1935

A Stratigraphic Study of the Pottery of Alameda Pueblo

J. W. Hendron

STRATIGRAPHIC STUDY OF POTTERY OF ALAMEDA PUEBLO - HENDRON

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A STRATIGRAPHIC STUDY OF THE POTTERY OF ALAMEDA PUEBLO

by

J. W. Hendron

A Thesis Submitted for the Degree of Master of Arts in Archaeology

University of New Mexico

1935

PREFACE

The writer wishes to express his most sincere gratitude to Dr. Edgar L. Hewett for his helpful suggestions; to Dr. Florence M. Hawley for her patient assistance and guidance; to Mrs. Marjorie Tichy, through whom assistance in field work was obtained; and to the other persons who have given practical assistance.

TABLE OF CONTENTS

		Page
Preface		iii
Introduction		viii
Description of Alameda Pueblo		xi
Part I.	Previous Investigations of Rio Grande Pottery	1
	Nelson's Stratigraphic Studies and Classification at San Marcos	1
	Kidder's Stratigraphic Work and Classification of Pottery at Pecos	10
	Mera's Studies of Rio Grande Surface Collections	16
	McCreery and Hendron's Stratigraphic Tests, Kuaua and Puaray	22
Part II.	Stratigraphic Test at Alameda Pueblo	32
	Method	32
	Results of Test	33
	Interpretation of Data	37
Summary		47
Bibliography		49

LIST OF DIAGRAMS, ILLUSTRATIONS, AND MAPS

	Page
Map of the Old Tiguex Province	vii
Diagram of Alameda Pueblo.	xiii
Views of Alameda Pueblo today, showing northern and middle sections of ruin	xiv
View of Alameda Pueblo today, showing southern section of ruin	xv
Nelson's bowl rim form classification.	9
Kidder's Pecos bowl rim form classification. . .	17
Mera's bowl rim forms from Rio Grande surface collections	23
Test pit at Alameda.	34
Cross section of refuse mound.	35
Chart showing graphically the distribution in percentage of principal Alameda pottery types	43
Chart showing the range of glaze types from Alameda.	45

LIST OF TABLES

Page

Table I. Distribution of Principal Alameda Pottery Types 42

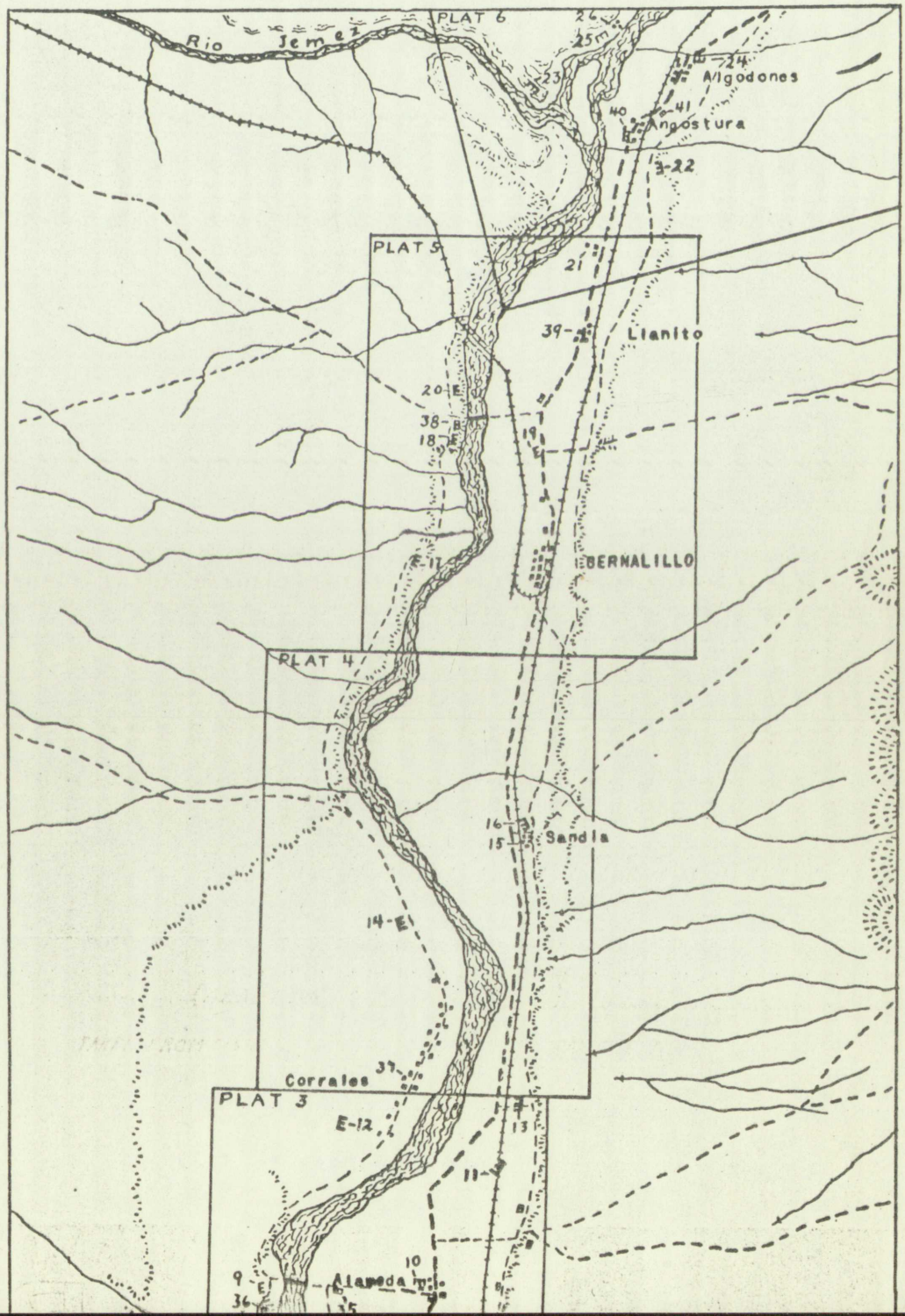
Table II. Percentages of Each Type of Glaze Per Stratum with all Glaze Taken as 100%. 44

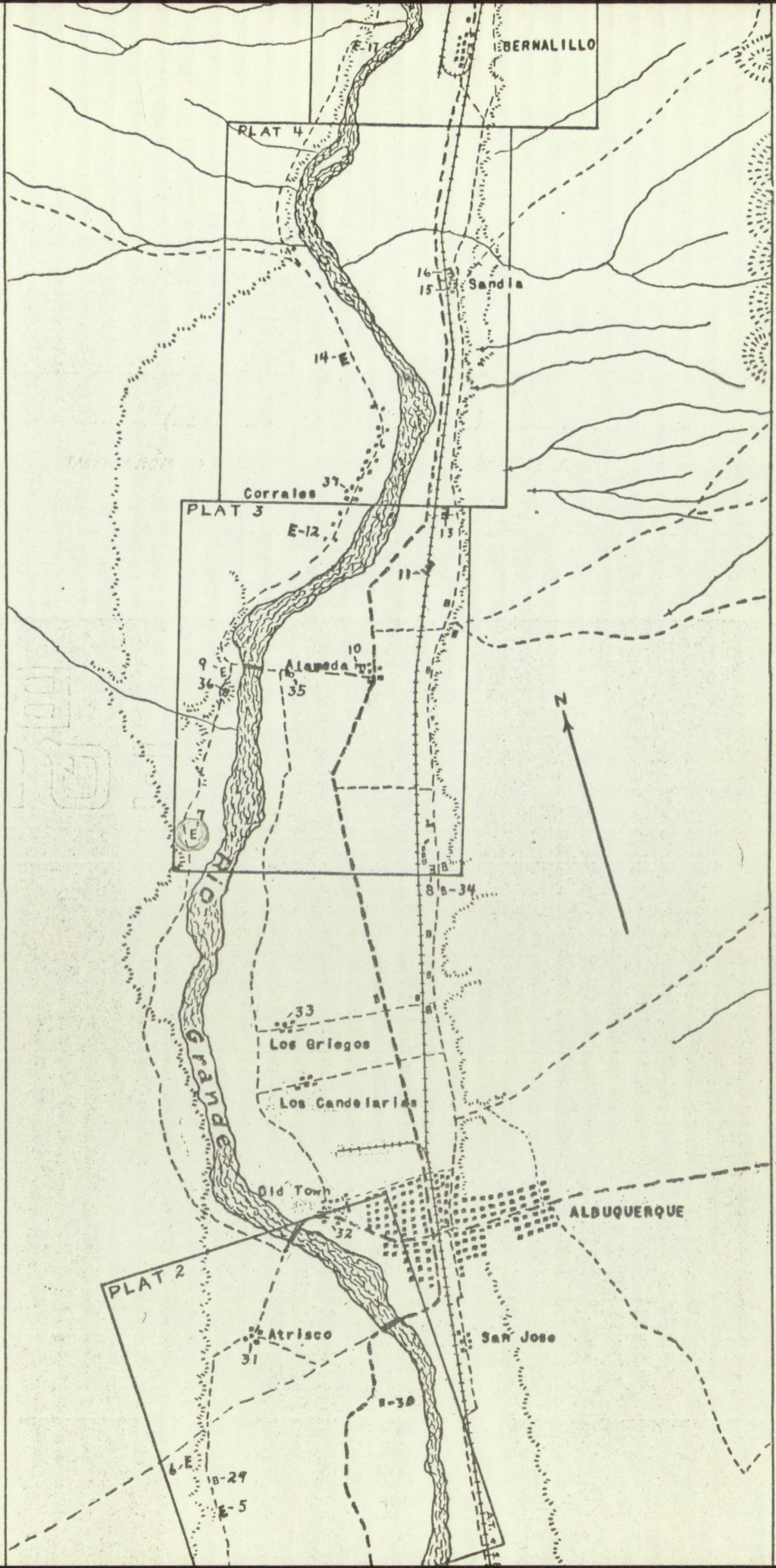
Table III. Percentage of Each Type of Glazed Rims Using the Total Number as 100% 46

