Journal of California and Great Basin Anthropology
Vol. 8, No. 2, pp. 180-203 (1986).

Post-Formative Ceramics in the Eastern Great Basin: A Reappraisal of the Promontory Problem

DONALD W. FORSYTH, Dept. of Anthropology, Brigham Young Univ., Provo, UT 84602.

IN 1937, on the basis of excavations carried out in a series of caves in the Promontory region, Julian Steward (1937:83, 1940:472) defined what he described as a hunting culture strongly oriented toward the exploitation of large mammals, particularly bison. However, very little "Promontory" material was actually recovered from any of Steward's cave excavations, with the exception of Cave No. 1, which contained abundant cultural material. Steward defined the culture on the basis of a number of material culture traits or characteristics. These included the

> self and sinew-back bow, cane arrows with hardwood foreshafts, longitudinally grooved stone arrow polishers, "fingernail" and rim decorated pottery, cedar bark pot rests, three and four piece moccasins, extensive use of hide, single-rod or rod-and-bundle coiled basketry, tule and rush matting with cord twine, fur and feather cloth, triangular flint knives set in the ends of long wooden handles, and incised slate slabs [Steward 1937:122].

What today are called Desert Side-notched points should probably be added to this list (Steward 1937:13, 93; Holmer and Weder 1980:60).

Steward's primary diagnostic attribute for the presence of a Promontory culture occupation at a site was the presence of a particular kind of pottery which he (1937:42; also see Steward 1936:18) labeled "Promontory ware." Although very few of the other material-culture characteristics outlined above were found at other sites, Steward (1937:42, 122) argued that the culture was widely represented in the Salt Lake and Provo regions based on the presence of Promontory-like pottery:

> A highly distinctive type of ceramics . . . occurred in the upper levels of all the Promontory caves, Nos. 1, 2, 3, 4, 5, and 6; in Cave No. 7, near Connor's Springs; in Caves Nos. 8, 9, and 11, north of Bear River Bay; in the Black Rock Cave; along an ancient dry stream channel in Tooele Valley, 4 miles south of Grantsville . . . ; in a mound on the Rollins property at Provo; . . . on the beach of Provo Lake near the mouth of the Provo River; and in a large cave at Lakeside on the western shore of Great Salt Lake [Steward 1937: 42].

Thus, Promontory pottery became a diagnostic marker for the Promontory culture.

Steward (1937:82-83, 122) argued on the basis of stratigraphy and the presence or absence of certain kinds of artifacts that the Promontory remains postdated the "Puebloan" (i.e., Fremont/Sevier) occupation of the region. Without any firm basis for chronometric dating, and finding few strong material-culture correlations with other then-known regions, Steward (1937:82-83, 122) concluded that the Promontory remains represented either an early Shoshonean manifestation or some other hunting and gathering group that occupied the region after the disappearance of the "Puebloid" occupation.

In subsequent years no sites with a wide range of artifacts equivalent to those of

Promontory Cave No. 1 were reported, although a number of sites in the area around the Great Salt Lake and northward were reported to contain Promontory ware (Rudy 1953:93-94). In some of these sites there was an overlap zone in which Promontory and "Puebloid" pottery were found mixed together (Rudy 1953:93). The issue of overlap based on contexts with mixed "Pueblo" and Promontory pottery surfaced in the late 1930s, and caused Steward (1940:472-474) to argue that the Promontory culture represented an intrusive cultural group that entered the northern Utah area while sedentary Puebloid groups still occupied the region. In his 1940 paper, Steward (1940: 473) emphasized what he regarded as a northern Plains flavor in the Promontory culture, while at the same time he pointed out traits derived from the Puebloid groups that he thought might still be inhabiting northern Utah.

Gunnerson (1956) reemphasized the focus on the Plains-related traits of Promontory culture by drawing a number of parallels between the Promontory culture and the Dismal River Aspect in the Plains region. While noting the difficulties of dating and the possible Puebloid overlap, Gunnerson (1956:72) suggested that the Promontory manifestation represented "an early protohistoric thrust by a buffalo-hunting Athabascan group into the Great Basin from the Plains."

The idea that the Promontory materials represented a cultural manifestation distinct from the Fremont was called into question by Aikens (1966). He argued that the distinctive Promontory pottery used to mark the Promontory culture had been recovered in direct association with typical Fremont remains at a series of sites in the Bear River region of Box Elder County (Aikens 1966:14, 59, 74). Aikens (1966:74) further pointed out that, just as in the case of the Promontory caves, the economy of the Bear River sites was heavily oriented toward bison hunting. Furthermore, radiocarbon analysis of a Promontory-type moccasin from Cave No. 1 yielded a date of A.D. 1110±75 years,[1] well within the Fremont time span. On the basis of this evidence, Aikens (1966:74) drew the conclusion that:

> These dates and associations support each other in indicating that Promontory and Fremont materials existed together for a considerable span of time in northern Utah, and that earliest Promontory is earlier than earliest Dismal River, possibly by as much as 700 years. These facts clearly negate the hypothesis that Promontory represents a late intrusion from the Plains; they also lend new significance to the fact that the known distribution of Promontory is coextensive with that of the distinctive northern Utah variant of the Fremont. Since Promontory culture seems to occur nowhere outside the presently known range of Fremont culture, it is here suggested that Promontory does not in fact represent a cultural grouping distinct from the Fremont, and that the "Promontory culture" is an artifact of archeological misinterpretation of a few variant items of material culture from seasonal Fremont hunting camps.

I should emphasize that although Aikens advanced a number of arguments for regarding Promontory materials as simply Fremont, the crucial evidence was the alleged complete association of Great Salt Lake Gray and other Fremont pottery types with Promontory pottery at the Bear River sites (Bear River Nos. 1, 2, 3, and the Injun Creek site). On the basis of Aikens' well-marshalled evidence, the idea of a separate, post-Fremont cultural manifestation represented by Promontory pottery and other characteristics outlined by Steward (1937) has not subsequently been entertained.

As part of his analysis of the ceramics from the Levee and Knoll sites (in the same vicinity as Bear River Nos. 1, 2, and 3), David Madsen (1979:98-99) argued that Promontory pottery was not nearly as prominent in the ceramic inventories of the Bear River sites as Aikens had believed. He suggested that much of what was labeled Promontory pottery was misidentified because all calcite-tempered pottery (most of which, in Madsen's view, was Uinta Gray--an unequivocally Fremont type) had been classified as Promontory pottery. Madsen (1979: 99) indicated that the Promontory pottery present in the Bear River sites dated relatively late in the Fremont sequence, and that it might represent an intrusive trade item. Nevertheless, in the absence of a more detailed analysis of the materials from the Bear River sites, he (1979:98) apparently continued to regard Promontory pottery as a locally manufactured ceramic variety limited to the Salt Lake Fremont area.

A similar view was expressed by Rex Madsen (1977) in his analysis of Fremont ceramics. Thus, Promontory Gray was considered to represent a different technological tradition of Fremont pottery manufacture that occurred in the latter portion of the Fremont time span (Madsen 1977:v-vi, 23-24).

Jennings (1978:173, 179), in discussing the Great Salt Lake Fremont, summarized the situation as it stood in the mid 1970s:

> The different Promontory pottery poses a minor problem. It superficially resembles pottery from the Plains, whereas all other Fremont pottery is in the Southwestern tradition. Why should limited amounts of the alien ware persist and occur at so many sites? Aikens (1966) once thought that the origins of the Fremont lay in the Plains and that the Promontory ware was merely a variant of Great Salt Lake Gray. David Madsen (1973) [actually 1979] in a restudy of tempering material, firing temperatures, and manufacturing techniques has pretty well established that the Promontory tradition is somehow alien in the Fremont setting. His findings open anew the problem of the Promontory culture and its relationships to the Fremont. . . . Steward (1937) has proposed the Promontory culture as heavily dependent on game, especially bison. With the Great Salt Lake Fremont so clearly oriented to game of all sorts, can it actually be a blending of the restricted Plains-flavored Promontory culture and the Uinta Fremont? If so, the matter is by no means solved, although Aikens, Marwitt, and Dalley have made fairly positive statements about the "dissolving" of Promontory into Fremont.

It seems evident that the whole issue of "Promontory" and its relationship to the Fremont, in terms of chronological placement and cultural affiliation, remains problematical. And it is, in my view, more than a minor problem. If Steward was correct in arguing that Promontory represented a different cultural group that succeeded the Fremont occupation (even allowing for some temporal overlap), this would constitute a significant datum. On the basis of archaeological data we know pitifully little about the post-Formative occupation of the northern portion of Utah. Indeed, were it not for ethnohistoric and ethnographic data we would know virtually nothing at all. This is primarily the result of a dearth of serious investigation of post-Fremont occupation out of either a lack of interest or a failure to locate or recognize appropriate sites for such investigation.[2] It is safe to say that were it not for the ethnohistoric data (e.g., Janetski 1983), we would know far more about Archaic hunters and gatherers, their subsistence, settlement patterns, and adaptive strategies than we do about the immediately pre-Anglo inhabitants of northern Utah (cf. Madsen 1980:27-28). This may be true even

if we do take into consideration the ethnohistoric information. Thus the issue of what Promontory really is or represents is not a minor issue of culture history, but a serious question about what constitutes the post-Fremont occupation of the region, particularly in northern Utah (see Madsen 1975). If we cannot satisfactorily identify such sites and occupations on the basis of archaeological material, we can hardly investigate more complex and difficult issues such as reconstruction of lifeways and cultural processes.

On the other hand, if Promontory represents nothing more than a subset of Fremont culture restricted to the northern portion of the Fremont area, whatever its origin, then we are left with virtually no archaeological evidence concerning the nature of the post-Fremont occupation of the area. We can label such an occupation Shoshoni. But there remain the basic problems of how to recognize it archaeologically and how to investigate it seriously. Because these kinds of basic culture-historical questions cannot at present be successfully resolved, the whole issue of the post-Fremont occupation remains fraught with difficulty. It is precisely for this reason, I suspect, that the issue of the post-Fremont occupation of the area has been only summarily treated in the archaeological literature (compare the data presented on the "Shoshoni" with those on the Fremont and Anasazi in Jennings' [1978] summary of the eastern Great Basin), and is heavily based on projections into the past of ethnographic information collected from Numic groups in the 1930s (see Madsen 1975, 1980). Janetski (1983:67-75) recently presented a testable model of post-Fremont, protohistoric settlement and subsistence of the Utah Valley region. But to test such a model, one must first determine with some degree of certainty the basic chronological and distributional framework of post-Formative occupation in the region. Unfortunately this cannot be done because of the difficulty of defining consistently and empirically what differentiates post-Fremont remains from Fremont ones.

