

The Excavation of the Cortez CO₂ Pipeline Project Sites, 1982–1983

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Chapter 19

A REVIEW AND COMPARISON OF EARLY NAVAJO CERAMICS AND CERTAIN PUEBLOAN TYPES FOUND IN EARLY DINETAH-DISTRICT ASSEMBLAGES

This chapter contains a brief review of early Navajo and certain Puebloan ceramics that appear in the Dinetah district. This research was stimulated by the analysis and comparative evaluation of early Navajo ceramics which were obtained from the excavation of three sites (El Campo Navahu, La Ceja Blanca, and Rincon Luis) along the Cortez pipeline. Readers are directed to individual site chapters for full descriptions of the assemblages.

The following summary is based principally upon the works of David Brugge (1963, 1977, 1981, 1982), Roy Carlson (1965), Frank Eddy (1966), Gwinn Vivian (1960), Malcolm Farmer (1942), and Dorothy Keur (1941). Together with ethnographic information provided by W. W. Hill (1937), Harry Tschopik (1941), and David Brugge (1964), these works allow a rather comprehensive definition of the Navajo ceramic industry. A great deal remains to be learned about the development of Navajo ceramics, especially with regard to regional and temporal variability. The continued analysis of early Navajo and other Athabaskan ceramics, especially those from excavated and dated assemblages, should be oriented toward specific traits or attributes. From such analysis of attribute variability, statistically comparable statements can be made that cannot be derived from ceramic studies employing simple type definitions.

Dinetah Gray and Early Variants of Navajo Utility Ware

Temper Types

Regional expressions of Dinetah and Navajo utility may be recognized on the basis of temper inclusions. Although temper type may vary within a single assemblage and within sites of a given region, in a pan-Navajo perspective temper type inclusions have significant regional and temporal variability. For the present this is only grossly defined but through the continued examination of Navajo ceramics additional regional expressions can be defined. Detailed descriptions of other associated attributes for these expressions may also reveal stylistic features which have specific regional or temporal affinities.

Sand Temper. The great bulk of the Dinetah utility material recovered from the La Ceja Blanca and El Campo Navahu components in Blanco Canyon is sand-tempered.

This is consistent with the observations made by Farmer (1942), Vivian (1960), Brugge (1963), and Reynolds and Cella (1984). The sand temper in the Blanco Canyon sample is relatively coarse and abundant. The grains are rounded and metamorphic (Specimen 9, Appendix VI). A single vessel in the assemblage from El Campo Navahu is tempered with crushed red sandstone (Specimen 8).

In the collection from La Ceja Blanca, sand-tempered materials constitute 84.9 percent of the sample, sand and sandstone 7.1 percent, sand and mudstone 6.4 percent, and sand and sherd 1.5 percent. A comparison with the Cedar Creek (LA 17483) collection (Reynolds and Cella 1984:Table 11.4) reveals that sand-tempered specimens represent 98.9 percent of that assemblage; sherd temper, 0.05 percent; sand and shale temper, 0.7 percent; and sandstone and sherd temper, 0.4 percent.

Also in the Dinetah district, Wilson and Warren (1974:17) report Dinetah materials from LA 2298 with temper of fine-grained quartz sandstone and traces of mica and white feldspar. A single specimen with sherd temper and clay pellet inclusions was also noted. Seven Dinetah utility sherds from sites in Carrizo Canyon were also inspected by Warren; all have sandstone temper—some with a white cement coating and others with hematite-cemented grains. One specimen contained magnetitic sandstone fragments.

In regions beyond the Dinetah district a variety of temper types have been defined for Dinetah utility. Brugge (1963:4) reports a western variant from the Black Mesa, Arizona, area which exhibits a fine texture and medium-to fine-grained temper that includes unidentified red and black particles. In the Seboyeta region, Marshall (1979) found the exclusive use of crushed opaque white-to-yellow rock temper in association with subangular semitranslucent quartz. The opaque rock is fine-grained, of uniform color and texture, and does not include phenocrysts. Occasional Seboyeta specimens also include white or pink feldspar and 20 percent are micaceous with either black biotite or golden muscovite.

The Dinetah tempering materials from the Doll House site in Chaco Canyon (Brugge 1977:206–208, App. C) include sandstone from the Ojo Alamo formation and crushed rock from at least two volcanic sources. Brugge observes that the local clays from Chaco refire yellow-buff, whereas the volcanic-tempered specimens refire red. One igneous-

rock-tempered specimen contains potash feldspar and traces of sodic feldspar, pyroxene, and glass. The other igneous specimen contains white feldspar and mica, possibly from a monzonite. The nearest source for monzonite is the Mount Taylor area.

In petrographic specimens of Navajo wares from the lower Chaco drainage (Loose 1977:569) both fine- to medium-grained quartz river sand and crushed-trachyte-tempered Chuskan sherds were noted.

A sample of 130 twentieth-century Navajo utility sherds from the Gallegos Mesa area is described by Sudar-Laumbach (1980:995). These contain 75 percent sand and sherd, 13 percent sherd, and 12 percent sand temper. Petrographic analysis of 12 specimens revealed four with andesitic rock temper and eight with detrital material containing rounded quartz, feldspar, chalcedony, and minor amounts of ferromagnesia and magnetite.

Sherd Temper. The use of sherd temper, particularly in association with neck fillets, is considered to have first become popular in the early nineteenth century. West of the Chuska Mountains this is manifest as Pinyon Gray and in the east as Navajo Gray (Brugge 1963:5-6). The specific dates for the introduction or minor use and the popular acceptance of sherd temper remain unspecified.

Sherd temper occasionally appears in eighteenth-century Dinetah district assemblages in association with nonfilleted vessels and in assemblages where sand-tempered specimens are prevalent. The Gobernador phase sample from La Ceja Blanca contains six sherd-tempered utility sherds (1.5 percent of the sample). In the Cedar Creek complex, 17 sherd-tempered specimens represent less than 1 percent of the sample (Reynolds and Cella 1984:Table 11.14). No sherd-tempered materials were observed at El Campo Navahu, a probable sixteenth-century site.

In the drainage of the Puerco of the West, Brugge (1963:14) indicates that "the use of sherd temper in utility pottery probably began during the 1750s. By about 1760 it was the predominant type of temper in use."

To summarize, sherd-tempered Navajo culinary vessels may occasionally appear in mid-eighteenth century assemblages and then become increasingly popular in the late eighteenth-early nineteenth century. Probably there was considerable regional/temporal variability in the introduction, minor use, and general acceptance of sherd temper. It is also likely that sand temper was used occasionally in the nineteenth and twentieth centuries (Brugge 1964). In order to resolve these problems of trait-use and distribution we need good attribute definitions of Navajo pottery in association with absolute dates or in association with other dated pottery types.

Micaceous Paste. Farmer (1942:74-75) notes the presence of "some mica" in both the Dinetah Scored and brownware materials that he defined in the Largo-Blanco region. No micaceous materials were observed in the assemblages from El Campo Navahu or La Ceja Blanca, nor do micaceous materials appear in the Carlson (1965) or Reynolds and Cella (1984) descriptions. Brugge (1963:4) describes

the Navajo micaceous variant as a southern type with a range from Mount Taylor in the Los Gigantes Canyon area north to Chacra Mesa. Vivian (1960:113) also notes a few "brown culinary" vessels with "a considerable quantity of mica" from Chacra Mesa.

In a sample of 2518 Dinetah sherds from the Seboyeta area (Marshall 1979), micaceous materials represent 20 percent. Micaceous materials have not been recognized in the Dinetah utility material recently observed in the Alamo Navajo area (Marshall and Walt n.d.). To date, neither a Navajo area or complex containing a decided preponderance of micaceous Dinetah materials nor a specific sub-area of exclusive micaceous-ware production in the southeastern Navajo range has been located. It does appear, however, as if Navajo micaceous variants are absent from the lower Blanco-Largo regions and the Navajo reservoir area.

The mica in Navajo ceramic materials is probably a constituent of the clay mass rather than an additive. Also, both micaceous and nonmicaceous clay materials were probably exploited in the Rio Puerco and Chaco districts, where such clay bodies may be found. Brugge (1981:87) notes that the dates for the micaceous Navajo variants (Dinetah Gray Micaceous and Navajo Gray Micaceous) are "rather uncertain" but they probably extend from some time in the early to middle eighteenth century until about 1900.

Navajo micaceous materials contrast with the Jicarilla Apache types—Ocate and Cimarron Micaceous—and with the Taos and Picuris Pueblo micaceous types—Peñasco and Vadito. The Navajo materials contain only minor quantities of mica, while the western Plains and northern Pueblo forms are heavily micaceous. Wilson and Warren (1974:15) note the presence of highly micaceous materials from LA 2298 and identify these with the Ocate Micaceous type. Similar materials were observed in the Laboratory of Anthropology type collections from LA 2300 and LA 4361. The LA 2300 example has a flared rim and concave base and may represent a northern Pueblo vessel. Very occasional Cimarron Micaceous sherds have also been identified at sites in the Chaco region (Brugge 1981:88). In any event, the presence of occasional very micaceous ceramics in the Dinetah district indicates infrequent contact with inhabitants of the western Plains and northern Rio Grande. A good summary of micaceous wares among Athabaskan, Puebloan, and Hispanic populations can be found in Warren (1981:149-165).

Paste Color

In all regions and time periods the firing atmosphere of most Navajo culinary wares was generally uncontrolled reduction. Even though various clay sources were exploited, each with different firing properties, due to the low firing temperature sherds are often somewhat soft and crumbly. Paste colors range from light gray to dark gray and brown. Both Farmer (1942:75) and Vivian (1960:113) report a brownware variant apparently of Navajo manufacture. Most of this material contains quartz sand, indicative of Dinetah Plain, although some brownwares with sherd temper (Navajo Plain) were noted. Both Farmer and Vivian indicate that occasionally brownware specimens

are micaceous. Vivian observes that this variant is rarely striated and that no filleted brownware materials were found at Chacra Mesa.

The grayware/brownware dichotomy noted by Farmer and Vivian appears to be substantiated in the assemblage from El Campo Navahu, where both types could be distinguished with relative confidence. Furthermore, striations appear to be associated with graywares and absent from brownwares. In addition, the brownware vessels from El Campo Navahu often exhibit a lighter interior polish in contrast to the smoothed surface of grayware vessels. Also, the brownware vessels appear to be smaller than the grayware vessels.

The La Ceja Blanca assemblage did not reveal consistent brownware and grayware groupings. Instead, there is a continuum in paste color from brown to a dark gray. Neither the occurrence of scoring and polishing nor vessel-size attributes appear to cluster with color. A similar circumstance was encountered in the assemblages from sites near Seboyeta (Marshall 1979), where the gray-to-brown color spectrum was often observed on different parts of the same vessel.

It is not known whether the brown paste variant of Navajo-made culinary vessels has a specific temporal or spatial distribution. Paste color is affected by clay source and firing temperature. The occurrence of both brown and gray wares may not be a "cultural" marker but may stem from selection of various clay sources, even within a restricted district, and from the uncontrolled character of the firing atmosphere. In order to determine if the brown variant is indeed a valid type, it is necessary to continue analysis of Navajo ceramic material to define specifically the various attributes, including temper type, surface treatment, presence and absence of fillets, presence and absence of mica, and vessel wall thickness, and compare the results between gray and brown samples.

