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FIELDIANA • ANTHROPOLOGY

Published by
CHICAGO NATURAL HISTORY MUSEUM

Volume 36

JANUARY 10, 1956

No. 7

LATE MOGOLLON POTTERY TYPES OF THE RESERVE AREA

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INTRODUCTION

The classification of pottery excavated in the Reserve area of west central New Mexico by the Chicago Natural History Museum Southwest Archaeological Expeditions during the last six years has resulted in the distinction of some eight types which have hitherto been only incompletely and indefinitely described. Although we, who were doing the classifying, carried in mind a general idea of each of these, we hesitated to describe them until their existence as types had been confirmed by a sufficient number of sherds and some complete vessels. We were particularly hesitant over the seven brown ware types because they had been mentioned by Nesbitt (1938, pp. 139-140) as falling within the two types, Upper Gila Corrugated and Reserve Polychrome.

As a result of this circumspection, compilation and publication of the descriptions which appear below were delayed for some time. These descriptions received their first real impetus from the appearance in mimeograph form of *A Check List of Southwestern Pottery Types*, compiled by Dr. Harold S. Colton of the Museum of Northern Arizona. Included in this list were a number of types which had hitherto been inadequately described and it was suggested that we describe those with which we were most familiar. We acknowledge here the stimulus which Dr. Colton's paper gave to us. Dr. Paul S. Martin gave us more immediate and practical help, advice and encouragement in the preparation and final publication of these descriptions and for this we are very grateful.

The whole vessels and sherds analyzed for this report came from Wet Leggett Pueblo, Three Pines Pueblo, South Leggett Pueblo (Martin and Rinaldo, 1950b) and Oak Springs Pueblo (Martin, Rinaldo, and Antevs, 1949) in the Pine Lawn Valley, New Mexico; Tularosa Cave, Cordova Cave (Martin, Rinaldo, and others, 1952), O Block Cave (Martin, Rinaldo, and Bluhm, 1954), Apache Creek Pueblo and Higgins Flat Pueblo (Martin and others, in press) in the Reserve area; and Cospers Cliff-Dwelling in the Blue River Valley, Arizona (Martin, Rinaldo, and Bluhm, 1954), which were excavated by Chicago Natural History Museum from 1948 to 1953. In addition, several whole vessels illustrated here come from Chicago Natural History Museum collections from San Cosmos and Round Valley, Arizona, and from unknown locations in New Mexico.

The majority of the raw data on which these descriptions are based was assembled by Mrs. Marilyn Corcoran, and we wish to offer our thanks for help so ably and graciously extended. These data on the physical descriptions were checked, analyzed, and compiled primarily by Elaine Bluhm, with some assistance from the senior author. The data on the temporal and geographical distributions of the types were gathered by the senior author from the excavation and survey data of the several Chicago Natural History Museum Southwestern Archaeological Expeditions, and additional data for Tularosa White-on-Red and Reserve Incised Corrugated were gathered from charts prepared by Dr. E. B. Danson for his doctoral dissertation, *An Archaeological Survey of West Central New Mexico and East Central Arizona*. We appreciate his making these data available. We are also indebted to Mr. James Barter for criticizing the following discussion and suggesting certain improvements in the accompanying chart. Mr. Philip Young traced the map shown in figure 52.

DISCUSSION

Most of the pottery types of the Mimbres drainage and those of the Upper San Francisco are essentially the same before about A.D. 1100 and become somewhat differentiated after that; yet they remain essentially Mogollon in character. Because of these unusual circumstances, the pottery types described here take on added significance. They also have more value and meaning in archaeological studies of the region because their sequence of typological development has been confirmed by the stratigraphy in Tularosa and O Block caves and by the horizontal (or dwelling-by-dwelling) seriation of other sites in the area.

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FIG. 52. Map showing location of Pine Lawn Valley and late Mogollon sites.

The analysis and description of these pottery types have brought into sharper focus the picture of relationships between all the pottery types of the Reserve area. They have shown clearly that the vast majority of types (the only major exceptions being Reserve Black-on-White and Tularosa Black-on-White), represent a concatenation of variations on a very few basic types. We have tried to show this in a broad way by the accompanying chart (fig. 53), which illustrates the antecedents and relationships of the brown ware types in the area. The textured or tooled and corrugated types described here are all quite clearly related to their antecedent plain and textured types.

Reserve Plain Corrugated, for example, is simply a late variation, with narrower fillets, of Three Circle Neck Corrugated, which in turn harks back in the same way to Alma Neck Banded and more basically to Alma Plain and Alma Rough. Moreover, the tradition of texturing the surface by incising and punching observed in Alma Incised and Alma Punched (Haury, 1936, pp. 39-40) was carried on in the surface treatment of the lowest coil of Three Circle Neck Corrugated (Haury, 1936, p. 36), and later in the decoration of Reserve Incised Corrugated and Reserve Punched Corrugated. In both these types the designs are applied on what is essentially a Reserve Plain Corrugated base. Reserve Plain Corrugated is probably antecedent to Reserve Indented Corrugated and the combination of the two techniques of plain corrugation and indentation reaches its apogee in certain examples of Tularosa Patterned Corrugated. This close typological relationship is indicated by the fact that Nesbitt (1938, pp. 139-140) classified Reserve Plain Corrugated, Reserve Incised Corrugated, Reserve Punched Corrugated and Tularosa Patterned Corrugated all under Upper Gila Corrugated. Their distinction as significant chronological variations came later with the excavation of sites intermediate in time between Nesbitt's "pithouse" and "pueblo" periods and with longer stratigraphic series.

Two other types described below—Tularosa White-on-Red and Starkweather Smudged Decorated—were once included under the single type, Reserve Polychrome (Nesbitt, 1938, p. 139). It was later recognized that these constitute two distinct, significant variations (Martin, Rinaldo, and Antevs, 1949, p. 188). The term "Reserve Polychrome" is now considered to be a misnomer (Danson, 1952) and the name "Tularosa White-on-Red" has been substituted for this type of pottery (Martin, Rinaldo, and Bluhm, 1954, p. 53).

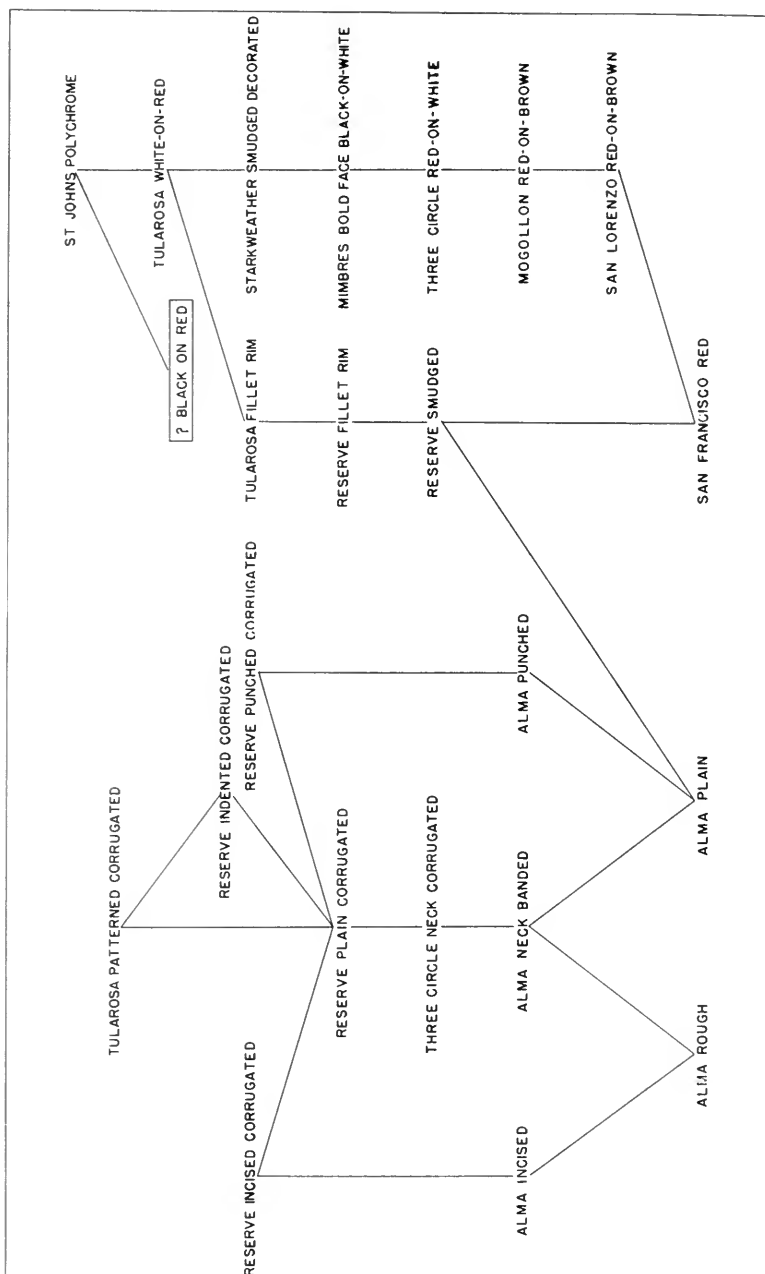


Fig. 53. Chart showing general sequence and taxonomic relationships of pottery types in the Reserve area.