For this reason, among others, I have concluded that it is necessary to review the entire issue of the "Promontory culture" and what it represents. What follows is an attempt to present some new data, revise and reinterpret some old data, and lay out a set of testable hypotheses concerning at least a part of the post-Formative occupation of the Wasatch Front region. My intent here is culture-historical. But an adequate culture-historical framework is an essential prerequisite to further investigation.

UTAH VALLEY AND THE PROMONTORY PROBLEM

As part of a review of the known archaeology of Utah Valley (Fig. 1), I have undertaken a reanalysis of the archaeological collections recovered from the valley by the University of Utah and Brigham Young University (BYU). The sites studied encompass the Hinckley Mounds, including the Benson, Marrott, and Rollins Mounds (Steward 1933a: 15-17; Reagan 1935a:65-72; Christensen 1947; Green 1961, and unpublished fieldnotes), Seamons Mound (unpublished), the Beeley site (Beeley 1946), Reagan's Utah Lake shore materials (Reagan 1935a:75, 1935b:13), Woodard Mound (Richens 1983, and unpublished fieldnotes), and Spotten Cave (Mock 1971).

In addition, I analyzed a number of private collections of materials from the valley that have been turned over to BYU for analysis. The most important of these is the James Bee collection. Bee, a mammalogist, and his father were active in private collecting in the 1930s, especially during the drought of 1933-34, when the level of Utah

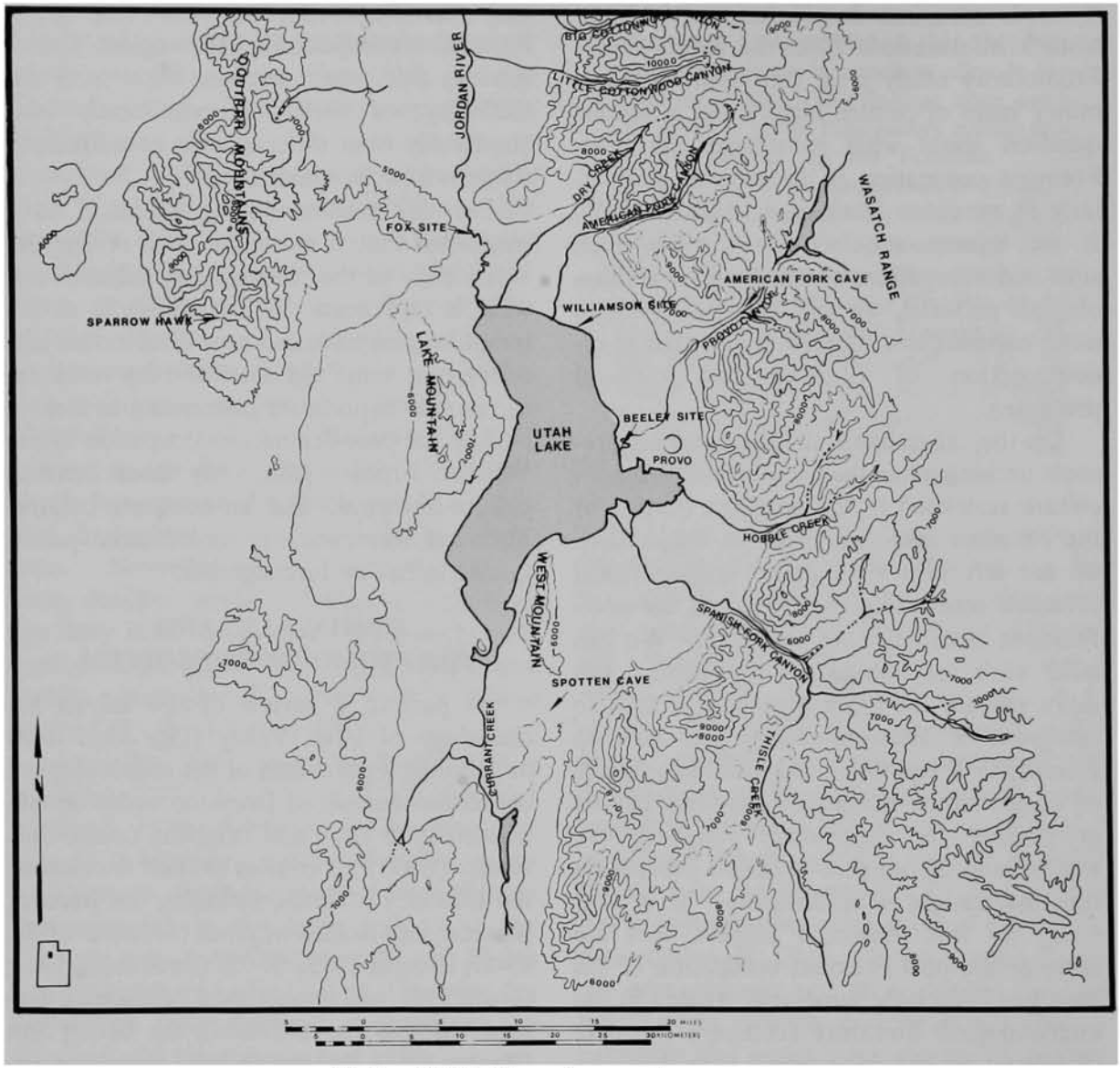

Fig. 1. Utah Valley and surrounding area.

Lake dropped precipitously. They recorded a number of sites located well out into what has normally been Utah Lake, at least since the 1870s when a dam was constructed at the mouth of the lake. Bee kept careful records of where sites were located and plotted them on maps. He also grouped together all artifacts recovered from surface collections by site (in the case of excavations, by horizontal provenience and stratigraphic location).

Another important site is the Heron Spring site, located where Spring Creek empties into Utah Lake (now under water). This site has been collected for several years by Ron Myers of American Fork, Utah. Still another site is the Williamson site (42Ut477) (Nelson 1984:54) briefly reported

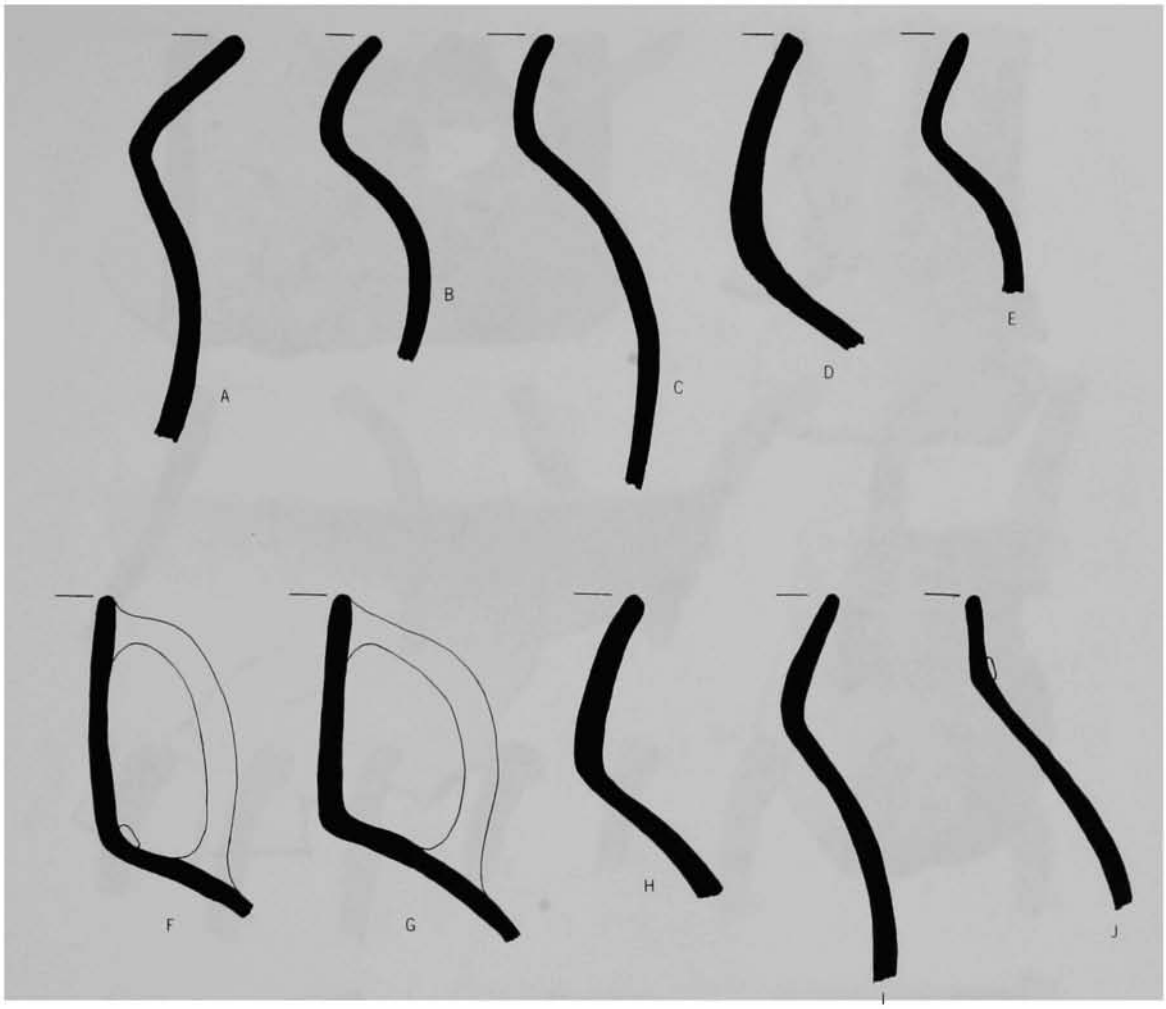

Fig. 2. Fremont sherd profiles.

by Janetski (1983:83-84) as the Spencer site.