ARCHAEOLOGICAL SURVEY OF THE PUEBLO PLATEAU

SANTA FE SUB-QUADRANGLE A

THE OLD TIGUEX PROVINCE

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Corrales
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7
E
8
B-34
33
Los Griegos
Los Candelarias
Rio Grande
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32
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San Jose
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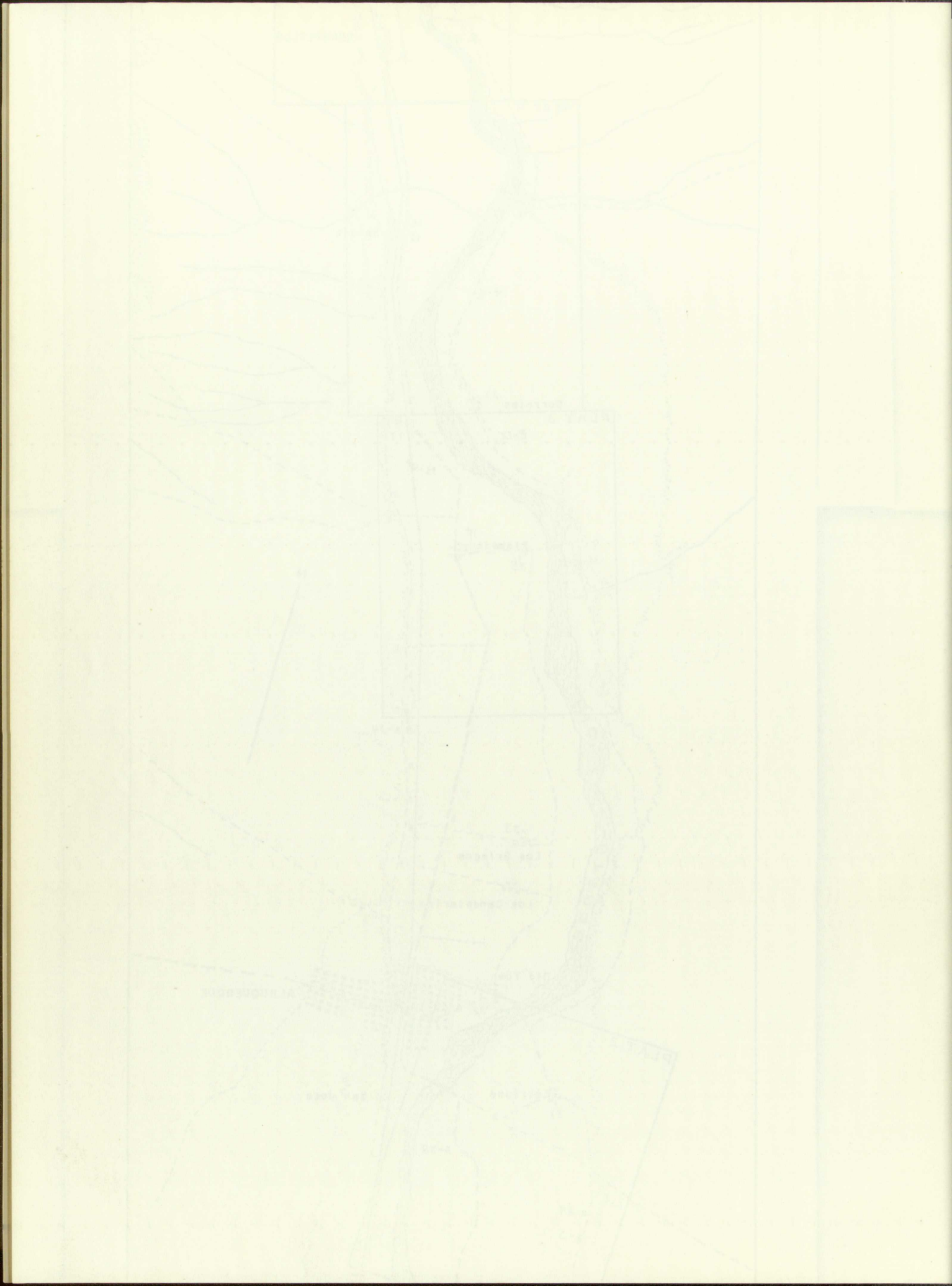
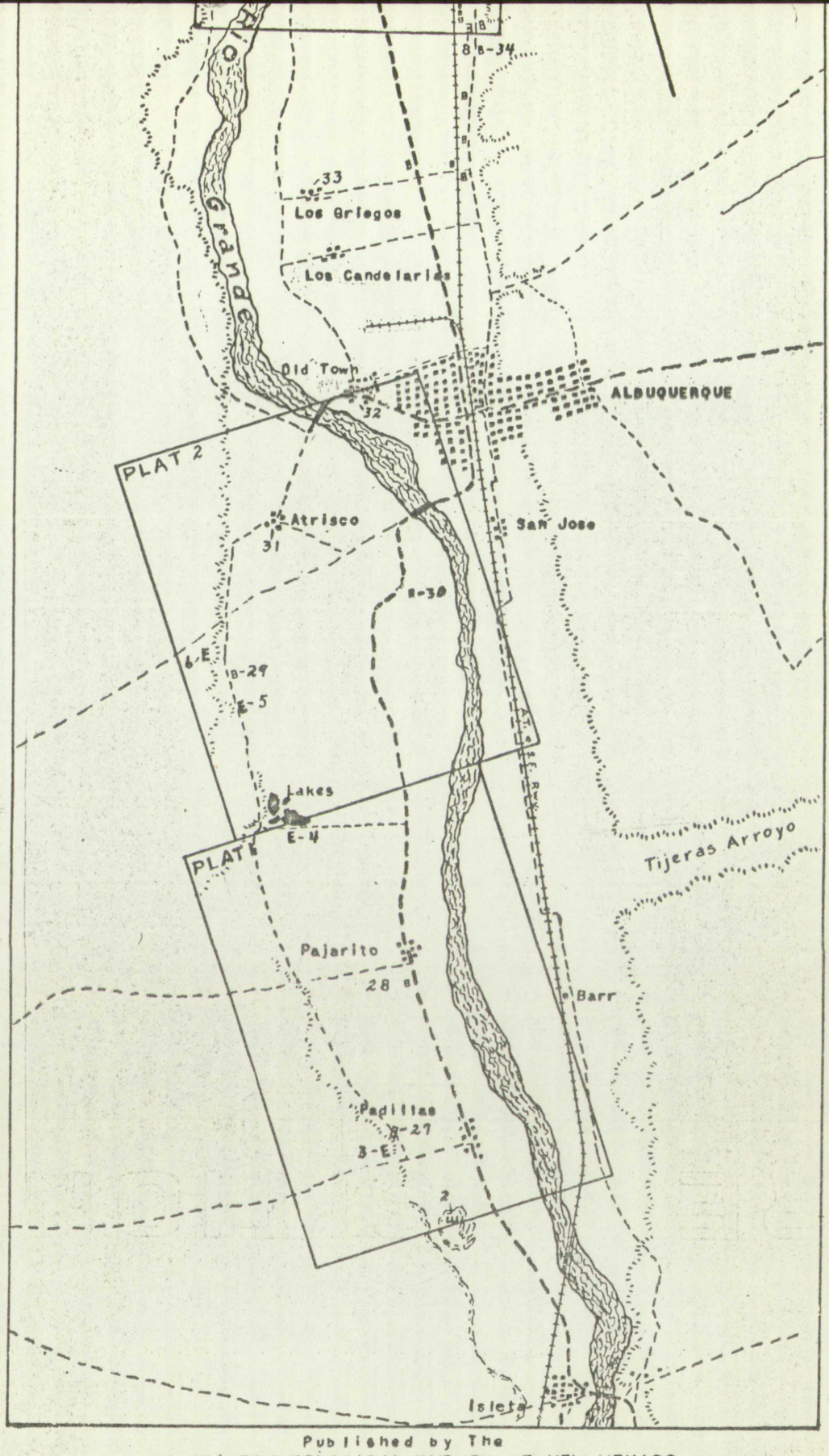
6-E
18-29
E-5





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Scale of Miles

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Reginald G. Fisher, Archaeological Engineer In Charge

R.G.F.

INTRODUCTION

The ancient pueblo of Alameda lies in Coronado's old Tiguex province, on the western bank of the Rio Grande approximately half way distant between Bernalillo and Albuquerque.

The Tiguex province comprises a narrow strip limited by the banks of the river. It begins in the north near the present town of Bernalillo, and extends as far south as Los Lunas. The old Spanish chroniclers give the number of Tigua villages on the Rio Grande at from twelve to sixteen. At an early date the number of villages was reduced, through the consolidation of smaller settlements with larger ones, for the security of their inhabitants, as well as to congregate them about the missions, and so in 1680 only four pueblos were occupied by the Tiguas: Puaray, opposite Bernalillo; Sandia, or Na-fi-ap; Alameda, on the left bank of the river; and Isleta, or Tshi-a-uip-a, thirty miles farther south, on the right bank.[1]

---

1. Bandelier, A. F. Final Report of Investigations Among the Indians of the Southwestern U. S., pp. 219-220.

According to Vivian, in his "Restudy of the Province of Tiguex,"[2] the pueblo being studied had various names and is probably best known as the pueblo of Alameda of 1680.

It was undoubtedly one of the twelve Tiguex pueblos of Coronado, though it was not definitely named or located by that expedition. The second Spanish expedition, that of Rodriguez, called it Santa Catalina. To the third Spanish expedition, that of Espejo, this was the pueblo of Los Guajolotes, and can very definitely be located from the Luxan account of that entrada. It is certain that this site, the Santa Catalina of 1580, is the Los Guajolotes of 1581, later to be the Alameda in 1680.[3]

The Indians of Alameda participated in the outbreak of 1680, as did the inhabitants of Puaray and Sandia. In 1681, upon the approach of Otermin's forces the inhabitants of all three pueblos fled. When it became known to him that his negotiations with the rebels at Cochiti had failed, he ordered these three Tigua villages burned.[4]

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2. Vivian, Gordon. Restudy of the Province of Tiguex, p. 50.

3. Ibid., pp. 50-53.

4. Bandelier, op. cit., p. 230.

Two of the Tiguex villages of Coronado's time survive today: Isleta, the southernmost town of the province, and Sandia, fourteen miles north of Albuquerque. Several large ruins lie on the western bank of the river, one just north of Bernalillo bridge, and three others from two to eight miles south.[5] It is within this group that Alameda is located.

Dr. Hewett has said, "In this province of which we have unbroken history for well-nigh four centuries, there is the best opportunity I know for the study of archaeology in the making."[6]

---

5. Hewett, Edgar Lee. Ancient Life in the American Southwest, pp. 244-245.

6. Ibid., p. 245.

DESCRIPTION OF ALAMEDA PUEBLO

Alameda pueblo lies approximately two and one-half miles southwest of the present town of Alameda. It lies at the foot of the sandhills and overlooks the Rio Grande valley. At the present time the banks of the river, which flowed only a few feet from the pueblo in years past can still be seen. Constantly changing its course, the present channel now lies several hundred feet to the east.

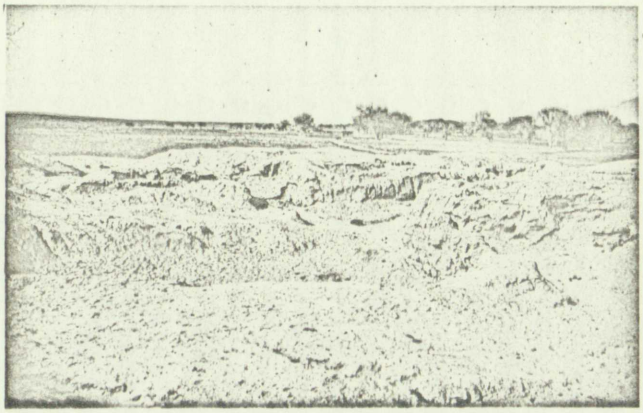
The pueblo occupies a space some 300 yards long and about half as wide, and from all indications it was at one time a community apartment house comprising two or more definite sections of rooms. The rooms appear to be deep, approximately 8 feet, as seen from a few walls that are still standing.