These pottery types also have their roots in Mogollon tradition. Starkweather Smudged Decorated is related on the one hand to Reserve Smudged and on the other hand to Mimbres Bold Face Black-on-White. Essentially it represents the application of Mogollon designs in a fugitive paint (probably white), to the interiors of Reserve Smudged bowls. In a similar fashion Tularosa White-on-Red represents the application of Mogollon designs in a white paint (sometimes fugitive) to the exteriors of Tularosa Fillet Rim bowls. When this relationship is traced back, Tularosa Fillet Rim is found to represent the addition of a fillet decorated rim to Reserve Smudged bowls, and Reserve Smudged is essentially a late interior smudged variation of Alma Plain. If the relationship is traced up, toward A.D. 1250 it may be seen that occasionally the designs on Tularosa White-on-Red are in the Anasazi design vocabulary, and that a similar relationship between St. Johns Polychrome and Tularosa White-on-Red is evident in the similarity in the exterior designs, and to a certain extent in the shapes of the bowls. In a sense, St. Johns Polychrome is a late variation of Tularosa White-on-Red with black on red decorated interiors rather than polished smudged interiors. In another sense, because the interior black on red designs of St. Johns Polychrome are derived from Wingate Black-on-Red, it is also a late variation of Wingate Black-on-Red with a Tularosa White-on-Red exterior design and shape.

The surface treatments mentioned above of incising, punching, polishing, smudging, scoring, and neck banding have been characterized repeatedly as Mogollon rather than Anasazi (Haury, 1936, p. 44; 1940, pp. 93-95). Their prior occurrence in Mogollon pottery-making has been confirmed recently by carbon 14 dates from Tularosa Cave and tree-ring dates from Turkey Foot Ridge. Furthermore, these techniques have a greater frequency both early and late in the Mogollon area, a fact which may not prove anything but at least argues strongly for their prior occurrence there. Whether these techniques had their ultimate origin to the south in Mexico, or to the southeast as originally postulated by Haury (1936, pp. 45-46) remains to be determined.

On the whole, one also senses a more closely integrated craft among the Mogollon than among the Anasazi. The Mogollon painted-decorated types seem more closely related to the plain ware types; for example, San Francisco Red and San Lorenzo Red-on-Brown seem closely related and so do Reserve Smudged and Starkweather Smudged Decorated, Tularosa Fillet Rim and Tularosa

White-on-Red. Such combinations occur among the Anasazi types (Mancos Black-on-White with indented corrugated exterior, for example), but they occur so rarely as to seem accidental rather than consistent variations. Quite to the contrary, there is a sharp distinction in Anasazi pottery between the unpolished and textured, or corrugated, types and the polished painted decorated types that occur rarely among the Mogollon types. These differences exist between Mogollon utilitarian and painted types, particularly in later times, but even then there are many intermediate types that create the impression of a closely knit technology.

Reserve Black-on-White and Tularosa Black-on-White are exceptions in this group of related ceramics because they are painted types of northern derivation and are not genetically related to the brown ware types described herein. Reserve Black-on-White was described by Rinaldo in an earlier report (Martin and Rinaldo, 1950b, pp. 502-503). Although Tularosa Black-on-White has been described before (Gladwin, 1931, pp. 32-35; Colton and Hargrave, 1937, pp. 240-241; Nesbitt, 1938, p. 139), we have included it here because we feel that the large documented collections of sherds and whole vessels and purchased collections (1894 and 1901) of 340 whole vessels at Chicago Natural History Museum indicate that current definitions are in need of modification. Even though it was Anasazi-inspired, we believe that Tularosa Black-on-White was locally made and perhaps influenced by local techniques. Eventually, it, too, might have been integrated with the local pattern had not the Tularosa drainage been abandoned at the end of the Tularosa Phase.

Description of Pottery

Reserve Plain Corrugated

Paste:

Construction: coiled and scraped.

Core color: usually brown; ranges from pinkish tan to dark brown and black (Maerz and Paul 5A9, 5A10, 8C9).

Temper: light-colored sand grains, mostly rounded, some angular.

Fracture: moderately crumbling to sharp, depending on firing and amount of temper.

Thickness of vessel walls: 0.4 to 1.0 cm., average 0.7.

Surface Features:

Exterior color: usually medium to dark brown; ranges from light pinkish orange and grayish red to gray-brown and dark gray (Maerz and Paul 4A8, 5A9, 6F9, 15A7, 7A9, 8C9).

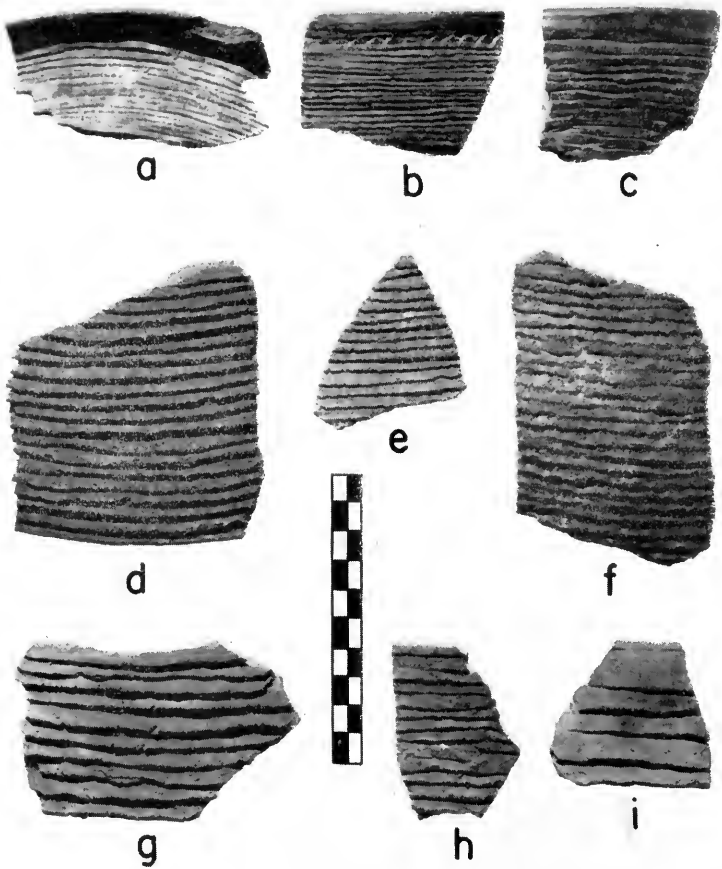


FIG. 54. Pottery sherds. *a, d-i*, Reserve Plain Corrugated; *b*, Reserve Plain Corrugated, Smudged Interior Variety, Tularosa variant; *c*, Reserve Plain Corrugated, Smudged Interior Variety. Scale in centimeters.

Exterior finish (fig. 54): plain corrugated, not indented; evenly spaced corrugations spiral around vessel. Coils usually stand out from surface; very rarely they are smoothed or flattened slightly. Coiling usually begins 1 to 3 cm. below the rim, occasionally corrugations begin at rim. Corrugations: 2 to 9 per 2 cm., average 5.

Interior color: usually medium to dark brown; ranges from light tan through dark brown to black (Maerz and Paul 11E7, 12B6, 14A7, 15C9).

Interior finish: usually poorly smoothed, often rough; few smoothing marks show. Occasionally surface is smooth but not polished.

Vessel Shapes: jars and bowls. Few whole vessels available for measurement.

Jars: usually wide-mouthed, with plain out-flaring rims.