Study of these materials indicated that two major classes of plain grayware pottery were represented, and that the two classes were marked by distinctive associational and distributional characteristics. One class of pottery, corresponding to the well-known Fremont graywares, was marked by relatively thin vessel walls (5-6 mm.); generally well-smoothed and -finished vessel surfaces; globular-shaped vessels with strongly restricted necks (i.e., vessel diameter at the neck much smaller than that at the major point of the globular body); moderate to strongly everted or cylindrical rims; and direct lips either rounded or tapered, but only very rarely folded or thickened (Figs. 2-3). Decoration was rare, but when it did occur, it generally consisted of fingernail or stick impressions on vessel necks and/or near the neck-shoulder junction, or appliqued coffee-bean fillets at the neck-shoulder junction. Decoration on rim tops was very rare. Handles occurred consistently and in considerable numbers.

The other class of pottery, corresponding to what has been classified as "Promontory Ware," was marked by thick vessel walls (8-9 mm.); irregular and lumpy, poorly smoothed surfaces; globular-vessel forms with

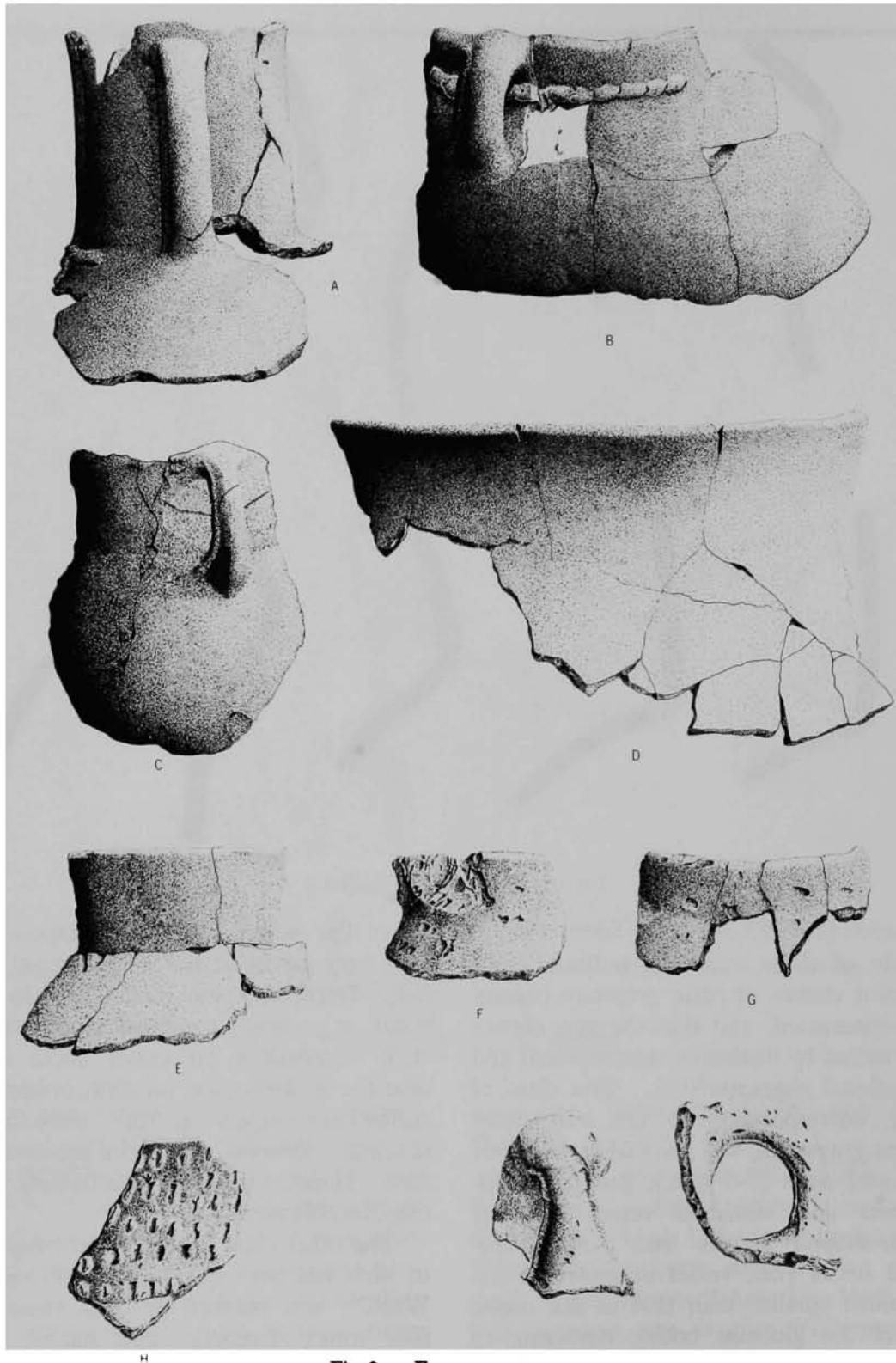

Fig. 3. Fremont pottery.

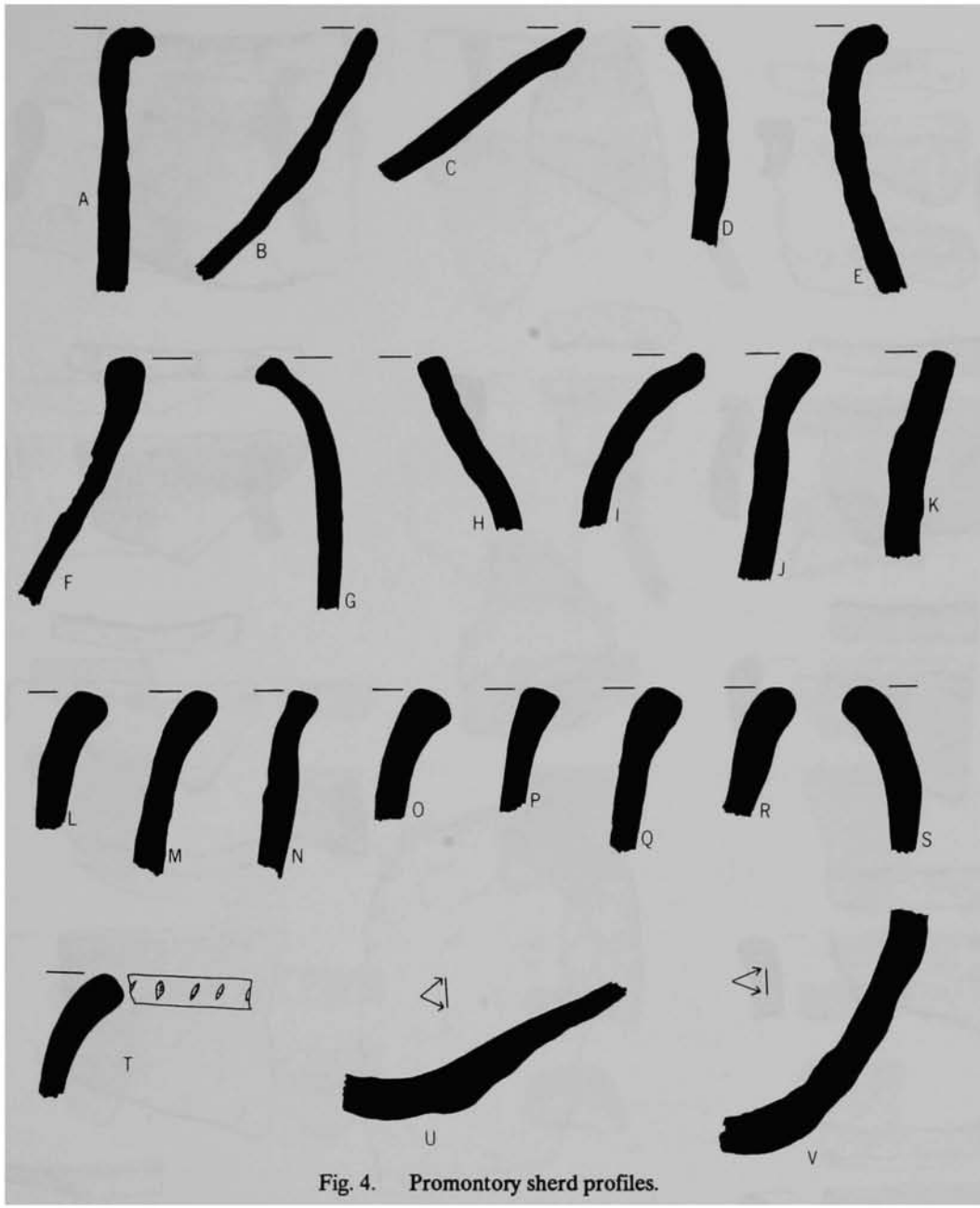

Fig. 4. Promontory sherd profiles.

only slightly restricted necks (i.e., vessel neck diameter only slightly smaller than the diameter of the major point); and exteriorly folded or thickened lips, sometimes bearing incised or punched designs on the tops of the folded rims, but only rarely on the vessel body (Figs. 4-6). In contrast to the Fremont pottery, vessel rims were poorly made; rather than forming a flat, horizontal plane, the tops of vessel rims are irregularly and carelessly formed. This same lack of care is exhibited at the base of the exterior lip fold where it meets the vessel wall. Here also the base of the fold is irregular. Handles are virtually nonexistent.

