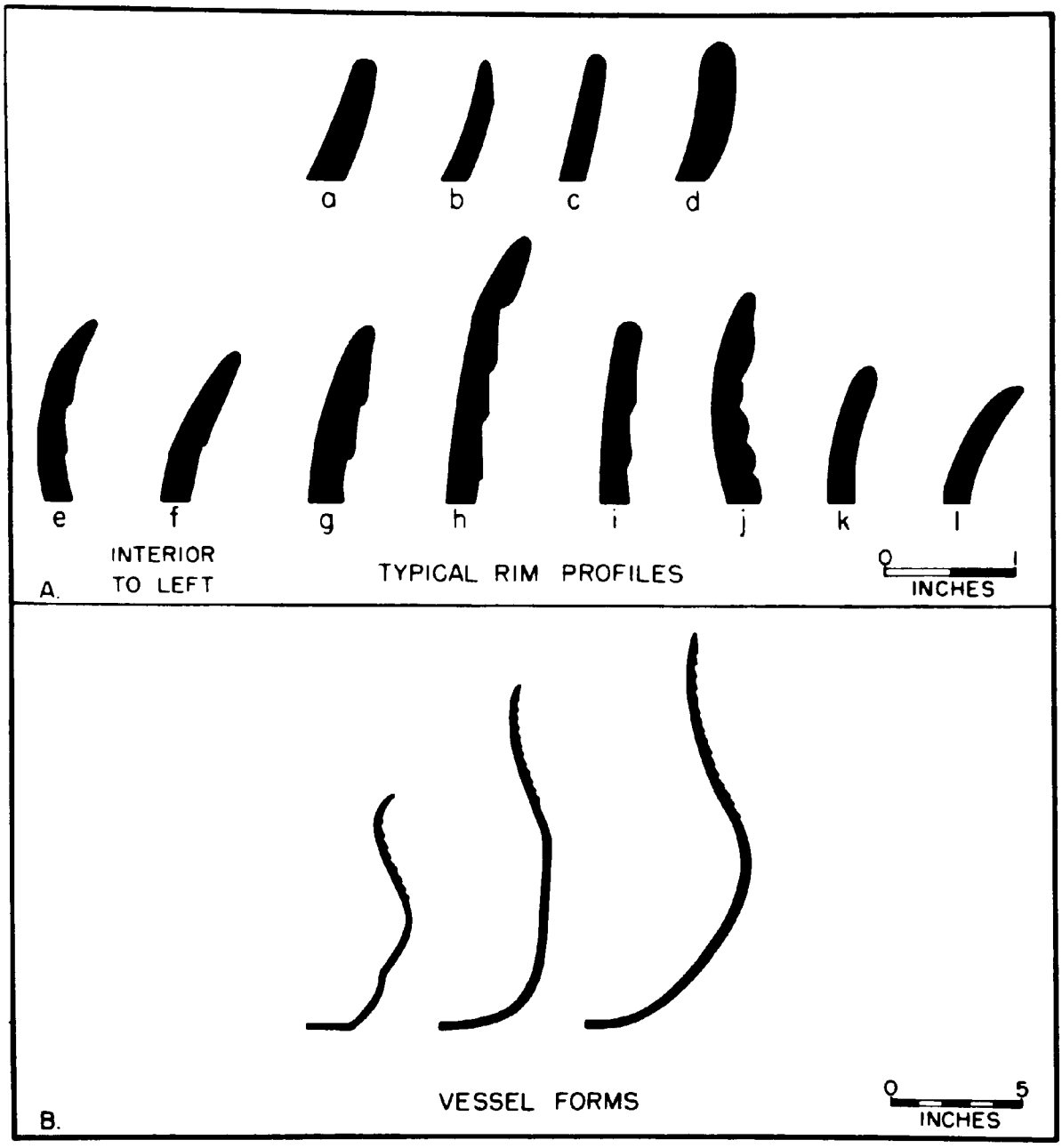


Fig. 11.-A. Typical rim profiles, Area B, Tesuque By-Pass Site. a-d, Santa Fe B/W; e, corrugated; f-i, neck-banded; j, neck-ribbed; k-l, plain surface.
B. Vessel forms, Area B, Tesuque By-Pass Site. All neck-banded.

ARTIFACTS OF STONE:

Projectile Points (Pl. VII, a-k): Only notched and/or stemmed forms are discussed in this category. Descriptive details are given in Figure 12.

Eleven whole or fragmentary projectile points were recovered. All are corner-notched. With but two exceptions (Pl. VII, j-k), all are small (length .54 inches to ca. 1.07 inches, median .81 inches; width .35 inches to .61 inches, median .47 inches). All but 4 of the specimens are of obsidian. The majority have expanding stems, others are straight. Blade edges are usually straight or slightly convex; 3 points have serrated blades. The two larger points, both from the kiva, could be classified as knives.

Other Chipped Stone: See Figure 13 for locus.

A. (flakes showing retouch or use; unshaped) 30 specimens. All apparently flakes (two possible exceptions). All are retouched or show use flakes on one side only. Eight examples have steep retouch; with but one exception, these specimens are from fairly large and/or thick flakes. In this respect they differ from the analogous specimens found in Area A. Eighteen are fairly thick flakes with one or more thin edges showing retouch or use. There are 3 small, thin, apparently random flakes showing use. One specimen has roughly parallel sides with use or retouch along these edges, and could be called a blade.

Five specimens show use or retouch along a concave

REF: Pl. VII	NOTCHES COR.	NOTCHES SIDE	STEM EXP.	STEM STR.	STEM CONT.	BLADE EDGE CONV.	BLADE EDGE STR.	BLADE EDGE CONC.	LENGTH	WIDTH	THICK.	MATERIAL	LOCUS
j	x		x			x			(3.00)	1.36	.24	obsd.	kiva, floor
k	x		x			x	x		1.50	(1.10)	.24	chal.	kiva, floor
c	x?		?	?	?			sxs	(1.07)	.61	.11	chert	tr. 2
f	x		x			x	x		(1.00)	.54	.13	chal.	surface
b	x		x			x	xs		.95	.44	.10	obsd.	tr. 2E, fl.1
a	x		x			x			(.82)	.45	.12	obsd.	tr. 2E. fl.1
d	x			x		x	x		.81	.51	.15	obsd.	tr. 2
e	x?		?	?	?		sxs		(.80)	.55	.10	obsd.	tr. 2
g	x		x			x			.76	.45	.10	obsd.	surface
h	x		?	?			x		(.63)	(.47)	.10	chal.	surface
i	x			x			x		.54	.35	.08	obsd.	surface

x present
xs present, one edge serrate
sxs present, both edges serrate
(-) estimated dimension

Fig. 12.-Projectile point dimensions, Area B, Tesuque By-Pass Site. Dimensions in inches.

edge. Six of the flakes with thick retouched edges may be end-scrapers.

B. (flakes retouched and shaped, not pointed; Pl. VII, l-m) 2 specimens. Small bifacially flaked pieces of obsidian. Both may be points or knives with broken tips. Retouch and/or use indicated along all other edges.

B'. (flakes shaped and retouched to a point; Pl. VII, n-u) 9 specimens. One thick, roughly triangular specimen, with use and/or retouch along all edges. Seven smaller triangular specimens, bifacially retouched.

C. (unretouched flakes, jagged edge) 4 specimens. All fairly large. Three have jagged edges that are quite thin. No indications of use, but are suitable for cutting.

D. (random flakes; edges smooth, not sharply pointed, no retouch) 25 specimens.

E. (sharply pointed random flakes, no retouch) 5 specimens. These flakes are of the same sizes as those of category B' and would have been included therein if they had showed any signs of use.

F. (cores, or possibly thick heavily chipped flakes) 5 specimens. Four smaller specimens, none with any dimension greater than 2.2 inches. One of these is very small, and may be only a fragment from a thick unworked flake. One larger specimen, roughly square, has one convex face; the other face is flat and shows flake scars. 2.3 inches x 2.5 inches x 1.3 inches max. thickness.

LOCUS / CLASS	A	B	B'	C	D	E	F	TOTALS
Surface	7	0	1	0	0	0	2	10
Tr. 2E abv. fl. 1	0	0	0	1	4	0	0	5
" " blw. fl. 1	9	1	1	0	2	0	1	14
" " misc.	4	1	2	2	7	1	0	17
Tr. 3 abv. fl. 1	0	0	3	0	0	1	0	4
" " blw. fl. 1	0	0	0	0	0	0	0	0
" " misc.	0	0	0	0	0	0	0	0
Tr. 8	0	0	0	1	0	1	0	2
Tr. 4 abv. fl. 1	0	0	0	0	7	0	1	8
" blw. fl. 1	0	0	0	0	1	1	0	2
" misc.	0	0	0	0	3	0	0	3
Tr. 6 abv. fl. 1	1	0	0	0	0	0	0	1
" " blw. fl. 1	1	0	0	0	0	0	1	2
" " misc.	0	0	0	0	0	0	0	0
Tr. 2	8	0	1	0	1	1	0	11
Kiva, upper fill	0	0	0	0	0	0	0	0
" lower fill	0	0	0	0	0	0	0	0
" misc. fill	0	0	0	0	0	0	0	0
" floor	0	0	0	0	0	0	0	0
TOTALS:	30	2	8	4	25	5	5	79

Fig. 13.-Locus of chipped stone artifacts, Area B, Tesuque By-Pass Site.

Metates and Manos:

Trough Metates.

(1) Kiva fill: Small fragment of trough metate, closed at one end. Not possible to estimate original dimensions.

(2) Kiva wall: Fragment of trough metate, closed at one end. No measurements recorded.

(3-5) Three small fragments of what appear to have been trough metates closed at one end, recovered in the dwelling area. None were of sufficient size to estimate original dimensions. These fragments were found 3) Trench 2; 4) Trench 2E, floor 2; 5) Trench 6 (Feature D).

Manos:

(1) Surface: Oval mano, 5 inches x 5 inches x 2 inches. One surface smooth.

(2-3) Kiva, fill: Two oval manos, 5.5 inches x 5 inches x 2 inches and 5.5 inches x 5 inches x 1.5 inches (lava). Both have one smooth surface.

(4-5) Trench 1. Two oval manos, 6 inches x 4 inches x 2 inches and 5 inches x 4 inches x 2 inches. Former has one smooth surface, latter has two.

(6) Trench 2. Oval mano, 5.5 inches x 4 inches x 2 inches. One smooth surface.

(7-8) Trench 2E, Floor 1. Two oval manos, 8 inches x 5 inches x 1.5 inches and 8.5 inches x 5 inches x 3 inches. Both have two smooth surfaces. Latter has

smooth indentations or (finger?) grooves in longer sides.

(9) Trench 2E, Floor 1. Rectangular mano with rounded corners; 7 inches x 4.5 inches x 1 inch. Two smooth surfaces.

(10) Trench 2E, below Floor 1. Oval mano, 5 inches x 4 inches x 2 inches. One side slightly convex, well smoothed.

(11-12) Trench 2E, Floor 2. Two oval manos, 5 inches x 4 inches x 1.8 inches and 7 inches x 4 inches x 2 inches. No data with regard to number of smooth surfaces.

(13-14) Trench 2E, indeterminate (probably fill of Feature A). Two thick rounded manos or "floor polishers"; 6 inches x 5 inches x 3 inches and 5 inches x 4.5 inches x 2 inches. Former shows much use on one flat face, latter shows slight use on one slightly convex face.

(17-18) Trench 4, indeterminate, floor 2 or below. One oval mano, 6 inches x 4 inches x 2 inches with one surface worn and other surface pecked. Other specimen, 5 inches x 4 inches x 3 inches shows little wear, and may be no more than a smooth rounded river boulder.

Axes and Mauls: none recovered.

Hammerstones:

A. Trench 2E. Round, flat specimen showing much battering, also removal of large flakes. Diameters 2.4 inches to 2.8 inches, max. thickness 1.2 inches. Could

be considered as a core or a crude chopper.

B. Trench 4. Flattened ellipsoidal stone, maximum diameter 2.7 inches, maximum cross-section diameter 2.2 inches. Shows battering or pecking.

C. Trench 4. Nearly spherical stone, battered. Diameters range from 2.3 inches to 2.6 inches.

Miscellaneous Smoothed Stone:

A. Trench 2. Broken piece of green stone 2.3 inches wide and .5 inches thick which seems to have been used as a whetstone, grinder or polisher.

B. Trench 3. Turquoise pendant (Pl. VII, w). Roughly rectangular with rounded edges. Edges smooth but specimen not symmetrical due to irregular shape of base. Very thin. .45 inches max. height, .40 inches wide, .04 inches max. thickness. Hole .05 inches in diameter, drilled from both sides.

ARTIFACTS OF BONE:

Awls or Flakers; 10. All apparently made from mammal leg-bone.

A. head of bone intact, no specimens.

B. head of bone unaltered except for original splitting, 5 specimens; two from Tr. 2E (Pl. VII, x and ee), Tr. 4 (Pl. VII, bb), Kiva lower fill (Pl. VII, z), Kiva floor (Pl. VII, aa).

C. head partly worked down, 2 specimens; Tr.

2E (Pl. VII, y), Tr. 4 (Pl. VII, cc).

D,E. head entirely removed or made from splinters, no specimens.

F. unidentified, 3 specimens; all Tr. 2E (Pl. VII, dd, ff-gg). Distal fragments with heads missing.

Short Bone Tube (bead?): (Tr. 2E; Pl. VII, ii). Cut section of bone from a large bird, possibly turkey. Length 1.25 inches, diameter .43-.36 inches. Cuts are not smoothed.

Split and Cut Deer Metapodial: (Tr. 4; Pl. VII, jj). Split longitudinally and distal portion cut off. Cut made by wide groove. Not smoothed across cut, but beveled somewhat. Not smoothed across split. 7.35 inches in length, max. width 1.12 inches, .45 inches thick. Use conjectural, no indication of having been used as a scraper.

Cut Bird Bone; from turkey or eagle: (Tr. 3; Pl. VII, hh). 3.46 inches long, diameter .56-.41 inches. No other indication of having been worked.

ARTIFACTS OF SHELL:

One specimen, recovered from Trench 2E (Pl. VII, v). Worked to a rectangular shape, but not drilled. .71 inches x .40 inches x .06 inches thick.

INTERMEDIATE AREA

It has been noted that the two areas in which sherds and architectural remnants occurred were separated by some 475 feet. Exploratory trenches revealed two isolated features between these areas. The first of these was encountered some 150 feet southeast of Area A. The second feature, more poorly defined, was about 400 feet southeast of Area A, and about 75 feet northwest of Area B (see Fig. 2). These two features, called Feature I and Feature II respectively, are described separately because their location and the material associated with them do not indicate that they are extensions of either Area A or Area B.

Immediately to the southeast of, and slightly uphill from, Feature I a surface concentration of gravel was found. It was roughly square, about 12 feet across. This gravel concentration, upon testing, appeared to contain no signs of human activity. It was ca. 2 feet 2 inches thick, and rested on the same yellow sterile soil into which Feature I was excavated.

FEATURE I: (Fig. 14).

Feature I was an irregularly shaped floor area, roughly elliptical with diameters of 21 feet and 13 feet 6 inches.

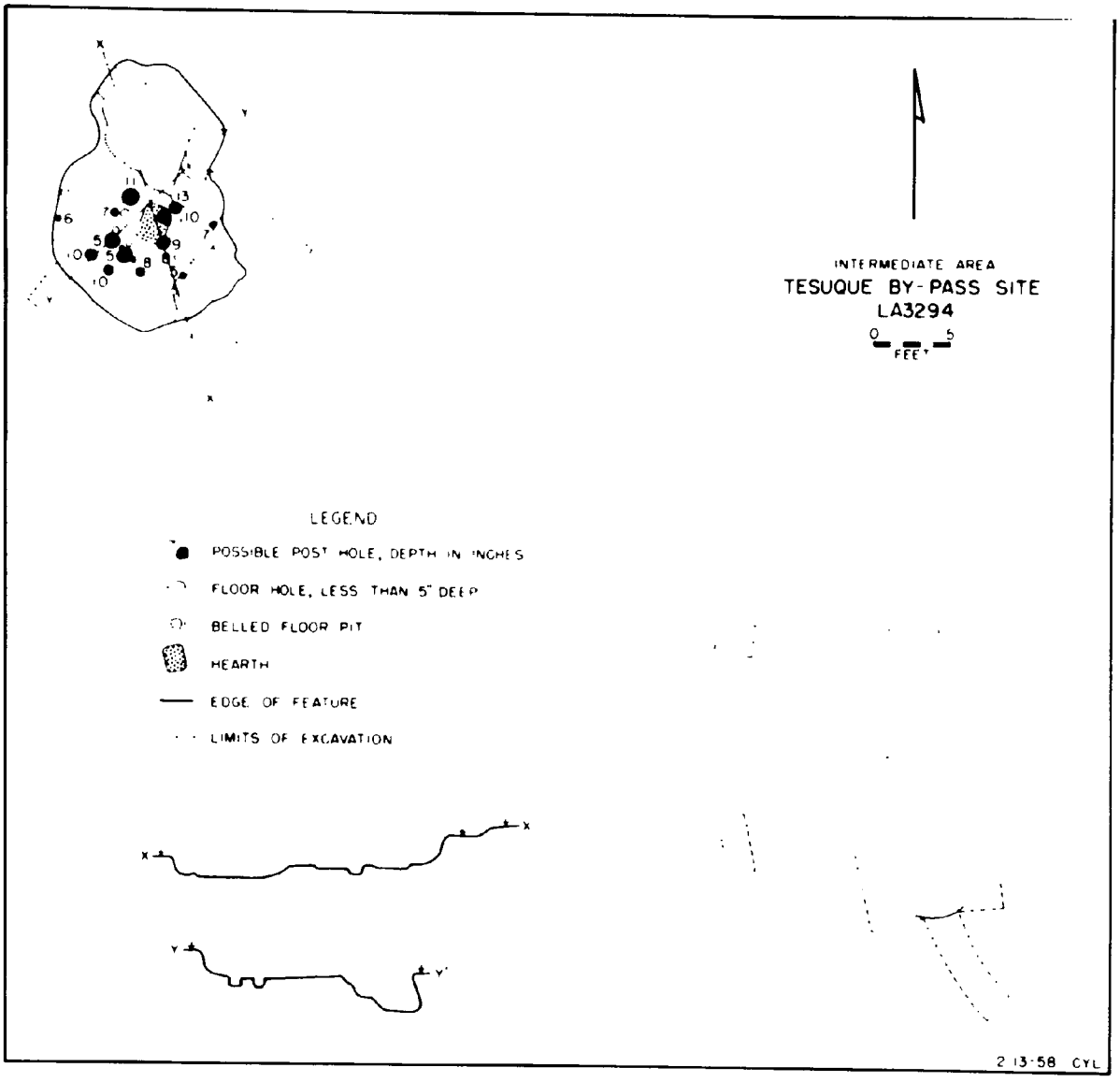

INTERMEDIATE AREA
TESUQUE BY-PASS SITE
LA3294
0 5
FEET
LEGEND
POSSIBLE POST HOLE, DEPTH IN INCHES
FLOOR HOLE, LESS THAN 5" DEEP
BELLED FLOOR PIT
HEARTH
EDGE OF FEATURE
LIMITS OF EXCAVATION
2-13-58 CYL

Fig. 14.

The floor was located beneath the slope of a small knoll, and its depth below surface varied from 10 inches to 3 feet. The floor and "walls" were demarcated only by a sterile zone inside which charcoal-stained fill was found. In this floor area many pits had been dug, the largest of which was elliptical, with diameters of 2 feet 8 inches and 3 feet 11 inches, and which reached a depth below floor level of 1 foot 11 inches.

No well-defined roof support system was found, but an arrangement of peripheral posts may have existed. A burned area in the middle of the floor suggested a hearth, but no depression, hearth coping, or ash concentration was found.

The fill of Feature I was gravelly charcoal-stained sand. The floor was marked in places by a slightly compacted layer of charcoal-stained sand; more often it was defined by uncovering the sterile sub-stratum of sand and gravel.

Artifacts recovered from the fill and floor were kept separate in most cases; some finds are described herein as "indeterminate". These are probably, but not positively, from the fill. The artifacts and other indications of human activity are listed below.

Pottery: Seven sherds of unpainted ware, probably from three different vessels. Six are from the fill, one from the floor. All sherds are probably from vessels with altered surfaces; two sherds from the fill are too small

for positive identification, but they appear to be bits of a larger sherd which has a corrugated surface. Two sherds (one fill, one floor) show neck-banding, three (fill) show slight corrugation.

One small painted sherd (unidentified B/W) was found near the floor.

Stone Artifacts:

Projectile points. Portions of four bifacially flaked obsidian points were found:

A fragmentary point (Pl. IX, b) was found in a posthole. It is a thin, triangular point with slightly concave edges. The basal portion is missing. Probably corner-notched, ca. 1.00 inches long, ca. .55 inches wide, .11 inches thick.

A small, thin, triangular point with a single shoulder, was found in the fill (Pl. IX, a). The stem was contracted, the blade edges slightly convex. It was .72 inches long, .46 inches wide, and .09 inches thick.

From indeterminate locations in Feature I (probably fill) two other points were recovered. One is a small, thin, triangular point .75 inches long, .50 inches wide, and .10 inches thick, with small corner-notches (Pl. IX, d). The stem is contracted; one blade edge is slightly convex and the other is straight. The other point is long, thin, and triangular; 1.04 inches long, .55 inches wide, and .11 inches thick (Pl. IX, c). Blade edges are

slightly concave; it has two corner-notches and an expanding stem. The portion of this point which corresponds to the fragmentary point from the posthole is almost identical to it in all dimensions.

Manos, hammerstones, and boulders.

Four manos were recovered. One was found in an unlined floor pit. It is 10.2 inches x 3.8 inches x 2.8 inches thick, rectangular with rounded ends. One end shows battering. One surface pecked. Granite.

A second mano, from the fill, tends to be round in horizontal section, 4.6 inches x 4.3 inches x 2.1 inches thick. One surface shows pecking. Granite.

The third mano, locus indeterminate, is oval, 4.6 inches x 3.7 inches x 2.5 inches thick. One (rounded) surface shows some use.

The fourth mano, locus indeterminate, is fragmentary. It appears to have been oval, with a wedge-shaped cross-section. One surface is smoothed and flat. It is 3.7 inches x 4 inches plus 1.5 inches thick; of granite.

Three hammerstones were found. They are roughly spherical and show excessive battering. One (3.2 inches x 2.0 inches x 2.4 inches) is from the floor, one (2.5 inches x 2.1 inches x 1.8 inches) is from the fill, one (2.1 inches x 1.9 inches x 1.8 inches) is from an indeterminate location.

Four unworked boulders were found. One is smooth and fairly spherical, with an average diameter of

ca. 2.8 inches. One smooth boulder, roughly rectangular, may have been used as a floor polisher. It measures 4.0 inches x 3.5 inches x 2.4 inches. One fractured and weathered boulder measures 4.3 inches x 3.0 inches x 2.2 inches. All three of the above were found on the floor of Feature I. A fourth boulder, from an indeterminate location, is roughly ovate, measuring 4.4 inches x 4.5 inches x 3.0 inches.

Three pebbles were found which had rectangular cross-sections with rounded corners. They are from 2.6-3.0 inches long, 1.1-1.2 inches wide, and .6-.9 inches thick. Two are from the floor, the third is from the fill. One of the pebbles from the floor is of quartzite and is quite smooth. It may have been used as a polishing stone. The other two pebbles have fairly rough surfaces and show no signs of use.

Other worked stone.

Sixteen pieces of stone, at least thirteen of them flakes, showed secondary flaking. Twelve were from the floor, three from the fill, and one is from an indeterminate position. All but six pieces of retouched stone may be classed as "random flake scrapers": small flakes, evidently unshaped, which show signs of use or slight retouch at one or more points along an edge. The six pieces not so classified are described below.

A long petal-shaped flake of quartzite with a triangular cross-section was recovered from the floor. It

was 3.8 inches x 1.5 inches x .6 inches maximum thickness. One long edge shows signs of use. This object may have been used with a sawing motion.

Another relatively large flake with a triangular cross-section was recovered from the floor. It shows retouch about a point. It measures 2.7 inches x 1.6 inches x .7 inches in maximum thickness.

From the posthole containing the obsidian point there was also recovered a trapezoidal flake with one point carefully retouched and a well-made end scraper (Pl. IX, e). The former measures 1.0 inches and .5 inches along its parallel sides, and has an altitude of .8 inches. The latter is 1.3 inches long, 1.2 inches wide and .3 inches thick.

From the fill, a small triangular flake was recovered which may be retouched about one point. It measures 1.2 inches x .7 inches x .3 inches.

An oval flake scraper, of indeterminate provenience, was found which shows use or retouch along one edge. It is 2.1 inches x 1.8 inches x .7 inches thick.

Unworked flakes. Twelve unworked flakes were found; ten at floor level, one in the fill, and one of indeterminate locus.

Bone Artifacts: 2 specimens. A piece of bone appears to have been used as an awl or gouge. The point, however, is not well smoothed, and may only be the result of an

accidental break.

A section of antelope horn-core, 4.6 inches long, has a point which is rounded and smooth, but not polished (Pl. IX, g). Half of the shaft is split away from the proximal portion, for a distance of 2.4 inches. There is a suggestion of smoothing at the proximal end, but the rest of the cut is jagged. At several places there are small parallel scratches which give the impression that the horn-core had been worked with a stone flake.

FEATURE II: (Fig. 14)

Feature II was a poorly defined floor area, demarcated only by a change from the stained fill to the sterile ground. It was partially excavated. No pits were found in the floor area, and no fire area was discovered. In one sector a suggestion of a small portion of wall occurred; it was ca. 3 feet in length and less than a foot high. The "floor" occurred at a depth of 1 foot 4 inches. The fill was homogeneous, of charcoal-stained sand and gravel. No separation of artifacts found in the fill and near floor level was made. Artifacts recovered are described below.

Pottery: Eleven sherds were found. None are painted but two show traces of slip. The slipped sherds and five others do not have altered surfaces. Of the four remaining sherds, one shows banding and two show corrugation of fairly narrow coils. The fourth shows a series of light

linear incisions which seem to follow a pattern. There are three parallel incisions down the middle of the sherd, spaced about .19 inches apart. Pendant from one of the outer lines is a series of oblique incisions, also parallel, and ca. .15 inches apart. The design produced, then, is similar to oblique hatchure pendant from parallel lines.

Stone Artifacts: Four manos were found. One is rectangular with rounded corners, 4.9 inches x 3.65 inches x 1.8 inches thick. Two surfaces show wear. One end shows slight battering. A second mano, rectangular with rounded corners, is 6.0 inches x 4.0 inches x 1.4 inches thick. One surface shows wear and one end shows slight battering. The third mano is circular, 4.4 inches in diameter and 2.3 inches thick. One surface shows wear from a circular motion. The fourth mano is fragmentary, oval or rectangular, with steeply rounded corners. It measures ? x 4 inches x 2.9 inches thick. One surface shows slight signs of use. The edges of the break have a smooth bevel in spots.

A smooth flat boulder was found. It is trapezoidal with smoothly rounded corners. The only suggestion of use is a small nick taken out of the top. The parallel sides are 5.0 inches and 2.5 inches, the altitude is 4.9 inches, thickness 1.7 inches.

Twenty flakes were recovered; ten show signs of retouch or use. Two show retouch about a point, two are fragments of blades with use flakes along one edge, six

are random flake scrapers.

Bone Artifacts: A bone needle or bodkin, made from an unidentified mammal long-bone (Pl. IX, g). Complete except for small fragment of tip. Shaft 5.03 inches long, .34 inches wide, .16 inches thick, with edges rounded. One end drilled from both sides, diameter of "eye" .08 inches. Scratches run diagonally across this end of the specimen, and the shaft is slightly thinned at this point. The other end is spatulate; width .5 inches from tip is .28 inches, thickness .07 inches. Edges are worn quite sharp for a distance of 1.0 inches from tip.

ANALYSIS OF
CULTURAL COMPONENTS AND OCCUPATIONS

The nature of the archeological remains at the Tesuque By-Pass Site precludes a straight-forward interpretation of the cultural components represented. A single hypothesis has been selected as the most reasonable of several alternate explanations for the material from this site, but the selection was made only after a very lengthy analysis of the remains. In this section, the analysis is given in detail, in order that the reader may be advised of at least a majority of the assumptions inherent in the hypothesis which I offer and, should he be so inclined, be in a position to reject it in favor of another interpretation.

A tabulation of the various artifact categories made it all too apparent that an initial analysis incorporating non-pottery artifacts would cause considerable confusion and possibly be misleading, for only rarely does an architectural unit produce as many as five objects of a given artifact type. The presence of any artifact in a specific location is meaningful, of course, but the absence of an artifact from an architectural unit at this site is probably without great significance.

The most reasonable approach appears to be an initial

analysis dealing explicitly with architecture and pottery. Even these old archeological standbys provide more than a modicum of ambiguity. Certain architectural-and-ceramic complexes can be isolated however, and they are probably the most reliable basis for additional discussion of the non-pottery material culture. The non-ceramic artifacts associated with each architectural-ceramic group are presented at the end of this section, and cultural components and occupations are based on the over-all associations.

ARCHITECTURAL AND CERAMIC ASSOCIATIONS:

Area A. The room-block in Area A is apparently an architectural unit, and there is no structural evidence to indicate that some rooms are appreciably later than others. The room floors were shallowly buried and sub-floor pits produced very little cultural material. These conditions conspire to make differentiation of objects from the site's surface, the room fill, and the room floors difficult and tenuous. The excavations designated Trench 1 and Trench 2 are shallow tests in the room-block area, and material from these two features was, in general, more shallowly buried than material found in the fill of the various rooms.

The ceramic assemblage associated with the room-block (see Fig. 5) is characterized by a low percentage of painted sherds, with Kwahe'e B/W the most common decorated type. Vessels of Red Mesa and other black-on-white types are

also present. Culinary vessels are represented primarily by plain, corrugated, and neck-banded (or -ribbed) sherds. Plain sherds, most of which probably represent lower portions of corrugated and neck-banded vessels, are the most common class, while corrugated sherds greatly outnumber neck-banded and neck-ribbed specimens.