Maximum diameter across body; rim diameters of whole vessels and sherds vary from 10 to 26 cm. Small jar with rim diameter of 10.0 cm. has maximum diameter of 14.0 cm., height of 12.7 cm. (fig. 55).

Bowls: straight-sided or slightly in- or out-curving.

Diameters from sherds vary from 16 to 22 cm.



FIG. 55. Rim forms of Reserve Plain Corrugated jars and bowls.

Range of Distribution: upper San Francisco River and tributaries, upper Blue River and tributaries, Tularosa River, Apache Creek, northwest to Springerville.

Stages and Phases: Reserve and Tularosa Phases, Pueblo II and III.

Time: ca. A.D. 1000 to 1200.

Reserve Plain Corrugated, Smudged Interior Variety

Paste:

Construction: coiled and scraped.

Core color: usually medium brown with black near smudged surface; ranges from beige and tan to dark brown and black (Maerz and Paul 5A9, 6A10, 15E10).

Temper: same as Reserve Plain Corrugated.

Fracture: same as Reserve Plain Corrugated.

Thickness of vessel walls: 0.5 to 1.0 cm., average 0.65.

Surface Features:

Exterior color: usually medium brown to dark brown; ranges from tan to dark brown and black (Maerz and Paul 13B4, 13A6, 14C7, 16A7).

Exterior finish: plain corrugated, not indented; evenly spaced corrugations spiral around vessel. Sometimes corrugations are rubbed over to smooth edges of coils. Corrugations: 3 to 10 per 2 cm., average 5. In *Tularosa variant* corrugations are narrow, toward upper end of range; top two or three rows of corrugations sometimes indented resembling fillet on Tularosa Fillet Rim bowls.

Interior color: black, smudged, dull to glossy; rarely iridescent black.

Interior finish: smoothed and polished with smudged finish; occasional crackle finish.

Vessel Shapes: bowls with straight or slightly in- or out-curving rims. Diameters from sherds and whole vessels 11 to 22 cm.; depths of whole vessels 5.5 to 8.5 cm.; usually depth is less than diameter (figs. 56, 57).

Range of Distribution: same as Reserve Plain Corrugated.

Stages and Phases: same as Reserve Plain Corrugated.

Time: ca. A.D. 1050 to 1200.

FIG. 56. Rim forms of Reserve Plain Corrugated, Smudged Interior Variety bowls.



FIG. 57. Vessels. *a*, Reserve Plain Corrugated, Smudged Interior Variety, Tularosa variant bowl (cat. no. 74970); Round Valley, Arizona; height 11.4 cm., diameter 23.4 cm. *b*, Reserve Plain Corrugated jar (cat. no. 21327); New Mexico; height 12.5 cm., diameter 14.0 cm. *c*, Reserve Plain Corrugated, Smudged Interior Variety bowl (cat. no. 74965); Round Valley, Arizona; height 8.5 cm., diameter 15.9 cm. *d*, Reserve Plain Corrugated, Smudged Interior Variety bowl (cat. no. 74931); Round Valley, Arizona; height 5.4 cm., diameter 11.5 cm.

*Reserve Indented Corrugated**Paste:*

Construction: coiled and scraped.

Core color: usually medium brown; ranges from yellowish tan and reddish tan through brown and gray-brown to dark brown and black (Maerz and Paul 14C8, 13A9, 7A8, 8J7).

Temper: light-colored sand grains, mostly rounded, some angular. More temper per sherd in Hinkle Park Cliff-Dwelling than other Reserve area sites may indicate sandier clay.

Fracture: moderately crumbling, depending on amount of temper and firing.

Thickness of vessel walls: 0.4 to 1.2 cm., average 0.7.

Surface Features:

Exterior color: usually medium brown to dark brown; ranges from pinkish tan and light tan to dull black (Maerz and Paul 12A2, 6A10, 8C6).

Exterior finish (fig. 58): corrugated, finger indented, usually at regular intervals; surface corrugations frequently slightly smoothed to flatten peaks of indentations. Rarely coils are almost obliterated with smoothing. Corrugations: 3 to 10 per 2 cm., average 5.2. Indentations: 1.5 to 4.5 per 2 cm., average 2.8.

Interior color: usually medium brown; ranges from light pinkish tan to black (Maerz and Paul 5A9, 8A3).

Interior surface finish: carelessly smoothed to smooth, sometimes rough.

Vessel Shapes: jars, bowls, and rarely double vessel with jar top set into bowl bottom, bowl overlapping at seam, edge of bowl finished before placing jar top.

Jars: usually wide-mouthed, with out-flaring rim; rim usually plain; corrugation begins 1 to 2 cm. below rim, although sometimes corrugations extend to rim. Height of whole and reconstructed vessels varies from 5.9 to 28.0 cm.; maximum diameter from 6.7 to 35.5 cm. (fig. 59).

Bowls: usually straight-sided or slightly out-curving. Diameters, measured from sherds, vary from 18 to 24 cm.

Range of Distribution: upper San Francisco River and tributaries, upper Blue River, Tularosa River, Apache Creek, possibly northwest to Springerville.

Stages and Phases: Reserve and Tularosa Phases, Pueblo II and III.

Time: ca. A.D. 1050-1250.

*Reserve Indented Corrugated, Smudged Interior Variety**Paste:*

Construction: coiled and scraped.

Core color: usually medium brown to brown, changing to black near smudged surface; ranges from yellowish tan through brown and gray-brown to dark brown and black; larger percentage of sherds have black core all the way through than in Reserve Indented Corrugated (Maerz and Paul 14C8, 13A9, 7A8, 8J7).

Temper: same as Reserve Indented Corrugated.

Fracture: same as Reserve Indented Corrugated.

Thickness of vessel walls: 0.4 to 1.0 cm., average 0.7.

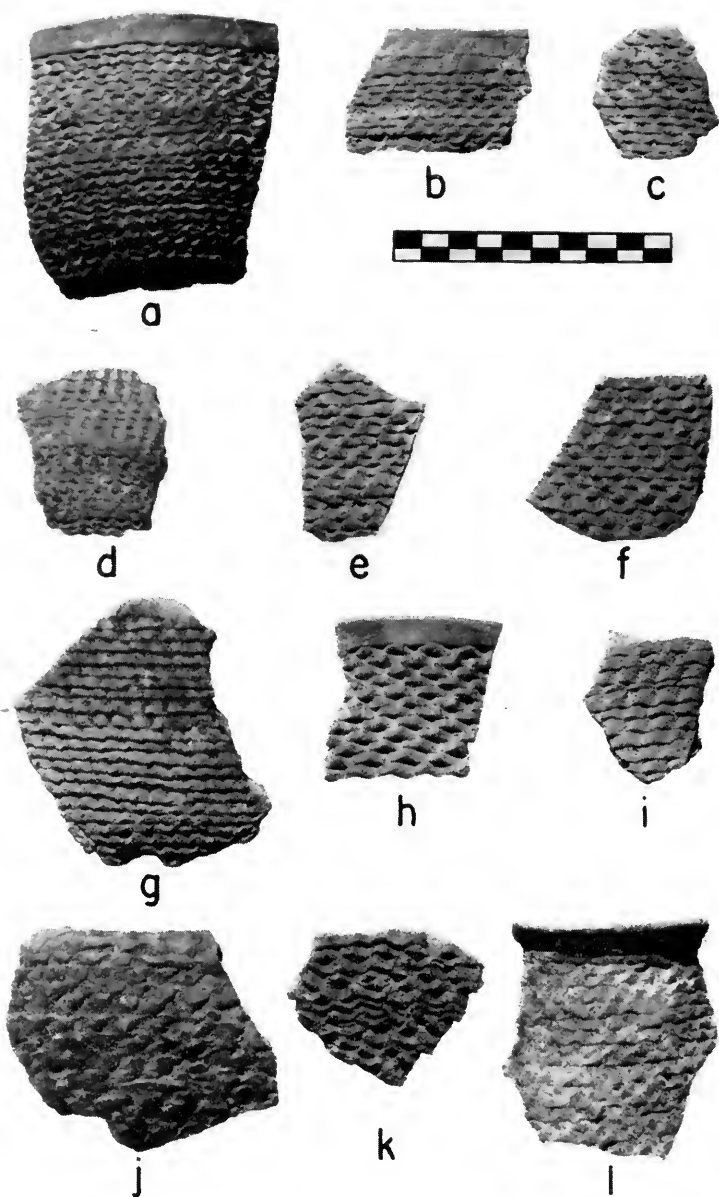


FIG. 58. Pottery sherds. *a, c, h, l*, Reserve Indented Corrugated, Smudged Interior Variety; *b, d-g, i-k*, Reserve Indented Corrugated. Scale in centimeters.

