

NEW AND REVISED PREHISTORIC PUEBLO POTTERY WARES AND TYPES FROM
NORTH AND WEST OF THE COLORADO RIVER:
PART 1, GRAY WARES FROM THE WESTERN AREA

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The prehistoric Pueblo area west of Kanab Creek extends to the St. George basin of southwestern Utah and the Moapa Valley in southern Nevada (see Figure 1). The Moapa Valley, formed by the Muddy River, includes the towns of Overton, Logandale, and Moapa. The gray and white wares of the region are summarized in Table 1.



Figure 1. The prehistoric Pueblo region north and west of the Colorado River.

Three wares or pairs of wares were produced exclusively west of Kanab Creek: Logandale Gray and White Wares, Moapa Gray and White Wares, and Shivwits Ware. The gray wares are described here.

Principle Information Sources

These descriptions incorporate information drawn from the participants of the conference, Prehistoric Pueblo Pottery North and West of the Colorado River, Museum of Northern Arizona, November 9-10, 2007. Other important sources of information include the reports of Northern Arizona's graduate ceramic analysis class, and extensive refiring information from James Allison.

The Littlefield Site and MNA's Ceramic Type Collection

The Littlefield Site (NA9058) was situated on a promontory overlooking the confluence of Beaver Dam Creek and the Virgin River near Littlefield, Arizona, and was destroyed by the construction of Interstate 15. The site was excavated by the Museum of Northern Arizona (MNA) under the direction of William D. Wade 1964-1966. Wade prepared a descriptive manuscript of this excavation and of sites in the Kanab-Fredonia area in 1967. The manuscript, long stored in the MNA library's special collections, has now been edited and annotated by David E. Purcell. Its publication as *Archaeological Investigations in Northwestern Arizona* in MNA's Bulletin Series is planned for 2008.

Kelley Hays-Gilpin chose the pottery from the Littlefield site as the focus for her Spring 2007 graduate class, ANT 552, Ceramic Analysis. Students analyzed pottery from the site's extensive surface collections and studied the sherds in the type collection. They produced new draft descriptions of wares and types, including refiring information.

Allison's Refiring information

James Allison provided his extensive refiring readings for Moapa Gray Ware, and Shivwits Ware. They were data for his dissertation (Allison 2000), and were drawn from collections in the vicinity of Mt. Trumbull, the Shivwits Plateau, and the lower Moapa Valley. I have grouped them according to the color categories of Bubmyre and Mills (1993:237). In the cases where Allison's readings were outside of Bubmyre and Mills's ranges, I have added *darker* when the values and chromas were lower than those of the category as defined; *lighter* when they were higher. Darker values and chromas are most common in Shivwits Ware.

Chronology

For "dating" in the descriptions, I provide only the relative chronology of the Pecos stages. Chronometric information is scarce and imprecise in the region. Stating dates and date ranges in years would give a false sense of precision. Nevertheless, here are some parameters.

Pit structures from Black Dog Mesa yielded pottery and annuals dated to Basketmaker III AD 500-800 (Winslow 2004). Middle Pueblo II marks the first introduction of corrugated pottery and of red ware, at least west of Kanab Creek. At the Yamashita sites Middle Pueblo II spans the transition from Deadman's Black-on-red (San Juan Red Ware) to Medicine Black-on-red (Tsegi Orange Ware) (Lyneis 2007). Middle Pueblo II may have begun before A.D. 1050 and lasted into the late 1000s. The ending date for Late Pueblo II falls no earlier than the early 1200s. Dates in this late range are found in Allison (1996). There is an accumulating, unpublished store of additional dates in the 1200s as well.

Two other characteristics are of some help with relative chronology. Rim eversions on jars increase with the passage of time. West of Kanab Creek, at least, the amount of corrugation seems to increase more gradually than in the Kayenta area. It is used to seriate sites from Middle Pueblo II to Late Pueblo II, although its utility is seriously decreased if used on mixed assemblages.

Characteristics

The information about these wares and types is focused on key variables, the characteristics necessary to make an assignment to a particular ware or type. The descriptions include current information about production and distribution areas.

LOGANDALE GRAY WARE

WARE: Logandale Gray Ware

Types included: Logandale Gray, Logandale Corrugated

Synonyms: none

Date Range: BM III to P II

Temper: Limestone is the key ingredient, and must be the most common constituent. At the Littlefield site (NA9058) it is accompanied by varying quantities of grains derived from granite or schist. At Bovine Bluff (26CK3130) Myhrer and Lyneis (1985) report that limestone is the sole temper. Subsequent investigation of this assemblage showed that dolomite was also present, and that sometimes minor quantities of quartz grains were present, too.

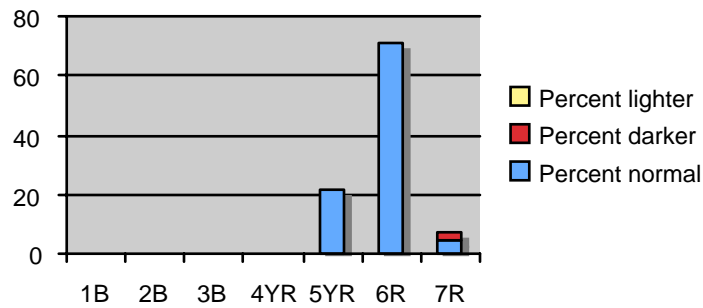
Paste Color, Firing, and Refired Colors:

Exterior surface colors, Bovine Bluff:

most are 10YR 5/ to 7/; /1 to /3: pale brown, brownish gray, grayish brown (Myhrer and Lyneis 1985: Figure 10).

Original Colors on Fresh Breaks, Littlefield Site (Mandell 2007).

<u>Original Colors</u>	<u>Munsell Names</u>
2.5Y 4/1	dk gray
2.5Y 6/1	gray
2.5YR 6/1	reddish gray
5YR 7/1	light gray
5YR 7/2	pinkish gray
5YR 7/3	pink
7.5YR 7/1	light gray
7.5YR 7/2	pinkish gray
7.5YR 8/1	white
7.5YR 8/2	white



Refired colors, n = 41, all from the lower Moapa Valley Moapa Valley (Allison).

Surface Treatment: plain; corrugated. In surface collections, the upper sides of sherds are usually marked by numerous small cavities where limestone temper grains have dissolved.

Production Areas: Two are known. One is in Upper Moapa Valley, southern Nevada, in the vicinity of Black Dog Mesa and nearby Bovine Bluff. The second is along the Virgin River in Arizona south of the Virgin River Gorge, in the vicinity of the Littlefield site and Cliff's Edge (Jenkins 1981).

Distribution: Apparently in the vicinity of production areas only.

Previous Descriptions: Colton (1952); Soule (1976)

Discussion: According to the records in MNA's Colton Ceramic Repository, the type site is NA4116, "Cemetery Point," in the Lower Moapa Valley, Nevada. They were from the "bottom of a trench" dug there by Bradley Stuart, an amateur archaeologist.

Cemetery Point may be the Steve Perkins site (26CK2027), which yielded Logandale Gray in some quantity $114/1446 = 7.9\%$ of the sherds from the early component (Myhrer 1989:Table 6). If it is not the Steve Perkins site, it is very near it. Colton (1952) erred in saying that Logandale Gray Ware is named after Logandale, Utah. Logandale is just few miles northwest of Overton, Nevada.

Rice (1987:98) provides a good discussion of the effect of temperatures on limestone temper. Colton's (1952) discussion is out of date.

LOGANDALE GRAY

Type Name: Logandale Gray

Ware: Logandale Gray Ware

Synonyms: none

Date Range: BMIII – Early Pueblo II

Temper: as in ware

Paste Color, Firing, and Refired Colors: as in ware

Surface Treatment: plain

Forms and Rims: plain jars; probably plain bowls



Large jar rim sherd, Logandale Gray, from the Littlefield site (NA9059). Museum of Northern Arizona. Photo by Ryan Mandell.