The kiva in Area A is set within the right angle of the L-shaped room-block, and the resulting combination of room-block and kiva forms a normal unit of Pueblo architecture. Pottery found on the kiva floor and in the lower levels of the kiva fill is similar to that found in the room-block.

The upper part of the kiva fill (levels I and II) also contains sherds that are typical of the ceramic complex found in the rooms. This suggests that the kiva was associated with only the earliest occupancy of the room-block. The nature of the kiva fill and the presence of burials in the fill indicate that the abandoned kiva was used as a trash pit by late inhabitants of the room-block. Another semi-subterranean kiva may have been constructed by the later occupants, but no trace of it was found. The atypical D-shaped room 5 must also be considered as a possible ceremonial room. Indeed, lacking any evidence to the contrary, it seems most reasonable to assume that this room served the later inhabitants as a kiva.

The lower fill in the kiva (levels III and IV) contained little cultural debris, and the two feet of accumu-

lated fill indicate that the kiva was not used as a trash pit immediately following its abandonment. There is nothing in the small pottery sample from the lower fill of the kiva which indicates a ceramic complex that is markedly different from that of the upper kiva fill. There is a slightly higher proportion of neck-banded and neck-ribbed to corrugated sherds and a smaller percentage of painted sherds in the lower levels, but the number of specimens involved (Fig. 5) is extremely small. Two hypotheses are suggested: either the people who used the kiva left the site during the period during which the lower kiva fill accumulated, or they disposed of their trash elsewhere during this interval.

The first hypothesis, while quite reasonable, involves assumptions of site abandonment and resettlement by people with a virtually identical ceramic complex. It leads to the further conjecture that the kiva may have been associated with some undiscovered dwelling structures rather than with the room-block.

The second hypothesis involves only the assumption that the early inhabitants of the room-block continued to dispose of their trash in the same manner during the accumulation of the lower kiva fill that they employed during the actual use of the kiva. This assumption is more than reasonable.

In summary, at least two hypotheses can be advanced regarding the relationship of the kiva and the room-block. The hypothesis which interprets the two as an architectural

unit involves fewer assumptions, and will be adopted in this discussion. As noted above, the ceramic material recovered from the lower fill of the kiva suggests, in comparison to that from the upper fill, slightly greater emphasis upon neck-ribbed and neck-banded vessels and less emphasis on painted pottery. The sample, however, is so small that further elaboration of the possible differences is hardly justified. Such differences as may exist are interpreted as indicative of temporal change rather than separate occupations of the site.

The only other architectural features found in Area A were four pits, located behind (i.e., northwest of) the room-block. No pottery was found in the pits, but their proximity to the room-block, the sherds found on the surface nearby, and the small pottery sample from Trench 4 (in the area of the pits) all suggest that the pits are associated with the room-block and kiva.

Hence, the architectural and ceramic remains from Area A apparently represent a single occupation of the Tesuque By-Pass Site. This occupation will be referred to, for the present, as the Kwahe'e complex, taking its name from its characteristic decorated pottery type.

Area B. In Area B there was found a complicated jumble of fragmentary architectural features. The remains of several roundish structures, segments of adobe and slab-based walls, sections of floor, and a part of a semi-sub-

terranean circular kiva were exposed.

Patches of floor found from just below ground level to depths of ca. 1.5 feet below surface were very poorly preserved and could not be traced with assurance. Both the shallow floors and the more deeply buried features appear to have been subjected to weathering and erosion and also to a great deal of disturbance. A number of large, amorphous holes penetrate many of the more deeply buried floors and have disturbed the fill in other spots. These holes, together with frequent interruptions of wall-lines, suggest that human agents were involved. At least four periods of construction are represented in one small area, by the floor of Feature B, the slightly higher floor of Feature A, a super-imposed adobe wall and its associated floor, and the slab-based wall (cf. Fig. 9). In many of the other features, two floor or occupation levels were found.

In the ceramic collection from Area B, two classes of painted sherds are predominant: Santa Fe B/W and "unidentified B/W" (p. 54-55). Red Mesa B/W is present. Culinary vessels are represented primarily by plain surfaced, neck-banded, and smeared-indented sherds. Corrugated body sherds are conspicuous by their virtual absence (six sherds only). Although few sherds were found in any given feature, evidence was found throughout most of the site that the major ceramic groups were well mixed. This is in keeping with the nature of the architectural remains.

Excavations in Area B were not satisfactory, and correlations of architectural and ceramic remains in this part of the site must be very tentative.

The Kiva. The kiva in Area B had not been used as a trash pit. Its fill was relatively homogeneous and contained but few sherds. No Santa Fe B/W or smeared-indented sherds were associated with this feature, but the kiva provides important evidence regarding the relationship of Red Mesa B/W and the unidentified B/W pottery. It is pertinent to recall the status of the latter ceramic group. It does not consist of a single unidentified B/W pottery type. Differences in design style, paste, and temper exist within this class, and more than one type is probably represented. On the other hand, these sherds have several attributes in common (pp. 54-55) and, as a class, show resemblances to both Red Mesa B/W and to the local variety of Kwahe'e B/W described for Area A. The apparent conformity of many of these specimens to Mera's description of Taos B/W (Mera 1935: 5-6) has been noted.

Red Mesa B/W sherds were found only on the floor of the kiva, whereas other mineral-painted pottery (unidentified B/W) occurred both at floor level and throughout the fill. The unidentified B/W and the unpainted non-culinary sherds ("coarse paste gray", "fine paste gray") from floor level are, with one exception, of the coarser and presumably non-local paste. Bowl sherds are slipped on both exterior and interior surfaces. In these respects, the

sherds resemble Red Mesa B/W. The exception noted above is of finer paste containing a small amount of sherd temper and is painted in a crude Red Mesa style of decoration.

Of the unidentified B/W and unpainted non-culinary sherds from the kiva fill, approximately equal quantities consist of coarser and finer paste. Sherds of the latter class contain small amounts of sherd or crushed rock temper, but in other respects their paste is similar to that of local Kwahe'e and Santa Fe B/W sherds. At least one unidentified sherd from the upper fill could be classified as non-local Kwahe'e B/W; one other sherd is probably local Kwahe'e. The few neck-banded sherds from the kiva were found throughout the fill, from just below present ground surface to floor level.

The pottery found on the kiva floor leaves little doubt that this structure was associated with a pre-Kwahe'e B/W occupation whose ceramic complex is characterized by non-local painted pottery, including Red Mesa B/W, and neck-banded culinary vessels. The differences observed in sherds from the kiva fill indicate a changing emphasis from non-local to local painted wares after the kiva was abandoned. Neck-banded culinary vessels remained in style; presumably these were made locally.

Features A and B, and superimposed walls. The floor level of Feature B is ca. 1 foot lower than that of Feature A. At first, it appeared that Feature B was later

than, and had been cut through, Feature A. Closer examination indicates that this is not the case. The only floor features associated with Feature B are two postholes and an undercut peripheral area, possibly used for storage. A hearth was found within the limits of the floor of Feature B, but there was almost 1 foot of fill between the bottom of the hearth and the actual floor of Feature B; i.e., the hearth was at the same level as the floor of the immediately adjacent Feature A. This suggests that Feature B is the earlier of the two structures and that at some time it had been refloored with 1 foot of earth and expanded to include what is here designated Feature A. The hearth in question was used in this remodelled and enlarged structure. Hence, the two construction periods indicated by Features B and A were probably separated by a relatively short time and probably represent a single occupation or component. If this interpretation is correct, the entrance, postholes, and hearth described for Feature A are also an integral part of Feature B, and the two features comprise a single pit-house.

An adobe wall, running northwest and southeast, is superimposed above the southwestern edge of Features A and B. At its northwest end the wall turns a right angle toward the northeast. A section of adobe floor (floor 1) associated with this wall extended over the southwest half of Feature A. This floor was found 1 foot below present surface and was 1.9 feet above the floor of Feature A.

There was some indication that a storage pit had been dug from floor 1 into the pit-house fill, but neither the pit nor the remainder of the floor could be traced.

At its northwest end, the adobe wall is crossed by a long, slab-based wall. The footing of the latter is at approximately the same level as is floor 1, but at a higher level than the bottom of the adobe wall. In the area west of this slab-based wall, several very shallow, fragmentary patches of floor were found. Near its southeast end, the adobe wall intersects a small segment of another slab-based wall. No two of these three wall-lines intersect at right angles (see Fig. 9).

The two varieties of wall construction, the slightly different depths of their footing, and the orientation of two very fragmentary wall sections found west of the long, slab-based wall suggest the presence of two room-blocks: an earlier one of adobe with its longitudinal axis north-northeast and south-southwest. It must be emphasized, however, that the fragmentary nature of all wall sections, the absence of preserved floors, floor features, connecting walls, and the relatively small differences in absolute elevations of floors and wall-footings does not permit the presentation of a rigorous hypothesis concerning the room-blocks represented.

Very few sherds were recovered from excavations in the vicinity of the pit-house and the room-block(s). The small sample (Trenches 2, 2E) is apparently mixed and offers

no evidence of stratigraphic differentiation. The major ceramic groups, Santa Fe B/W, unidentified B/W, Red Mesa B/W, neck-banded, and smooth-surfaced sherds, are all represented. The unidentified B/W and the unpainted non-culinary sherds are all of the coarser paste with medium amounts of sherd temper and are of non-local origin presumably. Two neck-banded vessels (Pl. VIII, c, d) were associated with the floor of the adobe-walled room above the pit-house. The larger vessel had been sunk into a shallow pit and its orifice was at floor level. The smaller vessel rested on the floor.

The ceramic material, then, indicates a mixture of Santa Fe B/W and smeared-indented sherds with non-local painted pottery and neck-banded culinary vessels. The latter ceramic complex is similar to the material from the lower level of the kiva. The location of the two neck-banded vessels provides the single demonstrable association of a pottery type with an architectural feature in the immediate area. Presumably non-local painted pottery and neck-banded culinary vessels are associated with the adobe-walled room as in the kiva. It is reasonable to assume that the Santa Fe B/W and smeared-indented sherds are associated with the postulated slab-based room-block, although this association cannot be demonstrated.

Sherds were found throughout the disturbed fill in the pit-house, beneath the level of the poorly preserved floor of the adobe-walled room. At least one sherd of

Red Mesa B/W was found immediately above the floor of Feature A. If any ceramic complex is associated with the pit-house, it is apparently similar to that associated with the obviously later adobe-walled room. It is possible, but does not seem probable, that the pit-house represents a non-ceramic occupation.

Trench 4. To the south of the features just discussed, a well-made storage pit and two superimposed semi-circular floor remnants were found.

The storage pit was traced to within 2 feet of the present surface. The two floor remnants were very poorly preserved. The uppermost was ca. 1.8 feet below surface, at approximately the same level from which the storage pit had been dug. This floor was almost completely destroyed by a number of apparently intrusive holes, roughly circular with diameters of 1.5-2.5 feet. The lower floor was found 2.5 feet below present surface. No floor features were associated with either level and the architectural significance of these two floors could not be determined.

No sherds were found in the storage pit. All major ceramic categories were represented in the material from above the two floors, but there was only one sherd each of Santa Fe B/W and Red Mesa B/W. Although neither of these specimens can be associated with a particular floor, the Red Mesa sherd was found at a lower level than the Santa Fe B/W sherd; both were found, in all probability, beneath

floor 1. The unidentified B/W and the unpainted non-culinary sherds from Trench 4 are predominantly of the coarser and presumable non-local paste; one of the unidentified B/W sherds is apparently made of local paste to which a small amount of sherd temper was added. The other sherd of local paste is probably an unpainted fragment from a Santa Fe B/W vessel. Although there is apparent mixture of the ceramic material in Trench 4, there is indication that Red Mesa B/W, neck-banded, and predominantly non-local unidentified B/W sherds are earlier than Santa Fe B/W and, presumably, the smeared-indented culinary pottery.

Trenches 3, 6, and 8; Features C and D. Trench 8 is located immediately to the east of the pit-house (Features A, B) and is an extension of the north end of Trench 3. The latter, running predominately north-south, is intersected at its southern end by Trench 6. These three trenches, then, are located just east of the dwelling area previously discussed. Two roughly circular features, C and D, are located at the south end of Trench 3 and in Trench 6.

In Trench 8 and in the northern end of Trench 3, two occupation levels were found. The first ("floor 1") was a poorly marked level 1.5-1.8 feet below surface. No architectural features could be defined, and this level may represent a buried occupation surface rather than a floor. Beneath this level, at ca. 3 feet below present surface,

fragmentary patches of adobe floor were found. In several places, the adobe floor is disturbed by the intrusion of holes from higher levels. One small section of slab-based wall was found associated with this lower zone, but it could not be traced.

Santa Fe B/W and smeared-indented sherds are well represented in the northern part of Trench 3 and in Trench 8. Although some sherds of these types were found below the shallowly buried occupation surface (floor 1), most of them came from above this level. Neck-banded, unidentified B/W, Red Mesa B/W, and unpainted non-culinary sherds are found mixed with the Santa Fe B/W and smeared-indented sherds, and most of the sherds come from above "floor 1". Although a majority of the unidentified B/W sherds from both above and below "floor 1" are evidently of non-local origin, local paste with sherd temper is well represented. Unpainted non-culinary sherds are of both non-local and local paste. The majority of sherds in the latter class have little or no visible temper and are probably fragments of Santa Fe B/W vessels.

The sherds from Trench 8 and the northern part of Trench 3 are thoroughly mixed and no ceramic complex or group of types can be associated with either of the superimposed architectural levels. The small section of slab-based wall is rather enigmatic. It definitely marks the location of a room. The wall segment is of the same type of construction as, and parallel to, other sections of

slab-based wall, but its footing is approximately 2 feet below that of the other sections.

In the circular structures at the south end of Trench 3 and in Trench 6 (Features C and D) there are indications of a floor and/or an occupation surface at 1.6-1.8 feet below surface. In Feature D, non-sterile fill was found to a depth of 2.5 feet. Neither of these structures had any floor features and their function is not known; they were called "adobe puddling pits", "borrow pits", and "storage areas" during the excavations. Any of these interpretations is reasonable, and I do not favor one above the others. There is no evidence, however, that either structure served as a dwelling.

Very few sherds were recovered from excavations in Features C and D. Neck-banded sherds were found both above and below the shallowly buried floor or occupation zone in Feature D (floor 1) and no smeared-indented or unidentified B/W sherds were present. The few sherds of Santa Fe B/W were found above "floor 1". The single sherd of Red Mesa ? B/W may have come from below this level, but this cannot be demonstrated. Unpainted non-culinary sherds are of both local and non-local paste; all were sherd tempered and none appear to be fragments of Santa Fe B/W vessels. The location of Santa Fe B/W sherds above floor 1 suggests that the upper level may be associated with the occupation represented by this pottery type. If so, it is pertinent to recall that the floor of nearby Feature C is at approxi-

mately this same level. The ceramic sample from above floor 1 is mixed however, and this interpretation cannot be demonstrated satisfactorily.

Summary, Area B. At least two ceramic complexes are represented in Area B. One consists of Santa Fe B/W and smeared-indented culinary vessels. The second consists of unidentified B/W pottery decorated with mineral paint, Red Mesa B/W, and neck-banded culinary vessels. The Red Mesa B/W and a majority of the unidentified B/W sherds are apparently of non-local origin. From several features there are indications that the Santa Fe B/W and smeared-indented pottery is the later of the ceramic complexes. Only the earlier ceramic complex was represented in the kiva, and in the uppermost levels of the kiva fill there are indications of a growing emphasis on locally made non-culinary vessels decorated with mineral-base paint. Sherds from the kiva and the nature of the kiva fill suggest that the occupation represented by the earlier ceramic complex was, for the site as a whole, of relatively long duration.

Throughout most of Area B, there are remnants of two occupation levels. In one section of Area B there are three occupation periods represented by a pit-house, an adobe-walled room, and a slab-based wall, from early to late. The apparent associations between architectural features and ceramic complexes in Area B are listed in Figure 15 from early to late.

ARCHITECTURAL FEATURE	ASSOCIATED POTTERY
pit-house (Features A and B)	probably early ceramic complex, including Red Mesa B/W. Possibly non-ceramic.
*kiva *adobe-walled room (tr. 2E)	early ceramic period: neck-banded culinary vessels, non-local painted pottery, including Red Mesa B/W.
floor 2 in trench 4 -------?	----------
lower floor, Feature D	early ceramic complex, but some local painted pottery present.
(final deposition of kiva fill)	
features in trench 3 and the northern part of trench 3, including slab-based wall and associated floor below upper level of trench 3	cannot be associated with either ceramic complex. Both early complex (with local painted pottery) and late complex present.
slab-based wall and associated floor (trench 2) storage pit in trench 4 floor 1 in trench 4 Feature D, upper level (floor 1) Feature C	late ceramic complex: Santa Fe B/W and smeared-indented culinary vessels.

Fig. 15.-Architectural and ceramic associations, Area B, Tesuque By-Pass Site. Associations are listed early to late, from top to bottom. Demonstrable associations are marked with an asterisk; all others are tentative.

Intermediate Area; Feature I. In the Intermediate Area, only Feature I provides evidence of a definite structure. (The excavations designated as Feature II disclosed a shallowly buried floor or occupation level, but further interpretation is not warranted.)

Feature I is apparently a pit-house. Its outline is quite irregular but roughly elliptical. A hearth area is located near the center of the structure and a large, undercut storage area was found on the northeast edge of the house. No well-defined posthole pattern was found; large posts tend to occur in the central part of the floor and smaller ones are located near the periphery.

A very small ceramic sample was obtained. A neck-banded sherd from the floor and the neck-banded and corrugated sherds from the fill suggest a pre-Kwahe'e Component occupation.

A sherd which had a squared rim bearing a single dot (or "tick") of carbon paint was found near floor level. Although this specimen cannot be identified as to type, it is of a class which is foreign to the Rio Grande Valley and characteristic of a relatively late period. Culinary pottery from both the fill and floor of Feature I suggests that the painted sherd is not associated with the occupation of the structure. If this interpretation is not correct, however, the pre-Kwahe'e status of the pit-house would be quite doubtful.

Discussion and Summary; Tesuque By-Pass Site. The material from Area A comprises an architectural-and-ceramic complex which apparently represents a single occupation of the site. This has been designated the Kwahe'e complex.

Two major periods of occupation are manifest in Area B. The latest architectural-and-ceramic comples in this potion of the site is characterized by Santa Fe B/W, smeared-indented culinary vessels, and, apparently, several architectural features. The material differs from that of the Kwahe'e complex and indicates a different occupation. This occupation will be referred to as the Santa Fe complex.

An earlier architectural-and-ceramic complex in Area B consists of the kiva, the adobe-walled room (Tr. 2E), and probably floor 2 in Trench 4, associated with Red Mesa B/W, unidentified non-local black-on-white, and neck-banded culinary vessels. This occupation will be referred to as the Red Mesa complex.

The latest pottery of the Red Mesa complex, e.g. that from the upper fill of the kiva, indicates an incipient Kwahe'e B/W ceramic complex. The associated neck-banded pottery and the absence of corrugated sherds provide further evidence that the Red Mesa complex is not only older than the Santa Fe occupation but also older than the Kwahe'e complex of Area A. Kwahe'e complex pottery is typologically intermediate between the Santa Fe and Red Mesa ceramics, and the implied sequence, from late to early, is Santa Fe complex, Kwahe'e complex, and Red Mesa

complex. This sequence conforms to existing interpretations of early Puebloan occupations in the upper Rio Grande Valley (cf. Mera 1935; Stubbs, in Stubbs and Stallings, 1953; Wendorf 1954).

The pit-house in Area B (Features A, B) is obviously earlier than the superimposed adobe-walled room of the Red Mesa complex. Evidence indicates, but not unequivocally, that Red Mesa B/W and neck-banded culinary pottery are associated with the pit-house. Because of the uncertainties regarding the ceramic associations, however, I shall refer to this occupation simply as "Pit-house Occupation, Area B", rather than group both the pit-house and its superimposed adobe-walled room within the Red Mesa complex.

The pit-house in the Intermediate Area (Feature I) has many characteristics in common with the one in Area B. A pre-Kwahe'e ceramic complex is apparently associated with Feature I, but this occupation cannot be assigned specifically to either the Red Mesa complex or the pit-house occupation in Area B. Because of the absence of specific data and the paucity of associations in general, this occupation in the Intermediate Area will not be assigned to any specific cultural complex. It will be referred to as "Pit-house Occupation, Intermediate Area".

The foregoing interpretation of the architectural-and-ceramic complexes and of the pit-house occupations is summarized below (Fig. 16) in outline form. This tabulation

LATE	SANTA FE COMPLEX Santa Fe B/W, smeared-indented culinary vessels. Room-block with slab-based walls. Outside storage pit. Circular floor areas of unknown use, no floor features. All in Area B.
	KWAHE'E COMPLEX Kwahe'e B/W, corrugated and neck-banded culinary vessels. Room-block with slab-based walls. Circular, semi-subterranean kiva early: D-shaped kiva in room-block late. Rear rooms probably used for storage, front rooms as living quarters. Outside storage pits. Area A.
	RED MESA COMPLEX Unidentified mineral painted B/W. Red Mesa B/W, neck-banded culinary vessels. Painted pottery primarily non-local: some local painted wares in latest deposits. Adobe-walled room-block; semi-subterranean, circular kiva; circular to elliptical floor areas of unknown use, no floor features. All in Area B.
PIT-HOUSE OCCUPATION, INTERMEDIATE AREA Feature I	PIT-HOUSE OCCUPATION, AREA B Pit house represented by Features A and B; probably some part of the Red Mesa ceramic complex. Area B.
EARLY	

Fig. 16.-Architectural-and-Ceramic Complexes at the Tesuque By-Pass Site.

presents what I feel to be the most reasonable of several possible interpretations of the architectural and ceramic remains found at the Tesuque By-Pass Site.

SUMMARY; OUTLINE OF CULTURAL COMPONENTS AND OCCUPATIONS:

The poor site preservation and apparent mixture of cultural levels which prohibited a completely satisfactory association of ceramic remains with architectural features also make it difficult to determine the non-pottery artifact complexes characteristic of the various components. These circumstances have been presented in the previous sections and will not be reiterated here. Material from Area A apparently represents a single cultural complex and will be treated as such. Certain artifacts from Area B are attributed to particular components on the basis of the foregoing interpretation, but no attempt is made to assign every artifact to a specific component.

The pit-house materials cannot be associated with or differentiated from the major cultural components and are presented below simply as "occupations". Both of these occupations pertain to the pre-Kwahe'e period. It is important for the reader to understand that either or both of the pre-Kwahe'e "occupations" may a) be a part of the Red Mesa Component or b) represent a distinct component at the site.

Santa Fe Component (found in Area B).

<u>architecture</u>: room-block with adobe floors and

slab-based walls; outside storage pit; circular to elliptical floor areas of unknown use. No ceremonial structure located.

pottery: Santa Fe B/W and smeared-indented culinary vessels.

non-pottery artifacts: worked sherds; small corner-notched projectile points; flake scrapers; flakes retouched about a point; turquoise; oval mano with one flat grinding surface; a thin stone (ventilator?) slab; split but unworked deer metapodial; large bird bone, probably eagle or turkey.

remarks: obsidian not a common raw material. The association of architectural remains and non-ceramic artifacts with this occupation is not clear-cut, and this summary must be regarded as quite tentative.

chronology: no dates were obtained on material from this component. Santa Fe B/W is a local Pueblo III pottery dated from ca. 1200-1350 A.D. (Stubbs and Stallings, 1953: fig. 70). The smeared-indented culinary pottery suggests that the Santa Fe Component at Tesuque By-Pass Site is not a particularly early Santa Fe B/W occupation, but the absence of later intrusive pottery and of side-notched points suggests a pre-1300 A.D. date.

Kwhae'e Component (found in Area A)

architecture: L-shaped room-block with two banks of rooms. Both adobe and cobble floors; slab-based walls. Semi-subterranean circular kiva with rough masonry wall within angle of room-block, ventilator to southeast. Centrally located D-shaped chamber in room-block with possible ventilator opening to east, probably used for ceremonial purposes. Both inside and outside storage pits.

pottery: Kwahe'e B/W, both neck-banded and shallowly corrugated culinary vessels.

non-pottery artifacts: worked sherds; curved and straight ceramic cloud-blowers; small corner-notched projectile points with expanding stems; flake scrapers; flakes retouched about a sharp point; other forms of chipped stone artifacts; trough metates open at one and two? ends; basin metates; rectangular manos with rounded corners and one flat grinding surface; wedge-sectioned manos with one and two flat grinding surfaces; chipped and ground axe with side and butt notches; grooved mauls; turquoise bead; bone awls (Types A, B, C); bird bone whistle; split and smoothed deer metapodial; one large bird bone; worked shell.

remarks: lambdoidal or occipital deformation was

noted on the two skulls associated with this component. Obsidian was a popular raw material in the rather limited chipped stone industry. Almost all remains from Area A belong to this component, and the Kwahe'e occupation is restricted to this portion of the site.

chronology: no dates were obtained on material from this component. Kwahe'e B/W is a local Pueblo II pottery dated from ca. 1100-1200 A.D. (Stubbs and Stallings, 1953: fig. 70). The culinary vessels with shallow corrugations suggest that the Kwahe'e Component at the Tesuque By-Pass Site is relatively late in the Kwahe'e B/W period.

Red Mesa Component (found in Area B).

architecture: room-block with adobe walls and floors; circular to elliptical floor areas of unknown use; semi-subterranean circular kiva with walls of plastered native earth and ventilator to southeast.

pottery: unidentified B/W sherds decorated with mineral paint (including some Taos B/W?), Red Mesa B/W; neck-banded culinary vessels.

non-pottery artifacts: worked sherds, ceramic cloud-blower, small corner-notched projectile points with expanding stems, large corner-

notched points or knives, flake scrapers; flakes retouched about a sharp point; other forms of stone artifacts; trough metates open at one end; oval and rectangular manos with one and two flat grinding surfaces; rectangular mano with rounded corners and finger groove; Type B and C bone awls, bird-bone bead.

remarks: obsidian was not a common raw material. All pre-Kwahe'e structures in Area B except the pit-house (Features A, B) have been placed in this component.

chronology: no dates were obtained on material from this component. Absence of shallowly corrugated sherds on the one hand and of definite P I trade sherds on the other suggest a date of ca. 950-1100 A.D.

Pit-house Occupation, Area B.

architecture: pit-house designated Features A and B.

pottery: although no sherds can be definitely associated with this structure, it seems likely that a portion of the Red Mesa Component ceramic complex, including Red Mesa B/W, belongs with this structure.

non-pottery artifacts: oval manos; fragment of

troughed metate. Possibly a few flake scrapers and a Type B bone awl.

remarks: definitely older than adobe-walled room-block ascribed to Red Mesa Component.

chronology: probably during the period 900-1100 A.D. This is a "guess date" based on presumed ceramic associations.

Pit-house Occupation, Intermediate Area.

architecture: pit-house designated Feature I.

pottery: neck-banded culinary ware. (Association of unidentified carbon-painted B/W sherd, found near floor, is doubtful.)

non-pottery artifacts: small projectile point, probably corner-notched with expanding stem; rectangular mano with rounded corners and one flat grinding surface; flake scrapers; snub-nosed end scraper; hammerstone.

remarks: very little cultural material can be associated definitely with this structure. Architecture and the snub-nosed end scraper suggest that this may be a distinct (separate) occupation.

chronology: possibly during the period 900-1100 A.D. This is a "guess date" based on the absence of P I sherds on the one hand and upon the associated culinary sherds on the other.

PART TWO

COMPARISONS AND INTERPRETATIONS

INTRODUCTION:

Analysis of the cultural material from Tesuque By-Pass Site has led to the postulation of a series of communities, located at a specific place in the upper Rio Grande Valley. None of the communities are entirely unique, and comparisons with other sites in adjacent areas will allow us to view each occupation as a part of the prehistoric settlement of the region.

The reader must be advised that this section is written, insofar as is possible, with reference only to the northern Rio Grande Valley proper. Comparisons and distributional data are restricted to the valley and, therefore, are not to be taken as exhaustive or complete for the whole Southwest, or even for the entire Rio Grande drainage basin. My immediate purpose is to present a picture of early Puebloan settlement in the northern Rio Grande area, and nothing more. It is all too easy to gloss over local developments and complexities by describing them as "reflections" or "resultants" of cultural traditions in other areas. I do not intend to deny the existence of intimate relationships between the upper Rio Grande Valley and other areas of Puebloan culture; but I am trying to view these relationships in what appears to me as the proper perspective. If I understand the terms correctly, I am proceeding a posteriori rather than a priori. Be that as it may, I

shall first attempt to relate the occupations of the Tesuque By-Pass Site to other developments in the immediate area. Relationships to other regions will be discussed in subsequent chapters.

There are several techniques for presenting comparative data; the mechanics of the one used here are as follows:

(1) the general distribution of the ceramic complex associated with each occupation at the Tesuque By-Pass Site is given. Such comments as are necessary regarding ceramic classification will be made at this point.

(2) excavated sites in the northern Rio Grande Valley which have comparable ceramic and architectural complexes are described briefly. An attempt is made to present data which seems pertinent to the Tesuque By-Pass material, but no attempt is made to provide complete site summaries. The sites are presented in a general south to north order.

(3) inferences are made concerning the relation of the occupations at the Tesuque By-Pass Site to those at other sites, and the characteristics of the general culture type(s) are presented.

COMPARABLE OCCUPATIONS WITHIN THE RIO GRANDE VALLEY:

The Red Mesa Component and the Pit-house Occupation in Area B. Because the pottery of the Red Mesa Component and the pit-house occupation cannot be distin-

guished, it will be considered as a unit for purposes of comparisons. The ceramic complex involved consists of Red Mesa B/W, unidentified black-on-white with exterior slip and mineral paint (including Taos B/W?), and neck-banded utility vessels.

