DOLORES ARCHAEOLOGICAL PROGRAM

TECHNICAL REPORTS

Volume V, Chapter 12

Excavations at Marshview (Site 5MT2235)

A Pueblo III Habitation Site

by Richard H. Wilshusen

Prepared For

Cultural Resources Mitigation Program: Dolores Project

Bureau of Reclamation, Upper Colorado Region

Contract 8-07-40-S0562

Under The Supervision Of

David A. Breternitz, Senior Principal Investigator

Final Submission

28 June 1982

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16. ABSTRACT

Marshview Hamlet (Site 5MT2235), a small Pueblo III habitation site located northwest of Dolores, Colorado, was excavated during the 1978 field season as part of the Dolores Archaeological Program. Between 24 July and 2 November 1978, a small pithouse and associated surface structures and features of this small unit hamlet were excavated and documented by University of Colorado crew members and personnel of the Bureau of Reclamation Youth Conservation Corps and Young Adult Conservation Corps. In October 1979 the site was regridded for a more extensive surface collection.

Materials and artifacts collected from Marshview Hamlet suggest that the prehistoric inhabitants were a family of horticulturalists subsisting on crops grown in fields near the site. Faunal remains indicate that the inhabitants augmented their diet by hunting small game.

The main occupation at Marshview Hamlet occurred in the Sundial Phase (A.D. 1050-1200), according to D.A.P. temporal systematics. Soon after the main abandonment, a multiple burial was placed in the pithouse; the relationship of the burial to the main occupation of the site remains uncertain. Other evidence suggests that the site also served as a limited activity locus after the main occupation.

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ABSTRACT

Marshview Hamlet (Site 5MT2235), a small Pueblo III habitation site located northwest of Dolores, Colorado, was excavated during the 1978 field season as part of the Dolores Archaeological Program. Between 24 July and 2 November 1978, a small pithouse and associated surface structures and features of this small unit hamlet were excavated and documented by University of Colorado crew members and personnel of the Bureau of Reclamation Youth Conservation Corps and Young Adult Conservation Corps. In October 1979 the site was regridded for a more extensive surface collection.

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The main occupation at Marshview Hamlet occurred in the Sundial Phase (A.D. 1050-1200), according to D.A.P. temporal systematics. Soon after the main abandonment, a multiple burial was placed in the pithouse; the relationship of the burial to the main occupation of the site remains uncertain. Other evidence suggests that the site also served as a limited activity locus after the main occupation.

Dolores Archaeological Project
Rural Route 1
17219 CR 26
Dolores, CO 81323

INTRODUCTION

Marshview Hamlet was one of seven sites intensively investigated as a part of the Dolores Archaeological Program (D.A.P.) during the 1978 field season. An intensive excavation of the site from 24 July to 2 November 1978 was undertaken by University of Colorado and Bureau of Reclamation personnel. Operations at the site were directed by Martin E. Bussard with the assistance of Vickie L. Clay.

Initial investigations were carried out by Youth Conservation Corps personnel. At the close of the Youth Conservation Corp summer program (11 August 1978), a University of Colorado crew continued the operations. In the latter part of the field season the field crew was augmented by one Young Adult Conservation Corps crew member. Approximately 367 person days were expended during the field investigation of Marshview Hamlet.

The investigations at Site 5MT2235 formed an integral part of the overall D.A.P. research design for the 1978 field season; the site was chosen for excavation specifically to define the latest permanent habitation phase (Sundial Phase, A.D. 1050-1200) in the Sagehen Flats Locality of the D.A.P. area (Kane [1]).

The preliminary analysis of the materials recovered in 1978 suggested the presence of additional components secondary to the main, Sundial Phase, occupation. To investigate this possibility, it was decided to enlarge and regrid the site in order to surface collect an area surrounding the 1978 site boundary. Six person days were expended in October 1979 to accomplish this. When compared with the 1978 data, the artifact distributions of the 1979 collection reinforced the interpretation of the site as having multiple components of use.

Site 5MT2235 is located in the Southeast Quarter of the Southeast Quarter of the Northwest Quarter of Sec 36, T38N, R16W. The Universal Transverse Mercator grid coordinates for the site are 715,050 mE, and 4,154,040 mN, zone 12.

ENVIRONMENTAL SETTING

The Sagehen Flats Locality is a broad valley extending east and west and is characterized by gentle slopes to the north and an abrupt ridge to the south. Numerous small intermittent drainages converge on the valley floor and flow toward the Dolores River, which forms the locality's eastern boundary.

Site 5MT2235 occupies a low hillock at the southern edge of the slope extending south from the Dolores anticline (Cline's Crest) (Figure 12.1). The gentle slopes of the site are covered with a relatively dense but low growth of big sagebrush (Artemisia tridentata) and rabbitbrush (*Chrysothamnus nauseosus*) (Figure 12.2). Isolated stands of pinyon (Pinus edulis) and juniper (Juniperus osteosperma) are found nearby. Approximately 300 m southeast of the site, a large headward-cutting arroyo has deposited a wide alluvial fan which dams the valley lowlands and forms an extensive marsh (Figure 12.3). Flow emanating from the numerous arroyos during the wet periods, surface percolation of ground water, and water derived from a nearby irrigation canal sustain the marsh and its growths of cattail (Typha latifolia) and bulrush (Scirpus sp.). The surrounding community of willow (Salix sp.), thistle (Cirsium sp.), and numerous grasses makes the area a haven for small game and birds, and the marsh serves as a seasonal stop for migratory waterfowl. Refer to Rye [27] for further information on vegetation in the Sagehen Flats Locality.

Fauna observed at or near the site include cottontail rabbit (Sylvilagus sp.), mule deer (Odocoileus hemionus), American elk (Cervus canadensis), coyote (Canis latrans), rock squirrel (Spermophilus variegatus), prairie dog (Cynomys sp.), bushy-tailed woodrat (Neotoma

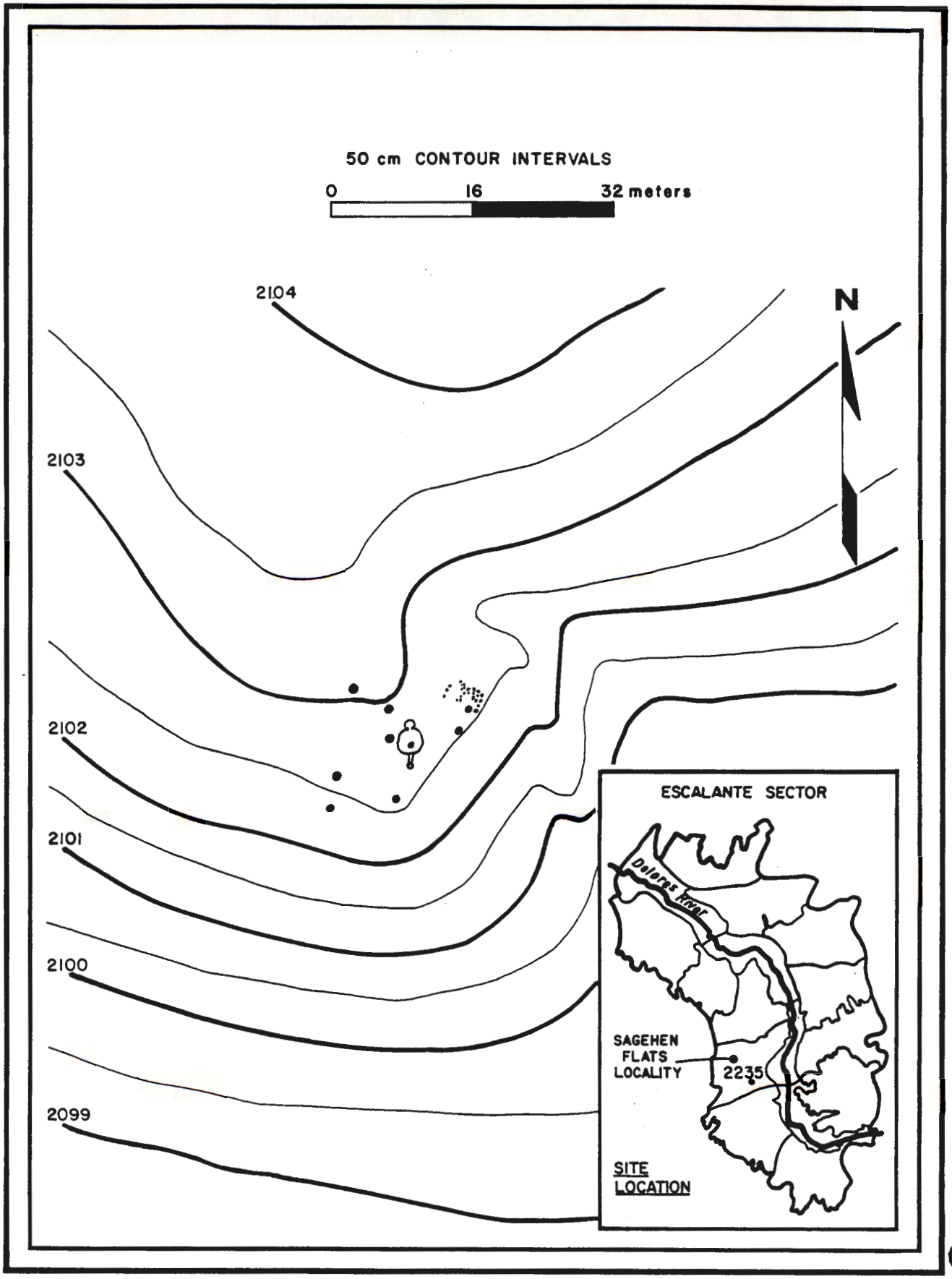


Figure 12.1 Topographic map of Marshview Hamlet..

Figure 12.2 Main area of the site before excavation, Marshview Hamlet (D.A.P. 002501).

Figure 12.3 Marshview Hamlet in initial stages of investigation; Sagehen Marsh is in the background (D.A.P. 003013).

cinerea), and other unidentified small rodents. Rattlesnakes and small lizards, including the horned lizard (Phrynosoma sp.), make up the reptilian population.

Avifauna commonly observed in the Sagehen Flats Locality are turkey vulture (Cathartes aura), common raven (Corvus corax), black-billed magpie (Pica pica), pinyon jay (Gymnorhinus cyanocephalus), marsh hawk (Circus cyaneus), golden eagle (Aquila chrysaetos), and numerous passerines. Due to the proximity of the site to the marsh, waterfowl were commonly seen and heard. These include sora (Porzana carolina), coot (Fulica americana), mallard (Anas platyrhynchos), and other species of duck. Emslie [3] provides additional discussion of the fauna in the D.A.P. area.

Marshview Hamlet lies at an elevation of 2103 m above sea level in an area where beans (Phaseolus sp.), wheat (Triticum sp.), and corn (Zea mays) are currently cultivated. Though some crop lands are irrigated, dryland farming produces adequate yields during years of average precipitation.

The climate in the Sagehen Flats area is characterized by low humidity, mild summers, and cold dry winters. Snowfall accounts for most of the winter precipitation. Summer weather conditions, dominated by stationary high-pressure systems that draw warm, moist air from the Gulf of Mexico, producing intermittent thunderstorms. Local weather records are available from both the United States Weather Bureau (U.S.W.B.) in Dolores, approximately 8 km southeast of the site, and from the U.S.W.B. Station in Yellowjacket, 13 km to the west. The average annual precipitation at Dolores is 460.5 mm; the warmest month is July, with a mean temperature of 19.7°C, and the coldest month is January, with a mean temperature of -3.1°C. Dolores averages approximately 126 frost-free days

annually. For additional discussion of the climate in the Sagehen Flats Locality see Kane [1].

With the exception of the shallow soil immediately south of the site, all land at and near the site might have been suitable prehistorically for farming or intensive horticulture utilizing dryland farming techniques. The large alluvial fan 300 m southeast of the site and some of the better-drained valley lowlands might have been suitable for subirrigation farming methods similar to the Hopi "akchin" technique. The soil of the site proper is a red-brown clay loam derived from an eolian loess (Leonhardy [4]). See Leonhardy [5] for additional discussion of the soils and geology in the project area.

One hundred meters south of the site, forming the boundary of the valley lowlands, is an outcropping of marine sandstone. This uppermost member of the Dakota Formation is the source of most of the building stone found during investigations at the site.

The area surrounding Site 5MT2235 is currently used as winter pasture for horses and cattle. In the 1940s the land was cleared of brush (though trees were left standing), disc plowed, and sown with grass seed.

SOCIAL SETTING

Marshview Hamlet is within 2 km of several small hamlets of the same temporal affiliation (Sundial Phase). A large pueblo, (Site 5MT4450) which was probably a center for trade and social interaction, is located 5.5 km to the southeast. The inhabitants of Marshview Hamlet probably also utilized certain limited activity sites in and near the Sagehen Flats Locality. Following is a list of nearby sites that may have been contemporaneous with Marshview Hamlet and a brief description of observed features and artifacts that indicate the chronological placement of each, based on survey records. Figure 12.4 indicates the locations of these sites.

Contemporaneous Sites

Site 5MT4450

Site 5MT4450 is located in the Sundial Locality on the rim of the Dolores River canyon, 5.5 km southeast of Marshview Hamlet. The site consists of a large group of ruins including a D-shaped pueblo with several kiva depressions, one of which is possibly a great kiva. East of the main ruin is a tri-wall structure, and a large trash area is located south of the site. Ceramics recorded during survey collection include Mancos Black-on-white, Moccasin Gray, Cortez Black-on-white, Mancos Corrugated, and Abajo Red-on-orange.

Site 5MT2851

Site 5MT2851 is a small rockshelter with cultural deposits and associated trash midden; it lies north-northeast of Site 5MT2235. The ceramics include Corrugated Body sherds, Early Pueblo Gray, and Chapin Gray. The camp was possibly used for the seasonal collection of food.

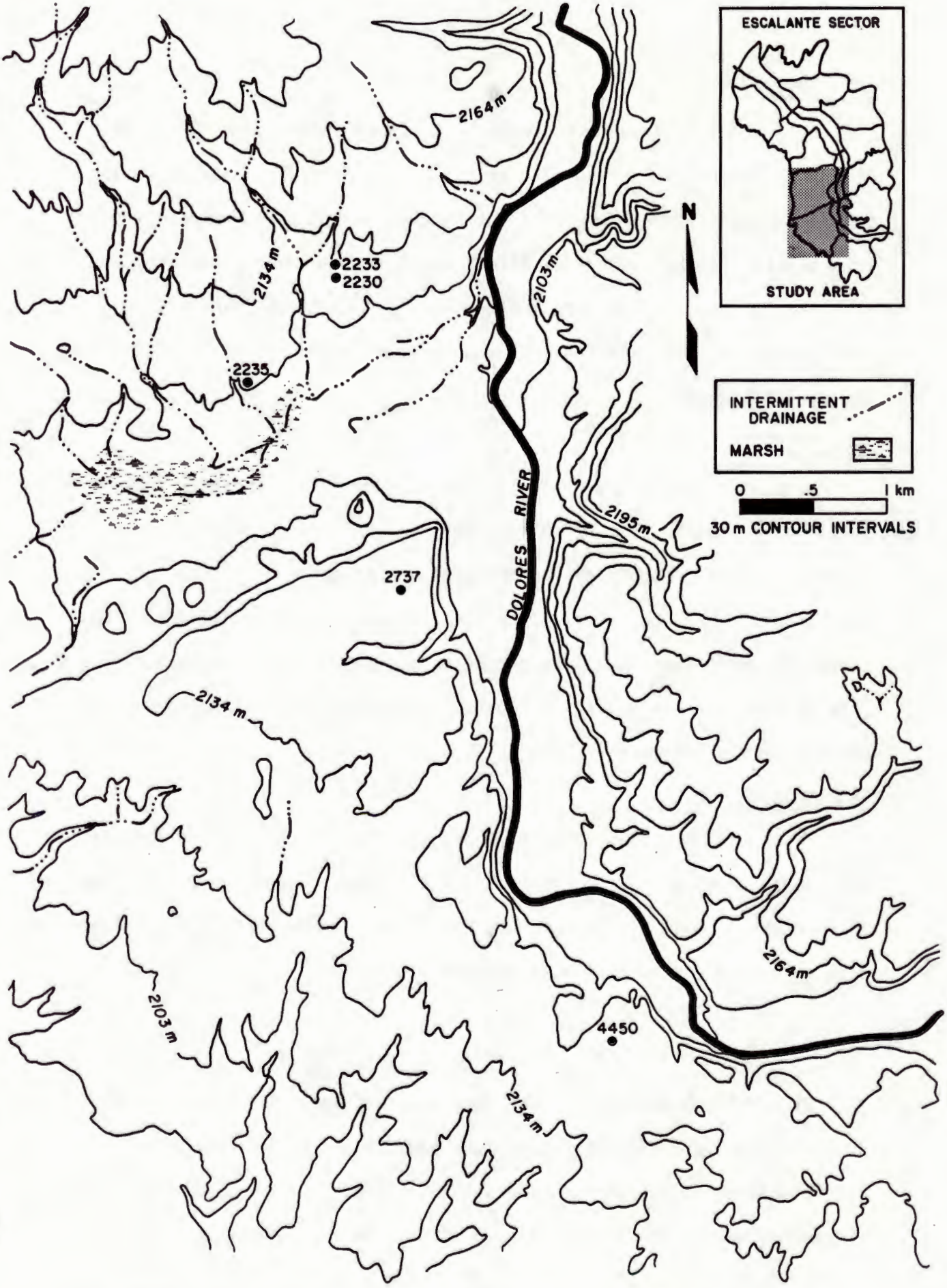


Figure 12.4 Locations of sites contemporaneous with Marshview Hamlet.

Site 5MT2737

Site 5MT2737, located approximately 1.8 km southeast of Marshview Hamlet, is a pueblo habitation consisting of a partially excavated ring of rubble suggestive of a tower and a linear mound probably representing a room block. To the south is a slight depression which may indicate a kiva. Ceramics from the site include Mancos Corrugated, Mancos Black-on-white, and McElmo Black-on-white; trade ware is represented by San Juan Red Ware.

Site 5MT2230

This site consists of a small, circular mound of sandstone rock rubble that appears to be a small tower structure 2.7 to 3.2 m in diameter. Survey reports do not indicate the presence of a roomblock but suggest that the site is related to a nearby hamlet (Site 5MT2233). Both sites are approximately 1.3 km northeast of Site 5MT2235. Ceramics from Site 5MT2230 include Mancos Corrugated and Mancos Black-on-white, corresponding to the ceramics at Site 5MT2233.

Site 5MT2233

This site is a small Sundial Phase unit hamlet that is approximately 30 m north of Site 5MT2230; it consists of a small masonry roomblock and appears not to have a kiva. Mancos Corrugated and Mancos Black-on-white were collected during survey operations.

Site 5MT2235 Within its Social Setting

Site 5MT2235 appears to have been occupied for a relatively short time (based on observations during the excavation of the pithouse). During this short occupation, the inhabitants certainly had contact with at least some of the sites mentioned above. Survey records are adequate

to suggest functional differences in sites from this period, but the settlement system is ill understood. For example, the inhabitants of Site 5MT2235 might have benefited from the system of towers in and near the locality, but the exact function of the towers has yet to be explained. Both the hamlets and towers of the Sagehen Flats Locality appear to represent a concerted effort to reoccupy the area during the Sundial Phase.

In contrast to earlier phases of habitation in the Dolores River valley and, more specifically, in the Sagehen Flats Locality, the settlement pattern in the Sundial Phase was characterized by nucleation into multifamily dwellings and occupation of a much smaller number of outlying single-family habitations.

SURFACE EVIDENCE

In July 1978, data-recovery operations at the site commenced with the removal of brush. For gridding purposes the site was defined as an area displaying a contiguous artifact scatter and probably containing architectural features. A 4 by 4 m grid system was established on 32 by 32 m area to provide control for surface collection and mapping. This area included a 2-m border on each side, so the actual surface area collected was 28 by 28 m. The possibility of a second component at the site led to the expansion of this area, in October 1979, to 64 by 64 m (on a new system of grid coordinates).

Surface Collection

For clarity, the surface collections of 1978 and 1979 will be examined together rather than separately. Lists of ceramic and lithic artifacts are presented by provenience and artifact class in Appendixes A and B. The distributions of collected artifacts were influenced to a degree by surface visibility, but comparisons between the artifact-distribution maps and a map of surface visibilty at the time of the collection show no systematic relationship between surface visibility and artifact density.

The distribution of ceramics on the surface (Figure 12.5) showed little patterning. There were more ceramics in the southern area and in two squares on the western edge, but all artifact densities were higher in these two.

As Figure 12.6 shows, the distribution of flaked lithic artifacts and debitage across the surface of the site was quite variable. This

variability was due partly to prehistoric cultural activities and partly to such post-abandonment processes as downslope erosion. The central domestic area of the site was marked by a paucity of flaked lithic material on the surface; this was probably a result of the "vacuuming" effect of the structural depressions during the period of filling. Any material in work areas around the pitstructure was probably washed into the depression created by the collapsed structure, as suggested by the presence of 434 pieces of flaked lithic debitage and 45 flaked lithic tools in the fill.

The units to the north of the main site had few cultural materials, corresponding to the general lack of cultural features north of the site. As is typical in Anasazi sites, the midden was to the south; 62 percent of all tools and 38 percent of the debitage collected from the surface were found in the southern units. Surface artifact density was also high to the west of the main area of the site. While only 19 percent of the surface-collected flaked lithic tools came from this area, 45 percent of the flaked lithic debitage was concentrated there. This is more debitage than was found in the sheet trash to the south and suggests that the western periphery represents either a special activity area or another cultural component within the site. If it represents a special activity area associated with the main occupation of the site then it suggests an intensity of lithic production that is truly notable for a single pithouse site. It is more likely that it represents a limited activity loci that is separate from the main occupation and that the density of lithics represents intensive, but nonhabitational, use of the site.

There were some broad similarities between the distribution of nonflaked lithic tools (Figure 12.7) and that of flaked lithic tools. The area around the pitstructure was notable for its lack of nonflaked lithic artifacts; the southern sheet trash had the highest concentration of nonflaked lithics and the northern periphery had the lowest. However, there were also differences between the distribution of flaked lithics and and nonflaked lithics. The grid units over the probable surface structures had a high density of nonflaked lithics, the majority of which are broken metates. These probably represent worn-out metates that were incorporated into the walls of the structures. The units to the west of the main area contained a much lower proportion (only 19 percent) of the total surface collected nonflaked lithic materials than of flaked lithic materials. As suggested above, the cultural area on the western periphery could represent, in part, seasonal, nonhabitational activities that may not be associated with the main occupation of the site.

Although portions of the site have suffered slight surface erosion, areas of high artifact density cannot be completely explained as erosional deposits. Sheet erosion has affected the southern part of the site, exposing sandstone bedrock about 100 m to the south. An incipient drainage to the east collects some slopewash, and several 8 by 8 m grid units on the west of the site have been affected by surface erosion. Despite some correlation with areas of erosion, surface concentrations of artifacts are more appropriately explained as areas of cultural activity: trash disposal to the south of the structures, the area of the structures themselves, and an area of probable secondary occupation to the west.

EXCAVATION METHODS AND OBJECTIVES

An Anasazi unit hamlet, as defined by the D.A.P., normally consists of three subareas. These subareas are (north to south) the surface structures, the pitstructure, and the trash area. At Marshview Hamlet, the disturbance to the surface structure(s) and the apparent proximity of the surface structure(s) to the pitstructure argued against dividing the site into more than two basic areas: Area 1, consisting of the main structures and activity areas, and Area 2, a peripheral area containing sheet trash (especially to the south).

Intensive Excavation Methods

Squares over or near the postulated architectural features in Area 1 (Figure 12.8) were chosen for hand excavation. The 2 by 2 m units were excavated in arbitrary 15-cm levels until culturally sterile soil was reached. In most cases sterile soil was reached within 30 cm. When cultural features were encountered, the excavation was expanded into adjoining squares until the feature was horizontally isolated, and fill was removed by natural or cultural strata rather than in arbitrary levels.

Several types of environmental and dating samples were collected during the excavation. Pollen and bulk soil samples were taken from each level, stratum, floor, cist, and architectural feature. Samples of wood, mortar, plaster, ash, and charcoal were collected whenever possible. Radiocarbon, archaeomagnetic, and tree-ring samples were also collected. All sampling was done according to procedures specified by the D.A.P. Field Manual (Kane et al. [6]).

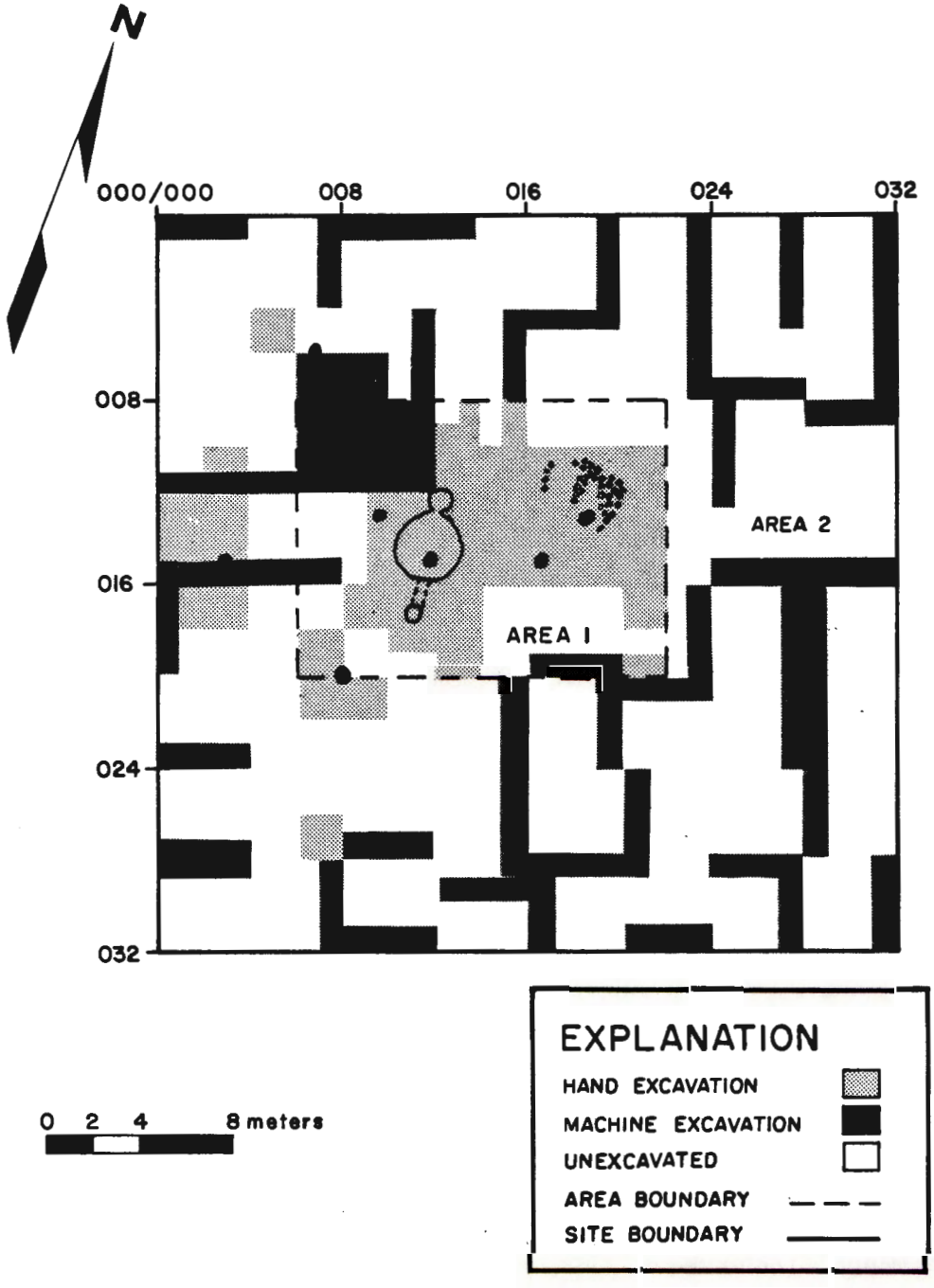


Figure 12.8 Site sampling plan, Marshview Hamlet.