Surface Treatment

The striated texture of Navajo culinary vessels is usually attributed to surface scraping with a fire-singed or charred corncob. This has been ethnographically documented by Hill (1937:11), Tschopik (1941:28), and Brugge (1964:39). Other materials, such as grass, corn husks, and juniper bark, or such implements as sheep wool mops and gourd-rind spoons may have been used to finish the vessel walls.

The plain surface of Dinetah Gray may have been "wiped with shredded juniper bark or corn husk, sometimes scraped with a corncob or smoothed, rarely lightly polished or a combination of these techniques" (Brugge 1963:3). In the Navajo Gray materials from Chacra Mesa, Vivian (1960) notes that the

vessel surfaces were rough; the great majority were marked by rather prominent striations attributed to corncob scraping. Other surfaces appeared to have been wiped with a cloth which slightly obliterated the striations. Striations ran both vertically and horizontally.

The scored or striated surface of Dinetah and Navajo Gray vessels is a distinctive attribute. Most assemblages reveal

some scored specimens, but in many instances smoothed-obliterated examples are the most common. In the Blanco Canyon collections that are the subject of this analysis, the great majority of the sample have been wiped smooth and only traces of scoring are observed. In a sample of 392 sherds from La Ceja Blanca, only 4.4 percent of the exterior surfaces and 0.4 percent of the interior surfaces exhibit any evidence of striations (see Table 15.3). In the sample from El Campo Navahu, only one vessel in eight has a striated surface.

In most other collections the vessels are described as scored, and no reference is made to wiped or smoothed vessels (Carlson 1965:64; Reynolds and Cella 1984:Table 11.12). In the Seboyeta collection of 2518 Dinetah sherds, however, the surface treatment was defined in a manner similar to that used in the present study. Scored, lightly scored, smoothed, and lightly polished categories were recognized (Marshall 1979). Thirty-two percent of that sample revealed some evidence of striations, while the bulk of the material had been wiped smooth. Polished surfaces are uncommon in both the Seboyeta and Blanco Canyon collections (less than 5 percent). Most polished surfaces in the Seboyeta sample are on the interior, whereas in the Blanco Canyon collection most are on the exterior.

Striated utility materials have also been described for the protohistoric Puebloan industries of the Jemez (Reiter 1938:105). At Pecos (Kidder and Shepard 1936:320-321) they appear most frequently in the late historical period. Jicarilla Apache types, Ocate and Cimarron Micaceous, also have corncob striations (Gunnerson 1969:26, 33). Striated specimens of Western Apache material have been described (Doyel 1978:104-106; Gifford 1941:163-164) and occasional striated specimens can be observed in the Museum of New Mexico collections from Taos and Picuris. There also appears to have been a seventeenth-century striated ware manufactured in the Cochiti area; it has been termed "Santa Cruz Plain" (Snow 1973:14, 21). This ware is tempered with andesite vitrophyre (Warren 1979b:239, 244). A sand-tempered variant of this type is also known in the San Felipe and Las Huertas area (Ferg 1982:35).

The use of corncob in finishing pottery probably originated in the prehistoric pueblos. Indeed, similar striated materials have been observed in the assemblages of the Rosa phase (Hall 1944b:39; Peckham 1963:99), and from prehistoric sites in the Tesuque area (Stubbs 1954:45). Striations are also found in the early Mogollon type, Alma Scored (Hawley 1936:106).

Corncob-striated materials do not appear to be a common element on the Plains, except in the eastern foothills of the Sangre de Cristos. Instead, Plains utility vessels appear to have been textured by simple stamping and thong-wrapped paddles (Gunnerson 1960:163; Wedel 1959:237).

Vessel Form

The technology and stylistic elements of utility ware industries often reflect a conservatism not found in servicewares. An entire painted ware industry may be adopted from an adjacent culture, or revolutionary changes may be incorporated in an existing serviceware industry, while

there is a persistence of traditional and often ancient methods and styles reflected in the ordinary cooking pot (Linton 1944:369). Good examples of this phenomenon may be found in the ceramics of the Largo-Gallina and the Navajo, where the pointed-bottom northern Woodland forms and plastic decorative embellishments of the culinary materials appear to reflect ancient or traditional styles, whereas the decorative wares appear to have been largely adopted from adjacent Puebloan industries.

In the manufacture of ceramic vessels potters often imitate the form of other containers. One intriguing observation made by Ingbar (1983:26) is that ceramic vessel morphology among various mobile groups of western North America tends to mimic the forms of basketry or other containers manufactured by the group prior to the introduction of ceramic technology. Thus, the conical shape of the Southern Paiute and the biconical forms of the Southern Ute are imitations of basketry forms; the flat-based bucket forms of the Sarsi (Sapir 1923) and Blackfoot (Ewers 1955) resemble bark containers. The tendency to mimic the forms of containers, such as gourds and baskets, has been outlined for early Puebloan ceramics (Cushing 1886:483). We might therefore assume that the early Navajo ollas duplicate, to a certain degree, the form of Navajo baskets at the time of early ceramic production. Both Keur (1944:82) and Hester (1962:123) describe Navajo baskets which appear similar in form to Dinetah utility vessels.

In the historical period we also find that various North American groups copied the forms of iron pots and kettles in ceramics. Witness the three-footed kettle oven of the western Shoshone (Steward 1941:340) and the coffee pots and frying pans of Navajo ceramic manufacture. Research regarding the variety of iron pots traded to the North American tribes and the similarities manifest in native earthenware containers should prove interesting but is clearly beyond the scope of this work.

The majority of Dinetah vessels are wide-mouthed, rather elongate ollas with rounded to pointed bases. The elongate olla with pointed bottom and maximum diameter below the middle of the vessel is characteristic of the early Navajo utility ware industry. In general terms, this vessel form appears similar to the northern Woodland style (Linton 1944:371-372). Morphological variations of the eighteenth and early nineteenth century Navajo-made utility vessels are illustrated in Figure 19.1 and are compared with Apachean (Figure 19.2); Puebloan (Figure 19.3); and Ute, Shoshonean, and other documented utility ware vessels of the protohistoric era in the southwestern United States (Figure 19.4). Vessel forms of the prehistoric Largo-Gallina phase are included as well (Figure 19.3).

The elongate character and low maximum vessel diameter of Dinetah utility vessels is rather distinctive, although somewhat similar forms appear among the Chiricahua Apache (Brugge 1981:20) and the Ute (Huscher and Huscher 1940:138). The Chiricahua vessel forms are illustrated by Brugge, but there is no information on the source of the vessels or other characteristics. The specimens are probably from the early to mid-nineteenth century. The Ute vessel (Figure 19.4) illustrated by Huscher and Huscher (1940:138) was found on the Uncompahgre

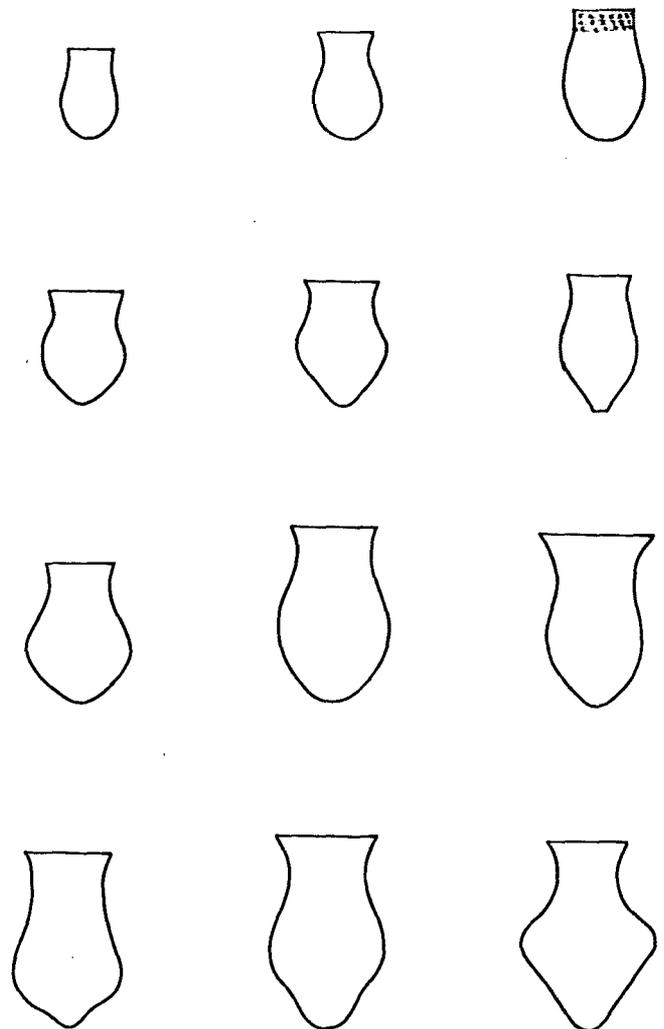


Figure 19.1. Vessel forms of eighteenth and nineteenth century Navajo culinary ware.

Plateau and was not associated with dated materials, structures, or other artifacts.

One unusual characteristic of some Dinetah utility vessels is the recurved lower vessel body (Figure 19.1). This form may have originated during the initial construction of the vessel base if the potter used his elbow or knee to mold the base. Although Dinetah utility vessels normally exhibit rounded bases, occasional pointed bases do occur. One variation of the recurved lower body and pointed base has a flat basal foot (Figure 19.1). Four examples of this style were observed in this research of documented Navajo ceramic collections. This basal form has been observed elsewhere in the Geneseo Plainware from the Tobias site in Kansas (Figure 19.4; Wedel 1959:236). Flat-based vessels have also been defined in the Jicarilla Apache Ocate material (Gunnerson 1979:164), but Ocate vessels are generally squat and rather round, somewhat like certain forms of the adjacent Plains. Some forms of Spanish derivation also exhibit flat bases (Hayes et al. 1981:83-90) but overall vessel form is not similar to the Navajo examples.