Pottery similar to that which I have called Red Mesa B/W is found at many sites distributed throughout the trench of the northern Rio Grande Valley, from Red River south beyond Belen, N. M. (Fig. 17). This pottery is characterized by a heavy Kana-a style of decoration executed in mineral paint, a good white slip on bowl interiors and exteriors and on jar exteriors, and, usually, crushed sherd temper.

The name "Red Mesa B/W" was introduced by the Gladwins (1934), and was considered to be synonymous with Chaco I and Chaco Transitional Black-on-White by Hawley (in Kluckhohn and Reiter, 1939: 52). Bowls of this pottery type, however, are said to have no exterior slip (ibid.). Similar pottery is discussed by Mera (1935: 3, 5, Pl. II) as "Chaco 2". Subsequently, the name Red Mesa B/W was extended to include well-slipped sherds such as those described in this report. Insofar as I can determine, the extension of "Red Mesa B/W" to Chaco 2 pottery has been virtually undocumented. At present, the name designates a horizon style found widely throughout the southwestern United States, in both Pueblo I and Pueblo II contexts, rather than a local pottery type. There is an obvious

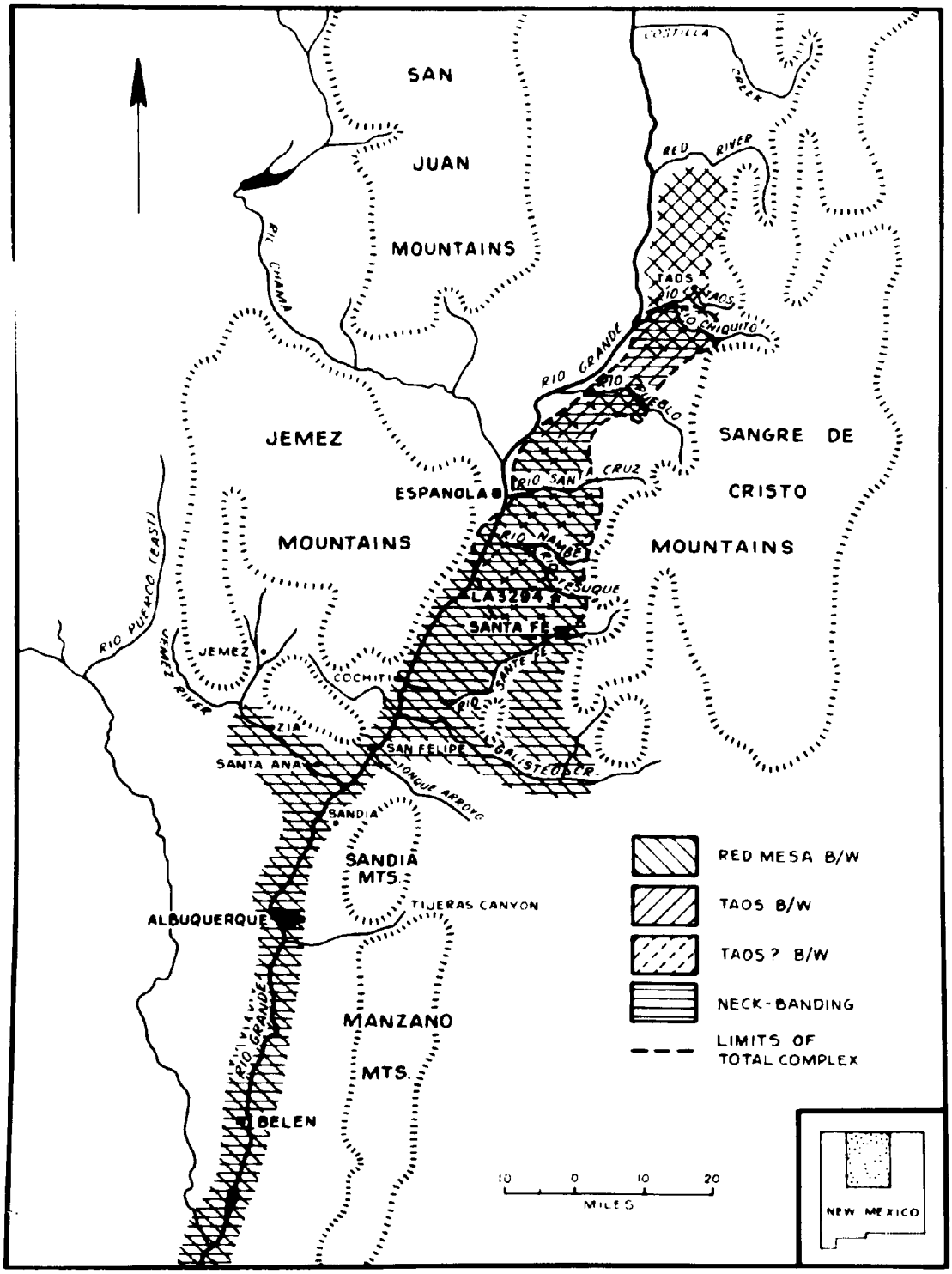


Fig. 17.-Distribution in the Rio Grande Valley of Red Mesa Complex pottery types.

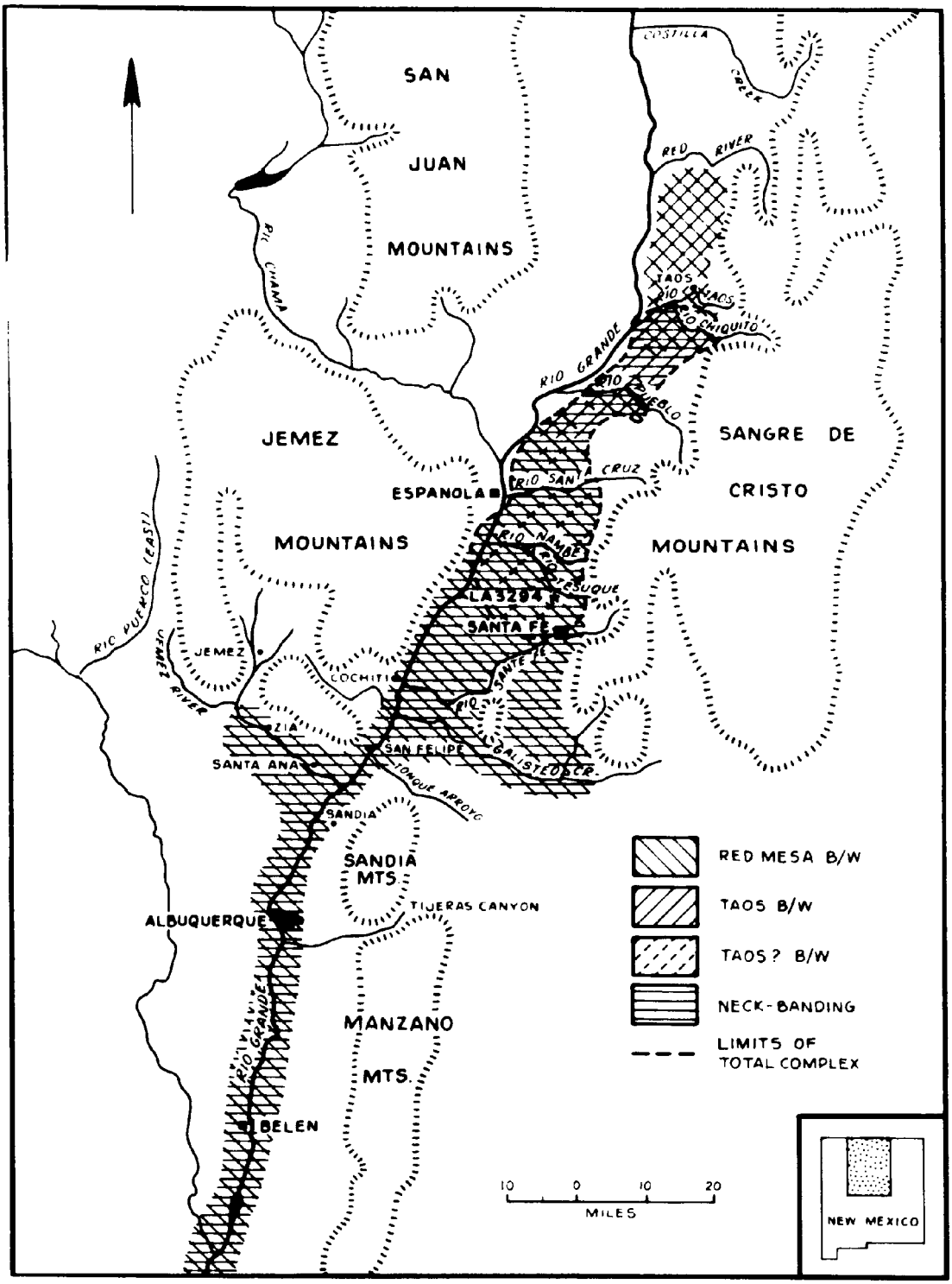


Fig. 17.-Distribution in the Rio Grande Valley of Red Mesa Complex pottery types.

need to determine areal varieties of this type if its diagnostic value is to be increased. This task is complicated by many, inescapable similarities of paste and temper associated with this pottery wherever it is found. The rather ubiquitous nature of Red Mesa B/W, as currently used, is probably responsible for the following statement by Stanley Stubbs: "Pueblo I and II Black-on-White pottery is the common denominator all across this region [the northern Rio Grande]. I do not think it proper to give a more exact name to the type at this time; Pueblo I or II, or Chaco I or II, to me, gives a time, space, and trait assemblage connotation which is lacking when a more localized name, such as Red Mesa Black-on-White is used." (Stubbs and Stallings, 1953: 154; my insertion).

Sherds similar to much of the "unidentified B/W" from the Tesuque By-Pass Site are concentrated in the upper part of the northern Rio Grande Valley, in the vicinity of Taos between Red River and Rio Chiquito. This pottery has been designated Taos B/W (Mera 1935: 5-6, Pl. IV; see Map. No. 1 for distribution), and is considered by Mera as a regional derivative of the Chaco 2 tradition. It must be noted, however, that the culinary pottery of the Taos area differs in many respects from that found at Tesuque By-Pass (cf. Blumenschein 1958: 108-9).

Neck-banded culinary vessels are found at sites scattered throughout the northern Rio Grande Valley, although they do not appear to be characteristic of the Taos

area. Very little information is available on paste characteristics or details of construction, but such data as there are and my own observations indicate that this pottery is made of at least two different kinds of paste: one is hard, dense, and gray, the other is softer, less dense, somewhat friable, contains some mica, and paste color ranges from gray through brown to black. The first class of paste is found sparsely at small sites in the southern part of this area, usually with a Pueblo I ceramic assemblage. I do not know the degree to which this variety is present north of Santa Fe. The latter variety of paste appears to be concentrated in the upper part of the northern Rio Grande Valley, and is often found with a late Pueblo I or Pueblo II ceramic assemblage. The neck-banded sherds at Tesuque By-Pass Site are of this latter variety.

Elements of the ceramic complex of the Red Mesa Component and the Pit-house Occupation in Area B at the Tesuque By-Pass Site, then, are found throughout the upper Rio Grande Valley, associated with a culture type which has been described variously as Chaco 2 (Mera 1935), Pueblo I or II (Stubbs and Stallings, 1953), and Developmental (Wendorf and Reed, 1955). The paste used in the manufacture of neck-banded vessels and the character of certain of the unidentified B/W sherds indicate that the total complex is characteristic of the upper part of the northern Rio Grande Valley, north of Santa Fe and south of Taos.

Excavated sites in the northern Rio Grande Valley which have more or less comparable ceramic assemblages are few and far between. Such information as has come to my attention is summarized in the following paragraphs.

In the southern part of the area under consideration, there are seven small sites at which are found circular structures closely comparable to the kiva of the Red Mesa Component in Area B These features are interpreted variously as kivas and pit-houses. One site (L.A. 586) is in Tijeras Canyon, about 20 miles east of Albuquerque (Wendorf, MS on file at Univ. New Mexico), three sites are near Sandia Pueblo (Peckham 1957), one is near Zia Pueblo (Vytlacil and Brodie, 1958), one is near Santa Ana Pueblo (Allen and McNutt, 1955), and one is in the vicinity of San Felipe Pueblo (Peckham 1954). These sites are discussed at greater length in a following section, and are considered here but briefly in order to place them in proper perspective with the Red Mesa material from Tesuque By-Pass.

Small and architecturally simple surface structures are present at four of these sites, but none are comparable to the well-constructed adobe-walled room of the Red Mesa period at Tesuque By-Pass.

There are no structures at any of these sites which are similar to the pit-house in Area B. At one of the sites near Sandia Pueblo, there is a semi-subterranean structure, oval in outline, with undercut storage pits and an irregular roof support pattern. It has a central fire-

place, however, and no entry or ventilator projection was found (Peckham 1957: 47-48, Fig. 20). At the site near San Felipe, irregularly shaped structures, interpreted as surface jacales, have irregular roof-post patterns and no central hearths, but lack undercut storage pits and entry or ventilator projections (Peckham 1954: 43-46, Fig. 4, upper).

Red Mesa B/W is the dominant painted pottery at most, but not all, of these sites. It is almost invariably associated with early Basketmaker III-Pueblo I period intrusives however, such as Kiatuthlanna B/W, Whitemound B/W, Lino B/G, San Marcial B/W, Alma Plain, and Mogollon R/Br. Culinary vessels are either plain (usually classified as Lino Gray, characteristic of Basketmaker III) or neck-banded (classified as Kana-a Gray, a Pueblo I derivative of Lino), but neck-banded sherds occur in lower proportions than were found at Tesuque By-Pass. This latter fact, plus the early intrusive sherds, suggests that these seven sites represent initial occupations which are earlier than the Red Mesa period(s) at Tesuque By-Pass.

These seven sites provide my only documentary information concerning excavated ceramic occupations within the Rio Grande Valley between Isleta Pueblo in the south and the Tesuque By-Pass Site which are as early as, or earlier than, the Red Mesa Component. Although none of the sites closely resembles the occupation at Tesuque By-Pass, they do indicate that many elements of the latter were present within the northern Rio Grande Valley at an earlier time

period. The elements concerned are discussed in detail in a following section.

Excavations by Stanley Stubbs at Site L.A. 835, approximately 7 miles north (downstream) from the Tesuque By-Pass Site and on the opposite side of Rio Tesuque, exposed what wil be the most important early Pueblo site in the northern Rio Grande Valley. Results of these excavations have not been published, nor is the material completely analyzed as yet.

Two brief notes have been published regarding these excavations (Stubbs and Stallings, 1953: 155; Stubbs 1954). The site consists of 12-15 house units, each containing some 10-20 rooms. Several types of wall construction are present, but slab-based adobe construction is apparently predominant. One or more kivas are associated with each room-block, and a great variety of kivas was found. A "great kiva", some 52 feet in diameter, has crude masonry walls, and eight roof supports. Circular and rectangular kivas, both above ground and subterranean, are present. Stubbs dates this site, on the basis of the associated pottery, as primarily of the eleventh century, with a terminal date of ca. 1150 A.D. (Stubbs 1954: 45).

Although the pottery analysis is not yet complete, Stubbs has very kindly given me full access to such notes as he has made. His ceramic classification does not employ the usual "Red Mesa B/W", "Taos B/W", "Kwahe'e B/W" terminology, but is based rather on specific attributes,

such as slip and temper (cf. Stubbs 1954: 45). For this reason, any parallels which I imply to named types from the Tesuque By-Pass Site are completely my responsibility, and do not necessarily reflect Stubbs' analysis.

The major ceramic categories at L.A. 835 are, I think, almost the same as those at the Tesuque By-Pass Site: Red Mesa B/W; presumably sherds similar to the unidentified B/W; Kwahe'e B/W; neck-banded, corrugated, and plain culinary vessels. There is a tendency for neck-banded sherds to be associated with painted pottery which is comparable to Red Mesa and the unidentified B/W sherds, and for corrugated pottery to be associated with sherds comparable to Kwahe'e B/W. There is, however, no clear division between the two complexes.

In some structures of the site, including the "great kiva", there seems to be, if not a pre-Kwahe'e occupation, at least a preponderance of ceramic material comparable to the Red Mesa sherds from Tesuque By-Pass. My own feelings, and I can be no more specific at present, are that the major portion of the occupation at L.A. 835 is slightly later than the Red Mesa period at Tesuque By-Pass. The complex and diverse nature of the architectural features at the former site will have a great effect upon our interpretations of both the Red Mesa and Kwahe'e periods in the northern Rio Grande Valley.

A number of subterranean structures are reported from

the vicinity of Taos, New Mexico, in the Hondo Valley, above Taos Creek Valley, and near Pot Creek (Blumenschein 1956, 1958). Excavations have been conducted in the Hondo Valley only. Associated pottery includes "black-on-white trade wares of general Chacoan ancestry" and of a time period of about A.D. 1000 to 1150, possibly a small amount of locally made Taos B/W, and early forms of Taos Incised, together with large amounts of culinary ware (Blumenschein 1956: 55). The great majority of the culinary pottery is smooth-surfaced plain gray ware, many sherds of which undoubtedly come from the lower portions of vessels with variously modified rims. Major classes of textured rim and neck sherds are "plain incised", "accentuated coil", "smoothed coil" and "deeply incised", in order of decreasing popularity (Blumenshcein 1958: 108-9). Neither neck-banding nor corrugated sherds are common.

Here, then, we have painted pottery which is roughly similar to that of the pre-Kwahe'e period, but associated with a strikingly different range of culinary vessels.

Five deep subterranean structures were excavated or tested in this area; four are square or rectangular and one is approximately circular. All are interpreted as pit-houses. All structures had central fireplaces with raised adobe rims, walls plastered over native earth, probably ventilators on their east side, and lacked sipapus. In two cases, excavation was sufficient to determine the roof support pattern. A four post support pattern was found in

a square structure, and two posts were located near opposite ends of a diameter of the circular structure.

Associated artifacts include slab and trough metates, full grooved mauls, chipped pebble axes (Blumenschein 1958: 109) and a single stone elbow pipe (Lambert 1956). Obsidian was evidently not a favored raw material.

The sites discussed above, from near Sandia Pueblo in the south to just beyond Taos Pueblo in the north, have ceramic complexes which are probably as early as, or earlier than, the Red Mesa period represented in Area B at the Tesuque By-Pass Site. I know of no other useable descriptions of equally early sites in the area of immediate concern.

As will be seen later, there are roughly comparable sites in adjacent areas, and there are sites within the Rio Grande Valley which appear to be only slightly later than the Red Mesa period. At present, however, we are in a position to summarize the information available on the Red Mesa occupation of the northern Rio Grande Valley.

The discriminating reader will have noticed that, of the sites discussed, none are entirely similar to the Red Mesa Component at Tesuque By-Pass. The distribution of Red Mesa B/W and neck-banded culinary vessels is almost pan-northern Rio Grande Valley. The data from the Taos area suggest that neck-banded sherds may have never achieved popularity in the uppermost portion of the area. Pottery

comparable to many of the unidentified B/W sherds from Tesuque By-Pass is not widely distributed on the other hand, but restricted to this same northern (Taos) area (see distribution of Taos B/W; Fig. 17; Mera 1935: Map No. 1; Stubbs and Stallings, 1953: Fig. 69). Neither Taos B/W nor sherds similar to this type seem to be found in any number to the south of Santa Fe.

Sites in the southern part of our area at which Red Mesa B/W and neck-banded culinary vessels are present also have early intrusives from Basketmaker III and early Pueblo I ceramic complexes, such as Lino B/G, La Plata B/W, San Marcial B/W, and Kiatuthlanna B/W. At several of these sites there are early brown ware sherds, such as Alma Plain, Mogollon R Br., and other unidentified red-on-brown sherds. Presumably they are from the Mogollon area to the south. These early intrusives, black-on-white and red-on-brown, do not seem to be characteristic of the sites north of White Rock Canyon (above Cochiti Pueblo) and La Bajada Hill (north of the lower Santa Fe River). There is no known BM III or Pueblo I pottery indigenous to the Rio Grande Valley north of the White Rock-La Bajada axis. The implication is that Puebloan sites of the BM III and formative P I stages are virtually absent from the uppermost Rio Grande Valley.

This inference is most pertinent to the interpretation of the pre-Kwahe'e (e.g. Red Mesa) occupations and it is necessary to elaborate upon extant hypotheses concerning

the earliest ceramic occupations in the northern Rio Grande Valley.

H. P. Mera (1935), in his classic work on the Rio Grande Valley, states that in the area north of the 35th degree of latitude (which crosses the Rio Grande ca. 6 miles south of Albuquerque) "sites showing nothing but true Basket Maker pottery are quite rare . . . and it seems probable that a great deal of the Basket Maker III pottery of this eastern region is more representative of the final phase of that cultural stage and may well be considered as transitional between typical Basket Maker III and the immediately following ceramic development, Chaco 1. To date, only one site of this class (L.A. 177), situated in the valley of the Rio Santa Fe, has failed to show at least one decorated sherd. Basket Maker locations in this region are known only in the form of sherd areas . . ." (Mera 1935: 2). With regard to Chaco I, or Pueblo I, sites, he continues: "Pure sites containing Chaco I pottery . . . though more numerous than those of the B.M. 3 period, are comparatively few in number but are found to extend over a range somewhat greater than that covered by the latter." (Mera 1935: 3). Trade wares described are black-on-red (presumably La Plata), red- or black-on-orange (presumably Abajo), and southern brownware. The black-on-red pottery is found sparingly and the (presumably) Abajo intrusives occur at only one site (L.A. 195) within the Rio Grande Valley proper. L.A. 195 is in Rio Arriba County, well to

the north of Tesuque By-Pass. Inspection of the site collection indicates the presence of Red Mesa B/W at this site.

In plotting the distribution of Basketmaker III and Chaco I sites in the Rio Grande Valley proper, Mera does not distinguish between pottery of the two stages. Sherd areas of one or both periods were found primarily south of the mouth of the Santa Fe River, and sporadically in the area between the Tesuque Valley and a point just north of Espanola (L.A. 195). A single site is located on the Rio Grande west and slightly north of Santa Fe.

Stubbs (Stubbs and Stallings, 1953) discusses the early occupation of the upper Rio Grande in terms of "the period ca. A.D. 700-1000 -- Chaco I and II, Pueblo I and II, or Developmental Pueblo" (Stubbs and Stallings, 1953: 152) and, concerning earlier occupations, says only "On the basis of present evidence, the Basket Maker III phase is very rare or missing in most sections of the upper Rio Grande area." (Stubbs and Stallings, 1953: 153).

Wendorf and Reed (1955), in their reconstruction of northern Rio Grande prehistory, set the southern limit of the area somewhat more to the south than does Stubbs. In discussing "The Rio Grande Developmental Period (ca. A.D. 600-1200)" (Wendorf and Reed, 1955: 138), they state that "Ceramic sites which could be correlated with San Juan Anasazi, Basket Maker III or early Pueblo I are extremely rare in the northern Rio Grande." (ibid.). They mention two sites near Albuquerque and describe L.A. 177 as

"possibly of this age" (ibid.). They continue, "Sites contemporary with Pueblo I are also small but more numerous than those of the preceding phase. The area of known occupation extended as far north as the mouth of the Chama. . . . These contain, in addition to the pottery types of the Basket Maker III sites, neck-banded gray and brown wares (Kana-a Gray, Alma Neck-Banded), Kiatuthlanna Black-on-white, and, occasionally, La Plata Black-on-red and Abajo Black-on-orange." (ibid.). Two sites are discussed: one near Santa Ana (Allen and McNutt, 1955) and one near San Felipe (Peckham 1954). Both of these sites, mentioned previously, are south of the White Rock Canyon-La Bajada Hill area and provided the only excavation data available at the time. The distribution of early sites adds nothing to that given by Mera, and no new early ceramic sites are described for the uppermost part of the Rio Grande Valley.

Insofar as I know, none of the BM III-P I sites north of the White Rock-La Bajada axis has been excavated as of this date (1959). Many, if not all, of them may represent the expansion of the Chaco I or Pueblo I groups, postulated by Mera. With but two possible exceptions (L.A. 171, 195), both very tentative, there is virtually no specific information which contradicts the hypothesis that Puebloan groups were not in the Rio Grande Valley north of White Dog Canyon and La Bajada Hill before 800 A.D. Furthermore, the very small number of sites which seem to be pre-Pueblo II suggests that Puebloan occupation of this northernmost area

had begun but was still quite minimal in the period 300-900 A.D.

Now, to return to the Red Mesa period at Tesuque By-Pass. It is basically late Pueblo I-early Pueblo II, and represents some of the earliest excavated material in the northern section of the upper Rio Grande Valley. Its closest analogue, from an architectural and ceramic standpoint, was found in the earliest occupation of L.A. 835. Other ceramic ties exist with the early sites in the Taos area. Although the material from these sites differs in several respects from, and may be slightly later than, the Tesuque By-Pass material, the data all suggest one important conclusion. The Red Mesa (and possibly the earliest Kwahe'e) period is characterized by a well-developed Pueblo complex, ceramically mature and architecturally diversified.

With regard to ceramics, in addition to neck-banded culinary vessels, painted pots of several shapes and ornamented in at least two styles of decoration were used by the pre-Kwahe'e inhabitants of the immediate area. These vessels may or may not have been obtained by trade, but they were available. In the Taos region, a different tradition of culinary vessels was present; some painted vessels were obtained by trade, and at least one style of painted pottery (found at Tesuque By-Pass and grouped with the unidentified B/W) seems to have been produced locally.

Pit-houses, adobe-walled room-blocks, and circular kivas were apparently constructed during this period at

Tesuque By-Pass. When the data from L.A. 835 are available, it is quite probable that other forms of architecture will be added to this inventory. Still another distinctive architectural form, square and/or rectangular subterranean dwellings, is present in the Taos area during this period or soon thereafter.

Due to the virtual absence of occupations in the immediate area which may be taken as ancestral to these developments, it is most reasonable to consider the Red Mesa occupations as remains of immigrants from some Puebloan center outside the northern Rio Grande Valley proper. The Red Mesa Component at Tesuque By-Pass and the earliest occupation at L.A. 835 seem to be sufficiently similar to indicate a common source.

The comparable but distinctive remains in the Taos region indicate that the question of single or multiple origins for the early ceramic period in the area must not be answered hastily.

Summary: The Red Mesa material at Tesuque By-Pass Site, Area B, is that of a well-developed early Puebloan culture, including pit-houses, adobe-walled room-blocks, circular subterranean kivas, and probably other forms of architecture. The remains are those of one of the earliest Pueblo occupations in the upper section (north of White Dog Canyon and La Bajada Hill) of the northern Rio Grande Valley. The people represented are probably

immigrants into the area from some Puebloan district outside the northern Rio Grande Valley proper. Food remains were not plentiful, but it is probable that these people were the first agriculturalists in the upper valley, for corn, beans, and squash were established crops in other Puebloan areas. It is likely that they also relied upon the deer and antelope for meat (and clothing?), as did the people of the subsequent Kwahe'e Component. The period is probably no earlier than 900 A.D., and it is doubtful that any Puebloan groups were in the area prior to 800 A.D.

The very minimal amount of comparative data available does not indicate a great difference, temporally or culturally, between the Red Mesa Component and the occupation of the pit-house in Area B. The latter structure is, of course, at least somewhat earlier than the adobe-walled room of the Red Mesa Component.

Major elements of the ceramic complex of the Red Mesa period are found throughout the greatest part of the northern Rio Grande Valley; the earliest manifestations are found to the south. The total and specific ceramic complex, with painted sherds similar to Taos B/W, is characteristic of the upper portion of the northern Rio Grande Valley, between Tesuque By-Pass in the south and Taos on the north. It is of considerable interest that pottery which is quite probably an early variety of Taos B/W was available to the inhabitants of the Tesuque By-Pass Site somewhat earlier than was Kwahe'e B/W pottery.

Material from the Taos area, of this same or a slightly later period of time, indicates at least the possibility that all early pottery making peoples in the immediate area were not of the same specific cultural background.

The Pit-house Occupation in the Intermediate Area. The pit-house in the Intermediate Area (Feature I) is interpreted as a pre-Kwahe'e, Pueblo II, occupation on the basis of a very few sherds which were associated with the structure. The architecture and the snub-nosed end-scraper suggest that this occupation may be distinct from the pre-Kwahe'e occupations in Area B, but this inference is extremely tentative.

The survey of sites made in the preceding section offers little analogous material. One rather striking architectural parallel may be pointed out. At one of the sites near Sandia (L.A. 3290) there was found an oval structure with unplastered walls and floor, a large undercut peripheral storage pit, an irregular roof-post pattern, and a clay-lined central hearth. No indication of an entry was found. No painted sherds were identified in this structure, and the bulk of the pottery was classified as Lino Gray (16 sherds) and Kana-a Gray (1 sherd). Peckham notes that the single diagnostic sherd (Kana-a Gray, neck-banded) which comes from the fill indicates, tenuously, a Pueblo I occupation of the pit-house. The site itself has structures which are interpreted as BM III, P I, and P I

or early P II. (See Peckham 1957: 47-48, 67ff., Fig. 27.) It is difficult to evaluate the significance of this comparison between "roughly oval but irregular house outline", "irregular roof-post pattern", "unprepared floors and walls", "irregularly shaped peripheral storage pits" etc., but the similarities remain.

Summary: Information is minimal, but there are indications that the occupation of the pit-house in the Intermediate Area was distinct from that of the pre-Kwahe'e occupation(s) in Area B.

Architectural similarity to a single (and apparently abberrant) structure at an early site near Sandia Pueblo can be taken to indicate that the Intermediate Area occupation was earlier instead of later than the Red Mesa period in Area B. If this is so, Feature I is the earliest excavated structure at the Tesuque By-Pass Site, representing a very late Pueblo I or early Pueblo II occupation which may date as early as 850 A.D.

On the other hand, the single unidentified B/W sherd may indicate that the fill, and inferrentially the occupation, of this pit-house is later than that of the Red Mesa period in Area B. If this is the case, the pit-house is a Pueblo II period structure which probably dates 1000-1100 A.D.

