

<VI. The Mossbacks Phase; the Basketmaker III Occupation>

<Introduction>

In many respects this period contrasts greatly with the earlier occupation. It has less than one-half as many recognized quadrat components (about 50), with less than one-half being single component sites, and less variety in kinds of sites. Some aspects of settlement pattern, however, show strong similarities with the Grand Gulch phase. Below, we briefly ^{REVIEW} the Cedar Mesa Basketmaker III occupation. An important point of discussion is the apparent hiatus between the Basketmaker II and III periods.

An evaluation of the relatively messy survey data will then be given, followed by the preliminary R-mode analysis. The Q-mode analysis continues from there, as in the preceding treatment of the Grand Gulch Phase. A summary of the archaeology of the Mossbacks phase concludes the chapter.

<The Archaeology of the Mossbacks Phase>

In comparison with other parts of the Anasazi region, Cedar Mesa was quite densely settled during the Grand Gulch Phase of the Basketmaker II period. On the other hand, the late Basketmaker III Mossbacks Phase is exceeded in site density and size by that found in a number of areas in the northern Southwest. We have revised our earlier estimate of 35 Mossbacks quadrat components (Matson and

Matson, Lipe, and Haase (Aug 88) VI-2
Lipe 1978:5) upward to 48 or 50, depending on how one wishes
to count two sites which spread into adjacent surveyed
quadrats. Only 18 of these were recorded as single
component sites. Thus many aspects our site information ^{MEASUREMENTS}
are not as complete in the Grand Gulch Phase.

Contrary to our hypothetical model about Basketmaker
developments presented earlier, it does not appear that
occupation on Cedar Mesa was continuous between the Grand
Gulch and Mossbacks Phases. Our latest Grand Gulch date is
prior to A.D. 400, but our Mossbacks occupation appears to
start in the late A.D. 600's and extend to the early 700's.
Thus, there is an apparent gap of some 250 or more years
between the two occupations and a duration of less than 100
years for the Mossbacks Phase. Because our dates for both
periods are from relatively few sites and these tend to
be among the larger and better preserved ones, we cannot
claim unequivocally that these dates are representative of
all Grand Gulch and Mossbacks components. Nonetheless, the
dates we do have are remarkably consistent with one
another.

A gap between Basketmaker II and III similar to the one
we find on Cedar Mesa has been recognized on a much broader
regional scale by Berry(1982:88). Incidentally, while
Berry used some of our Grand Gulch dates in compiling his
figures, he did not use any from the Mossbacks Phase. Thus
the local and regional patterns are at least partially
independent. Berry recognizes a widespread late or
"classic" Basketmaker II period from A.D. 200-370, followed
by a period of approximately 200 years, during which dated

Matson, Lipe, and Haase (Aug 88) VI-3
Anasazi manifestations are extremely rare. In the A.D.
600's, however, numerous Basketmaker III components appear
in the archaeological record of the San Juan Anasazi area,
a phenomenon to which the Mossbacks Phase must belong.

Testing of Cedar Mesa Mossback quadrat components
yielded 44 tree-ring dates from seven loci in four
sites (Table VI-1). Nearly all the samples had missing
outside rings, but the overall pattern indicates most or
all of the sites were occupied in the late A.D. 600's, and
perhaps the very early 700's, though no actual dates from
the 700's were obtained. Dates obtained from other nearby
Basketmaker III components can be interpreted to indicate
occupation in the 600's as well. Two sites salvaged at
Natural Bridges National Monument, just to the northeast
of Cedar Mesa (Schroeder 1965) produced tree-ring dates of
563+v for one site (single date) and 643++v for the other
(latest of five dates). Four Basketmaker III components
salvaged during the reconstruction of Utah Highway 95 in
Comb Wash and the northeastern Grand Gulch Plateau yielded
only four dates from three of the sites; they were
575vv, 597vv, 603vv and 625vv (Dalley 1973; Wilson 1974). The
Woodrat Knoll site in Butler Wash, just east of Comb Ridge,
produced a single date of A.D. 625vv from a Basketmaker III
pithouse (Nickens 1977). Many of these dates appear to be
earlier than the date range we assign the Mossbacks Phase
on Cedar Mesa. However, few dates were obtained for most
of these nearby sites and all their dated samples had
unknown numbers of missing rings. It is probable that most
of these dates are overestimates of the samples' true

Matson, Lipe, and Haase (Aug 88) VI-4 antiquity. This is a situation we discussed earlier with reference to the Grand Gulch phase. The Cedar Mesa dates compiled in Table VI-1 make our case clear. Most samples have outside rings missing and date prior to A.D. 650; five of the seven features dated, however, had at least one post-A.D. 670 date. The two features that did not had only two and one dated samples, respectively. Our best interpretation of the dates from Basketmaker III sites located near the study area is that they are approximately contemporary with the Cedar Mesa Mossbacks occupation and date from circa A.D. 650 to the very early A.D. 700's. An excavation of WJ 12-6 in the early 1980's resulted in two additional tree ring dates which fell into the A.D. 650-670 period, supporting the pattern seen above.