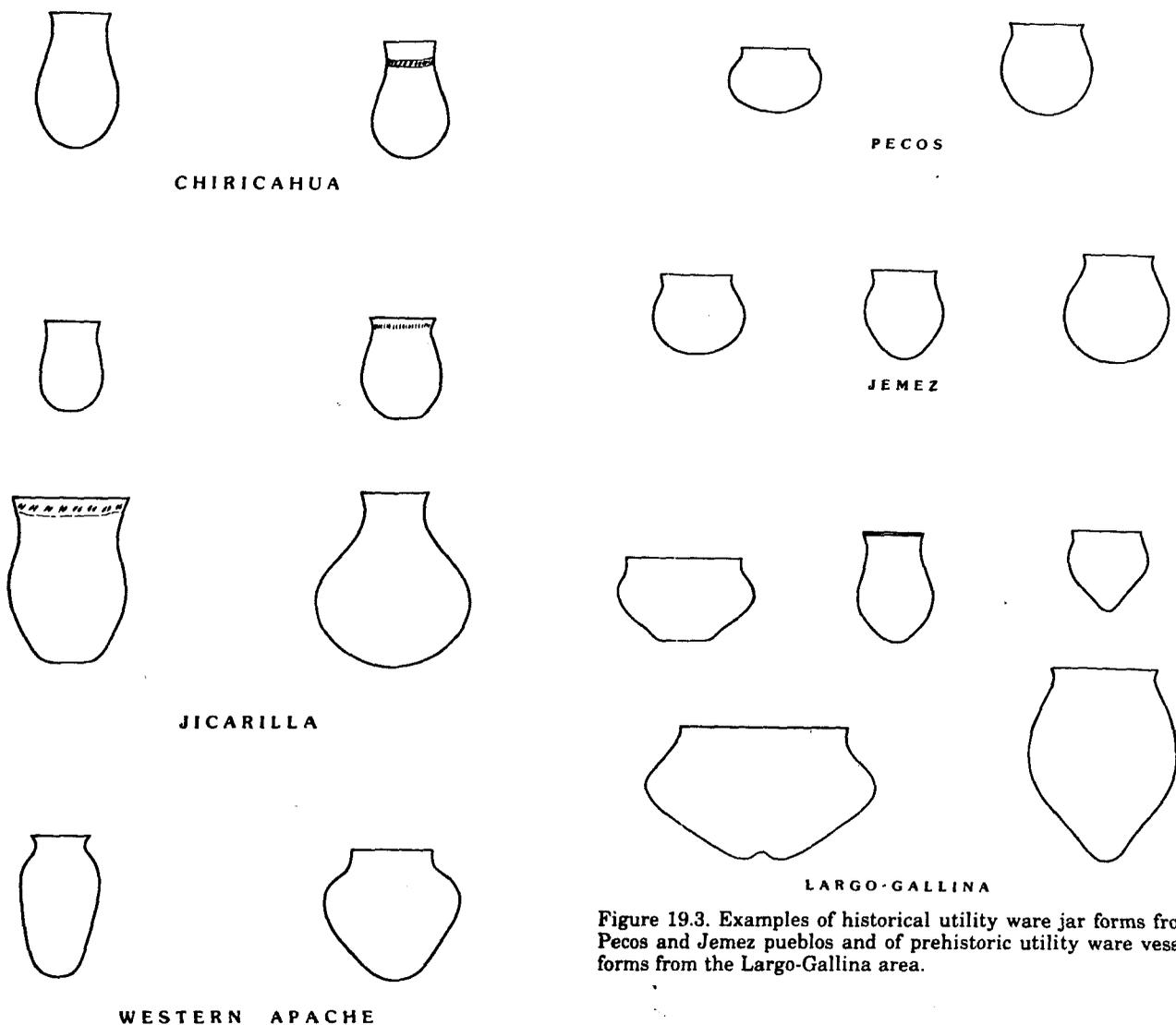


Figure 19.2. Jar forms of the Chiricahua, Jicarilla, and Western Apache.

It is conspicuous that the rounded globular form of the historic Puebloan and various Plains industries is very much unlike the elongate form of Dinetah vessels. The squat and globular form of certain Puebloan and Plains protohistoric industries is very similar to the intermediate or southern Woodland style defined by Linton (1944). It is also noteworthy that Jemez culinary ware vessel forms are very much unlike Dinetah forms (Reiter 1938). Jemez materials are clearly *not* the formal prototype of the Dinetah materials.

Western Apache vessels exhibit the very consistent feature of a maximum diameter elevated above the midpoint (Brugge 1981:20; Alan Ferg, personal communication) and are very much unlike Dinetah forms. The vessel forms of prehistoric Largo-Gallina are illustrated in Figure 19.3, since these forms are often compared to Dinetah materials. Indeed, it has been stated that Dinetah vessel forms may

Figure 19.3. Examples of historical utility ware jar forms from Pecos and Jemez pueblos and of prehistoric utility ware vessel forms from the Largo-Gallina area.

have been derived from copies of Gallina vessels found in the region (Brugge 1983:494). In certain instances the similarities are striking. It should be noted, however, that Gallina vessels tend to exhibit greater diversity and, in particular, have a much greater maximum diameter relative to their height.

It is difficult to draw significant conclusions regarding variations in vessel morphology, because similar forms may have been the result of independent development and because certain functional parameters may be the principal feature affecting form, rather than cultural-historic and stylistic continuities. Vessel form, size, wall thickness, and other characteristics are probably related to factors such as mobility, methods of transportation, and the type of food prepared, but such causal relationships have not as yet been recognized. It is also clear that ceramic containers produced in the early periods of an industry mimic the forms of basketry, bark, gourd, or other containers utilized by the particular group prior to the adoption of ceramic technology (Ingbar 1983:26). The elongate forms of Navajo culinary vessels may, therefore, relate to the basketry forms of ancestral Athabaskan populations.

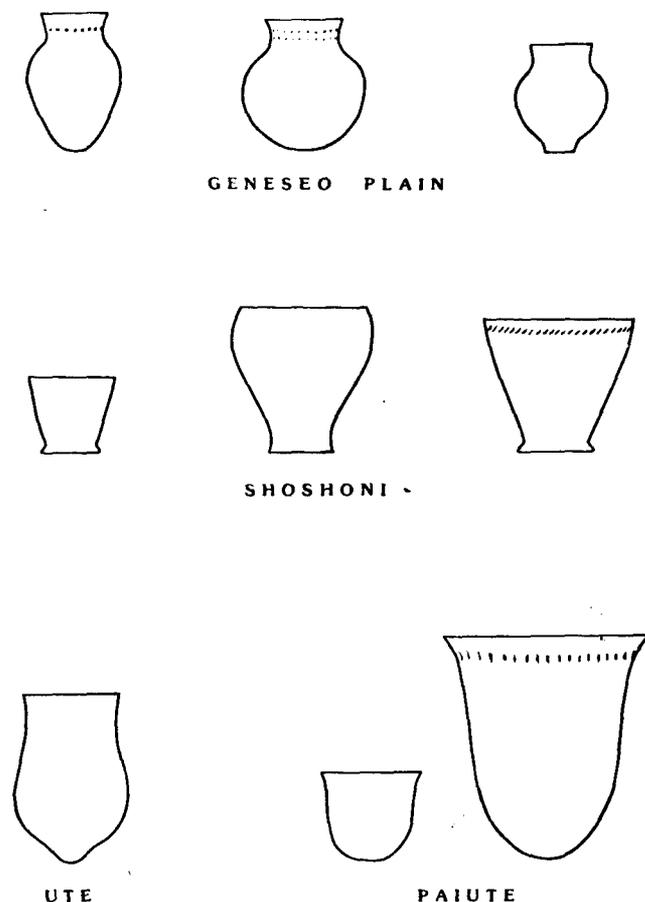


Figure 19.4. Utility jar forms of early historical Plains/Great Basin manufacture. Prehistoric: Geneseo Plainware. Historical: Shoshoni, Ute, and Paiute.

The high degree of fragmentation in the Blanco Canyon sample does not allow for specific definition of the vessel forms; however, the great majority of the vessels appear to be jars. The most common form is the typical rounded-bottom olla with a constricted neck, wide mouth, and slightly flared rim. Estimated orifice diameters from the rim sherds from both La Ceja Blanca and El Campo Navahu range from 8.0–14.0 cm ($n = 10$; mean is 11.4 cm). These vessels are rather small in comparison to the Seboyeta sample of 30 rims that exhibited a range from 8–30 cm and a mean of 19.3 cm (Marshall 1979). A 19–20 cm orifice diameter is also given for the specimen measured by Carlson (1965:64).

Bowls, miniature vessels, pipes, and occasional coil handles have been documented from eighteenth-century Dinetah sites elsewhere (Marshall 1979). The Blanco collection does not contain handles or lugs. The curvature of a single sherd from El Campo Navahu indicates the presence of a miniature vessel of undetermined form. The diversity of forms from the late 1800s and early 1900s illustrated by Hill (1937:8) includes ladles, cups, trays, seed jars, coffee pots, canteens, water bottles, dolls, and animal figures. Other forms, such as frying pans and crucibles (Sudar-Laumbach 1980:998), are apparently late nineteenth and early twentieth century innovations.

Rim-Edge Embellishment

The few Navajo culinary vessels that exhibit incised notches on the rim edge were manufactured in the nineteenth and twentieth centuries. Brugge (1981:88) observes that the "notched or impressed rims seem to date about the same as fillets" but that "they are too rare to permit more than a guess at present." To my knowledge, no incised rim edges have been documented in eighteenth-century Dinetah collections. This suggests a beginning date for incised rim edges after AD 1775–1800.

Rim-edge embellishment is uncommon among the various industries compared in this analysis. Embellished rim edges do occur, however, in the Dismal River complex for which Gunnerson (1960:164, Figure 23) illustrates incised lines in perpendicular, diagonal, and chevron forms. Incised rim edges were also occasionally observed on Picuris-Taos specimens in the Laboratory of Anthropology collections. The scalloped (pie-crust style) rim edges that appear on both Jicarilla and northern Pueblo forms do not appear in the Navajo industry.

Fingernail Incising

Nail-edge embellishment is present on early Navajo material, although it appears infrequently. An example from Feature A at La Ceja Blanca (LA 38951), a component that has been radiocarbon dated to AD 1700 \pm 50, has an unobliterated coil band near the neck which exhibits vertical nail incisions. Another example from Three Corn House (Carlson 1965:66) has been identified as "Gobernador Filleted," since the neck band, unlike that from La Ceja Blanca, appears to have been applied. Nail-edge decoration on a plain surface is unknown for early Navajo material but is a common feature elsewhere during the protohistoric period, and further investigations may also reveal this style on Navajo ceramics. The plain-incised style appears to be a common element of Western Apache Rimrock Plain materials (Gifford 1941:164; Schroeder 1963:41). Kidder and Shepard (1936:318) illustrate some nail-incised material from Pecos, but these could be intrusive vessels of Apachean Ocate or Perdido Plain from the adjacent Plains. The style is also noted on the Geneseo material from the protohistoric Tobias site on the Kansas plains (Wedel 1959:Plate 28). The nail-incised style clearly has a wide distribution in western North America during the historical period, as it also appears on Shoshonean materials (Baldwin 1950; Tuohy and Palombi 1972) and on vessels of the western Mono of the Sierra Nevada (Gayton 1929:243).