The differences outlined above are suffi-

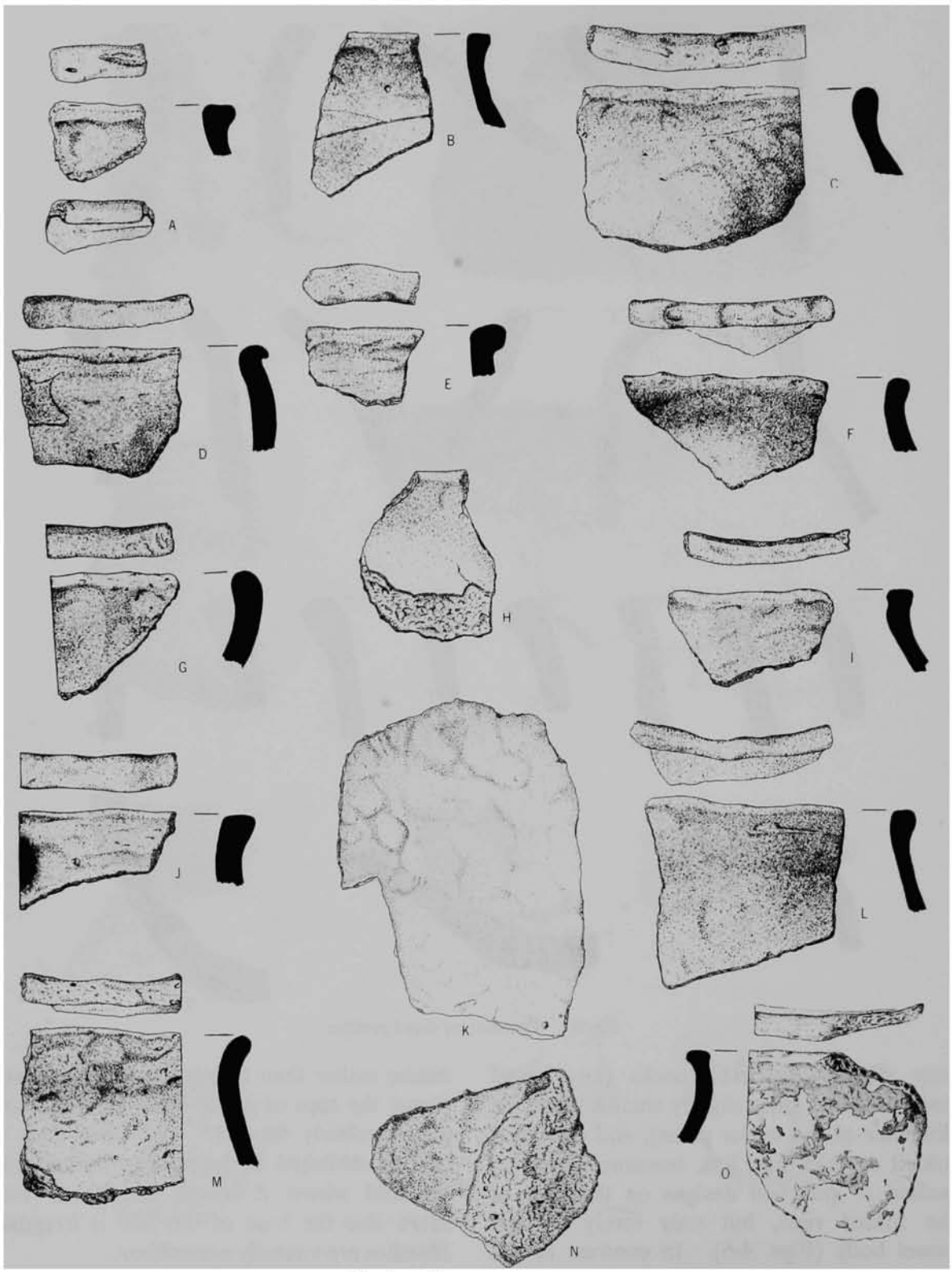

Fig. 5. Promontory pottery.

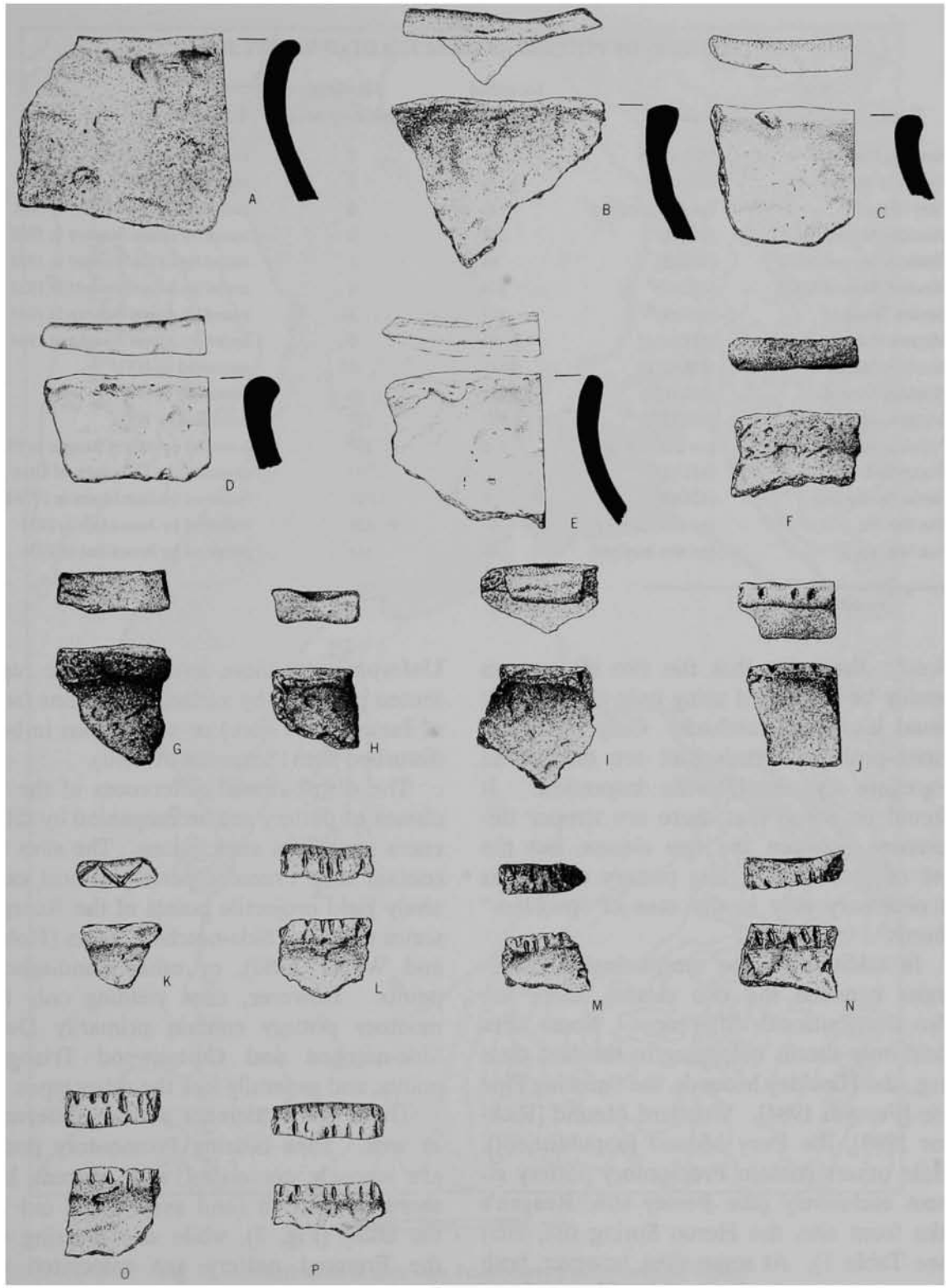

Fig. 6. Promontory pottery.

Table 1
DISTRIBUTION OF POTTERY AT SELECTED UTAH VALLEY SITES

Site Name	Number	Identified Fremont Sherds	Identified Promontory Sherds	Remarks
Smoking Pipe Site	(42Ut150)	2,364	0	excavated by BYU
Woodard Mound	(42Ut102)	4,578	0*	excavated by BYU
Peay Mound	(no site number)	726	0	excavated by James Bee in 1934
Hinckley Mound No. 1	(42Ut1)	228	0	tested by Julian Steward in 1932
Hinckley Mound No. 2	(42Ut2)	88	1	tested by Julian Steward in 1932
Hinckley Mound No. 3	(42Ut3)#	179	0	tested by Julian Steward in 1932
Benson Mound	(42Ut3)#	103	3	tested by Albert Reagan in 1934
Marrott Mound	(42Ut116)	83	0	tested by Albert Reagan in 1934
Hinckley Mound	(42Ut111)	2,687	6	excavated by BYU
Hinckley Mound	(42Ut112)	1,204	0	excavated by BYU
Seamons Mound	(42Ut271)	1,477	739	excavated by BYU
Provona Beach	(no site number)	6	384	collected by Albert Reagan in 1934
Beeley Site	(42Ut13)	0	1,869	excavated by University of Utah 1939
Heron Spring Site	(42Ut591)	9	1,002	collected by Ron Myers in 1979-82
Bee Site No. 1	(no site number)	60	459	collected by James Bee in 1934
Bee Site No. 3	(no site number)	10	114	collected by James Bee in 1934

* see note 10 # same site

ciently distinctive that the two classes can readily be separated using only macroscopic visual inspection methods. Only rarely are there problem sherds that are difficult to segregate by visual/tactile inspection. It should be noted that there are temper differences between the two classes, but the use of these for sorting pottery collections is necessary only in the case of "problem" sherds.

In addition to the morphological differences between the two classes, there are also distributional differences. Some sites yield only sherds belonging to the first class (e.g., the Hinckley Mounds, the Smoking Pipe site [Forsyth 1984], Woodard Mound [Richens 1983], the Peay Mound [unpublished]), while others contain Promontory pottery almost exclusively (the Beeley site, Reagan's lake front site, the Heron Spring site, etc.) (see Table 1). At some sites, however, both classes are present in considerable numbers. Unfortunately, these latter sites are represented primarily by surface collections (some of James Bee's sites) or excavations in badly disturbed sites (Seamons Mound).

The distributional differences of the two classes of pottery are accompanied by differences in artifact associations. The sites that contain only Fremont pottery almost exclusively yield projectile points of the Rosegate series or Uinta Side-notched points (Holmer and Weder 1980), or other nondiagnostic points. However, sites yielding only Promontory pottery contain primarily Desert Side-notched and Cottonwood Triangular points, and generally lack the other types.