Artifacts were segregated according to material type, bagged, and marked with the appropriate provenience information. Artifacts found on floors and in features associated with floors were mapped and assigned point-location numbers before removal. All human bone and pollen samples taken from floors, features, and burials were also mapped and point located.

Both one-quarter-inch and one-eighth-inch screens were used to sift the fill of features found on the occupation surfaces; one-quarter-inch screens were used to recover small items such as chips of lithic debris and fragments of bone and teeth from cultural levels within the pitstructure. Excavation of the pitstructure was more complex largely due to the multiple burial found on and just above the floor. Detailed mapping of small areas of the burial was necessitated by the large number of sherds interspersed with the human bone fragments; this condition complicated the exposure of large portions of the burial area. Bulk soil and pollen samples were taken from the fill of the burial as well as from the features of the pithouse floor and from the floor itself.

Site 5MT2235 has been subject to significant natural erosion and has been seriously disturbed during recent agricultural activitites. Because the upper stratum is disturbed, it was decided to sacrifice the information in this stratum and expand the excavated sample with mechanized equipment. This testing procedure entailed the random selection of 1 by 4 m grid units which were excavated with a small frontend loader. This was carried out by staking the 1 by 4 m trenches and carefully removing the upper 10-15 cm of top soil. A ground observer was stationed to see any features exposed which were not visible to the operator of the

frontend loader. The observer was equipped with a square-tipped shovel, trowel, broom, and whisk-broom to quickly delineate any feature exposed. Features thus discovered were excavated according to standard procedures. Trenches exhibiting no features were excavated to sterile soil (20-30 cm below modern ground surface). The frontend loader was not as accurate or efficient as a large grader, but it did prove useful in expanding the sample in Area 2, revealing several peripheral features that otherwise would have been missed. Table 12.1 indicates the proportion of each area excavated by hand and by machine.

Table 12.1 Excavation Techniques Used at Marshview Hamlet, by Area

	Area 1 (m^2)	Area 2 (m^2)	Total Site (m^2)
Total area	192	832	1024
Area hand-excavated	105 (54.7%)	36 (4.3%)	141 (13.8%)
Area machine-excavated	30 (15.6%)	188 (22.6%)	218 (21.3%)
Total area excavated	135 (70.3%)	224 (26.9%)	359 (35.1%)

ARCHITECTURAL REMAINS

The main architectural features at Marshview Hamlet are a small pitstructure (designated Pithouse 1) in the center of the site and an indeterminate number of small surface structures located 3 m northeast of the pithouse (Figure 12.9). Because of material culture similarities, it is assumed that the pithouse and roomblock were used contemporaneously, but because of the virtual destruction of the roomblock (probably in historic times) it is difficult to determine any precise relationship. Besides the historic processes that altered the original layout of the site, the prehistoric abandonment processes included a mass burial that was secondarily deposited in the pithouse; at least one feature represented a secondary occupation.

Pithouse 1

Since Pithouse 1 is clearly associated with the Sundial Phase by tree-ring, archaeomagnetic, and ceramic seriation evidence, it functionally should be a kiva. The kiva typical of this basic time period is described by MacGregor [7:287-288]:

> The kiva is relatively small, 12-15 ft in diameter, and is circular except for a platform on one side. The wall is lined with a bench or banquette upon which rest six or eight stone pilasters. These pilasters supported the roof, which was formed by placing poles across them from one to another. Additional poles were placed across the angles thus formed until a dome-shaped roof was constructed. Important floor features consist of a ventilator extending under the platform, a deflector, central fire pit, "sipapu" hole in the floor, and in some a second underground entrance connecting with one of the dwelling rooms.

Kivas probably served primarily as a focus for ceremonial and community activities. However, in the case of Pithouse 1 at Marshview Hamlet almost all these definitive features are lacking and the existing ones are

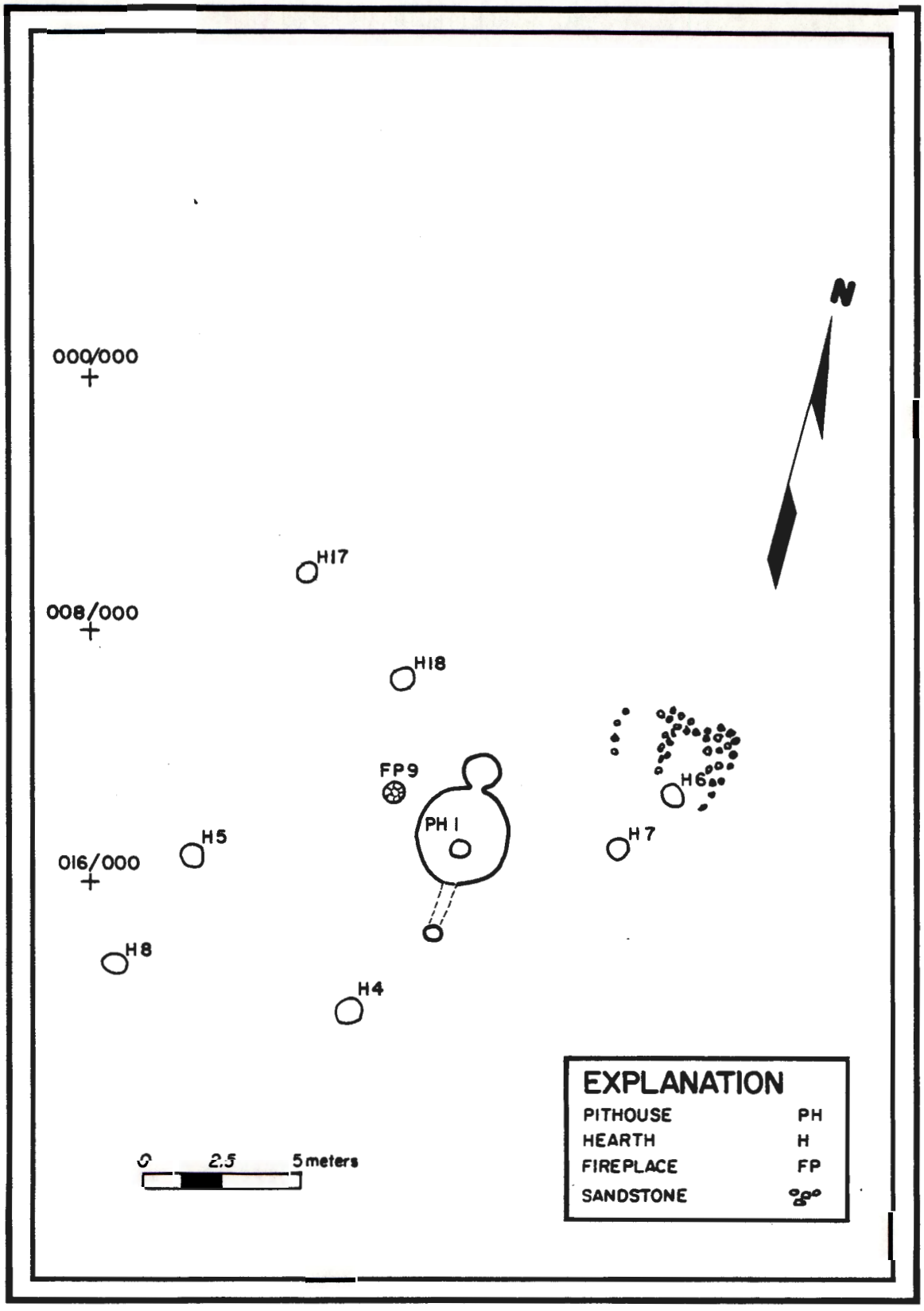


Figure 12.9 Spatial relationships of major cultural units, Marshview Hamlet.

anomalous. Because of the basically domestic nature of the internal features, and because of the lack of concomitant substantial surface living rooms, the pitstructure is interpreted as serving more as a pithouse than as a kiva. In the central and western San Juan River valley, pithouses were present at this time and even later. MacGregor states [7:327]:

> There was much use of wattle and daub or jacal construction in building walls, but not all structures were surface. . . .The pithouses occurred singly or were combined with surface structures in lines or in units.

In these respects, Pithouse 1 more closely resembles Kayenta dwellings than it does the contemporaneous Mesa Verde dwellings.

As illustrated in Figure 12.10, the area of the main chamber of the pithouse, 8 m^2, is abnormally small. The chamber is circular in plan; to its north lies a smaller elliptical chamber which has an area of 1.76 m^2. The pithouse had at least one major remodeling, as demonstrated by the presence of at least two coats of plaster on the walls and two distinct floors with separate features. Also, the northern chamber appears to have been abandoned while the pithouse was still occupied; this abandonment may have occurred at the time of remodeling.

Walls

Wall treatment consisted of gray-brown adobe plastered over the native clay loam into which the structure had been dug. In areas where preservation was good, two layers of plaster were found. One large masonry patch was present in the east wall (Figure 12.11); it apparently functioned to stabilize the loose fill of animal burrows that either cut

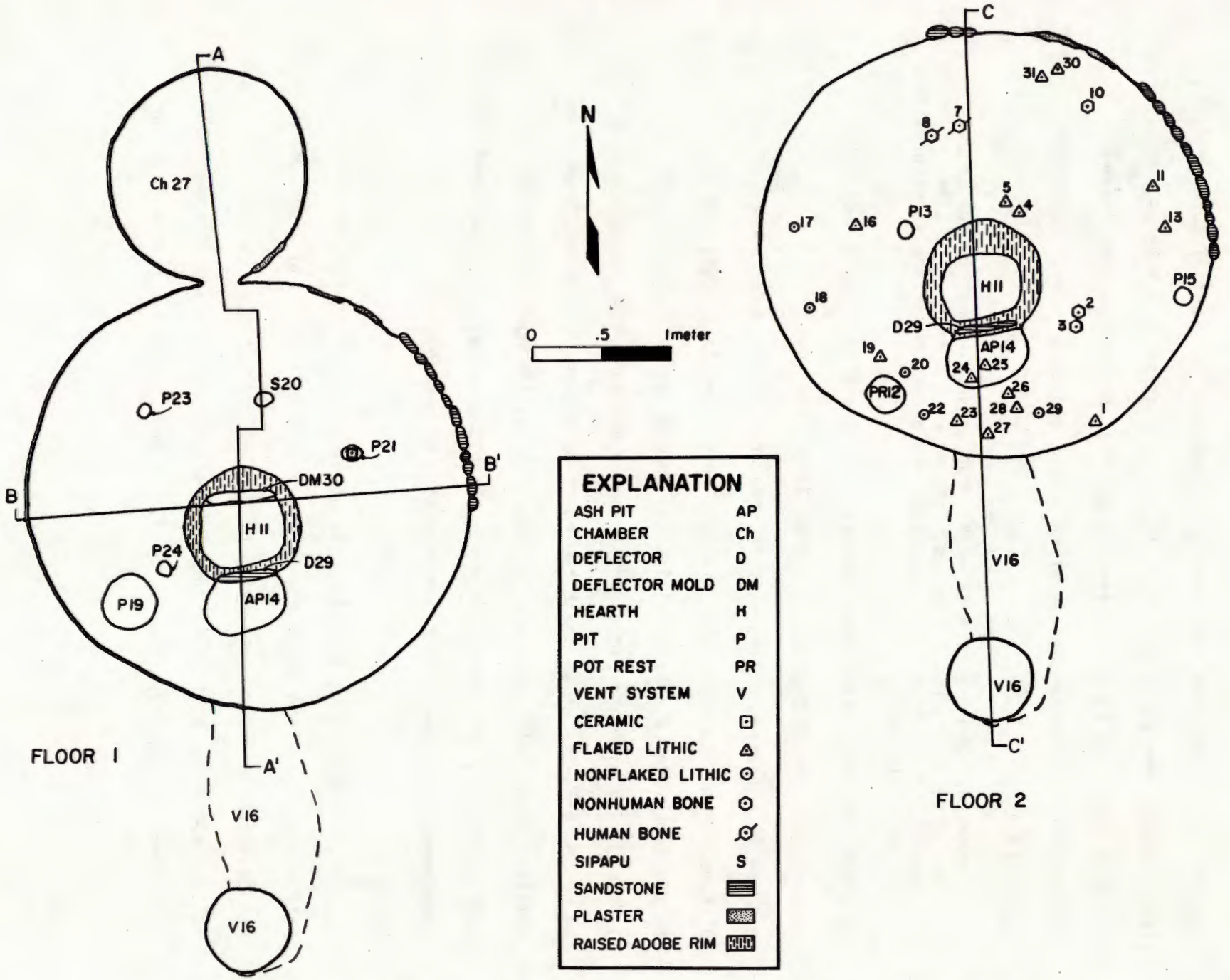


Figure 12.10 Plan view of Pithouse 1, Floors 1 and 2, Marshview Hamlet. AA' and CC' correspond to AA' and CC' on Figure 12.13. BB' corresponds to BB' on Figure 12.12. See Table 12.2 for numbered artifact locations.

Figure 12.11 Large masonry patch on east wall of Pithouse 1, Marshview Hamlet ("Kiva 1" on photo board is incorrect) (D.A.P. 004110).

into the wall or that the wall cut into. A much smaller patch appeared on the north wall and essentially served to seal up the abandoned northern chamber. Both of these masonry patches were set flush with the wall and were constructed of unshaped sandstone blocks mortared with red clay.

Northern Chamber

Dimensions:

Length:	1.55 m
Width:	1.37 m
Depth:	1.70 m

The small chamber at the northern end of the main chamber is an aberrant feature and had little material culture evidence to suggest its function. Large sandstone slabs (seven were larger than 30 by 20 cm) set in a circular pattern were found just above the floor of the chamber and probably were related to some sort of roofing; they also may have been placed as an intentional filling-in of the structure. In some ways the circular patterning suggests that the slabs may relate to a masonry collar around a surface entrance. There were patches of adobe plaster on the walls and one small masonry patch on the northern wall. The floor is composed of the native calcareous clay and displays no evidence of being plastered. Since the lower fill of the chamber was thoroughly disturbed by rodent activity there is some possibility that the chamber did have a formal floor that was later destroyed.

All significant artifacts in the feature were found in rodent disturbances; therefore, little substantial inference can be made concerning the feature's function. Its size, circular shape, and lack of floor features are reminiscent of the storage pits of several hundred years earlier. The northern chamber and pithouse were connected by a short tunnel which was completely filled in and sealed off with a small masonry patch before the abandonment of the pithouse.

In the main chamber of the pithouse, a deflector mold was found in an abnormal position of north of the hearth. This suggests that the northern chamber--in addition to whatever other function it might have served--may have interfered with or augmented the traditional southern ventilation system. However, there are no known north-oriented ventilator systems in the project area. This lack is easily explained by the fact that such systems probably would not have worked: the prevailing southerly winds would have caused the smoke rising from the ladder entryway over the central hearth to flow into a northern vent. While the northern chamber could not have effectively served as a primary ventilator, the combination of aberrant features associated with the chamber suggest that it was connected, at least at times, with the surface and the pithouse, and interfered with the normal operation of the traditional southern vent. The small tunnel that connected the main chamber and northern chamber, the slab molding on the north side of the hearth, the circular patterning of the sandstone slabs collapsed in the northern chamber, and the abandonment of all these features prior to the abandonment of the main chamber, argue that the northern chamber did relate in some way to the ventilating system.

Most likely, the northern chamber served as a storage room which was accessible both by a surface entrance and by a small entryway from the main chamber. The surface entrance would have allowed easy access from the fields, and the tunnel between the pithouse and the chamber would have given equally easy access to facilitate food processing in the pithouse. While the entryways were open, the northern deflector would have served to deflect any superfluous air intake from the north.

Since the northern chamber was sealed off before the abandonment of the main chamber, there is some possibility that the remodeling and re-flooring in the pithouse relates to the abandonment of the northern chamber. Associated with the second layer of plaster in the pithouse are the reduction in depth of the ash pit, the removal of the northern deflector, the deepening of the central hearth, and the reorientation of peripheral floor features. Because of the lack of in situ artifacts or extant features in the northern chamber, and because of the lack of comparability with other sites of this time period, all explanations proposed of the exact function of the northern chamber, and of how the remodeling in the pithouse related to the chamber's function, are conjectural.

Ventilator (Feature 16)

Dimensions:

Tunnel:	
Length:	1.35 m
Diameter:	0.75 m
Shaft:	
Depth:	1.35 m
Diameter:	0.60 m

In cross section, the southern ventilator tunnel is primarily rectangular with a slightly arched ceiling. The ventilator shaft is circular in cross section and intersects the tunnel north and slightly west of the tunnel terminus. The fact that the shaft is north of the tunnel terminus suggests that the shaft was excavated after the tunnel. The opening of the vent shaft is flanked by large stones which probably were part of a masonry collar which served to stabilize the vent opening and to prevent the entrance of water during periods of run-off.

Floors 1 and 2

There were two floors in the pithouse (Figures 12.12 and 12.13), the second of which probably coincided with the replastering of the walls. Floor 2 is the upper floor and Floor 1 is the lower. Each floor had several features exclusively associated with it, and central features such as the hearth and ash pit had been remodeled when the second floor was laid down. Floor 2 was plastered with a 0.5 to 1 cm layer of gray adobe, and sloped gently from the coping at the base of the wall to the hearth. Floor 1 was plastered directly over a carbonate horizon into which the bottom 10 cm of the pithouse had been cut.

Floor 2, the upper floor associated with the principal occupation of the pithouse, shared certain features, such as the ash pit and hearth, with Floor 1. However, Floor 2 possessed features spatially and apparently functionally different from those of Floor 1; there was not sufficient artifactual material on the floors to explain the marked differences between the floors. As is shown in Figure 12.14, the lower stratum of the pithouse fill and the floors are disturbed by rodent activity; there is a likelihood that at least some features of both floors were lost to rodent disturbance.

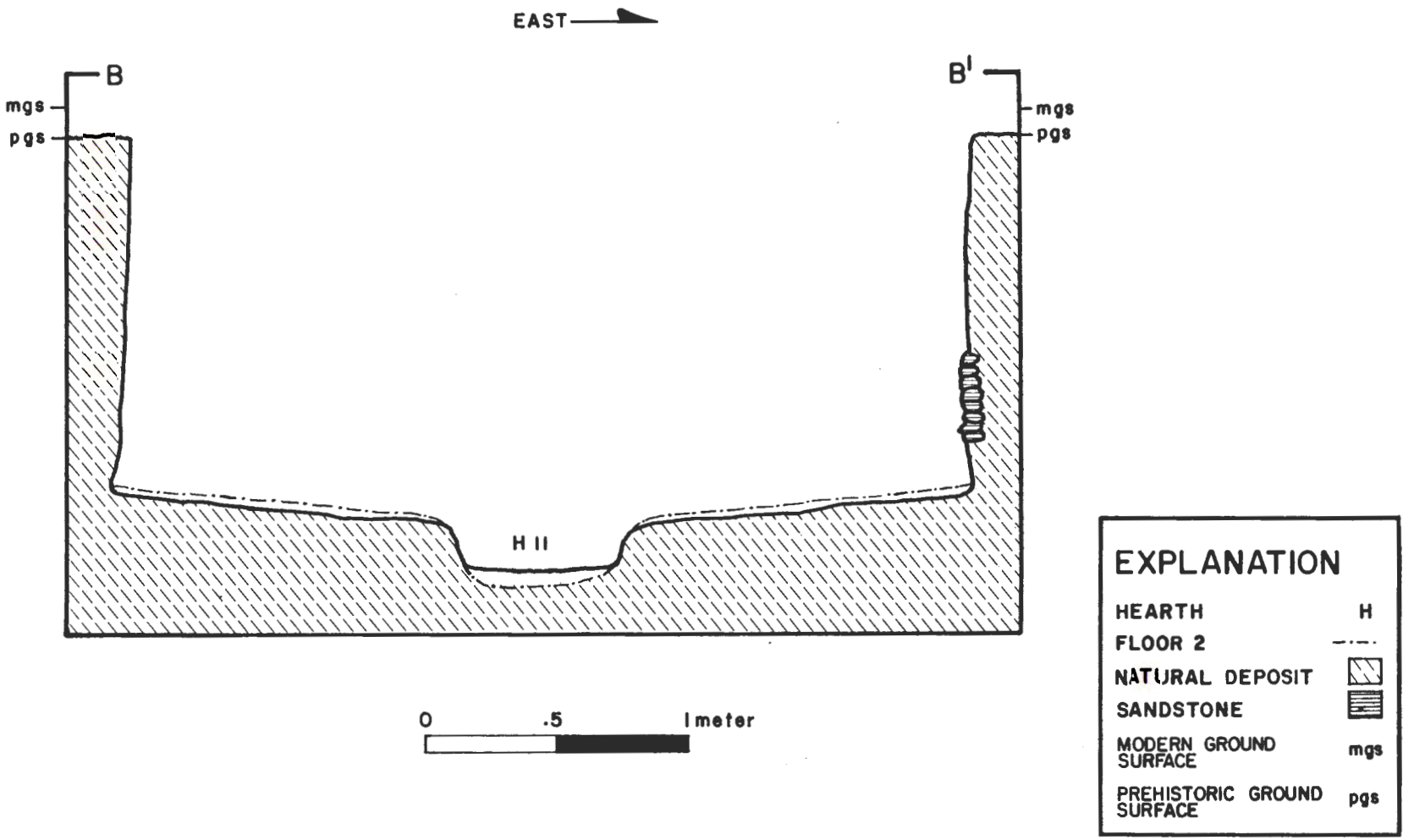
Floor 1 Features. Features associated with Floor 1 were exposed when Floor 2 was removed. These features include one large cist, two small pits of unidentified function, an adobe-lined pit with a sherd bottom, and the hearth, ash pit, and sipapu.

Pit (Feature 23):

Dimensions:

Length:	9 cm
Width:	9 cm
Depth:	3 cm

Figure 12.12 Architectural profile (east-west) of Pithouse 1, Marshview Hamlet. BB' corresponds to BB' on Figure 12.10.



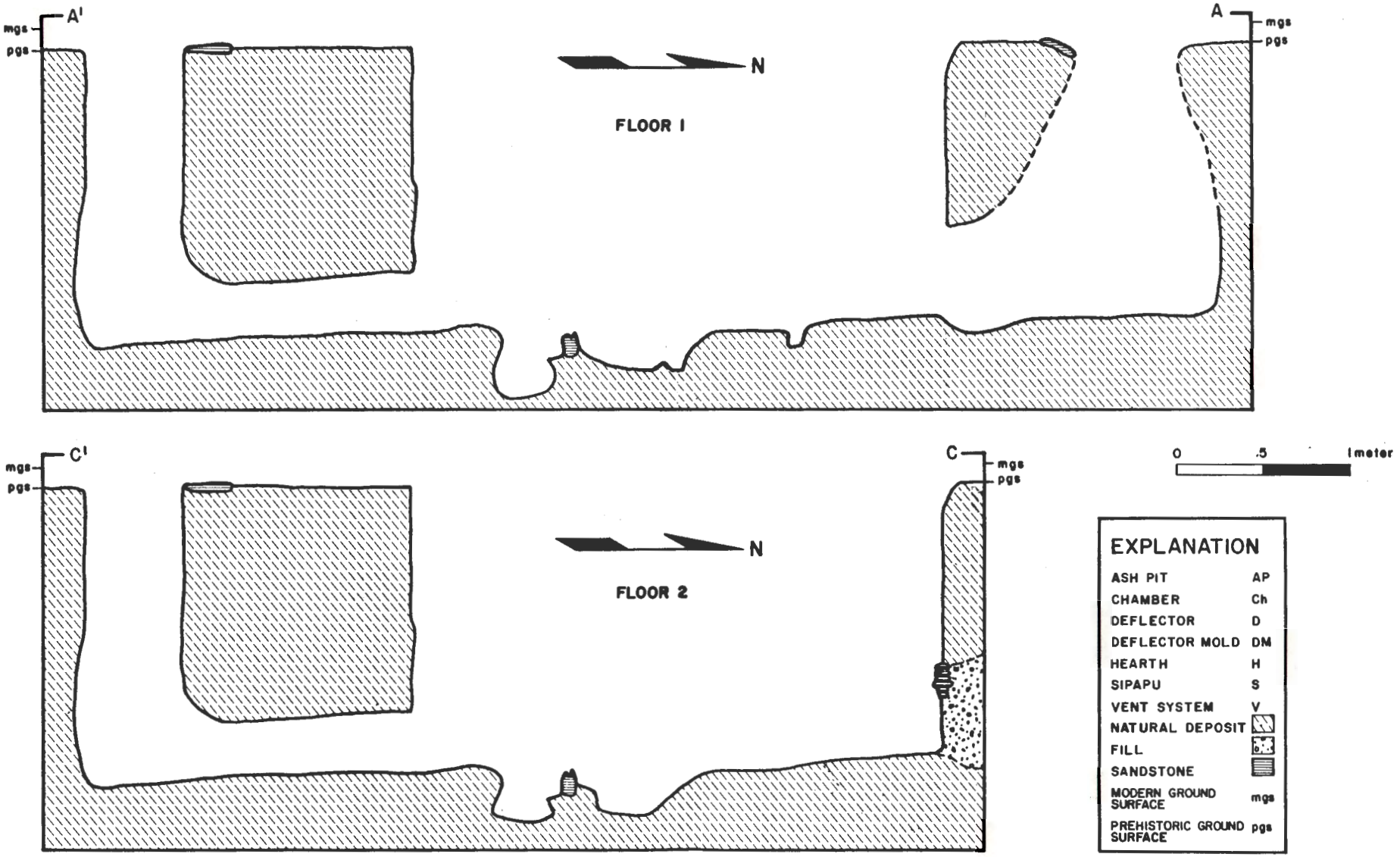


Figure 12.13 Architectural profile (north-south) of Pithouse 1, Floors 1 and 2, Marshview Hamlet. AA' and CC' correspond to AA' and CC' Figure 12.10.