Applied Fillets

The use of true applied fillets, consisting of a band of clay added to the vessel wall and decorated in various styles, is first documented on Navajo vessels during the mid- to late-eighteenth century. Two examples are described from Three Corn House as "Gobernador Filleted" by Carlson (1965:Plate 25a, c). One consists of a coil with high relief, which is incised with a deep vertical line. This form is reminiscent of applied lugs (Figure 19.5). The other fillet consists of a smoothed coil which creates a low, rounded contour on the vessel wall and is incised with deep vertical fingernail incisions (Figure 19.5). This example resembles certain nineteenth- and twentieth-cen-

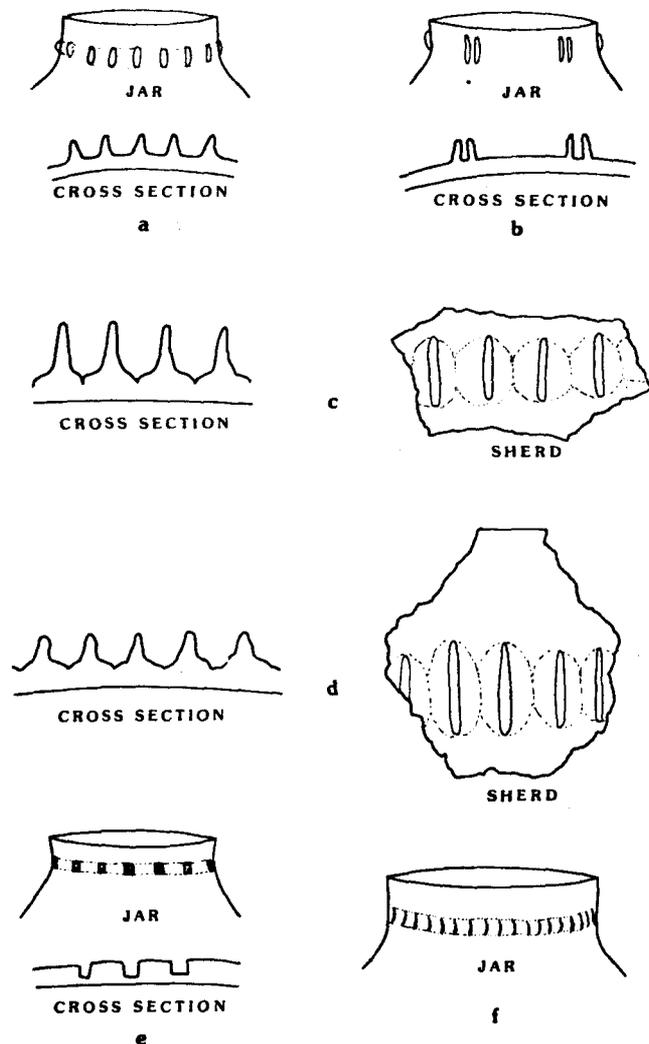


Figure 19.5. Gobernador fillet styles documented for early (eighteenth-century) Dineta utility ware found in the eastern San Juan district. (a-d) pinched lug style; (e) high-relief fillet with stick incisions; (f) low-relief fillet with fingernail incisions.

ture fillet styles. Based on associated tree-ring dates, these specimens appear to be mid-eighteenth century materials and represent the earliest documented examples of Navajo filleted bands.

The occasional use of fillets is also reported for the period from 1745 to 1812 in the Big Bead Mesa area by Keur (1941:47). One example consists of "strips 3.81 to 4.45 cm long, applied longitudinally obliquely in the neck region." These strips are incised with "deeply cut stick marks." This style resembles the high-relief fillet designs applied to the lower vessel walls of Taos-Picuris and Jicarilla Apache vessels (as observed in the Laboratory of Anthropology collections). Additional fillet styles of probable late eighteenth-early nineteenth century affinity from the Seboyeta area are described by Marshall (1979). These consist of fingertip and thumb-tip impressed styles and a diagonal stick-incised type (Figure 19.6). In spite of their appearance in the mid-eighteenth century, Navajo fillet embellishments remained uncommon until the emergence of the

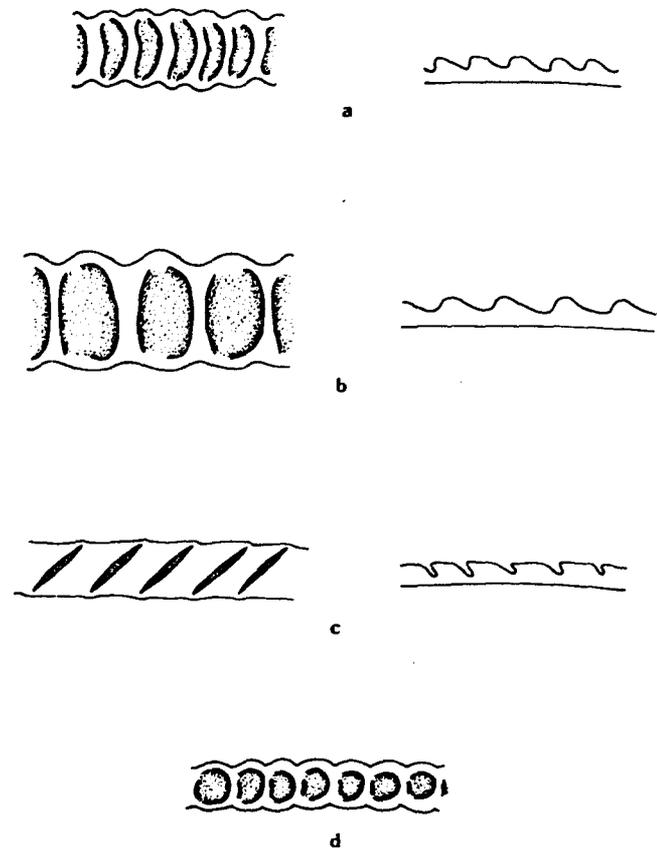


Figure 19.6. Additional fillet styles from early Navajo ceramics. (a-c) fillet styles documented for Dineta utility materials found near Seboyeta, New Mexico; (d) corncob-impressed fillet style described as the "string of beads" design by Hill (1937:15).

nineteenth century. Fillets then increased in frequency and diversity and are still in use today.

A wide variety of fillet styles developed during the nineteenth century as this form of plastic embellishment came into vogue. The continued diversification of the style into the twentieth century is perhaps due to commercial production. The earliest styles that have been documented for the mid-eighteenth century in the Dineta district include the applied pinched-lug style, the high-relief stick-incised style, and the low-relief nail-incised style. It is most likely that the fingertip and thumb-tip indented styles, and the corncob and stick punctate styles (Figure 19.6) were also early developments, but not until the late eighteenth or early nineteenth century after the general abandonment of the Dineta district.

Experimentation involving the application of fillets to the vessel body, below the neck/rim area, apparently began at an early date, ca. AD 1745-1812, in the Big Bead Mesa area. These forms appear to have been extremely infrequent until the late nineteenth and early twentieth centuries.

Multiple bands, either in parallel or linear rows (the string-of-beads style), zig-zag forms (the lightning design),

and other complex geometric forms also appear to have been a late nineteenth century development. The specific regional and temporal placements of these various fillet styles cannot be traced at present.

The application of fillets as decoration on ceramic vessels in western North America appears to have considerable antiquity and a wide distribution. The fillet style does not necessarily imply historic association, since the technique is quite simple and was no doubt subject to independent invention.

In the Southwest the earliest documented examples of the fillet style appear in the Kayenta region of northern Arizona and in the Largo-Gallina district of northwestern New Mexico at approximately AD 1050-1100. The Kayenta materials consist of a single band with indentations and incised curvilinear body fillets and are defined as Tusayan Gray Appliqued (Colton 1955). True Gallina-Largo fillets appear only occasionally, while the undecorated rim band is common (based on examination of Hibben's [1949] Gallina material at the Maxwell Museum). Hibben (1949) does not describe Gallina fillets, but Mera (1935:Plate VI) illustrates a pinched-lug band similar to those which have been recognized for Gobernador filleted ceramics. In addition, nob applications may appear on both Kayenta and Gallina-Largo materials.

The only example encountered in this study of a true filleted style documented for the southwestern Plains is from the protohistoric occupation at the Tobias site in Kansas (Wedel 1959:235, Plate 30). Those fillets are finger-indented or stick-incised and closely resemble certain Navajo examples.

Fillets also appear on numerous vessels of Jicarilla Apache and Picuris-Taos material in the Museum of New Mexico collections; however, the temporal affinities of these specimens are not known. Gunnerson (1969:26) does not describe filleted materials in the early Jicarilla Apache Ocate materials; therefore, the use of fillets among the Jicarilla may postdate their use among the Navajo. Jicarilla and northern Pueblo fillets exhibit a high relief and are often applied in various geometric forms to the lower vessel body as well as to the neck area. These specimens may also have a pinched or scalloped form or they may be finger-indented or stick-incised. Nob-type embellishments also occur.

Filleted materials are also indicated for the Chiricahua Apache (Brugge 1963), but the temporal affinities of these specimens are not defined. Various forms of finger-indented or nail-incised and punctate designs are noted by Gifford (1941:142) for the southern Tonto Apache and the Cibecue Apache, although these do not appear to be associated with true fillet bands.

The above cultural-historical and distributional sketch of the fillet style probably does not fully exploit the available data for the region. I suspect that the style has antiquity in both the Plains and the Colorado Plateaus, and that both diffusion and independent development are operative. Fillet materials in the Puebloan assemblages from west of the Rio Grande appear to be restricted to the prehistoric era from ca. AD 1050 to 1200. In the historic era

the fillet style appears among the Plains and Plains-derived ceramics and among the Picuris and Taos Pueblos where Plains influence is extensive.

Vessel Wall Thickness

In spite of their crude stylistic nature and soft, low-fired characteristics, Dinetah utility materials are often quite thin and therefore delicate. In the samples from El Campo Navahu and La Ceja Blanca, Dinetah materials range from 3.0-6.5 mm thick. The mean vessel wall thickness of 250 sherds from La Ceja Blanca is 4.12 mm. A similar mean value is observed in the assemblage from El Campo Navahu. Wall thickness may vary 1.0-1.5 mm in a single vessel, since the lower vessel body and base was often made thicker than the upper body and rim. A similar range in vessel thickness was observed by Vivian (1960:11) at Chacra Mesa, and Marshall (1979) found the Seboyeta materials to have a mean wall thickness of 4.0 mm. The thin character of the Dinetah materials at the Blanco sites can be given perspective when we observe that Anasazi graywares from the same region have a mean of 5.5-6.5 mm and occasionally occur in the 8-10 mm range.

Brugge (1963:14) observed that Navajo culinary ware vessels were made with thicker walls and smaller vessel sizes during the late eighteenth and early nineteenth centuries than they had been previously. Together with the use of sherd temper and a more cylindrical form, this gave the vessels "increased durability" and made them "easier to transport." These factors may be related to the increased mobility of the Navajo population as they shifted from a reliance on horticulture to a largely pastoral economy.

Variation in the vessel wall thickness may also reflect the plastic qualities of the clay materials utilized or it may be due to the construction technique. Furthermore, the thickness of a vessel wall "affects three aspects of mechanical performance: thermal conductivity, flexural strength, and resistance to thermal shock" (Braun 1983).

Pitch Glazing

A single Dinetah utility sherd exhibiting an exterior surface glazed with pine pitch was obtained from La Ceja Blanca, Provenience 1. Pitch glazing of Navajo culinary vessels is a common feature of the late-nineteenth and twentieth centuries. The pitch was applied to the hot vessels as they were removed from the fire. Hill (1937:17) observes that the pitch was "said to cool, harden, and darken the pottery," and that storage vessels were not pitched. Mutton tallow was applied to "remove the taste of the pitch." This method was probably inspired by the common practice of pitch-glazing basketry water bottles. The few early examples of pitch-glazed Dinetah or Navajo Utility material that have been described, including the present example from La Ceja Blanca, are glazed only on the exterior and often only on the base. Keur (1941:47) notes that certain utility specimens from Big Bead Mesa (dating from 1745-1812) were "blackened by pitch."

It is interesting to note that certain Western Apache ceramics are also pitch-glazed (Gifford 1941:163), but pitch glazing has not been reported for the foothills Apaches.

Transitional Dinetah-Navajo Plain Variants

A late eighteenth century Dinetah Utility-Transitional variety has been recognized by Brugge (1963:20, 1977:208, 1981:83). The variant is described as either a thin-walled vessel with fillet decoration and sand temper (probably similar to Gobernador Filleted) or as a vessel similar to Dinetah Utility but with sherd temper (similar to the few sherds found at La Ceja Blanca). Brugge notes that the "overlap of traits . . . defies classification" and that refined chronological evaluations with respect to Navajo-made utility ware can best be determined from the perspective of "separate traits" (Brugge 1981:83).