Alameda is in a sad condition, due to attacks made by pot-hunters and treasure seekers. It has literally been turned upside down, by a man looking for gold, so the story goes. The earth has been scooped from the inside and deposited in huge mounds 3 to 6 feet high, seemingly around the outside of the walls.

Refuse mounds have been hidden, walls torn down, and pottery sherds of all colors and types are scattered from one end of the pueblo to the other. Whether or not there is anything of value left for the archaeologist remains to be seen, and only by complete excavation.

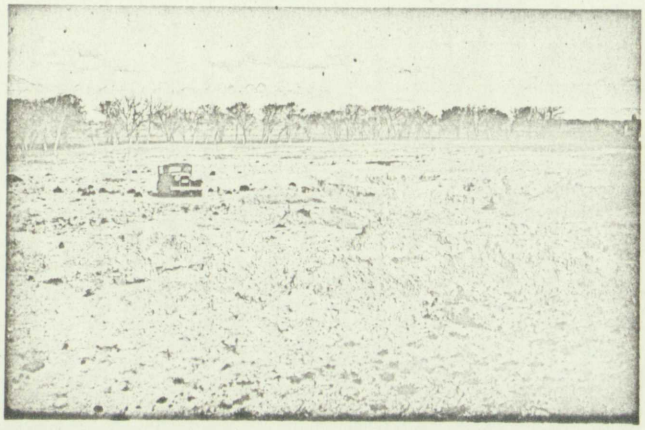
SCALE 1" = 300'

DIAGRAM OF ALAMEDA PUEBLO. TAKEN FROM FISHER'S SANTA FE SUB-QUADRANGLE A



NORTHERN SECTION OF ALAMEDA

MIDDLE SECTION OF ALAMEDA



SOUTHERN SECTION OF ALAMEDA

PART I

PREVIOUS INVESTIGATIONS OF RIO GRANDE POTTERY

The objective of this paper is to record and present the results of stratigraphic studies made on pottery at Alameda. Before this is attempted, it is necessary to have a clear picture of the most important previous investigations of pottery of the Rio Grande pueblos and related sites.

Nelson's Stratigraphic Study and Classifications at San Marcos

N. C. Nelson, in his "Chronology of the Tano Ruins, New Mexico,"[1] was the first to publish on stratigraphic investigations in this area. He gives a general consideration of prehistoric pottery of the Southwest, and lists several more or less localized types of prehistoric pottery, such as ornamentally indented coiled ware, several distinct varieties of painted ware, a somewhat varied group of glazed ware, and an ancient ware of the painted order which seems to mark the south-

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1. Nelson, N. C. Chronology of the Tano Ruins, New Mexico, pp. 159-181.

eastern limits of Pueblo culture in the United States.

The ceramic area, characterized primarily by glazed pottery, extends up the Rio Grande drainage basin almost to the Colorado boundary. Its eastern limit is uncertain, while in the west it remains within the Rio Grande basin except for a slender arm extended by way of Laguna and Acoma to the Zuni valley, where it expands again, taking in the country drained by several tributaries of the Little Colorado, close to the Arizona-New Mexico boundary. Glazed pottery then is distributed over an area approximately 20,000 square miles in extent, a stretch of territory which may be said to constitute the north-eastern border section of Pueblo culture.

The greater portion of this country seems unfit for almost any sort of aboriginal existence, but the flood plain of the Rio Grande and some of its tributaries offer inducements to a sedentary agricultural people. Excluding the smallest sites, there are on record for the region about three hundred ruins, some of them very large.

It is apparent that the Rio Grande pueblos underwent certain cultural transformations in prehistoric times. This fact was early recognized for a district lying south-east of the Pajarito plateau, and somewhat central

in the glazed pottery area. Traces of "small house ruins" were found, marked by sherds of painted pottery, of the black-on-white type, as well as by coiled ware. It was easy to see that these sites antedated the large Tano ruins, as of the Galisteo basin, which were characterized chiefly by glazed pottery. One of these glazed types was eliminated as of historic date, having been constantly associated with bones of domesticated animals, and, in fact, only in particular sections of such pueblos as San Cristobal, San Lazaro, San Marcos, Galisteo, and San Pedro Viejo, all but the last of which were known as Mission centers down to about 1680. There still seemed to be two distinguishable types, with several variants, of glazed pottery.

The first site excavated was San Pedro Viejo or Paako, a ruin lying on the southwestern edge of the Tano territory, near the head of the valley separating the San Pedro and Sandia Mountains. Results from here were verified and supplemented by data obtained from a refuse deposit at Pueblo San Cristobal on the east-central border of the Tano country. These finds were also verified at a later date at San Marcos, Cieneguilla, and Arroyo Hondo or Kuakaa. These investigations resulted in the identification and chronological order of four, or practically five, successive styles of pottery corresponding

to as many periods or stages in the history of the people occupying the late Tano and adjacent Pueblo territory.

The following is a classification of Tano pottery types:

Type I Two and Three Color Painted Wares

1. Black-on-white
2. Black-on-red
3. Black-and-white-on-red

Type II Two Color Glazed Wares

1. Black-(or brown)-on-red
2. Black-(or brown)-on-yellow
3. Black-(or brown)-on-gray

Type III Three Color Glazed and Painted Wares

1. Black-glaze-and-red-paint-on-gray
2. " " " " " " -yellow
3. " " " " " " -pink
4. " " " " " " -red

Type IV Historic Two Color Glazed Wares

1. Brown-(or green)-on-gray
2. " " " " -red
3. " " " " -yellow

Type V Modern Painted Wares

1. Black-on-pink
2. Black-and-red-on-pink

The above types of pottery succeed each other in the order given: but accompanying them from beginning to end, without undergoing any marked changes, are two additional types, viz:

1. Corrugated or coiled ware
2. Biscuit ware (i.e., a surviving variety of black-on-white ware)

Two superpositions were discovered at San Pedro Viejo, one showing contact of the historic type of glazed pottery with another earlier type of glazed ware, and the other showing contact of the older of the two preceding glazed types with the black-on-white painted ware. These superpositions showed nothing but time relations. Later another case of contact similar to the last of the two mentioned above was found at Pueblo Kuakaa. But, as before, these sections being incomplete in that they showed no trace of the fourth type of glazed ware, could not be taken at face value. At San Marcos and Cieneguilla, in both the refuse heaps and ruins proper, the ancient type of glazed ware twice noticed in contact with the black-on-white ware was found actually mixed with it, the one gradually replacing the other. This evidence accounted for the otherwise unknown time interval that separated the merely superimposed occurrences of types and from the point of view of the merely physical relationship of contiguity, connected them. The Tano section which comes nearest to fulfilling the succession was found at Pueblo San Cristobal, a test being made from an undisturbed refuse mound, 3 x 6 feet on the horizontal and nearly 10 feet deep. The results

of this test showed an abundance of corrugated cooking ware but of little value in succession, since the same types were used throughout the period; biscuit ware showed a very irregular succession; Type I, two-and-three-color painted ware or black-on-white painted ware had its maximum expansion at the bottom and becomes negligible about halfway towards the top, the contemporary variants of early glazed ware--called Type II--showed normal frequency curves of distribution, attained a maximum and then fell into decline; Type III, or a ware combining painted and glazed ornamentations, barely presented itself.

In description and classification of pottery types the corrugated ware is now left out as chronological data because of its general occurrence throughout the different layers. At any rate its form, size, surface finish, and paste composition was noted.

Of the biscuit ware there seemed to be two kinds, the most common being of a dull white or light gray color, the other of a dull yellowish tone. It is thought that this ware was not manufactured by the Tano but secured by trade either from the Keres or the Tewa.

Type I, two-and-three-color painted ware, is a local variety of the black-on-white ceramics commonly

identified with the generalized substratum of southwestern Pueblo culture. This ware is particularly lacking in variety of form. In decorative symbolism it approaches the abandoned northwestern Pueblo area rather more than the southwestern and is little, if at all, inferior to it. A small percentage of black-on-red painted ware is generally mixed with the black-on-white. These have a gray paste, red slip on both sides, geometric design in black on the inside, and sometimes a design in white on the outside.

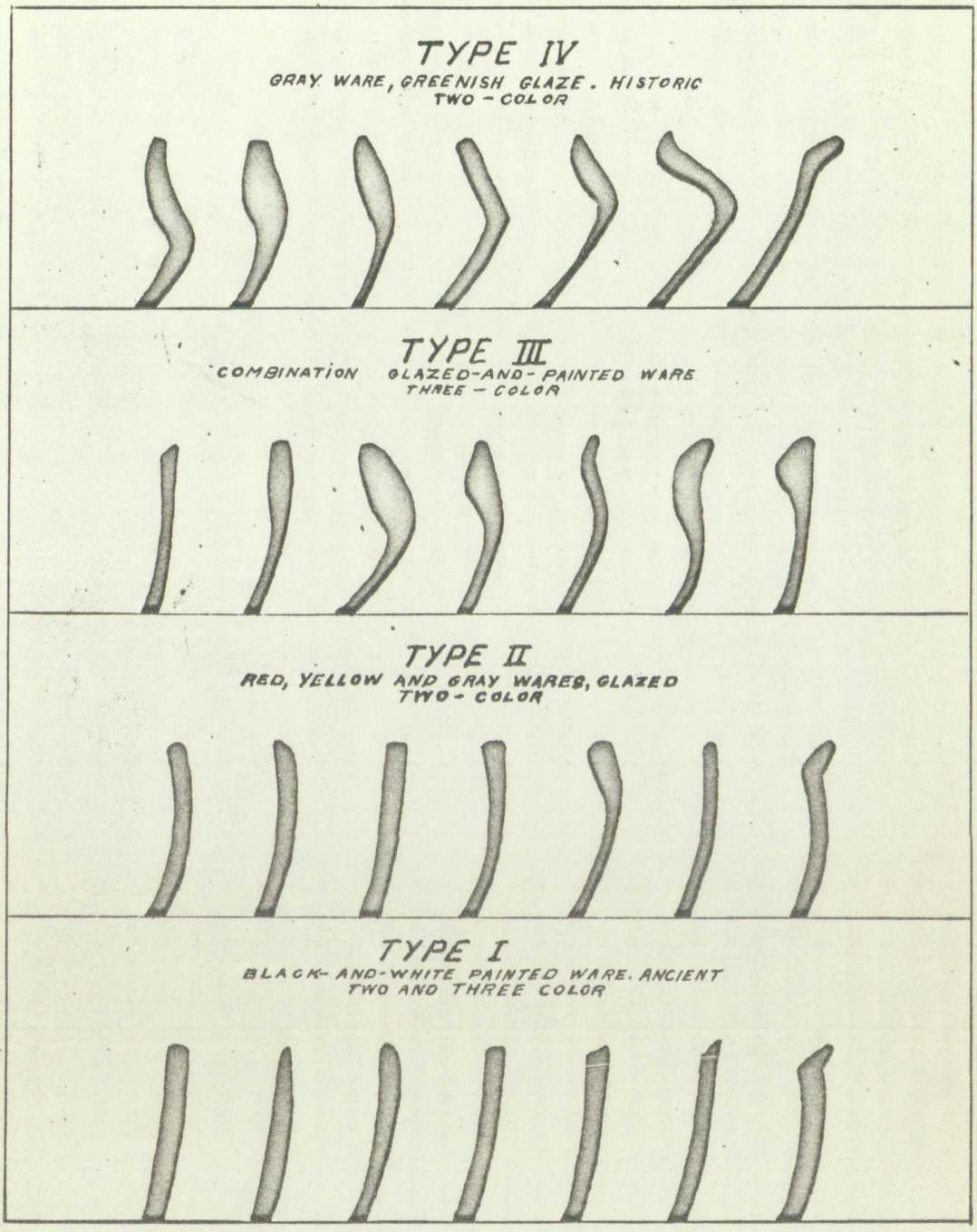
Type II showed three distinct varieties of color--red, yellow, and gray with ornamentation in black or brown glaze. The red colored ware seems to have been the transitional form, while yellow and gray wares held out the longest and gave rise to the succeeding type. Here we find black-on-white replaced by black-on-gray, and black-on-yellow wares, the black-on-red having been held over. Ornamentation was now applied with glaze instead of paint. There are indications that the transition from Type I to Type II was not sudden.