Logandale Gray jar from Black Dog Mesa. Photo courtesy of Diane Winslow, Harry Reid Center, University of Nevada, Las Vegas, Nevada.

Previous Descriptions: Colton (1952)

LOGANDALE CORRUGATED

Type Name: Logandale Corrugated (new type)

Ware: Logandale Gray Ware

Synonyms: none

Date Range: Late PII?

Surface Treatment: corrugated

Comments: No sherds have been examined. This type is probably rare. There are a few sherds of it in type collections at the Harry Reid Center for Environmental Studies, University of Nevada, Las Vegas, and the Bureau of Reclamation, Boulder City, Nevada. All have only very general provenience.

Previous Descriptions: none

MOAPA GRAY WARE

WARE: Moapa Gray Ware

Types Included: Boulder Gray, Moapa Corrugated.

Synonyms: none

Date Range: BM III to Late PII

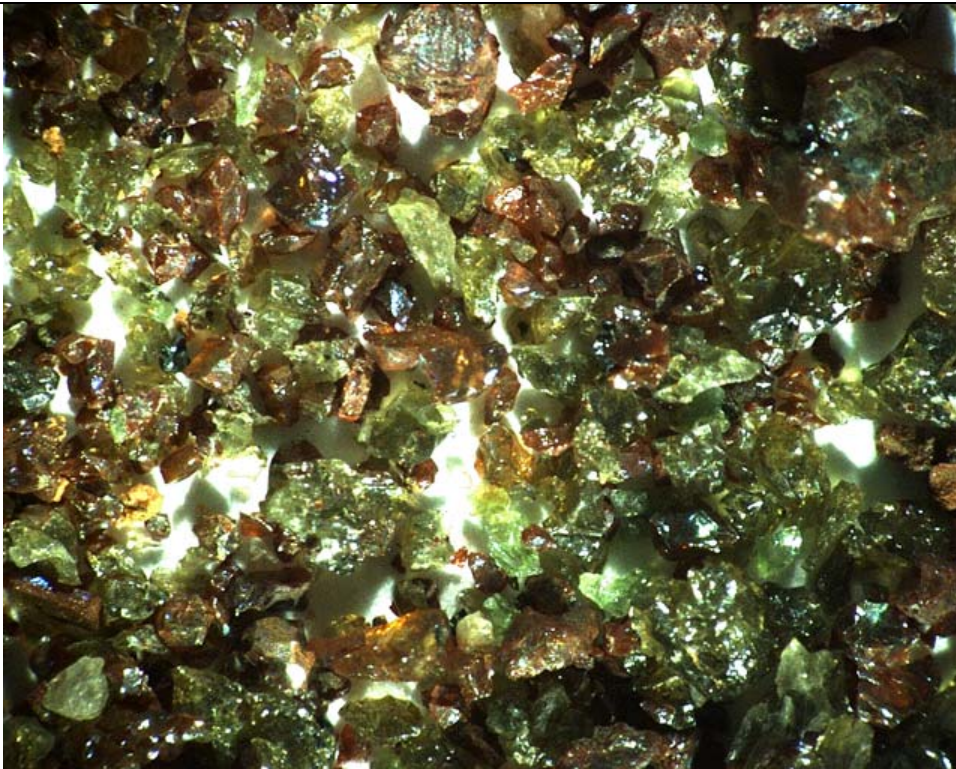
Temper: crushed or disaggregated xenoliths from the vicinity of Mt. Trumbull. The most common xenoliths are made up of about 65% olivine, 25% orthopyroxene, 10% clinopyroxene (chrome diopside) plus small quantities of amphibole and spinel. Xenoliths of other compositions are also found in the area (Menzies et al. 1987 and references cited therein) and could show up as temper.

Although these xenoliths are common in the alkali-olivine basalts of the area, they also are found as nodules weathering out of ash deposits associated with cinder cones. These are more accessible and were likely the source of the temper. Olivine reddens and darkens under several circumstances: in weathered, disaggregating xenoliths; in sherds fired at high temperatures; or in refired sherds. This color change is not the result of the formation of iddingsite, a distinct mineral. This temper is not a sand.

Rarely, crushed sherd is present as a secondary temper.



Raw disaggregated xenoliths from Mt. Trumbull, including olivine. Photo by Barbara Bane.



Fired (oxidizing atmosphere) disaggregated xenoliths from Mt. Trumbull, including olivine. Photo by Barbara Bane.



Moapa White Ware sherd with fresh break, showing olivine. Photo by Barbara Bane.

Production Locales and Distribution: Produced in the vicinity of Mt. Trumbull, the same area as Moapa White Ware. It was widely distributed west of Kanab Creek, is uncommon to the east. In the Moapa Valley it is present in varying quantities from the earliest ceramic assemblages to the latest, perhaps peaking in Middle PII times when it constitutes as much or more than 30% of the gray ware (Allison 2000; Lyneis 2007), then diminishes. In the St. George Basin, quantities increase in Late PII times.

Comparisons: Shivwits Ware is the only pottery that might be confused with Moapa Gray Ware. The only characteristic they share, however, is the presence of olivine or other xenolith-derived minerals. The clay body in Moapa Gray Ware is smooth and often light-colored. Sherd temper is rare, and only a minor component when present. In contrast, Shivwits Ware is sherd tempered, and olivine or other crystalline grains are a by-product of crushing sherds for temper. The clay body of Shivwits Ware is coarse-textured and dark, ranging from medium to dark gray or brown.

Previous Descriptions: (Colton 1952)

Discussion: According to the records of the Museum of Northern Arizona's Ceramic Repository, Colton received sherds from the Las Vegas Valley and the Moapa Valley in southern Nevada at least as early as 1944, sent to him by Dr. W. S. Park and Bradley Stuart. He recognized distinct "green temper" in some of them. He followed the convention of naming ware and types after where they were first reported. In this case, the naming locality is far from the area

of production. Stuart also sent sherds from the Sullivan 3 Ranch in Toroweap. Colton also had received sherds from the Shivwits Plateau sent by Gordon Baldwin. Although he thought the source of the clay “appears to have been from the lava in the Toroweap Valley” (1952:67), he named both wares after Moapa, a small town in the upper Moapa Valley. He repeated the use of Moapa in type names, as he did Boulder, named after Boulder Canyon, just below Hoover (formerly Boulder) Dam. Colton credits a manuscript version of Schroeder (1961) for the clay sourcing, and it appears preceded by an “apparently” and a “probably” in Schroeder (1961:46, 50). Schroeder bases the match on olivine, not clay, however.

BOULDER GRAY

Type Name: Boulder Gray (Colton (1952))

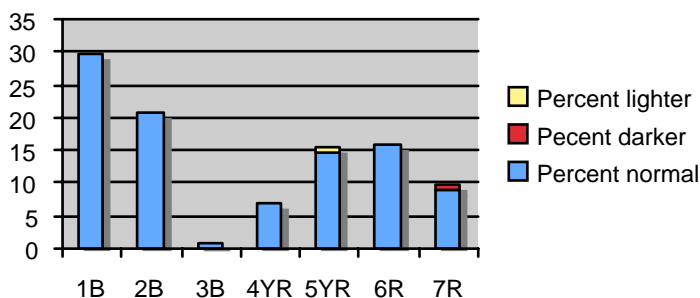
Ware: Moapa Gray Ware

Synonyms: Now includes Moapa Brown from Colton (1952) and Moapa Gray (Schroeder 1953; 1955)

Date Range: Basketmaker III to Pueblo II

Temper: As in Moapa Gray Ware

Paste Color, Firing, and Refired Colors: Paste colors from Littlefield site: light paste with original colors typically a range of grays (7, 8N to 8/5 PB) to pale tan (10YR 6/2 – 7/3). Occasional firing core, dark gray. Paste color on MNA type sherds for Moapa Brown: brown to gray (10YR 4/1, 5PB-10PB (Bane 2007)).