Surface Features:

Exterior color: usually medium to dark brown; ranges from orange pink through brown and gray brown to black, occasional fire clouds (Maerz and Paul 5A9, 13A6, 8C8).

Exterior finish: corrugated, finger-indented at regular intervals; sometimes smoothed over corrugations, removing peaks of indentations and giving general dull polished effect. Other sherds unaltered after indentation. Corrugations: 2.5 to 8 per 2 cm., average 5.4. Indentations: 1.5 to 4 per 2 cm., average 3.0.

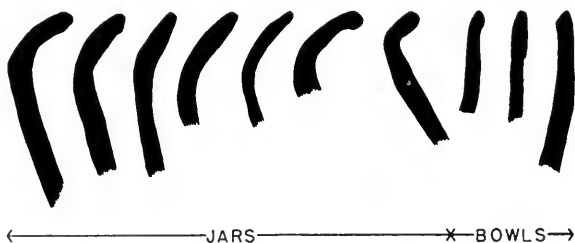


FIG. 59. Rim forms of Reserve Indented Corrugated jars and bowls.

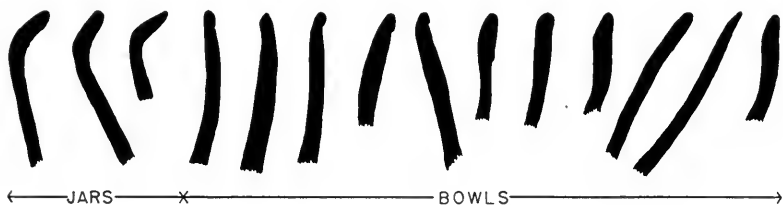


FIG. 60. Rim forms of Reserve Indented Corrugated, Smudged Interior Variety jars and bowls.

Interior color: black; dull polished smudged, smooth to glossy, occasionally iridescent.

Interior surface finish: smooth to satiny smooth, some crackle finish; polishing streaks can occasionally be seen.

Vessel Shapes: usually bowls, although occasionally neck of jar is smudged. One double vessel with jar top set into bowl bottom, with bowl overlapping at seam, edge of bowl finished before placing jar top.

Bowls: straight-sided to outflaring, occasionally incurved sides, one double-flared bowl. Height of whole and restored vessels varies from 6.4 to 10.4 cm.; diameters of whole vessels and sherds vary from 12.4 to 24.0 cm.

Jars: wide-mouthed (figs. 60-62).

Range of Distribution: same as Reserve Indented Corrugated.

Stages and Phases: same as Reserve Indented Corrugated.

Time: same as Reserve Indented Corrugated.



FIG. 61. Jars. *a*, Reserve Indented Corrugated jar (cat. no. 207688); Three Pines Pueblo, Pine Lawn Valley, New Mexico; height 27.1 cm., diameter 25.4 cm. *b*, Reserve Indented Corrugated jar (cat. no. 263595); Higgins Flat Pueblo, New Mexico; height 26.4 cm., diameter 30.5 cm. *c*, Reserve Indented Corrugated jar (cat. no. 262609); Cosper Cliff-Dwelling, Arizona; height 20.0 cm., diameter 25.0 cm. *d*, Reserve Indented Corrugated jar (cat. no. 21357); New Mexico; height 14.5 cm., diameter 18.5 cm.

Reserve Punched Corrugated

Paste:

Construction: coiled and scraped.

Core color: usually medium brown; ranges from pinkish tan to dark brown and black (Maerz and Paul 5A9, 5A10, 8C9).

Temper: light-colored sand grains, mostly rounded, some angular.



FIG. 62. Vessels. *a*, Reserve Indented Corrugated, Smudged Interior Variety bowl (cat. no. 262629); Cosper Cliff-Dwelling, Arizona; height 10.5 cm., diameter 18.5 cm. *b*, Reserve Indented Corrugated, Smudged Interior Variety bowl (cat. no. 260661); Tularosa Cave, New Mexico; height 9.0 cm., diameter 15.9 cm. *c*, Reserve Indented Corrugated, Smudged Interior Variety bowl (cat. no. 21317); New Mexico; height 6.4 cm., diameter 12.4 cm. *d*, Reserve Indented Corrugated miniature jar (cat. no. 21336); New Mexico; height 5.7 cm., diameter 6.5 cm.

Fracture: moderately crumbling to sharp, depending on firing and amount of temper.

Thickness of vessel walls: 0.5 to 0.7 cm., average 0.6.

Surface Features:

Exterior color: usually medium brown to dark brown; ranges from brown tan to dull brownish black (Maerz and Paul 13B6, 15C6, 8L11).

Exterior finish (fig. 63): plain corrugated, not indented; evenly spaced corrugations spiral around vessel; rows of punch marks in geometric patterns. Design: diagonal lines, diamonds, rows of chevrons, square spiral.

Interior color: usually medium brown; ranges from tan to orange brown to dull black (Maerz and Paul 13B6, 15A6, 15C6, 8E9).

Interior finish: somewhat smooth to poorly and carelessly smoothed.

Vessel Shapes: jars, usually wide-mouthed with out-flaring rims. Maximum diameters of whole and restored vessels vary from 13.1 to 18.2 cm.; rim diameters



FIG. 63. Reserve Punched Corrugated potsherds. Scale in centimeters.

of vessels and sherds 11.0 to 14.0 cm.; height of vessels 11.0 to 16.8 cm. (figs. 64, 65).

Range of Distribution: upper San Francisco River and tributaries, Tularosa River and Apache Creek, north and east to Jewett Gap.

Stages and Phases: Reserve and Tularosa Phases, Pueblo II and III.

Time: ca. A.D. 1000 to 1150.

Reserve Incised Corrugated

Paste:

Construction: coiled and scraped.

Core color: usually medium brown; ranges from pinkish tan to dark brown and black (Maerz and Paul 5A9, 5A10, 8C9).

Temper: light-colored sand grains, mostly rounded, some angular.

Fracture: moderately crumbling to sharp, depending on firing and amount of temper.

Thickness of vessel walls: 0.4 to 1.0 cm., average 0.6.

Surface Features:

Exterior color: usually medium brown to dark brown; ranges from grayed orange to dark brown and black (Maerz and Paul 6A9, 15A3, 8E4, 8C9).

FIG. 64. Rim forms of Reserve Punched Corrugated jars.

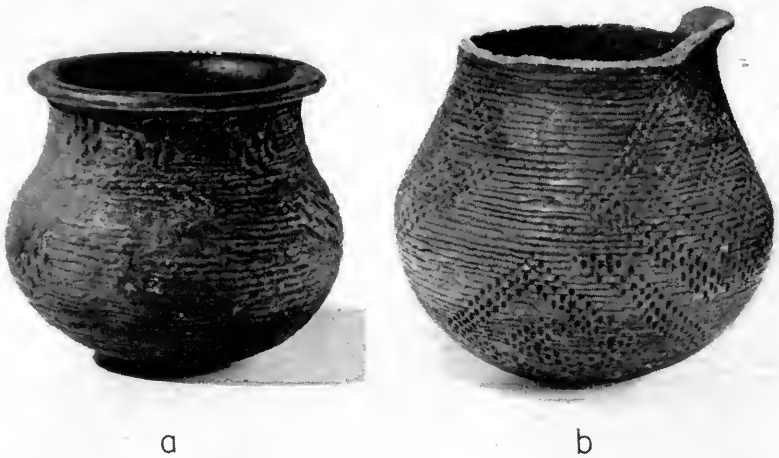


FIG. 65. Jars. *a*, Reserve Punched Corrugated jar (cat. no. 263492); Higgins Flat Pueblo, New Mexico; height 11.0 cm., diameter 13.0 cm. *b*, Reserve Punched Corrugated jar (cat. no. 73734); New Mexico; height 17.8 cm., diameter 18.2 cm.

Exterior finish (fig. 66): plain corrugated, not indented; evenly spaced corrugations spiral around vessel, corrugations occasionally slightly smoothed over. Corrugations: 2.5 to 6 per 2 cm., average 4. Sometimes corrugations and design on neck of jar only, body plain. Incised decoration over corrugations.