There are settlement pattern differences as well. Sites bearing Promontory pottery are strongly correlated with current lakeshore occupation (and even occur out into the lake) (Fig. 7), while sites bearing only the Fremont pottery are associated with riverine and streamside occupation farther

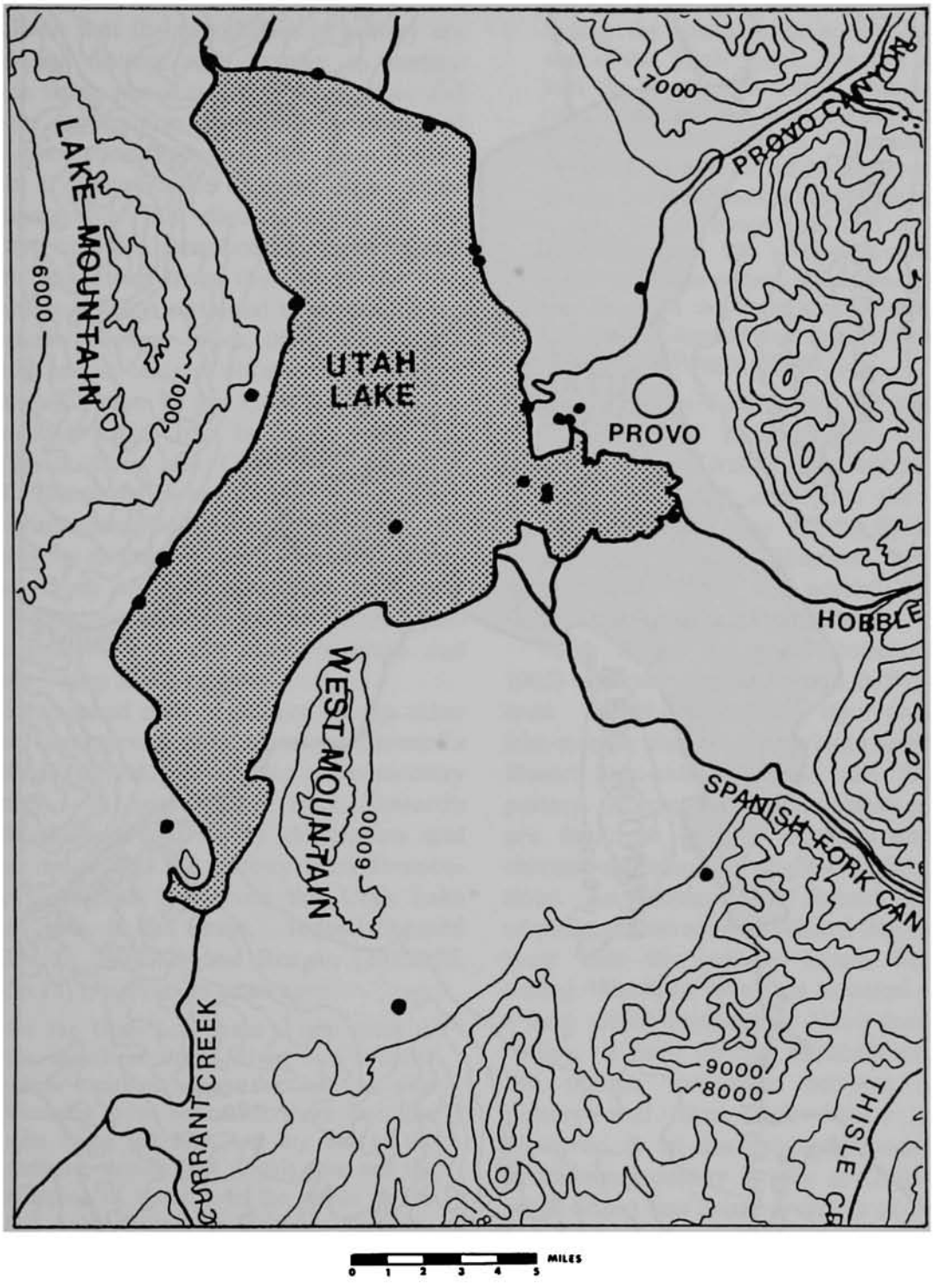

Fig. 7. Distribution of sites with Promontory pottery in Utah Valley.

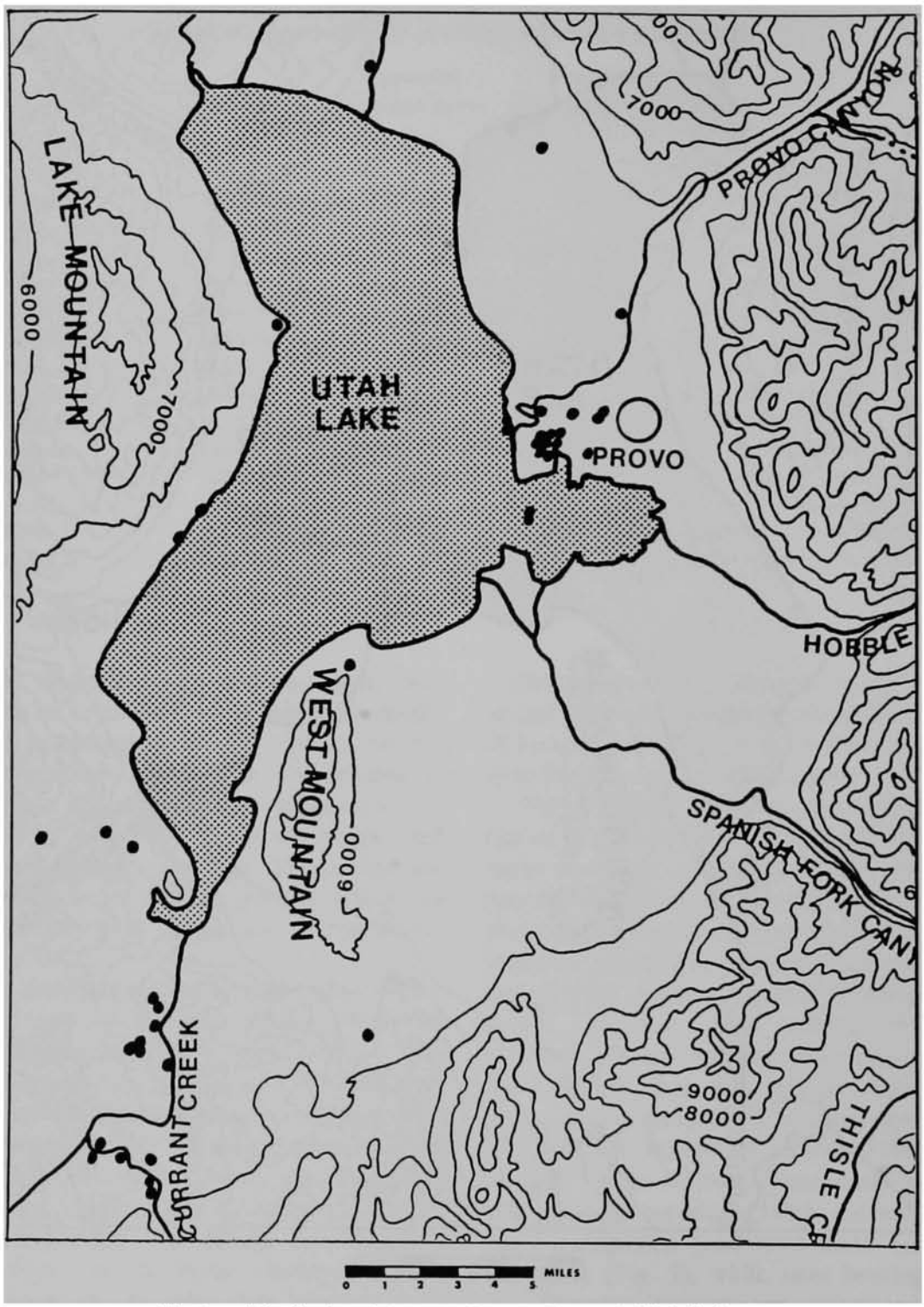

Fig. 8. Distribution of sites with Fremont Pottery in Utah Valley.

from the current lake margin (Fig. 8).

Given that the two classes of pottery are markedly distinct with respect to surface finish, form, rim shape, and decoration, and appear to occur in distinctive distributional and associational contexts, one must inquire about the significance of these data. What accounts for the distinctiveness of the pottery and the corresponding associations?

It was clear from the outset that the Fremont pottery pertained to several of the Fremont grayware types, differentiated primarily on the basis of differences in temper. The major type in the Utah Valley sites is Great Salt Lake Gray, but other types such as Sevier Gray and Uinta Gray occur as well. These types cannot usually be separated macroscopically, but taken as a class they serve as markers for a Fremont occupation. They are also associated with small but consistent numbers of the painted pottery types Ivie Creek Black-on-white and Snake Valley Black-on-gray.

The second class of pottery, on the other hand, corresponds most closely to Steward's (1936:18, 1937:42) description of Promontory pottery. It seems clear from Steward's (1937:42-50, Figs. 16-18) description and illustrations that the pottery from Promontory Cave and that from the Utah Lake shore sites is the same. Indeed Steward (1933a:17, 1937:42) and Reagan (1935a:75, 1935b:13) observed 50 years ago:

> On the Utah Lake front a mile north of the mouth of Provo River, and a dozen other locations along the lake, a mile lakeward from the usual shore line, the area being left high and dry due to the excessive drouth [*sic*] of this year and the pumping of water over the divide to the Salt Lake section for irrigation purposes, the writer found crude pottery which is neither Basket-Maker nor Puebloan. Associated with this were Shoshonean type arrow points,[3] and Shoshonean type metates, along with mullers (the metates lacking the characteristic double depression of the "Utah" type). He also examined the Bunnell and several other collections from the lake front and finds that they carry similar artifacts. A mound 130 by 95 feet in area on the Rollins Property, east of the lake, about a mile south of the Center (Provo) street road, also contains similar pottery. The pottery here resembles Shoshonean pottery, closely resembling that found in the caves about Great Salt Lake, which Steward says is probably early Shoshonean [Reagan 1935b:13].