Refired Colors, N = 3506 (Allison)

Surface Treatment: plain, sometimes with fugitive red on exterior.

Forms and Rims: jars, ollas, canteens, bowls.

Previous Descriptions: (Colton 1952)

Discussion: Schroeder (1953; 1955:130) thought that early Moapa Gray Ware, which he called Boulder Gray, was darker, or was characterized by a dark core and coarser temper, than later, lighter, “Moapa Gray.” The conference declined to follow Schroeder in this matter, omitting Moapa Gray as a type, and not endorsing his temporal trend.



Boulder Gray Bowl, NA9058.B.1.9. Museum of Northern Arizona. Photo by Barbara Bane.



Boulder Gray Jar, NA 9058.B.8.7. Museum of Northern Arizona. Photo by Barbara Bane.



Boulder Gray jar with fugitive red on exterior from burned pit structure, Black Dog Mesa. Photo courtesy of Diane Winslow, Harry Reid Center for Environmental Studies, University of Nevada, Las Vegas.

MOAPA CORRUGATED

Type Name: Moapa Corrugated

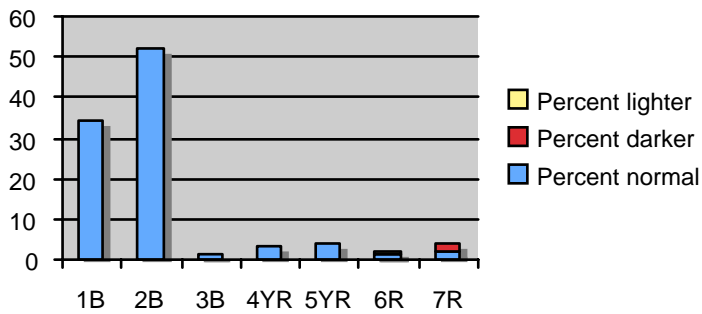
WARE: Moapa Gray Ware

Synonyms: none

Date Range: Mid- to Late Pueblo II

Temper: As in ware

Paste Color and Refired Colors: light paste with original colors typically light grays (7, 8N to 8/5 PB) to gray. Occasional gray firing core (Bane 2007).



Refired Colors, N = 268 (Allison)

Surface Treatment: various forms of corrugation

Forms: jars

Previous Descriptions: Colton (1952)



Moapa Corrugated sherds from the Littlefield Site (NA 9058). Museum of Northern Arizona. Photo by M. Lyneis.

SHIVWITS WARE

Ware: Shivwits Ware (new ware)

Types Included: Shivwits Plain, Shivwits Corrugated

Synonyms: none

Date Range: beginning unknown, continues into Late Pueblo II.

Temper: crushed sherd from a variety of wares: Moapa Gray and White Wares; Shivwits Ware itself; Tusayan White Ware, and Tusayan Gray Ware. Against its dark pastes, grains of light-colored sherds are more visible than grains from Shivwits Ware itself. Crystalline olivine grains freed in crushing are usually visible under a microscope; sometimes quartz grains are also visible. The sherd temper adds to the grainy or coarse texture of the paste.

Paste Color, Refired Colors: See Shivwits Plain.

Production Areas: When Shivwits Plain was described, Lyneis (1992) suggested that it was produced on the Shivwits Plateau. Current investigations indicate that its production area may be localized in the southern Shivwits Plateau (Allison, conference contribution).

Distribution: is limited primarily to the Moapa Valley, where it is found in large quantities in Middle Pueblo II times (Allison 2000; Lyneis 1992). Jensen (2002) looks at its distribution between the Shivwits Plateau and southern Nevada. It appears in the St. George Basin in Middle Pueblo II times and in Late Pueblo II assemblages on Yellowstone Mesa (Allison and Coleman 1998:9.2). Also present on the Kanab Plateau (Huffman 1993: Table 20).

Comparisons: Before its recognition, Shivwits Ware sherds were sometimes classed as Shinarump Gray Ware. In comparison to Shivwits Ware, Shinarump Gray Ware is tempered with a variety of quartz sands. Its clay is smooth-textured, and often forms shrinkage voids. It is sometimes vitrified, and when over-fired turns red. When there is sherd temper in Shinarump Gray Ware, it is usually from Shinarump Gray Ware or Shinarump White Ware themselves.

Shivwits Ware sherds have also been misclassified as Southern Paiute Brown Ware, by Shutler (1961:10) at A:15:8 on the Shivwits Plateau, and by Wade in his sorting of the Littlefield collections. The only real resemblance is in their dark paste colors, and perhaps coarse or grainy textures. Shivwits Ware displays good scrape marks on jar interiors and well-formed, Pueblo-style rims.

Previous Descriptions: none

SHIWITS PLAIN

Type Name: Shivwits Plain

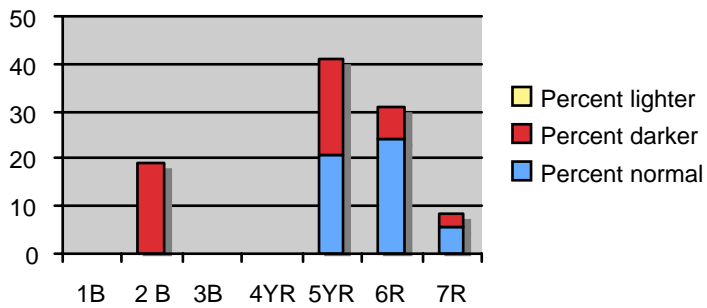
Ware: Shivwits Ware

Synonyms: none

Date Range: ? to Late Pueblo II

Temper: As in ware

Paste Colors, Refired Colors: reddish brown, dark gray, or black, sometimes with darker core. Exterior surface colors on jars are variable, including reddish brown, gray dark to very dark gray, black, dark brown, dark reddish gray; neck sherds tend to be more reddish or brownish than body sherds (Lyneis 1992: 45, Table 21).



Refired Colors, N = 1172 (Allison)

Surface Treatment: plain.

Forms: jars and a few bowls.



Shivwits Plain and Corrugated Sherds. Museum of Northern Arizona. Photo by Brian Joseph.

Remarks: Several conference attendees reported seeing a sherd or two from bowls with black paint; these few observations included black-on-gray and black-on-white (slipped) sherds. Because no examples were on hand for examination at the 2007 conference, participants declined to name and define a decorated type at that time.

Previous Descriptions: Lyneis (1992:45-46).

SHIWWITS CORRUGATED

Type Name: Shivwits Corrugated (new type)

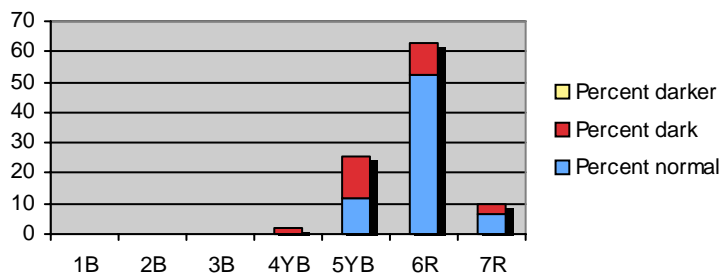
Ware: Shivwits Ware

Synonyms: none

Date Range: Middle to Late Pueblo II

Temper: as in ware

Paste Color and Refired Colors: paste color probably similar to Shivwits Plain.



Refired Colors, N = 153 (Allison)

Surface Treatment: various kinds of corrugation.

Forms: jars.

Discussion: Distribution of Shivwits Ware to the Moapa Valley ends at the end of Middle Pueblo II, so Shivwits Corrugated is rare in southern Nevada. Its production continues into Late Pueblo II times, so Shivwits Corrugated is present in greater numbers elsewhere (Allison, conference contribution; Joseph 2007).