Navajo Plain differs from Dinetah Plain "in being thicker, usually having fine sherd temper, having fillet decoration, and being generally smaller in vessel size. Some examples have sand or crushed rock temper" (Brugge 1981:87). Based on the existence of transitional variants it is apparent that attribute definitions of an assemblage are required before accurate recognition of Dinetah Gray (seventeenth and eighteenth century) or Navajo Gray (nineteenth and twentieth century) type affinities can be ascribed.

Gobernador Indented

This form of textured utility ware was named and described by Dittert (1958:20) and recognized by Brugge (1963:5-7) as an indented variant of Dinetah Gray. The style is said to have been a Navajo copy of Jemez utility ware (Carlson 1965:65; Dittert 1958:20) or perhaps a product of early Pueblo refugee manufacture (Brew 1973:24). Hester (1962:49) refers to the Gobernador Indented style as the "merging of both Athapascan and Pueblo pottery traditions."

The distribution of Gobernador Indented is restricted to the Dinetah district. None has been found in the Chaco region (Brugge 1981:86). Carlson (1965:65) refers to the type as "potentially the earliest known Navajo ware" and indicates that it is common in the northern drainages of the San Juan and rare in the southern canyon lands. The early and "relatively short lifespan" (Brugge 1981:86) of the type makes the form a significant element of early ceramic group designations (Eddy 1966:453). Brugge (1982:289) suggests an end date of approximately AD 1720.

The paste, temper, and vessel form of Gobernador Indented are similar to Dinetah Plain. Brugge (1963:4) describes the style as "shallowly indented corrugated and sometimes wiped after texturing." The indented texture of the example recovered at El Campo Navahu was effected after the vessel wall had been smoothed. The indentations appear to have been pushed up from a somewhat smoothed and still-plastic surface to form an irregular pattern of shallow indentations. This form of plastic embellishment contrasts with the Puebloan methods of indentation associated with coil closure and indicates that the example from El Campo Navahu is of Navajo manufacture.

One of the earliest known forms of plastic embellishment which appears in association with Navajo ceramics is that of the fingertip impressed style. An example from

El Campo Navahu (Vessel 7) consists of a single or possibly multiple rows of indentations which were the result of unidirectional fingertip impressions made after the vessel surface had been smoothed. This style can usually be distinguished from nail-incised ceramics, but in certain examples a nail impression may also be visible at the margin of the fingertip-impressed style.

Additional examples of the fingertip-impressed style of Gobernador Indented have been recognized in other early Navajo components (Museum of New Mexico collections from LA 3331, LA 2306, and LA 3433). The style has also been documented as a "subspecies" of the Faint Striated material from Pecos (Kidder and Shepard 1936:318) and is present in the Geneseo grayware material from Kansas documented by Wedel (1959:Plate 30k). A similar style may also appear in the Ocate material of northeastern New Mexico (Gunnerson 1969:26).

Kidder and Shepard (1936:319) describe the Pecos materials as "rare" and occurring only as "rather small jars." This suggests that the Pecos vessels are intrusive from adjacent Apache populations. Indeed, a similar style has been found in a site near Santa Rosa. In the report concerning this assemblage the argument is made that the style is a distinctive Athabaskan trait and is identified as Perdido Plain (Marshall 1984).

Examination of the Gobernador Indented materials from the Dinetah district in the Laboratory of Anthropology type collections (Drawers 15 and 16) reveals various texture styles. One has typical Puebloan coil closures in a corrugated-smoothed or corrugated-indented-smoothed style. This form often appears in association with Jemez Black-on-white, for instance at LA 4325 and LA 3367. It is possible that these typical corrugated and indented forms were manufactured by Jemez Indians and are in fact Jemez culinary ware. Other texture styles, such as nail incised, fingertip impressed, and tooled, are also present, but the embellishment is always applied to the vessel wall after it has been roughly smoothed. These forms are apparently of Navajo manufacture.

The examples that are probably Jemez culinary but are identified as Gobernador Indented in the Laboratory of Anthropology collections consist of the following forms:

1. A corrugated-smoothed style with no indentations and with a very shallow and angular contour from LA 4325.
2. A broad-coil indented style with irregular print impressions in a scalloped pattern and with flat and lapped contours, from LA 1872 and LA 2302.
3. A typical smeared-indented form from LA 3367.

The examples of what are considered to be true Gobernador Indented consist of the following forms:

1. A fingertip-indented style made in rows on the plain surface similar to the example from El Campo Navahu and from LA 3331, LA 2306, LA 3454, and LA 3433.
2. A macro-striated form with broad and random incisions and with fine lines in the incisions that suggest corn-husk impressions, from LA 4377.

3. Vertical incisions, probably made with a stick, appearing in rows with rounded contours, from LA 3009 and LA 3371.
4. Triangular tooled impressions that appear in rows, from LA 3440.

No conspicuous differences in paste or temper were observed in the Laboratory of Anthropology samples, but petrographic analyses were not performed. Further documentation of Gobernador Indented materials should attempt to specify the texture, and petrographic analysis should eventually be applied to the various styles.

The use of nail-incised, fingertip-indented, and stick-incised styles and the apparent absence of typical Pueblo corrugated-indented coil closure on Gobernador Indented materials point to an origin or influence from the Plains rather than the possible "merger of both Athapascan and Puebloan traditions" as suggested by Hester (1962:49).

The Gobernador Indented style appears with relative infrequency in assemblages dominated by Dinetah Plain vessels. For example, in the assemblage from La Ceja Blanca it represents only 5.6 percent of the sample. In certain instances the type appears in abundance (Eddy 1966:573), but the nature of the vessel clustering in these sites has not been addressed, nor has the probable presence of Jemez culinary been considered; therefore, the relative frequencies cannot be evaluated.

Gobernador Polychrome

Gobernador Polychrome is described by Brugge (1963:7-8) and extensively defined by Carlson (1965:51-64). It is a distinctive yellow or orange ware with matte black and red decorations. The vessels were fired at high temperatures and have a hard, often vitreous paste and a brittle fracture. The core ranges from dark gray to cream and contains a very fine temper of siltstone, clay pellets, sandstone, or crushed sherd. Bowls are often carinated, and the occasional jar forms have "collared" mid-bodies, similar to eighteenth-century Puebloan forms.

The manufacture of Gobernador Polychrome was primarily restricted to the Dinetah district during the eighteenth century. The ware appears infrequently as far south as Big Bead Mesa (Keur 1941:47), east to Pecos Pueblo (Kidder and Shepard 1936:373), and west into northern Arizona (Brugge 1963:7). The type is uncommon in the late eighteenth century sites at Chaco Canyon. Brugge (1981:87) suggests that "it was probably never produced in the Chaco region, and [its presence] indicates trade with the Dinetah." Eddy (1966:404) considers Gobernador Polychrome to be intrusive in the Navajo Reservoir area, since it "is strongly suspected to have been of Refugee Pueblo manufacture" and since pueblito architecture and other Puebloan traits present south of the San Juan River are uncommon or absent north of the river. In contrast, Carlson (1965:100) considers the Navajo occupation of the northern San Juan drainages to predate the occupations of the southern tributaries and therefore concludes that "Gobernador Polychrome developed as a type before the southward shift." Because of the similarity of this ware to

contemporaneous Puebloan wares, it is often considered a product of the Pueblo refugees and their immediate descendants (Brugge 1963:19).

Temper Types

The temper materials in Gobernador Polychrome have been described as "minute white or crystalline specks with occasional inclusions of 'small red and gray particles'" (Carlson 1965:62). The sample described by Wilson Warren (1974:15-16) contains a variety of elements including siltstone, sandstone, oblate clay pellets (always present), sherd, and occasional feldspars. Warren notes continuous gradation [of these elements] with no significant distinctive temper or clay type." Petrographic analysis of a Gobernador Polychrome specimen recovered from La Ceja Blanca (Specimen 12, Appendix VI) indicates that most of the temper inclusions are siltstone and mudstone with sparse quantities of quartz and feldspar.

A sample of 32 Gobernador Polychrome sherds (19.6 percent of the decorated wares) was recovered from the Bead Mesa complex which has been dated to 1745-1800 (Keur 1941). These occurred in association with the other Puebloan components but were absent from the forked-stem components. Keur (1941:47) describes the temper as "sandy with black inclusions, resembling basalt." A similar yellowish temper with black rock temper was also noted at Rincon Luis site excavated on the Cortez pipeline near the Rio Puerco and the village of San Luis. There appears to be a late eighteenth-early nineteenth century variant of Gobernador yellowware in the Rio Puerco district; in this region it is termed "Gobernador Polychrome-Puerco Variety." It is possible that the manufacture of Gobernador Polychrome was carried by the Dinetah migrants to the south but its manufacture in classic form was soon lost. Gobernador material was absent from the Seboyeta collection, where intrusive Laguna-Acoma servicewares, like Big Bead Mesa, are common.

Vessel Form

The frequent bowls and occasional jar forms described by Carlson (1965:52-53) include the carinated bowl and the characteristic mid-collared jar. Both are typical eighteenth-century Puebloan ceramics. The initial development of these forms was clearly from Puebloan prototypes.

The carinated bowl forms (Figure 19.7) resemble those produced in the Puname and Tewa districts and the Glendale materials (Kidder and Shepard 1936:255). Gobernador carinated bowls tend to be deep, unlike the shallow Tewa and Puname Polychrome vessels, and more like the deep Ogapoge and Powhoge forms (Harlow 1973:162-167). The carinated bowl, with a concave upper body and abrupt mid-body angle change, is a curious form which has no prehistoric prototype in the Southwest. This bowl form was common in the Mesoamerican region in the prehistoric and historic era. It may have been introduced into the Southwest by the Spanish and Mexican Indians and the manufacture of this form may have been encouraged through trade.