In Type III, three-color glazed ware, the design element, or part of it, is outlined in glaze and filled in, usually, with red paint, the combination design being placed on a ground color or slip of a different color, as yellow, pink, gray, and even some shade of

red. This type is apparently diffused over the entire glazed pottery area.

Type IV, or historic two-color glazed ware, though very short lived, has been singled out as a chronologic type because it is strictly characteristic of those ruined Tano pueblos that were inhabited between 1540 and 1680. It has also been found in ruins whose historic occupancy is not a matter of record. Its characterizing peculiarities are diversity of form and its simplified but execrable decoration. It is not genuine Indian art, but a poor European imitiation. It represents the breakdown of Pueblo culture under the first century of stringent Spanish regime.

Type V, modern painted pottery, began to replace the glazed ware at San Marcos, and to a slight extent elsewhere, sometime before the outbreak of 1680. Bowls and jars occur, showing at least several of the former variations. Vessel surfaces are more or less well rubbed, the undecorated portions are generally painted red, other portions a light pink. Ornamentation is done in black. All decorative lines are thin, straight, or curved and done with only a fair amount of precision. Most of the designs are geometric. Vessel walls become thicker, the paste is of light weight, porous, and brittle, containing a good deal of sand. Its color ranges between red



Typical rim sections of Tano pottery, only bowls being represented. The very gradual specialization suggests genetic relationship. (Taken from Nelson's Chronology of the Tano Ruins.)

and dull yellow, the latter resembling at times the color of sand.

In a recent letter to Miss Hawley, Dr. Kidder states that although he and Nelson used different classifications for their pottery types, their chronological sequences as obtained by stratigraphic work are essentially identical.

Kidder's Stratigraphic Work and Classification of Pottery at Pecos

A. V. Kidder did the second piece of stratigraphic work on glaze wares. In "Notes on the Pottery of Pecos,"[2] he presents the following classification:

I. Dull-Paint Ware

1. Black-on-white
2. Biscuit
   a. Rough exterior
   b. Smooth exterior
3. Modern

II. Glaze Paint Ware

1. Two-color
   a. Black-on-red
   b. Black-on-yellow
2. Transitional
3. Early three-color
4. Pajaritan three-color
5. Late three-color
6. Degenerate

III. Undecorated Smooth Ware

1. Polished black
2. Plain red

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2. Kidder, A. V. Notes on the Pottery of Pecos, pp. 325-361

IV. Black Ware

1. Corrugated
2. Strong blind-corrugated
3. Medium blind-corrugated
4. Faint blind-corrugated
5. Featureless
6. Striated

Material for this study was gathered by means of test sections similar to Nelson's; columns of rubbish running from surface to hardpan were isolated, and from them was taken their entire pottery content, the fragments from the different levels or cuts being kept separate. The tests were laid out in nearly equal divisions based on sand, ash, or other strata which indicated actual levels of deposition during the formation of the mound. The Pecos deposits were for the most part laid down on sloping or irregular surfaces.

Four tests were run, three from a great rubbish heap on the east slope of the Pecos mesa. The first earth column tested was 20 feet long, 5 feet wide, and 18 feet high; its eight cuts (numbered as in all the others from top to bottom) averaged 2 feet 3 inches in thickness. The next was 25 feet long, 5 feet wide, and 12 feet high, with seven cuts of about 1 foot 8 inches in thickness. The last of this series had eight cuts of 1 foot 6 inches. The fourth test was made in a midden. It was approximately 3 feet square, by 4 feet high, and had seven inch cuts.

The sherds from each cut were classified according to ware and to vessel-forms, but the glazed bowl ruins were subjected to closer study, as their stratigraphic sequence indicated their value in chronological studies.

It was shown that the black-on-white ware was very strong in the beginning, but declined as the glazes came in. There was also a beginning of modern painted, plain red, and polished black ware. Black ware as a class had no chronological significance, although it was important in the ceramic output of the pueblo during its whole occupation. In no case did black-on-white ware make a large showing after the real beginning of the rise of glaze.

Glazed ware rose from practically nothing at the bottom, to a high percentage at or somewhat beyond the middle, and declined toward the end little less rapidly than it rose. The showing of biscuit ware was comparable to that of glaze, except that biscuit ware had a shorter life, and glaze was at its height.

Polished black, plain red, and modern painted wares have their origin at about the point of extinction for biscuit, and were on the rise in the last cut of each test.

It appears that there were three main stages in

the ceramic history of Pecos: the black-on-white, the glazed, and the late; that the black-on-white ended soon after the settlement of the mesa, and the late began only shortly before its abandonment. In the glazed period falls most of the history of Pecos, and the material has been divided into six easily recognized types.

Type 1 is the earliest of the glazes. Type 2 is transitional between 1 and 3, which in latter turn develop directly into Type 5; the exact morphological position of Type 4 is still uncertain, but chronologically is either between 3 and 5 or contemporaneous with early 5; Type 6 represents the last stage of glazing.

At Pecos a black-on-red glaze ware was at first the preponderant. The black-on-light gains in importance and the red falls away as Type 2 glaze is approached. Type 2 is marked by a degeneration of the glaze, which becomes thicker and less adaptable to the production of fine line designs; by a parallel deterioration of the clear yellow color of the slip; by a thickening inwards of the bowl rim; and by the appearance on bowl exteriors, first of slashed marks and crosses, then of red-filled decorations. In Type 3 the slip on visible surfaces is almost invariably light, but is of poor uncertain quality; the glaze lines also are seldom sharp-edged and clear black, but are heavy, "runny", and of various shades of rusty black

brown, and green-brown. Type 5 seems to be merely a further growth along the same lines.

Type 4 seems to come in between Types 3 and 5 rather abruptly, runs but a short course, and abruptly disappears, apparently with no preceding or succeeding type. Its high, rather thin rims, red color, good glaze, and specialized decoration, do not fit well in the Pecos series.

Associated with Type 5 glaze are the featureless black and, towards the end, the striated black. There is a considerable amount of Biscuit B, averaging yellower than earlier Biscuit B, and having higher rims. Shortly after Type 5 glaze period it disappears.

Type 6 is distinguishable by the diversity and eccentricity of the vessel shapes, and by the extremely "runny" nature of the glaze. Quoting Nelson, "Generally the irridescent glaze substance is of such striking and excellent quality as to incline one to believe that it was compounded after a Spanish formula. The fact that the artist could not control it at all seems suggestive of the same idea. The designs attempted, though of the very simplest geometric nature, were almost invariably spoiled by the running of the glaze. The color and general appearance is a very characteristic dark brown when thickly applied, and of a greenish hue when the coating

is thin."[3]

The next in order were the dull-paint wares or "modern painted ware"--their entire appearance differing from glazed pottery. The only resemblance being the high, out-curved rim common in Type 6.

Chemical tests of this glaze, made by F. G. Hawley, to be published in Kidder's forthcoming volume on Pecos glazes, prove that the composition of the glaze did not change during the successive type periods. From beginning to end of the glaze period, the glazing element remained lead oxide, the colors changing according to admixture of iron and copper oxides. The texture of the glaze largely depended upon the amount of clay added to make it spread smoothly.

Tentative Division of the Culture-History of the East Central Rio Grande into Chronological Periods[4]

I	Formative period	Wares ?	Nelson's pre-pueblo; not yet found in Pecos valley
II	Archaic period	Indented corrupted, black-on-white, black-on-red	Nelson's I; not yet found at Pecos, but present at other nearby sites

3. Nelson, N. C. Chronology of the Tano Ruins, New Mexico, p. 176.

4. NOTE: The leading ware of each period is underlined.

III	Late Archaic	Corrugated (little) strong blind corrugated, blk.-on-white	Nelson's I
IV	Period of introduction of Glaze	Strong & medium blind corrugated, Glaze I, Biscuit A	Nelson's II; author's Agua Fria "schoolhouse"*
V	Period of Concentration	Faint blind corrupted, glazes 2 & 3, Biscuit B	Nelson's III; author's "Frijolito"*
VI	Late prehistoric ?-1600	Featureless blk., glaze 4, glaze 5, Biscuit B	Nelson's III; author's "Pajaritan"*
VII	Early historic (1540) 1600-1680	Striated black, late glaze 5, glaze 6, modern begins ?	Nelson's IV
VIII	Late period 1680-1840	Striated black ? plain red, polished black, modern	Nelson's V
IX	Present period 1840-1917	Polished wares (Santa Clara), painted wares (San Ildefonso, Santo Domingo, Tesuque, Cochiti)[5]	

Mera's Studies of Rio Grande Surface Collections

In 1922, H. P. Mera, of the Laboratory of Anthropology, Santa Fe, New Mexico, began a study of Glaze paint bowl rim forms from material gathered at a large