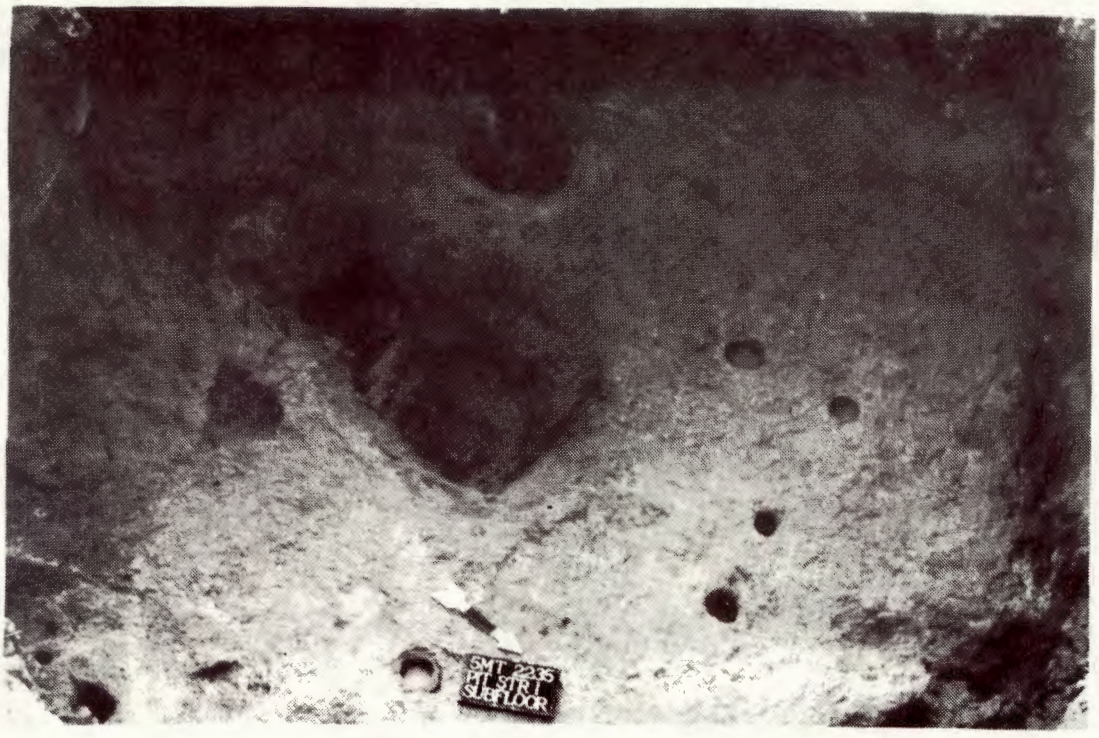


Figure 12.14 Floor 1 showing rodent disturbance, Marshview Hamlet (D.A.P. 003910).

Pit (Feature 24):

Dimensions:

Length:	9 cm
Width:	9 cm
Depth:	2 cm

The two small pits in the west half of the floor are remarkable for their similarity to one another in construction. They are 1.25 m apart, have slightly rounded bottoms, and lie on an approximately north-south axis. Their shallowness and slightly rounded profiles suggest that they served as pot rests.

Large cist (Feature 19):

Dimensions:

Length:	35 cm
Width:	34 cm
Depth:	6 cm

The larger feature in the southwest corner is likewise of undetermined function. It is a large, shallow pit that was not plaster lined, had no oxidation on its surface, and had no associated cultural material. The lack of evidence allows it only to be inferred as having been a large storage cist.

Adobe-lined cist (Feature 21):

Dimensions:

Length:	21 cm
Width:	14 cm
Depth:	5 cm

The third small cist in Floor 1 is unusual. Originally it was 23 by 14 by 6 cm and irregular in shape; at the base of this pit was a black-on-white bowl sherd with the painted side facing up. Adobe had been placed around the edges of the pit, effecting a more regular, annular depression, which

was 10 cm in diameter and 5 cm deep (as shown in Figure 12.15). The exact function of this feature is unknown.

Hearth (Feature 11):

Dimensions:

Original dimensions could not be determined because of remodeling (see Floor 2 discussion).

Ash pit (Feature 14):

Dimensions:

Length:	45 cm
Width:	38 cm
Depth:	35 cm

The hearth and ash pit were in the south center of the pithouse. While these features probably functioned as a unit, there were several basic construction differences between the two. The hearth was lined with adobe which was well oxidized, and the ash pit was unlined. Both features had been remodeled, probably at the same time that Floor 2 was laid down; the hearth had been deepened by at least 7 cm and the ash pit, which was originally 35 cm below floor level, was sealed with clean adobe at 20 cm below floor level. The hearth was round in plan and basined shaped in profile, and the ash pit was oval in plan view and bell shaped in profile. On the western and southern walls of the ash pit, digging stick marks associated with its original construction were clearly visible. The ash pit was filled with ash both above and below the adobe remodeling; the lower ashy fill contained four nonhuman bones and six sherds, one of which was McElmo Black-on-white. These are the only artifacts associated with Floor 1.

The archaeomagnetic date obtained from the sample taken from the oxidized plaster lining of the hearth agrees with the temporally diagnostic

Figure 12.15 Adobe-lined pit with sherd bottom (Feature 21), Marshview Hamlet (D.A.P. 003906).

Figure 12.16 Central hearth (Feature 11) showing slab molding (Feature 30) on north side and deflector stub (Feature 29), Marshview Hamlet (D.A.P. 003826).

McElmo Black-on-white sherd sealed in the ash pit. The archaeomagnetic date was A.D. 1140 ± 45 years (Appendix C), and McElmo Black-on-white pottery is dated between A.D. 1075 and A.D. 1275 (Breternitz et al. [87]). Radiocarbon sample and tree-ring samples were also obtained from materials associated with the hearth, but neither date proved to be helpful. The radiocarbon sample (UGA 2773) yielded a radiocarbon age of 1065 ± 100 years: A.D. 805. The dendrochronological sample only allowed a dating range of A.D. 909fp (fp, "far from the pith," yielding a poor initial date) to 988+vv (vv, "no way to know how far from the last ring," giving no good idea of the cutting date). The log from which the sample was taken was immediately on top of the hearth fill.

Deflection systems: The relationship between the remodeling of the air deflection systems and the construction of the two different floors remains somewhat confusing. A slab molding (Feature 30) was built into the northern edge of the hearth, but no slab was in place at abandonment (Figure 12.16). The stub of a deflector (Feature 29) was found in the more usual position between the ash pit and hearth. A sandstone slab that went with this stub was found slightly above Floor 2 and 0.5 m to the southwest. This southern deflector system was probably still functional at the time of abandonment and was was broken in the collapse of the roof. The other slab molding north of the hearth probably belonged to a deflection system that functioned in conjunction with the northern chamber. Ash was the only fill in this elongated feature.

Sipapu (Feature 20):

Dimensions:

Length:	9 cm
Width:	9 cm
Depth:	13 cm

The remaining feature associated with Floor 1 was the sipapu, which was 0.5 m to the north and slightly to the east of the center of the hearth.

Floor 2 Features.

Hearth (Feature 11):

Dimensions:

Length:	86 cm
Width:	84 cm
Depth:	22 cm

Ash pit (Feature 14):

Dimensions:

Length:	45 cm
Width:	38 cm
Depth:	35 cm

The hearth and ash pit were congruent with those of Floor 1 but had been remodeled. As previously discussed, the hearth had been deepened and the ash pit had been made shallower. One reason for these alterations may have been the abandonment of the northern chamber and the removal of the northern "deflector."

Pot rest (Feature 12):

Dimensions:

Length:	35 cm
Width:	30 cm
Depth:	3 cm

Just to the west of the ash pit was a pot rest feature that probably related to the cooking and food processing occurring around the hearth.

Pit (Feature 13):

Dimensions:

Length:	13 cm
Width:	11 cm
Depth:	6 cm

Pit (Feature 15):

Dimensions:

Length:	13 cm
Width:	13 cm
Depth:	12 cm

The remaining two features on Floor 2 are of indeterminate function; both are small pit features. There was no sipapu associated with Floor 2--the lack of such a usually integral feature could be disturbing, but there are several other instances in the Mesa Verde area in which a sipapu is lacking in Pueblo II/Pueblo III pitstructures (Brew [9:211]). Whether there are ethnographic analogies that might suggest a particular significance to this "lack" of a sipapu could not be ascertained.

Floor 2 Artifacts. A total of 57 artifacts or artifact clusters were mapped on or close to Floor 2 of Pithouse 1. Of these, 31 were related to a multiple burial consisting of the fragmentary and incomplete remains of five individuals and the grave goods associated with them. The burial and acccompanying artifacts will be discussed in a later section of this report.

Floor artifacts interpreted as associated with the occupation of the pithouse are mapped in Figure 12.10 and are listed in Table 12.2. The confusing overlap with the burial materials and the large amount of rodent disturbance made it difficult to separate de facto refuse associated with the floor from materials associated with the burials. The distinctive items believed to be associated with the floor include several highly thinned flaked lithic tools (PLs 5, 11, and 27), two bone awls (PLs 2 and 3), a number of mano fragments (PLs 17, 18, 22, and 29), and a small chunk of chalcopyrite (PL 10).

Table 12.2 Point-Located Artifacts, Floor 2, Pithouse 1, Marshview Hamlet*

PL #**	Item Description
1	Flaked lithic debitage
2	Nonhuman bone, large mammal (simple awl)
3	Nonhuman bone, Artiodactyl (simple awl)
4	Flaked lithic, thick uniface
5	Flaked lithic, spokeshave
7	Human bone, phalanx
8	Human bone, metatarsal fragment
10	Nonflaked lithic, chalcopyrite
11	Flaked lithic, denticulate
13	Flaked lithic, unused core
15	Ceramic, McElmo B/W bowl sherd (RC 8)
16	Flaked lithic debitage
17	Nonflaked lithic, two-hand mano
18	Nonflaked lithic, two-hand mano
19	Flaked lithic debitage
20	Nonflaked lithic, indeterminate
22	Nonflaked lithic, two-hand mano
23	Flaked lithic debitage
24	Flaked lithic debitage
25	Flaked lithic debitage (2)
26	Flaked lithic, used core
27	Flaked lithic, thin biface
28	Flaked lithic debitage (2)
29	Nonflaked lithic, one-hand mano
30	Flaked lithic, utilized flake
31	Flaked lithic, utilized flake

*See Figure 12.4 for artifacts associated with the burial in Pithouse 1.
**See Figure 12.10 for artifact locations.

( ) - Number of artifacts, if greater than one.
B/W - Black-on-white
RC - Reconstructable ceramic item

Post-Abandonment Processes

Pithouse 1 Statigraphy

Both cultural and noncultural post-abandonment processes were responsible for filling the pithouse, and because of the short-term nature of the secondary occupation(s) it was difficult to define more than a general sequence of fill above Floor 2 (Table 12.3, Figure 12.17). This general sequence consists of a group of secondary burials on or just above the floor, roof fall, eolian and colluvial fill, a temporary campsite with a hearth, and the final natural fill of the depression.

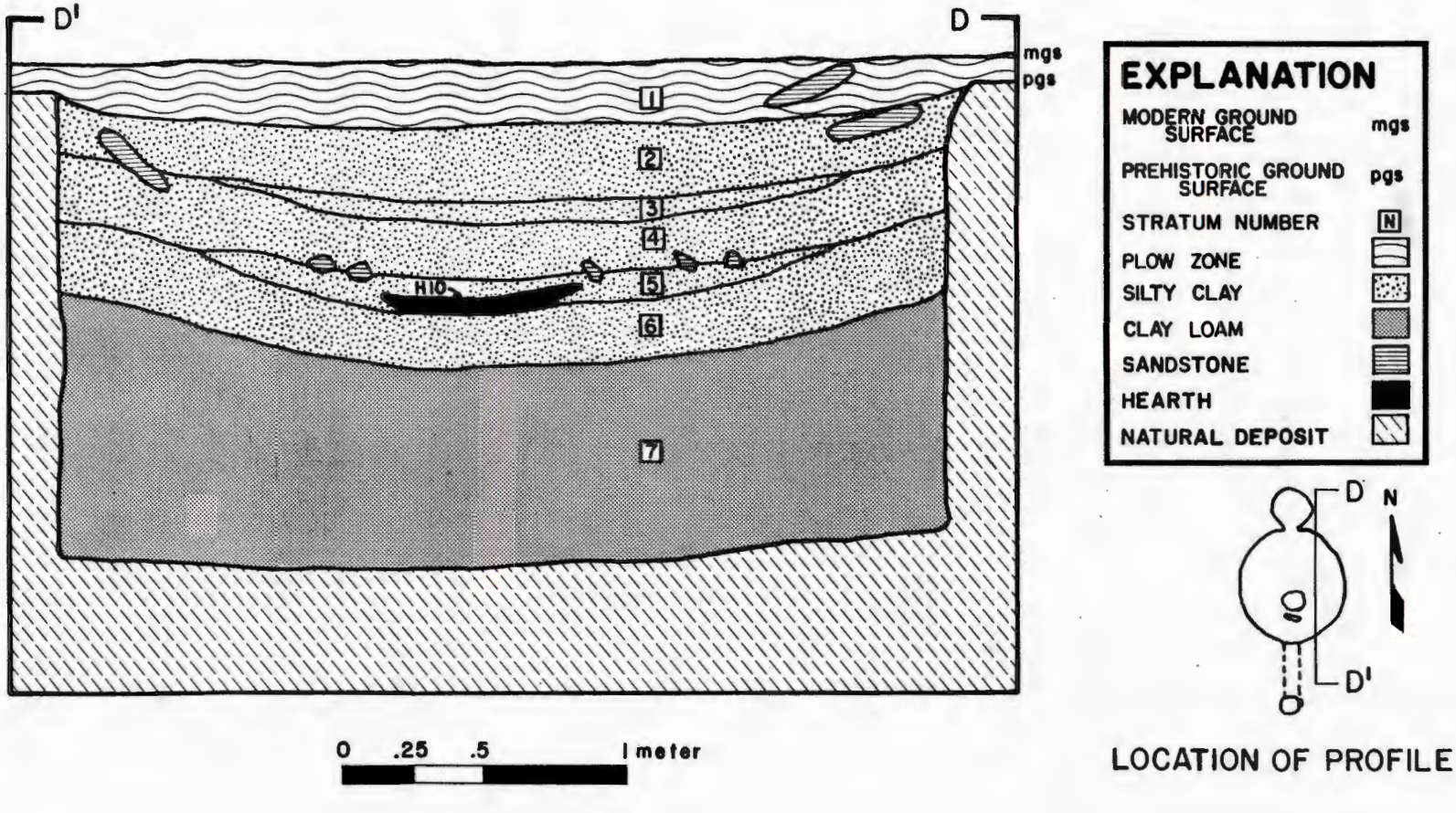
Table 12.3 Strata in Fill of Pithouse 1, Marshview Hamlet

Stratum	Maximum Thickness	Description
1	25 cm	Plow zone, brown to dark brown silt loam
2	25 cm	Strong brown to brown silty clay
3	4 cm	Dark gray-brown to black silty clay, humic layer--no good cultural associations
4	22 cm	Brown to dark brown silty clay
5	11 cm	Dark gray-brown to black silty clay, associated with secondary cultural occupation
6	20 cm	Brown silty clay--moderately calcareous
7	54 cm	Strong brown to brown clay--strongly calcareous
Floors 1 & 2	5 cm (combined)	Brown silty clay, lower boundary of floor is Cca Horizon

Soon after the final abandonment of the pithouse, several partial skeletons were placed in the pithouse. In some areas, the burials were in contact with Floor 2 and, in other areas, were up to 5 cm above the actual floor. The incomplete nature of the burials and associated grave goods, combined with the variable vertical placement of the material, support the definition of the burials as secondary.

The next major event identified in the filling of the pithouse was the collapse of the roof. Several large irregular blocks of marine

Figure 12.17 Stratigraphic profile of Pithouse 1, Marshview Hamlet.



sandstone were found close to the edges and dipping towards the center of the pithouse. The position of these blocks, the relative paucity of sandstone within the fill, and the lack of pilasters or postholes all indicate that the structure was probably roofed by poles being laid directly across the pit with the ends resting on the sandstone blocks. Although a number of gray stains representing the remains of beams were detected during excavation, no particular orientation was observed; therefore no precise understanding was gained of how the beams were placed.

At least two natural strata (6 and 7) were above roof fall and indicate a number of episodes of eolian and colluvial fill. A thin cultural stratum (Stratum 5) with a small informal hearth (Feature 10) midway between the floor and the modern ground surface suggested that the pitstructure depression had been used as a temporary campsite. As a result of its informal construction, the hearth was very poorly defined. Indicated by a localized area of fire-reddened clay, the hearth produced an archaeomagnetic sample that dated to A.D. 1340 $\pm$ 65 years or A.D. 1225 $\pm$ 65 years (Appendix C). A tree-ring sample, possibly associated with the hearth, was dated at A.D. 912fp to A.D. 1102vv, which means the tree was growing between these dates but that no initial or terminal dates could be ascertained. A radiocarbon sample (UGA 2772) taken from materials in association with the hearth yielded a data of 1545 $\pm$ 170 years B.P.: A.D. 405. At present, all other evidence contradicts the results of this sample.

Burial

The burial at Marshview Hamlet consisted of fragments of at least

five individuals that had been interred in the southwestern quadrant of the abandoned pithouse (Figure 12.18). Some of the remains were on Floor 2 of the structure and some were in a layer of fill immediately above. At the time of interment, the pithouse had been abandoned but the roof had not totally collapsed. No formal grave preparation was detected during excavation, but a number of ceramic vessels had been included with the burial.

Bones from at least five individuals (four adults and one juvenile) are represented. One of the adult crania is shown in Figure 12.19. As can be seen in the description of human remains in Appendix D, all individuals were poorly represented. The small number of bones supports the inference that the burial was secondary and the grave was not a prepared one. As Gifford [10:82-84] has noted, there are a number of factors that can influence the movement of bones that are not interred. In the Sagehen Flats Locality, probably the most significant noncultural factor in the movement of bone is rodent disturbance. The burial materials at Marshview Hamlet were located on or near the floor in the southwestern quadrant of the pithouse and this area was also the nexus of several rodent burrows. Figure 12.20 is a photograph showing rodent disturbance of the burial. A number of bones from the burial were found as far as 3 m away. However, the minimal representation of the innominates and the total lack of representation of some elements, such as the ribs and the sacra, suggest that much of the bone was missing at the time of its secondary placement. Due to the high degree of disturbance, there was no way to determine if the bone was positioned, but there is no evidence to suggest intentional positioning.

Another argument for defining the burial as secondary is the fragmentary nature of artifacts associated with the burial, as indicated in

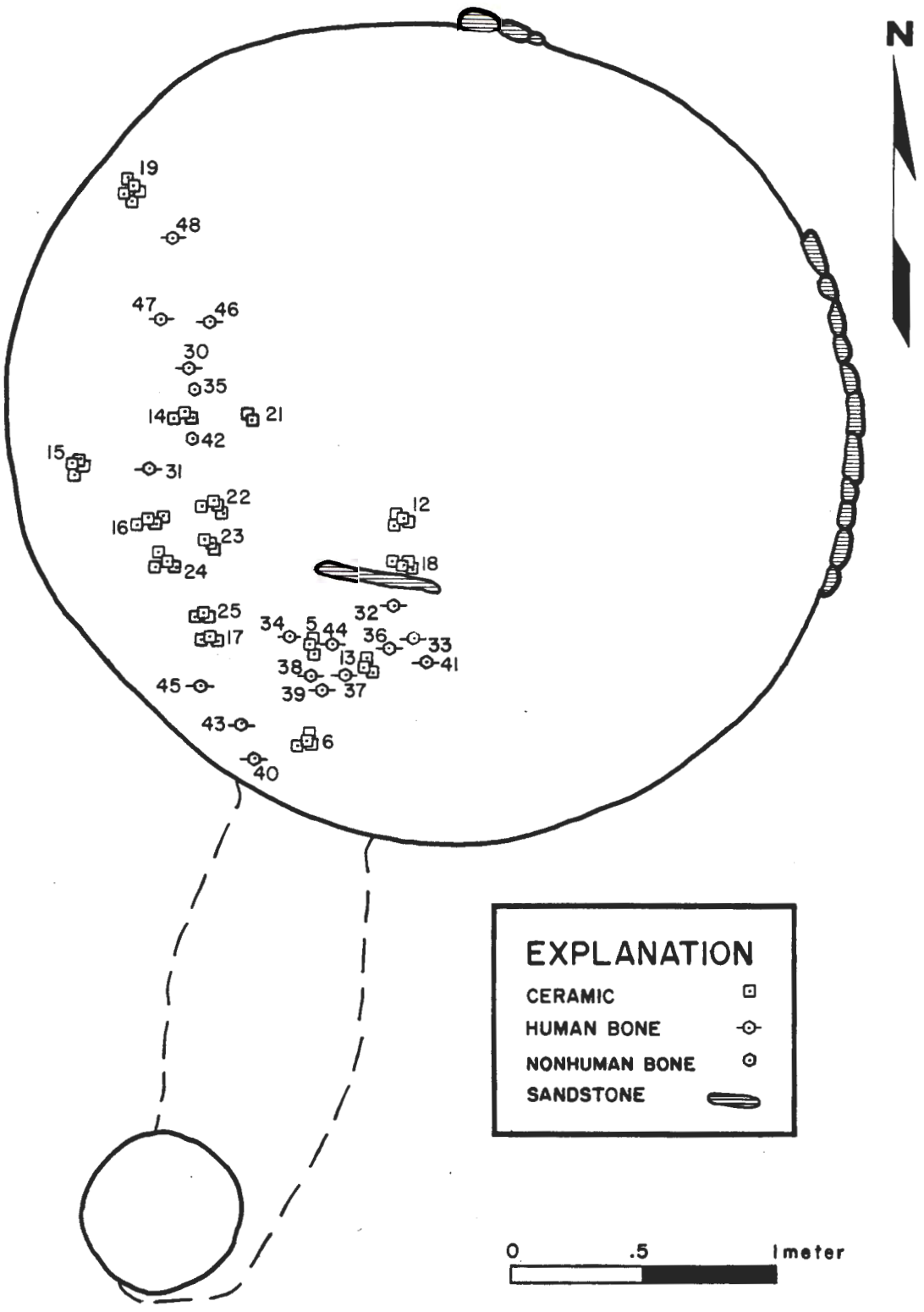


Figure 12.18 Plan map of multiple burial and associations, Marshview Hamlet.

Figure 12.19 Cranium 2, Marshview Hamlet (D.A.P.042508).

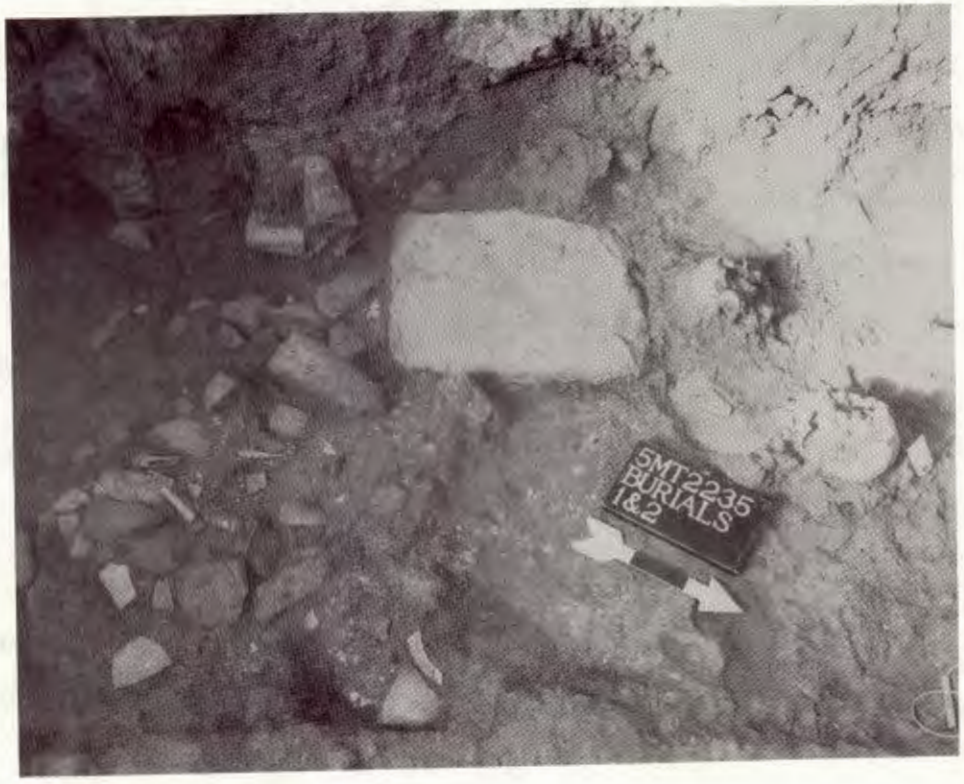


Figure 12.20 Burial in Pithouse 1, showing rodent disturbance, Marshview Hamlet (D.A.P. 004125).

Table 12.4. At least 11 McElmo or Mancos phase vessels were directly associated with the burial; of these, only 5 vessels (Vessels 8, 9, 11, 13, and 14) were associated with the burial only. Sherds of three of the vessels (1, 3 and 12) were also found widely scattered across the surface of the site in the sheet trash. Sherds from the three other burial-associated vessels (2, 10, and 19) were located within 15 cm of the modern ground surface in the pithouse fill. Also associated with the burial were a canine effigy head (RC 24) which had been broken at the neck and ground smooth, and two bone tubes (PL 35 and PL 42). Rodent disturbance cannot account for most of the dispersal of the sherds.

A reasonable explanation for the condition of the burial is that the individuals were primarily interred elsewhere, perhaps in some nearby structure, and then transferred to the pithouse. This is not an uncommon phenomenon in Southwestern Pueblo burials and a very similar situation was documented at Site 875 at Mesa Verde National Park (Lister [11:15-19]). In those burials, the bones were disarticulated, there were no complete or even partially intact skeletons, and they were associated with fragmentary and complete Mancos and McElmo vessels. From stratigraphic context, and from the lack of and disorientation of materials, Lister inferred that the burials were secondary.