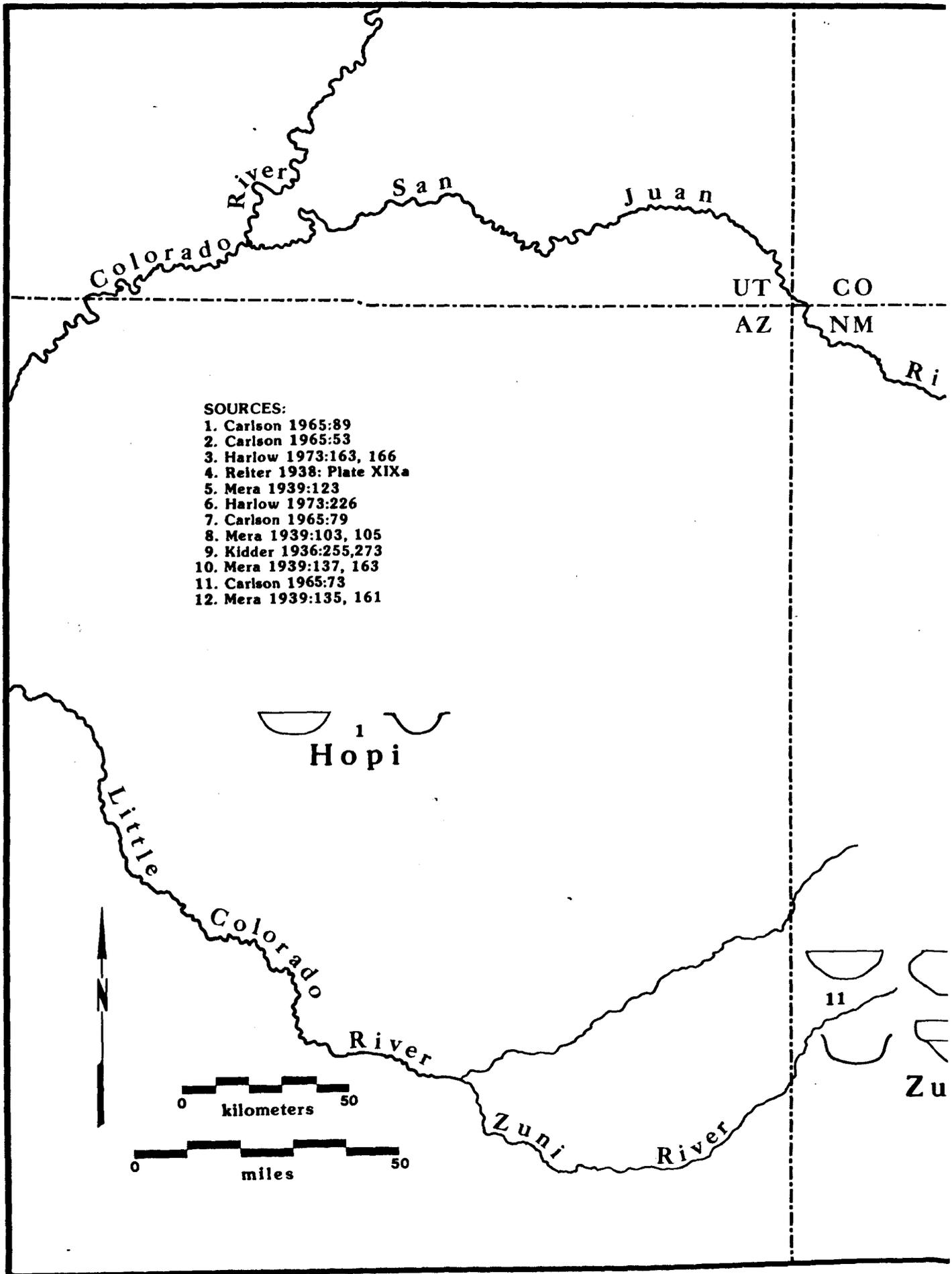
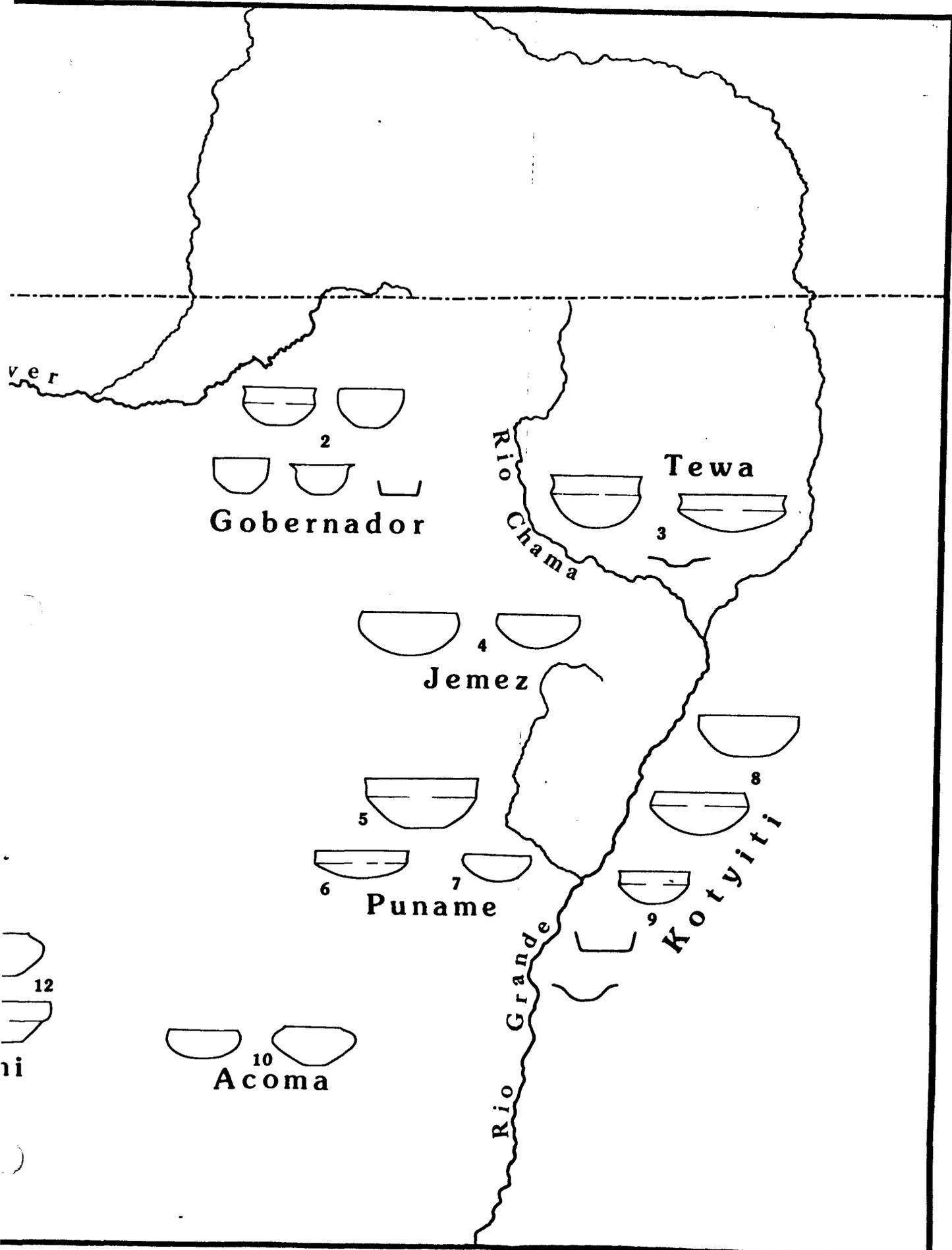


Figure 19.7. Variations in decorated bowl morphology of the late seventeenth and eighteenth century Pueblos and Dinetah Navajo.



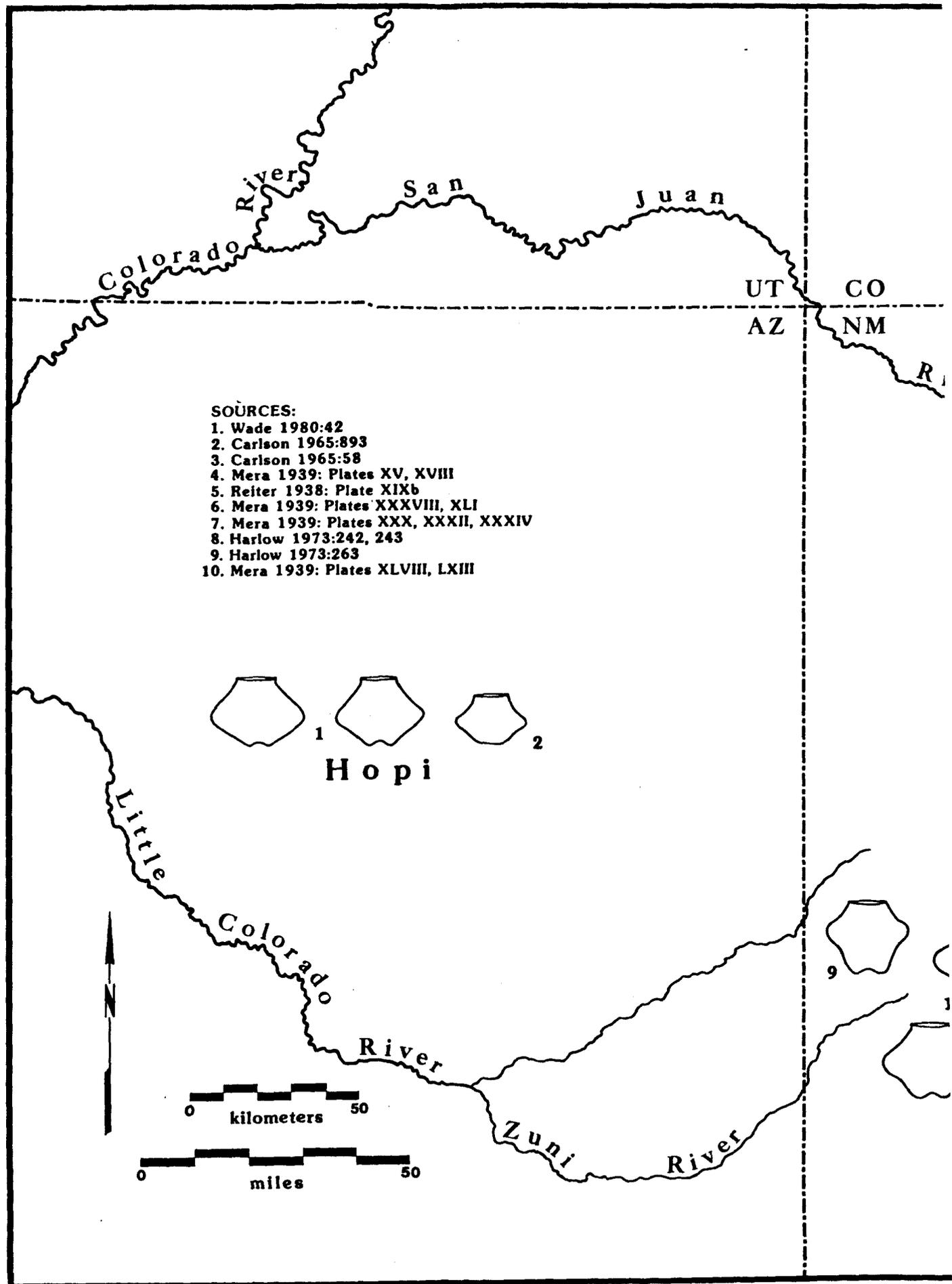
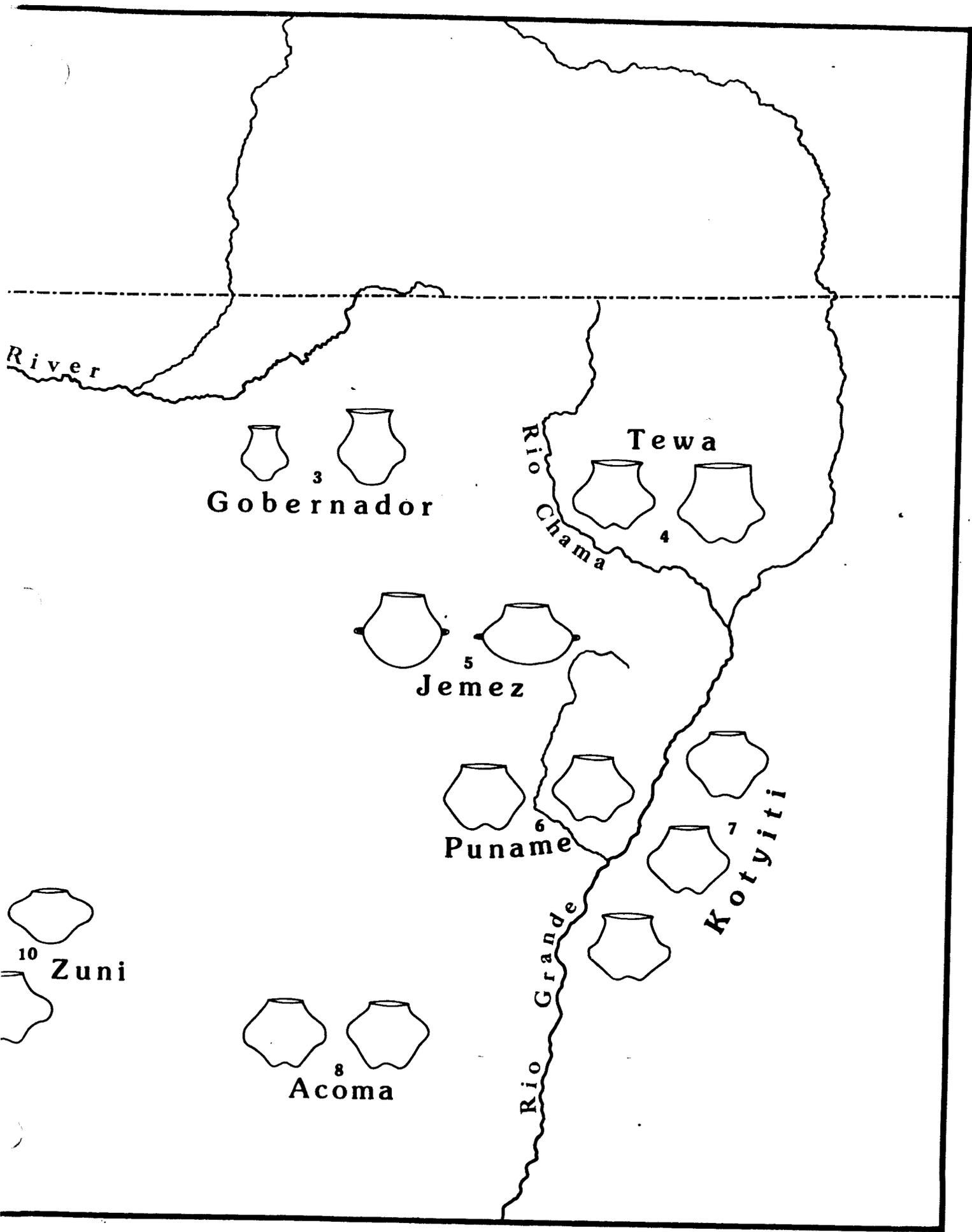