The latter interpretation is perhaps the more reasonable, but I cannot feel strongly inclined toward either.

The Kwahe'e Component in Area A. The major elements of the ceramic complex of the Kwahe'e Component are Red Mesa B/W, Kwahe'e B/W, neck-banded and corrugated culinary vessels. Of these, Red Mesa B/W and neck-banded culinary vessels are present in relatively small proportions. The distribution of these two kinds of pottery, virtually pan-northern Rio Grande Valley, has been presented above.

Corrugated culinary vessels are widely distributed throughout the Southwest, within the northern Rio Grande Valley and elsewhere. I have no specific data on the degree to which corrugated vessels replaced the plain and incised culinary tradition in the Taos area, but they were present in the southern part of that region (Jeançon 1929: 20).

Kwahe'e B/W is found in the Rio Grande Valley to the mouth of the Rio Chama in the north and south to a point just north of Albuquerque. On the east side of the river, however, it is not common south of Galisteo Creek. The greatest concentration of Kwahe'e B/W appears to be on the east of the Rio Grande, between the Galisteo and the mouth of the Chama (Fig. 18; see also Mera 1935: Map No. 1; Stubbs and Stallings, 1953: 154). Kwahe'e B/W is considered to be a local development from the earlier Chaco I-II (Red Mesa B/W, as the term is used here) pottery, beginning in the late eleventh century. The terminal date of this pottery type is approximately 1200 A.D. It should be noted that Taos B/W is considered to be another local variant

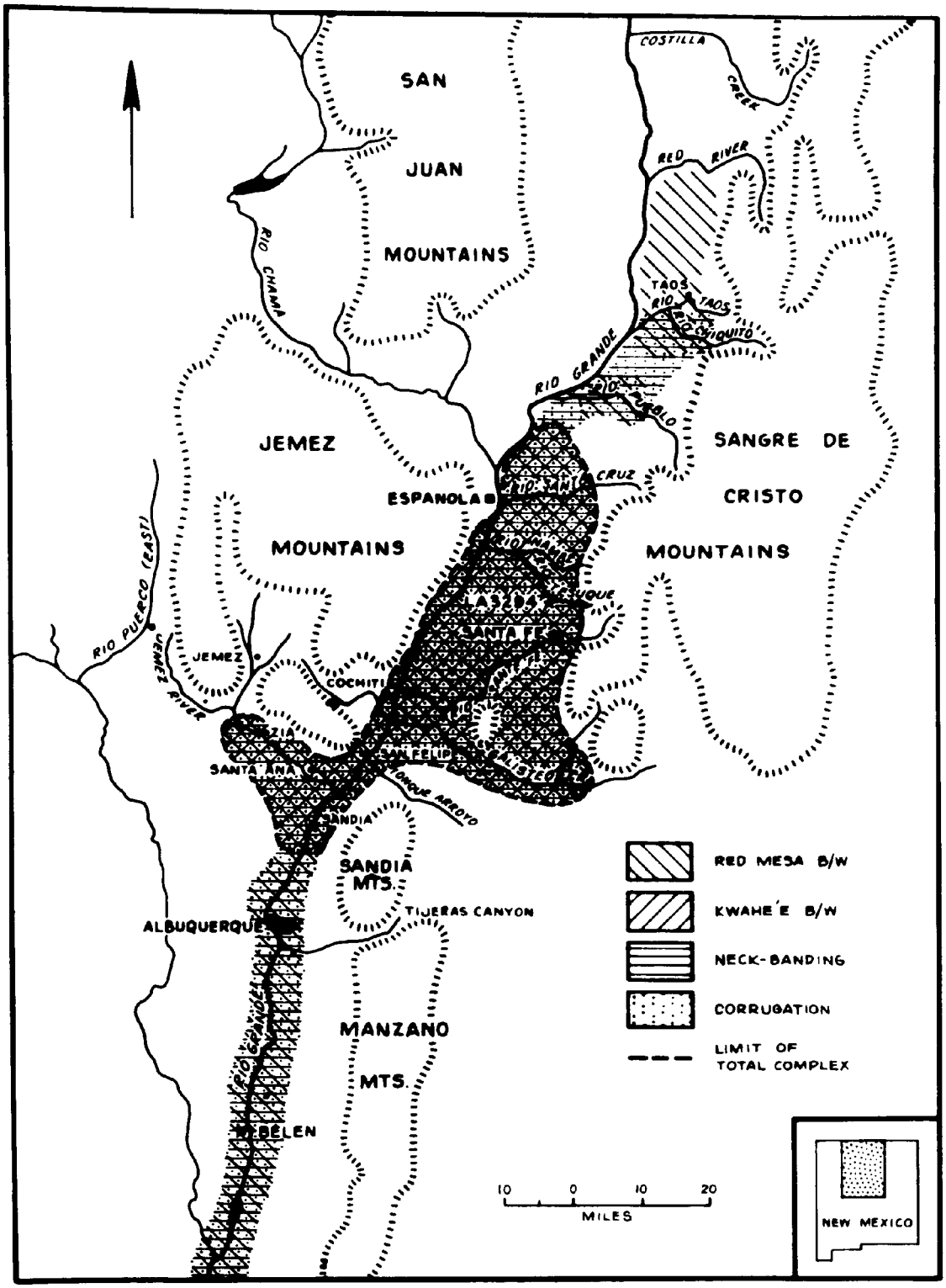


Fig. 18.-Distribution in the Rio Grande Valley of Kwahe'e Complex pottery types.

derived from the same Red Mesa B/W (Mera 1935: 6; Stubbs, in Smiley, Stubbs, and Bannister, 1953: 61). In the region north of the Chama and south of Taos, sherds are found which appear to be transitional between Kwahe'e B/W and Taos B/W (Peckham, personal communication).

Because Red Mesa B/W, neck-banded culinary vessels, and corrugated culinary vessels are so widely distributed, the distribution of the Kwahe'e Component's total ceramic complex, as a whole, can be equated to that of Kwahe'e B/W.

Before turning to such information as is available from site excavations, I shall repeat an observation which has been made by nearly all people concerned with the northern Rio Grande Valley. The appearance of Kwahe'e B/W is coincident with an expansion and increased intensity of Puebloan occupation in this area. The site files at the Laboratory of Anthropology in Santa Fe indicate that Kwahe'e B/W is to be found on approximately 100 sites in the northern Rio Grande Valley and immediately adjacent areas. There must be, of course, many more which have not been recorded.

During the excavation of Pindi Pueblo (Stubbs and Stallings, 1953), approximately six miles south of Santa Fe and on the north bank of the Santa Fe River, an early ceramic level was partially exposed. The painted pottery associated with this occupation is described as Red Mesa B/W and closely related types, Kwahe'e B/W, Wingate B/Red

and Puerco B/Red. Culinary wares are not described in detail, but only as "coiled; incised and striated; plain ware" (Stubbs and Stallings, 1953: 14). This pre-Pindi complex is dated, dendrochronologically, at ca. 1200 A.D.

Two structures were associated with the pre-Pindi horizon. One was a jacal, roughly equilateral with excurved walls and rounded corners. The walls were oriented roughly north-south and east-west and were 9 to 10 feet long. On the north-south axis of the structure and in the northern half of the building there was a well-made fireplace with a raised adobe rim. Near the south wall of the house, and on opposite sides of the N-S axis, two flat stones were set in adobe at floor level. The structure had no prepared floor, and no roof supports were found.

A second pre-Pindi structure, semi-subterranean, was located near the jacal. It was ca. 8 feet in diameter and 3 feet deep. Walls and floors were unplastered native earth, and a depression in the east side of the floor served as a hearth. On the west side of the structure there was "a broken-down, sloping cut which may have served as an entrance way, or vestibule, but it was too damaged to determine its original shape." (Stubbs and Stallings, 1953: 25). A single, centrally-located roof post was found. Sherds from the lower fill of this structure are described as early Kwahe'e and Chaco II Black-on-white.

Very few artifacts were recovered from the pre-Pindi horizon, but a trough metate (open at one end) and a Type B

bone awl are listed (Stubbs and Stallings, 1953: 116, 130).

The pre-Pindi ceramic complex is similar to that of the Kwahe'e Component at Tesuque By-Pass with regard to Red Mesa B/W, Kwahe'e B/W, neck-banded (coiled) and plain culinary vessels, and differs only in that no corrugated sherds were found in the small ceramic sample at the former site. Data from Pindi does not permit a comparison of the degree to which individual elements of the ceramic complex are present. Two new architectural forms are added to the Kwahe'e inventory: the jacal and a small pit-house. The latter structure has certain general characteristics in common with the pre-Kwahe'e pit-houses at Tesuque By-Pass.

Site L.A. 835 (Stubbs and Stallings, 1953: 155; Stubbs 1954) has been mentioned above, in the discussion of the Red Mesa material. Although some structures at this site may well belong to this earlier period, the greatest part of the occupation at L.A. 835 is Kwahe'e. This is the largest site of this period which has been excavated.

The painted pottery is apparently similar to Red Mesa B/W and Kwahe'e B/W at Tesuque By-Pass; culinary vessels were plain, neck-banded, and corrugated. Other minor forms, such as incised vessels, are present, just as they are at Tesuque By-Pass. In short, the ceramic complexes of L.A. 835 and of the Kwahe'e Component consist of the same elements, but again, data are not available which permit a quantitative comparison.

The diversified architectural complex at L.A. 835 not only duplicates the room-block and circular kiva at Tesuque By-Pass, but adds new elements to the inventory: rectangular kivas, above and below ground; upright pole reinforcement in subterranean walls; Great Kiva (possibly earlier); several wall construction techniques using stone and adobe singly or in combination; a village pattern of several distinct room-blocks, each with its associated ceremonial structure(s). The room-blocks themselves are somewhat distinctive: a row of relatively large (12-16 feet) square rooms with fire-pits, presumably living quarters, in front of smaller rectangular rooms, probably used for storage (Stubbs 1954: 43).

Artifacts were not abundant at the site, but trough metates open at one and both ends, tri-notched axes with polishing confined mainly to the blade, and ornaments of turquoise, shell, and jet are mentioned (Stubbs 1954: 44).

Three burials were excavated. One had an undeformed skull, one showed lambdoidal deformation, one vertical occipital deformation.

These two sites, Pindi and L.A. 835, provide the only Kwahe'e occupations described in any detail in the literature. A few additional sites have been excavated but not reported; specifically, Arroyo Negro (L.A. 114) on the Santa Fe River and about 3 miles west of Santa Fe, Mocho (L.A. 191) on Arroyo Hondo about 6 miles south of Santa

Fe, Tesuque Valley Ruin (L.A. 742) about 10 miles north of Santa Fe. There is probably a Kwahe'e and Red Mesa occupation beneath La Garrita, within the city limits of Santa Fe (B. T. Ellis, personal communication). A limited amount of information is available on some of these sites in Wendorf and Reed (1955: 140-42, Fig. 2, Fig. 3), and tree-ring dates for some of them have been published by Smiley, Stubbs, and Bannister (1953). It may be noted that the latter are often difficult to evaluate, because many of the sites are multi-component. Wendorf and Reed (1955: 142) note that the dates range from 963 to 1194 A.D., with the greatest concentration at 1050-1150 A.D. These same authors consider these sites as "essentially the same" (Wendorf and Reed, 1955: 140), and it can be assumed that the unpublished sites would not add any further major ceramic or architectural elements to our present list.

Summary: The Kwahe'e Component at the Tesuque By-Pass Site is typical of a well-developed and widespread Pueblo complex in the northern Rio Grande Valley. Chronological evidence indicates that the Kwahe'e complexes were characteristic between 1100-1200 A.D.; they quite probably appeared in the area by 1050 A.D. Surface surveys indicate that the period is one of expansion and population increase, with the greatest concentration of sites in the valley between the mouth of the Chama in the north and Galisteo Creek in the south. The period is known from very few

excavated sites and these are concentrated in the vicinity of Santa Fe and the nearby Tesuque Valley.

Very little perishable material has been recovered from sites of this period, but occasional charred corn cobs, the abundance of manos and trough metates, and large numbers of animal bone (see Appendix) indicate that both agriculture and hunting were basic to the subsistence of these people.

All evidence indicates a fairly continuous transition from earlier pre-Kwahe'e complexes (as found in Area B at Tesuque By-Pass) into the Kwahe'e period, although several new traits appear in the area.

There is evidence of great elaboration of architecture, both domestic and religious. Pit-houses, jacales, small room-blocks built with a variety of adobe and stone construction techniques, cobbled floors, and differentiated living and storage rooms are all present. Religious architecture includes circular kivas below ground (probably the commonest form), circular kivas above ground, rectangular kivas above and below ground, and Great Kivas. Construction features used in religious structures include pole-reinforced walls and crude masonry, four post roof support, sipapus, central fireplaces with raised adobe rims, ash pits, ventilators to the south or southeast.

In ceramics, there is a change in design emphasis, mineral paint remains in vogue, and the quality of the slip deteriorates. Also during the Kwahe'e period, corru-

gated culinary vessels appear and finally surpass neck-banded vessels in popularity.

Artifacts characteristic of this period include tubular and elbow pipes of clay, trough metates open at one and both ends, small corner-notched obsidian points with expanding stems, mammal bone awls, tri- or poly-notched axes with polished bits, full-grooved mauls, bird bone whistles, ornaments of turquoise, jet, and shell. Many other artifact types are also present, but in minor proportions.

Head deformation was practiced to some degree during this period.

Intrusive sherds indicate relations with other areas of the Southwest, and shell ornaments show that the northern Rio Grande Valley was connected with at least some of the major trade routes of the western United States.

The marked population expansion and the appearance of new traits would suggest continued immigration into the area. The gradual transition from pre-Kwahe'e to Kwahe'e complexes, seen at several sites, further suggests that the Kwahe'e period immigrants were not radically different from their predecessors in the area. It seems likely, but virtually impossible to demonstrate, that local population growth in the Rio Grande Valley also added to the Puebloan expansion during the Kwahe'e period.

The Santa Fe Component in Area B. The ceramic complex

asscciated with this occupation consists of Santa Fe B/W, smeared-indented culinary vessels, and possibly some plain-surfaced culinary vessels.

Santa Fe B/W is found in the northern Rio Grande Valley from the Rio Pueblo and Rio Chama area in the north to the Jemez River and Galisteo Basin in the south (Fig. 19; see also Mera 1935: Map. No. 2; Stubbs and Stallings, 1953: 48, Fig. 69). This pottery, thought to have developed locally from Kwahe'e B/W ca. 1200-1350 A.D., is considered to indicate the beginning of Pueblo III (Stubbs and Stallings, 1953: 48, 154, Fig. 70) and/or the Rio Grande Coalition Period (Wendorf and Reed, 1955: 143-44).

The distribution of smeared-indented vessels such as are found at Tesuque By-Pass is presumably the same as that of Santa Fe B/W (Mera 1935: 14), but it is nowhere given in detail. These vessels represent one of the earliest of the highly characteristic Rio Grande culinary wares. A variety of surface treatments have been recognized, but almost all share the quality of being smoothed subsequent to an initial surface manipulation. This secondary treatment, not unknown in other areas of the United States, inevitably produces classificatory problems. Perhaps this explains the virtual absence of detailed study of the Rio Grande culinary wares since the very excellent discussions by the late H. P. Mera.

The distribution of the ceramic complex associated with the Santa Fe Component at Tesuque By-Pass, then, may

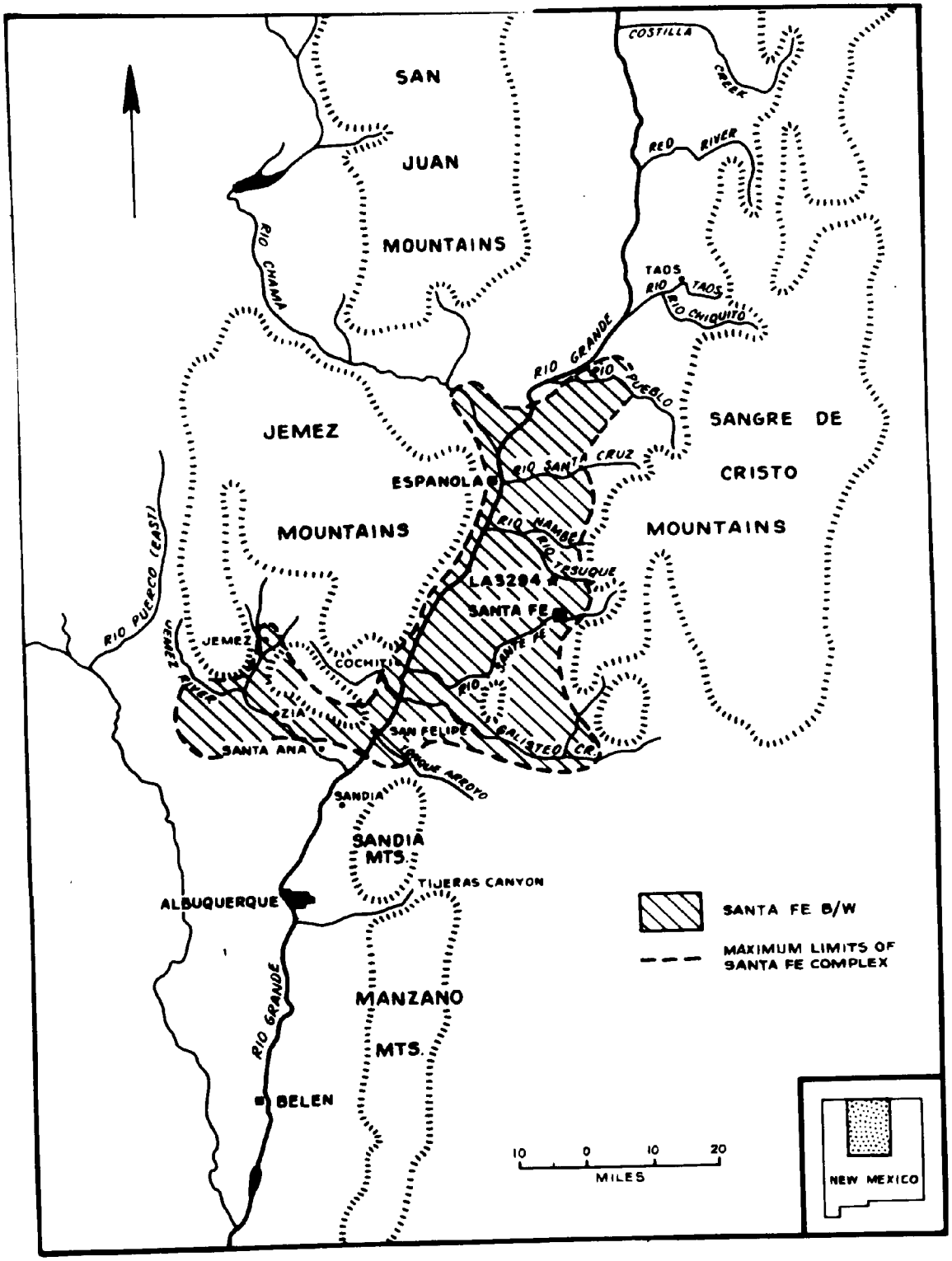


Fig. 19.-Distribution in the Rio Grande Valley of Santa Fe B/W pottery.

be taken as that of Santa Fe B/W pottery in the northern Rio Grande Valley.

If one can judge at all by the number of recorded sites, the Santa Fe period in the Rio Grande can be characterized as one of further population increase. (The ratio of sites with Santa Fe B/W present to sites with Kwahe'e B/W present, as recorded in the site files of the Laboratory of Anthropology, Santa Fe, is almost 3 to 1; the period of manufacture of the two types is approximately equal.)

Information from excavated sites is greater than for the earlier periods, and a summary of available data can be found in Wendorf and Reed (1955: 143-48). Because there is virtually nothing but the ceramic complex of the Santa Fe Component at Tesuque By-Pass to use in comparisons with other sites, the following paragraphs will emphasize pottery.

Almost all excavated sites that produce Santa Fe B/W have very elaborate ceramic assemblages, with later types of painted pottery well represented, if not predominant. These later pottery types were not present at the Tesuque By-Pass Site, and will not be discussed.

There is virtually no information concerning sites in which Santa Fe B/W is characteristic of a terminal occupation, as it is at Tesuque By-Pass. Such sites exist, and two may have been excavated. At Arroyo Negro (L.A.

114) and Mocho (L.A. 191), both mentioned above with regard to the Kwahe'e Component, indigenous pottery is described as Chaco II B/W, Red Mesa B/W, Kwahe'e B/W, Santa Fe B/W. The latest dendro-dates at the former are 1145 A.D., at the latter 1194 A.D. (Smiley, Stubbs, and Bannister, 1953: 22-23, 25-26). The extent of the Santa Fe B/W occupation at these two sites and the pertinence of the late dendro-dates to such occupations is, however, not known. Presumably these occupations are minor, as Wendorf and Reed show no Coalition Period occupation of either site (Wendorf and Reed, 1955: Fig. 3).

Excavations by Stubbs and Stallings (1953) at Pindi, about six miles southwest of Santa Fe, disclosed a large pueblo which had been formed by a number of sequent building periods. The pottery is divided into two main ceramic periods. The initial pueblo and possibly some of the earliest additions are associated with the first ceramic period. The painted pottery of this complex is characterized by a heavy preponderance (80-90%) of Santa Fe B/W, accompanied by a small proportion of Wiyo B/W and a very limited amount of Galisteo B/W (Stubbs and Stallings, 1953: 15). Culinary vessels are evidently smeared-indented (Stubbs and Stallings, 1953: 56) in most cases. The Santa Fe B/W was "fully developed" at the beginning of the pueblo's occupation (Stubbs and Stallings, 1953: 2). Wiyo B/W evolved locally from Santa Fe B/W and is thought to

have been manufactured from ca. 1300-1400 A.D. (Stubbs and Stallings, 1953: 50, Fig. 70). Galisteo B/W is another local development, evolved from Mesa Verde B/W. Indeed, "early Galisteo B/W" is Mesa Verde B/W; later sherds diverge from this type and are easily distinguished (Stubbs and Stallings, 1953: 15, 50)[2].

The original Pindi pueblo was built on a north-south ridge. It was a long, narrow, irregular building containing approximately 40 rooms, and two to three rooms in depth. The structure is actually a multi-unit building, comprised of contiguous units of ca. ten rooms and an associated kiva. On the east (front) of the pueblo there were three (possibly four) subterranean circular kivas. In addition to these, two or three rectangular rooms within the pueblo were so constructed as to indicate that they were used for ceremonies[3]. Walls were of adobe. Fireplaces were found

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[2]A brief digression is in order, to explain this peculiar classificatory scheme. There is considerable evidence that some of the last peoples to abandon Mesa Verde, at ca. 1300 A.D., moved into the upper Rio Grande Valley. They continued to make their characteristic painted pottery, designated by archeologists as Mesa Verde B/W. With the passage of time, the pottery changed; i.e., it continued to evolve. Archeologists, rather than break the obvious continuum between "Mesa Verde B/W made in the Rio Grande Valley" and "evolved Mesa Verde B/W, also made in the Rio Grande Valley", applied the term "Galisteo B/W" to the complete sequence. The resultant difficulties are obvious; it will suffice here to note that any inferences of "intrusive Mesa Verde B/W" versus "local Galisteo B/W" must be examined critically.

[3]Wendorf and Reed (1955: 146) apparently attribute all rectangular ceremonial rooms to later periods. Stubbs and Stallings (1953) do not assign the individual rooms to specific construction periods, but their room sections

in the three rectangular ceremonial rooms and in one other room; they were not common (as implied in Wendorf and Reed, 1955: 144; see Stubbs and Stallings, 1953: 31-32, site map).

A partial list of the artifacts from the first ceramic period deposits includes small side-notched projectile points; full-grooved axes of igneous rock (partially polished in most cases); numerous slab metates (one trough metate and one basin metate present); ornaments of turquoise, shell, and red shale; mammal leg-bone awls of types A-E; bird-bone awls, whistles, and beads; coiled and twilled basketry, represented by impressions on sherd exteriors; remains of corn and pumpkin. Turkeys were kept and apparently used for food in later periods of the pueblo. The turkey bone awls in the early pueblo may indicate the presence of domestic turkeys at this period also.

The earliest definite cutting date of wood from the first ceramic period deposits is 1246 A.D.; the latest is 1302 plus X (Stubbs and Stallings, 1953: Appendix B).

The absence of Wiyo B/W in the Santa Fe Component at Tesuque By-Pass suggests that the earliest Pindi Pueblo was occupied later than Tesuque By-Pass. This early period at Pindi, however, presents the only published information on a ceramic complex which is closely comparable to that of Tesuque By-Pass.

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indicate that some of these specialized rooms may have been used by the inhabitants of the original pueblo (Stubbs and Stallings, 1953: Fig. 26, room 121; Fig. 27, room 138).

Summary: The Santa Fe Component at the Tesuque By-Pass Site represents an early stage of Pueblo III in the upper Rio Grande Valley. The associated ceramic complex consists of carbon-painted Santa Fe B/W and smeared-indented culinary vessels. Non-pottery elements of this occupation cannot be isolated with any degree of certainty.

Material from the earliest pueblo at Pindi, which may be slightly later, indicates several new developments in this period. The pueblo itself consisted of a number of contiguous room-blocks, each with a circular subterranean kiva associated. Specialized rectangular rooms apparently were also used by the early occupants for ceremonies. Virtually all projectile points are side-notched, slab metates are characteristic, grooved axes are common, and bird-bone awls appear. Turkeys were probably kept as a source of both food and feathers.

These developments foreshadow a great expansion in the upper Rio Grande Valley, an elaboration of local carbon-painted pottery, the appearance of increasingly large pueblos, and the approaching dominance of the area in Pueblo history.

Summary. Examination of data from other sites in the upper Rio Grande Valley indicates that the various components and occupations at Tesuque By-Pass are representative of more widely distributed cultural complexes in the region. The pit-house occupation in the Intermediate Area may provide an exception.

No definite evidence was found for a Puebloan occupation of the Rio Grande Valley north of White Rock Canyon and La Bajada Hill prior to 800 A.D.

The Red Mesa material from Area B is characteristic of a well-developed early Pueblo culture. Some elements of this complex are found in earlier sites located to the south, between Albuquerque and San Felipe Pueblo; others are found in sites to the north, near Taos. The total complex, however, appears to be characteristic of the area between Santa Fe and the mouth of the Chama River (Fig. 17). There is virtually no evidence that this culture was evolved within the upper Rio Grande Valley; apparently it was introduced by Puebloan immigrants from some other area, beginning at ca. 900 A.D.

Absence of data, both basic and comparative, does not permit a satisfactory interpretation of the pit-house occupation in the Intermediate Area. It is apparently pre-Kwahe'e, but there are no closely comparable sites in the immediate vicinity. A close architectural parallel was noted at one of the early sites near Sandia Pueblo, but the comparison involves two rather irregular and poorly defined structures.

The Kwahe'e Component is typical of a period during which the earlier Pueblo complex (Red Mesa in Area B) changed and expanded. A number of new architectural forms appear, designs on painted pottery change, and corrugated culinary vessels begin to replace the earlier neck-banded

forms. Occupation intensity is increased, particularly in the area from Galisteo Creek north to the Chama (Fig. 18). Evidence from several sites, and L.A. 835 in particular, indicates that these changes were rapid but continuous. It seems probable that there was both local population growth and continued immigration during this period. Most of these developments took place from 1100-1200 A.D., but probably began as early as 1050 A.D.

The Santa Fe Component, the latest occupation at Tesuque By-Pass, represents an early stage of upper Rio Grande Pueblo III. Pottery similar to that of the Santa Fe Component is found at many sites throughout most of the upper Rio Grande Valley (Fig. 19), but usually in association with other, later, kinds of pottery not found at Tesuque By-Pass. Santa Fe B/W is distinguished from the earlier indigenous painted pottery by its different kind of paint (carbon) and the addition of new design elements. Excavations at Pindi indicate other changes and additions in non-ceramic traits during this general period. New architectural forms appear; side-notched projectile points, present in earlier periods, become the predominant type; slab metates are characteristic; grooved axes are common. Turkeys were probably kept for the first time as a source of food, and bird-bone artifacts become increasingly common.

The appearance of new traits, the evidence of continued population expansion, and the absence of information

concerning transitional sites indicate the possibility of further immigration into the valley.

The rather unimpressive Santa Fe Component of Tesuque By-Pass stands at the beginning of a period during which Pueblo culture of the upper Rio Grande Valley was to undergo accelerated change, incorporating new people and new ideas, to reach its maximal development in the great pueblos of the Chama Valley, the Pajarito Plateau, the Pecos and Galisteo valleys, and the Albuquerque area.

DISTRIBUTION OF TESUQUE BY-PASS CERAMIC COMPLEXES:

In the foregoing chapter, certain cultural developments in the valley of the upper Rio Grande were described with as few references as possible to neighboring areas. It was seen that the ceramic complexes of the Red Mesa, Kwahe'e, and Santa Fe Components at Tesuque By-Pass are characteristic of three major and consecutive periods of the early Puebloan sequence in a part of the upper Rio Grande Valley. In this chapter, the occurrence of these same and closely similar ceramic complexes in immediately adjacent areas is considered. Virtually all information pertinent to this discussion is derived from the pioneer surveys of the late H. P. Mera.