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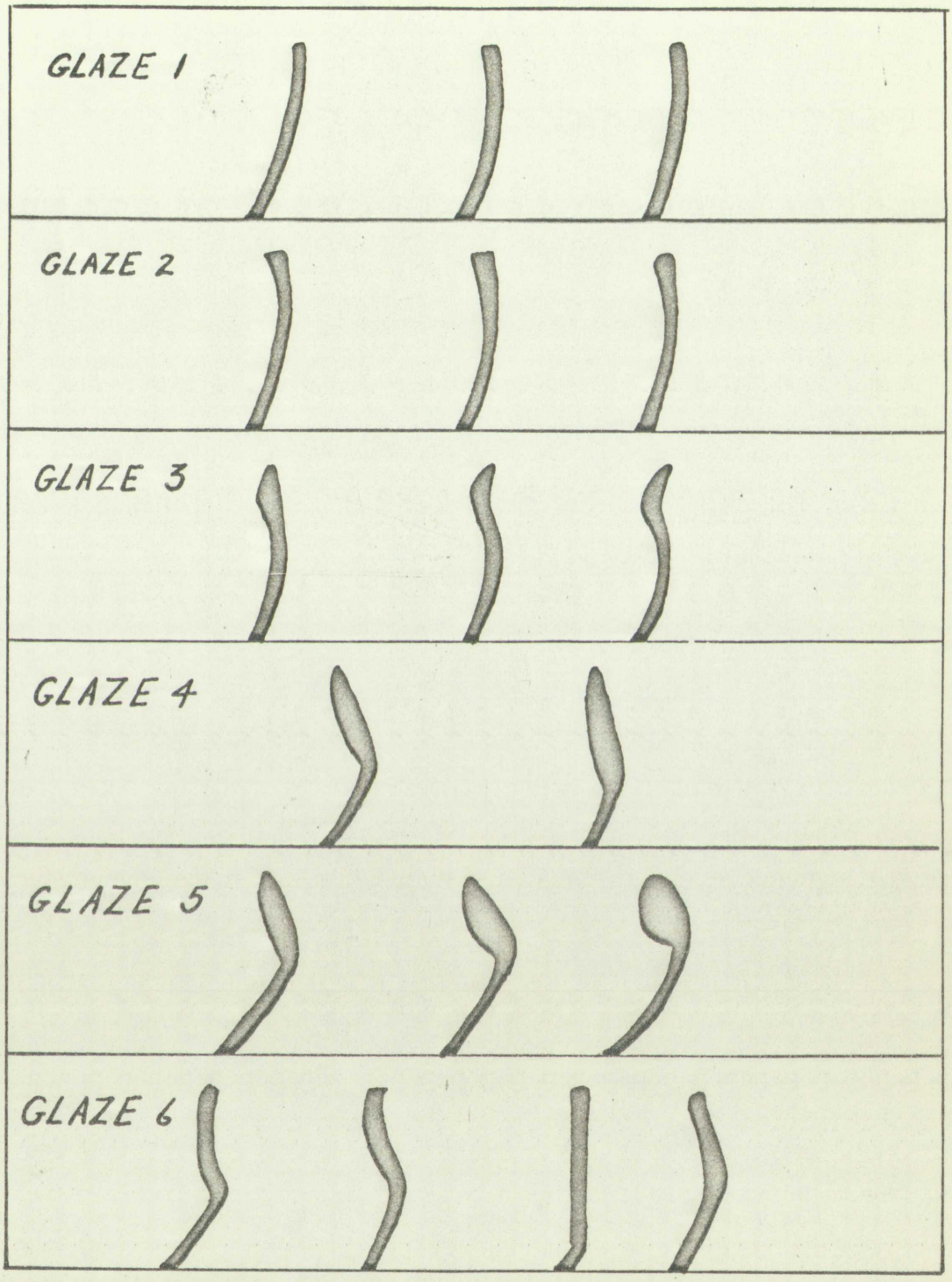
* Kidder, op. cit., pp. 329, 333, and 335 respectively.

5. Ibid., pp. 325-361.



BOWL-RIM SECTIONS. (Taken from Kidder's Notes on the Pottery of Pecos.)

number of sites. The study included over 170 sites, over an irregular strip about 160 miles in a north and south direction, and over 100 miles across at its widest point.

Variations from the Kidder sequence were found, and there seemed to be grounds for the belief that a more suitable classification might be erected for the Rio Grande area. The horizons were designated by letters, and the sub-types in each horizon were given names. The lettered horizons were known as groups.

Bowl rim forms were the major criteria employed, although at times, it was found necessary to supplement them with certain features of color and decoration. The general chronological sequence of these types was determined by their association with Kidder's principal types, definitely set into chronological succession by their preponderance in successive midden strata.

GROUP A. All bowl rims are of the direct variety, both inner and outer surfaces nearly parallel, curve of vessel beginning at rim.

Bowl type: Agua Fria Glaze-on-red

Slip is always some shade of red on both inside and outside. Designs in dull glaze paint confined to interiors.

Bowl sub-type: Arenal Glaze-polychrome

Separate from the type by a thin line decoration in white on outer surface below the rim which places it in the more than two color class.

Bowl sub-type: San Clemente Glaze-polychrome

White or tan slip.

Bowl type: Cieneguilla Glaze-on-yellow

Yellow to dirty white slip. Polychrome sherds rare. Grades in easy stages into next type.

GROUP B.

Bowl type: Largo-Glaze-on-yellow

Characterized by thickened lip. Poorly represented in southern part of Glaze paint area.

Bowl sub-type: Largo Glaze-polychrome

Differs from type only in that it is a polychrome.

GROUP C.

Bowl type: Espinoso Glaze-polychrome

Series as a whole distinguished by an inner beveling of the rim resulting in a carina.

Bowl type: Kuaua Glaze-polychrome

Nothing more than a copy of the popular Little Colorado forms, executed with Rio Grande paste and pigments. Bowl interiors never decorated. Designs confined to comparatively narrow space below the rim on the exterior.

GROUP D.

Bowl type: San Lazaro Glaze-polychrome

Usually substitutes a curve for a marked carina. Rims become thicker and extend farther down the sides of the bowl.

GROUP E. Great diversity of form. All but a single borrowed type are variants in a series that grade from one to another.

Bowl type: Puaray Glaze-polychrome

Exaggeration of Group D, being much thicker and deeper, and having much less concavity on the outer surface below the rim.

Bowl sub-type: Pecos Glaze-polychrome

An extremity of the Group E series. Popular at Pecos and adjacent regions. Local in distribution.

Bowl sub-type: Trenaquel Glaze-polychrome

Characteristic of southern part of area.

Bowl type: Tiguex Glaze-polychrome

Borrowed form under Group C is ancestral to this type. Decoration of prototype confined to narrow strip below the upper and lower sections of bowl which may produce a distinct carina. May occur earlier than this horizon. A number of variations are known.

GROUP F.

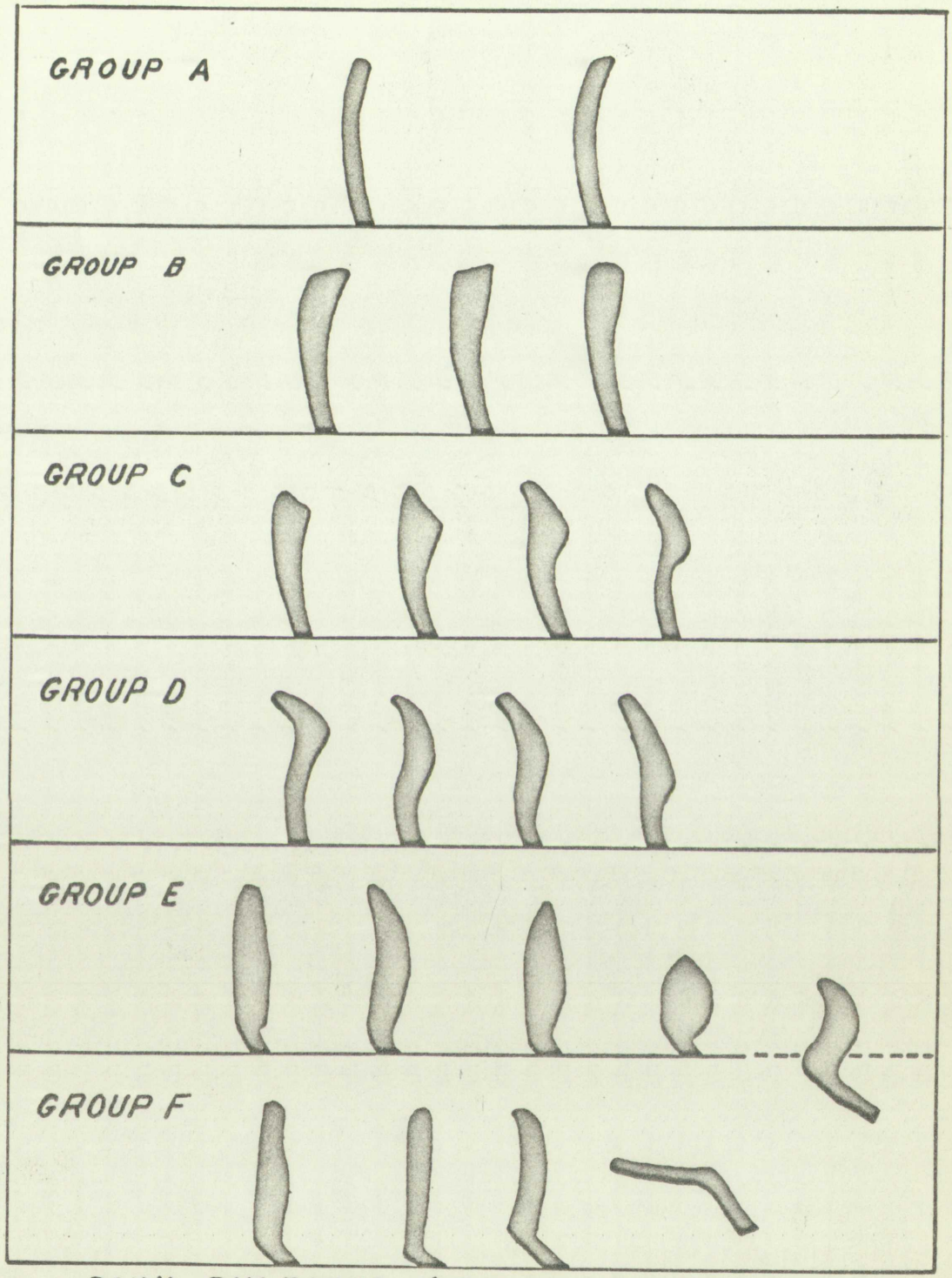
Bowl type: Kotyiti Glaze-polychrome or Glaze-on-red

Pronounced angle formed by rim and by bowl. Almost parallel sides in rim element. Entire rim may become slightly curved in an opposite direction. Rims vary in height.

Bowl type: Cicuye Glaze-polychrome or Glaze-on-red

Rim seems to have been derived from two sources; Pecos Glaze-polychrome and Tiguex Glaze-polychrome. It possesses the stubby character of the former and combines with a modification of the Tiguex form. Decoration conforms to latter type. May have existed in latter part of E.