Previous Descriptions: none.



Shivwits Corrugated Sherds from the Littlefield Site (NA 9058). Photo by M. Lyneis. Museum of Northern Arizona.

References Cited

Allison, James R. 1996 Comments on the Impacts of Climatic Variability and Population Growth on Virgin Anasazi Cultural Development. *American Antiquity* 61:414-418.

2000 Craft Specialization and Exchange in Small-Scale Societies. Unpublished Ph.D. dissertation, Department of Anthropology, Arizona State University, Tempe.

Allison, James R., and Arlene Coleman 1998 Chapter IX. Ceramic Analysis. In *Excavation/Mitigation Report Three Sites near Hildale, Utah: 42 WS2195, 42 WS2196, AZ B:1:35(BLM) (Reservoir Site)*, compiled by Asa S. Nielson. Submitted to the Utah State Bureau of Land Management by Baseline Data Inc., Orem, Utah.

Bane, Barbara 2007 Moapa Gray Ware. Ant 552 Ceramic Analysis, Department of Anthropology, Northern Arizona University. Manuscript on file in the Colton Ceramic Repository, Museum of Northern Arizona, Flagstaff.

Bubeyre, Trixi, and Barbara J. Mills 1993 Clay Oxidation Analyses. In *Across the Colorado Plateau: Anthropological Studies for the Transwestern Pipeline Expansion Project*. Volume XVI, Interpretation of Ceramic Artifacts. Office of Contract Archaeology and Maxwell Museum of Anthropology, University of New Mexico, Albuquerque.

Colton, Harold S. 1952 *Pottery Types of the Arizona Strip and Adjacent Areas in Utah and Nevada*. Museum of Northern Arizona Ceramic Series No. 1. Northern Arizona Society of Science and Art, Flagstaff.

Huffman, Jim 1993 Between River and Rim: A Comparative View of Subsistence Systems In Grand Canyon, Arizona. Unpublished Master's thesis, Department of Anthropology, Northern Arizona University, Flagstaff.

Jenkins, Dennis L. 1981 Cliff's Edge: a Pueblo I Site on the Lower Virgin River. Unpublished Masters thesis, University of Nevada, Las Vegas.

Jensen, Eva Albrecht 2002 Exploring the Shivwits Production Zone. Unpublished Master's thesis, Department of Anthropology, University of Nevada, Las Vegas.

Joseph, Brian 2007 Shivwits Plain Ware. Ant 552 Ceramic Analysis, Department of Anthropology, Northern Arizona University. Manuscript on file in the Colton Ceramic Repository, Museum of Northern Arizona, Flagstaff.

Lyneis, Margaret M. 1992 *The Main Ridge Community at Lost City: Virgin Anasazi Architecture, Ceramics and Burials*. University of Utah Press Anthropological Papers 117. Salt Lake City.

Lyneis, Margaret M. 2007 Surprising Shifts: Changes in Middle PII Pottery Frequencies at the Yamashita Sites. Presented at the Three Corners Conference, Las Vegas.

Mandell, Ryan A. 2007 Logandale Gray Ware: A Comprehensive Study. Ant 552 Ceramic Analysis, Department of Anthropology, Northern Arizona University. Manuscript on file in the Colton Ceramic Repository, Museum of Northern Arizona, Flagstaff.

Menzies, M.A., R. J. Arculus, M. G. Best, S. C. Bergman, S. N. Ehrenberg, A. J. Irving, M. F. Roden, and D. J. Schulze 1987 A Record of Subduction Process and Within-plate Volcanism in Lithospheric Xenoliths of the Southwestern USA. In *Mantle Xenoliths*, edited by P. H. Nixon, pp. 59-74. John Wiley and Sons, New York.

Myhrer, Keith 1989 Basketmaker and Puebloan Occupation at the Steve Perkins Site, Moapa Valley, Southern Nevada. Ms. in possession of the author.

Myhrer, Keith and Margaret M. Lyneis 1985 *The Bovine Bluff Site: An Early Puebloan Site in the Upper Moapa Valley*. Bureau of Land Management Nevada Contributions to the Study of Cultural Resources Technical Report Number 15, Reno.

Rice, Prudence M. 1987 *Pottery Analysis: A Sourcebook*. The University of Chicago Press, Chicago.

Schroeder, Albert H. 1953 A Few Sites in Moapa Valley, Nevada-II. *The Masterkey* 27(2):62-68.

1955 *Archaeology of Zion Park*. Anthropological Papers No. 22, Department of Anthropology, University of Utah, Salt Lake City.

1961 *The Archaeological Excavations at Willow Beach, Arizona 1950*. University of Utah Anthropological Papers No. 50. University of Utah Press, Salt Lake City.

Shutler, Richard Jr. 1961 *Lost City: Pueblo Grande de Nevada*. Nevada State Museum Anthropological Papers No. 5. Carson City.

Soule, Edwin C. 1976 Pottery Types of the Moapa Valley: Logandale Gray Ware. *Masterkey* 53:101-104.

Winslow, Diane L. 2004 Possibly One of the Earliest, And Not Necessarily One of the Poorest: Luminescence Dating of Logandale Gray Ceramics from Black Dog Mesa. Paper Presented at the 29th Biennial Great Basin Anthropological Conference, Sparks, Nevada.

Table 1. Regional Gray and White Wares.

Ware	Temper	Paste Colors ¹	Production Area(s)	Distribution Area
Logandale Gray Ware	limestone, sometimes with secondary inclusions	buff to gray	Moapa Valley, lower Virgin Valley	Probably limited to production areas
Logandale White Ware (rare)	same	same	same	same
Moapa Gray Ware	crushed xenoliths	gray to buff	vicinity of Mt. Trumbull on Uinkaret Plateau	widely distributed to the west, north, and east of production area
Moapa White Ware	same	white to light gray, buff,	same	same
Shinarump Gray Ware	quartz with minor feldspar, occasional sherd	gray to dark gray, sometimes vitrified	east of Kanab Creek	widely distributed east of Kanab Creek
Shinarump White Ware	same	same	same	same
Shivwits Ware	crushed sherds	reddish brown, dark reddish brown, dark gray	Shivwits Plateau	Uinkaret and Kanab Plateaus, Moapa and lower Virgin Valleys, St. George Basin
Tusayan Gray Ware, Virgin Series	quartz with minor feldspar; rarely, multi-lithic sand	light to medium gray, tan	multiple but unidentified locales east and west of Kanab Creek	same as production areas
Tusayan White Ware, Virgin Series	same	Light to medium gray, tan, brown	same	same

¹ Paste colors on fresh break, between firing core and the surface.

Shinarump Red Ware and Other Red Ware Pottery North and West of the Colorado River

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In November 2007, the Museum of Northern Arizona (MNA) hosted a conference to discuss, clarify, and where necessary revise the standard typology used for prehistoric Puebloan pottery found in northwestern Arizona, southwestern Utah, and southeastern Nevada. The multi-state nature of the area covered makes precise geographical description awkward, but the conference was titled Prehistoric Puebloan Pottery North and West of the Colorado River. Margaret Lyneis and Kelley Hays-Gilpin organized the conference, and they have provided a general discussion of the conference and its conclusions in an earlier edition of *Pottery Southwest* (Lyneis and Hays-Gilpin 2008). Participants continue to work on various issues raised at the conference with the goal of producing a comprehensive publication describing the ceramics of the region. The more limited goals of this article are to document the decisions made at the conference about red ware ceramic typology and to record some general observations about both red ware typology and the distribution of red wares across the region.