The Red Mesa ceramic complex of Area B is not widely distributed. The ubiquitous nature of Red Mesa B/W and neck-banded culinary vessels has been noted (see Fig. 20). The third element of this complex, "unidentified B/W",

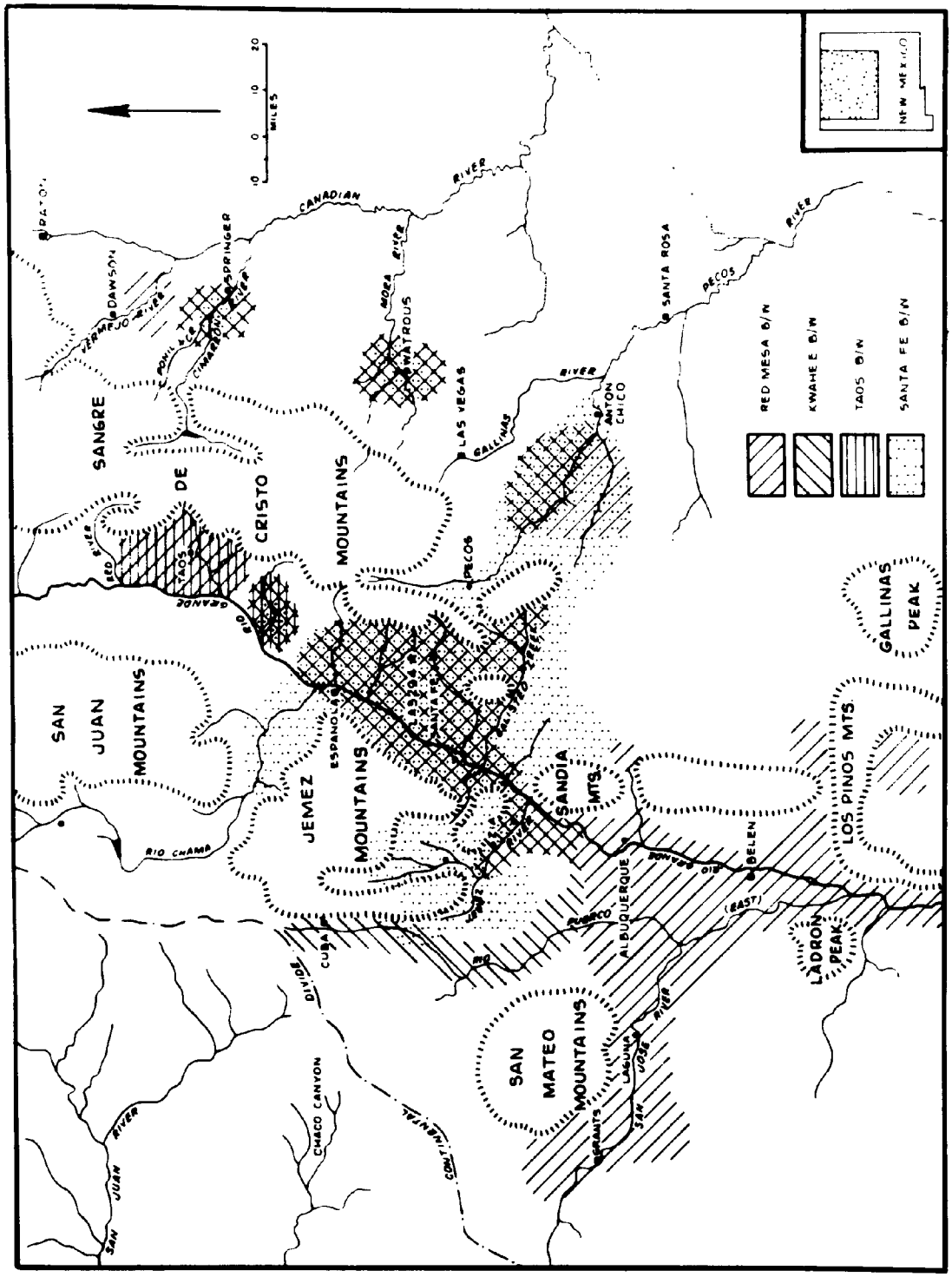


Fig. 20.-Maximum distribution of decorated pottery types found at Tesuque By-Pass Site.

largely represents a local pottery style which is, in part, transitional between Red Mesa and Kwahe'e ceramic techniques. The persistence and continued development of this local style is characteristic of the Taos region ("Taos B/W"; Mera 1936: 6), but in that area it is associated with a distinctive culinary tradition (Blumenschein 1953: 108-9). Investigations west of the Rio Grande in the Chama Valley (Mera 1935; Hibben 1937) revealed no early Puebloan sites whatsoever. I know of no occurrence of Taos B/W or similar material on the Pajarito Plateau, in the vicinity of Santa Fe, or southward. Hence, the total ceramic complex of the Red Mesa Component at Tesuque By-Pass does not appear to extend beyond the Rio Grande Valley; it is to be found primarily on the east side of the river, between Santa Fe in the south and the Rio Chiquito in the north.

The ceramic complex of the Kwahe'e Component at Tesuque By-Pass is found both east and west of the Rio Grande Valley (Fig. 20). East of the Sangre de Cristo range there are several clusters of sites upon which are found Chaco 2 (Red Mesa B/W, as used here) and/or Kwahe'e B/W pottery (Mera 1935: Map No. 1). These groups of sites, each centered on a western tributary of the Pecos drainage, are located along a line drawn from Raton, New Mexico, south-

west through Las Vegas (Fig. 20).[4] From the northernmost of these sites (on the Vermejo River below Dawson) and from the southernmost sites (south of the Pecos River above Anton Chico) only Red Mesa B/W is reported. Both Red Mesa B/W and Kwahe'e B/W are reported from the Ponil Creek-Cimarron River area above Springer, from the Mora River in the vicinity of Watrous, and north of the Pecos River above Anton Chico. There has been virtually no excavation in this eastern area (cf. Lutes 1959), but the absence of Kwahe'e B/W in the northern Vermejo River sites suggests initial Puebloan occupation or trade relationships characterized by Red Mesa B/W, and that Kwahe'e B/W was added to the ceramic complex at a slightly later date.

On the west side of the Rio Grande, there is no evidence of Kwahe'e B/W occupation in the Chama Valley or in the area to the north. Farther south, however, Kwahe'e B/W and Red Mesa B/W are found on both sides of the Jemez River west to Zia Pueblo (Mera 1935: Map No. 1). Mera (ibid.) indicates a westward extension of Kwahe'e B/W from the vicinity of Corrales (north of Albuquerque) to the Rio Puerco (East), and thence northward up the Puerco to its headwaters, near Cuba. He reports no Red Mesa B/W from these sites on the upper Puerco however, and indicates that its distribution lies to the west, up the San Jose

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[4]This line, incidentally, seems to mark the easternmost extension of Puebloan settlements in northeast New Mexico (Mera 1935: 5).

River past Laguna and Grants. Hence, the distribution of the total ceramic complex of the Kwahe'e Component seems to be: in the Rio Grande Valley, from Corrales north to a point slightly beyond the mouth of the Chama, with extensions up the Jemez River, but not up the Chama; east of the Rio Grande, in small enclaves on the Cimarron, Mora, and Pecos Rivers (Fig. 20).

Santa Fe B/W is apparently found east of the Sangre de Cristos in approximately the same areas as is Kwahe'e B/W (Mera 1935: Maps No. 1, 2; Stubbs and Stallings, 1953: Fig. 69; but compare Wendorf and Reed, 1955: 144, " . . . along the tributaries of the Canadian, the potters retained the mineral paint tradition throughout the Coalition Period . . ."). From the Pecos River sites, however, Santa Fe B/W extends both northwest to Pecos Pueblo and west past the south end of Glorieta Mesa to the Rio Grande (Fig. 20). West of the Rio Grande, Santa Fe B/W is found up the Chama and its tributary valleys to Abiquiu, throughout the northern and western reaches of the Jemez drainage, and still farther west to the vicinity of La Ventana on the Rio Puerco.

It has been observed that Santa Fe B/W is frequently found in company with later painted pottery, and therefore it cannot be assumed that the total distribution of Santa Fe B/W necessarily reflects the spread of early and/or "pure" Santa Fe sites. Mera indicates that early (indeed, formative) sites are to be found in the Jemez drainage and

west to the Puerco (Mera 1935: 11-12). Occupations characterized by Santa Fe B/W unmixed with other types have been found in this area (Ellis n.d.). In the Rio Grande Valley, relatively unmixed occupations are found at Pindi, possibly at Potsuwii II (Wendorf and Reed, 1955: 144), and, of course, at Tesuque By-Pass. Others are located on the Pajarito Plateau (site files; Laboratory of Anthropology, Santa Fe). Although the data are not specific, there is no indication of an extensive pre-Wiyo Santa Fe B/W occupation in the Chama Valley. There is, then, some indication that early Santa Fe B/W sites are found in the southern and central sections of its distribution, but not in its northern extension up the Chama Valley. Later sites, upon which Santa Fe B/W is found, occur throughout its area of distribution, with the possible exception of the enclaves east of the Sangre de Cristos.

Summary: The specific ceramic complexes of the Red Mesa, Kwahe'e, and Santa Fe Components at Tesuque By-Pass are largely restricted to the valleys of the Rio Grande and its tributaries from the Jemez to the Chama, and to small groups of sites east of the Sangre de Cristo Mountains. Each of the ceramic complexes is apparently distributed more widely than its predecessor. Major elements of each complex are found west of the valley, but not in the combinations characteristic of the Rio Grande area. The occurrence of apparently early Santa Fe complex

sites on the upper Jemez and possibly west to the Puerco may provide an exception to this statement.

DISSIMILAR OCCUPATIONS WITHIN THE UPPER RIO GRANDE VALLEY:

The "upper Rio Grande Valley" was originally described as extending from Isleta Pueblo in the south to the New Mexico-Colorado line in the north, following the definition of Wendorf (1954) and Wendorf and Reed (1955). Yet, in discussing sites comparable to the components at Tesuque By-Pass, reference has been made but rarely to those portions of the valley which lie north of the Chama or south of the Jemez Rivers. It is my purpose, in this section, to describe briefly the (Puebloan) cultural developments in these two regions, to which I shall refer as the "Taos Area" and the "Albuquerque Area", respectively.

The Taos Area. There is no evidence for intensive occupation of the San Luis Valley in Colorado or of the Rio Grande Valley in northernmost New Mexico (Renaud 1942, 1943), and Puebloan occupation of the Taos area does not extend beyond Red River, ca. twenty miles north of Taos Pueblo.

As was first noted by Mera, the progressive deterioration of slipping techniques which characterizes the painted pottery of the Tesuque area in post-Chaco 2 times (e.g., Kwahe'e B/W) did not take place in the Taos area. On the contrary, the latter region was unique in that its

potters adhered to the use of a carefully applied slip "until the end" (Mera 1935: 6-7). A divergence from the designs of Chaco 2 pottery did take place, which apparently paralled that of the more southern potteries. To this local painted pottery was applied the name Taos B/W (Mera 1935: 7). Regarding the appearance of Santa Fe B/W in the Rio Grande Valley, the same author observes that it was not adopted in the Taos area. Taos B/W remained in use "practically unchanged" not only during the spread of Santa Fe B/W "but also through a number of the evolutionary changes of the latter." (Mera 1935: 8). The continued use of well-slipped mineral-painted pottery throughout the prehistoric Puebloan occupation of the Taos area is also noted by Wendorf and Reed (1955: 144).

The rectangular and circular pit-houses of this region (Blumenschein 1956, 1958) have been described. It was observed that the associated ceramic complex consisted of plain and incised culinary vessels, with a few, presumably intrusive sherds of "P I-P II Chacoan types" dated 1000-1150 A.D., and, possibly, a few sherds of Taos B/W. In contrast to the Santa Fe-Tesuque area, and the Puebloan area in general, the architectural and ceramic complexes of these sites are quite distinctive. This is particularly true with regard to the pottery of the Taos area.

Blumenschein (1958: 110-11) also reports the presence of "numerous P II unit-type pueblo ruins" in the Taos area, and occasional P III manifestations. The painted pottery

associated with the Pueblo II structures is evidently a variety of Taos B/W. Of a Pueblo III site north of Ranchos de Taos, with superimposed two-story house blocks, it is said "Taos Black-on-white was the dominant pottery in the lower level, with Santa Fe Black-on-white showing an increasing percentage in the upper." (Blumenschein 1956: 56).

In 1920, Jeançon (1929) excavated a small pueblo just south of Ranchos de Taos, near Llano (cf. L.A. 1892, "Jeançon's Site" in Smiley, Stubbs, and Bannister, 1953: 38). Jeançon, of course, did not employ Mera's later type terminology, but the painted pottery from this site has been described as Taos B/W, Santa Fe B/W, and Taos Incised (ibid.). Wendorf and Reed, however, note that "the decorated pottery at the Llano Site was similar to that found in the same area during the Developmental Period [i.e., Taos B/W and Chaco II or Red Mesa B/W]. The designs were primarily Chaco-related hatched elements executed in a mineral paint. In the culinary pottery incising was frequently used, often in imitation of neck-banding." (Wendorf and Reed, 1955: 148; my parentheses). There is no reference to carbon-painted Santa Fe B/W.

The site which Jeançon excavated was a small pueblo enclosing a small, roughly square, plaza. Within this plaza, and occupying most of its area, there was a single circular subterranean kiva (Jeançon 1929: 10, Fig. 2). This pueblo was constructed upon the debris of an earlier one; walls of the latter were encountered during the exca-

vations, but were not traced.

Jeançon excavated at several sites in the Taos area during 1920, and it is sometimes impossible to determine which sites his artifact descriptions pertain to. It seems, however, that both slab and trough metates were found at the Llano pueblo and that projectile points were typically side-notched (Jeançon 1929: 17; Pl. 6 a, b; Pl. 9). No axes were found.

Concerning pottery, Jeançon observes that, although corrugated sherds occurred in abundance on the surface, none came from the ruin. Culinary vessels were coiled, then wiped with a corncob or some other rough object, and frequently incised (horizontally) about their upper portions (Jeançon 1929: 20, Pl. 12). In the Taos region, Jeançon observes, "fully one-third of the sherds are a very good white with jet black decorations." (Jeançon 1929: 21). He also notes that the slip tends to crackle or craze upon exposure to the elements, since buried sherds do not have a crazed slip although sherds on the surface do. Bowls are decorated on their exterior surface as frequently as they are on their interior. Although many of the sherds illustrated (Jeançon, 1929: Pl. 14) are apparently Taos B/W, a number of his design elements (Jeançon 1929: Figs. 8-10, 11 a, b, c, d) do not conform to those described for this pottery.

Although one cannot be certain at all times of the particular site being discussed by Jeançon, the references

to crazed slips, exterior decoration of bowls, interlocking frets and other designs indicate that the statement of Wendorf and Reed, quoted above, presents an oversimplification of the ceramic complex. On the other hand, crazed slip (characteristic of, but not restricted to, Galisteo B/W) and exterior bowl decoration (associated, in the Rio Grande Valley, most commonly with Biscuit B) are not characteristic of the Santa Fe B/W mentioned by Smiley, Stubbs, and Bannister. It seems best to conclude that the ceramic complex at the Llano site consisted, as stated by the latter authors, of Taos B/W, Santa Fe B/W, Taos Incised, and probably some other kinds of decorated pottery, transitional between Taos B/W and Santa Fe B/W and/or representing ceramic trends which postdate the appearance of Santa Fe B/W. No definite (cutting) dendro-dates have been determined for this occupation; presumably the series of dates from 1207 plus -1239 A.D. (no cutting dates; Smiley, Stubbs, and Bannister, 1953: 38) is derived from this pueblo.

This must conclude the discussion of excavated sites in the Taos area. Blumenschein (1958: 110) feels that, on the basis of intrusive sherds found on sites in this area, the following chronology applies to the Taos region:

	beginning date	end date
Pueblo I	950 A.D.	--
Pueblo II	1100 A.D.	1200 A.D.
Pueblo III	--	1350 A.D.

The end date for Pueblo III marks either a temporary abandonment of this area by all Puebloans or their permanent retraction into the immediate area of present-day Taos and Picuris pueblos. It is of interest to note Stubbs' statement that the site of Picuris Pueblo has been occupied "at least since 1200" (Stubbs 1950: 27).

Before summarizing such information as is available from the Taos area, it is convenient to present data from perhaps the only sizeable excavation in any of the Puebloan enclaves east of the Sangre de Cristos. The presence of Red Mesa B/W, Kwahe'e B/W, and probably Santa Fe B/W has been noted in the Ponil Creek-Cimarron River area (Fig. 20), northeast across the mountains from Taos. Lutes (1959) has recently described excavations in the north Ponil region which disclosed Puebloan architectural features such as rectangular rooms with slab-based and adobe walls, adobe rimmed hearths with deflectors, and jacal, a ceramic complex composed primarily of unpainted pottery, an extensive inventory of stone artifacts, and much animal-bone refuse.

Because of the apparent absence of cranial deformation, stone axes, kivas, squash, and beans; the small proportion of painted pottery; and the well-developed hunting complex which has elements in common with non-ceramic occupations in this area, Lutes concludes that "Altogether, it seems doubtful that the main roots of this culture lie in the Rio Grande." (Lutes 1959: 67). The unpainted pottery at

this site is described as "sand-tempered and generally of a soft, friable, blackish or (less frequently) reddish paste . . . Incised and punctated designs were found separately and together on 10% of the unpainted sherds. Incised designs usually were a series of horizontal lines on the upper portions of vessels, while punctate decoration was . . . in herring-bone patterns on vessel necks. Other surface treatments were: banded - 9 sherds; washboard corrugated - 2 sherds; plain - 295 sherds." (Lutes 1959: 62). Of a total 377 sherds, only 20 were painted, the majority of which were Kwahe'e B/W and Taos B/W. This ceramic complex has a great deal in common with that described by Blumenschein (1958) for the Taos pit-houses, differing primarily in that the latter collection shows a higher incidence of incising.

Summary: The Taos Area was apparently occupied by pottery-making peoples at ca. 950 A.D. Both rectangular and circular subterranean structures were constructed during this early period.

Throughout the prehistoric occupation of the area, a distinctive tradition of culinary vessel decoration was maintained. Horizontally incised, punctated, and (corncob?) scored vessels were popular; neck-banded and corrugated vessels were not. (This same culinary tradition is found in one of the northeasternmost of the ceramic enclaves in New Mexico, east of the Sangre de Cristos.) Painted

pottery, particularly during the earlier occupations, was primarily a local development of Chaco 2-Red Mesa B/W ceramic techniques. The use of heavy white slip and mineral paint was continued in the Taos area long after they were discarded or replaced in the remainder of the upper Rio Grande Valley. There was, however, some penetration of Santa Fe B/W, and possibly later types of carbon painted pottery, into the southern part of this area during the post-1200 A.D. period. Apparently these types never became common in this region.

The Taos area was either temporarily abandoned by Puebloan peoples ca. 1350 A.D., or else the population withdrew to the present locations of Taos and Picuris Pueblos.

The Albuquerque Area: The presence of early sites in the areas of Tijeras Canyon, Sandia Pueblo, Zia Pueblo, Santa Ana Pueblo, and San Felipe Pueblo has been mentioned. With these exceptions, I find no other excavation reports pertaining to the BM III, P I, P II, and early (unmixed Santa Fe B/W) P III occupation of the area south of the Jemez drainage, west of the Pecos, north of Isleta Pueblo, and east of the Puerco. There has been virtually no other excavation of early sites in the area. Just north of Albuquerque, a circular subterranean structure with an antechamber, possibly BM III, has been excavated (F. H. Ellis, personal communication) and Dawson has recently

surveyed the valley of the Rio Puerco west of Albuquerque (Dawson, personal communication).

Information regarding the early Puebloan sequence in the Albuquerque Area, then, is severely limited, particularly so in its southern section. Before considering the few excavated sites in the region I turn, inevitably, to the surveys of H. P. Mera, to present an outline of the ceramic developments which apparently took place in this and adjacent areas.

The early black-on-white pottery in the Albuquerque Area is described by Mera as Chaco 1 and Chaco 2 black-on-white. This is the same painted pottery which is found on the early Puebloan sites north to La Bajada Hill, beyond which only Chaco 2 (Red Mesa B/W) seems to be represented. From Albuquerque south past Isleta to the vicinity of Socorro, small sites with Chaco 1 (occasional sherds only) and Chaco 2 B/W are found in the Rio Grande Valley, in the East Puerco Valley to the west, and on the highlands which separate the two rivers. Extensions of this pottery east of the Rio Grande Valley, and particularly of Red Mesa B/W, are found below the Manzano Mountains.

Still farther south in the Rio Grande Valley, between Socorro and Hot Springs (Truth or Consequences), Mera distinguished another early (BM III-P I) black-on-white pottery, which he designated San Marcial B/W (Mera 1935: 25-26). Subsequent surveys have located varieties of San Marcial B/W to the north in the upper Jornada del Muerto,

the Rio Salado drainage (Site files, Laboratory of Anthropology, Santa Fe), still farther north in the Puerco Valley (Dawson, personal communication), and in the Jemez drainage (Allen and McNutt, 1955; Vytlacil and Brodie, 1958).

Throughout the greatest part of this region, however, the early black-on-white pottery is associated with a plain brown culinary ware. Brown culinary pottery is characteristic of southern New Mexico in general (cf. Mera 1943; Wheat 1955). In the Rio Grande Valley, the transition zone betwen the southern brownware and the more northern gray paste pottery is between Albuquerque and Isleta Pueblo; Mera uses the 35th degree of latitude as a boundary (Mera 1935: 1, 24-26; cf. Danson 1957: 101-2).

The next major ceramic development to affect the Albuquerque Area was the appearance of a thinly-slipped black-on-white pottery characterized by hatchure, some broad-line designs, and arrangements of opposed hatched and solid figures. This pottery, Socorro B/W, is found not only throughout the Albuquerque Area south of Corrales, but west to Grants and south from Laguna to the Rio Salado.

Throughout its area of distribution, Socorro B/W is associated with a distinctive brownware bowl. The vessels were formed by very thin overlapping coils, ca. 1/16 inch thick. Coils were not obliterated on the upper exterior surface of the bowl, but were allowed to remain as prominent ridges. Vertical and diagonal lines of punctates were

commonly superimposed upon the ridges. The interior of the bowl was carefully smoothed and subsequently smudged. Mera designated this vessel type Los Lunas Smudged. Other brownware forms, primarily jars, are found, exhibiting a variety of surface manipulations, such as narrow neck-banding, neck-ribs, occasional corrugation and punctates used in combination with banding or ribs.

During the development of the Socorro B/W-Los Lunas Smudged complex, the people east of the Rio Grande apparently continued to produce varieties of Red Mesa B/W. In the Albuquerque Area, the Socorro-Los Lunas pottery seems to have remained in style during the greater part of the period with which we are concerned. Late P III sites in the area show rather heterogeneous black-on-white types related to both Socorro B/W and Mesa Verde B/W, associated with an early type of glaze pottery (Los Padillas Glaze Polychrome; Mera 1935: 31-33).

Throughout the greater part of this period, then, the southern Albuquerque Area has its strongest ceramic affinities with areas to the west and southwest (see also Reed 1955) rather than with the Rio Grande Valley to the north.

Excavations in the Albuquerque Area have, as has been noted, disclosed a number of early sites in the region from Albuquerque north to a point slightly beyond the confluence of the Jemez River and the Rio Grande. These sites will now be considered in some detail, not only because

they provide our only data from this area but also because they are pertinent to an understanding of the early Pueblo occupations of the regions to the north.

At the Tijeras Canyon site (Wendorf n.d.) a circular semi-subterranean structure was found with a ventilator on its east side. Construction features include four roof support posts set a short distance in from the wall, a deflector resting in a prepared socket in front of the ventilator opening, and pole-reinforced walls (Wendorf 1953: 51). It is noted that "A firepit was probably present, but was destroyed during the excavation." (ibid.). Early painted pottery, classified as Whitemound and Red Mesa B/W, and brownware culinary vessels were associated with this structure (Wendorf, n.d.; 1953: 51). Later sherds (Galisteo and Santa Fe B/W) were also found at the site, probably representing a later occupation.

In the vicinity of Sandia Pueblo, Peckham (1957) excavated three sites in which Red Mesa B/W was the dominant painted pottery. At each site, L.A. 3289, 3290, and 3291, semi-subterranean structures were found. Small, roughly rectangular surface rooms were located at L.A. 3289 and L.A. 3290.

At Site L.A. 3289, the great majority of the unpainted pottery is classified as Lino Gray, the smooth-surface gray culinary pottery characteristic of Basketmaker III. Neck-banded sherds (Kana-a Gray) are present, but in small

numbers (Peckham 1957: Fig. 27).[5] In addition to Red Mesa B/W, other painted pottery, classified as Lino B/G and Kiatuthlanna B/W, was recovered from the excavations as minor types. These latter are considered characteristic of Basketmaker III and Pueblo I ceramic complexes, respectively. Decorated pottery types found (only) on the surface vary from La Plata B/W through the Tewa series, representing all stages from Basketmaker III through Pueblo IV. The various surface finds are few in number, and the late sherds are doubtlessly intrusive (Peckham 1957: 57).

Peckham feels that there are two occupations represented at this site, Basketmaker III and Pueblo I (Peckham 1957: 67ff.). This interpretation is apparently based upon the presence of two distinctive architectural styles, a shallow squarish house with a short, wide lateral annex or entry on the west, four-post roof support, and a central hearth (interpreted as Basketmaker III) and a deeper, circular structure with a ventilator on its eastern side, four-post roof support, central hearth and ashpit, sipapu, and ladder sockets (interpreted as Pueblo I). The differences in the pottery associated with the two structures are remarkably slight, however, and even these are not entirely

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[5]Peckham does not distinguish rim-sherds and body sherds of Lino Gray. It is important for the reader to understand that Lino Gray ("Basketmaker III") and Kana-a Gray ("Pueblo I") are distinctive only in surface treatment of the neck area. Body sherds of the two types are indistinguishable, and many of the Lino Gray sherds from the Sandia sites doubtlessly represent lower portions of neck-banded (Kana-a) vessels. For another example of this unsatisfactory practice, see Allen and McNutt, 1955.

consistent with his interpretation.

Projectile points (all surface finds) were typically of obsidian, small, with a triangular blade, corner-notches forming an expanding stem narrower than the blade, and a convex base. A single metate was found; it was troughed, with one end open. Two manos with a single grinding surface were found. Other artifacts are primarily chipped stone forms. It should be noted that the total artifact inventory from this site is small.

L.A. 3290 is located approximately 700 feet from the site just discussed. The major elements in the ceramic complex are Lino Gray, Kana-a Gray, Alma Plain, and Red Mesa B/W. Lino Gray comprises a much smaller proportion of the total collection than at L.A. 3289, but Kana-a Gray (neck-banded), Alma Plain, and Red Mesa B/W are present in much higher percentages.

Structures at this site are interpreted as Basketmaker III (Room 5, a shallow rectangular structure with a short stepped entry on its south side and apparently a four-post roof support); Pueblo I (Room 1, a deep circular structure with a ventilator on its east side, four-post roof support, central hearth and ashpit, sipapu, ladder holes, and a deflector; possibly Room 2, a shallow oval structure with poorly defined floor features) and possibly Pueblo I or early Pueblo II (Room 3, a deep, rounded-rectangular structure with a ventilator on its east side and floor features

comparable to those of Room 1). In this interpretation, the Basketmaker-Pueblo stages are used as chronological periods, e.g., "the Basket Maker III period" (Peckham 1957: 68), and the inference is either of a long occupation involving only one or two structures at a time, or at least two periods of occupation at the site. Although this is quite possibly correct, it is equally probable that but one relatively short occupation is represented. Any interpretation of these sites must be tentative, due to the small number of sherds present and to the fact that body sherds of Lino Gray and Kana-a Gray vessels cannot be separated.

Three pipes (conical cloud-blowers) were found at this site. Two, of stone, were associated with burials in Room 1, and one, of clay ("brownware"), was found in the fill of this same structure. Projectile points are small and triangular, with and without corner-notches. Several varieties of chipped stone scrapers were found; hammerstones, choppers, and cores were relatively abundant. No metates were found, but manos with one grinding surface were present. No information concerning the contours of the grinding surfaces is given. A small turquoise pendant was found on the surface. A splinter of bone was sharpened for use as an awl (Kidder's awl type E). Two beads, one of bird-bone and one of shell, were found on the surface. A shell gorget (Haliotis sp.) was associated with a burial in Room 1.

At L.A. 3291, located some 250 feet WNW of L.A. 3289, the major elements of the ceramic complex are Lino Gray, Kana-a Gray, and Red Mesa B/W. Proportions of Lino Gray and Red Mesa B/W are quite high, whereas the neck-banded Kana-a forms only ca. 10% of the collection. Kiatuthlanna B/W and a worked sherd of Socorro B/W are present as intrusives.

There is evidently but one structure at this site, a semi-subterranean, roughly circular dwelling or kiva, with a ventilator on its southeast side, four-post roof support, central hearth and ashpit, sipapu, ladder sockets and pole-reinforced walls. This structure is interpreted as a Pueblo I pit-house.

Only six artifacts, other than unworked sherds, are reported. One of these is the worked sherd of Socorro B/W mentioned above. The only other diagnostic artifact is a relatively large point or knife, with slightly a-symmetric, convex blade edges, corner-notches, and a short, slightly expanding stem.

On the west side of the Rio Grande, and in the vicinity of Zia Pueblo, two structures are reported by Vytlacil and Brodie (1958). The structures are roughly circular, semi-subterranean, with entries or ventilators on their southeast side. House I has a four-post roof support with the uprights set near the walls, a central hearth and ashpit, sipapu, and either ladder sockets or posts to support

a deflector. House II has complicated and poorly defined floor features which include a central fire area, ladder sockets and/or deflector posts, and numerous small pits and depressions. Two floors were found in this structure. A bulbous passage on the southeast side of the structure seems to be quite definitely a ventilator shaft, although its shape is atypical. It is possible that the ventilator was associated with the upper floor only, and that it was made by remodelling a bulbous entrance which was associated with the lower floor.

The two structures are interpreted as different occupations, Pit-House I was late Basketmaker III-early Pueblo I and Pit-House II as late Pueblo I-early Pueblo II (Vytlacil and Brodie 1958: 177, 183). The ceramic samples obtained from the structures are in accord with this interpretation.

A single neck-banded (Kana-a) vessel was found in Pit-House I, and painted pottery is classified as Kiatuthlanna B/W, La Plata B/R, and San Marcial B/W. The latter two pottery types were recovered from the surface only.

Associated artifacts include a shallow basin metate, a tri-facetted two-handed mano, a bi-faced one-hand mano, and fragments of two corner-notched obsidian points. The tri-facetted mano implies the use of a trough metate.