The burials at Big Juniper House (Swannack [12:165-177]) on Mesa Verde are also of the same temporal phase as those at Marshview Hamlet. They were primary burials and the skeletons were articulated, but in numerous instances the remains were fragmentary due to rodent disturbance. Of the 13 burials with associated ceramic materials, only 4 contained complete or nearly complete vessels. Therefore, when a variety of cultural and noncultural post-abandonment processes are considered, the

Table 12.4 Human Skeletal Materials and Point-Located Artifacts Associated with Multiple Burials in Pithouse 1, Marshview Hamlet (Page 1 of 2)

PL #	Item Description
5	Ceramic, Dolores Corrugated jar sherds (14) (RC 2)
	Ceramic, McElmo B/W bowl sherds (13) (RC 3)
	Ceramic, LP White bowl sherd
	Ceramic, McElmo B/W bowl sherd
6	Ceramic, McElmo B/W bowl sherd (RC 3)
	Ceramic, Mancos B/W jar sherd (RC 18)
	Ceramic, McElmo B/W jar sherds (2) (RC 19)
	Ceramic, Corrugated Body sherd
12	Ceramic, LP White jar sherds (4)
13	Ceramic, Dolores Corrugated jar sherds (10) (RC 2)
	Ceramic, McElmo B/W bowl sherds (4) (RC 3)
	Ceramic, McElmo B/W bowl sherd (RC 9)
	Ceramic, McElmo B/W bowl sherds (23) (RC 19)
	Ceramic, LP White bowl sherd
	Ceramic, Corrugated Body bowl sherd
	Ceramic, Corrugated Body jar sherd
14	Ceramic, Mancos B/W bowl sherds (3) (RC 12)
	Ceramic, McElmo B/W bowl sherds (21) (RC 8)
15	Ceramic, LP White bowl sherd
	Ceramic, McElmo B/W bowl sherds (6) (RC 9)
16	Ceramic, Dolores Corrugated jar sherd (RC 2)
	Ceramic, McElmo B/W bowl sherds (5) (RC 8)
	Ceramic, McElmo B/W bowl sherds (10) (RC 9)
	Ceramic, Mancos B/W jar sherds (20) (RC 11)
	Ceramic, McElmo B/W dipper sherds (7) (RC 13)
	Ceramic, LP White jar sherds (3)
17	Ceramic, Corrugated Body jar sherd
	Ceramic, LP White jar sherd
18	Ceramic, Dolores Corrugated jar sherd (RC 2)
	Ceramic, McElmo B/W bowl sherd (RC 9)
	Ceramic, LP White jar sherds (2)
19	Ceramic, McElmo B/W effigy sherds (2) (RC 14)
21	Ceramic, McElmo B/W bowl sherd (RC 8)
	Ceramic, McElmo B/W bowl sherd (RC 9)
22	Ceramic, Mancos B/W jar sherds (2) (RC 11)
	Ceramic, LP White bowl sherds (2)
23	Ceramic, McElmo B/W bowl sherds (5) (RC 8)
	Ceramic, Corrugated Body jar sherd
24	Ceramic, Corrugated Body jar sherds (2)
	Ceramic, LP White bowl sherds (4)
	Ceramic, LP White jar sherd
25	Ceramic, Dolores Corrugated jar sherd (RC 2)
	Ceramic, McElmo B/W bowl sherds (4) (RC 8)
	Ceramic, LP White bowl sherds (2)
30	Human bone, orbit fragments and right maxilla (Cranium 1)
31	Human bone, left zygomatic: one auditory meatus and malleus (Cranium 2)
32	Human bone, dentition; adult incisor (Cranium 2)

Table 12.4 Human Skeletal Materials and Point-Located Artifacts Associated with Multiple Burials in Pithouse 1, Marshview Hamlet (Page 2 of 2)

PL #	Item Description
33	Human bone, mandible; adult fragment (Cranium 2)
34	Human bone, phalanges; distal hand
35	Nonhuman bone, eagle species, radius, tube
36	Human bone, calvaria; parietal fragment, adult (Cranium 2)
38	Human bone, mandible, juvenile fragments (2)
39	Human bone, calvaria; right petrous temporal fragment, charred, adult
40	Human bone, scapula; right juvenile
41	Human bone, parietal fragments (2)
42	Nonhuman bone, turkey; tibrotarus, tube
43	Human bone, clavicle fragment
44	Human bone, clavicle fragment
45	Human bone, facial skeleton; right orbit; adult
46	Human bone, radius; proximal fragment
47	Human bone, scapula; adult glenoid fragment
48	Human bone, vertebrae; transverse process atlas

*See Figure 12.18 for artifact locations.

( ) - Number of items, if greater than 1
RC - Reconstructable vessel
B/W - Black-on-white
LP - Late Pueblo

fragmentary nature of the burials at Marshview Hamlet is not without probable explanation.

Archaeomagnetic samples (Appendix C) taken from hearths located above and below the burials indicate a range of A.D. 1225 ± 65 years to A.D. 1140 ± 45 years. Associated with the burial were sherds of Mancos Black-on-white (A.D. 900-1150), and sherds of McElmo Black-on-white (A.D. 1150-1250). The ceramic materials associated with the burial date to approximately A.D. 1150, which is within the archaeomagnetic date range from the two hearths.

Probable Surface Rooms and Associated Features

Three meters northeast of the pithouse was an area of stone rubble thought to be a group of small surface rooms associated with the pithouse. The upper layer of irregular, massive sandstone blocks was heavily disturbed by recent historic activity. Recent sagebrush burns within the rubble area and the disorientation of the blocks indicate that at least the upper levels of the stone rubble were affected by the land-clearing activities of the 1940s. To avoid damage to their farming implements, the local farmers commonly gathered the larger stones from prehistoric structures into piles before plowing.

No complete walls were positively identified during excavation; however, the concentration of stone and the presence of several disjunct portions of walls indicate that this area contained surface rooms. The three fragmentary portions of walls and the concentrations of wall fall suggested that there was one substantial masonry-and-jacal room of approximately 4 m^2 and two adjoining smaller, less substantially built

rooms. The small size of the rooms and the lack of internal features are evidence for an interpretation of the rooms as special activity areas and storage areas.

Hill [13] has stated that within pueblos, storage rooms lack internal features and are small in comparison to habitation rooms. While Marshview Hamlet was probably the dwelling for one nuclear or extended family, Hill's distinctions are useful; when combined with the inferences of pithouse domestic functions, they argue for a tentative interpretation of the surface rooms as storage and special activity areas. A better preserved set of contemporaneous surface rooms was excavated at the Dominguez Site (Reed et al. [14]) and can provide a suggestion of what was possibly present at Marshview Hamlet. The walls there consisted of several lower courses of masonry with mud mortar and a superstructure of lighter material such as jacal. It should be noted that the Dominguez Site had a pitstructure which was very small, as is the pithouse at Marshview Hamlet, but which displayed more of the features of a kiva than does the pithouse at Marshview Hamlet.

The placement of these probable surface rooms within the context of the whole site is difficult. That the area was used for food processing is inferred from a comparison of flaked and nonflaked lithic assemblages from the areas near the rooms with those of other areas.

Hearth (Feature 6).

Dimensions:

Length:	55 cm
Width:	50 cm
Depth:	12 cm

Hearth (Feature 7)

Dimensions:

Length:	55 cm
Width:	50 cm
Depth:	10 cm

In spite of the intense disturbance of the area, remains of two hearths were detected just south of the rooms. One hearth was possibly within the confines of a room; due to poor preservation of both the room and the hearth, nothing more can be stated. A hearth of similar dimensions was found southwest of the surface rooms. Both hearths were simple excavated pits with no coping or lining.

Extramural Features

Six firepits that were not directly associated with the pithouse or surface rooms were discovered during the excavation of Marshview Hamlet. All of the features were in the western half of the site--two of them at the western edge of the excavated area and the other four in a roughly north-to-south line just west of the pithouse. Because the entire site was not stripped of the plow zone layer, it cannot be determined whether these groupings of features are meaningful.

Hearth (Feature 5).

Dimensions:

Length:	50 cm
Width:	50 cm
Length:	17 cm

A radiocarbon sample from Feature 5 dated to 1145 $\pm$ 65 years B.P.: A.D. 805 $\pm$ 65 years (UGA 2771). Several sherds associated with the hearth date to at least post A.D. 900, so the radiocarbon date should be used cautiously.

Hearth (Feature 8).

Dimensions:

Length:	40 cm
Width:	35 cm
Depth:	5 cm

Archaeomagnetic samples from Feature 8 yielded dates of A.D. 1125 or 1390 ± 55 years (Appendix C). There is not sufficient other data associated with the hearth to corroborate either date.

Fireplace (Feature 9).

Dimensions:

Length:	60 cm
Width:	60 cm
Depth:	15 cm

Hearth (Feature 17).

Dimensions:

Length:	85 cm
Width:	65 cm
Depth:	15 cm

Hearth (Feature 18).

Dimensions:

Length:	75 cm
Width:	75 cm
Depth:	25 cm

Hearth (Feature 4).

Dimensions:

Length:	75 cm
Width:	75 cm
Depth:	20 cm

These four features, just to the west of the pithouse, are thought to represent extramural food processing activity areas used during the main occupation of the site. It is impossible to confidently assign each of these features to a specific occupation without having a good date from

each. The assignment of the features to the main occupation is based, therefore, upon their proximity to the center of the site. However, this assignment may not be valid for the rock-lined fireplace (Feature 9) just 1 m northwest of the pithouse; if the fireplace was contemporaneous with the main occupation, its proximity might have posed a problem as a fire hazard to the roof.

MATERIAL CULTURE

The material culture represented at Marshview Hamlet can be divided into the following categories: ceramic materials, flaked lithic implements and debitage, nonflaked implements, and worked bone. Due to the large quantity of data recovered, very few items or proveniences will be considered specifically. Instead, broad comparisons, such as one group of implements to another, or one area or level of fill to another, will be made. Lithics and ceramics data are tabulated in Appendixes A and B.

Ceramics

A total of 3233 sherds was recovered by the excavation activities at Marshview Hamlet. Analysis procedures also reconstructed 21 partial or whole vessels, the majority of which were associated with the human skeletal remains located in the pitstructure. The majority of the sherds were assigned to the Mesa Verde Culture Category. Gray, white, and red wares of the Mesa Verde ceramic tradition are represented and body sherds of the three wares account for the bulk of the ceramic remains. Cibola white and red ware sherds were recorded in the analysis, as were gray, white, and red wares of the Kayenta Culture Category.

The reconstructable vessels (RCs) which have been partially reconstructed include: four bowls (RCs 3, 8, 9, and 10), one dipper (RC 13), two large pitchers (RCs 1 and 11), two ollas (RCs 2 and 19), and one bird effigy (RC 14). Reconstructable vessels 6, 7, 18, 20, and 21 are composed of some sherds associated with the burials and some sherds from the upper pithouse fill or from the upper fill levels of the area surrounding the pithouse. Vessels 16 and 17 have no apparent association

with the burial. Figures 12.21 through 12.39 illustrate those vessels which have been reconstructed.

The overwhelming majority of the Mesa Verde ceramics represent late Pueblo II or early Pueblo III occupation of the site. Temporally diagnostic types of the collection include Mancos Corrugated (A.D. 900-1050), Dolores Corrugated (A.D. 1050-1200), Mancos Black-on-white (A.D. 900-1150), and McElmo Black-on-white (A.D. 1150-1250). Note that all date ranges are adjusted from those given by Breternitz et al. [8] to reflect D.A.P. ceramic dating. Individual sherds of Moccasin Gray (A.D. 775-900) and Cortez Black-on-white (A.D. 900-1000) were also recovered from the site. However, those sherds were recovered either from surface collections or from the upper fills of the site. Their scarcity and position of occurrence suggest that they are not directly associated with the primary occupation of the site (A.D. 1100-1150).

Ceramics associated with the Kayenta and Cibola regions of the Anasazi make up a small percentage of the collection. Only seven sherds could be assigned to a diagnostic type (Chaco/McElmo Black-on-white). The type has been described by Vivian and Mathews [15] and its presence in Marshview Hamlet indicates that Cibola ceramics were being transported some distance from their manufacturing locale. Red ware body sherds thought to represent a Puerco Black-on-red bowl were recorded, but the lack of design elements made positive identification impossible. Kayenta white, gray, and red ware body sherds were also recovered from the site.

Flaked Lithics

The 538 flaked lithic implements recovered at Marshview Hamlet

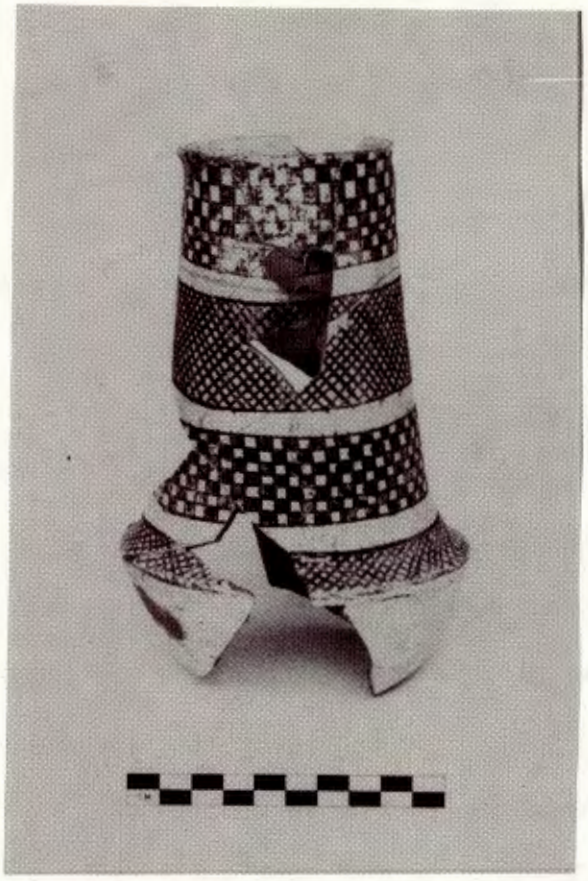


Figure 12.21 Mancos Black-on-white pitcher (RC 1), partially associated with burial in Pithouse 1, Marshview Hamlet (D.A.P. 004223).

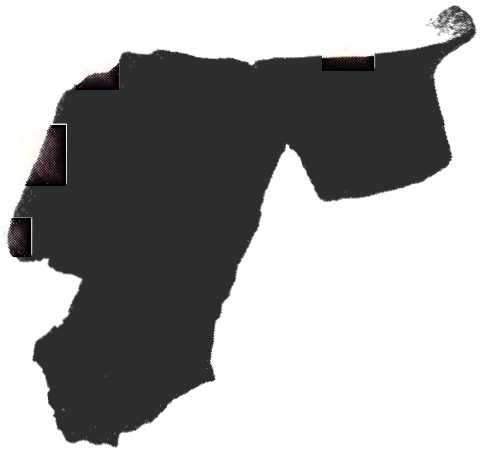


Figure 12.22 Dolores Corrugated jar (RC 2), partially associated with burial in Pithouse 1, Marshview Hamlet (D.A.P. 004528).

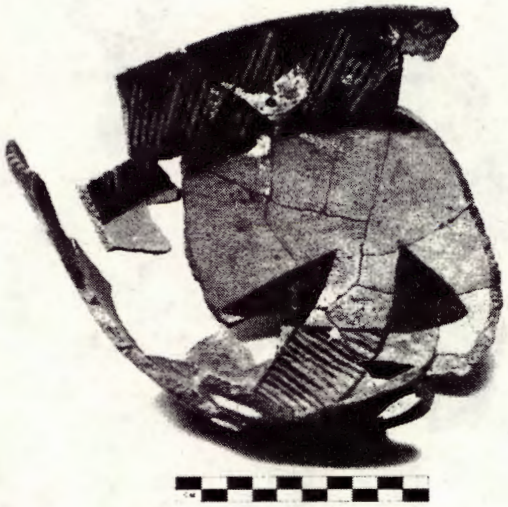


Figure 12.23 McElmo Black-on-white bowl (RC 3), partially associated with burial in Pithouse 1, Marshview Hamlet (D.A.P. 004513).

Figure 12.24 McElmo Black-on-white bowl (RC 6), partially associated with burial in Pithouse 1, Marshview Hamlet (D.A.P. 004531).

Figure 12.25 McElmo Black-on-white bowl with corrugated exterior (RC 7), partially associated with burial in Pithouse 1, Marshview Hamlet (D.A.P. 004514).

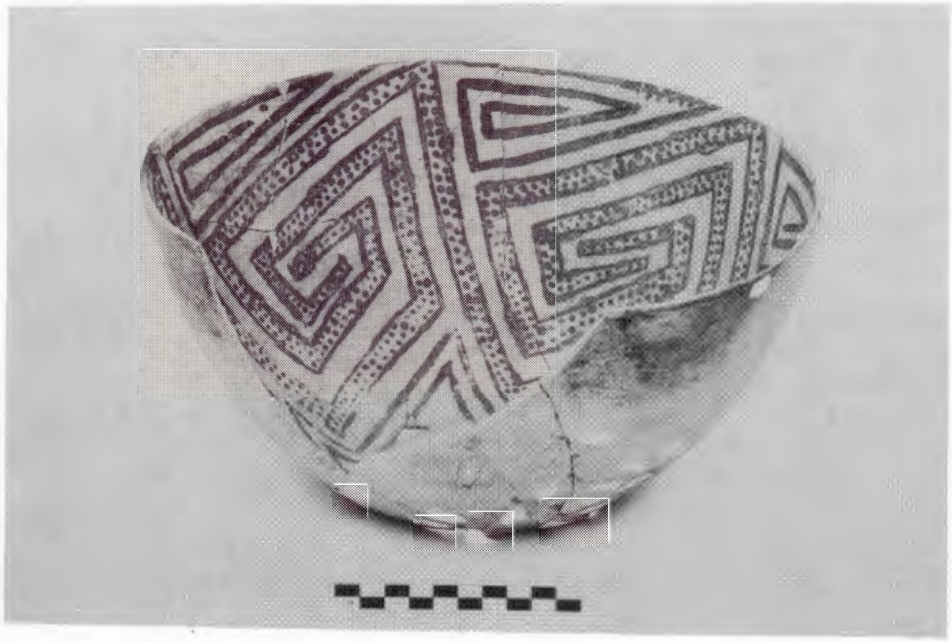


Figure 12.26 McElmo Black-on-white bowl (RC 8), totally associated with burial in Pithouse 1, Marshview Hamlet (D.A.P. 004510).

Figure 12.27 McElmo Black-on-white bowl (RC 9), totally associated with burial in Pithouse 1, Marshview Hamlet (D.A.P. 004511)

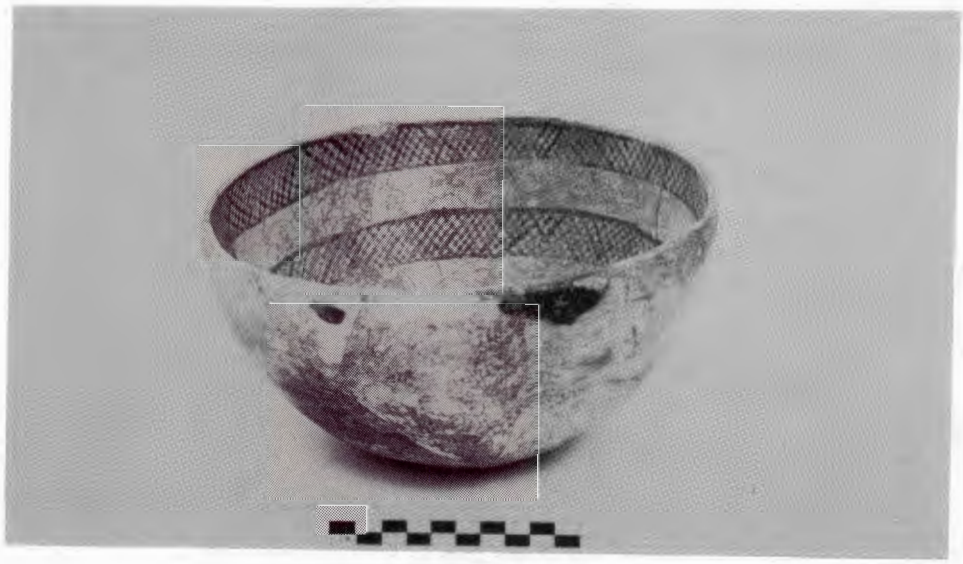


Figure 12.28 McElmo Black-on-white bowl (RC 10), partially associated with burial in Pithouse 1, Marshview Hamlet (D.A.P. 004512).

Figure 12.29 Mancos Black-on-white pitcher (RC 11), totally associated with burial in Pithouse 1, Marshview Hamlet (D.A.P. 004517).

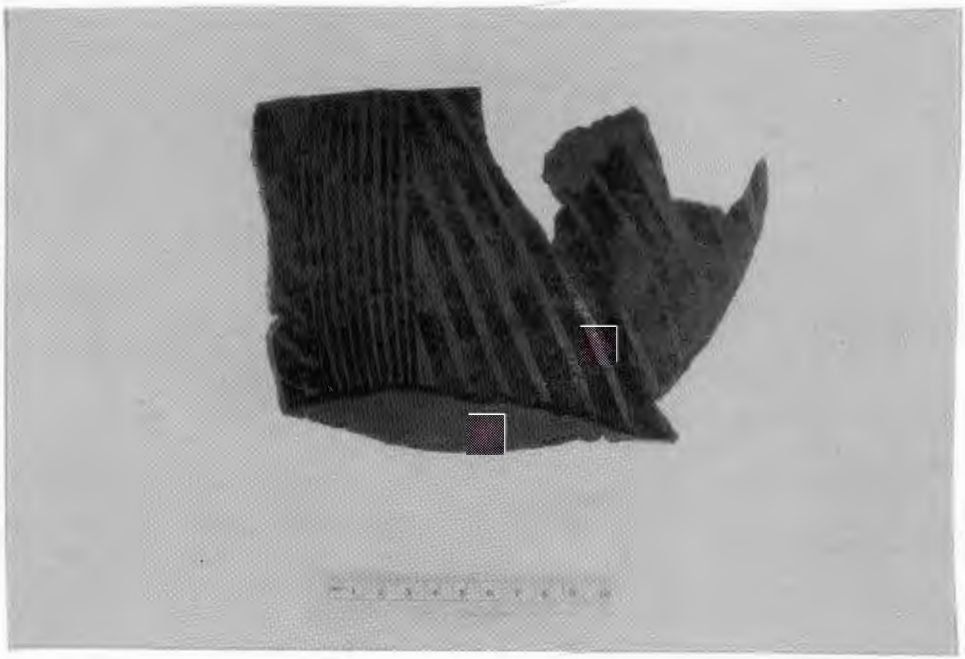


Figure 12.30 Mancos Black-on-white jar (RC 12), partially associated with burial in Pithouse 1, Marshview Hamlet (D.A.P. 004529).

Figure 12.31 McElmo Black-on-white dipper (RC 13), totally associated with burial in Pithouse 1, Marshview Hamlet (D.A.P. 004522).

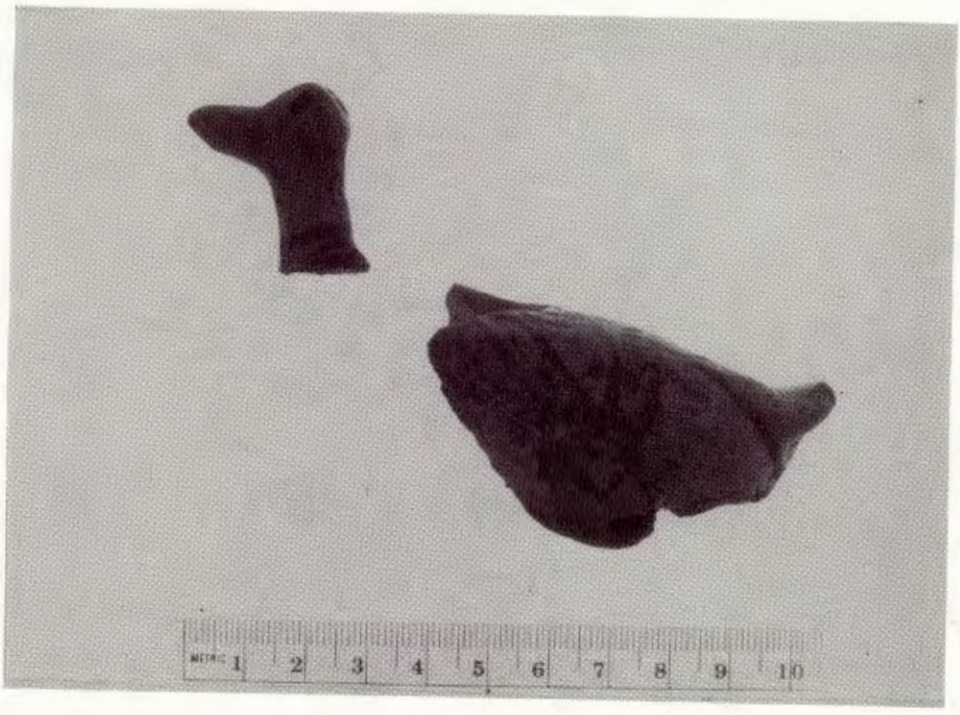


Figure 12.32 McElmo Black-on-white duck effigy (RC 14), totally associated with burial in Pithouse 1, Marshview Hamlet (D.A.P. 004530).

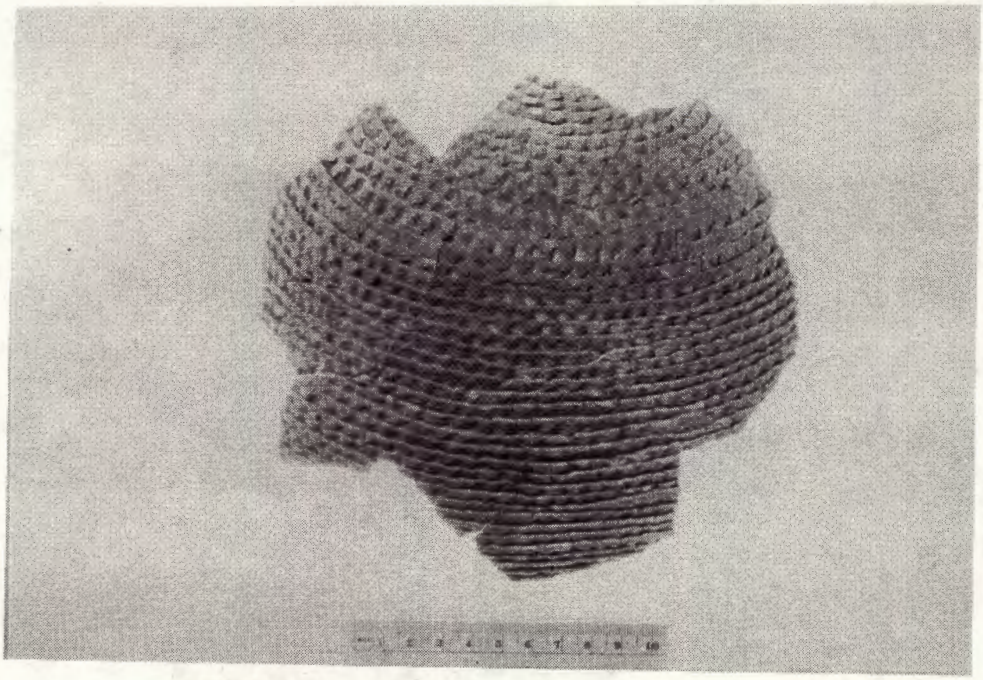


Figure 12.33 Corrugated jar (RC 16), associated with surface structure, Marshview Hamlet (D.A.P. 004523).