Design: made by incised lines, varying from 0.15 to 0.4 cm. in width, and wedge-shape to round-concave in cross section. Designs consist of parallel straight lines, diagonal and intersecting lines, nested triangles, alternating



FIG. 66. Reserve Incised Corrugated potsherds. Scale in centimeters.

hatched triangles, cross-hatching, stepped elements, zigzags, rectilinear patterns. Rare cases of incised corrugation with punch design also.

Interior color: usually medium brown to dark brown; ranges from light orangish yellow to dull black (Maerz and Paul 4A9, 6E10, 15A5, 8E8).

Interior finish: smooth to poorly smoothed.



FIG. 67. Rim forms of Reserve Incised Corrugated jars.



FIG. 68. Rim form of Reserve Incised Corrugated, Smudged Interior Variety jar.

Vessel Shapes: jars, usually wide-mouthed with plain out-flaring rims and rounded lips. Maximum diameter 9.0 to 28.8 cm.; rim diameter 7.5 to 22.5 cm.; height 7.7 to 33.7 cm. (fig. 67).

Range of Distribution: upper San Francisco River and tributaries, Tularosa River and Apache Creek, north and east to Jewett Gap and northwest to upper Little Colorado River.

Stages and Phases: late Three Circle Phase(?), Reserve and early Tularosa Phases, Pueblo II.

Time: ca. A.D. 950 to 1125.

Reserve Incised Corrugated, Smudged Interior Variety

Paste:

Construction: coiled and scraped.

Core color: usually medium brown changing to black near smudged surface; ranges from pinkish tan to dark brown and black (Maerz and Paul 5A9, 5A10, 8C9).

Temper: same as Reserve Incised Corrugated.

Thickness of vessel walls: same as Reserve Incised Corrugated.

Surface Features:

Exterior color: same as Reserve Incised Corrugated.

Exterior finish: same as Reserve Incised Corrugated.

Design: same as Reserve Incised Corrugated.

Interior color: black, smudged, dull to smooth and glossy.

Interior finish: smooth to satiny smooth, occasional crackle finish.

Vessel Shapes: no whole vessels found, only occasional sherds. Probably mostly bowl fragments; one wide-mouthed jar neck with rim diameter of 13 cm. (figs. 68, 69).

Range of Distribution: same as Reserve Incised Corrugated.

Stages and Phases: same as Reserve Incised Corrugated.

Time: same as Reserve Incised Corrugated.

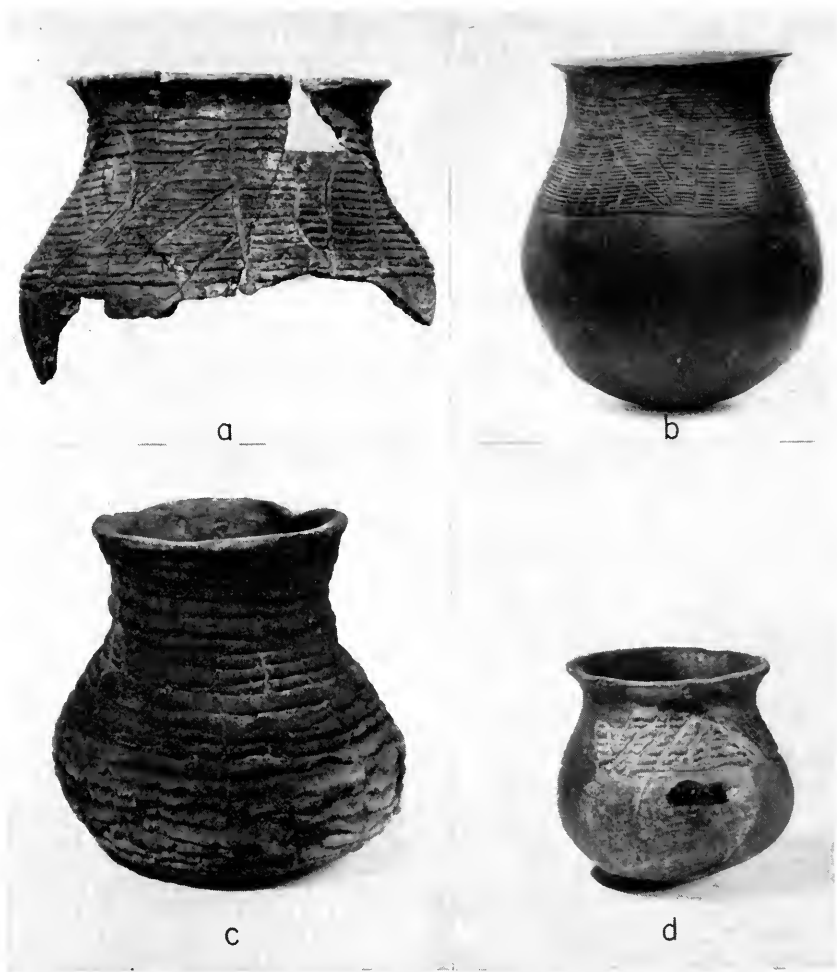


FIG. 69. Jars. *a*, Fragment of Reserve Incised Corrugated, Smudged Interior Variety jar; Wet Leggett Pueblo, Pine Lawn Valley, New Mexico; height 12.0 cm., diameter 16.7 cm. *b*, Reserve Incised Corrugated jar (cat. no. 207687); Wet Leggett Pueblo, Pine Lawn Valley, New Mexico; height 34.6 cm., diameter 29.0 cm. *c*, Reserve Incised Corrugated jar (cat. no. 262610); Cospser Cliff-Dwelling, Arizona; height 12.5 cm., diameter 12.5 cm. *d*, Reserve Incised Corrugated miniature jar (cat. no. 207694); Wet Leggett Pueblo, Pine Lawn Valley, New Mexico; height 8.1 cm., diameter 9.2 cm.

*Tularosa Patterned Corrugated**Paste:*

Construction: coiled and scraped.

Core color: usually brown; ranges from pinkish tan to dark brown and black (Maerz and Paul 5A9, 5A10, 8C9).

Temper: light-colored sand grains, mostly rounded, some angular.

Fracture: moderately crumbling to sharp, depending on firing and amount of temper.

Thickness of vessel walls: 0.5 to 0.9 cm., average 0.7.

Surface Features:

Exterior color: usually medium to dark brown; range from grayed orange to black (Maerz and Paul 13B6, 6A9, 15A5, 8A9).

Exterior finish (fig. 70): plain corrugated body, occasionally slightly smoothed over corrugations to remove sharp edges; geometric patterns produced by indented corrugated areas. Some vessels where neck is patterned corrugated, body is smooth; one example with plain corrugated neck, indented corrugated body.

Designs: chevron, diamond and square spiral. *Reserve variant* designs are alternate rows or alternate bands of several rows of plain and indented corrugated coils.

Interior color: usually medium to dark brown; ranges from light orange and pinkish gray to dull black (Maerz and Paul 6A7, 13B6, 8A9, 6A7, 15A7).

Interior finish: fairly smooth to rough; some polishing marks show.

Vessel Shapes: jars, usually wide-mouthed with plain out-flaring rims with rounded lips. Maximum diameters of whole and restorable vessels 12.6 to 33.4 cm.; rim diameters 6.5 to 20.0 cm.; heights 10.5 to 30.0 cm. (fig. 71).

Range of Distribution: upper San Francisco River and tributaries, upper Blue River and tributaries, Tularosa River, Apache Creek.

Stages and Phases: Reserve and Tularosa Phases, Pueblo III.

Time: ca. A.D. 1050 to 1250.

*Tularosa Patterned Corrugated, Smudged Interior Variety**Paste:*

Construction: coiled and scraped.

Core color: usually brown, changing to black near smudged surface; ranges from pinkish tan to dark brown and black (Maerz and Paul 5A9, 5A10, 8C9).

Temper: same as Tularosa Patterned Corrugated.

Fracture: same as Tularosa Patterned Corrugated.

Thickness of vessel walls: same as Tularosa Patterned Corrugated.

Surface Features:

Exterior color: same as Tularosa Patterned Corrugated.

Exterior finish: same as Tularosa Patterned Corrugated.

Designs: same as Tularosa Patterned Corrugated.