Shinarump Red Ware and Its Relationship to Other Red Wares

Red ware pottery occurs on almost all late Pueblo II or Pueblo III sites north and west of the Colorado River, although red wares comprise a minority of the decorated ceramics from these sites. Archaeologists working in the region recognize three distinct kinds of red ware, two of which have relatively well-known production areas on the other side of the Colorado River: San Juan Red Ware and Tsegi Orange Ware. Although its distribution has not been well studied, the third kind of red ware appears to be most common in the eastern part of the Arizona Strip and adjacent parts of southwestern Utah, and was probably made somewhere in the area east of Kanab Creek (Figure 1). Archaeologists have used several different names to refer to this third red ware, but the November 2007 MNA ceramic conference agreed to call it Shinarump Red Ware.

The name 'Shinarump Red Ware' asserts a relationship to the Shinarump White and Gray Wares. The precise definitions of Shinarump Gray Ware or Shinarump White Ware raise some difficult issues (Lyneis and Hays-Gilpin 2007:14; Walling and Thompson 2004:47-59), but in general both wares can be characterized as tempered with mostly sand or crushed sandstone and made with high-iron clays that, when fired in a reducing atmosphere, often vitrify to a dark gray color that many analysts describe as having a purplish tint. Shinarump Red Ware often, but not always, appears to have been made with similar materials, as Harold Colton first documented in refiring experiments described by Hall (1942:21). Also, Shinarump Red Ware temper sometimes includes what appears to be crushed Shinarump Gray or White Ware.

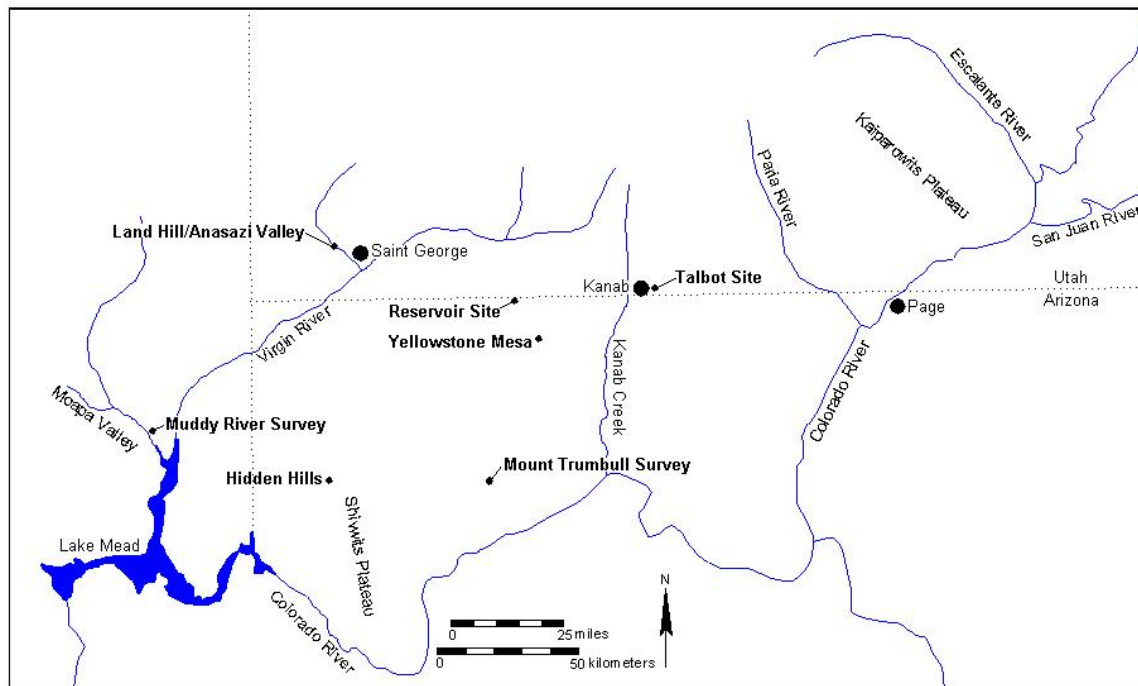


Figure 1. Map of the region north and west of the Colorado River showing locations mentioned in the text.

As defined by the recent MNA conference, Shinarump Red Ware includes most of what Colton (1956) called the Little Colorado Series of San Juan Red Ware, or (equivalently) what he described simply as San Juan Red Ware in his typology of ceramics from the Arizona Strip and surrounding areas (Colton 1952:87-93). Colton's descriptions of red ware typology are somewhat problematic, however, and depart from current understandings and typological practice in several ways. Specifically, Colton (1956) includes Deadmans Black-on-red in the Little Colorado Series of San Juan Red Ware, and distinguishes San Juan Red Ware and Tsegi Orange Ware in part based on presence or absence of a red slip. Current analysts generally associate Deadmans Black-on-red with the other types Colton (1956) placed in the San Juan Series of San Juan Red Ware, which are usually referred to as San Juan Red Ware (without using the San Juan Series designation). Current practice also distinguishes San Juan Red Ware from Tsegi Orange Ware based on temper and paste characteristics, not whether a slip is present.

Shinarump Red Ware is only common north and west of the Colorado River. Temper is variable, although it usually includes abundant subangular to rounded quartz inclusions (Figure 2). Because of the quartz inclusions, archaeologists working in the region have sometimes used the term "sand-tempered red ware" for what is now designated as Shinarump Red Ware (e.g., Allison 1988). Finely crushed potsherds are often present as well, however, and they often look like crushed Shinarump Gray Ware pottery. Also, light-colored mineral deposits are sometimes present and often adhere to the quartz grains. These are probably remnants of sandstone cementing matrix, suggesting some Shinarump Red Ware tempers are derived from sandstones rather than stream or wind-deposited sands. The variation in paste color and temper within Shinarump Red Ware suggests that it may eventually be possible to recognize varieties made in different parts of the region, although that will require much more research.



Figure 2. Examples of Shinarump Red Ware temper, showing the range of variation. The two sherds in the top row are from AZ A:10:20 (BLM), in the Hidden Hills area on the Shivwits Plateau. The bottom two are from the Talbot Site, near Kanab, Utah. Quartz is present in all of the examples in varying amounts. The dark angular fragments in the sherd at the bottom left are crushed sherd, probably Shinarump Gray Ware; the sherd at the upper left has much smaller fragments that also are probably crushed Shinarump Gray Ware. Other opaque grains in the sherds at the bottom left and the upper right may be bits of unground clay. The temper in the sherd at the lower right is probably sandstone.

San Juan Red Ware and Tsegi Orange Ware differ from Shinarump Red Ware primarily in their paste color and temper. San Juan Red Ware usually has igneous rock temper and, when fully oxidized, a reddish-orange paste. Tsegi Orange Ware has an orange paste when fully oxidized and crushed white ware potsherds as temper. Tsegi Orange Ware sherds also usually include relatively large, rounded quartz inclusions. Paste colors of the three wares overlap, although many examples of Shinarump Red Ware have pastes that oxidize to relatively deep red colors closest to, but sometimes slightly redder than, Munsell hue 10R (Table 1), while San Juan Red Ware or Tsegi Orange Ware sherds almost always oxidize to the lighter reds and oranges in Munsell hues 2.5YR or 5YR. All three of these red wares often have red slips (contra Colton [1952:87, 1956]), but the slips contrast much less with the red pastes of Shinarump Red Ware than with the more orange pastes of San Juan Red Ware and (especially) Tsegi Orange Ware.

Table 1. Oxidized colors of refired Shinarump Red Ware sherds from AZ A:10:20 (BLM) and 42WS1345.