Figure 19.8. Variations in decorated jar morphology of the late seventeenth and eighteenth century Pueblos and Dinétah Navajo.



Soup-plate forms have not been documented in Gobernador materials, and those that appear in the Tewa, Rio Grande Glaze, and Tabira series were probably manufactured by the Pueblos for trade to local Hispanic populations. One shallow, undecorated, flat-based Gobernador vessel was noted in the Museum of New Mexico collection from LA 2135. This vessel resembles late-glaze forms which have been recorded in the Horse Canyon area of southern Colorado (Donaldson 1983).

In certain respects, the mid-collared jar form resembles eighteenth-century jars found throughout the Puebloan provinces (Figure 19.8). In particular, the tall examples of the Tewa and Kotyiti types are most similar. Indeed, Mera "claims that the characteristic collared form of Gobernador Polychrome is derived from the late Rio Grande Glaze" (Keur 1941:53, from personal communication with H.P. Mera). Gobernador Polychrome jars, in contrast to contemporaneous Puebloan vessels, are often small and, more importantly, in all observed or documented examples they lack a concave base.

The concave base, which is a typical feature of eighteenth-century Puebloan jars, is the probable result of the use of a puki mold made from the broken base of a similar jar (Cushing 1886:504), but the possibility also exists that such bases were modeled on the outside of other concave-based vessels. The abrupt angle change and the expanded mid-body are often attributed to a bulge created when the coils were applied to the molded base. This cannot be the primary factor affecting the form, however, since basket and ceramic molds were used throughout the prehistoric and historical eras, and the resulting vessels do not have this characteristic. The mid-body bulge must be considered a stylistic trait. The shape does not resemble Spanish vessel forms.

Perhaps the most significant characteristic of Gobernador collared jars is the absence of a concave base. This contrasts with the near-universal presence of concave bases in Pueblo jars of the eighteenth century (Figure 19.8). Gobernador jars appear to have been formed in containers (Carlson 1965:52), but these were most likely bowls or baskets rather than olla-base pukis.

The typical Gobernador Polychrome jar is rather small and has the form described above (Figure 19.8). Keur (1941:82) refers to a Gobernador Polychrome vessel from Cerritos Ridge, however, which appears in the form of a typical Dineta utility vessel. Kidder and Shepard (1936:373) also illustrate an *apparent* Gobernador Polychrome vessel that appears in a form similar to Payupki Polychrome vessels of the Hopi district.

Decoration

Gobernador Polychrome vessels are decorated in matte red and black pigments applied to an oxidized, unslipped, yellow-to-orange surface. Occasional bichrome variants of red-on-yellow and black-on-yellow are also described (Carlson 1965:51). The rare use of white kaolin pigment has been observed (Brugge 1963:7) but this form was not found in the Museum of New Mexico type collection nor is it described elsewhere. A single specimen of Gobernador Glaze Polychrome has been recorded (Wilson and Warren

1974:15) and is described as a local glaze variant with typical Gobernador paste, temper, and surface color. This specimen has a moderately fused, black mineral pigment and in all other respects is similar to Gobernador Polychrome. It probably should not be considered a true variant unless the form is similar to Glaze F specimens.

The decorative layout and design motifs of Gobernador Polychrome are described and illustrated by Carlson (1965:54-63). Additional motifs found in the Museum of New Mexico type collections appear in Figure 19.9 and 19.10. In general, the fine-line style is painted on the exterior of bowls and jars, while the broad-line style appears on bowl interiors. A systematic analysis of eighteenth-century design styles is required before the origins of Gobernador Polychrome decorative style can be adequately evaluated. It is possible that various Puebloan sources are indicated, and in many respects the style is peculiar to the

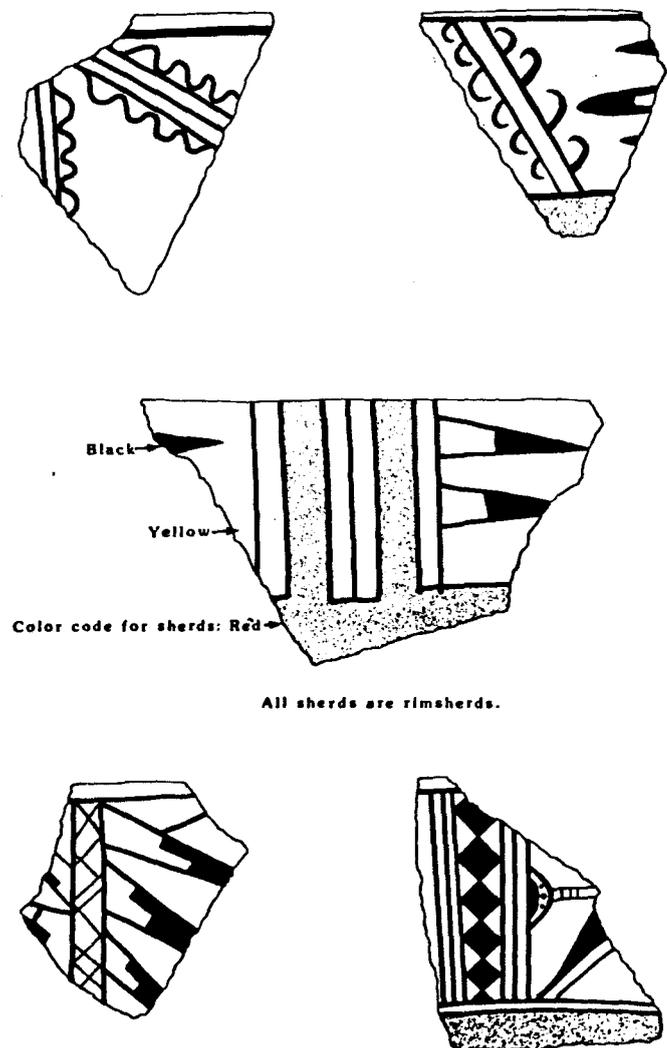


Figure 19.9. Examples of Gobernador Polychrome design motifs (Laboratory of Anthropology, Museum of New Mexico collections).

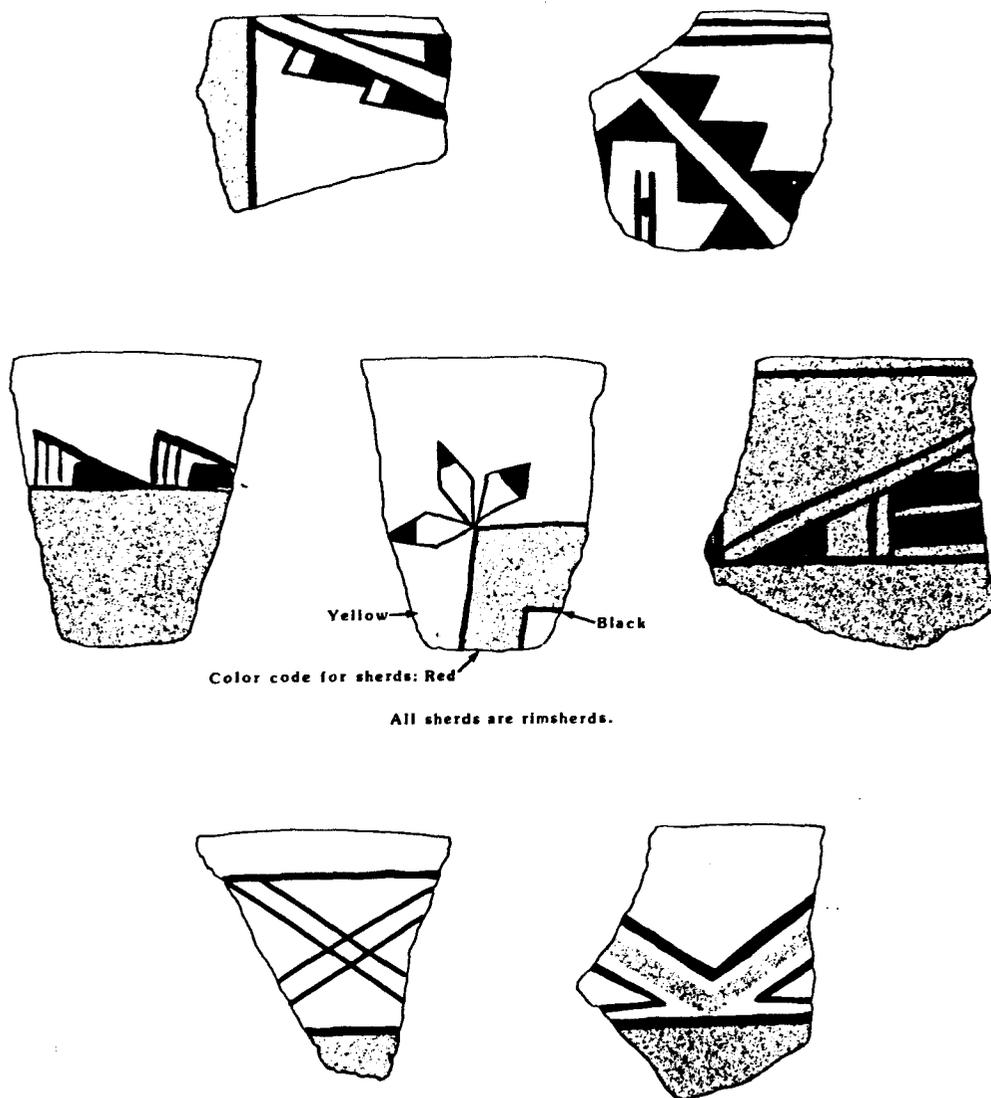


Figure 19.10 Examples of Gobernador Polychrome design motifs (Laboratory of Anthropology, Museum of New Mexico collections).