The quadrat survey recorded 52 components that were considered definitely or probably Basketmaker III. The chief diagnostic were ceramics; sites were considered to be Mossbacks if they had substantial amounts of plain gray pottery and no other kinds. When these were only small amounts of plain gray pottery, or there were Pueblo period types in addition to the plain grey, the criterion was the presence of diagnostic Basketmaker III sherds, either some definite Chapin or Lino Gray rim sherds and/or some Chapin B/W or Lino B/G painted sherds. Since only 18 single component Mossbacks quadrat sites were recorded, most were found in association with components of other periods, usually Pueblo. There is no overlap between Basketmaker III and late Pueblo II-Pueblo III ceramic complexes in this area, so virtually all rim and most body sherds can be

Matson, Lipe, and Haase (Aug 88) VI-5 unequivocally assigned to one or the other group. For example, a site having Pueblo period pottery would be inferred to have a Mossbacks component as well if it had several Chapin Gray or Chapin B/W sherds, in addition to a number of plain grey body sherds. If there had been a Pueblo I-early Pueblo II occupation in the Cedar Mesa study area this assignment would have been more difficult, but as reported earlier, the quadrat and canyon surveys recorded no sites assignable to these periods. Because none of the later ceramic complexes produce plain gray body sherds, these could be assigned to the Mossbacks Phase, provided some examples of diagnostic Basketmaker III types also occurred.

In contrast with the Grand Gulch and Pueblo periods, there is very little evidence of Mossbacks occupation in the canyons. Only 15 of the 291 sites inventoried in the five drainage canyons belonged to this period, and only one of these was more than ephemeral in nature. On this basis only two to three percent of the Mossbacks site total on Cedar Mesa are to be found in the canyons, and less than that in terms of total artifacts.

In addition to the presence of gray wares, Mossbacks sites differed from those of the Grand Gulch Phase in the absence of limestone, although some small fragments were noted on a few sites. Projectile points (See Appendix A), while rare, were intermediate between Basketmaker II and Pueblo in size and were of a variety of shapes, including stemmed and cornernotched, but not sidenotched forms. Some sites appeared to be the result of a more intensive

Matson, Lipe, and Haase (Aug 88) VI-6 occupation than was typical of Grand Gulch habitation sites; evidence included concentrated middens, extensive slablined features, and large pithouses. Because most of the sites were multicomponent it was often difficult to attribute specific features to the Mossbacks occupation, but several sites, such as North Road 11-4, were as large in terms of artifacts as any sites found during the quadrat survey. Still, Basketmaker III sites elsewhere are often larger. Examples include Egg Hamlet or Big House (Winter 1973, Wilson 1974) excavated during the Utah Highway 95 work, and located scarcely outside of our sampling universe; other sites we have observed in Comb Wash; and sites reported in the literature from elsewhere in the northern Southwest. Lipe (1966;1970) indicates an absence of Basketmaker III and Pueblo I sites in the Red Rock Plateau and the known concentration of these periods is mainly to the east of Cedar Mesa. Thus Cedar Mesa appears to be on the western edge of an extensive Basketmaker III occupation north of the San Juan. The fact that our initial dates are slightly later than those found elsewhere (Berry 1982) may be due to this position on the periphery, an area which may have been occupied only after more central locations were filled up.

A number of the Mossbacks components were interpreted as having pithouses. Four of these were later confirmed by tests and a number of others appear to be relatively obvious. The standard shape appears to be that of a subrectangular to round main chamber with a smaller and often slightly shallower antechamber to the south or

Matson, Lipe, and Haase (Aug 88) VI-7 southeast. Extensive slab based features were typically also present, mainly to the north or northwest, a pattern repeating that found in the Grand Gulch Phase and anticipating the Prudden Unit type Pueblo.

<Evaluation of Mossbacks Components.>

Unlike the Grand Gulch Phase, this later period is represented primarily by multicomponent sites. Although recognizing Basketmaker III components by the presence of rim and neck sherds of Lino or Chapin Gray, is relatively straightforward, finding unmixed areas of these sites is not. On the basis of occurrence of diagnostic Basketmaker III ceramics, we defined a maximum of 52 Mossbacks components. When we plotted the spatial distribution of sherds, two of these sites had only small amounts of Basketmaker pottery dispersed over wide areas that were dominated by later Pueblo ceramics. These sites were deleted from the list of probable Basketmaker III sites because of the lack of a localized component and because of their very small number of Basketmaker potsherds. These sites are B 7-2 (7 Basketmaker III ceramics, 19 total sherds) and N 11-2 (11 Basketmaker III ceramics, 116 total ceramics). A third site (N 10-1) was similar in having an amorphous Basketmaker III sherd distribution except that the only certain component in this case was Basketmaker II (7 Basketmaker III ceramics, 135 total lithics). It also was deleted.