The ceramic assemblage associated with Pit-House II has a higher proportion of neck-banded (Kana-a) sherds, and Red Mesa B/W is the dominant painted pottery. Two

floor levels were found in this structure, but the ceramic complex associated with the different floors is virtually identical. Intrusive painted pottery (all from the upper fill) is classified as Kiatuthlanna B/W, La Plata B/R, San Marcial B/W?, and Socorro B/W. In passing, the authors must be commended for their care in separating neck-banded (Kana-a) and plain (Lino) types on the basis of rims only, and for not assigning the plain body sherds to either category.

A pottery pipe fragment was associated with the lower floor of the structure. Three points are described as tanged and one is of San Pedro type (all from upper fill). Manos are tri-facetted (fill, upper floor), bi-faced (upper floor, lower floor), and single faced (ventilator). No metates were found. A broken three-quarter grooved polished axe or maul was found in the fill and a full-grooved, basalt axe was found on the lower floor. Two turquoise pendants were found in the fill and a bead of the same material was found on the lower floor. Three bone awls were found in the upper fill, but no descriptive details are given. A single bone bead was recovered (lower floor), and beads of olivella shell (fill, ventilator) and seeds (fill) were also found.

Two other features were found during the excavations near Zia. One was a shallow basin, 6 to 7 inches deep, roughly circular with a diameter of 7 feet 7 inches. Its floor was unplastered and contained no other features. No

pottery was found in this basin-shaped structure, and associated stone artifacts are not described in detail (cf. Vytlacil and Brodie 1958: 178). A second structure, interpreted as an above-ground storage unit, is described as having a circular floor with a diameter of 4 feet 6 inches. No artifacts were associated with this feature.

In the vicinity of Santa Ana Pueblo, another early site is described by Allen and McNutt (1955). Here, in a small area, several hearths were found at or near surface level and two deeply buried circular structures were discovered in bull-dozer cuts made by a construction crew.

The site is interpreted as representing a single BM III-P I occupation. The ceramic complex contained neck-banded and plain culinary vessels, and the major painted pottery is classified as San Marcial B/W. Unfortunately, the authors did not distinguish plain body sherds from plain rim sherds, but described both classes as afinis Lino Gray. My notes indicate that in the afinis-Lino series, twenty-two rim and neck sherds were found on the surface and two were found in Pit-house 2.

The structures, interpreted as pit-houses, were circular, with four-post roof supports, central hearths, ash-pits, and lateral passages on their east sides. The latter were interpreted as entries, but it is possible that they were ventilators, as suggested by Wendorf (Wendorf and Reed, 1955: 139) and Peckham (1957: 69). Pit-house 2 had, in

addition to the above features, indications of pole-reinforced walls, and two holes in front of the ashpit which may represent auxiliary ashpits, ladder sockets, or deflector posts.

Almost no artifacts, other than sherds, were found. A cloud-blower pipe (clay) and a relatively large, tanged obsidian point with two notches in each blade edge were found in Pit-house 2, and a serrate obsidian point with corner-notches and a deeply concave base was found in one of the hearths.

Returning to the east side of the Rio Grande, an early site is described in the vicinity of San Felipe Pueblo by Peckham (1954). Here, portions of three very irregular and poorly defined structures, interpreted as surface rooms of jacal construction, were found near a deep circular structure with four-post roof support, central hearth and ashpit, sipapu, ladder socket, deflector, and a ventilator to the north. The latter is interpreted as a kiva, and the site is described as probably representing a single Pueblo I occupation.

The ceramic complex at this site presents certain problems, as noted by Peckham (1954: 51). Identified painted sherds come from a single vessel of atypical Red Mesa B/W, and were found on the kiva floor and in one of the surface rooms. Culinary vessels were represented by almost 900 sherds, all of which were plain surfaced and

comparable to Lino Gray. No neck-banded sherds were recovered, although neck-banded vessels occur at other sites in the immediate vicinity associated with apparently earlier painted sherds (ibid.).

Among the artifacts from the site were a simple triangular point, thumbnail scrapers, trough metates (one with one open end), uni-face and bi-face manos. One of the bi-face manos is described as lens-shaped in cross-section and notched [grooved?], and another is wedge-shaped in cross-section.

Summary: The Albuquerque Area was occupied by Puebloan groups fairly early, with respect to the rest of the upper Rio Grande Valley. Some structures in this region have been interpreted as Basketmaker III, and may have been constructed by 700-800 A.D., if not earlier.

Each of the early sites in the northern Albuquerque Area is distinctive in its total ceramic inventory, yet it is not possible to give an unequivocal interpretation of any one of them, or to demonstrate a relative, temporal sequence for them. The major factor which contributes to these difficulties is the very small number of artifacts, ceramic and other, which can be associated positively with the structures concerned. There are, on the other hand, certain characteristics found at all or most of these small sites.

Approximately circular, semi-subterranean structures

with lateral passages on their east or southeast sides and a four-post roof support are found at all sites except the one near San Felipe Pueblo. The latter had a ventilator on its north side. The shape of the structures is a flattened circle (D-shaped), rounded-rectangular, or circular. The lateral entries are, in many cases, ventilator tunnels; entry passages may be present at the sites near Zia and Santa Ana. Insofar as can be determined, all of these structures had centrally located hearths and an ashpit. Hearths are normally circular with a raised adobe rim, and ashpits are usually separate, unrimmed depressions in front of the hearth. Sipapus are usually found, and holes in front of the ashpit (ladder sockets and/or deflector supports?) are common. Pole-reinforced walls, sockets for ventilator-dampers, and a united hearth-ashpit complex occur, but are not common.

Pottery is predominantly gray paste ware with small percentages of mineral painted sherds. Neck-banded culinary vessels are present at all sites excepting the one near San Felipe and possibly the Tijeras Canyon site. Brownware is present at Tijeras Canyon, L.A. 3290, Santa Ana, L.A. 3289 and L.A. 3291, in order of decreasing representation.

Non-ceramic artifacts from the sites have been discussed. The individual assemblages are too small to permit extensive comparison, but basin and trough metates and corner-notched projectile points seem to be characteristic.

It is of interest that the sites containing greater proportions of brownware are those at which uncommon architectural features, such as pole-reinforced walls, united hearth and ashpit, and sockets for ventilator-dampers are also to be found.

There are no excavated late Pueblo II or early Pueblo III sites in the Albuquerque Area, but surface surveys indicate that the central and southern parts of the region partake of changes in pottery manufacture characteristic of areas to the south and west of the upper Rio Grande Valley. The northern part of the Albuquerque Area, in the vicinity of the Jemez River, shows ceramic affiliations with the Santa Fe and Tesuque regions to the north.

ORIGINS OF EARLY PUEBLOAN OCCUPATIONS IN THE UPPER RIO GRANDE VALLEY:

In the previous sections, the early Puebloan occupations of the upper Rio Grande Valley have been described. Allusions have been made to the appearance of new traits and to "possible immigrations". The discussion has now reached a stage where such eventualities may be examined more closely.

Before pursuing these matters further, it is appropriate that I state briefly my feelings about what J. O. Brew might call the use and abuse of migrations. Overly enthusiastic postulations of migration have been a part of prehistory since scholars first attempted to identify the

Ten Lost Tribes. Some investigators may infer a migration on the basis of a single find; others deny the probability of migration unless the complete cultural inventory of the supposed immigrants can be duplicated by a reported discovery at a single spot in the presumed homeland. I do not feel that it is necessary, or even advisable, to take a strong stand at either of these extremes. The discovery of a single item of exotic type does admit at least the possibility of a small group of people moving into, or passing through, an area. If, on the other hand, a completely foreign cultural complex, well-known from another region, is found in any area, a strong probability of immigtation is established. Indeed, if such a hypothesis of migration can be corroborated by the association of distinctive skeletal remains, the probability of the migration will be established insofar as it is possible for the archeologist to do so.

The latter case, in which a "most probable" migration can be postulated, is dependent upon the existence of several factors, however, which are not characteristic of migrations as such. Specifically: (1) the migration must be rapid; (2) the peoples moving must remain intact as a social unit; (3) the immigrants must be able to continue their old way of life in their new location with no appreciable period of adjustment to a new environment; (4) the source of immigration must have been the subject of archeologic investigation. If any one of these conditions is

not fulfilled, I doubt seriously that the cultural complex of the immigrant colony will be duplicated by completely corresponding complexes reported for the homeland.

Rouse (1958) has recently summarized the more conservative approach to migration theories which, in my opinion, demands the existence of these conditions. In taking this position he is in excellent company, composed primarily of scholars who have either wearied of the numerous but undemonstrable mass movements postulated at one time or another, or who have witnessed the discredit of apparently well-founded theories of migration. There seems to be an explicit feeling, however, that migration is a second-class concept, that it should not be introduced at all unless it can be demonstrated that "some other hypothesis, such as independent invention or diffusion of traits, does not better fit the facts of the situation." (Rouse 1958: 64). Caution should be an accepted policy in making any of the above inferences, and Rouse has set forth the specific reasons for caution toward migration inferences in an excellent manner. I still feel that migration is a valid interpretive concept, and that it should not be disregarded whenever it cannot be virtually proven.

In most situations, the archeologist can only regard migration as more or less probable, depending upon such data as are available. At present, there is no accepted way of ordering the probabilities of migrations postulated on the basis of different traits (e.g., ceramics vs. archi-

tecture) and the matter is admittedly subjective. It is with such "possible migrations" that students of the Rio Grande Valley must be concerned.

It is most probable that the earliest Puebloans in the northern Rio Grande Valley were immigrants from somewhere within the area south of Mesa Verde, west of the East Puerco, north of the Datil Mountains, and east of the Chuska-Lukachukai-Carrizo Mountains. This region, consisting of northwestern New Mexico and an extension into southwestern Colorado, corresponds roughly with the "Chaco-San Juan", and includes two climax areas of Pueblo culture: Chaco Canyon and Mesa Verde. The term "Chaco-San Juan" will be used in this discussion to designate the area just defined.

Early ceramic developments in the Chaco-San Juan present striking parallels to the Red Mesa B/W and Kwahe'e B/W pottery sequence of the northern Rio Grande Valley, with regard to vessel form, finishing techniques, paint type, and decorative motifs. Ceramic typology in the area is quite frankly in a state of great confusion (cf. Gladwin 1945; Reed 1958), but the pottery of which I speak has been classified at one time or another as Kiatuthlanna B/W, Red Mesa B/W, Escavada B/W, Gallup B/W, Chaco Transitional, Chaco II, and Mancos B/W.[6]

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[6]It is beyond the purpose of this paper and my own capability to resolve this confusion. It has arisen

Throughout most of the Chaco-San Juan, carefully slipped pottery decorated with Red Mesa style designs in mineral paint can be found in late P I and/or early P II horizons. In the following period, the slip becomes poorer and hatchured design elements become prominent. During these changes, neck-banded culinary vessels were replaced by corrugated vessels. These ceramic developments have been characterized as late Pueblo I, Pueblo II, and early Pueblo III; they took place from ca. 800-1100 A.D. The parallel to the Red Mesa B/W-Kwahe'e B/W sequence in the Rio Grande Valley is obvious, and it seems equally apparent that the sequence is somewhat earlier in the Chaco-San Juan than in the latter area.

So far, so good. In the realm of architecture, the situation is somewhat less clear, although parallels to the early northern Rio Grande pit-houses and kivas do exist.

The floor area of early (BM III, P I) pit-houses in the Chaco-San Juan area is characteristically divided into

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primarily because of: (1) lack of specific and distinctive pottery type descriptions; (2) inconsistent use of type names; (3) tendencies of some investigators to associate all hatchured designs with Chaco Canyon and the area to its west and south, and to apply "Chacoan" names to hatchured pottery in the San Juan and Mesa Verde areas; tendencies of others to associate coarse hatchure with the San Juan-Mesa Verde district and to apply non-Chacoan names to certain hatchured pottery in the Chaco Canyon area. See Hawley 1936, Hawley in Kluckhohn and Reiter, 1939, for descriptions and basic references to the pottery involved.

two sections by a ridge or partition passing through the center of the house, usually just in front of a centrally located hearth. I have pointed out elsewhere (McNutt 1954) that this "winged hearth", usually accompanied by a ventilator, ashpit, sipapu, and four-post roof support, is typically associated with mineral painted pottery during the period from ca. 400 A.D. until ca. 850-900 A.D. Sites characterized by these traits are culturally very homogeneous in contradistinction to contemporary, geographically peripheral, heterogeneous sites with carbon-painted pottery and usually lacking the winged-hearth. It is of particular interest to the present study that there is no indication whatsoever of the winged-hearth in the early sites of the Albuquerque area, or elsewhere in the Rio Grande Valley.

After the winged-hearth ceased to be a popular architectural form in the Chaco-San Juan area, peripheral benches and finally, by Pueblo III, pilasters were incorporated into sub-surface structures. I shall anticipate the discussion of later periods in the Rio Grande Valley to point out that neither benches nor pilasters ever gained lasting popularity in that area.

During the period in which winged-hearths were being abandoned and peripheral benches adopted, pit structures were built in the San Juan-Chaco which had neither of these characteristics. The remaining floor features (ventilator, ashpit, hearth, sipapu, four-post roof support) are those which have been found characteristic of the early Rio

Grande structures. The adoption of peripheral benches evidently began soon after 750 A.D. in the Chaco-San Juan (cf. Judd 1924: Fig. 2; Gladwin 1945: Fig. 6, 43-45; Martin 1939: 380, 495) and winged-hearths were abandoned by 900 A.D. (cf. Gladwin 1945: 65; Roberts 1939; Martin 1939). Evidence of structures with neither of these features is best in the southern part of the Chaco-San Juan, where they are reported during Gladwin's late Kiatuthlanna Phase and Red Mesa Phase (cf. Gladwin 1945: Figs. 12, 13, 15; Roberts 1931: Fig. 11; Roberts 1939). The only comparable example which I find in the northern Chaco-San Juan is an undated kiva in the Piedra area (Roberts 1930: Fig. 8). It must be noted, however, that there is very little information available from the northern Chaco-San Juan concerning structures with building dates from 870-950 A.D. (cf. Martin 1939; O'Bryan 1950).

There is evidence, then, that structures roughly similar to the early circular pit-houses and/or kivas of the northern Rio Grande Valley were built during the transition between Gladwin's (1945) Kiatuthlanna and Red Mesa Phases, and between O'Bryan's (1950) Chapin Mesa and Mancos Mesa Phases. I hasten to add that there is no evidence that these houses ever became a standardized architectural type in the Chaco-San Juan, and they show considerable variability as a class with regard to specific architectural features.

There has been virtually no speculation on the origin of the early pit-structures of the northern Rio Grande

Valley. Wendorf has said that they are "reminiscent of Basket Maker III-Pueblo I pit-houses of the San Juan Anasazi" (1954: 208; Wendorf and Reed, 1955: 142-43). He does not specify the pit-houses concerned, but the nearly omnipresent winged-hearth in the eastern (mineral-paint) San Juan Anasazi sites provides a uniform contrast to the early Rio Grande structures, particularly during Basket-maker III and early Pueblo I. Data given above do indicate that the early Rio Grande structures are similar to certain Pueblo I-Pueblo II structures of the Chaco-San Juan area.

Allen and McNutt (1955: 248) say that the Santa Ana structures "are characteristic of neither the Anasazi nor the Mogollon area, but show a marked blending of influences from both regions . . . would cause little surprise were they found in the region between Bear Ruin and White Mount . . . .". These authors emphasize similarities to Bear Ruin because they feel that the lateral passages of the Santa Ana pit-houses are entries rather than ventilator ducts. Ventilators, however, are more typically found on other Rio Grande structures, and a more northerly (i.e., Chaco-San Juan) derivation seems probable.

This discussion of pottery and architecture of the Chaco-San Juan area permits the following hypothesis: the early Puebloan occupation of the upper Rio Grande Valley, as found at several sites in the northern Albuquerque area, was initiated by groups which left the Chaco-San Juan area after 750 A.D.

The ceramic similarities between the two areas are striking. The architectural similarities are less so, and it seems probable that the circular semi-subterranean structures characteristic of the Rio Grande Valley became standardized in that general region, although they have prototypes in the Chaco-San Juan. Recent surveys in the East Puerco Valley, west of Albuquerque (Dawson, personal communication), indicate a fairly concentrated occupation during P I-P II times, and it seems likely that the early Rio Grande sites may represent an extension of a Chaco-San Juan occupation in the East Puerco.

The major objections to this hypothesis will stem, I think, from the implication that the early Puebloan occupation of the northern Rio Grande Valley proper and areas to the east did not begin much before 800 A.D. The presence of San Marcial B/W in the central East Puerco Valley and at the site near Santa Ana is pertinent, for this pottery is regarded as a Basket Maker III product (Mera 1935: 2). Although San Marcial B/W is not found in the northern Rio Grande Valley proper, it is said to be associated with the characteristic Rio Grande circular pit-structures near Santa Ana (Allen and McNutt, 1955). San Marcial B/W is very similar, with regard to surface treatment, paint type, design elements, and all other attributes, to White Mound B/W, a late Basket Maker III type of the Chaco-San Juan (compare Mera 1935: 25-26 and Allen and McNutt, 1955: 250 with Gladwin 1945: 22-23; note also MacGregor 1941: 350).

Gladwin was able to date the end of his White Mound Phase and the introduction of neck-banded (Pueblo I) culinary vessels at White Mound "at some time between 785 and 801, or possible (sic) a few years later . . ." (Gladwin 1945: 37). Adams (1949: 293) estimates that similar changes occur in Chaco Canyon ca. 740-777 A.D. If, as I strongly suspect, San Marcial B/W is a late local variant of White Mound B/W, these dates for terminal Basket Maker III in the southern Chaco-San Juan are in accord with the hypothesis just presented.

Before leaving the subject of the earliest occupations in the northern Rio Grande Valley, I would add that there are other interpretations of this material which are equally reasonable although slightly more involved. For example:

(a) the San Marcial B/W and/or Red Mesa B/W found in the Rio Grande Valley may be the result of diffusion to previously non-ceramic non-Anasazi peoples.

(b) the characteristic house-type found in the northern Rio Grande Valley may have evolved earlier than 750 A.D., and represent either non-acceptance of the winged-hearth complex (which may have had religious connotation) by local residents (suggested by Allen and McNutt, 1955), or it may simply indicate that the winged-hearth was "lost" during an early (B M III) migration from the Chaco-San Juan.

When and if dates are obtained on the early circular

structures of the northern Rio Grande Valley, some of these conflicts will be resolved. At present, I favor the hypothesis presented above.

After the early Puebloan occupation of the Albuquerque Area, and the apparent spread northward of related (Red Mesa) complexes, the next major ceramic development in the northern Rio Grande was the appearance of Kwahe'e B/W. This occasion is marked by an apparent increase in the number of sites, particularly in the region north of Albuquerque.

Kwahe'e B/W, quite apparently manufactured in the northern Rio Grande Valley, has been referred to as a "decadent Chacoan pottery type" (Mera 1935: 34); "a local variant of [the generalized Chaco I-II style]" (Stubbs, in Stubbs and Stallings, 1953: 154; my parenthesis); "a poorly made local cognate of contemporary Chaco types" (Wendorf and Reed, 1955: 141). Although Stubbs' allusion is to a style found throughout the Chaco-San Juan, the other references imply a rather direct relationship to the Chaco Canyon area.

In contrast, Gladwin is dubious of major influences from Chaco to the Rio Grande Valley, and says specifically that Kwahe'e B/W resembles pottery of the Four Corners area more than it resembles Chacoan types (Gladwin 1945: 146). Kidder declares that Kwahe'e B/W sherds "are to my mind not at all Chacoan, from the point of view of decora-

tion. They seem, on the other hand, to resemble more closely a generalized Black-on-white of the northern San Juan . . ." (Kidder 1936: 597). Judd is inclined to find origins of Chaco culture in general to the north (1954: 32-34) in the San Juan area.

It appears, then, that whereas the change from Red Mesa to Kwahe'e design styles is characteristic of developments throughout the Chaco-San Juan, the specific design changes in the upper Rio Grande have their closest parallel in the northern (San Juan) section of that area.

New architectural forms appearing in the northern Rio Grande Valley at this time are Great Kivas, sub-surface rectangular kivas, surface rectangular kivas, and at least one D-shaped kiva built within a room-block.

Great Kivas are a characteristic architectural form in the Chaco-San Juan area, and are reported from Basket Maker III through Pueblo III stages (see Brew 1946; Hawley 1950; Danson 1957, for recent discussions).

Rectangular kivas, either surface or sub-surface, are not characteristic of the Chaco-San Juan area. Although it is not profitable to speculate at length upon the rectangular kivas at L.A. 835 until more detailed descriptions and plans are available, it may be observed that possibly comparable structures are found to the south and southwest in the Mogollon region (Wheat 1955), in the Flagstaff district (Roberts 1932), in Chaco Canyon (Pepper 1920), in the Ackmen-Lowry area northwest of Mesa Verde (Martin 1939),

in the Gallina region (Hibben 1948), in the Taos area (Blumenshcein 1948), and to the east in the Plains area (Strong 1935).

Of particular interest to this study is the possibility of relationships between the rectangular kivas at L.A. 835 in the Tesuque Valley and the roughly contemporary rectangular pit-houses in the Taos region. The minimal amount of information available at present does not even permit a satisfactory comparison between the rectangular structures of these two areas.

With regard to the derivations of the new ceremonial architectural forms in the northern Rio Grande Valley, it may be pertinent that both large circular structures (interpreted as Great Kivas or pit-houses) and rectangular, subsurface structures (interpreted as kivas or pit-houses) are found in the Mogollon area (Wheat 1955), in the Chaco-Zuni district (Roberts 1932), the Ackmen-Lowry region (Martin 1939), and in the Governador and Gallina areas (Hall 1944; Hibben 1949).

The single D-shaped kiva at Tesuque By-Pass is probably a peculiarity of this site, and further discussion of this isolated example does not seem warranted at present.

In view of the increasing population, the changes in pottery decoration, and the appearance of new architectural forms, it seems reasonable to assume a continuing immigration into the northern Rio Grande Valley during the Kwahe'e period. The apparently uninterrupted change from Red Mesa

B/W to Kwahe'e B/W at L.A. 835, the specific design treatment of the latter pottery, and the appearance of the Great Kiva all suggest that the greater part of the immigrants were from the northern Chaco-San Juan area. Such a hypothesis does not account too satisfactorily for the rectangular kivas, although roughly similar structures are reported sporadically from that area. Regardless of the latter structures, further immigration from the Chaco-San Juan seems quite probable.

In the Taos area, a highly distinctive tradition of culinary vessels is found. Although a majority of the vessels in this area are plain surfaced, there is a high incidence of horizontal incision and of herringbone punctation. Mera (1935: 4, 6) evidently feels that this culinary tradition is a local intensification of an early Chaco tradition. There is little evidence of incising in the Chaco area, and none of a culinary tradition comparable to that for the Taos area. Incision, when used, occurs most frequently on neck-banded and corrugated vessels, not as a primary decorative technique (cf. Pepper 1920; Judd 1954; Gladwin 1945).

Wendorf and Reed (1954: 143) observe that "The occurrence of incised pottery among the Rio Grande Anasazi cannot be considered a persistence of an early Anasazi trait, since incising was not common among the San Juan Anasazi. Instead, this difference evidently reflects the peripheral

position of the Rio Grande pueblos and their proximity to the followers of the incised ceramic tradition of the Plains and Mississippi Valley areas." I feel that the incised ceramic complex of the Taos area may indicate more than proximity of Anasazi Puebloans to the western plains. Several points are pertinent: (1) this incised culinary tradition was concentrated in the Taos area and appears northeast across the Sangre de Cristos, (2) the Taos area was tenaciously conservative in their ceramic traditions, (3) early sites in the Taos area have very little painted pottery, and (4) the distribution of the major Puebloan pottery types (Santa Fe B/W, Wiyo B/W, Biscuit B/W) is, for the greater part, deflected from the Taos area into the Chama Valley. It appears most reasonable to assume that the northern spread of Chaco-San Juan Anasazi culture up the Rio Grande Valley met, and was stopped by, non-Anasazi groups in the vicinity of Taos which possessed a ceramic complex comprised of what is referred to as "Taos culinary ware". These groups apparently adopted the early, carefully slipped Chaco-San Juan painted pottery and, later, many design elements of Kwahe'e B/W. The origins of the non-Anasazi ceramic complex remain to be determined, but they probably lie in the Plains area. The presence of square pit-houses in the Taos area is compatible with such a speculation. Horizontal incision and corn-cob scoring of vessels are very characteristic of relatively late complexes in the Missouri Valley and they are found in central

Texas, but the appearance of these traits in the Taos area presumably by 1000 A.D. cannot be explained satisfactorily without more data from the western Plains.

The final major change in ceramics and architecture with which we are here concerned is marked by carbon-painted Santa Fe B/W in the upper Rio Grande. With the appearance of this pottery, there is a further increase in the resident population, possibly further architectural innovations, and several changes in artifact types.

The Santa Fe period is currently felt to be a local development. Thus, Stubbs (Stubbs and Stallings, 1953: 48) says that "From present evidence, Kwahe'e appears to be ancestral to Santa Fe Black-on-white." Wendorf and Reed (1955: 144) say "It seems unlikely that this [the introduction of Santa Fe B/W] was caused by the movement to this area of any significant numbers of new immigrants, since there are no evident accompanying changes in other aspects of the Rio Grande Anasazi culture which could be attributed to a western source. The pigment change in this eastern Anasazi area was a reflection of the shift in the San Juan Anasazi from the mineral paint of early Chaco and Mesa Verde to the organic paint tradition of the west."

There is, however, certain evidence which indicates that the possibility of further immigration during this period should not be dismissed. First, there is the matter of what I consider to be a major and fairly rapid change in ceramic technology, the change from mineral to carbon paint.

To describe this as a "reflection" of the similar change in the Chaco-San Juan implies either diffusion of this trait from the latter area or parallel evolution. Wendorf and Reed cite O'Bryan (1950) as authority for their statement that "In the Mesa Verde area, organic pigments replaced mineral paints by A.D. 1050 or 1100, . . ." (Wendorf and Reed, 1955: 144). This terminal date supports the idea of belated diffusion of carbon paint to the Rio Grande Valley, since Santa Fe B/W does not appear much before 1200 A.D. I am unable to find this statement in the source mentioned however, and presumably the reference is to O'Bryan's initial date for the McElmo Phase, which is characterized by carbon-painted pottery (O'Bryan 1950: 109). O'Bryan presents evidence that Mancos B/W (mineral-painted) pottery was made later than 1150 A.D., if not until 1200 A.D., concurrently with carbon-painted McElmo B/W (O'Bryan 1950: 26, Fig. 6).

The transition from mineral to carbon paint in the Mesa Verde area was a slow one, occupying the better part of two centuries. The intergraduation between mineral-painted and carbon-painted pottery are so complex and subtle that some have questioned the validity of a type (McElmo B/W) to distinguish a pre-Mesa Verde B/W carbon-painted pottery (Reed 1958: 102ff.). Recalling the similarities in design between Mancos and Kwahe'e pottery, it would seem that design similarities between Kwahe e and Santa Fe B/W would be expected even if the latter pottery

is derived from a San Juan (McElmo) source. In addition, there is "a pronounced design influence from the Mesa Verde" in Santa Fe B/W (Stubbs, in Stubbs and Stallings, 1953: 154), and, although he feels that Santa Fe B/W is a local development, he notes that this pottery is "indistinguishable from similar material found in the classic San Juan center or even further west." (Stubbs and Stallings, 1953: 48).

Mera (1935: 11-12) felt that Santa Fe B/W resulted from contact of producers of Kwahe'e B/W in the East Puerco Valley with people from the Gallina area, where carbon paint was characteristic. According to this hypothesis, Santa Fe B/W subsequently spread down the Puerco, east below the Jemez Mountains and thence northward into the upper Rio Grande Valley. I would suggest an ultimate origin of Santa Fe B/W further to the northwest, in the San Juan area, and its subsequent entry into the Rio Grande Valley via the Puerco and Jemez Rivers, along the path suggested by Mera. If this is valid, Santa Fe B/W would bear the same relation to McElmo B/W (or carbon-painted Mancos B/W as the case may be) as Galisteo B/W bears to Mesa Verde B/W: the continuation and development of a San Juan ceramic tradition in the upper Rio Grande Valley after that tradition had died out in the homeland.

In addition to the increased population and the larger pueblos of the Santa Fe period, it has been observed that slab metates replace trough metates, side-notched points

completely replace corner-notched types, the full-grooved partially polished axe appears, turkeys were kept, and bird-bone awls occur. Any or all of these events may simply be the result of changing times in the upper Rio Grande Valley, although none of them appear to be inevitable. On Mesa Verde, O'Bryan's Site 34 is of particular interest in this respect: slab metates, side-notched points, and full-grooved axes are characteristic (O'Bryan 1950: 83, 82, 84), bird-bone awls occur and turkeys were kept (O'Bryan 1950: 109). This site is of the McElmo Phase, and, although no dendro-dates were obtained, O'Bryan believes that the site was occupied from ca. 1025-1200 A.D. (O'Bryan 1950: 79).

There is yet another consideration which suggests that migration may have been the vehicle by which the new traits of the Santa Fe period reached the upper Rio Grande Valley. It is fairly well established that the entire Puebloan population of the eastern San Juan had moved southward by 1300 A.D. But the exodus began much earlier. There are few post-1200 A.D. dates of initial pueblo construction in this area (O'Bryan 1950: 14), and at least one Mesa Verde group had moved south to Aztec Ruin by 1225 A.D. (Gladwin 1945: 129). The record of dry years in the early 1200's (cf. Smiley, Stubbs, and Bannister, 1953: 50) is in accord with this theory, and the frequent association of Santa Fe B/W with Galisteo B/W (presumably a post-1300 A.D. Rio Grande variant of Mesa Verde B/W) may

well be more than fortuitous.

I have presented the evidence for a migration from the San Juan area to account for developments associated with, and including, Santa Fe B/W in a rather laborious manner, primarily because such a migration is not currently believed to have taken place. As is often the case, once a person presents evidence for an "alternative hypothesis", he comes to regard it as more reasonable than any other hypothesis. I find myself in that situation. In any event, the possibility should receive serious consideration.