Dinetah. Carlson (1965:57) states that "the shapes and designs of Gobernador Polychrome are closest to those in use on the Rio Grande in the late seventeenth and early eighteenth centuries" and he refers to Tewa Polychrome and Jemez Black-on-white as possible sources. The Gobernador style is nonetheless a peculiar tradition, and the common "X"-paneled forms and broad-lined styles are not normally found in the eighteenth century outside the Dinetah. The absence of scallops, which are a common feature of eighteenth-century Acoma, Zuni, and Puname ceramics, is of notable interest. Occasional Gobernador vessels with spattered red interiors are noted (Carlson 1965:56; and a specimen in the Laboratory of Anthropology collections from LA 2138). This spattered stylistic technique may derive from imitation of Hopi Payupki Polychrome vessels (Edwin 1980:46).

Certain characteristics of the Gobernador Polychrome ceramic industry, in particular the vessel form, are derived from eighteenth-century Puebloan sources. Perhaps the

earliest examples of the ware were produced by displaced Jemez potters who were attempting to copy the Tewa Polychrome styles of the period at about the same time that the Jemez whiteware industry came into extinction. These potters were clearly not familiar with the use of the convex-based puki mold and their application of the oxidation firing techniques to the local Dinetah clays resulted in the yellow-orange firing color. In any event, based on the decorative structure of Gobernador design, it is probable that the Navajo populations were soon responsible for the bulk of the Gobernador Polychrome production.

Frances Polychrome

Frances Polychrome is a variant of Gobernador Polychrome that has been described by Dittert (in Eddy 1966:406). A crude variant of Gobernador style, Frances Polychrome is characterized by a broad-line design, sherd temper, a relatively thick wall, and soft paste. This contrasts to the broad- and thin-line work, rock temper, thin

walls, and hard paste of the classic Gobernador form. Dittert considers Frances Polychrome to be "transitional in style between Gobernador Polychrome and Navajo Polychrome" and to be a "Navajo copy" of the Pueblo refugee Gobernador Polychrome form. Likewise, Hester and Shiner (1963:77) assume that Gobernador Polychrome was made by Pueblo refugees and that Frances Polychrome represents a local Navajo copy. Carlson (1965:57, 99) suggests that the Frances variant may represent a stage in the initial development of Gobernador Polychrome rather than a transition to later Navajo painted ware. Brugge (1982:292) likewise considers the Frances variant to be the ancestral form of Gobernador yellowware, one which represents "experimentation with local clays and pigments by Pueblo refugees." Brugge estimates a 1694-1720 date for the variant and notes that it is frequently associated with Gobernador Indented.

In response to his review of a draft of this manuscript, Brugge (personal communication) states that

There is a definite tendency . . . for sites close to the San Juan to have more indented sherds, more Jemez Black-on-white, more glazewares, and more Frances Polychrome, while on sites farther up the tributary canyons to the south there are far fewer sherds of any of these and more of the classic Dinetah gray, Gobernador Polychrome, and Pueblo matte-paint ceramics such as Puname and Ashiwi.

These factors reinforce the assumption that Frances Polychrome is the early form of the Gobernador yellowware industry, but it is curious that sherd temper was used in this type, since this trait is a common feature of later Navajo ceramics.

Navajo Bichrome and Polychrome Types

The Navajo painted styles are generally considered to have evolved from the Gobernador-Frances industry during the late eighteenth-early nineteenth centuries, after the general abandonment of the Dinetah district and with the expansion and dispersal of Dinetah populations to the south and west. Navajo painted materials have been described by Brugge (1963:8-9) and Tschopik (1941). Brugge recognizes polychrome, red-on-orange, and black-on-orange styles. After the abandonment of the Dinetah homeland, the Navajo art of painted pottery seems to have declined. This apparently is a reflection of the waning influence of Puebloan traditions. The presence of only traces of Navajo painted material in the late eighteenth-early nineteenth century occupations at Chaco Canyon (Brugge 1977:209) and at Big Bead Mesa (Keur 1941:48) indicate that the Navajo painted ware industry had nearly died out. There was, however, a substantial revival during the nineteenth and early twentieth centuries. Indeed, within the early twentieth century settlements of the Gallegos Mesa region Navajo painted materials are rather common (Sudar-Laumbach 1980:996).

The decorative styles and vessel morphology of this revival, as defined by Tschopik (1941), exhibit considerable influence from Hispanic, Anglo-American, and various Puebloan sources. Brugge (1981:98) observes that various types and variants of this revival industry are present but

require definition. He further notes that "in areas near modern Pueblo Indian settlements, it tends to resemble the painted pottery made by the nearby Puebloans." It is probable that the revival of Navajo painted pottery was stimulated by a need to produce certain items for common and ceremonial use but was primarily in response to commercial influences exerted by traders, tourists, and ethnographers.

Rio Grande Glazes in the Dinetah District

Minor quantities of Rio Grande glazewares are often encountered throughout the Dinetah district. The majority of this material appears to have been manufactured in the Puname district. The presence of Rio Grande glaze material in frequent association with various matte-paint vessels and eighteenth-century tree-ring dates suggests that there was a persistence of glazeware production into the middle eighteenth century, especially in the Puname district.

The sample reported from Three Corn House (LA 1871) contains three Rio Grande Glaze vessels, all of which were found in the trash mound and in association with Gobernador matte-paint materials (Carlson 1965:75). It is probably significant that no glazes were found in the burial area, where 59 matte-paint vessels were recovered. The trash deposits probably predate the burial area and are associated with early site occupation during the early to middle eighteenth century.

The sample from Old Fort (LA 1869), as described by Carlson (1965:11), contains only two glaze vessels in association with 54 matte-paint vessels. Tree-ring dates from this site "place the construction activity in the middle eighteenth century" (Robinson et al. 1974:70).

Based on Dinetah area tree-ring dates and ceramic associations, it seems likely that glazeware production, at least in the Puname district, persisted until approximately 1725 or perhaps 1750. It is possible that both glaze- and matte-paint vessels were in simultaneous production for a period during the early eighteenth century. No well-defined combinations of matte-paint and glaze styles on a single vessel have been recognized, but certain sherds of Puname Polychrome appear to be morphologically transitional and similar to glaze forms (Harlow 1973:225, Vessel A).

Glaze production (as indicated by its present in Navajo sites) had apparently ceased during the middle eighteenth century. This is manifest in the absence of glazes in the Chaco Canyon Navajo sites, the earliest of which were occupied in the latter half of the eighteenth century (Hayes et al. 1981:98). It is also evident in the lack of glaze material at Big Bead Mesa, which dates after 1745 (Keur 1941).

Most of the Rio Grande glaze material that appears in the Dinetah district is tempered with basalt and was probably manufactured in the Puname district. Carlson (1965:80) reports that 13 of the 16 sherds in his sample contain basalt. A similar frequency (85 percent) of basaltic temper was observed in a sample of 47 sherds from the 22 sites

in the Navajo Reservoir district researched during this study (Laboratory of Anthropology type collection). The basaltic materials observed in this sample consist of a light-to-dark smokey crystalline material which appears similar to the "Zia diabase" or Zia basalt recognized by Warren (1979a:194).

Minor quantities of other temper types are also recognized in the Rio Grande glazes from Dinetah sites. Carlson (1965:80) describes two specimens with tuffa, apparently from the Pajarito area, and one specimen identified by Dittert as from the Galisteo Basin. In the Navajo Reservoir sample, I observed two specimens of rhyolite tuffa (4 percent of the sample), one of Tongue latite, one of sandstone, and one of an unidentified white rock.

Four glaze sherds are reported by Wilson and Warren (1974:15) from LA 2298, a well-dated pueblito in Cañon Largo (AD 1690-1694). One specimen contained glassy andesite temper, probably from the Cochiti area; one had rhyolite tuffa from the Cochiti area; and another had Zia basalt temper. The other glaze specimen contained siltstone with a white cement, similar to the Gobernador Polychrome temper at the same site. According to Wilson and Warren (1974), "this vessel was probably made in the Gobernador area by a glaze potter."

Jemez Black-on-White

Jemez Black-on-white is a distinctive whiteware that was manufactured in the upper Jemez drainage from the fourteenth century until the beginning of the eighteenth century. It has been described by Mera (1935:22) and Reiter (1938:123-154). The ware has a distinctive, thick "oyster white" slip and carbon paint that tends to be brown and blurred. The paste ranges from gray to brown and contains volcanic ash temper. Ollas have a distinctive globular form with horizontal handles (Reiter 1938:Plate XIXb). Rim forms often parallel the glaze style (Mera 1935:23).

This ware is considered to be the earliest Puebloan intrusive into the Navajo Dinetah community and its appearance in the pre-Revolt occupation (Ceramic Group Ab, Eddy 1966:405) is considered to be "an indicator of early

contact between the Navajo and Jemez Indians." The drastic consequences of the Revolt and Reconquest and the displacement of Jemez populations is often considered to have resulted in the extinction of Jemez whiteware prior to the beginning of the eighteenth century. Indeed, Carlson (1965:84) states "it seems unlikely that Jemez Black-on-white was made after 1696," and Keur states "the Jemez themselves appear to have abandoned pottery making in the early years of the eighteenth century" (Keur 1941:54). It should be noted, however, that Jemez Black-on-white is listed as an element of early and late Gobernador phase assemblages (Eddy 1966:453) and that Carlson (1965:84) describes the presence of Jemez Black-on-white material from sites dated to the middle of the eighteenth century. Eddy feels that the Jemez refugee populations may have "continued to produce their distinctive decorated black-on-white" in the Dinetah district and he suggests that petrographic studies be made to evaluate this possibility (Eddy 1966:406-407). The Jemez Black-on-white sherds examined in this study from 10 components in the Navajo Reservoir district are typical examples with a thick white slip and pumice temper in a dark gray paste. A single Jemez Black-on-white bowl sherd from LA 3417, termed "degenerate" in the site records, is atypical only in that it is unslipped.

A Dinetah-area regional variant of Jemez Black-on-white cannot be recognized unless a definite paste and temper type or stylistic form is documented. The classic character of the Dinetah-area Jemez Black-on-white materials suggests that the vessels were imported from the Nacimiento area during the early eighteenth century, but this suggestion must be considered with the following qualifications.

Jemez Black-on-white normally represents only minor intrusive quantities in typical Dinetah-area assemblages, but in certain instances (such as at LA 3367 and no doubt others in the Navajo Reservoir area) Jemez Black-on-white is abundant and appears in association with Jemez Corrugated-Indented and without the presence of Dinetah Plain. Sites like LA 3367 with a great predominance of Jemez ceramic material suggest an occupation by Jemez Pueblo refugees. The Jemez Black-on-white material from LA 3367 is, nonetheless, classic in character.