Refired Color	Count	Percent
10R 4/6	14	33
10R 4/8	5	12
2.5YR 4/8	4	9
2.5YR 5/6	6	14
2.5YR 5/8	12	28
2.5YR 6/8	1	2
5YR 6/8	1	2
Total	43	

The three red wares share a series of design changes and interrelated production histories. San Juan Red Ware production begins the earliest of the three, around A.D. 750, with production concentrated in southeastern Utah north of the San Juan River (Hegmon et al. 1997). The earliest common San Juan Red Ware types, Abajo Red-on-orange and Bluff Black-on-red, rarely or never occur west of the Colorado River, although Lyneis (2000:261-262) reports a few sherds of Abajo Polychrome from the Bonelli Site in southeastern Nevada. Deadmans Black-on-Red, which was made from about A.D. 900-1100, does occur in the region, but is not common there until the mid eleventh century when San Juan Red Ware production was probably already in decline. Deadmans Black-on-red often has designs that incorporate thin (2-4 mm) parallel lines and elongated triangles or other solids. Some late San Juan Red Wares incorporate bands of hachure like those found on Dogoszhi-style white wares or Tusayan Black-on-red, although this style of San Juan Red Ware has not been formally distinguished as a separate type and is usually considered a variety of Deadmans Black-on-red (Wilson and Blinman 1995:57, 87-88).

Tsegi Orange Ware began to be produced shortly after A.D. 1000, and San Juan Red Ware production begins to decline at about the same time. Over a few generations, red ware production shifted from the western part of the Mesa Verde region, north of the San Juan River, to the northern Kayenta region south of the river. The earliest Tsegi Orange Ware type, Medicine Black-on-red, has classic Deadmans-style designs, with solids that are often accompanied by parallel thin lines, but Tsegi Orange Ware potters soon shifted to the hachured designs characteristic of Tusayan Black-on-red. Still later designs are polychrome, most commonly bands of red outlined with thin black lines on an unslipped orange background.

Shinarump Red Ware production probably begins about the same time as Tsegi Orange Ware production, and it might be reasonable to consider it a regional variety of Tsegi Orange Ware made with distinctive raw materials. Medicine/Deadmans-style designs are present but uncommon, while Dogoszhi-style designs are common. Polychromes also occur, but because the red paste often has only a weak contrast with the red slip, Shinarump Red Ware polychromes sometimes have odd-looking red-and-black-on-lighter-red designs.

The recent MNA ceramic conference recognized four types within Shinarump Red Ware: 1) Kanab Black-on-red, 2) Middleton Black-on-red, 3) Middleton Polychrome, and 4) Nankoweap Polychrome. These type names indicate pottery that combines Shinarump Red Ware paste and

temper characteristics with, respectively: 1) Medicine/Deadmans-style designs including solids and thin lines, painted in black; 2) Dogoszhi-style hachured elements, usually hachured bands, again painted in black; 3) partially slipped surfaces with hachured designs painted in black paint on the red-slipped portions of the vessel; and 4) wide bands of red outlined with black paint on an unslipped surface. As Table 2 shows, these Shinarump Red Ware types all have cognate types in Tsegi Orange Ware, and the black-on-red types also have San Juan Red Ware cognates. All of these wares and types occur at least occasionally on Puebloan sites across northwestern Arizona, southwestern Utah, and in southeastern Nevada (Figures 3-5).

Table 2. Shinarump Red Ware Types and Cognates.

Shinarump Red Ware Type	Design Style	Cognate Types	
		San Juan Red Ware	Tsegi Orange Ware
Kanab Black-on-red	Solids and lines in black paint	Deadmans Black-on-red	Medicine Black-on-red
Middleton Black-on-red	Hachured bands in black paint	Deadmans Black-on-red, Dogoszhi-style	Tusayan Black-on Red
Middleton Polychrome	Hachured bands in black paint, contrast between red-slipped and unslipped areas	none	Cameron Polychrome
Nankoweap Polychrome	Wide bands of red outlined with thin black lines on an unslipped background	none	Citadel Polychrome

A Brief and Partial History of the Shinarump Red Ware Typology

The names used for the Shinarump Red Ware types all have their origins in the archaeological literature of the region, although the names have not always been used consistently, and the Kanab Black-on-red name has been given an entirely new meaning in the revised typology. Red ware ceramics were recovered from the earliest excavations in the region—C.C. Parry recovered a Tusayan Black-on-red seed jar (Harvard Peabody Museum number 75-19-10/8344) in 1875 from a “mound on the Santa Clara” in southwestern Utah, and both Holmes (1886:313-314) and Fowler and Matley (1968) illustrate red ware vessels from Edward Palmer’s (1876) excavations in the same area (possibly at the same site)— but the first attempt to classify red ware from the region was not made until more than 50 years later. Joseph Spencer (1934) recorded sites in southwestern Utah describing and naming 13 pottery types, including Middleton Red and Middleton Black-on-red; Spencer also mentions the presence of “Tusayan Polychrome” sherds (probably what would now be called either Citadel Polychrome or Nankoweap Polychrome) that he interprets as a probable trade ware.



Figure 3. Black-on-red sherds of Shinarump Red Ware, Tsegi Orange Ware, and San Juan Red Ware, showing cognate styles. Top row, Shinarump Red Ware from the Talbot Site near Kanab, Utah: a-b Kanab Black-on-red, c-e Middleton Black-on-red. Middle row, Tsegi Orange Ware from the Talbot Site: f Medicine Black-on-red, g-h Tusayan Black-on-red. Bottom row, San Juan Red Ware from Brigham Young University southeastern Utah ceramic type collections: i-j Deadmans Black-on-red, k-l Deadmans Black-on-red, Dogoszhi style.

Colton (1952) based his ceramic typology for the Arizona Strip and the adjacent parts of Utah and Nevada largely on Spencer's collections. He used Spencer's Middleton Red and Middleton Black-on-red names, although he combined them with Deadmans Black-on-red into San Juan Red Ware. Since then, Middleton Black-on-red appears to have been used consistently for what would now be considered Shinarump Red Ware with Dogoszhi-style designs, although it also has occasionally been applied to Dogoszhi-style Deadmans Black-on-red on both sides of the Colorado River (e.g., Windes 1977:347-348), as encouraged by Colton's conflation of San Juan Red Ware and Shinarump Red Ware. A number of analysts have also used Middleton Red for Shinarump Red Ware sherds that lack decoration (e.g., Pendergast 1960; Walling et al. 1986), apparently accepting Colton's (1952:93, 1956) reasoning that "this is a valid type for the sherds ascribed to it do not come from unpainted portions of Deadmans Black-on-red or Middleton Black-on-red vessels". Most current analysts are skeptical of this assertion, however, and the MNA ceramic conference agreed to retire the type name. Shinarump Red Ware sherds lacking paint are better classified only to the ware level, without being given a specific type name.



Figure 4. Shinarump Red Ware polychrome sherds from the Talbot Site: a-b Middleton Polychrome; c-g Nankoweap Polychrome.

In contrast to the long and relatively unproblematic use of the name ‘Middleton Black-on-red’, ‘Kanab Black-on-red’ has a short and troubled history. It was first used by Richard Thompson to accommodate a reconstructible vessel that seemed to contradict Colton’s misconception that slipped red wares were confined to Tsegi Orange Ware. As Thompson describes it, “...laboratory workers scrubbed some of the sherds with unusual vigor and, upon completion of the reconstruction, the supposed Middleton Black-on-red was found to have the cross-hatched design painted on red slip over orange paste. By definition this could not be Middleton Black-on-red...” (Walling et al. 1986:361). As noted above, Colton was simply wrong on this point, and sherds of both Shinarump Red Ware and San Juan Red Ware frequently exhibit slips, although they do tend to be less conspicuous than the slips on Tsegi Orange Ware. Thompson, however, felt that the presence of a slip (impossible to ignore in this case due to the contrast between over-scrubbed sherds lacking slips and other sherds from the same vessel) warranted assigning a new type name, and he chose Kanab Black-on-red. The participants of the recent MNA conference appropriated the name, which is geographically apt for the assumed production zone of Shinarump Red Ware, and applied it to Shinarump Red Ware exhibiting designs combining solids and parallel lines as on Medicine Black-on-red or classic Deadmans Black-on-red (e.g., Figure 3a-b, Figure 5a). Until now, there has not been a separate type name for Shinarump Red Ware with Medicine/Deadmans style designs, and I am unaware of any previous use of the name Kanab Black-on-red in this new sense.