This pattern has been noted not only in a reexamination of Reagan's and Steward's collections from Utah Valley, but at subsequently investigated sites (e.g., the Beeley site [Beeley 1946], the Heron Spring site [unpublished], the Williamson site [see Janetski 1983:83-84], and several of James Bee's lakeward sites [unpublished]).

Mark Stuart (personal communication 1985) reports a similar pattern in the Ogden area. Stuart has noted a clear pattern of lake-margin sites with very large numbers of Desert Side-notched points and "Shosoni" pottery. In contrast, Fremont sites generally are found at greater distances from the current shoreline at slightly higher elevations. An examination of Stuart's collection of pottery from around Willard Bay makes it clear that the pottery Stuart has been calling "Shoshoni Ware" is identical to what I have called Promontory Ware from Utah Valley. I have not yet carefully examined the temper variations between Stuart's pottery and the Utah Valley pottery. However, it is clear that calcite-tempered Promontory pottery is rare in Utah Valley, while Stuart has found a variety of Promontory pottery that is tempered with calcite and another that is not.[4] The strong similarities, not only in pottery but in distributional patterns and artifact associa-

tions, greatly reinforce the conclusion that the pattern seen in Utah Valley is not anomalous.

Finally, an examination of what remains of Steward's pottery from Promontory Cave No. 1, currently stored in the Museum of Natural History at the University of Utah, indicates unequivocally that what Steward defined as Promontory ware is the same pottery that I have called Promontory pottery in Utah Valley. In terms of vessel form, surface finish, manufacturing technique, decoration, and rim form, the Promontory Cave pottery is the same as the Utah Valley pottery. The Promontory Cave sherds are generally thinner walled (5-6 mm.) and have a calcium carbonate temper, but in all other respects they are virtually identical to the Utah Valley ceramics.

But if Steward and Reagan were correct in their initial interpretations of the archaeological data, how can this be squared with the findings of complete association and contemporaneity at the Bear River sites (Aikens 1966)? Either something was wrong with the interpretation of the Bear River sites, the Utah Valley sites, and Mark Stuart's sites, or Utah Valley and the area Stuart examined had an unusual pattern of contemporaneous sites occupied by the same cultural group, but with discreet and unique artifact distributions and associations.

THE EVIDENCE FROM THE BEAR RIVER AREA

This problem led me to a reexamination of the ceramic materials from the Bear River sites. Consequently, in April 1985 I examined all of the ceramic collections at the University of Utah from the Bear River sites (Nos. 1, 2, 3), Injun Creek, the Levee site, and the Knoll site. The results of this examination lead me to agree with Madsen (1979:98-99) that Promontory pottery is not represented in significant quantities at the Bear River sites. The pottery labeled "Promontory" in the Bear River collections is Fremont pottery with coarse, roughened surfaces. In terms of vessel wall thickness, vessel form, rim shape, and decoration, it conforms to the normal patterns of Fremont ware. Only with respect to surface finish, and perhaps temper, does it differ from the more typical Fremont pottery at these sites.[5] Even given the coarser surfaces of the pottery labeled "Promontory," these sherds do not resemble the irregular, undulating, lumpy surfaces of Promontory pottery from Utah Valley. Included in the category labeled Promontory are a few unusual thick-walled sherds that differ from real Promontory pottery in terms of surface finish, vessel form, rim form, decoration, and firing. Nevertheless, Promontory sherds do occur at some of the Bear River sites (e.g., the rim sherd illustrated by Aikens [1966:Fig. 31-l]), but in such small numbers that they may be of little significance--they could easily be the result of postoccupation deposition.

We can conclude that Bear River sites 1-3 do not yield Promontory pottery in any significant numbers,[6] and therefore cannot substantiate Aikens' (1966:11) argument about the nature of the Fremont-Promontory relationship.[7] But definitive Promontory pottery does occur at the Injun Creek site. Although somewhat thinner in terms of vessel wall thickness than the Promontory Gray material from Utah Valley, it has all the surface finish, vessel form, and rim form characteristics of Promontory Gray. In addition to some body sherds, which were not counted, there were 22 of the thickened, undulating, carelessly finished rims characteristic of Promontory Gray (see Aikens 1966:Fig. 20j-k). Because the bulk of the collection from Injun Creek is typical Fremont gray ware, this would suggest association and contem-

poraneity of the two classes of pottery. But given the lack of stratification and depth at the site (Aikens 1966:13), and the radiocarbon dates from Injun Creek (both of which are considerably later than those normally associated with Fremont occupation [Aikens 1966:14]), it seems to me that Injun Creek raises more questions than it answers concerning the relationship of Fremont and "Promontory" materials.[8] Nevertheless, the contemporaneity argument cannot be rejected out of hand. It is possible that there was indeed at least some temporal overlap between Promontory and Fremont materials at the site (Aikens 1970:31-32). But, likewise, mixing of materials cannot be ruled out. The evidence is not strong enough to invite confidence in either conclusion.

In the Levee site collection are several sherds (and a partially reconstructed vessel [Madsen 1979:Fig. 65a]) labeled as Promontory pottery. These sherds are thick walled and have undulating, lumpy surfaces vaguely reminiscent of those of Promontory Gray from other areas. However, the surface finish seems too well smoothed, the firing too well executed, the paste color far too brown, and the paste texture too dense to be standard Promontory Gray. I am inclined to regard these examples as thick-walled, poorly finished Fremont pottery (cf. Madsen 1979: 81). This conclusion is strengthened by the lack of the thickened, poorly formed rims characteristic of Promontory Gray; moreover, none bear the hatching or punctation on the rim top so diagnostic of Promontory Gray. Stuart's pottery, which comes from the same general area as that of the Levee site (and which I have examined), tends to substantiate this conclusion, since Stuart's pottery is almost identical to Utah Valley Promontory pottery.

The Knoll site collection contained no sherds even labeled as belonging to the "Promontory" category, but the examined collection is small and may not include everything recovered from the site. There is no reason to believe that the pottery found at the Knoll site differed significantly from that at the Levee site (see Madsen 1979).

THE HYPOTHESIS

This review of the collections from the Bear River sites contradicts the argument made by Aikens (1966, 1967) and others (Shields and Dalley 1978; Marwitt 1970:145) that Promontory pottery, as I define it, is an integral and fully contemporaneous component of Fremont culture. It is true, of course, that Madsen (1979:98-99) apparently had already come to a similar conclusion. The evidence from Utah Valley and from Mark Stuart's investigations strongly substantiates this. Madsen could say quite correctly that Promontory pottery was not common at the Bear River sites, and that it seemed out of place in the context of other Fremont pottery. But given the small quantities of Promontory pottery in the collections he examined, it was not possible to go much beyond that. The Utah Valley data, with its marked settlement, distributional, and associational disjunctions, argues for a serious reconsideration and testing of Steward's (1937) proposition that Promontory pottery is a diagnostic marker for a cultural pattern distinct from and temporally later than the Fremont. This Promontory archaeological culture differed from the preceding Fremont culture not only in terms of material culture, but also in terms of settlement, subsistence, and perhaps--although this is a much more difficult issue to test--ethnic affiliation. If this hypothesis is correct, it raises a number of crucial issues.

One of these is the issue of Plains influence in the eastern Great Basin and its relationship to the Promontory culture. Both

Steward (1940:473) and Gunnerson (1956) emphasized Plains influence on the Promontory culture. However, Aikens (1966:10-11) argued that although the Plains influence was real, Promontory was really part of northern Fremont. Thus, he saw the northern Fremont as a synthesis of "Plains and Anasazi elements" (Aikens 1966:11, but see 1970:204). This hypothesis was reinforced by the seeming orientation of the Great Salt Lake variant of Fremont culture toward hunting and gathering and the habitation of seasonal camps, rather than toward more permanent habitation sites like those further to the south (Marwitt 1970:147; Jennings 1978:173; Madsen 1981:75, 76).

I would argue that this characterization of the Great Salt Lake region is misleading. I believe it is a function of the kind of sites excavated rather than a reflection of the overall settlement and subsistence patterns of the region's inhabitants. The Willard Mounds (Judd 1917, 1926; Steward 1933a:7-9) do not fit this pattern, and a number of other sites, including the Warren Mounds (Mark Stuart, personal communication 1985), also suggest more permanent habitation.

I suggest the following hypothesis--which needs verification if that is still possible: The pattern seen at the Bear River sites represents only one part of a more complex settlement and subsistence adaptation in the area around the Great Salt Lake during Fremont times, and this pattern is not significantly different from that found in the more southerly regions of the Wasatch Front (cf. Madsen 1982:218). For example, bison hunting and marsh resource exploitation also were part of the Fremont pattern around Utah Lake (Forsyth 1984) that involved relatively permanent occupation based to some degree on horticulture.

The Grantsville site and sites in the Provo area have been excluded from the Great Salt Lake variant (and placed in the Sevier variant) essentially because they represent a different settlement type. Perhaps this classification would be legitimate if it were clear that the Bear River sites really are representative of the range of Fremont habitation in the area. But this is not at all clear because, as Marwitt (1970: 147) and Jennings (1978:173) pointed out, the area around the Bear River sites has been destroyed or badly damaged by modern land use. A similar pattern of destruction has occurred in the Provo region, where the large habitation sites have been all but destroyed due to farming, development projects, and looting. Investigators such as Judd (1917, 1926:4-10) and Steward (1933a:9-15) went to the larger mound sites such as Willard and Grantsville precisely because many of these large sites were still at least partially intact at the time. The same was true of the Provo Mounds (Steward 1933a; Reagan 1935a).

However, the major issue is the nature of of the Promontory phenomenon. I argue that Promontory, as originally defined by Steward, really does represent a distinct archaeological culture, differing from Fremont (or Sevier) not only in terms of material culture, but also in terms of settlement pattern and subsistence strategy. The Promontory culture was based on hunting and gathering, but was heavily oriented toward exploitation of lake resources. For this reason, base camps were located close to the lake shore, often near the mouths of streams and rivers. Exploitation of marsh and river resources, such as fish, waterfowl, and marsh plant resources, would have dominated the subsistence strategy. But large mammals, including deer, antelope, elk, and particularly bison, would have been important subsistence elements, especially in winter. Although there is little archaeological evi-

dence for this practice, forays into the uplands, particularly during late summer and fall, probably provided supplemental plant and game resources.