Figure12.34 Mancos Black-on-white jar (RC 18), partially associated with burial in Pithouse 1, Marshview Hamlet (D.A.P. 004524).

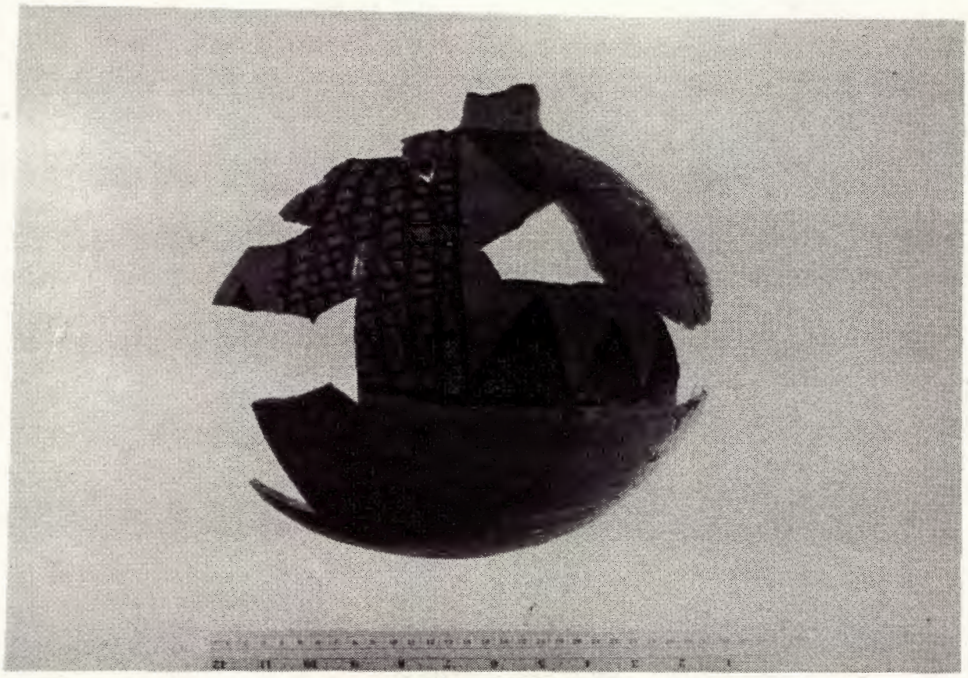


Figure 12.35 McElmo Black-on-white jar (RC 19), partially associated with burial in Pithouse 1, Marshview Hamlet (D.A.P. 004527).

Figure 12.36 McElmo Black-on-white bowl (RC 20), partially associated with burial in Pithouse 1, Marshview Hamlet (D.A.P. 004532).

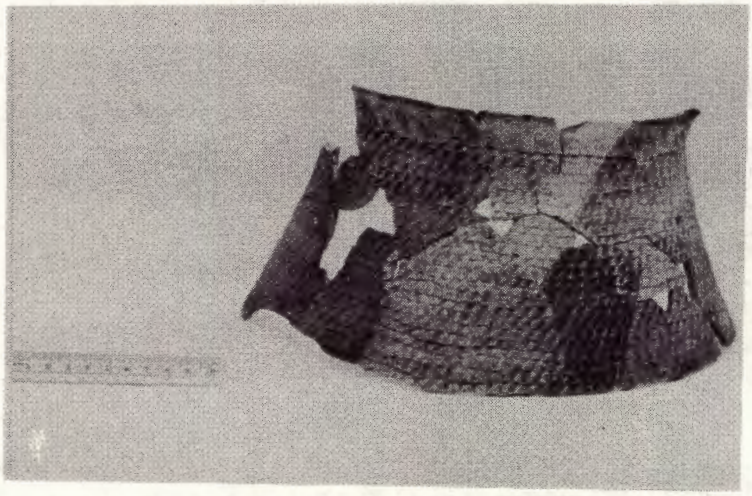


Figure 12.37 Dolores Corrugated jar (RC 21), partially associated with burial in Pithouse 1, Marshview Hamlet (D.A.P. 004504).

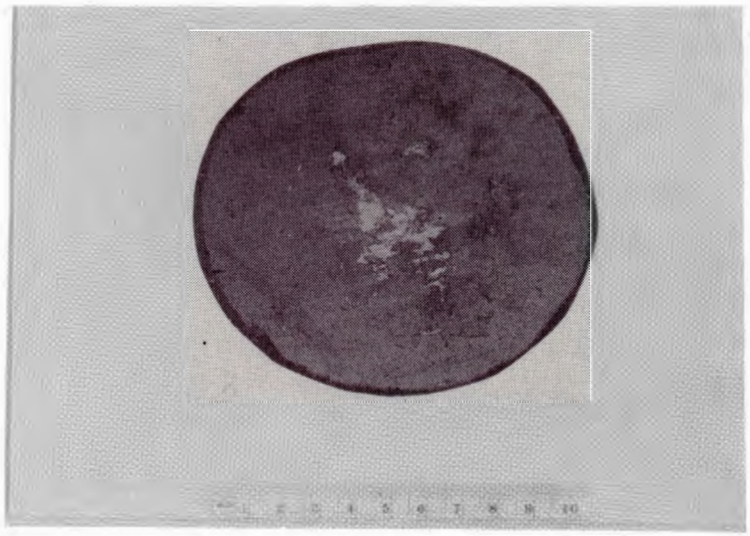


Figure 12.38 Late Pueblo White sherd disk (RC 23) from floor of Pithouse 1, Marshview Hamlet (D.A.P.004525).

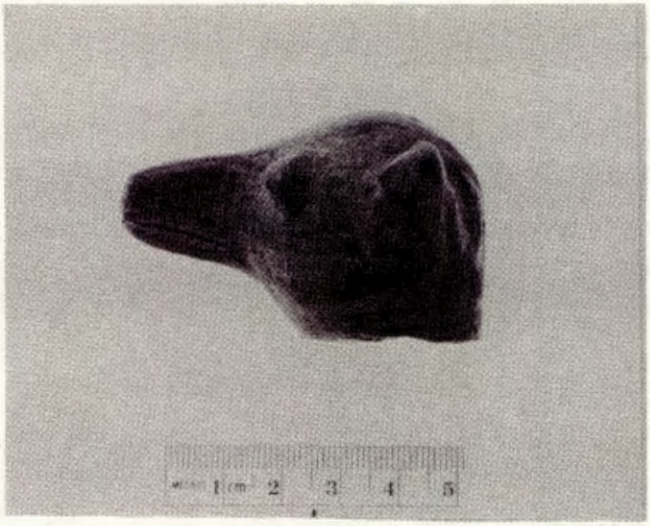


Figure 12.39 McElmo Black-on-white canine effigy (RC 24), totally associated with burial in Pithouse 1, Marshview Hamlet (D.A.P. 004526).

represent a relatively high number of implements for a single-family residence. Site 5MT2194 and Site 5MT4545 are earlier single-family habitation sites and had, respectively, 94 flaked lithic implements and 294 flaked lithic implements. The much higher frequency of tools at Marshview Hamlet is tentatively interpreted as a result of multiple uses of the site as a hunting camp, in addition to the habitation during the Sundial Phase.

Of the total number of implements recovered from Marshview Hamlet, the two largest categories were utilized flakes, which accounted for 51.7 percent of the total, and cores, which accounted for 13.6 percent. The remainder of the implements were fairly equally divided among the following categories: choppers, scrapers, thick scrapers, thin scrapers, bifaces, and projectile points.

The majority of the tools (385, or 71.6 percent) were of very fine material such as fine-grained orthoquartzite. The second most utilized material class (122 implements, or 22.7 percent) was of nongranular nature, such as chalcedony and good grade chert. Only 25 implements were of finely granular material such as shale, and only 6 were coarse grained.

An inexplicably high proportion of debitage (73.2 percent) was finely granular; only 4.6 percent of the implements were in a comparable material class. This high ratio of finely granular debitage to implements of like material holds for all units of the site and cannot be explained by examination of specific proveniences or tool types. Apparently some use was being made of finely granular materials which are not represented in the tool assemblage.

For flaked lithics, there is little correlation between material type exhibited in the debitage and that in the implements; however, the material types of the surface collected flaked lithics correlated more closely with the flaked lithic material types for the whole site. Utilized flakes account for 50.4 percent of the total implements in the surface collection and 51.7 percent in the total collection. All other tool categories are within 6 percent of agreement and similar agreements are to be seen in thinning stage and grain size variables between the total site collection and surface collection.

In the flaked lithic assemblages of the pithouse floor and fill a number of meaningful differences can be seen. Although many items on the pithouse floor have not been included due to their possible association with the later burial materials and due to rodent disturbance, a wide range of tool types can be seen in the floor assemblage, including an increased proportion of more specialized forms. Utilized flakes remained the most abundant category in spite of the number of well-shaped forms. The pithouse fill below the secondary occupation hearth (Feature 10) and above the floor, excluding the burial material, had very few associated implements. The seven utilized flakes and three cores were likely deposited from surface activity areas proximal to the pithouse soon after the collapse of the roof. There was relatively little debitage in this lower level as compared with the 343 pieces of debitage in the fill associated with the hearth and camp. In this upper level, 42 implements were recovered; they ranged from utilized flakes to specialized forms.

A wide range of morphological-use was displayed in the tools recovered from the surface room area. This supports the interpretation of the surface rooms as an area of special activities.

For the well-shaped forms such as projectile points, there is as yet no comprehensive typology constructed for the Southwest. Of the 16 projectile points recovered from the site, only 6 are complete enough for further analysis (Figure 12.40). Two of the arrow points are corner-notched with expanding bases and are very similar to Hayes and Lancaster's Style B points [16:143-144]. Three projectile points have straight stems, while the sixth point is basically notched with rounded shoulders. Due to their fragmentary nature, the remaining 10 items classified as projectile points will not be discussed. The proveniences of the projectile points show no patterns in their distribution or in the materials they were made of, and therefore are no aid in distinguishing the variable occupations at the site.

With the lithic data, certain activity area components across the site can be identified, but little temporal separation can be distinguished. The quantitative differences in material type between debitage and implements indicate production of tools on the site, but there is little or no residual evidence of the tools themselves. The majority of tools in all activity areas were expedient, or low production-input, items; only certain areas such as the pithouse floor, the hunting camp in the pithouse fill, the area of the surface rooms, and the southern trash area show any range in curated tool types. The overlap of occupations, the expedient nature of the assemblage, and the historic and erosional disturbance to the site have left only a mixed assemblage of flaked lithic materials as the evidence of presumed multiple activities.

Nonflaked Lithics

A total of 347 nonflaked lithic tools were recovered at Marshview

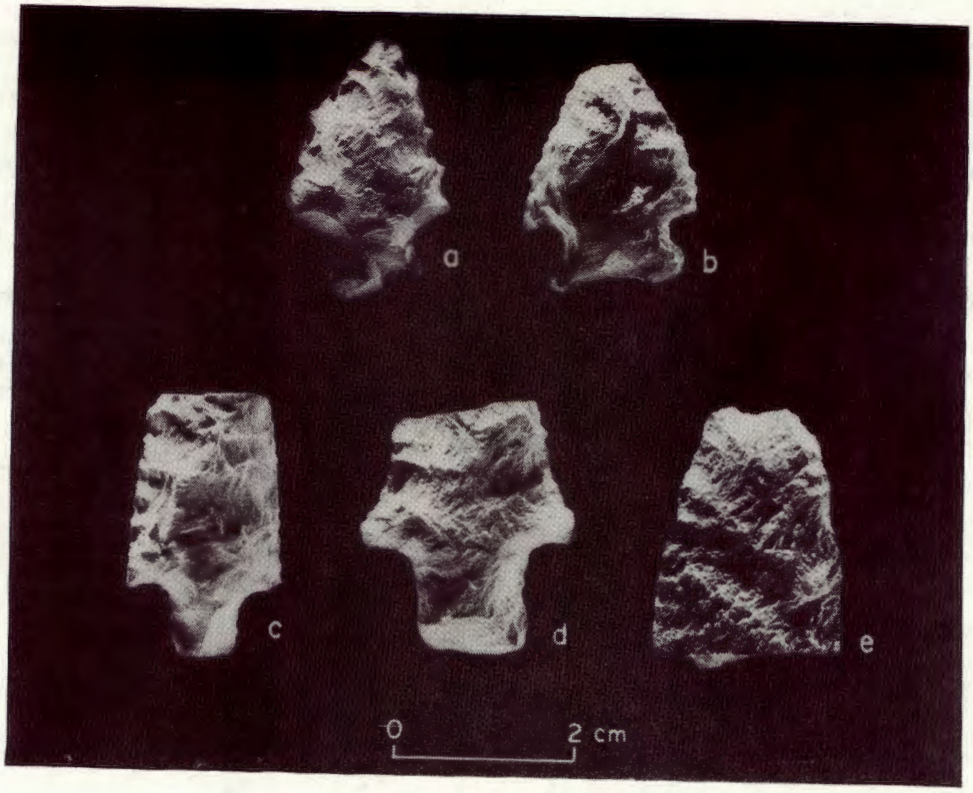


Figure 12.40 Complete projectile points recovered from Marshview Hamlet: (a) 2 by 2 m grid square 20S, 8E, Level 1; (b) Pithouse 1, Stratum 3; (c) sheet refuse south of Pithouse 1; (d) 2 by 2 m grid square 12S, 16E, Level 2; (e) Pithouse 1, fill (D.A.P. 121101).

Hamlet. Of this total, 260 were sandstone, 37 were orthoquartzite, and 30 were igneous river cobbles, with the remainder made up of materials such as siltstone, conglomerate, or basalt. Appendix B contains an additional description of nonflaked lithic items. A cautionary note must be made concerning the generalized categories used in the nonflaked tool analysis. Not all representatives of a particular category are exemplary, complete specimens. For example, the morphological-use category "mano" shows 70 artifacts in the total site collection. This does not mean that there were 70 complete manos; instead, it is more likely that the majority were fragmentary or minimally shaped, yet showed some evidence of being used as hand-held grinding stones. Keeping this in mind, it can be stated that 20.2 percent of the total assemblage are classified as manos, or hand-held grinding stones, and 34.6 percent are metates, or receptacles for grinding. So at least 54.8 percent of all nonflaked lithics are grinding tools.

When the nonflaked item totals for the surface collection and for the total site are compared, it becomes obvious that in the morphological-use categories the percentages for each tool type are similar. For example, hammerstones are 5.2 percent of the total surface collection and 6.6 percent of the total site collection. Only for unspecialized and fragmentary metates was there a large discrepancy in percentages between the surface and total collections, with 15 percent more unspecialized and fragmentary metates recovered for the total site than were accounted for in the surface collection. Other variables such as production evaluation, item completeness, and grain size had noticeable similarities between surface collection and total collection.

The largest percentages of nonflaked lithics in both surface and excavated collections were from the surface rooms, including twenty-four percent of all metates and metate fragments. Because of the historic destruction of the surface rooms, no metates were found in situ, but several of the metates were sufficiently intact to have been in use at the time of abandonment. The majority of the metates, though, were fragmentary and were in use in wall construction.

The only other large numbers of nonflaked lithics were from the surface collection of the trash area and from the hearth in the pithouse fill. Complementing the large amount of flaked lithic debitage associated with this hearth, the main nonflaked lithic morphological-use types found in this area were percussion implements such as pecking stones and a hammerstone.

The highest site-wide percentages of grinding tools were found in the surface rooms and trash areas; 33 percent of all the manos and 50 percent of the "specialized" metates were found in these areas. In contrast to these tools, which are associated with sedentary, agricultural activities, the nonflaked tools around the hearth in the fill of the pithouse are most likely related to the production of flaked lithic tools and possibly to hunting or animal processing activities.

Bone Tools

A total of 10 pieces of worked bone was found at Marshview Hamlet; of the 10, 4 were associated with the pithouse fill, 5 with the pithouse floor, and 1 with a surface feature. Six of the bones were from artiodactyls (such as mule deer) and are metapodials, metacarpals, and a humerus. The metapodials of artiodactyls are all notable for their

density and strength, and are the most commonly used bones for tools. The remaining four bones are from large birds and are tubes.

All of the bones except two of the beads, were examined macroscopically and microscopically using a 7x microscope; they were classified by general morphology and wear patterning. Four implements (Figure 12.41), all fashioned from split cannon bones of artiodactyls, met the general criteria of awls, defined by Kidder [17:302] as "tools, accordingly, whose points are apparently sharp enough to have been of use for the perforating of hides or for the manufacture of coiled basketry." This definition of awls is rather general and not as specific as some classifications (Reed et al. [14:303-323], Aikens [18:85]), but is applied to the awls from Site 5MT2235 considering the small sample of tools and their disparate proveniences. The striations on these awls are perpendicular or slightly oblique to the axis of the implement and are indicative of the reaming action used to perforate hides. The humerus had been fashioned into a gouge-scraper, or fleshing tool, with a blunt, round end (see Emslie [19:263] or Morris [20:121-122] for a discussion of this type of tool). The sixth worked long bone, a mule deer metacarpal, was in the initial stage of tool manufacture and had been scored down the posterior center line in preparation for splitting.

Because of the intense rodent disturbance to the pithouse area, it was difficult to associate the bone tools in the fill with a cultural context. Two awls, one 17 cm long (PL 2) and the other 15.9 cm long (PL 3), were clearly associated with Floor 2 of the pithouse. The three remaining tools--two awls and the gouge-scraper--and the scored long bone, were in the upper fill of the pithouse and probably associated with the secondary occupation hunting camp. The gouge-scraper is 18.6 cm long and

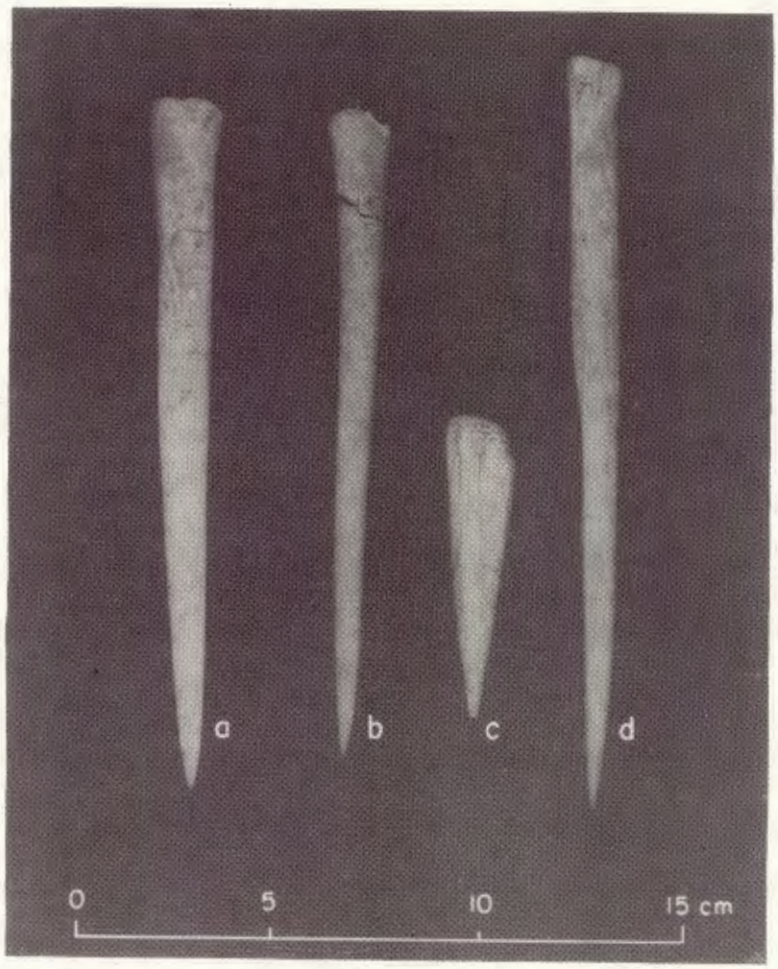


Figure 12.41 Bone awls recovered from Marshview Hamlet: (a) Floor 2, Pithouse 1 (PL 3); (b) Floor 2, Pithouse 1 (PL 2); (c) fill of Pithouse 1; (d) fill of Pithouse 1 (D.A.P., 121103).

is constructed from the proximal end of the humerus of a mule deer. The awls are 7.5 cm and 18.6 cm long and are constructed from the proximal quarter and the distal end of metapodial, respectively. A fragment of a tube or bead made from the long bone of a large bird was found on the pithouse floor, and a sandhill crane ulna with the ends cut off to form a tube or bead, was associated with the hearth southwest of the pithouse (Figure 12.42).

Subsistence Data

Vegetal Remains

Two logs from the pithouse were taken as tree-ring samples; they were both identified as juniper by the University of Arizona Laboratory of Tree-Ring Research. A complete listing of botanical remains recovered from the site may be found in Appendix E.

Pollen

A total of 17 pollen samples from Marshview Hamlet was analyzed and the results for each sample are presented in detail in Appendix F. The samples are all associated with the pithouse fill or floors. The uniformity of the pollen record throughout the various proveniences in the pithouse allows for little in the way of specific functional interpretation of various features. The high amount of background pollen does suggest that the prehistoric habitat was similar to the present day sagebrush grassland environment. Only in the small pit (Feature 24) in the southwest corner of Floor 1, Pithouse 1, was a significantly high amount of economic pollen encountered, with 19 percent of the pollen being from Cleome. Cleome, or beeweed, was used in a variety of ways by prehistoric and historic Pueblo peoples (Whiting [21]). Beeweed

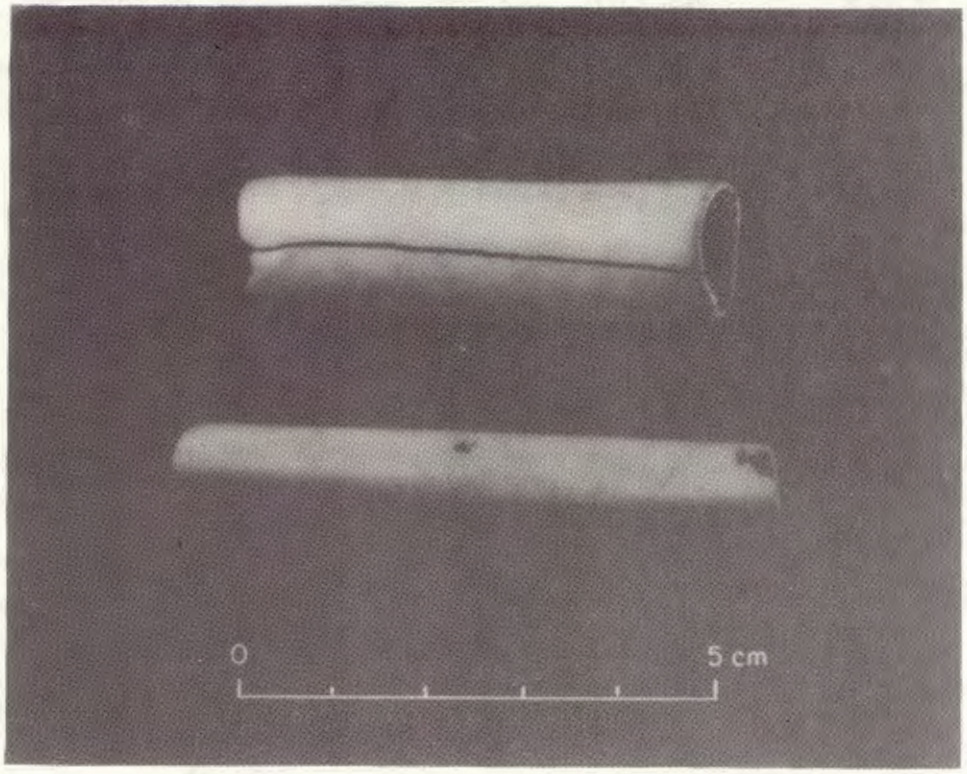


Figure 12.42 Selected bone tubes recovered from Marshview Hamlet: above, Floor 2, Pithouse 1, (PL 35); below, Floor 2, Pithouse 1 (PL 42) (D.A.P. 121102).

represented in the pollen record suggests that it was available for use by the occupants of Marshview Hamlet. Since the plant commonly flowers in midsummer, natural pollen deposition would be expected to occur at this time. More localized occurrences of Cleome pollen, such as in the vicinity of the pit in the southwest corner of Pithouse 1, might suggest utilization of the plant in the flowering stage at this location, perhaps as a dye or foodstuff. All the samples exhibiting Zea pollen came from the floor and from features west of the hearth, suggesting that food processing was done primarily in this area. A number of other economically useful plants are documented in the pollen record, but the small percentages recovered and the disparate proveniences from which they came make it difficult to draw any conclusions.

Faunal Material

The sample of unworked animal bone is much more informative about subsistence patterning than either the pollen or macrobotanical remains. A total of 970 animal bones was recovered in excavation of the site. A discussion of the analysis and results is given in Appendix G. Of this total, 56 bones were too fragmentary to be identified and 10 were worked. Of the remaining 880 bones, 593 were from mammals, but could not be identified as to order, 338 were mammal bones that could be more specifically identified, 5 were from Amphibia and Reptilia, and 34 were from birds. The largest number of bones that could be identified to family were Lagomorpha; these bones were found across the site. Cottontail rabbit (Sylvilagus sp.) bones outnumbered jackrabbit (Lepus sp.) bones almost three to one; among Rodentia, Gunnison's prairie dog

(Cynomys gunnisoni) comprises 49 percent of the total, and squirrel (Sciuridae) 28 percent.

As can be seen in Table 12.5, the areas with the largest number of bones were the fill of the pithouse and the surface rooms. Consistent with the large amount of animal disturbance in the pithouse fill, the highest number of bones were from Lagomorpha and Rodentia. The greatest diversity within the bones from the fill is among those of the upper fill, which is probably associated with the secondary occupation. Unworked bone from Castor and worked bone from mule deer (Odocoileus hemionus) and other artiodactyls came from this upper fill. The surface rooms had some rodent and rabbit bones, but 84 percent was from unidentified mammals.

Because so few specifically identifiable bones were found in clean cultural contexts such as in features or on surfaces, the conclusions about faunal exploitation are based on inferences from a "laundry list" of materials from the site. Other than the species used for worked bone, only three Meleagris gallopavo (turkey) and six Passeriformes bones were found in clean cultural associations. Because of the high degree of rodent disturbance at the site, the large amount of rodent and rabbit bones found are difficult to place as either cultural or natural. However, there is ethnohistoric evidence (Castetter and Bell [22:58], Dozier [23:129]) and archaeological evidence (Stiger [24:135-137]) that rabbits and rodents were exploited as food. Assuming even one third of the bone is cultural, rodents and rabbits appear by the sheer numbers of their bones to be the most heavily exploited populations. The only potential domestic animal in the assemblage is the turkey.