Figure 5. Red ware vessels from the Talbot Site, near Kanab, Utah: a-e Shinarump red Ware, a Kanab Black-on-red, b-d Middleton Black-on-red; e Nankoweap Polychrome; f Deadmans Black-on-red, Dogoszhi style; g-j Tsegi Orange Ware, g-i Tusayan Black-on-red; j Citadel Polychrome.

The two polychrome type names within Shinarump Red Ware, Middleton Polychrome and Nankoweap Polychrome, are again relatively unproblematic. Schroeder (1955:125) first defined Middleton Polychrome as “similar to Middleton Black-on-red (which exhibits a black design on an unslipped red paste) in all respects except for the addition of red paint as a part of the decoration on the unslipped red paste. The red decoration forms the basic design, and it is outlined in black.” That verbal description is vague, but he includes a drawing of one sherd on which a hachured design in black paint entirely occupies a red-slipped area. The first published use of the name ‘Nankoweap Polychrome’ is in Colton (1956), but he notes that the type was recognized and named by Walter W. Taylor, apparently referring to Taylor (1958), which had not yet been published. Julian Steward had earlier described what appears to be Nankoweap Polychrome from Johnson Canyon, a few miles east of Kanab, which he said “was probably made locally or nearby as it usually has quartz rather than sherd temper, as in Arizona” (Steward 1941:302), although he still called it Tusayan Polychrome.

Red Ware Distributions North and West of the Colorado River

Red ware distributions north and west of the Colorado River have not been systematically studied, although a few observations are possible. Red wares are almost completely absent until

sometime around the middle of the 11th century; after that they make up one or two percent of most excavated assemblages in the western part of the region. There is less quantitative data from the area east of Kanab Creek, although many archaeologists familiar with the region share the sense that red ware is most common just east of Kanab and they assume that Shinarump Red Ware was made in that general area. These are largely intuitions based on anecdotal evidence rather than well-documented conclusions, however. For example, red ware, and especially Shinarump Red Ware, is common in the collection from the Talbot Site near Kanab, and the bulk of the examples illustrated in Figures 2-5 come from there. But that collection, which is privately owned but currently on long-term loan to the Museum of Peoples and Cultures at Brigham Young University, was not professionally excavated. Because the collections from the site were unsystematic, it is impossible to determine the percentage of red ware in the total site assemblage; all that can be said is that there is a lot of it. A small amount of quantitative data supports the idea that red ware is more common in the eastern part of the region in general. For instance, red ware comprises 7.6 percent of the sherds from Fowler and Aikens' (1963) excavations on the Kaiparowits Plateau. That is about four times as much red ware as occurs on sites in the west, although almost half of that is Tsegi Orange Ware, and red ware is probably not common enough at those sites to suggest they are in the Shinarump Red Ware production zone.

There are some apparent temporal patterns in the distributions of San Juan Red Ware, Tsegi Orange Ware, and Shinarump Red Ware. Lyneis (2008) notes stark differences between two adjacent sites in the Moapa Valley: at the Yamashita 2, site 86 percent of the red ware is San Juan Red Ware, while at the slightly later Yamashita 3 site Tsegi Orange Ware comprises 80 percent of the red ware. This pattern is expected given what we know about the production history of those two wares, but there also is a tendency for Shinarump Red Ware to replace Tsegi Orange Ware on the latest sites in the region.

Table 3 shows red ware data from a number of sites scattered across the western part of the region (Figure 1); I identified all the red wares from these sites myself, which should limit typological inconsistencies. In this region corrugated pottery gradually becomes more common from its introduction at about A.D. 1050 to the end of the Puebloan occupation sometime close to A.D. 1300. The percentage of corrugated pottery thus serves as a rough proxy measure of occupation date, although the exact order of the sites does not necessarily reflect the true sequence of occupation. The earliest sites, at the top of the table, date in the mid 1000s. Sites with around 20 percent corrugated pottery probably date in the 1100s, while the latest sites, with 40 percent or more corrugated, probably date to the 1200s. Radiocarbon dates from several of these sites (AZ A:10:10, 42WS1345, AZ A:10:20, and the Reservoir Site) as well as ceramic cross-dating with other radiocarbon dated sites confirm this general chronology.

Several patterns are evident in Table 3, even though most sites have only small numbers of red ware sherds, and sampling error is therefore likely to obscure patterning. First, a number of sites have less than the one or two percent red ware that I earlier asserted was typical. In particular, sites from the Muddy River Survey at the far western end of the region tend to have low amounts of red ware, and a few sites have no red ware at all despite having moderately large ceramic assemblages. One possible interpretation is that red ware frequencies drop from west to east. It seems more likely, however, that the relative lack of red ware is due in large part to the fact that most of these assemblages are surface collections from which red wares were preferentially

removed prior to the systematic collections. The Yamashita 2 and 3 sites were originally recorded during the Muddy River Survey, and red ware percentages are 1.2 and 2.3 percent, respectively, of the excavated assemblages there (Lyneis 2008). Red ware percentages are italicized in Table 3 for sites where only surface collections are available, which makes it easier to see that most of the assemblages with less than one percent red ware come entirely from the surface. A second pattern is the expected tendency for San Juan Red Ware to be most common on the earliest sites, as at the early sites (e.g., AZ A:10:10 and AZ A:10:28) where it is the only red ware present. If all the sites with three percent or less corrugated are combined, 74 percent of the red ware is San Juan Red Ware. Third, Tsegi Orange Ware is the dominant red ware on sites with intermediate percentages of corrugated pottery; on sites with more than three but less than 28 percent corrugated (which probably includes sites dating from the late 1000s well into the 1100s), Tsegi Orange Ware comprises 56 percent of the combined red ware. Finally, Shinarump Red Ware dominates on the latest sites, accounting for 86 percent of the red ware.

Table 3. Red Ware Distributions for Selected Sites.

Site	Location	Percent Corrugated	San Juan Red Ware	Tsegi Orange Ware	Shinarump Red Ware	Red Ware Percent	n
AZ A:10:10	Hidden Hills	0.0	7			1.3	153
NA 13727	Mount Trumbull Survey	0.0	6		2	0.3	910
NA 13685	Mount Trumbull Survey	0.4		1		0.1	776
AZ A:10:28	Hidden Hills	0.7	8			1.2	429
MRS 12	Muddy River Survey	0.8		1		0.4	243
MRS 19	Muddy River Survey	1.0		1		0.3	301
MRS 66	Muddy River Survey	1.1	3	1		0.9	444
MRS 26	Muddy River Survey	1.1	3	1		0.5	840
MRS 65	Muddy River Survey	1.5	5	1		2.3	263
MRS 35	Muddy River Survey	1.8		1		0.2	510
MRS 42	Muddy River Survey	2.1				0.0	280
MRS 49	Muddy River Survey	2.3	2			0.9	217
MRS 47	Muddy River Survey	3.0	2			0.4	471
MRS 34	Muddy River Survey	3.0	1	4		0.6	906
MRS 36	Muddy River Survey	3.3				0.0	334
MRS 13	Muddy River Survey	4.7		7	2	2.2	364
MRS 5	Muddy River Survey	6.2	1	2	1	0.6	664
MRS 39	Muddy River Survey	7.0				0.0	431
MRS 11	Muddy River Survey	7.3				0.0	248
MRS 45	Muddy River Survey	8.4		1		0.3	311
NA 13718	Mount Trumbull Survey	9.6		5		1.0	209
MRS 51	Muddy River Survey	9.8	1			0.3	295
MRS 20	Muddy River Survey	10.8	6	3		0.8	1127
MRS 4	Muddy River Survey	11.5	1	1	1	0.5	572
MRS 30	Muddy River Survey	14.1		2		0.3	582
NA 13719	Mount Trumbull Survey	14.5				0.0	331
MRS 32	Muddy River Survey	14.8				0.0	243
MRS 62	Muddy River Survey	14.8		1	2	0.4	716
NA 13728	Mount Trumbull Survey	18.0			5	1.3	317
MRS 14	Muddy River Survey	19.6		1		0.3	286
42WS1890	Land Hill/Anasazi Valley	20.3		4	1	1.3	306
MRS 54	Muddy River Survey	21.1	1			0.2	560
MRS 55	Muddy River Survey	23.6	3			0.6	491
AZ B:1:63	Yellowstone Mesa	26.3	1	7	1	0.6	171
42WS1345	Land Hill/Anasazi Valley	28.6		8	16	1.5	611
MRS 44	Muddy River Survey	37.1	1	1	1	0.6	466
NA 13683	Mount Trumbull Survey	42.4			5	0.9	335
MRS 76	Muddy River Survey	42.5		1		0.4	266
42WS2188	Land Hill/Anasazi Valley	53.5			3	0.2	1506
AZ A:10:20	Hidden Hills	54.6	2	12	105	2.9	918
42WS2187	Land Hill/Anasazi Valley	65.8			6	1.0	620
Reservoir Site	Colorado City	81.8		4	41	1.4	3189