Bowl type: San Marcos Glaze-polychrome or Glaze-



BOWL RIM FORMS. (Taken from Mera's Proposed Revision of the Rio Grande Glaze Paint Sequence)

either the Kidder or Mera classification drawings. Some of these variants appear to be subdivisions of existing groups, one or two perhaps may be termed new. It is also apparent that there are types listed by Kidder and Mera which do not appear at this site. They include Kidder's Glaze V, types a and c, Glaze VI, types a, b, and c; Mera's Group B, type 2, Group C, types 2 and 5, Group E, types 2, 6, 7, and 8, and Group F, types 3, 4, and 5. A total count of variations from each classification was made, the results indicating that the one classification pertained about as well as the other.

The following classification is proposed by Miss McCreery for use in conjunction with the sequences of either Kidder or Mera, or of both if such is desired. Her endeavor has been to simplify the classification as much as possible, and to employ as many characteristics in classifying as are distinctive. However, the study should not be considered as more than a tentative basis for further work.

McCreery Classification

GROUP X.

Form: Bowls predominate

Hardness: Paste--averages 5 (Mineral determinative hardness scale)
Slip--5 or 4-5

Color: Two-tone and polychrome

1. Two-tone
   a. Glaze-on-red: Red varies from a bright, rather orange shade to a dark and somewhat dull brown red.
   b. Glaze-on-gray: Gray varies from light to dark, although lighter shades predominate. Gray varies toward yellow.
   c. Glaze-on-yellow: Yellow varies from a pale canary toward a pale cadmium.

2. Polychrome
   a. Glaze-on-red: Gray exterior
   b. Glaze-on-red: Red exterior--occasionally gray slip will be carried over upper portion of exterior.

Surface texture: Very sleek, smooth, even, and fine; smoothly and evenly applied.

Crackle: Very fine crackling often apparent.

Remarks: Slip--Hard, rather thick, inclined to be permanent; smoothly and evenly applied.

Rims: Predominately Kidder's I and II, and Mera's A and B.

Designs: Simple, geometric, usually band designs; characteristically on interiors only.

Glaze: Varies greatly; blacks, browns, and greens are found; all range from dull to varnishy and irredescent, from even to uneven, from transparent to opaque, and from very thin to fairly thick; predominant types: very thin, semi-transparent, brownish, varnishy glaze, in

which it is possible to distinguish the brush strokes; and an opaque, even, thin irredescent, black glaze.

General characteristics: Rather thin ware; predominantly of excellent quality; excellence in execution; simplicity of design elements themselves; well fired.

GROUP Z.

Form: Bowls somewhat more numerous than ollas.

Hardness: Paste--averages 5

Slip--averages 3-5

Color: Two-tone and polychrome

1. Two-tone
   a. Glaze-on-gray: Gray ranges from fairly light to dark, also toward a somewhat brownish shade.
   b. Glaze-on-yellow: Yellow bright, ranges toward a buff.
   c. Glaze-on-red: Great range in reds, light to dark, pink to orange or buff.

2. Polychrome
   a. Glaze-on-red-and-gray: Great range of reds, vermillion to maroon.
   b. Glaze-and-gray-on-red: Not common
   c. Glaze-and-red-on-red-or-buff: Great range in reds, light to dark, pink to orange or buff.
   d. Glaze, red to buff, and gray: Many combinations, usually interior differs from exterior.
   e. Glaze-on-yellow with red: Not common, perhaps unnecessary.

Surface texture: Considerable variation. The best

pieces nearly equal to Group X in texture, others appear more porous and coarser grained while remaining even and smooth, others rather uneven and hardly more than semi-polished; few have the sleek feel or the luster of Group X; many appear dull and have a somewhat chalky feel.

Crackle: Some crackling.

Remarks: Slip--Considerable variation, but in most cases tends toward the wash, and appears to have a tendency to wear off; usually fairly evenly applied.

Rim: Show great variety of types and seem to include Kidder's III-VI and Mera's C-F.

Designs: Complex geometric designs; usually both interior and exterior, often two-tone interior and exterior, often two-tone interior with polychrome exterior, and vice versa, stepped designs are prominent.

Glaze: Varies greatly, often dull and bubbly; ranges green, brown to black, dull to varnishy, opaque to transparent, runny to firm, even to bubbly and uneven.

General characteristics: On the whole, rather thicker and heavier type of ware than Group X;

great variation in quality, generally not superior; execution usually not equal to Group X, lines not clean cut, vessels not as well smoothed, etc.; designs rather complex; glaze used mainly for design outline, except in two-tone ware; seldom as well fired as Group X.

The glazes found vary in appearance so widely and so inconsistently that it seems impossible to employ glazes as a factor in sherd classification. The glazes used in Rio Grande pottery decoration are all lead glazes. The variation in color was probably unintentional and was due to varying amounts of different metallic oxides: manganese, iron, and copper. The consistency of the glaze at the time of application, the care with which it was applied, and the method and time of firing all react upon the appearance of the final product.

In studying these sherds it was found that there was a definite preponderance of fine stone and fine sherd temper in the glazed ware, and in the cooking and storage ware the use of medium stone far exceeds that of any other type of tempering material.

Classification of rim-types according to both Kidder and Mera showed that one is no more satisfactory than the other as far as the pottery from Kuaua is concerned.

There are a large number of variations in each case and there is evidence of one or more types not illustrated by either. Also, certain sub-types of both were not found. Using the proposed classification of the X and Z types, it appears that the X types evidently preceded Z types, which gradually gained in ascendancy, but which never entirely excluded the X types.[7]

At a later date another test was made but in a refuse heap at Puaray, a few miles south of Kuaua. A three foot square was taken down in six inch levels, in a location which appeared to be one of the main refuse heaps of the pueblo. The study of material removed showed that there was a preponderance of Mera's Groups C and D, and of Kidder's Glazes III and IV.[8]

In a series of room studies at Kuaua and Puaray, Miss McCreery found that the early rim types of both Kidder and Mera were found in fairly large percentages at Kuaua, but were almost entirely absent at Puaray. Puaray ranges around the upper middle and late types of both classifications. Kuaua ranges from one extreme to the other, but seems to have a predominance of earlier,

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7. McCreery, J. Honour. A Study of Pottery from a Kuaua Stratification Test and Analysis of Methods of Classification of Rio Grande Glaze Ware, pp. 1-76.

8. McCreery, J. Honour. A Stratification Test in the Southwest Refuse Mound at Puaray, pp. 1-23.

rather than of late types. If the pottery sequences of Mera and of Kidder were exact, then these finds would show Puaray to be younger than Kuaua. The classification is to be checked by dendro-chronology some time in the near future.[9]

A similar test was made by the writer at the Puaray of Bandelier. The mound worked upon, situated near one of the main sections of rooms, appeared to be one of the main refuse heaps of the pueblo. From top to bottom the mound measured approximately eight feet. A three by two foot section was removed by six inch levels. Three definite layers of black and white ash were encountered, beginning with level six. They produced an abundance of pottery and animal bones. Every glaze rim form fitted into the Mera classification, although there were some variations.

The total number of rim forms numbered 126, with the exception of 14 olla rims identified by Mera.[10] Group E represented 90.8% of the total rims, Group F showed 4.8%, Group A showed 3%, and Group D, 1.6%. A slight sequence of rims was shown in that not a single sherd from Group F was found until the sixth level from

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9. McCreery, J. Honour. A Study of Pottery in Rooms at Kuaua and Puaray from which Material for Dendro-Chronological Studies has been Recovered, pp. 1-44.

10. Mera, H. P. Proposed Revision of the Rio Grande Glaze Paint Sequence.

the top was reached. There was considerable variation in groups D, E, and F, but the glazed rim forms could be determined as representative variations of the Mera groups.

Sherds in total were abundant at this site, showing a total of 2,159 sherds, cooking ware ranging 59% of this number and the glazed sherds 25%. Gray ware and red ware seemed to be lacking here, although a considerable number of red slipped, undecorated sherds were recovered. The number and percentage of glazed rim forms found is as follows:[11]

Group	Total	Percentage
A	4	3.0
D	2	1.6
F	6	4.8
E	114	90.8

11. Hendron, J. W. The Significance of the Glaze Pottery Sequence at Puaray.

PART II

STRATIGRAPHIC TEST AT ALAMEDA PUEBLO

Alameda pueblo today is in a deplorable condition, as has been previously shown. For this reason it is very difficult to locate walls, kivas, or refuse mounds.

One refuse mound was located, although it had been cut through "by a man looking for gold," which made it possible to see the stratigraphic layers. Although it is difficult to see exactly how much of the mound was cut away, it is apparent that the cut was made east and west through a section sloping gently to the south, leaving the greater part of the mound.

Method

Due to the size of the dump it was decided that one large cut would be more practicable than several small ones. The test pit measured 3 feet wide, 6 feet long, and $7\frac{1}{2}$ feet deep.

Six inch cuts or levels were taken, accurately measured and marked. From each cut the sherds were carefully removed as the soil was thrown out and dump-

ed in piles away from the test.

Very few pottery types beside glazed wares are found at Alameda. A very simple method of classification was used for the former. The Mera classification was used for the glaze types.

Sherds of culinary vessels numbered high in the total count and were consistent through each cut. Types remained uniform throughout, all having a smooth surface.

Black-on-gray and black-on-white ware was totally absent with the exception of three Biscuit ware sherds, probable hold-overs from early black-on-white wares.

Gray ware figured very low; all sherds were slipped but undecorated.

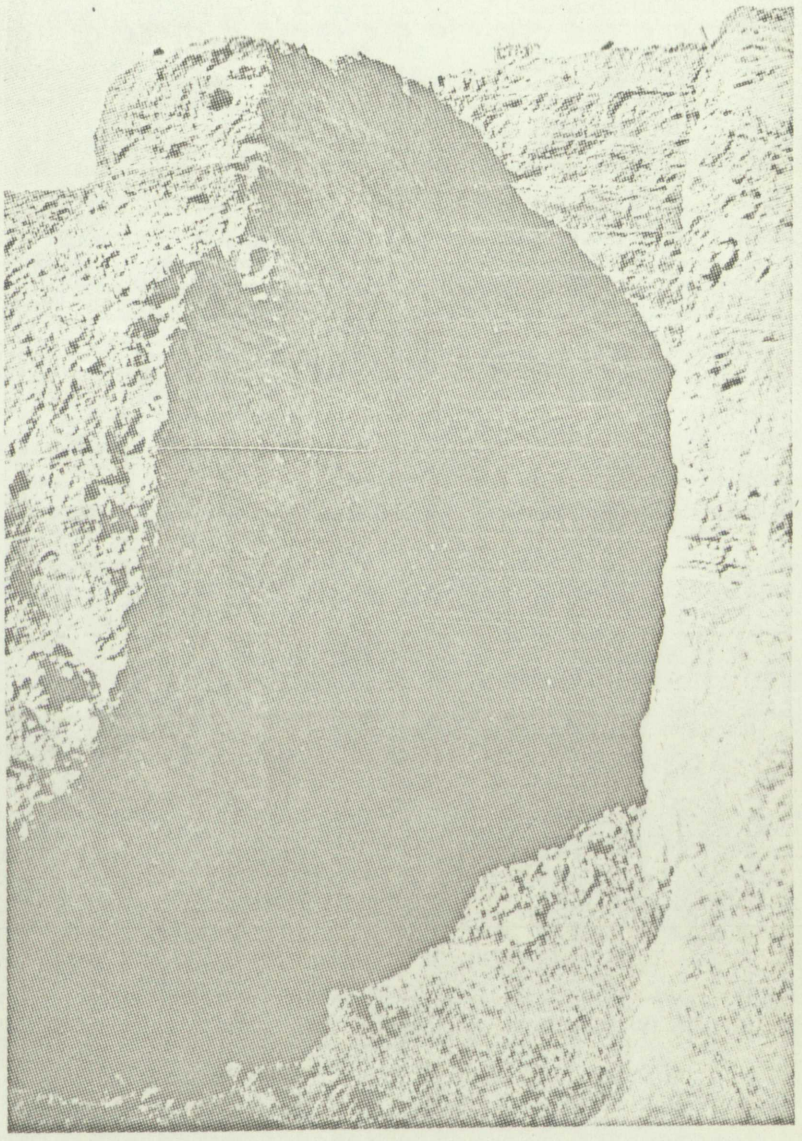
Red slipped ware was common as far as sherd content was concerned, but these sherds may have been bottoms of decorated bowls or ollas.