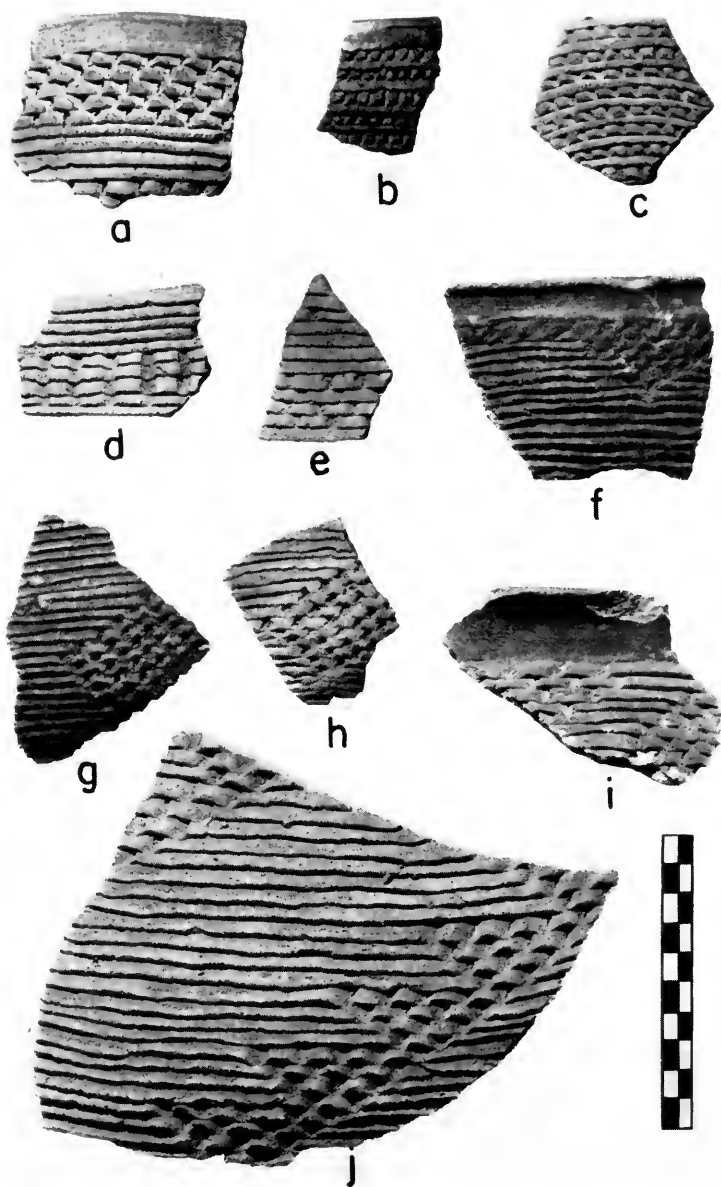


FIG. 70. Pottery sherds. *a-c, f*, Tularosa Patterned Corrugated, Smudged Interior Variety; *d, e, g-j*, Tularosa Patterned Corrugated. Scale in centimeters.

Interior color: black; ranges from grayish black to black (Maerz and Paul 15A7).

Interior finish: smoothed, almost glossy smudged black.

Vessel Shapes: bowls, straight-sided or with slightly in- or out-curving rims. Diameters of whole vessels and sherds 14.0 to 22.3 cm., heights of whole vessels 7.2 to 11.7 cm. (figs. 72, 74).

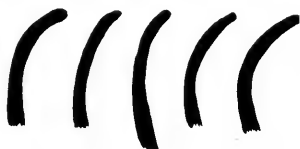


FIG. 71. Rim forms of Tularosa Patterned Corrugated jars.



FIG. 72. Rim forms of Tularosa Patterned Corrugated, Smudged Interior Variety bowls.

Range of Distribution: same as Tularosa Patterned Corrugated.

Stages and Phases: same as Tularosa Patterned Corrugated.

Time: same as Tularosa Patterned Corrugated.

Starkweather Smudged Decorated

Paste:

Construction: coiled and scraped.

Core color: usually brown; ranges from orangish flesh color through rose gray to black; sometimes light core grays rapidly toward black smudged surface (Maerz and Paul 5A8, 14D7, 15A12, 8A8).

Temper: light-colored sand grains, mostly rounded, some angular.

Fracture: somewhat crumbling to sharp, depending on firing and amount of temper.

Thickness of vessel walls: 0.4 to 0.8 cm., average 0.5.

Surface Features:

Exterior color: usually dark brown; ranges from beige to black, sometimes almost smudged (by accident?) (Maerz and Paul 13A2, 6A9, 5E11, 15E8, 8C9).

Exterior finish: roughly smoothed to smooth; a few pieces may be polished. Occasionally exterior of vessel is plain corrugated with edges of corrugations slightly smoothed.

Interior color: smudged black, with fine design.

Interior finish (fig. 75): smooth smudged surface, occasionally iridescent.

Design is more a matter of difference in finish than of difference in color. Pottery polished over paint before firing, and paint disappeared (during firing?) leaving design usually noticed because of contrast between polished body of pot and non-polished painted area; result similar to negative painting. Two sherds have design in white paint.



a



b



c



d



e



f

Designs (fig. 76): geometric design of fine to medium fine lines, varying from 0.1 to 0.4 cm. in width; usually parallel lines, straight, zigzag, or chevron; some concentric squares or diamonds, an occasional square spiral, one curvilinear spiral; solid triangles attached to lines rare; wavy lines rare; one example of large dots.

Vessel Shapes: bowls, with straight or slightly in-curving walls, rounded lips. Diameters of whole and restorable vessels vary from 12 to 26 cm., heights 8.4 to 10.6 cm. (figs. 77, 78).

Range of Distribution: upper San Francisco River and tributaries, Tularosa River, Apache Creek, north and east to Jewett Gap.

Stages and Phases: Reserve and Tularosa Phases, Pueblo II and III.

Time: ca. A.D. 950 to 1200.

Tularosa White-on-Red

Paste:

Construction: coiled and scraped.

Core color: usually dark brown; ranges from orange red to dull black (Maerz and Paul 6C11, 6B10, 7A9, 8H9). Some sherds black in center of core with gray near edges.

Temper: light-colored sand grains, mostly rounded, some angular.

Fracture: crumbling to sharp, depending on firing and amount of temper.

Thickness of vessel walls: 0.5 to 0.8 cm., average 0.7.

Surface Features:

Exterior color: usually red brown to dark brown; ranges from reddish orange to dull brown and black (Maerz and Paul 6F11, 7H9, 7A10, 8L4, 8E8).

Exterior finish (fig. 79): smooth to polished body of vessel with white painted lines 0.2 to 0.4 cm. wide. In some cases paint has been removed during or after firing so that painted area is rougher than surrounding surface. Bowls have fillet rim, 2 to 3 rows of fine indented corrugations 0.6 to 1.2 cm. below edge; corrugated area varies from 0.4 to 1.4 cm. in width.

Designs: chevrons, square spiral, interlocking fret, stepped lines, zigzag; only line design, no solid pattern. Design in broad horizontal zone below the rim fillet.

FIG. 73. Jars. *a*, Tularosa Patterned Corrugated, Reserve variant jar (cat. no. 207685); Wet Leggett Pueblo, Pine Lawn Valley, New Mexico; height 24.2 cm., diameter 24.3 cm. *b*, Tularosa Patterned Corrugated, Reserve variant jar (cat. no. 74969); Round Valley, Arizona; height 13.3 cm., diameter 12.9 cm. *c*, Tularosa Patterned Corrugated jar (cat. no. 207686); Wet Leggett Pueblo, Pine Lawn Valley, New Mexico; height 22.8 cm., diameter 24.3 cm. *d*, Tularosa Patterned Corrugated, Reserve variant jar (cat. no. 262801); Hinkle Park Cliff-Dwelling, New Mexico; height 21.1 cm., diameter 25.3 cm. *e*, Tularosa Patterned Corrugated jar (cat. no. 263596); Higgins Flat Pueblo, New Mexico; height 22.8 cm., diameter 24.0 cm. *f*, Tularosa Patterned Corrugated jar (cat. no. 21349); New Mexico; height 10.7 cm., diameter 12.7 cm.



a

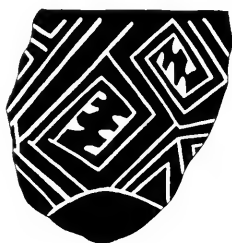


b

FIG. 74. Bowls. *a*, Tularosa Patterned Corrugated, Smudged Interior Variety, Reserve variant bowl (cat. no. 21286); New Mexico; height 18.4 cm., diameter 22.2 cm. *b*, Tularosa Patterned Corrugated, Smudged Interior Variety bowl (cat. no. 21307); New Mexico; height 7.4 cm., diameter, 15.4 cm.