The Fremont (Sevier) pattern would have been similar to that of the Promontory culture in many ways, but with some significant differences. Fremont sites, rather than being located close to the lake margin to maximize access to lacustrine/marsh resources, were situated along the river and stream channels close to cultivable, well-watered soils, but with easy access to marsh resources. The availability of arable land was crucial because the Fremont peoples raised crops, particularly corn, beans, and squash. Although it is a matter of debate just what role domesticates played in Fremont subsistence (Madsen 1982:216-219), it is likely that it was substantial. The cultivated crops almost certainly were supplemented by the exploitation of such marsh and riverine resources as fish, waterfowl, bulrush, and cattail. The domesticates, supplemented by dried fish, meat, and perhaps gathered vegetable remains, provided the food reserve necessary for surviving the winter months. This reserve probably would have been augmented by hunting the larger mammalian fauna wintering in or near the valley bottoms.

Assuming that these descriptions are valid, a question still remains concerning the relationship, if any, between the Fremont culture and the Promontory culture. Aikens (1966) argued for complete temporal and cultural overlap, denying that there were two archaeological cultures. I argue that neither of these propositions is tenable given the current state of information concerning Promontory. Madsen (1979:98-99) concluded that what he classified as Promontory materials occur only in the late components of Fremont sites in the Bear River area, and thus date somewhere between A.D. 1000 and 1350 (Fry and Dalley 1979:5). If his classification is correct, the Levee and Knoll sites might well represent an overlap between Fremont and Promontory materials. That is, Promontory pottery (and presumably other cultural characteristics), appeared along the Wasatch Front sometime before the disappearance of the Fremont cultural pattern. I have noted that Steward (1940:472-474) and others raised this possibility many years ago.

At Seamons Mound in Utah Valley, Promontory pottery and Desert Side-notched points have been recovered in excavations together with Fremont materials. However, this site had been badly damaged by farming and looting. Moreover, stratigraphic control of the excavations apparently was not well executed (R. Madsen 1969:23). It is not clear, therefore, whether the association of Promontory and Fremont materials is due to originally contemporaneous deposition or to mixing as a result of post-occupation disturbance.

However, there is evidence that militates against the acceptance of contemporaneity. For example, two sites in Utah Valley radiocarbon dated to what is generally considered late in the Fremont sequence (Woodard Mound[9] and Smoking Pipe) contain no Promontory remains at all. Other excavated Fremont sites (e.g., the Hinckley Mounds, Peay Mound), although not securely dated, also lack significant Promontory remains. But a number of other sites in the valley do contain Promontory materials (Table 1). If the two cultural patterns were at least partially contemporaneous and interacting with one another, as the Seamons Mound data might suggest, this seems unusual, especially since the Hinckley Mounds, Peay Mound, and Seamons Mound are within several hundred meters of one another. It is possible that the Seamons Mound data are

misleading because of postoccupation disturbance. It also is possible that the Levee and Knoll pottery identified by Madsen (1979) as Promontory is not Promontory, or that it is the result of post-Fremont occupation. But since I am not familiar with the associational context of the Levee and Knoll material, this is difficult for me to determine. Apparently neither Madsen (1979) nor Fry and Dalley (1979) encountered any reason to consider this likely. At any rate, the possibility of a complete temporal disjunction between Fremont and Promontory, during which portions of the eastern Great Basin perhaps remained unoccupied, cannot be ruled out on the basis of current evidence.[10]

In addition, there is the issue of northern Plains influence in the northern portion of the eastern Great Basin. Steward (1937:83ff., 1940:473) raised this point, and Gunnerson (1956) expanded upon it. But it was Aikens (1966) who argued most forcefully for it, although he later moderated his views on the matter (1970:204) while still arguing that there were important northern Plains ties to the eastern Great Basin. Aikens (1966) argued that these ties were related to the Fremont occupation of the area, since Promontory was a part of that archaeological culture. This conclusion must now be rejected, because the idea that Promontory is an integral part of northern Fremont is not substantiated by the archaeological evidence. Nevertheless the idea of northern Plains influence on the Promontory culture remains to be determined. The pottery, with its paddle-and-anvil finish and unique vessel shapes (for the eastern Great Basin, at least), is reminiscent of certain Plains pottery. And other material culture items described by Steward (1940:472-473) and Gunnerson (1956) suggest a northern Plains connection. However, given our currently rudimentary knowledge of the Promontory culture, it is premature to go further than to suggest the possibility of northern Plains influence.

It is more likely, however, that the Promontory culture is ancestral to at least some of the historically known Numic peoples who occupied the eastern Great Basin at the time of European contact. The apparent lacustrine adaptation of the Promontory sites correlates well with the ethnohistoric descriptions of the Utes around Utah Lake (Janetski 1983, 1986:151-156); the Promontory Cave No. 1 data are not incongruent with an adaptation to the Great Salt Lake and surrounding areas as well. However, Steward (1937:83-87), in analyzing the original Promontory Cave materials, had considered the possibility that Promontory represented the prehistoric portion of the ethnographically known Shoshoni. But he rejected this view, stressing differences in subsistence. He argued that the historic Shoshoni "were essentially seed gatherers using a highly developed complex of twined basketry" (Steward 1937:83), while Promontory, he asserted, represented a culture oriented more towards hunting.[11]

This latter argument, however, is based on Steward's projection of a broad-based subsistence strategy derived from his study of Western Shoshoni in the 1930s. Although Steward (1938:256-258) was aware of cultural variability in the Great Basin area--he had done field work among the Owens Valley Paiute--the cultural model that came to be associated with the Great Basin as a result of Steward's work was that of a broad-based subsistence strategy adapted to a difficult and resource-poor environment (see Thomas 1982:162). This viewpoint was reinforced by archaeology, particularly through Jennings' concept of the "Desert Culture," based primarily on data from cave sites (Janetski 1983:10).

Over time, however, the view of general uniformity in the Great Basin has been challenged by scholars who noted the diversity of resources and cultural adaptations to them. Archaeologists, particularly those working in the western portion of the Basin (Heizer 1956; Baumhoff and Heizer 1965; Napton 1969), criticized the Desert Culture concept, stressing the importance of richer lacustrine environments in the west. As more archaeological evidence has emerged, the view of the Great Basin as environmentally and culturally diverse has increased (Thomas 1979; Madsen 1982). This view is supported by ethnographic research as well (Fowler 1977, 1982; Janetski 1986).

The area in which Promontory materials seem to be restricted, at least in any quantity, are located in regions of lacustral microenvironments along the Wasatch Front in northern Utah. Janetski's (1983, 1986) study of the early historic Utes of Utah Valley demonstrates just such a lacustral adaptation. Although too little is known about the Promontory culture at this point to establish the connection between it and the historic populations of the area with complete confidence, likely this is the case.

CONCLUSIONS

The propositions that I have argued for in this paper can be summarized as follows:

1. The material culture complex that Steward (1937) originally termed "Promontory" represents a distinct archaeological culture that can be distinguished from the Fremont/Sevier on the basis of material culture, settlement pattern, and subsistence strategy.

2. The Promontory culture along the Wasatch Front postdates and replaces the Fremont occupation of the region, although the nature and timing of that replacement is uncertain.

3. The prehistoric Promontory culture is ancestral to the ethnographically known Numic groups found in the northern region of the eastern Great Basin at the time of historic contact (cf. Madsen 1975). However, a northern Plains influence cannot be ruled out.

It should be clear that the arguments presented above are based on archaeological data that are suggestive but inadequate for resolving these issues definitively. A good deal of well-controlled fieldwork and analysis will be necessary before they can be resolved. At a minimum, single-component sites bearing Promontory materials must be identified. To my knowledge the only such site systematically investigated to date, excluding Promontory Cave No. 1, is the Beeley site (Beeley 1946).[12] The materials recovered from this site suggest strongly that Promontory represented a separate culture from Fremont. But the site was excavated many years ago when much less was known about the archaeology of the Wasatch Front, and when excavation techniques and problem orientation were not as developed as they are now. Even more useful, perhaps, would be the identification and investigation of multi-component sites bearing both a Fremont and a Promontory occupation, and thus to determine the stratigraphic relation of one to the other--if indeed there is any. This may be difficult since many of the known sites that might have yielded such evidence (e.g., Seamons Mound) have been destroyed or badly disturbed, or lie beneath the current levels of Utah Lake or Willard Bay. But such sites undoubtedly exist. We must make a concerted effort to locate and investigate them in order to clarify the cultural, temporal, and spatial relationships between Fremont and Promontory.

NOTES

1. See Marwitt (1970:144) for two additional radiocarbon assays of Promontory Cave materials.

2. Jennings (1978:235) suggested that it is the inability to locate sites rather than a lack of interest that has prevented archaeological investigation. This only further validates the point.

3. These would now be called Desert Side-notched points (Holmer and Weder 1980:60). See Steward (1933b:18, 1936:Fig. 14f).

4. Stuart has called the pottery not tempered with calcite "Shoshoni Ware" and the calcite-tempered pottery "Promontory Ware." But in terms of vessel shape, rim form, surface finish, and distribution, they are essentially the same.

5. There are temper differences as well, and this apparently was a primary sorting criterion. But even with respect to temper there was apparently considerable variation in the pottery classified as Promontory (Aikens 1966:33).

6. Only eleven actual Promontory sherds were noted at Bear River No. 1, all but one of them body sherds (see Aikens [1966:Fig. 31l] for the single rim sherd), five sherds from Bear River No. 2, and one Promontory sherd from Bear River No. 3.

7. I am not arguing that there may be no rationale for separating into a different classificatory grouping the pottery designated "Promontory" in the Bear River collections, but rather that what is classified as "Promontory" in those collections does not belong in the same taxon as the pottery labeled Promontory by Steward (and by me).

8. No attempt was made to determine the exact context of the Promontory sherds from Injun Creek.

9. Although Richens (1983:52) indicated the presence of Promontory pottery at Woodard Mound, it does not occur there. After discussing the issue with Richens, I personally examined the "Promontory" type sample from the site. What Richens classified as Promontory is not Promontory ware. Much of the confusion in the literature is a reflection of the fact that many analysts are not clear about what the characteristic features or attributes of Promontory pottery are--that is, what it actually looks like. Thus any thick-walled, poorly made, or otherwise exotic Fremont sherds are often classified as Promontory.