In closing this section, a note concerning religious architecture is in order. Although it must seem almost inevitable that my discussion turn to the Chaco-San Juan in search of origins for upper Rio Grande culture, one of the most characteristic features of late Chaco-San Juan architecture has received virtually no mention. Almost universally, the kivas of this area are equipped with pilasters. The virtual absence of this form of roof support in the upper Rio Grande would seem to argue against hypotheses of repeated immigration from the Chaco-San Juan. The only examples of pilasters of which I know are reported by Stubbs from L.A. 835, where one structure had roof supports set near, and braced to, the wall by the addition of adobe.

No kivas of the Galisteo period have been excavated; it is here that Rio Grande pilasters will be found if they are to be found at all. But in any event, they were <u>never</u>

adopted in the Rio Grande, for they are absent from post-Galisteo sites, such as Pecos and Te'ewi. Wendorf has emphasized and carefully documented the persistence of the small circular kiva in the Rio Grande Valley, which has its obvious prototype in the early circular structures of the Albuquerque area (1953; 1954; with Reed, 1955). He adds that any attempt at historical reconstruction or linguistic-archeologic correlation must be "necessarily confronted by the dissimilarities in kiva forms between sites in the two [Rio Grande and Chaco-San Juan] areas." (1953: 51; my insertion).

I cannot explain the absence of pilasters in the Rio Grande area, either before or after the Mesa Verde-Galisteo period. I can suggest that (1) the Chaco-San Juan immigrants arrived in small groups which exerted more influence in the technologic than religious sphere, (2) that the immigrants were quite adaptable with regard to ceremonial architecture, (3) that the Rio Grande kiva pattern was simply regarded as "the way you build a kiva in the Rio Grande Valley". These conjectures are hardly testable and by some standards non-scientific. There is, at least, an apparent analogy to this situation in the Rio Grande Tewa emigration of 1696 to found Hano, on the First (Hopi) Mesa. "The town has a plaza layout and the general appearance of other Hopi towns. The rectangular kiva has been adopted from the Hopi, and by all indications Hano is a Hopi village in everything except language."

(Stubbs 1950: 99-100, Pl. XXI, Fig. 23).

The absence of pilasters in Rio Grande kivas does not, in my opinion, negate the very considerable evidence for several immigrations into that area from the Chaco-San Juan. It does suggest, however, that no extremely large group entered the valley at any particular time, although their total impact upon the resident population was quite significant; that the "immigrations" were actually results of small social units drifting into the area rather than a planned and organized population movement.

PART THREE

DISCUSSION

SUMMARY:

Excavations at Tesuque By-Pass Site, north of Santa Fe, New Mexico, disclosed three distinct Puebloan components (Red Mesa, Kwahe'e, and Santa Fe) and two pit-house occupations which could neither be assigned to nor distinguished from the Red Mesa Component. Chronological limits for each component and occupation have been estimated, on the basis of ceramic typology, as:

Santa Fe Component	1200-1300 A.D.
Kwahe'e Component	1100-1200 A.D.
Red Mesa Component	950-1100 A.D.
Pit-house Occupation, Area B	900-1100 A.D.
Pit-house Occupation, Intermediate Area	900-1100 A.D.

Analysis of artifacts and architectural remains indicates that the components at the Tesuque By-Pass Site are characteristic of the central (Santa Fe-Tesuque) portion of the northern Rio Grande Valley, and that they represent three major sequential stages in the early Puebloan occupation of that region. An outline of early Puebloan cultural developments in the upper Rio Grande Valley is presented in the following pages. Rigorous definition of the cultural foci involved, in either McKern's (1939) or

Colton's (1939) use of the term, must await information from the major sites of the period, such as Arroyo Negro and L.A. 835.

Comparison of the Tesuque By-Pass occupations to those of other areas suggests that, although some characterics (e.g., kiva types) may be local developments, each of the culture types represented at the site may have originated as a result of emigration by small groups from the Chaco-San Juan area to the upper Rio Grande Valley. The case for each of these migrations, or population drifts, has been presented and is summarized in the following section.

AN INTERPRETATION OF EARLY PUEBLOAN OCCUPATIONS IN THE UPPER RIO GRANDE VALLEY:

Two summaries of northern Rio Grande prehistory have been written in recent years, and each has appeared, in slightly different form, on two occasions: Stubbs' version in Smiley, Stubbs and Bannister (1953) and in Stubbs and Stallings (1953); Wendorf's, in 1954 and in Wendorf and Reed (1955). The former are the result of many years' devotion to problems of Rio Grande prehistory, and few would challenge Kidder's (1958: 42) reference to Stubbs' "unrivalled knowledge of New Mexican archaeology". The latter are concise presentations of tremendous amounts of data, documented in considerable detail, and are most comprehensive in scope. It is, then, with the greatest

urgency that I advise the reader that the following passages are supplementary to, but in now way supersede, the summaries of Stubbs and Wendorf. This is particularly necessary because I shall dwell at greatest length upon those interpretations not entertained and, in a few cases, expressedly doubted by these authors, rather than upon points of agreement and the obviously reasonable alternate interpretations which they have presented.

Wendorf has suggested a series of period names and dates for the prehistory of this region. We are concerned in this discussion with his Rio Grande Developmental Period and the earlier part, or "Pindi stage", of the Rio Grande Coalition Period. In the following discussion, I shall substitute the term "Colonization" for "Developmental". My reasons for doing so are twofold, but not of such a nature that I would care to take an unbending stand against the latter term. First, it seems quite apparent that much of the "Developmental Period" culture was developed not in the Rio Grande Valley, but elsewhere. The use of some term other than the one in question would not require such qualifications as " . . . [most of this material] can be assigned to the early part of the 'Developmental Period' of the 'Rio Grande Anasazi' . . . . This is not to say that much of the material had its origins in the Rio Grande Valley." (Peckham 1957: 70; my insertion). To this effect, "Colonization" seems appropriate. In addition, Wendorf's "Developmental Period" corresponds roughly, but <u>not</u> com-

pletely, with Roberts' (1937) Developmental Pueblo. The "Pindi stage" is referred to herein as "Early Pindi sub-period". This is not just a semantic nicety; only the earliest pueblo at Pindi is pertinent, and reference to a sub-period as a stage may lead to confusion. I have also taken the liberty of modifying certain of the dates suggested by Wendorf, to conform with the interpretation which follows.

The Rio Grande Colonization Period (ca. 750-1225 A.D.)

The initial Puebloan occupation of the northern Rio Grande Valley proper may have been no earlier than 750 A.D. At this time, small groups of people from the Chaco-San Juan area entered the valley near the south end of the Jemez Mountains. Their immediate derivation was probably from Anasazi settlements in the East Puerco Valley. There is little evidence that these immigrants had ever occupied Chaco Canyon itself; a homeland in the Four Corners area or on the eastern slopes of the Chuska Mountains is more probable.

These Anasazi groups were the first agriculturalists in the upper Rio Grande Valley. Hunting of game animals, such as deer and antelope, was an important factor of their economy. They built circular semi-subterranean structures which typically had ventilators on their east or southeast sides, a central adobe-rimmed hearth, a sipapu, a separate ashpit in front of the hearth, two or more post holes in

front of the ashpit (ladder sockets and/or deflector supports) and a four-post roof support system. There were, or course, occasional variations in this architectural pattern, which included unrimmed hearths, a united hearth and ashpit, no sipapu (found), probably side entries, and pole-reinforced walls. Painted pottery, comparable to Kiatuthlanna and Red Mesa Black-on-white, was decorated in a generalized eastern P I-P II style; culinary vessels were both plain and neck-banded. Data concerning the non-ceramic artifact assemblages of these sites are quite limited, but basin and trough metates, small corner-notched and simple triangular projectile points, clay and stone cloud-blowers, and olivella beads are among the artifacts reported. Evidence of trade relationships and limited architectural influence from Mogollon groups to the south is found at some, but not all, of these sites.

There is no evidence at present that any of these groups moved northward up the valley to the Santa Fe area before 800 A.D., nor is there evidence that many had moved to this region by 900 A.D. On the contrary, site surveys suggest that most of the early Puebloan groups remained in, or were deflected south of, the East Puerco-Albuquerque area during this period. The apparent reticence of these people to occupy the obviously favorable environment of the Pajarito and La Bajada plateaus is most easily accounted for by the hypothesis that the area was occupied by another group, presumably non-ceramic and non-Anasazi. Others have

speculated on such a possibility (Mera 1935: 34; Kidder 1931: 151), and Wendorf (1954) has summarized the few data on non-ceramic finds which are available (see also Miller and Wendorf, 1958; Wendorf and Miller, 1959). Although definite evidence is lacking for a late non-ceramic occupation of the Santa Fe area, Hibben's (1937) finds of non-ceramic occupations in the Chama Valley, presumably accounting for the absence of early Pueblo occupation in that area, add considerable support to this hypothesis.

Eventually, ca. 900 A.D. or slightly earlier, the central section of the upper Rio Grande was opened to settlement, and Anasazi groups pushed north into the Santa Fe-Tesuque area, while others may have moved eastward past Glorieta Mesa, thence north along the eastern foothills of the Sangre de Cristos. The northward movement in the valley continued to a point near the confluence of the Chama and the Rio Grande. The Chama valley was occupied by non-ceramic, non-Anasazi groups, possibly remnants of the original pre-Pueblo occupants, which prohibited further expansion in that direction; the more northerly portions of the Rio Grande Valley were occupied by non-Anasazi groups which made unpainted pottery. The latter adopted the painted Anasazi pottery, but were not absorbed by the immigrant population.

The early Rio Grande Anasazi colonies were augmented by additional groups from the Chaco-San Juan during the 11th and 12th centuries. These people evidently followed

the earlier routes, down the East Puerco Valley, eastward below the Jemez Mountains, thence northward into the Santa Fe-Tesuque area, for there are still no indications that the Chama Pass was open to Anasazi traffic. It is of interest that these later immigrants were not deflected south of Albuquerque, nor did they choose to follow such a route. These groups, probably from the northern Chaco-San Juan, brought with them new styles of pottery decoration (hatchure), new architectural forms, and, above all, additional man power.

The previous discussion has, for reasons stated above, placed great emphasis upon evidences for migrations into the northern Rio Grande Valley. The reader will have been misled, however, if he regards the local settlements of this period as no more than crude imitations of Chaco-San Juan Anasazi or as a simple and poorly developed culture type with no distinctive attributes of its own.

During the period of colonization in the upper Rio Grande, a distinctive and relatively complex culture type evolved, as represented by the Red Mesa and Kwahe'e Components at Tesuque By-Pass and other sites. Painted pottery was made locally which showed, if not the excellence of the unrivalled late Chaco B/W, a competence and concern with decoration which compares favorably with the rest of the eastern Pueblo area. Neck-banded and corrugated culinary vessels were apparently quite servicable, although rarely the subject of elaborate secondary modification, as were

comparable vessels to the west and south. Considerable architectural sophistication is apparent. Building techniques relied heavily upon coursed adobe, but this was used in combination with stone to produce several styles of wall construction. Jacal surface structures and sub-surface pit-structures were also built. Above-ground dwellings and storage rooms were constructed contiguously to form room-blocks of from ten to twenty or more units, and several room-blocks were often built at a single site. The characteristic kiva had the floor features of the earlier semi-subterranean structures in the Albuquerque area, with other innovations, such as pole-reinforced walls, gaining in popularity. Other ceremonial structures include Great Kivas, rectangular sub-surface and rectangular surface kivas, and specialized ceremonial rooms within the room-blocks. The floor-feature complex characteristic of the Rio Grande kiva took firm root during this period, and was never entirely replaced. The following trade relations were established: with the San Luis Valley (Renaud 1942) and the Cuchara district (Renaud 1943) of southern Colorado; with the Gallina area, as evidenced by intrusive pottery and suggested further by the sub-conical culinary vessels (Hibben 1949) and tri-notched axes (Hibben 1938) found in both areas; with the Chaco-San Juan area (on the basis of intrusive pottery); with the Mogollon area to the south (on the same basis). There is, it may be noted, no evidence of extensive trade with any of these areas which would

suggest a lack of technologic independence of the Rio Grande Pueblos. Presumably the local villages relied primarily upon food plants for subsistence, but there is considerable evidence that hunting was a very important part of the Rio Grande Valley economy.

During this period, characterized by the local manufacture of Kwahe'e B/W, Puebloan settlements increased in number and spread throughout the valley from the lower Jemez north to the Chama confluence. Others were either established or supplemented on the eastern slopes of the Sangre de Cristos, and the Santa Fe-Tesuque area became, to a limited extent, a source of cultural influences felt to the north (Taos area), northeast (Ponil), and south (in the middle Rio Grande Valley).

There is little evidence concerning occupations in the vicinity of Albuquerque and southward during this period, except that which has been derived from surface surveys. Such information as is available suggests that sites in this area were peripheral to cultural developments to the west, southwest, and south, and did not belong to the upper Rio Grande cultural area as such.

Although the concept "Pueblo II" has contributed more than its share of taxonomic difficulty (cf. Brew 1946: 32ff.), its original definition provides an excellent, if concise, statement of current developments in this particular area: "The stage marked by widespread geographical extension of life in small villages; corrugation, often of

elaborate technique, extended over the whole surface of cooking vessels." (Kidder 1927). Although the parenthetical reference to elaborate corrugation is not particularly applicable, it is apparent that the Pueblo II stage can be isolated in the upper Rio Grande Valley, and that it is characteristic of this colonial period.

Rio Grande Coalition Period: Early-Pindi sub-period, (ca. 1200-1300 A.)

The developments of this period, represented by the earliest Santa Fe B/W ceramic phase at Pindi Pueblo and by the Santa Fe Component at Tesuque By-Pass, were to a large degree a continuation of earlier cultural traditions in the area. Indeed, the degree of continuity between the late Colonization and early Coalition periods suggests to some investigators that events of the latter era were almost completely of local origin (cf. Stubbs, in Stubbs and Stallings, 1953; Wendorf, in Wendorf and Reed, 1954). It seems likely, however, that certain important traits which are characteristic of this period were introduced by small groups of immigrants from the San Juan-Mesa Verde area, harbingers of the impending abandonment of that region and of the subsequent Galisteo period in the Rio Grande area.

In any case, carbon-painted pottery with similarities to both local and Mesa Verde designs replace the earlier mineral-painted Kwahe'e B/W, slab metates replace trough metates, side-notched projectile points complete their replacement of corner-notched points, full-grooved partially

polished axes appear, and bird-bone awls occur for the first time, probably a correlative of the appearance of domestic turkeys. There is an increase in the size of pueblos, but many of the earlier architectural features and construction techniques are retained. Sites of this period are found throughout the area previously occupied by the producers of Kwahe'e B/W. There are further extensions of Santa Fe B/W into the Chama Valley, into the southernmost Taos area, and into the Galisteo Basin. It remains to be determined if the latter expansions came early or late within this sub-period, or took place subsequently to it.

During this period, the Taos area was either abandoned by pottery-making groups or else the population became concentrated within the vicinities of present-day Taos and Picuris. This question is, in my opinion, of great importance to hypothetical linguistic-archeologic correlations. If it can be demonstrated that the conservative, apparently non-Anasazi, groups in the Taos area, with ceramic ties to the Ponil district, were indeed the founders of Taos and Picuris, much evidence would be adduced for the hypothesis of an early Tiwa dialect both in the northern part of the upper Rio Grande Valley and east of the mountains (cf. Wendorf and Reed, 1955).

With the establishment of the culture type associated with Santa Fe B/W pottery, the Puebloan occupation of the upper Rio Grande Valley was virtually complete, and the stage was set for the arrival of additional groups and new

ideas which soon transformed this area into one of the major climax areas of Puebloan culture. The reader is referred to the summaries by Stubbs and by Wendorf for an outline of subsequent events, and also to the recently published discussion by A. V. Kidder (1958).

IN CONCLUSION:

This examination of early Puebloan occupations in the upper Rio Grande Valley has, predictably, raised more problems than it has resolved. It is, I feel, a sign of at least some progress if major problems within any sphere of investigation can be isolated. With this in mind, the following suggestions are offered.

(1) The ritual cry for more data from excavated sites is particularly pertinent. I cannot help but be surprised at the very small number of early Puebloan sites which have been excavated in the upper Rio Grande area. They are practically untouched east of the Sangre de Cristos, although highly competent surveys were made more than two decades ago (Mera 1935; Renaud 1937). Discussions of relationships with the Plains and areas farther east can be no more than conjectural until some excavation is accomplished in the northeastern "Pueblo" and western "Plains" sites. It must be equally apparent that only a minimal amount of data is available for the upper valley itself, and almost none for areas to the south and immediately to the west.

Fortunately, more work <u>is</u> being done in this area.

Current projects of the Wichita Foundation in the Taos area (Wendorf 1958), the Atomic Energy Commission in the vicinity of Los Alamos (Worman 1959), the Laboratory of Anthropology in the Santa Fe-Tesuque region, the University of New Mexico and its staff in the Jemez and Puerco drainages, the wide-ranging Highway Salvage Archaeology project, and work by the Philmont Scout Ranch east of the Sangre de Cristos will all add vital information to that presently available.

(2) The very excellent dendrochronological studies (Smiley, Stubbs, and Bannister, 1953) initiated by the University of Arizona and Museum of New Mexico should, if at all possible, be continued. It would seem profitable to concentrate on relatively early sites (San Marcial B/W, Red Mesa B/W, Kwahe'e B/W, Taos B/W, Santa Fe B/W) with unmixed ceramic complexes, in each region of the upper valley. By this means, and possibly only by this means, many of the alternative interpretations of local pre-history will be resolved.

(3) Both survey for and excavation of non-ceramic sites in the upper Rio Grande and adjacent areas should be intensified. The beginnings of such work in the area have been most promising, and further data will be pertinent to an understanding of both Pueblo and non-Pueblo occupation of the area.

(4) A comparative design analysis of local varieties of the generalized Chaco I-II or Pueblo I-II painted potteries (Mancos, McElmo, Red Mesa, Escavada, Gallup, Kwahe'e, Taos, etc., etc. B/W) should do much to resolve the many problems of taxonomy and interpretation that exist at present.

(5) Culinary vessels of the area must be studied. There is every indication that, in this particular area, they are every bit as sensitive to temporal and cultural change as are the painted vessels. In addition, it seems likely that chronological inferences based on culinary vessels will not merely duplicate those based upon painted pottery. Changes in culinary vessels apparently took place independently of shifts in painted designs, and they quite probably will provide bases for chronological inferences throughout the area. Finally, it is in the class of unpainted vessels that one can expect to find the greatest evidence for the penetration of non-Puebloan ceramic concepts into the upper Rio Grande area.

(6) Finally, I would recall the absence of kiva pilasters to the readers mind. This poses a very interesting problem concerning Puebloan attitudes toward ceremonial architecture. Inter-pueblo relations in religious affairs have been documented in many ethnographic works. The present study has further stimulated both my archeological and anthropological curiosity in this matter. Specifically,

how do various pueblos feel about changing particular architectural features in their ceremonial structures? How do they feel about adopting new features? What is their attitude toward the adoption of local ceremonial structures by immigrant groups? Do any of these feelings differ by linguistic sub-groups? Answers to these and related queries would be of considerable anthropological interest and would be of the greatest pertinence to current interpretations of Southwestern prehistory in general.

The above paragraph is not a request for obviously pertinent data which has been omitted from the ethnographic literature, thus frustrating the course of archeology. After all, there is no published data whatsoever on an excavated kiva from the Galisteo-Mesa Verde period in the upper Rio Grande Valley. The non-acceptance of pilasters in this area is a rather specialized situation, but it provides an excellent opportunity for the combination of archeological and ethnological techniques to resolve a specific anthropological problem.

(7) In closing, a rather negative conclusion can be offered. The upper Rio Grande Valley, on the eastern periphery of the Puebloan region, is a likely area for contact between Southwestern and Plains peoples. During the period discussed in this paper, there is surprisingly little evidence of such contact.

The culinary pottery tradition in the Taos and Ponil districts possesses such Plains ceramic charactistics as

horizontal incision and corn-cob scoring. These traits did not spread down the Rio Grande Valley, although they may have passed westward to the Gallina area. The sub-conical, or contracted, vessel base of the Taos area is, however, characteristic of sites to the south (e.g., the neck-banded jars at Tesuque By-Pass Site and L.A. 835).

The grooved axes and side-notched projectile points of the southwestern and the eastern United States may be related in some manner (cf. Griffin 1955; Wauchope, ed. 1956: 99-100), but the Rio Grande Anasazi apparently received these artifacts, as well as carbon-painted pottery, slab metates, and turkeys, from the Chaco-San Juan area at or slightly later than 1200 A.D. The initial diffusion of these artifacts between the Southwest and the eastern United States, if such indeed did occur, either passed through non-Anasazi peoples in the Rio Grande Valley, or not through that area at all.

APPENDIX

APPENDIX: IDENTIFICATION OF MAMMALIAN FAUNA

by Arthur J. Jelinek

The animal bone from the Tesuque By-Pass Site comes from Area A; a majority of the specimens were recovered from the kiva.

In the descriptions which follow, "l" and "r" stand for left and right members, respectively. A summation of the specimens and the minimum number of individuals represented is given for each animal.

The identified animal bone from the kiva is listed in Table 1.

TABLE 1.-Animal bones recovered from the kiva fill, Area A, Tesuque By-Pass Site

	lev. I	lev. II	lev. III	lev. IV	other	sum	min. ind.
Carnivora							
Dog (Canis familiaris)						5	1
parietal-occipital	1						
humerus (l), dist.					1		
tibia (r)	1						
phalanges	2						
Rodentia							
Cottontail Rabbit (Sylvilagus sp.), prob. audubonii						16	4
scapula (r)	1			1			
humerus, dist.		1					

TABLE 1-Continued.

	lev. I	lev. II	lev. III	lev. IV	other	sum	min. ind.
(Cottontail Rabbit, cont.)							
ulna (r), prox.				1			
radius (r)				1			
pelvis (r)		1					
pelvis (l)				1			
femur (r)				2	2		
tibia (r)	2			1			
tibia (l)				2			
Jack Rabbit (*Lepus californicus*)						18	2
mandible (l)				1			
scapula (r)				1			
scapula (l)				1	1		
humerus (r), prox.	1						
humerus (r), dist.				1			
radius (r)				1	1		
radius (l)				1			
pelvis (r)	1			1			
pelvis (l)	1			1			
tibia (r), dist.				1			
tibia (l), prox.	1			1			
calcaneum				1			
astragalus				1			
White-throated Wood Rat (*Neotoma albigula*)						-	1
most of one individ.			x				
Wood Rat (*Neotoma sp.*), prob. *albigula*						2	1
pelvis (r)		1					
femur (r)		1					
Pocket Gopher, Chestnut Faced (*Cratogeomys castanops*)						2	1
skull	1						
pelvis	1						
Black Tailed Prairie Dog (*Cynomys ludovicianus*)						6	2
palate and frontal				1			

TABLE 1-Continued.

	lev. I	lev. II	lev. III	lev. IV	other	sum	min. ind.
Black Tailed Prairie Dog (cont.)							
ramus (r)		1					
ulna (l)				1			
radius (l)			1	1			
pelvis					1		
Artiodactyla							
Elk (Cervus sp.). prob. merriami						2	1
femur (l), prox.	1						
calcaneum (l)					1		
Bison (Bison bison)						1	1
phalange (2nd)	1						
Mule Deer (Odocoileus sp.), prob. hemionus						90	6
frontal frag. w. antler base (r)	1						
maxilla (r)		1					
1st cervical vert.	2						
misc. vertebrae	3			3			
scapula (r)	1						
scapula (l)		1					
humerus (r), dist.	3	3					
humerus (l), dist.	2						
ulna (r), prox.					1		
ulna (l), prox.	1	1	1		1		
radius (r), prox.	2			1			
radius (l), prox.	1						
radius (l), dist.	2	1					
pelvis (r), acetab.	1						
pelvis (l), acetab.	2						
femur (r), prox.	1						
femur (l), prox.	3				1		
femur (l), dist.	1						
tibia (r), dist.	1			1			
tibia (l), dist.	2			1			
calcaneum (r)	2	1		1	1		
calcaneum (l)	2				1		
astragalus (r)	1						
astralagus (l)	2			1	1		

TABLE 1-Continued.

	lev. I	lev. II	lev. III	lev. IV	other	sum	min. ind.
(Mule Deer, cont.)							
naviculo-cuboid (r)	1						
naviculo-cuboid (l)	2						
metatarsal (l), prox.	1						
metatarsal, dist.	2			2	1		
metacarpal (r), prox.	1						
metacarpal, dist.					1		
phalange (1st)	8	2		1			
phalange (1st), prob. Odocoileus	3				1		
phalange (2nd)	2	1					
phalange (3rd)	1						
Pronghorn Antelope (Antilocapra americana)						100	5
frontal (r)	1						
frontal (l)	1						
orbit (l), lower rim	1						
ramus (r)		1					
ramus (l)	1	1					
maxilla (r), frag.	1						
basal (r), frag.	1						
molar	1						
auditory bulla (r)	1						
1st cervical vert.	2						
misc. vertebrae	4						
scapula (r)	3						
scapula (l)	2				1		
humerus (r), dist.	2		1				
humerus (l), dist.					1		
ulna (r), prox.	3						
ulna (l), prox.		1					
radius (r), prox.	1	1					
radius (r), dist.		1					
radius (l), dist.		1			1		
pelvis (r)					1		
pelvis (l)*	4			1	1		
femur (r), prox.	1						
femur (r), dist.	1	1					
femur (l), prox	3				2		
tibia (r), prox.	2	1					
tibia (r), dist.	2						
tibia (l), prox.	2				1		
tibia (l), dist.	1			2			
calcaneum (r)	2	3					

TABLE 1-Continued

	lev. I	lev. II	lev. III	lev. V	other	sum	min. ind.
(Pronghorn Antelope, cont.)							
calcaneum (l)	1	1					
astragalus (r)	1						
astragalus (l)	2						
naviculo-cuboid (l)						1	
metatarsal (r), prox.	1						
metatarsal (l), prox.	1						
metatarsal, dist.	3		1			1	
metacarpal (r), prox.						1	
metacarpal (l), prox.	1						
metacarpal, dist.	3					1	
phalange (1st)	1	2		2		2	
phalange (2nd)	2						
phalange (3rd)	2						

*two fragments possibly from one individual

The identified animal bone from other features in Area A is listed below in Table 2.

TABLE 2.-Animal bone recovered from the dwelling area, Area A, Tesuque By-Pass Site

	T-3	T-7	T-4	Room 5 rect. part	"D" part	Rm.6	Rm.7
Rodentia							
Black Tailed Prairie Dog (Cynomys ludovicianus)							
ramus (l)				1			
Artiodactyla							
Domestic Sheep (Ovis aries)							
metacarpal (r) prox.					1		

TABLE 2-Continued

	T-3	T-7	T-4	Room 5 rect. "D" part	Room 5 rect. "D" part	Rm.6	Rm.7
Mule Deer (Odocoileus sp.), prob. hemionus							
maxilla (r)							1
maxilla (l)							1
ramus (r)		1					
tibia (r), prox.			2				
tibia (l), dist.			1				
calcaneus (l)					1		
metatarsal, dist.	1						
metacarpal (l), prox.			1				
Pronghorn Antelope (Antilocapra americana)							
calcaneus (l)					1		
metatarsal (r), prox.						1	

In addition to the above, two identified specimens of animal bone were recovered from the fill of Feature I in the Intermediate Area. They were a distal fragment from a humerus (r) of a Mule Deer and a proximal fragment from an ulna of a Pronghorn Antelope.

Comments: In general, the identified animal bone specimens from Tesuque By-Pass Site are typical of the fauna found in the area during historic times. From the broken and shattered condition of the bones, it appears that all animals were used as food, with the possible exceptions of the pocket gopher (Cratogeomys), the wood rat (Neotoma), and the dog. Many of the bones show rodent-tooth marks. This may be explained by the presence of the wood rat. The

pocket gopher, on the other hand, is primarily vegetarian and may have been eaten.

The most interesting forms, from the standpoint of present distribution, are the Chestnut Faced Pocket Gopher (Cratogeomys castanops), the Black Tailed Prairie Dog (Cynomys ludovicianus), and the bison (Bison bison). The two rodents are not found at present in the Rio Grande valley north of the Albuquerque area. Although both occur in the normal range of an Upper Sonoran fauna, they are apparently more characteristic of a "Lower-Upper Sonoran" assemblage than of the "Upper Sonoran-Transitional" assemblage found in the area today.[1] Their presence may indicate a somewhat warmer climate (including possibilities of both a longer growing season and greater aridity) than is typical of the Tesuque area at present.

The bison bone is from a very large individual. The absence of other bison material from the site suggests the possibility of a souvenir of an impressive animal brought back from the plains. Present knowledge indicates that bison were not native to the northern Rio Grande area at the time the Tesuque By-Pass Site was inhabited.[2]

The one Domestic Sheep bone is more recent in appearance than the other material. Its association with the other

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[1] cf. V. Bailey, "Life Zones of New Mexico," North American Fauna, No. 35 (U. S. Dept. Agriculture, Washington, 1913).

[2] E. K. Reed, "Bison Beyond the Pecos," Texas Journal of Science VII, No. 2 (1955), pp. 130-36.

faunal remains can probably be discounted on the basis of its shallow position in the site fill.

The absence of any bones other than the calcaneum and femur of the elk suggests that a single haunch had been carried back to the village from a hunting excursion in higher country.

Virtually all portions of deer and antelope are present and it is probably safe to assume that they were not hunted at any great distance from the village.

Analysis of the faunal remains indicates one rather puzzling factor: the absence of proximal extremities of humeri for the artiodactyls. There are thirteen distal ends and no proximals. Since the proximal portion of humeri does not appear to have been a favored raw material for tools, this may characterize local butchering techniques.