Little buff ware was found; these sherds were slipped, but undecorated.

Next to culinary ware the glazed sherds numbered highest. Polychrome wares made up about 25% of the total glazed wares.

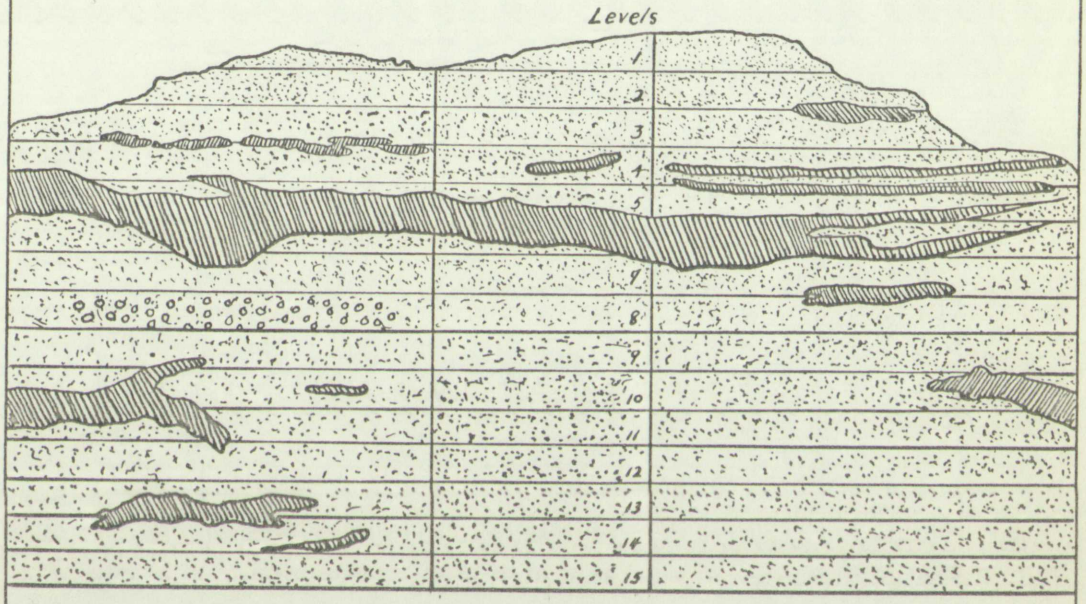
Results of Test

It has been previously mentioned that the refuse mound under study had at some time or other been cut



TEST PIT AT ALAMEDA

REFUSE MOUND
Cross Section



Black ash

Black and white ash

Scattered sand and ash

Sand

SCALE

3/8 inches to one foot

from east to west. The mound sloped from north to south, being approximately 18 inches lower at the southern end than at the northern.

Levels 1 and 2 showed no strata, being made up of sand and occasionally a little scattered ash and charcoal.

In level 3 the first ash layer was encountered, but it was not very definite. Traces of charcoal and of white ash with a high mixture of sand were observed.

A definite black ash layer was present in level 4, but disappeared near the west wall.

In levels 5, 6, and 7, a layer of black ash, varying from 4 to 12 inches in thickness, extended throughout the test pit.

In levels 8 and 9, nothing but sand, scattered charcoal, and ash was found.

Black and white ash layers appeared in levels 10 and 11, over the southern half of the surface.

Level 12 contained only a little scattered ash and charcoal, and no sherds.

The last ash layer came in level 13, and only in the west side; the east side contained only a little scattered culture material.

Level 15 produced a few sherds embedded in wet sand. The earth was tested down several inches farther for re-

fuse but with no positive results. Level 15 seemed to be the bottom.

The ash layers taken as a whole seem to slant to the south, and a trifle to the east, indicating that refuse had been thrown from north to south. At level 10, in the north end of the trench, very hard sand and adobe was encountered. This extended approximately half way over the horizontal surface of the trench, giving foundation for the supposition that this refuse mound was built up on a natural mound some two or three feet high. This fact may help to explain the position of late sherds in level 15, at the very bottom of the trench. In fact no sherds were noticed in these hard levels in the north end of the test.

As refuse was thrown from the north onto this natural mound sloping to the south, some of the material may have been thrown with enough force to carry part of it completely to the bottom which may account for the presence of two Group C rims in level 15.

Interpretation of Data

In this section, the glazed rims will be studied, to show the stratigraphic and chronological sequence of the main types.

A total of 248 glazed sherds were counted from 896 sherds of all types, constituting 28% of the total ware.

Of the glazed sherds, 61 were bowl rims definitely recognizable as forms of the Mera classification.

Rims of Groups E and F were the only types in levels 1 and 2, and held the majority as far down as level 5 in association with Group A. In level 4, Group A appeared and continued in varying amounts throughout the remainder of the test, with the exception of level 5. Group A constituted the bulk of rim forms in levels 6 and 7, in association with Groups B and C. Levels 8 and 9 showed nothing but Group A rims. Group A was preponderant in the next level, with few Group C types appearing. Only two rims were present in level 11, one of Group A and the other of Group C, while in level 12 all glazed rims were Group A. One Group A rim in level 13 was associated with 2 of Group B and two of Group C, but in level 14 all rims were of Group A, numbering 3. Two rims of Group C were all that were found in level 15.

In level 4, one sherd of Biscuit A type was found, which was probably a hold-over from an earlier period. In levels 12 and 13, sherds of the Biscuit B type were encountered, but this was a logical place for them, in association with the earlier glazed types. A sherd of Sikyatki Polychrome was found in the latter level, indicating that the inhabitants of Alameda may have trad-

ed wares from the Jeddito district in Arizona.

The foregoing data presents the succession of glazed pottery types at Alameda, the types of Groups E and F definitely predominating in the upper levels, gradually giving way to earlier types present in abundance in the various levels. It appears that there is a succession from bottom to top, although Groups A, B, and C are present up to level 4, where Groups E and F are present in majority, and totally in the remaining upper levels.

All rims from this site fit in the Mera classification, the only variation being in the various colors applied to the wares of the different periods. These variations were slight and probably of no great importance.

Mera has stated:

> In applying this classification a number of things must be taken into consideration before arriving at any conclusion. As an instance, there are many bowl-rim forms, the result of individual taste that cannot be classified with any degree of accuracy. As the percentage of these is usually small, they should not affect the diagnostic value of a sufficiently large number of sherds. Especial caution should be exercised in postulating time values until all available material from a ruin has been carefully reviewed. The absence of a developmental group may mean either a break in continuity of the occupation of a site or the result of a lag. Although time is sometimes implied, duration or exact periods are not. Nothing but excavation will establish time re-

> lationships between the several developmental horizons which may differ in that regard according to locality.[1]

No rims of Group D were found in this test. This type may be uncovered in some other section of the site.

In "A Study of Pottery from a Kuaua Stratification Test and an Analysis of Methods of Classification of Rio Grande Glaze Ware," Miss McCreery feels that she has a number of variant types not found in the Mera classification. Some of these variants appear to be sub-divisions of existing groups, one or two perhaps may be termed new. She also states that some of Mera's types were not at all in her work. In "A Stratification Test in the Southwest Refuse Mound at Puaray," she lists variations from both the Mera and Kidder glaze classifications. The rims she has classified show a preponderance of Mera's Groups C and D, and of Kidder's Glazes III and IV.

From this account it would appear that still another revision of the Rio Grande Glazed Paint Sequence is needed, and on the other hand the results of stratigraphic work done by the writer at Puaray indicate that Mera's classification works with precision if one allows

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1. Mera, H. P. A Proposed Revision of the Rio Grande Glaze Paint Sequence.

for minor variations.[2] In this test, every glazed rim form fitted into the Mera classification.

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2. Hendron, J. W. The Significance of the Glazed Pottery Sequence at Puaray.

TABLE I

DISTRIBUTION OF PRINCIPAL ALAMEDA POTTERY TYPES

Level	Culinary ware		Gray slip Undec.		Red slip		Buff slip Undec.		Glaze		Poly-chrome	Total
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	
1	23	59	0	0	6	15	0	0	10	26	7	39
2	32	74	0	0	3	7	0	0	8	18	6	43
3	21	68	2	6	4	13	0	0	4	13	1	31
4	19	35	1	2	7	13	1	2	26	48	14	54
5	51	59	0	0	5	6	6	7	25	28	8	87
6	86	63	0	0	17	13	1	0	32	24	8	136
7	54	53	1	0	25	25	0	0	21	21	4	101
8	36	40	1	1	29	32	1	0	26	29	2	93
9	78	75	0	0	12	12	0	0	14	13	4	104
10	20	29	0	0	17	25	0	0	31	46	5	68
11	18	45	0	0	9	22	1	3	12	30	2	40
12	12	52	0	0	4	17	1	4	6	26	0	23
13	8	19	0	0	8	19	1	3	24	58	4	41
14	10	53	2	10	1	5	0	0	6	31	3	19
15	11	69	0	0	2	12	0	0	3	19	1	16
Total	479	53	7		149	17	12		248	28	69	895