10. The subsequent occupation of Fremont sites by later groups is also seen in southern Idaho, where, Butler (1983:8, 16) argued, Shoshonean peoples occupied many sites already abandoned by the Fremont. In fact Butler's (1983:8) proposition concerning Fremont-Shoshonean relationships in Idaho is essentially the same argument that I am making for the "Promontory culture" in Utah. That is, "while there is a geographical overlap in the distribution of Fremont and" Promontory in Utah, "they are products of distinctly different cultural systems attuned to distinctly different sets of environmental parameters" (Butler 1983:8). It should be noted, however, that Promontory pottery also occurs in Idaho (Butler 1983:Fig. 8). Butler (1983:14) suggested that it is part of the Idaho Fremont culture. This seems based more on its alleged association with the Great Salt Lake Fremont in northern Utah than on clear-cut evidence from Idaho itself. Its occurrence at some Fremont sites does not demonstrate contemporaneity any more than does the occurrence of what Butler called Shoshonean pottery at some Fremont sites in the absence of good stratigraphic and associational data. Such data may, in fact, exist for Idaho; but if so, it is not clear from Butler's (1983) paper. Even if this were so, it would not necessarily vitiate the no-overlap argument for Utah, since Fremont apparently continues into the sixteenth century in parts of southern Idaho (Butler 1983:8), and could therefore have overlapped with Promontory long after Fremont sites had been abandoned in Utah.

11. Steward (1937:84) also based his argument of differences between Promontory and historic groups on the basis of differences in material culture trait lists between the Promontory culture and the Shoshoni, the latter of which he derived from three local informants in the 1930s. Although a common approach in the 1930s, the use of presence/absence trait lists is fraught with difficulty (Taylor 1964:130-138). There are similar difficulties in relying on the "memory culture" of a few Shoshoni informants, which could apply at best only to the late nine-

teenth century when these cultures had been greatly influenced by the Anglo immigration of the Mormons and others, to establish the characteristics of the precontact Shoshoni.

12. Archaeological investigations in process at Utah Valley sites such as the Fox site (42Ut573) and the Heron Spring site (42Ut591) should provide better data than are presently available on Promontory. However, what is needed is a regional approach to the Promontory culture.

REFERENCES

Aikens, C. Melvin

1966 Fremont-Promontory-Plains Relationships. University of Utah Anthropological Papers No. 82.

1967 Excavations at Snake Rock Village and the Bear River No. 2 Site. University of Utah Anthropological Papers No. 87.

1970 Hogup Cave. University of Utah Anthropological Papers No. 93.

Baumhoff, Martin A., and Robert F. Heizer

1965 Postglacial Climate and Archeology in the Desert West. In: The Quaternary of the United States, H. E. Wright and D. E. Frey, eds., pp. 207-226. Princeton: Princeton University Press.

Beeley, Stephen J.

1946 The Archaeology of a Utah Lake Site. Master's thesis, University of Utah.

Butler, B. Robert

1983 The Quest for the Historic Fremont and a Guide to the Prehistoric Pottery of Southern Idaho. Occasional Papers of the Idaho Museum of Natural History No. 33.

Christensen, Ross T.

1947 A Preliminary Report of Archaeological Investigations Near Utah Lake, Utah, 1946. Master's thesis, Brigham Young University.

Forsyth, Donald W.

1984 Preliminary Report of Archeological Investigations at the Smoking Pipe Site (42UT150), Utah Valley, Utah--The 1983 and 1984 Seasons. Brigham Young University, Museum of Peoples and Cultures, Technical Series No. 84-92.

Fowler, Catherine S.

1977 Ethnography and Great Basin Prehistory. In: Models and Great Basin Prehistory: A Symposium, Don D. Fowler, ed., pp. 11-48. University of Nevada Desert Research Institute Publications in the Social Sciences No. 12.

1982 Settlement Patterns and Subsistence Systems in the Great Basin: The Ethnographic Record. In: Man and Environment in the Great Basin, David B. Madsen and James F. O'Connell, eds., pp. 121-138. Society for American Archaeology Papers No. 2.

Fry, Gary F., and Gardiner F. Dalley

1979 The Levee Site and the Knoll Site. University of Utah Anthropological Papers No. 100.

Green, Dee F.

1961 Archaeological Investigations at the G. M. Hinckley Farm Site, Utah County, Utah, 1956-1960. Master's thesis, Brigham Young University.

Gunnerson, James H.

1956 Plains-Promontory Relationships. American Antiquity 22:69-72.

Heizer, Robert F.

1956 Recent Cave Explorations in the Lower Humboldt Valley, Nevada. Berkeley: University of California Archaeological Survey Reports No. 33:50-57.

Holmer, Richard N., and Dennis G. Weder

1980 Common Post-Archaic Projectile Points of the Fremont Area. Utah Historical Society, Division of State History, Antiquities Section Selected Papers 7(16): 55-68.

Janetski, Joel C.

1983 The Western Ute of Utah Valley: An Ethnohistoric Model of Lakeside Adaptation. Ph. D. dissertation, University of Utah.

1986 The Great Basin Lacustrine Subsistence Pattern: Insights from Utah Valley. In: Anthropology of the Desert West: Essays in Honor of Jesse D. Jennings, Carol J. Condie and Don D. Fowler, eds., pp. 145-167. University of Utah Anthropological Papers No. 110.

Jennings, Jesse D.
1978 Prehistory of Utah and the Eastern Great Basin. University of Utah Anthropological Papers No. 98.

Judd, Neil M.
1917 Notes on Certain Prehistoric Habitations in Western Utah. Proceedings of the Nineteenth International Congress of Americanists, 1915, pp. 119-124.

1926 Archaeological Observations North of the Rio Colorado. Bureau of American Ethnology Bulletin No. 82.

Madsen, David B.
1975 Dating Paiute-Shoshoni Expansion in the Great Basin. American Antiquity 40:82-86.

1979 Great Salt Lake Fremont Ceramics. In: The Levee Site and the Knoll Site, Gary Fry and Gardiner Dalley, pp. 79-100. University of Utah Anthropological Papers No. 100.

1980 The Human Prehistory of the Great Salt Lake area. In: Great Salt Lake: A Scientific, Historical, and Economic Overview, J. Wallace Gwynn, ed., pp. 19-31. Utah Geological and Mineral Survey Bulletin 116.

1981 Utah's Prehistory. In: Atlas of Utah, Deon C. Greer, Klaus G. Gurgel, Wayne L. Wahlquist, Howard A. Christy, and Gary B. Person, eds., pp. 74-76. Provo: Brigham Young University Press.

1982 Get it Where the Gettin's Good: A Variable Model of Great Basin Subsistence and Settlement Based on Data from the Eastern Great Basin. In: Man and Environment in the Great Basin, David B. Madsen and James F. O'Connell, eds., pp. 207-226. Society for American Archaeology Papers No. 2.

Madsen, Rex E.
1969 The Seamons Mound: A Fremont Site in Utah Valley. MS on file at the Museum of Peoples and Cultures, Brigham Young University.

1977 Prehistoric Ceramics of the Fremont. Museum of Northern Arizona, Ceramic Series No. 6.

Marwitt, John P.
1970 Median Village and Fremont Culture Regional Variation. University of Utah Anthropological Papers No. 95.

Mock, James
1971 Archaeology of Spotten Cave, Utah County, Central Utah. Master's thesis, Brigham Young University.

Napton, Lewis K.
1969 The Lacustrine Subsistence Pattern in the Desert West. Kroeber Anthropological Society Special Publications No. 2:28-98.

Nelson, Fred W., Jr.
1984 X-ray Fluorescence Analysis of Some Western North American Obsidians. In: Obsidian Studies in the Great Basin, Richard E. Hughes, ed., pp. 27-62. Berkeley: University of California Archaeological Research Facility Contributions No. 45:27-62.

Reagan, Albert B.
1935a Archaeological Report of Field Work Done in Utah in 1934-35. Proceedings of the Utah Academy of Sciences, Arts, and Letters 12:50-87.

1935b Some Notes on an Ancient Culture of the Provo-Salt Lake Region. Northwest Science 9(2):13-15.

Richens, Lane D.
1983 Woodard Mound: Excavations at a Fremont Site in Goshen Valley, Utah County, Utah 1980-1981. Master's thesis, Brigham Young University.

Rudy, Jack R.
1953 Archeological Survey of Western Utah. University of Utah Anthropological Papers No. 12.

Shields, Wayne F., and Gardiner F. Dalley
1978 The Bear River No. 3 Site. University of Utah Anthropological Papers No. 99: 57-99.

Steward, Julian H.
1933a Early Inhabitants of Western Utah, Part 1: Mounds and House Types. Bulletin of the University of Utah No. 23(7).

1933b Archaeological Problems of the Northern Periphery of the Southwest. Museum of Northern Arizona Bulletin 5.

1936 Pueblo Material Culture in Western Utah. University of New Mexico Bulletin 287.

1937 Ancient Caves of the Great Salt Lake Region. Bureau of American Ethnology Bulletin No. 116.

1938 Basin-Plateau Aboriginal Sociopolitical Groups. Bureau of American Ethnology Bulletin No. 120.

1940 Native Cultures of the Intermontane (Great Basin) Area. In: Essays in Historical Anthropology of North America, pp. 445-502. Smithsonian Miscellaneous Collections 100.

Taylor, Walter W.
1964 A Study of Archeology. Carbondale: Southern Illinois University Press. Original: American Anthropological Association Memoir No. 69 [1948].

Thomas, David H.
1979 On Steward's Models of Shoshonean Sociopolitical Organization: A Great Bias in the Basin. Paper presented at the annual meeting of the Society for American Archaeology, Vancouver. MS on file at the American Museum of Natural History, New York.

1982 An Overview of Central Great Basin Prehistory. In: Man and Environment in the Great Basin, David B. Madsen and James F. O'Connell, eds., pp. 156-171. Society for American Archaeology Papers No. 2.