Note: The ceramic assemblages from many of these sites include both systematic collections of all sherds from certain proveniences and collections targeted at diagnostic sherds. The red ware counts include all sherds, but the percentages of corrugated and red ware sherds, and the sample sizes, are based only on systematic collections. Italicized red ware percentages are from sites with surface collections only. Sources: Muddy River Survey and Mount Trumbull Survey, Allison (2000); AZ B:1:63 (BLM), Allison (1988); Reservoir Site, Allison and Colman (1998); Land Hill/Anasazi Valley and Hidden Hills Sites, unpublished data generated by the author and various Brigham Young University field school students.

Conclusion

Although red ware pottery is generally not common on Puebloan sites from the region north and west of the Colorado River, it is consistently present in small amounts in ceramic assemblages dating from the mid-1000s to around A.D. 1300. San Juan Red Ware and Tsegi Orange Ware, trade wares from east of the Colorado River, are both present across the entire region as far west as southeastern Nevada, and a third red ware made within the region was also widely distributed. The November 2007 MNA ceramic conference agreed that this locally made red ware should be called Shinarump Red Ware, and recognized four types within it: Kanab Black-on-red, Middleton Black-on-red, Middleton Polychrome, and Nankoweap Polychrome. Red ware distributions are poorly known, but suggest changing patterns of connectivity both within the region and with Ancestral Puebloan people to the east.

References Cited

Allison, James R.

1988 *Archaeology of Yellowstone Mesa, Mohave County, Arizona*. Museum of Peoples and Cultures Technical Series No. 88-24. Brigham Young University, Provo, Utah.

2000 Craft Specialization and Exchange in Small-Scale Societies: A Virgin Anasazi Case Study. Unpublished Ph.D. dissertation, Department of Anthropology, Arizona State University.

Allison, James R., and Arlene Colman

1998 Ceramic Analysis. In *Excavation/Mitigation Report, Three Sites near Hildale, Utah: 42Ws 2195, 42Ws 2196, AZ B:1:35 (BLM) (Reservoir Site)*, compiled by Asa S. Nielson. Research Report No. U98-8. Baseline Data, Orem, Utah.

Colton, Harold S.

1952 *Pottery Types of the Arizona Strip and Adjacent Areas in Utah and Nevada*. Museum of Northern Arizona Ceramic Series No. 1. Northern Arizona Society of Science and Art, Flagstaff.

1956 *Pottery Types of the Southwest: Wares 5A, 5B, 6A, 6B, 7A, 7B, 7C San Juan Red Ware, Tsegi Orange Ware, Homolovi Orange Ware, Winslow Orange Ware, Awatovi Yellow Ware, Jeddito Yellow Ware, Sichomovi Red Ware*. Museum of Northern Arizona Ceramic Series No. 3C. Northern Arizona Society of Science and Art, Flagstaff.

Fowler, Don D., and C. Melvin Aikens

1963 *1961 Excavations, Kaiparowits Plateau, Utah*. University of Utah Anthropological Papers No. 66, Salt Lake City.

Fowler, Don D., and J. F. Matley

1978 *The Palmer Collection from Southwestern Utah, 1875*. University of Utah Anthropological Papers No. 99, Salt Lake City.

Hall, Edward T.

1942 *Archaeological Survey of Walhalla Glades*. Museum of Northern Arizona Bulletin No. 20. Northern Arizona Society of Science and Art, Flagstaff.

Hegmon, Michelle, James R. Allison, Hector Neff, and Michael D. Glascock

1997 Production of San Juan Red Ware in the Northern Southwest: Insights into Regional Interaction in Early Puebloan Prehistory. *American Antiquity* 62(3):449-463.

Holmes, William H.

1886 *Pottery of the Ancient Pueblos*. Fourth Annual Report of the Bureau of Ethnology. Smithsonian Institution, Washington, D.C.

Lyneis, Margaret M.

2000 Life at the Edge: Pueblo Settlements in Southern Nevada. In *The Archaeology of Regional Interaction: Religion, Warfare, and Exchange across the American Southwest and Beyond*, edited by Michelle Hegmon, pp. 257-274. University Press of Colorado, Boulder.

2008 The Socioeconomic Context of Changing Middle Pueblo II Pottery Frequencies at the Yamashita Sites, Moapa Valley, Southern Nevada. Proceedings of the 2007 Three Corners Conference. Las Vegas, Nevada (in press).

Lyneis, Margaret M., and Kelley Hays-Gilpin

2007 Prehistoric Pueblo Pottery North and West of the Colorado River: Museum of Northern Arizona Ceramic Conference. *Pottery Southwest* 26(3):12-20.

Palmer, Edward

1876 Explorations of a Mound in Utah. *American Naturalist* 10:410-414.

Pendergast, David M.

1960 The Frei Site, Santa Clara, Utah. In *Miscellaneous Collected Papers*, by James H. Gunnerson, David M. Pendergast, and Keith M. Anderson, pp. 127-163. Anthropological Papers No. 60. University of Utah Press, Salt Lake City.

Spencer, Joseph E.

1934 Pueblo Sites of Southwestern Utah. *American Anthropologist* 36(1):70-80.

Steward, Julian H.

1941 *Archaeological Reconnaissance of Southern Utah*. Bureau of American Ethnology, Bulletin No. 128. Smithsonian Institution, Washington, D.C.

Walling, Barbara A., and Richard A. Thompson

2004 *Archaeology of the Dead Raven Site*. Utah Cultural Resource Series No. 26, Grand Staircase-Escalante National Monument Special Publication No. 2.

Walling, Barbara A., Richard A. Thompson, Gardiner F. Dalley, and Dennis G. Weder
1986 *Excavations at Quail Creek*. Cultural Resource Series No. 20. Utah State Office, Bureau
of Land Management. Salt Lake City.

Wilson, C. Dean, and Eric Blinman
1995 Ceramic Types of the Mesa Verde Region. In *Archaeological Pottery of Colorado:
Ceramic Clues to the Prehistoric and Protohistoric Lives of the State's Native Peoples*, edited by
Robert H. Brunswig, Jr., Bruce Bradley, and Susan M. Candler, pp. 33-88. CCPA Occasional
Papers No. 2. Colorado Council of Professional Archaeologists, Denver.

Windes, Thomas C.
1977 Typology and Technology of Anasazi Ceramics. In *Settlement and Subsistence along the
Lower Chaco River: The CGP Survey*, edited by Charles A. Reher, pp. 279-370. University of
New Mexico Press, Albuquerque.