Table 12.5 Distribution of Faunal Remains Recovered from Marshview Hamlet

	Pithouse 1											
	Fill above & includ. Feat 10, hearth		Fill below Feat 10, & above floor		Burial		Surface Struct.		Other Excavated Units		Total Site	
	#	%	#	%	#	%	#	%	#	%	#	%
MAMMALIA												
Lagomorpha												
Sylvilagus	20	16.9	15	15.8	21	14.9	3	3.1	70	13.5	129	13.3
Lepus	3	2.5	4	4.2					28	5.4	35	3.6
Other & Unident							1	1.0	1	0.1	1	0.1
Rodentia												
Total	16	13.6	13	13.7	19	13.5	8	8.2	104	20.0	160	16.5
Carnivora												
Total									1	0.2	1	0.1
Artiodactyla												
Odocoileus							1	1.0	7	1.3	8	0.8
Ovis							1	1.0			1	0.1
Other									3	0.6	3	0.3
Other & Unident												
Total	78	66.1	60	63.2	85	60.3	81	83.5	289	55.7	593	61.1
TOTAL MAMMALS	117	99.2	92	96.8	125	88.7	97	100.0	500	96.3	931	96.0
AVES												
Passeriformes												
Total					12	8.5					12	1.2
Galliformes												
Melagris			1	1.1					2	0.4	3	0.3
Grouse			1	1.1					9	1.7	10	1.0
Other	1	0.8	1	1.1					7	1.3	9	0.9
TOTAL AVES	1	0.8	3	3.2	12	8.5			18	3.5	34	3.5
AMPHIBIA												
TOTAL AMPHIBIA					4	2.8					4	0.4
REPTILIA												
TOTAL REPTILIA									1	0.2	1	0.1
GRAND TOTAL UNWORKED BONE	118		95		141		97		519		970	

CONCLUSIONS

Chronology

Dendrochronology and archaeomagnetism have provided absolute date estimates at the site; and ceramic, lithic, and stratigraphic sequences have provided relative dates. The main occupation of the site is best defined by an archaeomagnetic date, A.D. 1140 ± 45 years, obtained from a sample in the central hearth of the pithouse (Feature 11), and by the ceramic types found with the burial placed just above the floor. Since both Mancos Black-on-white and McElmo Black-on-white vessels were found associated with the burial, the best estimation of an interment date would be A.D. 1150. The tree-ring samples taken from the pithouse yield dates of A.D. 988+vv and A.D. 1102vv. As the former date is from a fragmentary sample it is likely that the latter date is the more valid. The main occupation of the site, therefore, based on the ceramic sequence and on tree-ring and archaeomagnetic dates, is estimated to be around A.D. 1100.

An archaeomagnetic date of A.D. 1225 ± 65 years (or possibly A.D. 1340 ± 65 years) for the hearth in the pithouse fill (Feature 10) is the only time measure for the second occupation of the site. The hearth is approximately 90 cm above the pithouse floor. While there has been no comprehensive documentation of the time needed to fill a pitstructure, it is likely from observation of filling in of excavated pitstructures in the project area that less than 100 years is needed to deposit 90 cm of fill in a pitstructure. So the dating of the floor of the first occupation at approximately A.D. 1100 agrees well, given the time span for fill of a pitstructure, with the date of the second occupation.

The group of archaeomagnetic samples from the westernmost surface hearth dated at either A.D. 1125 or 1390 ± 55 years. At present, there is no evidence to confirm either date. A density of lithic materials at the west side of the site indicates special lithic activity areas. This concentration of materials has been argued previously to probably represent a limited actvity loci not necessarily associated with the main occupation of the site.

Marshview Hamlet's primary occupation was in the Sundial Phase (A.D. 1050-1200). There were secondary occupations before and after the main occupation by either foraging or hunting-gathering bands.

Adaptation and Economy

The presence of a domestic pitstructure, northern storage chamber, and surface rooms at the site argues for a sedentary economy such as agriculture. Although precise models of prehistoric farming are difficult to generate, it can be observed that Marshview Hamlet is within 300 m of a large drainage that currently offers good soil and seasonal run-off water that would be more than adequate for growing of corn. The pollen record argues that corn was cultivated and that a number of ruderal plants such as Cleome and Cheno-ams were tolerated or encouraged. The seeds and leaves of various wild grasses and plants, and the fruits of cacti and various bushes possibly augmented the cultivated crops. Plants such as Ephedra sp. (Mormon tea) were possibly gathered for medicinal purposes and other plants probably served ceremonial purposes. Animals such as mule deer, beaver, and cottontail rabbits were hunted for food, hides, and bones for tools. Large birds, such as the sandhill crane, and small pas-

serines were hunted for food, feathers, and bone tools. Turkeys were probably kept as domestic animals.

Lithic materials for flaked and nonflaked implements are, with only a few exceptions, local. Building materials were likewise locally available. The ceramics are of styles common to the Mesa Verde region, with only a few trade wares noted.

Before and after the main occupation of the site, hunting bands probably utilized the favorable position of Marshview Hamlet as a promontory overlooking the Sagehen Flats. Currently, large game such as mule deer and elk migrate into the Sagehen Flats and the Dolores River valley with the onset of heavy snows in the higher mountainous regions; it is likely that prehistoric inhabitants exploited a similar influx of big game. The large number of flaked and bone tools associated with the second occupation support the interpretation of the hearth as the locus of activities of a hunting band. Heavy concentrations of debitage at the western edge of the site which may date other than with the main occupation also probably represent the activities of hunting bands.

Paleodemography

Because Marshview Hamlet is isolated from the other large pueblo sites of the same period, it can be argued that it represents the residence of a nuclear family. There are ethnographic accounts of modern pueblo families living apart from the pueblo for part of the year as nuclear families; these families, upon returning to the pueblo, will melt back into the lineage structure (Dozier [23:138]). Although the clan/lineage structure was probably the motivating factor in the social organization of the pueblos by the time in prehistory of the main occupation of

Site 5MT2235 (Birkedal [25]), there is no evidence of facilities at the site that might have accommodated more than a nuclear family. Assuming the social structure at the site was based on a nuclear family, approximately four to six people lived there.

A more quantitative way of estimating momentary population is to calculate how many people could have inhabited the total available floor space. At Marshview Hamlet, the pithouse (with the northern chamber) has a total of 9.8 m^2 of floor space, and though the surface rooms could not be clearly defined, it is conservatively estimated that they enclosed at least 8 m^2 of floor space. This gives a total of 17.8 m^2 of floor space at the site. Fekri Hassan [26] has recently summarized the results of a number of different attempts to measure the correlation between living space and the number of people living in that space. Reasonable estimates for living space allotted to an individual range from 1.86 m^2 (based on Cook's California data [27]) to 4.55 m^2 (based on Hill's Broken K estimates [13]). Of the 17.8 m^2 at Marshview Hamlet, four people could have had 4.45 m^2 each, five people 3.56 m^2 each, and six people 2.97 m^2 each. Considering that most southwestern estimates are probably closer to Hill's estimate of 4.55 m^2 per person, it is likely that Marshview Hamlet housed four to five people.

Due to its secondary nature, the burial could not be directly associated with the hamlet. The lack of nearby residential sites suggests three possibilities as to how these five individuals came to be buried within the pithouse. One is that the individuals represent the family that inhabited the site. Another is that they were a group of individuals that were not associated with the site, but that died nearby and were then interred in the pithouse. The third possibility is that the individuals

had been buried elsewhere and transferred to the pithouse. The first possibility is the simplest and least cumbersome explanation. However, the fragmentary and secondary nature of the burial make any positive conclusions impossible.

Although the architecture at the site showed evidence of at least one major remodeling, there is no way to accurately measure the length of time that the site was occupied. It is assumed that the site is not occupied for more than one generation.

Community Activities and Social Organization

Marshview Hamlet was relatively isolated at a time when nearby families were nucleated in pueblos (Rohn [28:241] or MacGregor [7:467-468]). During late Pueblo II times the majority of people in the Mesa Verde region were living in pueblos, with field houses used for seasonal or daily occupation away from the pueblo. Marshview is interpreted as being part of this lifeway as an agricultural outpost that is connected by social ties with some pueblo in the sector. As mentioned earlier, there are analogous ethnographic situations of outlying nuclear families connected with pueblos. If the mass burial does represent the prehistoric inhabitants of the site, then they appear to have been decimated by some disaster and thereafter buried or reburied by someone who thought their interment important.

Cultural Change

Marshview Hamlet represents a residentially isolated social unit at a time when pueblo habitation was the common pattern; it is difficult to explain exactly how it fits into this pattern. The main occupation of the

site may represent a family that had left a pueblo because of economic or social reasons, but there is no evidence to suggest why a single social unit found it necessary to locate itself over 5 km from the nearest large pueblo. There are two other Sundial Phase residential sites (Site 5MT2233 and Site 5MT2737) that are within 2 km of Marshview Hamlet, so the site is not a completely isolated phenomenon. The site is best explained as a final Anasazi attempt to exploit the Dolores River valley.

APPENDIX A

CERAMIC REPORT FOR MARSHVIEW HAMLET

by

William A. Lucius

Preliminary (inventory) analysis of the ceramic artifacts from Site 5MT2235 was carried out by members of the D.A.P additive analysis laboratory subsequent to the field operations. Description of the prelimnary analysis procedures and structure, and resulting data interpretability are avalable in Lucius [29]. Familiarity with the inventory analysis program will aid in the understanding of the data and interpretations provided below.

Table 12.A.1 is a summary of ceramic frequencies for the site as a whole (ceramics collected during the original inventory survey were not avialable for analysis and are not included). Sherds are grouped by "culture categories and wares" (Lucius [30]). Thirty two sherds were from either the Kayenta or Cibola region. All other sherds from Site 5MT2235 were assigned to wares of the Mesa Verde Culture Category and relect a local (Mesa Verde region) manufacturing tradition and exchange system. Pottery types within each ware are listed sequentially from early to late, and grouped types (e.g., Early Pueblo Gray) are listed last and include sherds not assignable to specific types (e.g., gray ware body sherds). Sherds from reconstructable vessels are excluded from this table. Table 12.A.2 includes a breakdown of ceramic items from selected proveniences. Like Table 12.A.1, this table does not include sherds from reconstructable vessels.

Relative weight of temporally diagnostic types have been extracted from Table 12.A.1 and are presented graphically in Figure 12.A.1. Each type is expressed as a percentage of its ware total (excluding sherds not identifiable to type and exluding sherds from reconstructable vessels). The relative contribution of each ware to the classifiable site total is listed on the left. Temporal spans for the diagnostic types are based on

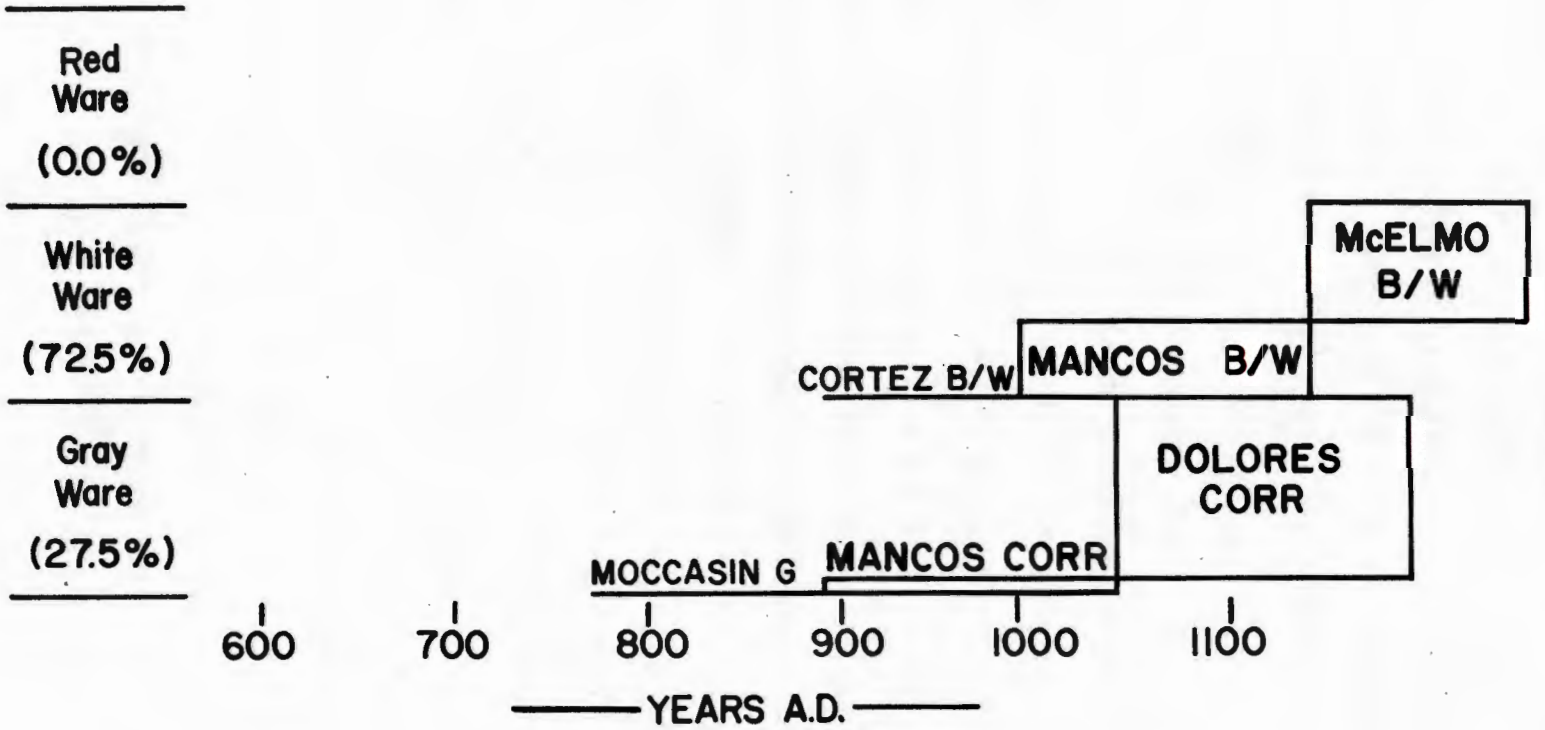


Figure 12.A.1 Diagnostic type occurrences for ceramics at Marshview Hamlet.

Breternitz et al. [8] with some adjustments based on dating results from within the D.A.P. This figure illlustrates the intensity of occupation as well as the temporal range of occupation, and it can be compared with similar figures prepared for other D.A.P. sites.

Reconstructable Ceramic (RC) items, which include all whole or fragmentary vessels as well as special nonvessel shapes, are not included in the data tables. Table 12.A.3 documents the traditional types represented and the vessel numbers of these reconstructable items.

The ceramics from Site 5MT2235 reflect a date range of approximately 475 years (A.D. 775-1250). Review of the ceramic profile for the site (Figure 12.A.1) indicates that the primary occupation of the site was preceded by minor usage (as indicated by the presence of several sherds of temporally diagnostic ceramics) from A.D. 775-1050. The main occupation of the site, as indicated by the majority of ceramics, (especially those associated with the human bones within the pitstructure), is thought to date from approximately A.D. 1100 to 1150. The mixture of Mancos Black-on-white and McElmo Black-on-white in the ceramic assemblage indicates the primary occupation occurred just as Mancos Black-on-white was in the process of developing into McElmo Black-on-white (approximately A.D. 1150). The McElmo Black-on-white sherds and whole vessels of the collection can be considered as transitional between the two types, as both mineral and organic paints were used. Those items with organic paint were consistently placed into the McElmo Black-on-white category. Sherds and vessels with mineral paint were placed into either the Mancos or McElmo Black-on-white category by recognition of stylistic elements and formats generally associated with one or the other type. The association of Dolores Corrugated with the white wares of the site is interesting, but

because the corrugated type has only recently been defined, no absolute dates for this type are available to aid in the determination of site age.

The ceramic assemblage from Marshview Hamlet is unique in that most late ceramics found in the project area occur as surface finds and are not associated with structures. The occasional occurrence of late Pueblo II/early Pueblo III ceramics in D.A.P. sites would be expected given the intensity of such occupation just to the south of the project area. It is possible that the inhabitants of Site 5MT2235 were associated with a large village complex such as the Dominguez/Escalante ruins adjacent to the project area (Reed et al. [14]). The presence at Marshview Hamlet of exotic ceramics (Figure 12.A.1) from both the Cibola and Kayenta areas suggests that the site may have been affiliated with a large centrally located site which would have had access to foreign ceramics.

The variety in ceramic types from Marshview Hamlet is reflected in the various types of tempering agents observed in the ceramics. Slightly over 78 percent of the ceramics contained either crushed igneous rock temper or crushed sherd temper (often with igneous rock). Some of the Mesa Verde ceramics (less than 10 percent) contained either sand or crushed sandstone temper, thought to have been used in areas to the west of the project area. Temper types associated with ceramics from outside the Mesa Verde region account for the remaining 12 percent of the ceramics from the site.

A total of 21 reconstructable ceramic (RC) vessels was recovered from the site ceramic assemblage. The vessels were reconstructed from various sherd clusters associated with the human bones within the pitstructure. The majority of the vessels apparently represent grave goods that were

associated with the burial. The broken and scattered nature of the vessels may be used to support the assertion that the burial had undergone secondary interment in the pitstructure.

Bowl, jar, pitcher, dipper, and effigy forms were recovered from the burial goods. Nine bowls, eight jars (including pitchers), and four other forms were reconstructed. The latter consist of one McElmo Black-on-white dipper (RC 13), a McElmo Black-on-white duck effigy vessel (RC 14), a large sherd disk which was shaped by grinding (RC 23), and an effigy head, possibly representative of a dog (RC 24). The head of the duck effigy had been broken and ground, and the two portions of the vessel were recovered some distance apart. A similar duck effigy head was recovered from the trash at Long House (Cattenach [31:238]). The hollowed-out head of what appears to have been a McElmo Black-on-white canine effigy was abraded and the parent vessel for the item was not recovered in the excavations. The shaped ceramic disk was also abraded around its edge and its use may have either been as a scraping tool or as a revolving base for ceramic manufacture (a puki). Additional evidence for ceramic manufacture at the site was totally lacking, perhaps supporting the assertion that the item could have served as a tool or perhaps even as a small plate. Refer to Lucius [29] for further discussion of the reconstructable ceramic items.

Table 12.A.1 Summary of Descriptive Frequencies of Ceramics at Marshview Hamlet

WARE TRADITIONAL TYPE	BY COUNT												WEIGHT	
	BOWL		JAR		OTHER		TOTAL		RIMS		MODIFIED			
	#	%	#	%	#	%	#	%	#	%	#	%	g	%
Indeterminate Gray			1	0.04			1	0.03	1	0.4			6	0.02
Mesa Verde Gray														
Dolores Brown	1	0.2					1	0.03					54	0.2
Moccasin Gray			1	0.04			1	0.03					6	0.02
Mancos Corr.			27	1.0			27	0.8	26	11.4			173	0.7
Dolores Corr.			26	1.0			26	0.8	26	11.4			2256	9.0
Mesa Verde Corr.			1	0.04			1	0.03	1	0.4			4	0.01
Early Pueblo			7	0.3			7	0.2					15	0.06
Late Pueblo			662	25.0	11	34.4	673	20.8	27	11.8	8	23.5	4041	16.1
Corr. Body Sherd			1376	51.9			1376	42.5			2	5.9	6295	25.0
Mesa Verde White														
Cortez B/W			1	0.04			1	0.03					3	0.01
Mancos B/W	77	13.9	55	2.1	1	3.1	133	4.1	41	18.0	6	17.6	2730	10.9
McElmo B/W	39	7.1	3	0.1	3	9.4	45	1.4	22	9.6	3	8.8	4361	17.3
Early Pueblo	1	0.2					1	0.03	1	0.4			1	< 1
Late Pueblo	403	73.0	483	18.2	17	53.1	903	27.9	80	35.1	14	41.2	5078	20.2
Mesa Verde Red														
Early Pueblo	1	0.2					1	0.03					3	0.01
Late Pueblo	5	0.9					5	0.2	1	0.4			25	0.1
Cibola White														
Chaco-McElmo B/W	2	0.4	5	0.2			7	0.2					28	0.1
Late Pueblo	5	0.9					5	0.2			1	2.9	8	0.03
Cibola Red														
Unclassifiable	4	0.7					4	0.1					17	0.07
Kayenta Gray														
Corr. Body Sherds			1	0.04			1	0.03					6	0.02
Kayenta White														
Late Pueblo	3	0.5	1	0.04			4	0.1	2	0.9			10	0.04
Kayenta Red														
Early Pueblo	1	0.2					1	0.03					1	<1
Late Pueblo	10	1.8					10	0.3	1	0.4			32	0.1
TOTALS	552		2650		32		3233		228		34		25,153	

Key:

Corr- Corrugated
B/W - Black-on-white

Table 12.A.2 Ceramic Assemblage at Marshview Hamlet, by Selected Proveniences* (Page 1 of 2)

	Surface Collection							Surface Structure			
	Units Over Surface Structure (N = 3)	Units East (N=42)	Units West (N=134)	Units North (N=29)	Units South (N=250)	Total Surface Collection		Upper Fill Level 1 (N=69)	Lower Fill Levels 2 & 3 (N=147)	Total Surface Structure Fill	
	%	%	%	%	%	#	%	%	%	#	%
MESA VERDE GRAY WARE											
Moccasin Gray											
Mancos Corr			1.5		0.8	4	0.9	2.9		2	0.9
Dolores Corr		2.4			0.4	2	0.4				
Mesa Verde Corr	33.3	2.4				2	0.4				
Early Pueblo Gray					2.0	5	1.1				
Late Pueblo Gray		35.7	14.2	20.7	18.8	87	19.0	31.9	27.2	62	28.7
Corr Body Sherds		26.2	45.5	34.5	41.6	186	40.6	37.7	57.8	111	51.4
MESA VERDE WHITE WARE											
Cortez B/W			0.7			1	0.2				
Mancos B/W					6.0	16	3.5	2.9	2.7	6	2.8
McElmo B/W					0.4	1	0.2	1.4	0.7	2	0.9
Early Pueblo White											
Late Pueblo White	66.7	33.3	36.6	44.8	29.6	152	33.2	21.7	10.9	31	14.4
MESA VERDE RED WARE											
Early Pueblo Red					0.4	1	0.2				
Late Pueblo Red											
TRADE WARES											
Cibola											
Chuska											
Kayenta											
OTHER			0.7			1	0.2	1.4	0.7	2	0.9
TOTALS						458	100.0			216	100.0
VESSEL FORMS											
Bowl	33.3	14.3	16.4	17.2	14.8	71	15.5	14.5	5.4	18	8.3
Jar	66.7	85.7	83.6	79.3	84.4	384	83.3	85.5	94.6	198	91.7
Other & Indeterminate				3.4	0.8	3	0.7				

Table 12.A.2 Ceramic Assemblage at Marshview Hamlet, by Selected Proveniences* (Page 2 of 2)

	Pithouse 1											
	Fill								Floor			
	Upper Fill Includes Hearth (N = 301)	Lower Fill Below hearth above floors (N = 148)	Burial (N = 98)	Floor Fill, Floor 2 (N = 2)	Northern Chamber (N = 20)	Southern Vent (N = 23)	Total Pit-house 1 Fill		Total Pit-house 1, Floor 2		Total	
	%	%	%	%	%	%	#	%	#	%	#	%
MESA VERDE GRAY WARE												
Moccasin Gray	0.3						1	0.2			1	0.1
Mancos Corr	0.3	1.4				8.7	5	0.8			11	0.9
Dolores Corr	0.7	1.4			5.0		5	0.8			7	0.6
Mesa Verde Corr											2	0.2
Early Pueblo Gray											5	0.4
Late Pueblo Gray	18.9	10.8	4.1		25.0	4.3	83	14.0	1	33.3	233	18.4
Corr Body Sherds	48.2	60.8	45.9	100.0	20.0	30.4	293	49.5			590	46.5
MESA VERDE WHITE WARE												
Cortez B/W											1	0.1
Mancos B/W	2.7	1.4	4.1		5.0	8.7	17	2.9			40	3.2
McElmo B/W	0.3	1.4	1.0				4	0.7	1	33.3	7	0.5
Early Pueblo White	0.3						1	0.2			1	0.1
Late Pueblo White	27.6	23.0	44.9		35.0	47.8	179	30.2	1	33.3	363	28.6
MESA VERDE RED WARE												
Early Pueblo Red											1	0.1
Late Pueblo Red	0.7						2	0.3			2	0.2
TRADE WARES												
Cibola											?	?
Chuska											?	?
Kayenta											?	?
OTHER					10.0		2	0.3			5	0.4
TOTALS							592	100.0	3	100.0	1269	100.0
VESSEL FORMS												
Bowl	15.9	14.9	29.6		20.0	30.4	110	18.6	2	66.7	201	15.8
Jar	83.7	84.5	67.3	100.0	80.0	69.6	477	80.6	1	33.3	1060	83.5
Other & Indeterminate	0.3	0.7	3.1				5	0.8			8	0.6

*Discrepancies between Table 12.A.1 and this table are the result of ongoing editing of the ceramic data file.

Table 12.A.3 Reconstructable Vessels from Marshview Hamlet

	VESSEL NUMBER																				
	1	2	3	6	7	8	9	10	11	12	13	14	16	17	18	19	20	21	22	23	24
MESA VERDE GRAY WARE																					
Dolores Corrugated		X																X			
Corrugated Body Sherds													X								
MESA VERDE WHITE WARE																					
Mancos B/W	X								X	X									X		X
McElmo B/W			X	X	X	X	X	X			X	X				X	X				
Late Pueblo White														X	X					X	
TOTALS																					
VESSEL FORMS																					
Bowl			X	X	X	X	X	X						X			X		X		
Jar	X	X							X	X			X		X	X		X			
Other											X	X								X	X

APPENDIX B

LITHIC REPORT FOR MARSHVIEW HAMLET

by

Thomas H. Hruby and Carl J. Phagan

The data presented in Tables 12.B.1, 12.B.2, and 12.B.3 represent part of the lithic reductive-technology analysis completed for Marshview Hamlet. From a 12-attribute Flaked Lithic Tool (FLT) analysis system, 4 attributes were selected to illustrate general technological, functional, and raw-material variablity. A traditional morphological-use classification, a ranked estimation of production technology input for dorsal and ventral surfaces, and a grain-size evaluation are included. Six variables are included from the Flaked Lithic Debitage (FLD) analysis system: grain-size ranking, classification of items with cortex, items which retain a striking platform, obsidian items, mean weight, and total number of debitage items. The Nonflaked Lithic Tool (NFLT) analysis system is represented by four variables: traditional morphological-use item classification, production-input evaluation, indication of item completeness, and raw-material grain-size evaluation. The complete lithic-analysis systems are described elsewhere in D.A.P. publications (Phagan [32]).

During 1980 the D.A.P. lithic-laboratory personnel have repeatedly reviewed the utility and reliability of the lithic-analysis systems. In this review, a number of analysis variables have been modified, particularly the item morphological-use variables for both the FLT and NFLT systems. Analytical perspectives change as information accumulates and as models of tool production and use improve. In order to minimize the effects of this analytical modification on interpretation, the observed values of these variables have been regrouped into larger categories within which analytic consistency is reliable.