FIG. 75. Starkweather Smudged Decorated potsherds.



Interior color: dark brownish black or black.

Interior finish: rough unsmudged to glossy smudged with occasional crackle finish.

Vessel Shapes: bowls with straight or slightly in-curving walls and straight or slightly out-flaring rims. Diameters of whole and restored vessels 18.0 to 26.0 cm., heights 7.3 to 13.9 cm. (figs. 80, 81).

FIG. 77. Rim forms of Starkweather Smudged Decorated bowls.



Range of Distribution: upper San Francisco River and tributaries, upper Blue River and tributaries, north to upper Little Colorado River, Apache Creek and tributaries.

Stages and Phases: Tularosa Phase, Pueblo III.

Time: ca. A.D. 1100 to 1200.

Tularosa Black-on-White

Paste:

Construction: coiled and scraped.

Core color: usually uniform white to light gray, sometimes darker; occasionally center of core darker gray than edges (Maerz and Paul 15A2 to 8A7).

Temper: light-colored angular particles, occasional darker particles included; some sherd fragments.

Fracture: sharp to slightly crumbling, depending on firing and thickness of sherd.

Thickness of vessel walls: 0.3 to 0.6 cm., average 0.4.

Paint: iron paint, dull black, occasionally oxidized to dark red-brown (Maerz and Paul 8L6, 7H12). Sub-glaze paint occurs on less than 1 per cent of sherds.

Surface Features:

Jar exterior, bowl interior color: usually white to light gray, occasionally medium gray (Maerz and Paul 4A1, 14A1, 6A8); fire clouds on some jars.

Jar exterior, bowl interior finish (fig. 82): slipped, polished over slip with occasional dull streaks on surface which indicate imperfect polish; crackle finish on ca. 25 per cent of sherds; paint applied after polishing.

Jar interior color: usually white to medium gray, occasionally medium gray or gray-brown (Maerz and Paul 11A1, 14A1, 7A9, 8C8).

FIG. 76. Drawings of Starkweather Smudged Decorated potsherds, showing variation in design. Scale in centimeters.



a



b



c



FIG. 79. Tularosa White-on-Red potsherds. Scale in centimeters.

Jar interior finish: smoothed, fine scraping marks on surface; temper inclusions occasionally protrude through surface.

Bowl exterior color: white to medium gray, slipped surfaces lighter than unslipped (Maerz and Paul 11A1, 6A7).

Bowl exterior finish: smoothed, usually slipped and polished over slip; polishing streaks evident; occasionally painted, paint applied after polishing.

Design elements: interlocking solid and hatched square scrolls, often with terrace endings, ca. 16 per cent; interlocking solid and hatched circular scrolls, sometimes with terrace endings, ca. 14 per cent; interconnected opposed solid terraces in diagonal, whirlwind or vertical bands, ca. 9 per cent; "plaited" or "woven" bands of negative parallelograms, parallel lines with or without pendent dots, or negative zigzag design, with simple cross-hatching as fillers, ca. 4 per cent; solid triangular scrolls, ca. 4 per cent; bands of opposed solid terraced oblique lines separated by row of hatched stepped squares or diamonds, ca. 4 per cent; band of diamonds or circles

FIG. 78. Bowls. *a*, Starkweather Smudged Decorated bowl (cat. no. 260660); Tularosa Cave, New Mexico; height 10.5 cm., diameter 22.0 cm. *b*, Starkweather Smudged Decorated bowl (cat. no. 263593); Higgins Flat Pueblo, New Mexico; height 8.0 cm., diameter 13.0 cm. *c*, Drawing of interior of *b*, showing design.

filled with crosses, bands of parallel lines and stepped lines, concentric bands of negative parallelograms, parallel lines varying in width, or cross-hatching, sometimes outlined with oblique terraced lines, ca. 4 per cent. Other designs include cribbing, concentric rectangles or triangles, bands of interlocking solid scrolls, bands of opposed solid and hatched terraced lines, warp and woof designs in square and triangular units, solid and solid-and-hatched checkerboard, horizontal parallel zigzag lines, vertical bands of diagonal squiggle hatch and parallel lines, radiating solid double sawtooth lines, chevrons, etc.



FIG. 80. Rim forms of Tularosa White-on-Red bowls.

Comparison: Tularosa Black-on-White designs differ from Reserve Black-on-White designs in several ways. The hatching in Tularosa Black-on-White is usually longitudinal, i.e., parallel or almost parallel to the framing lines, while the Reserve Black-on-White hatching intersects the framing lines at about a 45 degree angle. In Tularosa Black-on-White the framing lines are heavier than the hatching but in Reserve Black-on-White they are about the same. Hatching in Tularosa Black-on-White is also finer and the lines are closer together, but frequently the draftsmanship is poor and the hatched lines merge with one another and the hatching runs over the framing. Solid elements in Tularosa Black-on-White are smaller and more compact, sometimes giving the effect of negative designs; negative designs occur here but not in Reserve Black-on-White.

Vessel Shapes: jars, bowls, pitchers, ladles, effigies, eccentric and miniature forms (figs. 83-85).

Jars: ca. 12 per cent of purchased collection. Straight necks, globular bodies; occasional specimen with long neck resembling Chaco shape; few with recurved necks; maximum diameter 4.4 to 31.9 cm.; height 4.3 to 27.3 cm. Some jars with quadrilobate globular bodies; maximum diameter 6.9 to 21.4 cm.; height 5.0 to 16.5 cm. Some small forms with tripartite bodies; maximum diameter 10.1 to 13.7 cm.; height 9.8 to 12.9 cm.

Pitchers: ca. 46 per cent of purchased collection. Straight necks, globular bodies, differing from Reserve Black-on-White pitchers in that necks tend to be shorter and bodies more globular. Occasional specimen with quadrilobate body. Handles vary; plain strap ca. 48 per cent; animal effigy strap ca. 25 per cent; animal and bird effigy knob ca. 6 per cent; plain knob ca. 11 per cent; remainder twisted loop, sprinkler, or grooved strap. Maximum diameter 4.3 to 19.7 cm.; height 5.3 to 16.8 cm.

Ladles: ca. 20 per cent of purchased collection. Usually have round or oval bowl with rounded or squared rod type handle, often with ears or knob at end; occasionally handles are grooved, open on under side, or rattle type. Maximum length 5.2 to 29.5 cm.; diameter of bowl 3.5 to 17.0 cm.



a



b

FIG. 81. Bowls. *a*, Tularosa White-on-Red bowl (cat. no. 262648); Cosper Cliff-Dwelling, Arizona; height 13.3 cm., diameter 24.1 cm. *b*, Tularosa White-on-Red bowl (cat. no. 263723); Higgins Flat Pueblo, New Mexico; height 7.7 cm., diameter 20.9 cm.



FIG. 82. Tularosa Black-on-White potsherds. Scale in centimeters.



FIG. 83. Vessels. *a*, Tularosa Black-on-White bowl (cat. no. 74157); San Cosmos, Arizona; height 11.3 cm., diameter 21.8 cm. *b*, Tularosa Black-on-White pitcher (cat. no. 261123); Higgins Flat Pueblo, New Mexico; height 14.3 cm., diameter 15.5 cm. *c*, Tularosa Black-on-White jar (cat. no. 263858); Apache Creek Pueblo, New Mexico; height 23.7 cm., diameter 30.3 cm. *d*, Tularosa Black-on-White jar (cat. no. 261122); Higgins Flat Pueblo, New Mexico; height 25.0 cm., diameter 27.8 cm. *e*, Tularosa Black-on-White jar (cat. no. 263591); Higgins Flat Pueblo, New Mexico; height 22.6 cm., diameter 28.6 cm. *f*, Tularosa Black-on-White jar (cat. no. 263889); Higgins Flat Pueblo, New Mexico; height 22.9 cm., diameter 30.5 cm.

Canteens: ca. 6 per cent of purchased collection. Globular bodies, small straight short necks, pair of small strap, loop, or knob handles high on shoulders. Diameter 6.5 to 21.6 cm.; height 7.2 to 17.8 cm.

Bowls: ca. 8 per cent of purchased collection. With straight or out-flaring walls and straight or slightly flaring rims. Maximum diameter 10.7 to 31.3 cm.; height 4.9 to 14.7 cm.