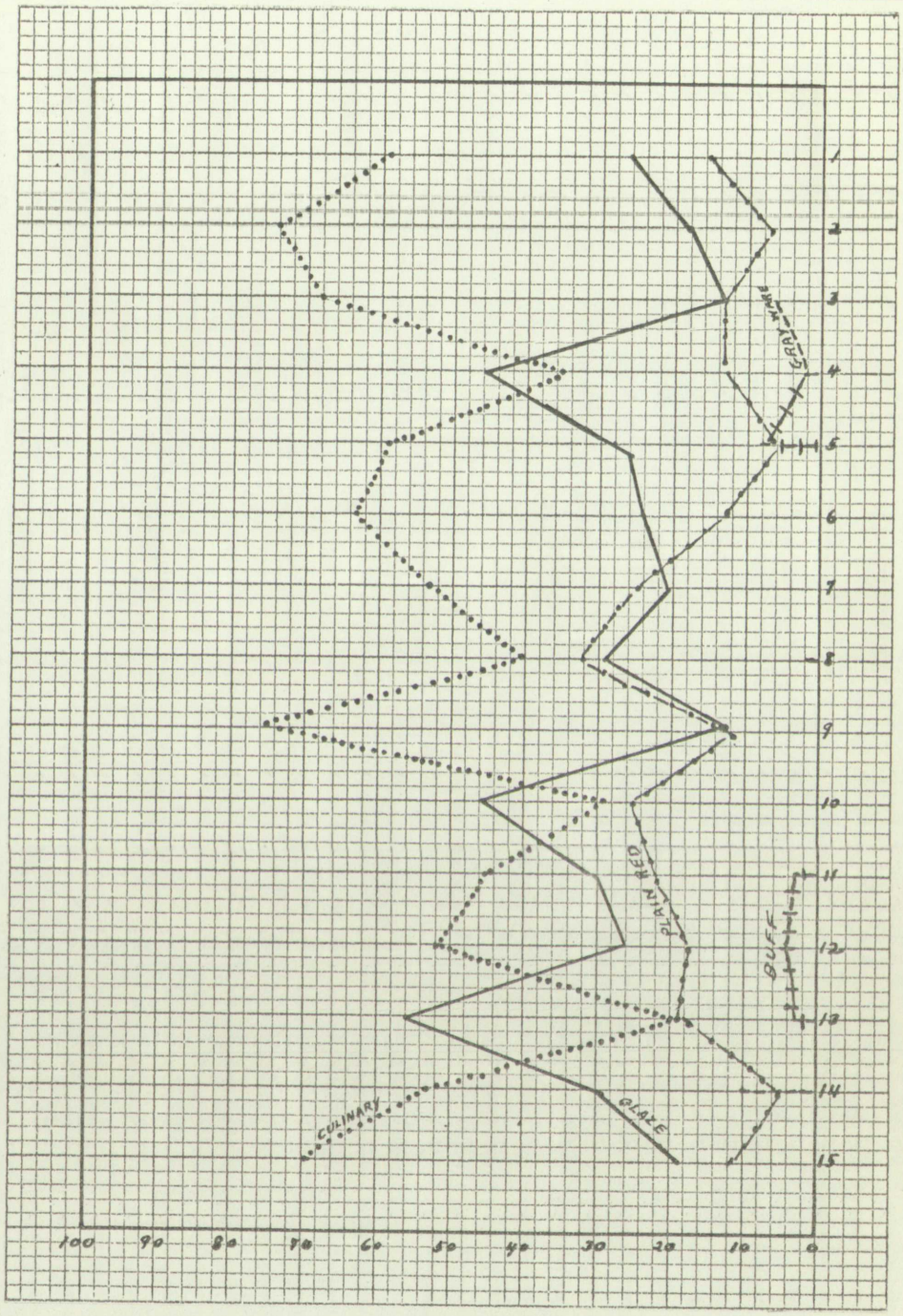

CHART SHOWING GRAPHICALLY THE DISTRIBUTION IN PERCENTAGE OF PRINCIPAL ALAMEDA POTTERY TYPES.

TABLE II

PERCENTAGES OF EACH TYPE OF GLAZE PER STRATUM

WITH ALL GLAZE TAKEN AS 100%

Level	Glaze Rims	%
1	3 Group F (Kotyiti Glaze-polychrome) . . .	75
	1 Group E (Trenaquel Glaze-polychrome) . .	25
2	2 Group E (Puaray Glaze-polychrome). . . .	100
3	No rims found.	0
4	1 Group E (Puaray Glaze-polychrome). . . .	17
	3 Group F (2 Kotyiti Glaze-polychrome; 1 Pecos Glaze-polychrome).	49
	2 Group A (Agua Fria Glaze-on-red)	32
5	1 Group F (Cicuye Glaze-polychrome). . . .	14
	2 Group E (Puaray Glaze-polychrome). . . .	28
	4 Group C (3 Espinoso Glaze-polychrome; 1 Black Glaze-on-gray)	56
6	5 Group A (2 Agua Fria Glaze-on-red; 3 San Clemente Glaze-polychrome) . . .	50
	4 Group C (1 Espinoso Glaze-polychrome; 1 Largo Glaze-on-yellow; 2 Kuaua Glaze-polychrome).	40
	1 Group B (Glaze-on-red)	10
	(10 olla rim forms)	
7	1 Group C (Espinoso Glaze-polychrome). . .	33
	2 Group A (Cieneguilla Glaze-on-yellow). .	67
8	4 Group A (3 Cieneguilla Glaze-on-yellow; 1 San Clemente Glaze-polychrome)	100
9	3 Group A (San Clemente Glaze-polychrome) (1 olla rim similar to San Clemente Ware)	100
10	6 Group A (5 Cieneguilla Glaze-on-yellow; 1 Black Glaze-on-white).	75
	2 Group C (Similar to Espinoso type) . . .	25
11	1 Group A (San Clemente Glaze-polychrome).	50
	1 Group C (Espinoso Glaze-polychrome). . .	50
12	2 Group A (1 Cieneguilla Glaze-on-yellow; 1 Agua Fria Glaze-on-red). . . .	100
13	1 Group A (San Clemente Glaze-polychrome).	20
	2 Group B (Largo Glaze-on-yellow).	40
	2 Group C (Espinoso Glaze-polychrome). . . (1 olla rim)	40
14	3 Group A (2 Arenal Glaze-polychrome; 1 San Clemente Glaze-polychrome) .	100
15	2 Group C (Espinoso Glaze-polychrome)	

Total 61

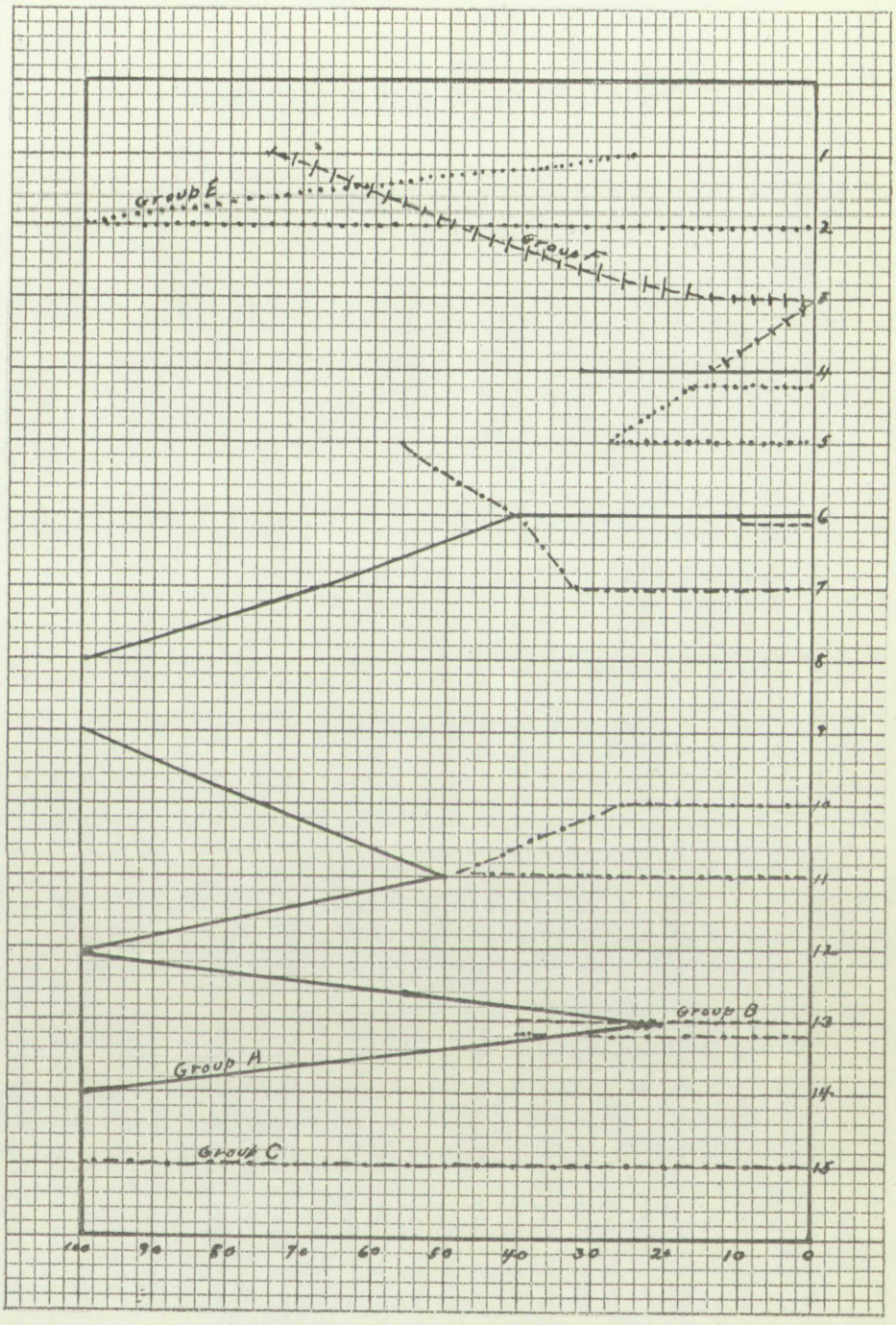

CHART SHOWING THE RANGE OF GLAZE TYPES FROM ALAMEDA

TABLE III

PERCENTAGE OF EACH TYPE OF GLAZED RIMS

USING THE TOTAL NUMBER AS 100%

Type	Rims	%
Group F	7	11
Group E	6	10
Group D	0	0
Group C	16	26
Group B	3	5
Group A	29	48
Total	61	100

SUMMARY

Taking the glazed series as a whole, we find that all types are present at Kuaua and Puaray, and all but type D at Alameda.

As has been shown, glazed wares and cooking ware were found to comprise most of the pottery complex at Alameda, with an occasional gray slipped sherd or a few of the buff type. No black-on-white ware was found, with the exception of 3 sherds of the Biscuit ware type, while at the other sites tested Biscuit ware was present in greater quantities, and black-on-white ware was common. Culinary vessels at Alameda were of the smoothed variety, while at the other sites considerable corrugated ware was found.

These facts seem to indicate that occupation at Alameda may have taken place at a later date than it did at Puaray and Kuaua. This is only a suggestion based upon material from one trench. It may be, however, that there are other refuse mounds at Alameda, much older than the one under consideration, which were discontinued as dumps when material from the households was de-

posited in a new location, the mound now excavated. Hence the pueblo may have been founded earlier than this one dump would indicate.

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