For comparative purposes the tables include percentage data for all D.A.P. Anasazi sites analyzed prior to the 1980 field season. These "Anasazi group" data have been generated from computer files which have

not undergone complete editing, and final figures may differ slightly from those presented. Comparisons and interpretations presented here, particularly those of an intersite nature, are based on a qualitative assessment of lithic profile variation, since significance has not been statistically established.

Site 5MT2235 is a small unit hamlet habitation with the primary occupation associated with the Sundial Phase of the Anasazi Tradition. Since no other D.A.P. excavated site is temporally/functionally comparable to Site 5MT2235, comparisons with a similar site cannot be made.

In very general terms, the lithic tools from Marshview Hamlet are comparable to the Anasazi Group. Most unit hamlets excavated and analyzed to date exhibit roughly 60 percent flaked lithic tools and 40 percent nonflaked lithic tools. The ratio at Site 5MT2235 is approximately 61 percent flaked lithic tools to 39 percent nonflaked lithic tools. The Anasazi group as a whole, displays 62 percent flaked lithic tools and 38 percent nonflaked lithic tools. Though a number of differences are apparent in the profiles, especially raw material values, the tables suggest that an expedient lithic technology was utilized at Anasazi sites, including Site 5MT2235. Anasazi flaked lithic tool inventories are chiefly composed of utilized flakes and cores, with characteristically low technological input. The nonflaked lithic tool assemblages are dominated by manos, generalized unhafted tools, and metates. Though the nonflaked lithic tool assemblage from Site 5MT2235 diverges from the typical profiles, it is probably due to the fragmentary nature of that assemblage.

The flaked lithic tools from Site 5MT2235 are very similar to the group of Anasazi sites. Though utilized flakes and specialized forms are overrepresented and cores are underrepresented, these differences are

probably not functionally significant. Technological input values are slightly higher for Site 5MT2235 than the Anasazi group. The high percentage of well-shaped items indicates considerable technological input for some tools. Whether this technological investment suggests a temporal trend toward more specialized, curated tools, a cultural situation such as craft specialization, or the presence of a large Archaic component at the site must await a more intensive analysis of the cultural material. In general, the flaked lithic tools from Marshview Hamlet fit very well into the Anasazi profile.

The flaked lithic debitage from Marshview Hamlet is unusual for an Anasazi site. The unusually high percentages of items retaining cortez, of items retaining striking platforms, and of fine-grained raw materials are quite similar to those anticipated at local raw material procurement locations. The location of Site 5MT2235, however, is not appropriate for such quarry activity. The disparity in grain sizes between tool and debitage raw materials would best be explained by the primary reduction of certain raw materials at the site, with other raw materials being carried into the site as finished tool forms. Intensive analysis of the debitage may suggest additional interpretations.

Site 5MT2235 is consistent with other Anasazi sites in the ratio of tools to debitage and in the mean weight of the debitage. Site 5MT2235 has 11.9 tools per 100 debitage, while the Anasazi Group has 9.6 tools per 100 debitage. This ratio is relatively consistent within all Anasazi sites.

The nonflaked lithic tools from Site 5MT2235 appear to be significantly different from the Anasazi group of sites. Most of the variability is probably due to the fragmentary nature of the nonflaked lithic assem-

blage. The very high percentages of fragmentary metates and indeterminates skew the relative percentages of the other tool groups. Three tool groups appear to diverge from the Anasazi group even when the fragmentary problem is controlled. The apparent low percentage of generalized unhafted tools is consistent with the hypothesis that Anasazi nonflaked lithic technology became increasingly curation-oriented through time. The ratio of slab metates to trough metates is consistent with the late date for the site.

In summary, the lithic materials from Site 5MT2235 are relatively consistent with other Anasazi sites in the D.A.P. area. The variability present in the assemblage can probably be accounted for by the temporal placement of the site. Substantiation of the temporal variability as reflected in the lithic assemblage awaits the excavation of functionally and temporally similar sites.

Table 12.B.1 Lithic Analysis Data Summary for Marshview Hamlet, Flaked Lithic Tools (Page 1 of 2)

	Surface Collection (N =119)		Pithouse 1							
			Fill, includes hearth (Feature 10) (N = 42)		Fill below hearth (Feat 10) (N = 3)		Floor 2 (N = 9)		Burial (N = 5)	
	#	%	#	%	#	%	#	%	#	%
MORPHO-USE FORM										
Indeterminate	1	0.8	1	2.4						
Utilized flakes	60	50.4	30	71.4	2	66.7	3	33.3	2	40.0
Cores	23	19.3	2	4.8			2	22.2	1	20.0
Choppers, scrapers	9	7.6								
Thick scrapers	2	1.7					1	11.1		
Thin scrapers	10	8.4	1	2.4						
Bifaces	5	4.2	4	9.5			1	11.1	1	20.0
Projectile points	5	4.2	3	7.1						
Specialized forms	4	3.4	1	2.4	1	33.3	2	22.2	1	20.0
THINNING STAGE: DORSAL										
Indeterminate										
Nonfacial item	25	21.0	2	4.8			2	22.2	1	20.0
Unthin item, w/ cortex	48	40.3	16	38.1	1	33.3	3	33.3	1	20.0
Unthin item, no cortex	28	23.5	14	33.3	1	33.3	1	11.1	1	20.0
Prelim shap, w/ cortex	5	4.2								
Prelim shap, no cortex	1	0.8					1	11.1		
Primary thinning			1	2.4						
Secondary thinning	1	0.8	2	4.8						
Well-shaped	11	9.2	7	16.7	1	33.3	2	22.2	2	40.0
Highly stylized										
THINNING STAGE: VENTRAL										
Indeterminate										
Nonfacial item	24	20.2	2	4.8			2	22.2	1	20.0
Unthin item, w/ cortex	3	2.5								
Unthin item, no cortex	79	66.4	32	76.2	3	100.0	4	44.4	3	60.0
Prelim shap, w/ cortex	3	2.5								
Prelim shap, no cortex							1	11.1		
Primary thinning	2	1.7	1	2.4						
Secondary thinning	1	0.8	2	4.8						
Well-shaped	7	5.9	5	11.9			2	22.2	1	20.0
Highly stylized										
GRAIN SIZE										
Medium (coarse)	2	1.7								
Fine	9	7.6	2	4.8	1	33.3			1	20.0
Very Fine (detrital)	77	64.7	32	76.2	1	33.3	7	77.8	3	60.0
Microscopic (nongranular)	31	26.1	8	19.0	1	33.3	2	22.2	1	20.0

Table 12.B.1 Lithic Analysis Data Summary for Marshview Hamlet, Flaked Lithic Tools (Page 2 of 2)

	Surface Structures (N = 25)		Other Excavated Units (N = 335)		Site 5MT2235 Total (N =538)		Anasazi Group (N = 7048)
	#	%	#	%	#	%	%
MORPHO-USE FORM							
Indeterminate			8	2.4	10	1.9	0.5
Utilized flakes	12	48.0	169	50.4	278	51.7	43.6
Cores	3	12.0	42	12.5	73	13.6	19.0
Choppers, scrapers	2	8.0	24	7.2	35	6.5	10.4
Thick scrapers	2	8.0	31	9.3	36	6.7	6.4
Thin scrapers			14	4.2	25	4.6	10.1
Bifaces	3	12.0	10	3.0	24	4.5	3.9
Projectile points	1	4.0	7	2.1	16	3.0	3.7
Specialized forms	2	8.0	30	9.0	41	7.6	2.3
THINNING STAGE: DORSAL							
Indeterminate			3	0.9	3	0.6	0.3
Nonfacial item	3	12.0	42	12.5	75	13.9	19.8
Unthinned item, w/cortex	8	32.0	122	36.4	199	37.0	31.7
Unthinned item, no cortex	4	16.0	65	19.4	114	21.2	31.4
Prelim shaping, w/cortex			10	3.0	15	2.8	3.7
Prelim shaping, no cortex			3	0.9	5	0.9	2.6
Primary thinning			5	1.5	6	1.1	1.2
Secondary thinning	1	4.0	3	0.9	7	1.3	1.1
Well-shaped	9	36.0	82	24.5	114	21.2	7.5
Highly stylized							0.7
THINNING STAGE: VENTRAL							
Indeterminate			2	0.6	2	0.4	0.2
Nonfacial item	3	12.0	42	12.5	74	13.8	19.5
Unthinned item, w/cortex	2	8.0	3	0.9	8	1.5	1.9
Unthinned item, no cortex	14	56.0	219	65.4	354	65.8	64.4
Prelim shaping, w/ cortex			4	1.2	7	1.3	1.4
Prelim shaping, no cortex			9	2.7	10	1.9	3.4
Primary thinning			2	0.6	5	0.9	1.2
Secondary thinning	1	4.0	2	0.6	6	1.1	1.0
Well-shaped	5	20.0	52	15.5	72	13.4	6.4
Highly stylized							0.7
GRAIN SIZE							
Medium (coarse)			4	1.2	6	1.1	2.1
Fine	2	8.0	10	3.0	25	4.6	6.2
Very Fine (detrital)	17	68.0	248	74.0	385	71.6	65.3
Microscopic (nongranular)	6	24.0	73	21.8	122	22.7	26.3

Feat - Feature

Table 12.B.2 Lithic Analysis Data Summary for Marshview Hamlet, Flaked Lithic Debitage (Page 1 of 3)

	Surface Collection (N = 1231)		Pithouse 1			
			Fill, including hearth (Feature 10) (N = 343)		Fill, below hearth (Feature 10) (N = 91)	
	#	%	#	%	#	%
GRAIN SIZE						
Medium (coarse)	9	0.7	10	2.9	2	2.2
Fine	740	60.1	279	81.3	76	83.5
Very Fine (detrital)	271	22.0	36	10.5	4	4.4
Microscopic (nongranular)	211	17.1	18	5.2	9	9.9
Items with Cortex	462	37.5	167	48.7	51	56.0
Items with Platform	669	54.3	229	66.8	49	53.8
Obsidian Items	1	0.1				
Mean Weight (grams)	9.33		5.68		9.69	
Total Debitage	1231		343		91	

Table 12.B.2 Lithic Analysis Data Summary for Marshview Hamlet, Flaked Lithic Debitage (Page 2 of 3)

	Pithouse 1				Surface Structures (N = 153)	
	Floor 2 (N = 42)		Burial (N = 45)			
	#	%	#	%	#	%
GRAIN SIZE						
Medium (coarse)					1	0.7
Fine	37	88.1	43	95.6	127	83.0
Very Fine (detrital)	2	4.8			15	9.8
Microscopic (nongranular)	3	7.1	2	4.4	10	6.5
Items with Cortex	14	33.3	19	42.2	76	49.7
Items with Platform	30	71.4	27	60.0	100	65.4
Obsidian Items						
Mean Weight (grams)	0.78		2.00		7.41	
Total Debitage	42		45		153	

Table 12.B.2 Lithic Analysis Data Summary for Marshview Hamlet, Flaked Lithic Debitage (Page 3 of 3)

	Other Excavated Units (N = 2066)		Site 5MT2235 Total (N = 3971)		Anasazi Group (N = 66,095)
	#	%	#	%	%
GRAIN SIZE					
Medium (coarse)	60	2.9	82	2.1	3.2
Fine	1655	80.1	2908	73.2	21.4
Very Fine (detrital)	270	13.1	647	16.3	51.6
Microscopic (nongranular)	81	3.9	334	8.4	23.7
Items with Cortex	1102	53.3	1891	47.6	25.9
Items with Platform	1573	76.1	2677	67.4	38.8
Obsidian Items			1	0.1	18
Mean Weight (grams)	6.56		7.35		7.93
Total Debitage	2066		3971		66,095

Table 12.B.3 Lithic Analysis Data Summary for Marshview Hamlet, Nonflaked Lithic Tools (Page 1 of 2)

	Total Surface Collection (N = 96)		Pithouse 1							
			Fill, including hearth (Feat 10) (N =14)		Fill below hearth (Feat 10) (N =12)		Floor 2 (N =7)		Burial (N = 3)	
	#	%	#	%	#	%	#	%	#	%
MORPHO-USE FORM										
Indeterminate	43	44.8	5	35.7	5	41.7	2	28.6		
Generalized, unhafted	8	8.3	5	35.7	2	16.7			1	33.3
Hammerstones	5	5.2	1	7.1	1	8.3				
Manos	17	17.7	1	7.1	1	8.3	5	71.4	1	33.3
Slab Metates	11	11.5								
Trough Metates	1	1.0								
Unspecified & Frag Metates	9	9.4	2	14.3	3	25.0				
Generalized, hafted	1	1.0								
Miscellaneous Specialized	1	1.0							1	33.3
PRODUCTION EVALUATION										
Indeterminate	39	40.6	6	42.9	6	50.0				
Module	34	35.4	6	42.9	4	33.3	2	28.6	1	33.3
Minimally Shaped	19	19.8	2	14.3	2	16.7	4	57.1	2	66.7
Well-shaped	4	4.2					1	14.3		
Highly stylized										
ITEM COMPLETENESS										
Indeterminate										
Small Fragment									1	33.3
Partial Implement	83	86.5	8	57.1	7	58.3	5	71.4	1	33.3
Complete (+ or -) Implement	13	13.5	6	42.9	5	41.7	2	28.6	1	33.3
GRAIN SIZE										
Indeterminate							1	14.3		
Coarse	19	19.8	2	14.3			2	28.6	1	33.3
Medium	45	46.9	11	78.6	10	83.3	4	57.1	1	33.3
Fine	32	33.3	1	7.1	2	16.7			1	33.3
Nongranular										

Table 12.B.3 Lithic Analysis Data Summary for Marshview Hamlet, Nonflaked Lithic Tools (Page 2 of 2)

	Surface Structures (N = 36)		Other Excavated Units (N =179)		Site 5MT2235 Total (N =347)		Anasazi Group (N = 4318)
	#	%	#	%	#	%	%
MORPHO-USE FORM							
Indeterminate	2	5.6	30	16.8	87	25.1	9.2
Generalized, unhafted	5	13.9	15	8.4	36	10.4	24.0
Hammerstones	3	8.3	13	7.3	23	6.6	9.9
Manos	8	22.2	37	20.7	70	20.2	33.5
Slab Metates	7	19.4	12	6.7	30	8.6	2.1
Trough Metates	2	5.6	1	0.6	4	1.2	9.4
Unspecified & Frag Metates	8	22.2	64	35.8	86	24.8	5.2
Generalized, hafted			2	1.1	3	0.9	2.5
Miscellaneous Specialized	1	2.8	5	2.8	8	2.3	4.0
PRODUCTION EVALUATION							
Indeterminate	7	19.4	83	46.4	141	40.6	8.4
Module	8	22.2	38	21.2	93	26.8	53.5
Minimally Shaped	15	41.7	47	26.3	91	26.2	16.7
Well-shaped	6	16.7	11	6.1	22	6.3	21.1
Highly stylized							0.1
ITEM COMPLETENESS							
Indeterminate							0.9
Small Fragment	1	2.8	3	1.7	5	1.4	3.3
Partial Implement	28	77.8	138	77.1	270	77.8	45.6
Complete (+ or -) Implement	7	19.4	38	21.2	72	20.7	50.8
GRAIN SIZE							
Indeterminate			1	0.6	2	0.6	8.1
Coarse	4	11.1	22	12.3	50	14.4	16.5
Medium	29	80.6	136	76.0	235	67.7	39.4
Fine	3	8.3	20	11.2	60	17.3	34.5
Nongranular							1.2

Key:

Feat - Feature

APPENDIX C

ARCHAEOMAGNETIC REPORT FOR MARSHVIEW HAMLET

by

J. Holly Hathaway and Jeffrey L. Eighmy

Introduction

Archaeomagnetic dating is a relatively recent chronometric method employed by archaeologists. Archaeomagnetism is based on the fact that burned material can record the direction of the earth's magnetic field at the time of incineration at that location. By using the Southwest master curve (DuBois [33]) of independently dated magnetic poles and other known pole positions for the area under study, the magnetic orientations of cultural contexts can be relatively dated. For a complete discussion of laboratory and field methods employed by the D.A.P., as well as an evaluation of the applicability of the current Southwest master curve to the Dolores area, see Hathaway and Eighmy [34].

Sampling and Methods

Marshview Hamlet is located at 37.52° north latitude and 251.43° east longitude in the Sagehen Flats Locality of the D.A.P. area. Four samples were collected from Site 5MT2235 during the 1978 field season. Sample 1 was collected from a temporary hearth (Feature 8) located in an exterior use area southwest of the main living structure. Sample 2 was collected from a temporary hearth (Feature 7) located in an exterior use area east-southeast of the main living structure. Sample 3 was also collected from a temporary hearth (Feature 10) located in the fill of Pithouse 1 (Stratum 5). Sample 4 was collected from the central hearth of Pithouse 1 (Feature 11), on Floor 1.

Twelve specimens were collected for each of the samples from Site 5MT2235. Each specimen (an estimated volume of 3.4 cm^3) was encased in a 2.5 cm plaster cube (15.6 cm^3). The orientation of each specimen was maintained by leveling the cube and measuring the magnetic declination of

one cube side. To control for current local magnetic declination, the North Star was sighted on 2 September 1978. The average observed magnetic declination was 13.5°, one-half degree different than the U.S.G.S. 1965 geological map, and in substantial agreement with expected values calculated from the National Oceanic and Atmospheric Administration map "Magnetic Declination in the United States-Epoch 1975.0.0."

Laboratory Results

Results from Samples 1-4 are reported in Table 12.C.1. Individual magnetic directions are plotted for Samples 1, 3, and 4 in Figure 12.C.1 using the declination and inclination method. Results from Sample 2 were too scattered and were not plotted. Six outliers were defined from Sample 1; this is recognized as an unusally large proportion of the collected specimens. Four outliers were identified from Samples 3 and 4. Outliers were detemined in the following manner. The sample was rerun with relatively extreme specimens excluded and a new mean and the angular deviation calculated. The excluded specimens were defined as outliers of the new mean (smaller sample) if they fell beyond two standard deviations from the mean. There is a strong possibility that these outliers are not part of the same population and that the new sample is a better representation of the true direction created by the ancient firing.

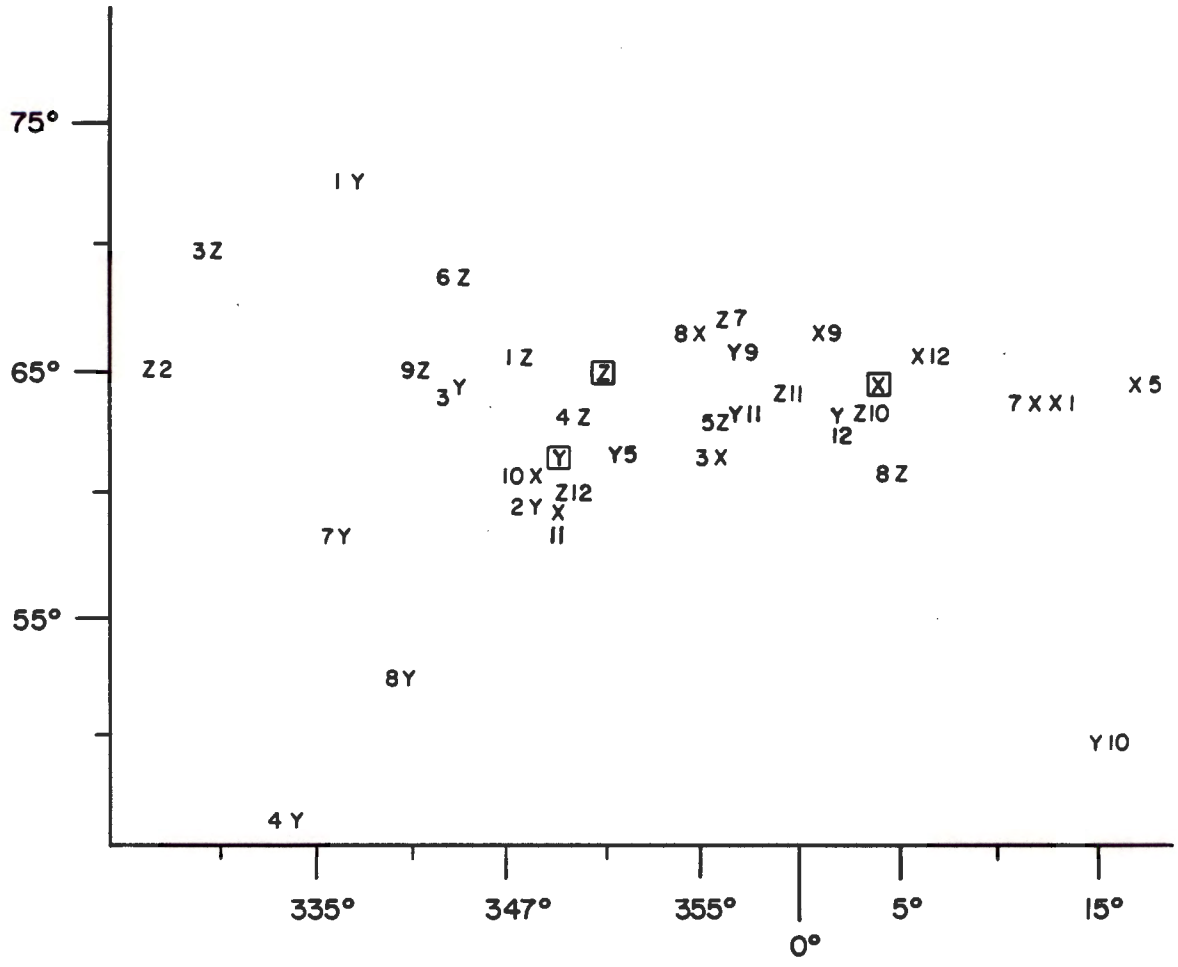
Three tests were used to determine sample reliability. Alpha 95 is defined as the radius of a circle centered on the observed mean direction within which the true mean will fall 95 percent of the time. Small values indicate tighter clustering about the mean. The precision parameter is estimated by Fisherian statistics, and values increase geometrically with internal consistency. The mean sample vector indicates internal

consistency as the value approaches the number of specimens used for detemination of the mean. Error along the great circle and perpendicular to the great circle are functions of the alpha 95 which has an oval distribution when plotted, with a short axis (EP) which runs along the great circle between the collecting site and paleopole. The long axis is perpendicular to the short axis; both are centered on the paleopole.

The demagnetized and cleaned results of Samples 1, 3, and 4 were then plotted on the Southwest master curve (Figure 12.C.2). Sample 1 appears to fall near either the A.D. 1125 or 1390 portion of the curve with a relatively large range of error, $\pm$ 55 years. Sample 3 plots inside a bend in the curve, and several possibilities seem likely. The archaeomagnetic interpretations include A.D. 1225 and 1340, all with a relatively wide range of error, $\pm$ 65 years. Sample 4 appears to plot around the A.D. 1140 portion of the curve, with a $\pm$ 45 year range of error.

Table 12.C.1 Archaeomagnetic Results from Marshview Hamlet

Archaeomagnetic Designation	1	2	3	4
Feature and Provenience	Feature 8	Feature 7	Feature 10	Feature 11 Pithouse 1 Floor 1
Specimens used in final analysis/ total collected	6/12	12/12	8/12	8/12
Degauss level	150 oersted	150 oersted	150 oersted	150 oersted
Mean Inclination	64.34	66.38	60.90	64.77
Mean Declination	3.86	3.41	348.46	349.78
Mean Intensity	0.224×10^{-4}	0.151×10^{-4}	0.384×10^{-4}	0.119×10^{-4}
Mean Sample Vector	5.99	11.78	7.96	7.98
Precision Parameter (k)	451.33	50.52	176.48	460.42
Alpha 95	3.16	6.17	4.18	2.58
Paleolatitude	80.91	78.43	80.15	78.12
Paleolongitude	268.60	119.83	190.80	215.19
Error along great circle (EP)	4.04	8.35	4.88	3.34
Error perpendicular to great circle (EM)	5.05	10.13	6.39	4.16



X Specimens 1,3,7,8,9, and 12 used in final analysis. Mean ([X]) based on these values. Specimens 2,4, and 6 fall outside plotting surface.

Y Specimens 2,3,5,7,8,9,11, and 12 used in final analysis. Mean ([Y]) based on these values. Specimen 6 fell outside plotting surface.

Z Specimens 1,4,5,6,7,9,11, and 12 used in final analysis. Mean ([Z]) based on these values.

Figure 12.C.1 Individual magnetic directions for Archaeomagnetic Samples 1, 3, and 4, Marshview Hamlet.

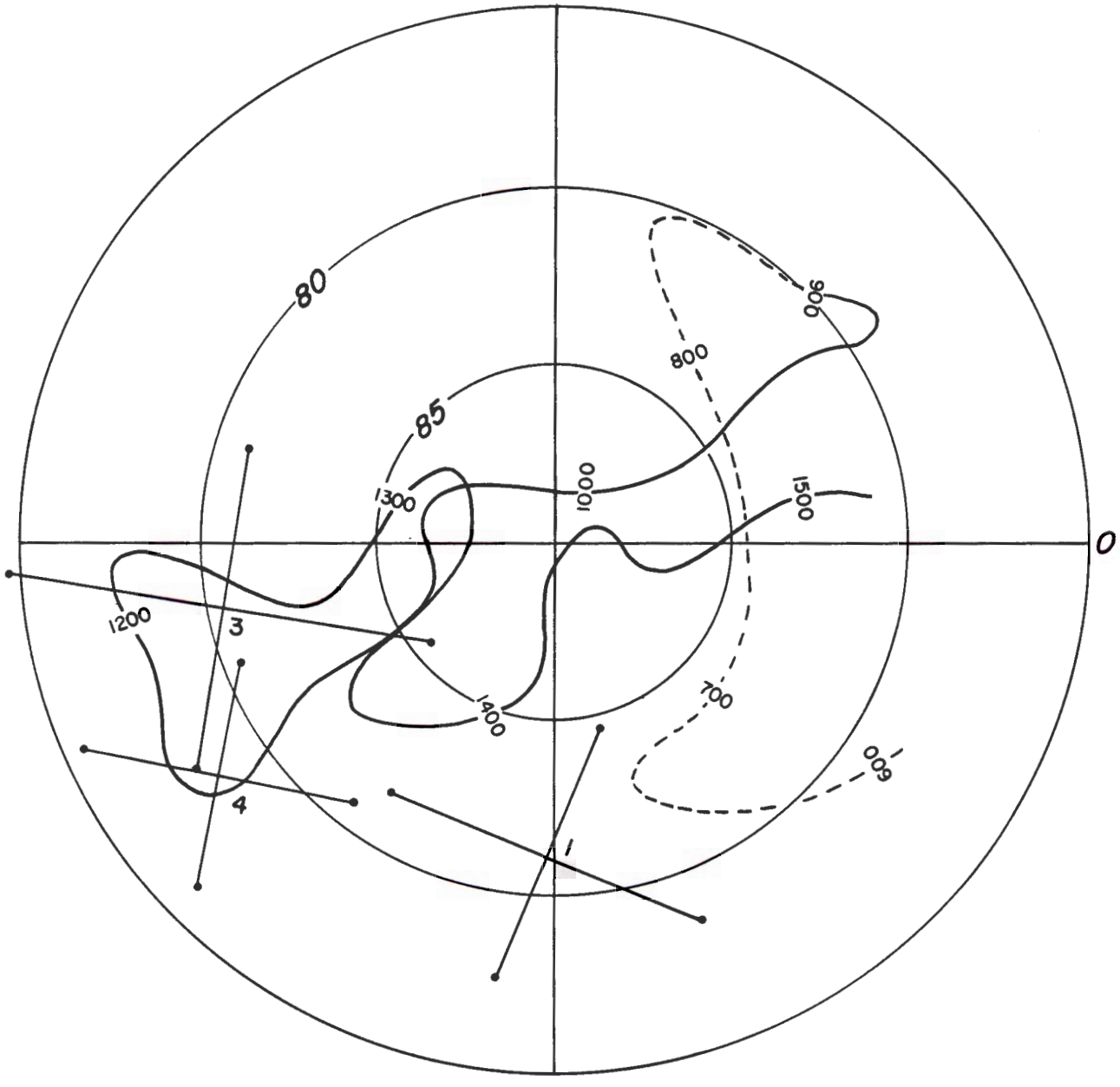


Figure 12.C.2 Southwest master curve, Marshview Hamlet.