In conclusion, it may be noted that bone was not distributed uniformly through the fill of the kiva in Area A. The paucity of remains from level III suggests an early (level IV) and a late (levels I and II) use of the kiva for deposition of trash, separated by the time during which the level III fill accumulated. The amount of time involved is, at present, conjectural.

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PLATES

PLATE I

SMALL SHERDS OF PAINTED POTTERY FROM AREA A,
TESUQUE BY-PASS SITE

a-h, Kwahe'e B/W; i-k, Red Mesa B/W;
l-m, Gallup B/W; n-o, Chaco B/W;
p, Santa Fe? B/W; q, Mancos? B/W
r, Wingate B/Red; s-t, unidentified B/W.

PLATE I

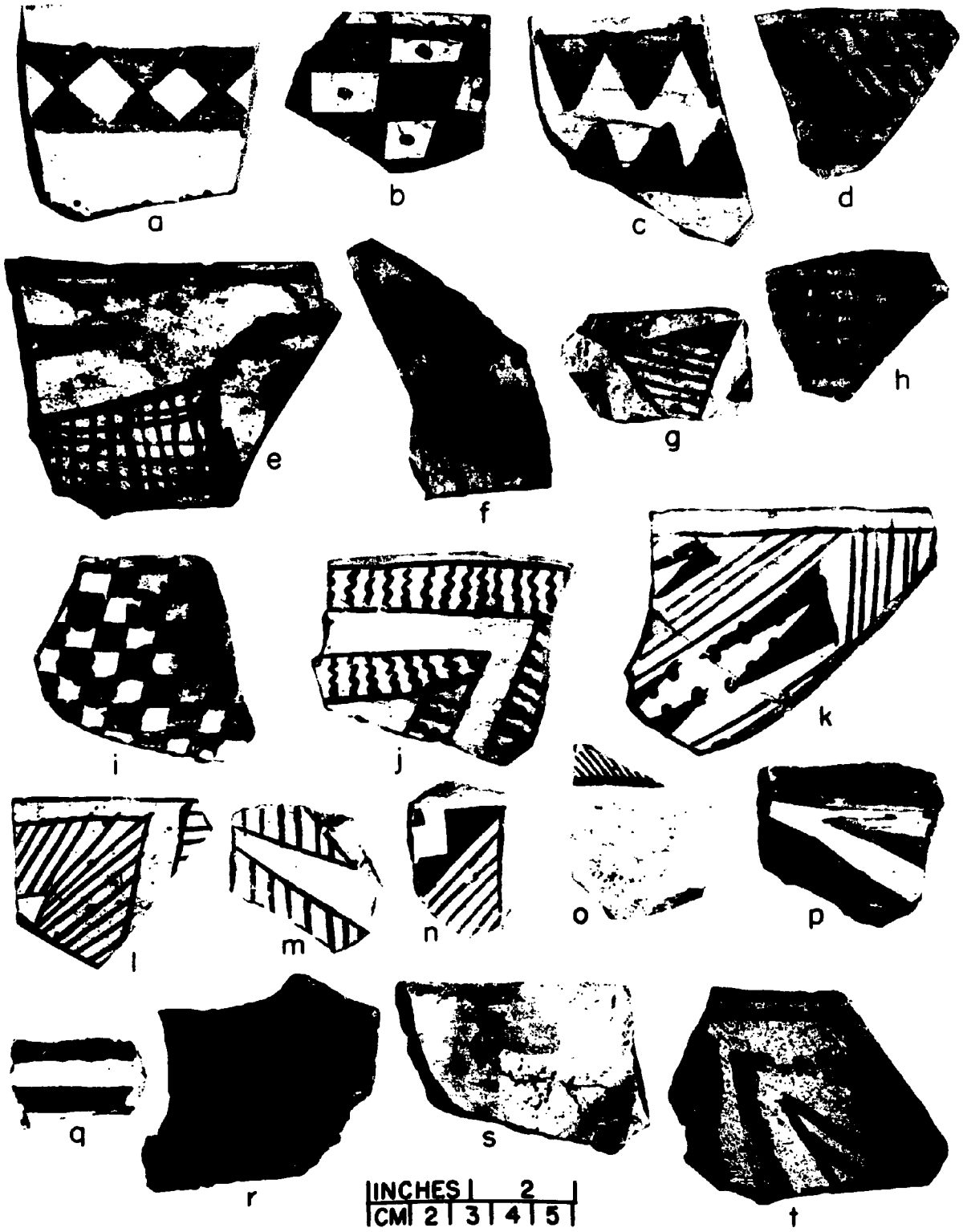


PLATE II

UNPAINTED POTTERY FROM AREA A, [illegible] BY-PASS SITE

a-c, neck-banded; d-e, corrugated;
f, punctate; g, neck-ribbed
h-i, incised; j-n, handles and lugs;
o-q, pipes; r-s, worked sherds.

PLATE II



PLATE III

SMALL ARTIFACTS OF STONE, BONE, AND SHELL FROM AREA A, TESUQUE BY-PASS SITE

a-i, points; j-k, chipped stone Group A;
l-o, chipped stone Group B;
p-u, chipped stone Group B'; v, shell artifact;
w-x, awls Group F; y-z, awls Group C;
aa, awl Group B; bb, dd-ff, awls Group A;
cc, awl Group E; gg-ii, other worked bone.

PLATE III

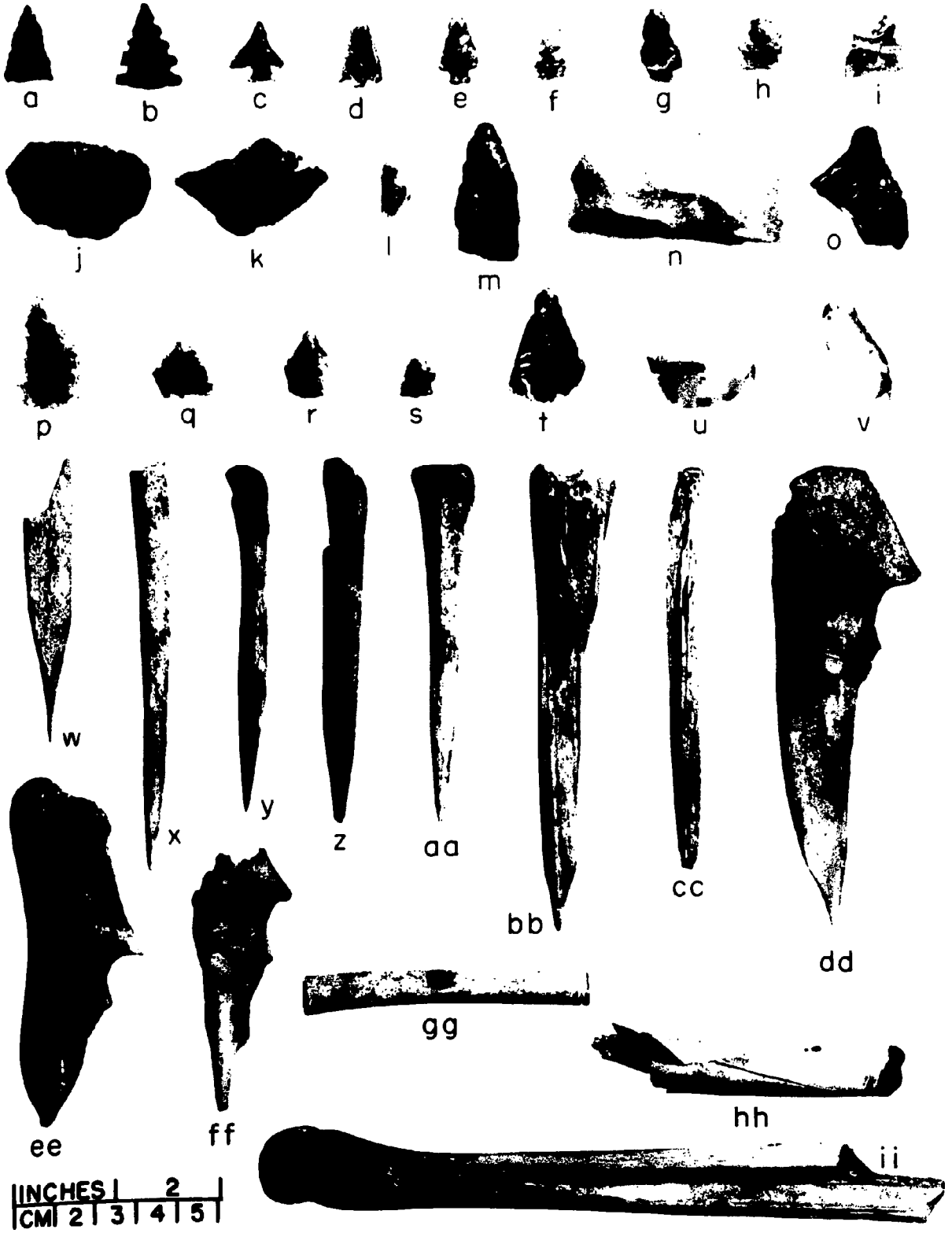

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ii
INCHES 1 2
CM 2 3 4 5

PLATE IV

LARGE SHERDS AND STONE ARTIFACTS FROM AREA A,
TESUQUE BY-PASS SITE

a-d, Kwahe'e B/W;
e-f, incised culinary pottery;
g-j, mauls and axes.

PLATE IV



PLATE V

PAINTED POTTERY FROM AREA B, TESUQUE BY-PASS SITE

a-k, Santa Fe B/W; l-m, Kwahe'e? B/W;
n, Biscuit B?; o-r, Red Mesa B/W;
s-y, unidentified B/W.

PLATE V

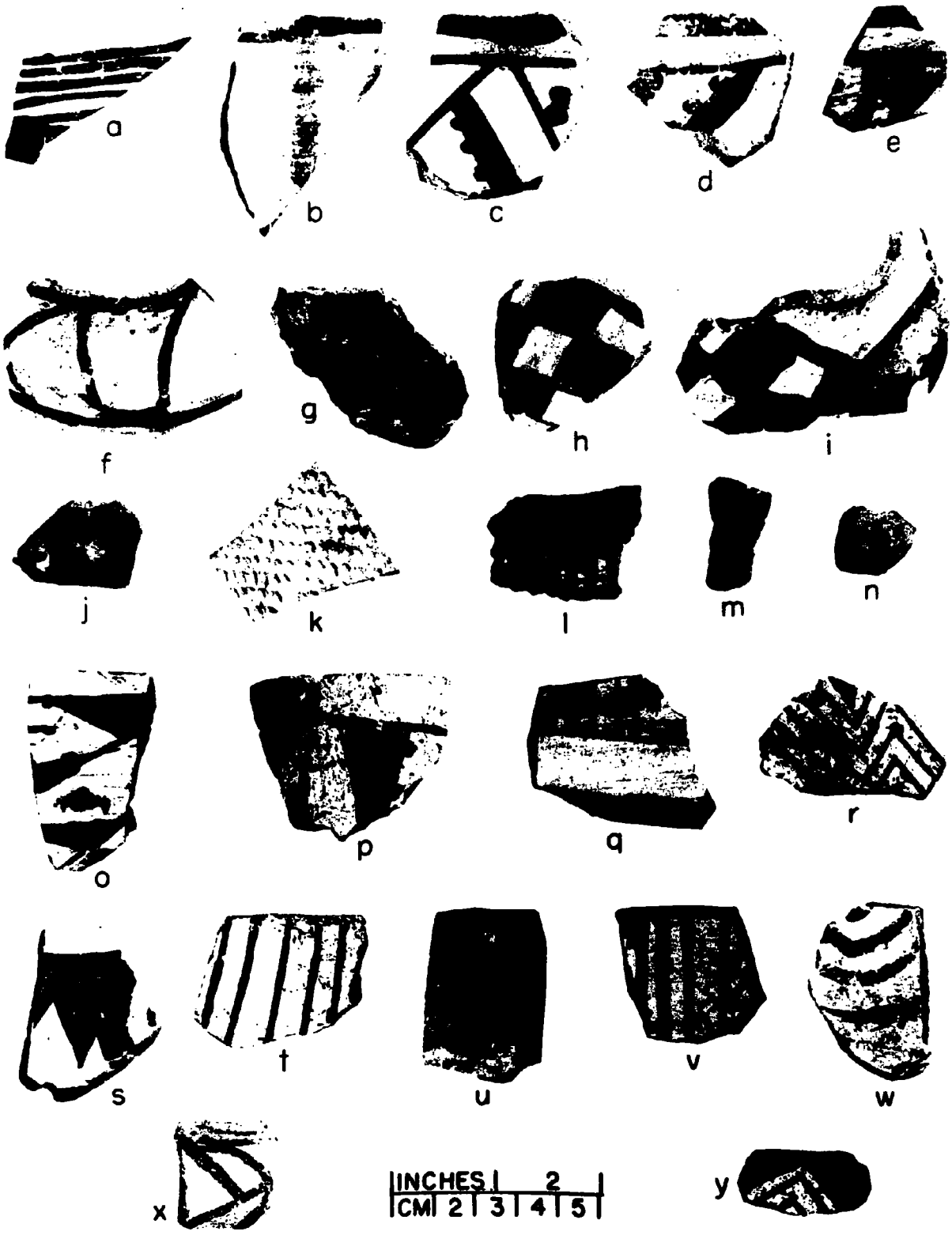


PLATE VI

UNPAINTED POTTERY FROM AREA B, TESUQUE BY-PASS SITE

a-g, neck-banded; h-i, Tesuque Smeared-Indented; j, neck-ribbed; k, corrugated and ribbed; l, corrugated; m, Linc Gray; n, corrugated and slipped; o, scored; p-t, handles and lugs; u-y, worked sherds; z, pipe.

PLATE VI

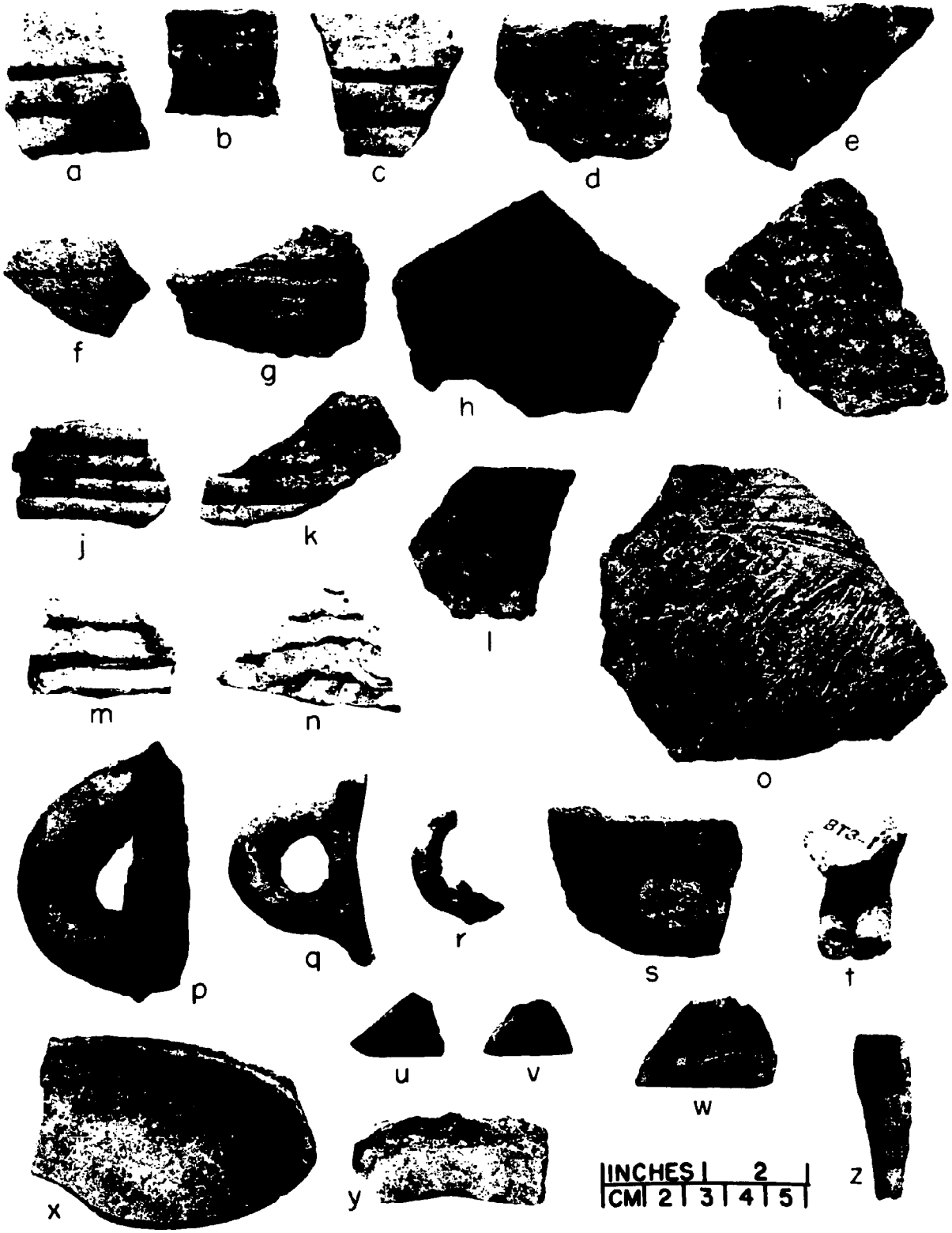


PLATE VII

ARTIFACTS OF STONE, BONE, AND SHELL FROM AREA B, TESUQUE BY PASS SITE

a-k, points; l-m, chipped stone Group B; n-u, chipped stone Group B'; v, worked shell, w, worked turquoise; x, z-bb, ee, awls Group B; y, cc, awls Group C; dd, ff-gg, awls Group F; hh-jj, other worked bone.

PLATE VII

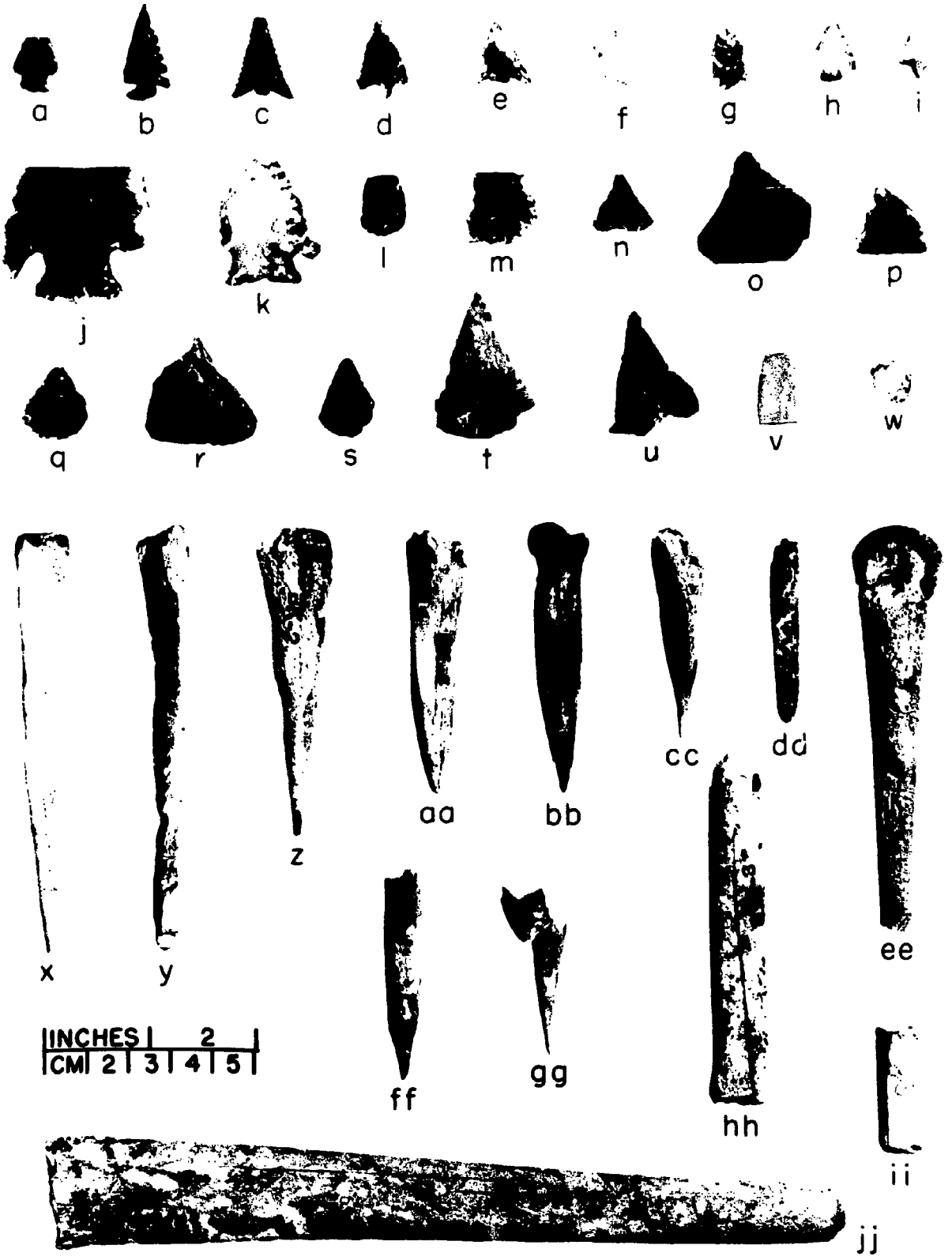

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aa
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jj
INCHES 1 2
CM 2 3 4 5

PLATE VIII

COMPLETE AND RESTORED VESSELS FROM AREA A AND AREA B,
TESUQUE BY-PASS SITE

a, section of corrugated vessel, Area A;
b, section of neck-banded vessel, Area B;
c-d, neck-banded vessels, Area B.

PLATE VIII

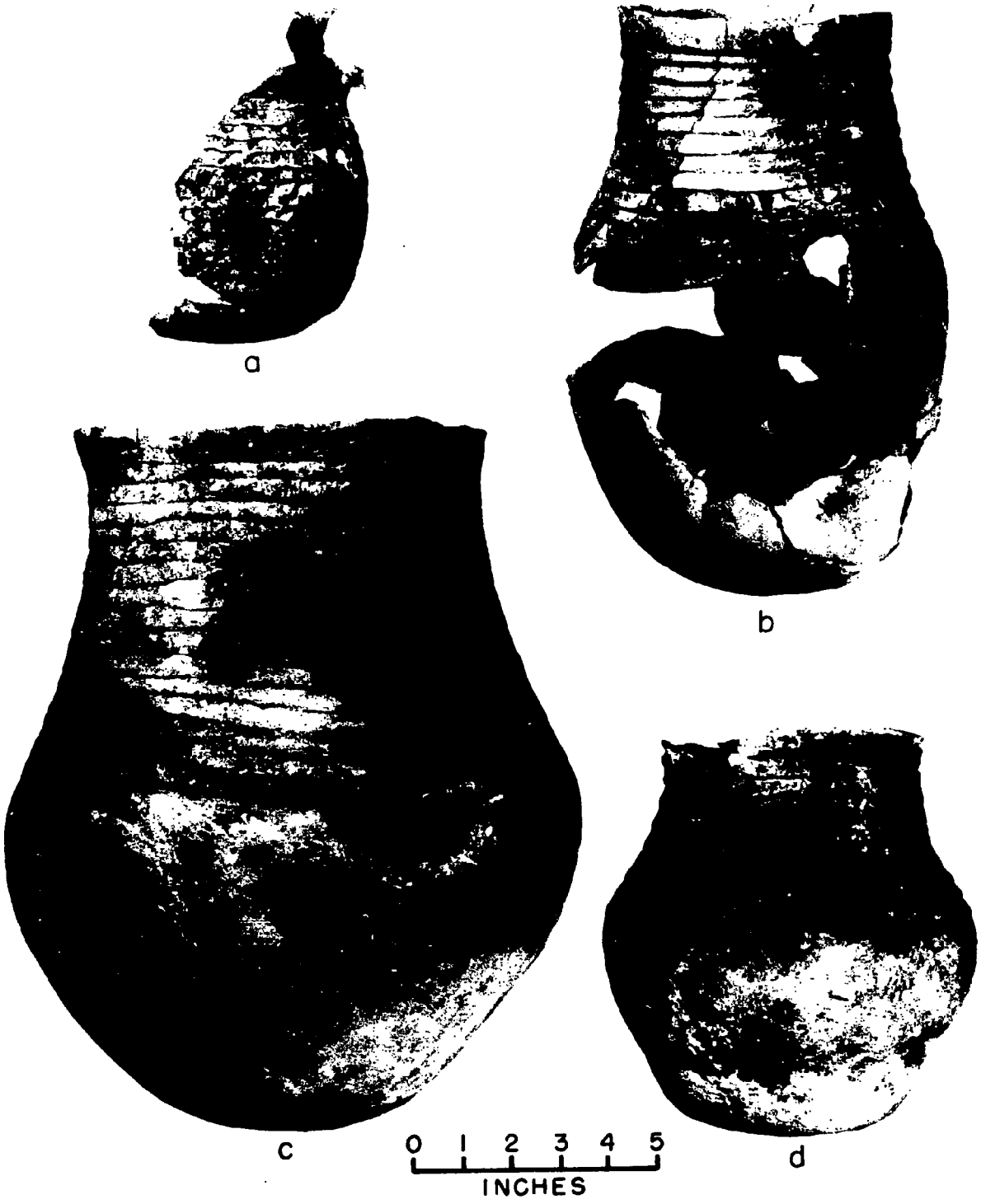
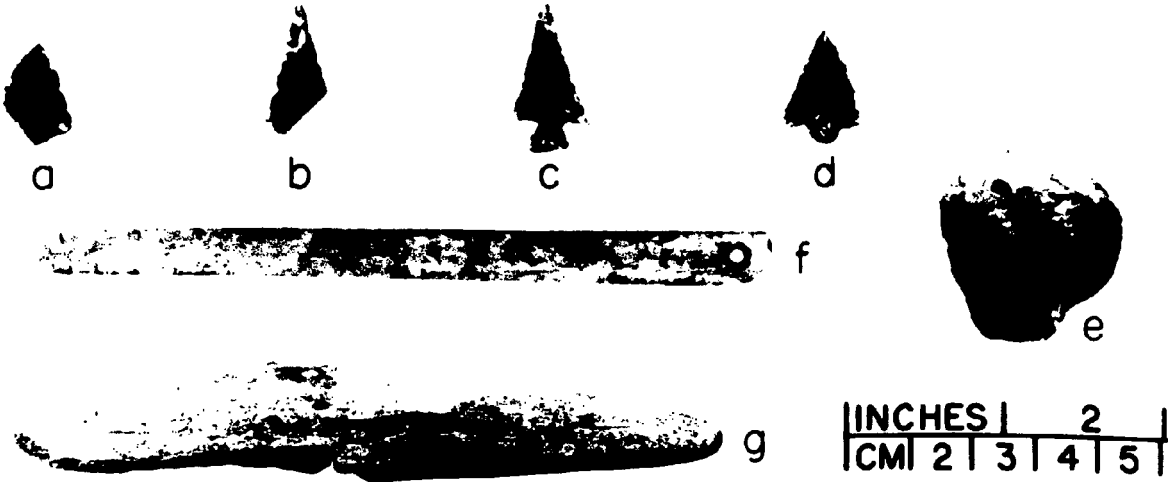


PLATE IX

ARTIFACTS FROM THE INTERMEDIATE AREA,
TESUQUE BY-PASS SITE



a-e, g, Feature I; f, Feature II.

PLATE X

EXCAVATION PHOTOGRAPHS, AREA A, TESUQUE BY-PASS SITE

a. the room-block, view NNW. Scale is in Room 5.
b. the kiva, view SSW. Ventilator is at left.

PLATE X



a



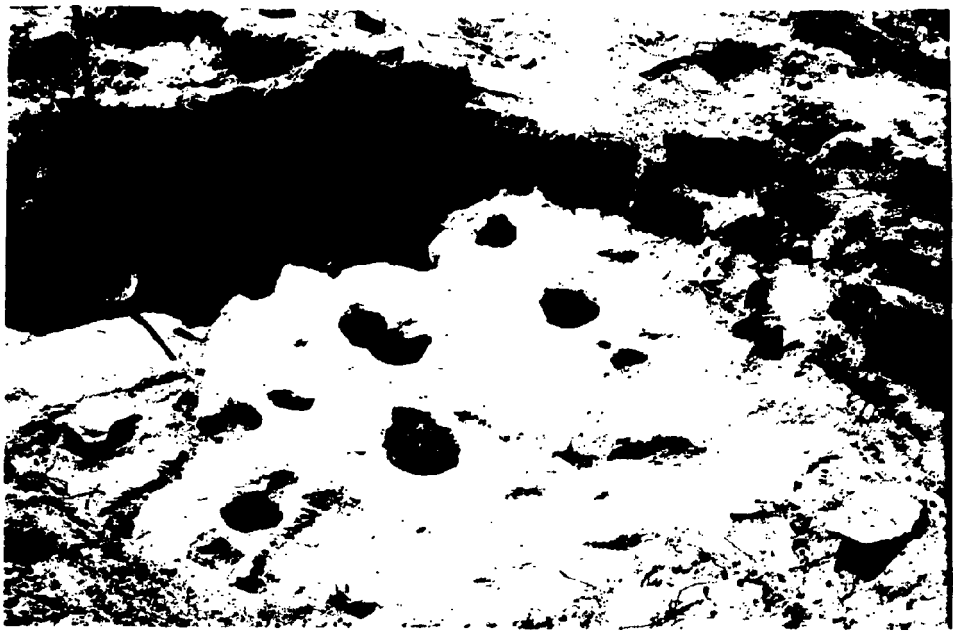
b

PLATE XI

EXCAVATION PHOTOGRAPHS, AREA B, TESUQUE BY PASS SITE

a. Features A and B, view SW. The shovel, resting on the darker floor of Feature B, leans against the superimposed adobe wall. The lighter floor area is that of Feature A
b. the kiva, view NE. Ventilator, not shown, is to the right of the broken stone slab.

PLATE XI



a



b