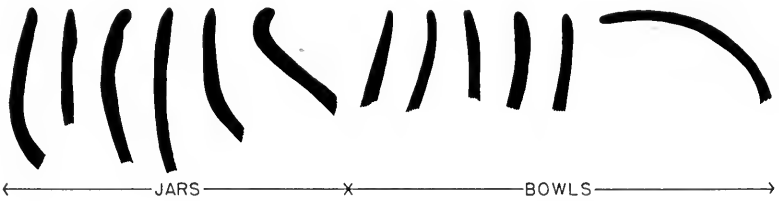


FIG. 84. Rim forms of Tularosa Black-on-White bowls and jars.

Seed bowls: ca. 3 per cent of purchased collection. Globular bowls with incurving rims; sometimes specimens are made by grinding off broken neck of jar or pitcher. Maximum diameter 16.2 to 22.3 cm.; height 10.9 to 14.5 cm.

Ring vessels: ca. 1 per cent of purchased collection. Small vessels; body forms ring with straight neck coming up out of top at one side; one jar with strap handle. Maximum diameter of ring 5.6 to 18.0 cm.; thickness of ring 1.7 to 6.2 cm.; height of vessel 3.8 to 11.3 cm.

Effigy vessels: ca. 4 per cent of purchased collection. Jars and pitchers with duck-shaped bodies, some with bilobed or trilobed breast; a few with modeled bills, others with open neck and no head. Animal effigy jars have body resembling duck form, and four modeled legs; one with head resembling mountain sheep with ears, broken stubs of horns, and incised mouth and nostrils. Height 11.1 to 14.3 cm.; length 11.4 to 21.2 cm.; width 7.3 to 16.3 cm. Miniature duck forms, length 4.8 to 10.6 cm.; height 2.3 to 4.8 cm.

Cup: single specimen, round bowl and strap handle. Diameter 12.2 cm.; height 7.4 cm.

Range of Distribution: upper San Francisco River and tributaries, upper Blue River and tributaries, Tularosa River and tributaries, upper Little Colorado River and tributaries, upper Gila River and tributaries. Traded to Rio Grande area, Hopi area and Flagstaff region.

Stages and Phases: Tularosa Phase, St. Johns Phase, Pueblo III.

Time: A.D. about 1100–1250 (estimated date).



FIG. 85. Vessels. *a*, Tularosa Black-on-White quadrilobate pitcher (cat. no. 73674); San Cosmos, Arizona; height 12.0 cm., diameter 17.3 cm. *b*, Tularosa Black-on-White duck effigy pitcher (cat. no. 21243); New Mexico; height 13.1 cm., width 14.0 cm., length 16.9 cm. *c*, Tularosa Black-on-White ladle (cat. no. 75082); Round Valley, Arizona; length 19.9 cm., bowl diameter 10.2 cm., bowl depth 4.1 cm. *d*, Tularosa Black-on-White ring vessel (cat. no. 73967); San Cosmos, Arizona; height 7.9 cm., diameter 15.3 cm. *e*, Tularosa Black-on-White canteen (cat. no. 73915); San Cosmos, Arizona; height 12.3 cm., diameter 13.3 cm. *f*, Tularosa Black-on-White animal effigy jar (cat. no. 73984) (legs restored); San Cosmos, Arizona; height 16.4 cm., width 9.7 cm., length 16.0 cm. *g*, Tularosa Black-on-White jar with tripartite body (cat. no. 74997); Round Valley, Arizona; height 8.6 cm., diameter 11.6 cm.

BIBLIOGRAPHY

COLTON, H. S.

1954. Check list of southwestern pottery types. Museum of Northern Arizona, Ceramic Series no. 2 (preliminary copy). Flagstaff, Arizona.

COLTON, H. S., and HARGRAVE, L. L.

1937. Handbook of northern Arizona pottery wares. Museum of Northern Arizona, Bull. 11. Flagstaff, Arizona.

COSGROVE, H. S. and C. B.

1932. The Swarts Ruin. Papers of Peabody Museum of American Archaeology and Ethnology, Harvard University, vol. 24, no. 2.

DANSON, EDWARD B.

1952. An archaeological survey of west central New Mexico and east central Arizona. Unpublished manuscript, Harvard University.

GLADWIN, H. S.

1931. Some southwestern pottery types, Series II. Gila Pueblo, Medallion Papers, no. 10. Globe, Arizona.

HAURY, EMIL W.

1936. Some southwestern pottery types, Series IV. Gila Pueblo, Medallion Papers, no. 19. Globe, Arizona.

1940. Excavations in the Forestdale Valley, east-central Arizona. University of Arizona Bulletin, vol. 11, no. 4 (Social Science Bulletin, no. 12).

HAURY, EMIL W., and SAYLES, E. B.

1947. An early pit-house village of the Mogollon culture, Forestdale Valley, Arizona. University of Arizona Bulletin, vol. 18, no. 4 (Social Science Bulletin, no. 16).

HAWLEY, FLORENCE M.

1936. Field manual of prehistoric southwestern pottery types. University of New Mexico, Bull. 291, Anthr. Ser., vol. 1, no. 4. Albuquerque.

HOUGH, WALTER

1907. Antiquities of the upper Gila and Salt River valleys in Arizona and New Mexico. Bureau of American Ethnology, Bull. 35.

1914. Culture of the ancient Pueblos of the upper Gila River region, New Mexico and Arizona. United States National Museum, Bull. 87.

LEHMER, DONALD J.

1948. The Jornada Branch of the Mogollon. University of Arizona Bulletin, vol. 19, no. 2 (Social Science Bulletin, no. 17).

MAERZ, A., and PAUL, M. REA

1930. A dictionary of color. McGraw-Hill Book Co., Inc., New York.

MARTIN, PAUL S.

1943. The SU site. Excavations at a Mogollon village, western New Mexico, 1941. Field Museum of Natural History, Anthropological Series, vol. 32, no. 2.

MARTIN, PAUL S., and RINALDO, JOHN B.

1940. The SU site. Excavations at a Mogollon village, western New Mexico, 1939. Field Museum of Natural History, Anthropological Series, vol. 32, no. 1.

1947. The SU site. Excavations at a Mogollon village, western New Mexico, third season, 1946. Field Museum of Natural History, Anthropological Series, vol. 32, no. 3.

- 1950a. Turkey Foot Ridge site. A Mogollon village, Pine Lawn Valley, western New Mexico. *Fieldiana: Anthropology*, vol. 38, no. 2.
- 1950b. Sites of the Reserve Phase, Pine Lawn Valley, western New Mexico. *Fieldiana: Anthropology*, vol. 38, no. 3.
- MARTIN, PAUL S., RINALDO, JOHN B., and ANTEVS, ERNST
 1949. Cochise and Mogollon sites, Pine Lawn Valley, western New Mexico. *Fieldiana: Anthropology*, vol. 38, no. 1.
- MARTIN, PAUL S., RINALDO, JOHN B., and BLUHM, ELAINE
 1954. Caves of the Reserve area. *Fieldiana: Anthropology*, vol. 42.
- MARTIN, PAUL S., RINALDO, JOHN B., BLUHM, ELAINE, CUTLER, HUGH, and GRANGE, ROGER, JR.
 1952. Mogollon cultural continuity and change. *Fieldiana: Anthropology*, vol. 40.
- MARTIN, PAUL S., and WILLIS, ELIZABETH S.
 1940. Anasazi painted pottery in Field Museum of Natural History. *Field Museum of Natural History, Anthropology Memoirs*, vol. 5.
- NESBITT, PAUL H.
 1938. Starkweather Ruin. Logan Museum Publications in Anthropology, Bulletin no. 6. Beloit College, Beloit, Wisconsin.
- SAYLES, E. B.
 1945. The San Simon Branch. Excavations at Cave Creek and in the San Simon Valley. I: Material culture. Gila Pueblo, Medallion Papers, no. 34. Globe, Arizona.
- SMILEY, TERAH L.
 1951. A summary of tree-ring dates from some southwestern archaeological sites. *University of Arizona Bulletin*, vol. 22, no. 4 (*Laboratory Bulletin of Tree-ring Research*, no. 5).
- WENDORF, FRED
 1950. A report on the excavation of a small ruin near Point of Pines, east central Arizona. *University of Arizona Bulletin*, vol. 21, no. 3 (*Social Science Bulletin*, no. 19).
- UNIVERSITY OF ARIZONA
 1953. A guide to the description of pottery types in the Southwest. University of Arizona, Department of Anthropology.





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