APPENDIX D

HUMAN REMAINS FROM MARSHVIEW HAMLET

by

Ann Lucy Wiener

An assemblage of fragmentary human bone was recovered from several post-occupational proveniences near Floor 2 of Pithouse 1 at Site 5MT2235.[1] An inventory of the human skeletal material is presented in Table 12.D.1. Approximately 70 of the bone and dentition fragments are identifiable, and these represent the remains of at least five individuals. Two adults are represented by the relatively complete crania from FS 184 (PLs 30 and 31), and two others by fragmentary cranial remains from FS 184 (PLs 36 and 39, and PL 45). A fifth individual, a juvenile of about six years of age, is represented by immature dentition, pelvic, and postcranial fragments from FSs 184, 172, and 190. All of the skeletal remains were designated D.A.P. Burial 13, Feature 28 (burial numbers are assigned consecutively for all D.A.P. sites).

Cranium 1, PL 30, is probably that of a middle-aged or older adult, but sex cannot be determined. Extensive antemortem tooth loss and alveolar resorption are exhibited in the maxilla, and dental wear is advanced on the remaining teeth. There are healed lesions of cribra orbitalia in the eye orbits, indicating an incidence of dietary anemia. This cranium exhibits symmetrical lambdoidal deformation.

Cranium 2, PL 31, also exhibits lambdoidal deformation, asymmetrically oriented to the right. No dentition can be definitely associated with this skull, and no determination of sex or precise age can be made. No pathology is observable in these remains.

Examination of the postcranial remains yielded little information. Presence of a septal aperture in the distal humerus from FS 210 indicates that one of the adults was probably a female.

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[1]Preliminary analysis of this assemblage was done by Louisa Beyer Flander.

Table 12.D.1 Inventory of Human Remains from Marshview Hamlet (Page 1 of 2)

	Provenience	Description
Cranial		
Cranium 1	FS 184, PL 30	orbit fragments and right maxilla, zygomatic found in soil matrix filling vault; right temporal and left parietals missing
	FS 186	left squamous temporal, zygomatic, maxilla
	FS 208	right petrous temporal
Cranium 2	FS 184, PL 31	left zygomatic, maxillae missing
calvaria	FS 176	left temporal fragments (3)
	FS 177	parietal fragments, adult
	FS 184, PL 36	parietal fragment, adult
	FS 184 PL 41	parietal fragments, adult
	FS 184	parietal fragments, juvenile
	FS 184, PL 39	right petrous temporal fragment, charred, adult
	FS 190	left petrous temporal fragment, adult
	FS 212	basi-occipital, adult
facial skeleton	FS 184	right zygomatic fragment, maxilla, adult
	FS 184, PL 45	right orbit, adult
	FS 184	zygomatic fragment
	FS 184	zygomatic fragment
mandible	FS 184, PL 38	2 fragments, juvenile
	FS 184, PL 33	fragment, adult
dentition	FS 184	incisor, adult
	FS 184, PL 32	incisor, adult
	FS 184	deciduous incisors (2), molar; adult incisor, premolar, molar
	FS 184	charred root, adult
	FS 186	charred canine, adult
	FS 187	charred fragments
	FS 190	deciduous incisors (2)
		incisor, adult
Post-cranial		
vertebrae	FS 184, PL 48	transverse process atlas
	FS 177	axis
	FS 178	thoracic vertebra (spinous process fragment)
clavicle	FS 184, PL 43	fragment
	FS 184, PL 44	fragment
	FS 177	fragment
	FS 208	fragment

Table 12.D.1 Inventory of Human Remains from Marshview Hamlet (Page 2 of 2)

	Provenience	Description
innominate	FS 172	ilium fragment, juvenile
humerus	FS 184	right, juvenile
	FS 208	right distal fragment
	FS 210	right distal fragment
	FS 190	distal fragment
radius	FS 208	right shaft and head
	FS 184, PL 46	proximal fragment
ulna	FS 208	right shaft and head
	FS 176	left olecranon process
scapula	FS 184, PL 40	right, juvenile
	FS 184, PL 47	glenoid fragment, adult
	FS 190	right glenoid fragment, adult
		scapula fragment
tibia	FS 176	proximal shaft fragment
	FS 184	right and left proximal fragments
patella	FS 210	fragment
foot	FS 210	calcaneus fragment
	FS 175	right calcaneus fragment
	FS 175	calcaneus fragment
	FS 210	calcaneus or talus fragment
phalanges	FS 184, PL 34	distal hand
	FS 184	fragment
	FS 184	distal hand
	FS 184	distal hand
	FS 184	fragments (2)
	FS 184	middle
	FS 185, PL 7	phalanx
	FS 185, PL 8	metatarsal fragment

The majority of remains in this assemblage are fragments of long bones. Elements of the axial skeleton are very minimally represented by three fragments of vertebrae, a single innominate fragment, and several clavicle fragments. Ribs, sacra, and lumbar vertebrae are completely lacking.

The possibility of cannibalistic activity at this site has been addressed in careful analysis of the human remains. The materials do not display the dense, highly mineralized type of preservation that has been described in other cannibalized remains in the Mesa Verde region, nor do they exhibit a predominant pattern of spiral-type fractures such as are attributed to intentional breakage of bone for marrow extraction (Nickens [37, 38]). Only one cut mark was observed among the assemblage; this mark could have been made by excavation tools. A few of the bone and dentition fragments appear charred, but not calcined, and it seems likely that these characteristics are the result of proximity to the hearth and ash pit on Floor 2 of the pithouse. Red stains, noted on three bone fragments, may be suggestive of some ritual association with ochre or hematite, or may have resulted merely from contact with reddish soil.

While cannabalism is not implied, this assemblage of very fragmentary remains does appear to have been subject to some type of violent treatment. The robust long bones have been broken to an extent that is more likely to be the result of a forceful blow, rather than of the weight of roof fall or post-abandonment fill. As described in the accompanying report, several ceramic vessels and animal effigies were found with the human remains, and portions of some of these reconstructable vessels were recovered from midden deposits and surface structures at the site, implying transportation of the vessels and bones from an original place of interment to the pitstructure. Motive or method in the apparently violent treatment of these remains is unknown.

APPENDIX E

MACROBOTANICAL REMAINS FROM MARSHVIEW HAMLET

by

Bruce F. Benz and Meredith H. Matthews

Recovery of macrobotanical remains and bulk soil samples from Marshview Hamlet followed standard procedures outlined in the program field manual (Kane [6]). The families and respective genera of plant materials submitted for analysis are presented in Table 12.E.1. Since many of the specimens/samples lack specific contextual descriptions, cultural associations remain speculative. Certain comments concerning the macrobotanical remains do seem justifiable, however.

Sagebrush (Artemisia sp.) wood was the most commonly recovered vegetal material from the site. It was recovered only in a charred condition from features and structure/nonstructure fills. The charred condition of this material suggests that it was used by the prehistoric occupants of Marshview Hamlet. Since sagebrush fragments were recovered from two hearths (Features 4 and 17), it is probable that the wood was used as a fuel resource.

Also present in these two features were charred parts of the female reproductive structure of maize. The presence of charred corn kernels in these features suggests corn preparation activities. However, since there were also charred fargments of corn cobs in the hearths, the few kernels retrieved may have been attached to the cobs and susequently burned if the cobs had been used as a fuel resource.

Floated bulk soil samples from the floor of the pithouse (Bulk Soil Samples 92, 94, and 96) and the matrix of the burial (Bulk Soil Sample 72) yielded several genera of noncharred weedy plant seeds and fruits, as well as a minimal amount of charred Artemisia sp. wood fragments. It is commonly believed that noncharred plant remains indicate that they are contaminants (i.e., some still have intact embryos) and probably were introduced into the site through bioturbative activities or accidently

during excavation. It is believed that the charred fragments of Artemisia sp. wood recovered from these samples were associated with the prehistoric occuaption. However, the occurrence of these wood fragments in these samples is probably due to intermixing of general site debris with sampled strata.

Table 12.E.1 Macrobotanical Remains from Marshview Hamlet (Page 1 of 3)

TAXON	FS 65 Sq14S,18E Level 3 VEG	FS 70 Sq16S,10E Level 2 VEG	FS 105 Sq10S,20E Level 1 VEG	FS 148 Feature 4 VEG	FS 167 Pithouse 1 Stratum 1 VEG
Amaranthaceae					
Amaranthus sp.					
Seed					
Chenopodiaceae					
Chenopodium sp.					
Fruit					
Compositae					
Fruit					
Artemisia sp.					
Wood	X/C	X/C	X/C	X/C	
Cupressaceae					
Juniperus sp.					
Wood					
Fagaceae					
Quercus sp.					
Wood					X/C
Gramineae					
Zea mays					
inflorescence/cob				X/C	
Fruit				3/C	
Pinaceae					
Pinus edulis					
Seed	1/C				
Portulacaceae					
Portulaca sp.					
Seed					

Table 12.E.1 Macrobotanical Remains from Marshview Hamlet (Page 2 of 3)

TAXON	FS 171 Pithouse1 Fill VEG	FS 184 Burial Pithouse1 BS 72	FS 186 Pithouse1 Floor 2 VEG	FS 187 Pithouse1 Feature11 VEG	FS 197 Feature17 BS 91
Amaranthaceae					
Amaranthus sp.					
Seed		2/N			
Chenopodiaceae					
Chenopodium sp.					
Fruit		2/N			2/N
Compositae					
Fruit		1/N			
Artemisia sp.					
Wood		X/C			X/C
Cupressaceae					
Juniperus sp.					
Wood	X/C				
Fagaceae					
Quercus sp.					
Wood					
Gramineae					
Zea mays					
inflorescence/cob					X/C
Fruit			1/C	2/C	1/C
Pinaceae					
Pinus edulis					
Seed	1/C				
Portulacaceae					
Portulaca sp.					
Seed					

Table 12.E.1 Macrobotanical Remains from Marshview Hamlet (Page 3 of 3)

TAXON	FS 198 Pithouse 1 Floor 2 BS 92	FS 199 Pithouse 1 Floor 2 BS 96	FS 200 Pithouse 1 Floor 2 BS 94
Amaranthaceae			
Amaranthus sp.			
Seed	5/N		
Chenopodiaceae			
Chenopodium sp.			
Fruit	8/N		3/N
Compositae			
Fruit			1/N
Artemisia sp.			
Wood	X/C	X/C	X/C
Cupressaceae			
Juniperus sp.			
Wood			
Fagaceae			
Quercus sp.			
Wood		X/C	
Gramineae			
Zea mays			
inflorescence/cob	X/C		
Fruit			
Pinaceae			
Pinus edulis			
Seed			
Portulacaceae			
Portulaca sp.			
Seed	32/N	1/N	13/N

Key:
1/ - Number of reproductive plant parts present
X/ - Nonreproductive plant parts present
/C - Plant part charred
/P - Plant part partially charred
/N - Plant part noncharred
FS - Field provenience unit
BS - Bulk soil sample
VEG - Vegetal specimen

APPENDIX F

POLLEN REPORT FOR MARSHVIEW HAMLET

by

Linda J. Scott

A total of 69 pollen samples was taken at Marshview Hamlet; of these, 18 were analyzed. A discussion of the methodology involved in analysis is presented in the 1979 D.A.P. pollen report (Scott [39]). Also included in this report are intersite comparisons and a graphic representation of the pollen records for various D.A.P. sites, including Marshview Hamlet.

All pollen samples from Marshview Hamlet were taken from Pithouse 1 (Table 12.F.1). Two floors were located within the pithouse: Floor 2, in use at the time of abandonment, and Floor 1, an earlier floor which had been plastered over. Sample 15, taken 0-10 cm below the present ground surface, represents the uppermost sample taken from the stratigraphic column in this pitstructure. This sample was chosen for analysis because it was thought most likely to yield information concerning the modern environment at the site. The high frequency of Artemisia pollen within this sample is inconsistent with the modern surface sample taken at Site 5MT4512, 0.8 km northwest of Marshview Hamlet (Scott [39:Figure 8.1]). This discrepancy is probably a reflection of the seasons during which the pollen samples were taken. The sample from Site 5MT4512 was taken in mid-April and that from Site 5MT2235 in mid-September.

The archaeological pollen samples from Floor 2 in Pithouse 1 were taken from a variety of locations. Samples 35 and 36 were taken from the center of the northeast quadrant of the floor. Sample 35 did not yield sufficient pollen for analysis, whereas Sample 36 contained abundant pollen. Sample 36 more closely resembles the modern sample from Site 5MT4512 than do any other of the archaeological samples from Marshview Hamlet. This sample appeared to contain primarily background pollen

Table 12.F.1 Provenience of Pollen Samples from Pithouse 1, Marshview Hamlet

Pollen Sample #	FS #	Provenience and Comments
15	178	0-10 cm below present ground surface, upper sample from stratigraphic column
35	185	Floor 2, floor contact, NE quarter; no pollen
36	185	Floor 2, floor contact, NE quarter
37	187	Floor 2, top area of hearth (Feature 11) in ash fill
39	188	Floor 2, bottom of Feature 12, a pot rest
41	189	Floor 2, upper fill of Feature 13, a cist
42	189	Floor 2, base of Feature 13, a cist
44	185	Floor 2, beneath mano fragment, SW quarter
47	198	Floor 2, floor contact, SW quarter; scatter sample
49	199	Floor 2, floor plaster, SE quarter; scatter sample
56	203	Floor 2, near base of Feature 20, sipapu
58	205	Floor 1, near base of Feature 22, a pit feature or possible rodent hole, NW quarter
59	206	Floor 1, near base of fill, Feature 23, a pit feature, NW quarter
60	207	Floor 1, near base of fill of Feature 24, a pit feature; SW quarter of floor
63	184	Layer 1, fill in the bottom of duck effigy vessel (RC 14)
65	184	Layer 3a, duck effigy vessel (RC 14)
66	184	Layer 3b, duck effigy vessel (RC 14)
67	184	Layer 3c, duck effigy vessel (RC 14)

types, even though a small amount of Cleome pollen was present and the Juniperus frequency is higher than in other samples from this site.

Samples 49 and 47 are scatter samples taken from the southeast and southwest quadrants of the pithouse. These two samples contained very similar pollen. The primary differences are that Sample 47 contained Cleome, Shepherdia, and Umbelliferae pollen, which were not noted in Sample 49. Most of the pollen in these two samples represents ambient pollen types present in the pithouse.

The samples taken from Floor 2 of this pithouse contained fairly similar frequencies of arboreal pollen. Sample 36 had the largest frequency of arboreal pollen while Sample 49 contained the largest frequency of Cheno-am pollen. Cleome pollen was noted in both the northeast and southwest quadrants of this pithouse. No Zea pollen was noted in any of these pollen samples.

Pollen Sample 44 was taken from beneath a mano fragment in the southwest quadrant of Floor 2 in Pithouse 1. Five percent Cleome and 1 percent Zea were the only economic pollen noted in this sample. Sample 44 was compared to Sample 47, the scatter sample from the southwest quadrant near the mano. The mano sample contained more Cheno-am pollen and slightly more Cleome pollen than did the scatter sample. The mano sample also contained Zea pollen, which was not noted in the scatter sample. It is possible that Zea, Cleome, and/or Cheno-ams were ground with this mano.

Pollen Sample 39 was taken from the bottom of Feature 12, a pot rest on Floor 2 of Pithouse 1. The pollen from this sample is very similar to that observed in Sample 47; the only significant difference noted was the presence of 1 percent Zea pollen in Sample 39.

Pollen Samples 41 and 42 were taken from the upper fill and the base, respectively, of Feature 13, a cist in the northwest quarter of Floor 2 in Pithouse 1. The difference in pollen frequencies noted in these two samples is that Sample 42 contained 5 percent Graminae pollen and 1 percent Portulaca pollen, neither of which occurred in Sample 41. Sample 41 also contained more arboreal pollen than Sample 42. One percent Zea pollen was noted in both samples. It is possible that Gramineae, Portulaca, and Zea were stored in this cist.

Pollen Sample 56 was taken from near the base of Feature 20, the sipapu. This sample contained pollen similar to that from Sample 42 at the base of the cist, with the exception that no Portulaca pollen was noted in the sipapu. All pollen from this sample can be accounted for as ambient pollen within the pithouse.

Pollen Sample 37 represents the top of the ash fill in the hearth (Feature 11). This sample primarily contained ambient pollen. The Cheno-am pollen frequency is rather high for this pithouse, and 1 percent Cleome and 1 percent Zea pollen were also noted. There is no definite evidence for the cooking or preparation of specific foods in or near the hearth; therefore, these low frequencies of economic pollen and slightly increased Cheno-am pollen may be ambient pollen from the pithouse.

Pollen Sample 58 was taken from near the base of the fill in Feature 22. This feature might be a small pit feature or a rodent hole, so all pollen from this sample is considered ambient pollen from this pithouse. The pollen frequencies in this sample are similar to many of the samples from this structure in that no large quantities of economic pollen were noted.

Pollen Sample 59 was taken from near the base of Feature 23, a pit feature in the northwest quarter of Floor 1 of Pithouse 1. The pollen content of this sample was similar to other samples from this pithouse, although it has a slightly higher frequency of Artemisia pollen and a lower frequency of Cheno-am pollen. Both Cleome and Zea were represented as 1 percent of the total pollen. The probable contents of this feature cannot be discerned based on the pollen record.

Pollen Sample 60 was taken from near the base of the fill in Feature 24, a pit feature in the southwest quadrant of Floor 1 of Pithouse 1. This pollen sample contained a large amount of Cleome pollen (19 percent). No other economic pollen types were observed and the remaining pollen from the sample is similar to other samples from this pithouse. The large quantity of Cleome pollen may indicate that this plant was handled in the area around the cist.

Four samples from a duck effigy vessel (RC 14) were also examined for their pollen contents. The fill of this vessel was composed of several distinct layers. Pollen Sample 63 represents Layer 1, the fill in the bottom of the vessel, consisting of an irregular layer of ash. Layer 2 in the vessel consisted of fine reddish sand; this layer was noted to have pollen, but a full analysis was not completed on the sample. Layer 3 was composed of approximately eight lamella (W. Litzinger, personal communication). Samples 65, 66, and 67 represent Layers 3a, 3b, and 3c, from bottom to top, respectively. Layer 4 consisted of a coarse reddish sand and was noted to contain pollen, although a complete pollen analysis was not done. Zea pollen was noted only in Layer 1. Cleome pollen was noted in all samples analyzed, and it increased in frequency in the upper layers from this vessel. With the possible exception of the ash in the bottom of

the vessel, the distinct layers probably represented the accumulation of soil in the vessel. The arboreal pollen frequency in these samples varies slightly. Sample 63 contained 14 percent arboreal pollen, which increased to 20 percent in Layer 3a (Sample 65). The arboreal pollen then declined to 16 percent in Layer 3b and 12 percent in Layer 3c. Similar fluctuations were observed in the nonarboreal pollen frequencies. These pollen samples were probably comprised primarily of pollen which was present in the soil at the time it was deposited in this vessel. These samples contained slightly less arboreal pollen and more Cheno-am pollen than most of the other samples from this site. These fluctuations may be due to subtle changes in the local environment or to variations in the amount of pollen present in the soil due to the time of year that the layers were deposited in the vessel.

The pollen record from Site 5MT2235 indicates that the prehistoric environment near Marshview Hamlet included the following genera and taxonomic types: Alnus, Juniperus, Pinus, Quercus, short-spined Compositae, Artemisia, high-spined Compositae, Cheno-ams, Sarcobatus, Cleome, Collomia, Cruciferae, Ephedra nevadensis-type, Ephedra torreyana-type, Eriogonum, Gramineae, Polygonum sawatchenses, Portulaca, Rosaceae, Sphaeralcea, Shepherdia, and Umbelliferae. Zea was the only cultigen noted in the pollen record. Cleome pollen was noted in all samples, with the exception of Sample 36 from the northeast quadrant of the pithouse. Zea pollen did not occur in any of the general floor samples or in Sample 56, but did occur in all other pollen samples from this pithouse.

Pollen Sample 15, contained a very large quantity of Artemisia pollen when compared to the rest of the samples from this site, and it is

considered aberrant. The proximity of this site to the Sagehen Marsh, however, is not readily apparent from the pollen record. There is a consistency in the pollen record in this pithouse that makes interpretation of individual features very difficult. Sample 60 is the only sample that contains a large amount of economic pollen. This sample contains a high frequency of Cleome pollen, which probably indicates the presence of Cleome in this pit feature (Feature 24).

APPENDIX G

FAUNAL REMAINS FROM MARSHVIEW HAMLET

by

Steven D. Emslie

Methods

Faunal remains recovered from Site 5MT2235 were excavated during the 1978 and 1979 field seasons. Remains were identified using modern comparative skeletons collected in the D.A.P. area. All bones were identified to species when possible, or to other taxonomic categories. Bones of the cottontail, (Sylvilagus sp.) and mouse (Peromyscus sp.) were identified only to genus, as several species which are not osteologically distinct occur in the D.A.P. region. Bones of reptiles and amphibians could not be identified at this time due to lack of adequate comparative material.

Minimum numbers of individuals (MNIs) for each taxon identified to genus and/or species were calculated by counting the most numerous element of the same side of the body, and by comparing young vs. old individuals based on bone growth. In the case of multiple occupation sites, MNIs cannot be calculated for specific time periods until other analyses are completed.

The Data

A total of 970 bones representing 18 species and 37 taxonomic categories was recovered from the site (Table 12.G.1). The majority of bones are unidentifiable mammals, followed by rabbits, rodents, and artiodactyls. Worked bone from the site is listed in Table 12.G.2. Only two point locations (PLs) of bone were recorded: a large mammal long bone shaft fragment (PL 2) and an artiodactyla metatarsal shaft fragment (PL 3). A mule deer right metacarpal has two perpendicular cut marks on the distal anterior shaft, one on the posterior shaft, and one oblique cut

mark on the distal lateral condyle. This bone has also been worked.

Discussion

All species represented at this site currently occur in the D.A.P. region with the exception of the pika (Ochotona princeps) and common turkey (Meleagris gallopavo). The pika currently occurs at higher elevations in Colorado north of the D.A.P. region. The common turkey was a domesticated bird kept by the Anasazi.

Rodent remains at the site may be intrusive and not related to cultural deposits. Ground squirrels, prairie dogs, and pocket gophers are found in areas with deep light soil as is found at the site today. Similar inferences may be made concerning the rabbit remains in the site. However, rodents and rabbits are known to be used for their skins and for food by modern tribes. Cultural use of bone is substantiated by the presence of butchering marks and bone tools and ornaments. Species represented in this manner at Site 5MT2235 include mule deer and sandhill crane. Comparison of this site with other sites in the D.A.P. area, once all analyses are completed, may provide further interpretations on the use of fauna at Site 5MT2235.

Table 12.G.1 Faunal Taxa Identified at Marshview Hamlet (Page 1 of 2)

Taxon	No. of Bones	MNI*
Not identifiable	2	
Mammalia or Aves	5	
Mammalia, small	150	
Mammalia, medium	271	
Mammalia, large	165	
Black-tailed jackrabbit (*Lepus californicus*)	35	3
Cottontail rabbit (*Sylvilagus* spp.)	129	9
Pika (*Ochotona princeps*)	1	1
Rodentia	17	
Sciuridae	12	
Spotted ground squirrel (*Spermophilus spilosoma*)	2	1
Rock squirrel (*Spermophilus variegatus*)	1	1
Gunnison's prairie dog (*Cynomys gunnisoni*)	78	8
Pocket gopher (*Thomomys* sp.)	9	
Valley pocket gopher (*Thomomys bottae*)	10	3
Ord's kangaroo rat (*Dipodomys ordii*)	1	1
Beaver (*Castor canadensis*)	15	2
Cricetidae	7	
Mouse (*Peromyscus* sp.)	4	

Table 12.G.1 Faunal Taxa Identified at Marshview Hamlet (Page 2 of 2)

Taxon	No. of Bones	MNI*
Woodrat (*Neotoma* sp.)	3	
Porcupine (*Erethizon dorsatum*)	1	1
Carnivora	1	
Artiodactyla	3	
Mule deer (*Odocoileus hemionus*)	8	2
Bighorn sheep (*Ovis canadensis*)	1	1
Aves	7	
Duck or Teal (*Anas* sp.)	1	1
Grouse	9	
Sage grouse (*Centrocercus urophasianus*)	1	1
Common turkey (*Meleagris gallopavo*)	3	1
Greater sandhill crane (*Grus canadensis tabida*)	1	1
Corvidae	6	
Steller's jay (*Cyanocitta stelleri*)	1	1
Scrub jay (*Aphelocoma coerulescens*)	3	1
Pinyon jay (*Gymnorhinus cyanocephala*)	2	1
Reptilia	1	
Amphibia	4	
TOTAL	970	

*MNI - Minimum number of individuals

Table 12.G.2 Worked Bone Identified at Marshview Hamlet

FS/Cat No. PL	Taxon	Element
51-02-1	*Grus canadensis tabida*	left ulna, both ends cut from shaft
169-02-2	Artiodactyla	metapodial, proximal quarter with spiral break
169-02-1	*Odocoileus hemionus*	right metacarpal
172-02-1	*Odocoileus hemionus*	left humerus, spiral fracture proximal end missing
175-02-1	Artiodactyla	metacarpal, split laterally, shaft fragment
184-02-17, PL 35	Aves	radius
184-02-18, PL 42	*Maleagris*	tibiotarsus
185-02-1, PL 2	Mammalia, large	longbone shaft fragment, split laterally
185-02-2, PL 3	Artiodactyla	metatarsal, split laterally, shaft fragment
210-02-1	Aves	longbone shaft fragment

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