The remaining 48 sites (counting each of the two sites which crossed two quadrat boundaries as one) were judged to

Matson, Lipe, and Haase (Aug 88) VI-8 have valid Basketmaker III components. Eighteen of these are from single component sites, and the other 31 are from multicomponent ones. These 31 sites were then further inspected to see if the Basketmaker III component, or a portion of it, could be spatially separated from the other component or components present. Since we had collected all artifacts from our sites, and had mapped all collection locations (these usually consisted of areas no larger than three square meters) we could make detailed maps of the distribution of the Mossbacks ceramics (and Pueblo, if present) at each site. We used different symbols to plot different types and numbers of ceramics. This procedure enabled us to visually recognize a number of relatively unmixed areas of Mossbacks occupation. Once an area of a multicomponent site could be separated as being almost entirely Basketmaker III, all the locations within that area could be referred back to the catalogue sheets to determine which lithic artifacts came from that area. Further, features in such an area could be tentatively assigned to the Mossbacks occupation. In general, it was easier to assign features to the separable component than to find areas sufficiently unmixed to assign all artifacts to the Mossbacks component.

In this way 18 more components were segregated to add to the original 18 single component Mossbacks sites. Two of these separable components from multicomponent sites (N 5-8 and N 9-1) were then discarded as being too small and having too low a proportion of the total Mossbacks component present to be of any use in quantitative

Matson, Lipe, and Haase (Aug 88) VI-9 analysis (The lithic tool samples of these two separated components were only 6 and 1). By these procedures 34 components (18 plus 16) were determined to be of some use in quantitative functional analysis, while 15 of the total 49 Mossbacks components were set aside. The 15 sites that are unseparable tend to be larger than those that are separable. Since many of the features in these 15 sites could be assigned to one or the other component, the information from the features could be used to help classify these sites. All 48 sites are used in the settlement pattern analysis.

In addition to these 48 sites, there are others, such as B 4-1, which may have a Basketmaker III component present, but which lacks diagnostic (rim or B/W) sherds. By using such a restrictive definition of Basketmaker III, we can be certain that our sample of Mossbacks components are all from this period, even if it excludes some of the probable smaller manifestations. For practical reasons a decision procedure that erred in this direction is necessary since otherwise practically all Pueblo sites have some small undiagnostic gray pottery sherds that could conceivably have resulted from a small Basketmaker component. A listing of the Mossbacks components and their status is given in Table VI-2.

<Preliminary R-mode Analysis of Mossbacks Tool Types>

Once all the relatively "pure" and separable Mossbacks components were tabulated the question of functional variability was examined. Following the procedures

Matson, Lipe, and Haase (Aug 88) VI-10 developed in the previous chapter dealing with Grand Gulch material, the first step was a preliminary R-mode analysis to help select the condensed groupings of characters to be used in the Q-mode analysis.

In the Mossbacks case several changes were made from the Grand Gulch example. Since the Spearman's r and metric multidimensional scaling approach was the most successful in the Grand Gulch situation, the product moment correlation-- principal components approach was not tried for the Mossbacks. Similarly, only unstandardized distance was used. In the Basketmaker II R-mode analysis, large numbers of artifacts and sites were present and lumping of artifact types was generally unnecessary in order to obtain sufficient numbers in each class for a reliable analysis. In the Mossbacks case with only 34 useful components, some lumping was needed. The total numbers and numbers of sites where present are shown for each artifact type in Table VI-3. If we had used criteria similar to the ones used in the Grand Gulch preliminary R-mode analysis (e.g., a total of at least 10 artifacts found on at least five sites) many artifact classes would not be represented in the initial R-mode analysis. For instance, no point, point fragment, or drill class meets these criteria. So even to examine these classes of artifacts for possible further lumping required some collapsing of categories.

Following the precedent set in the Grand Gulch Phase analysis, all typable projectile points, (Categories 14-22) were placed into a single class. Projectile Point

Matson, Lipe, and Haase (Aug 88) VI-11 fragments, however, were kept separate from this class, following the argument (Judge 1973:202-5) that typable points (complete or base portions) may have been discarded in different locations (perhaps discarded at base camps or arming sites) from untypable tips or midsections (perhaps discarded at hunting and butchering locations). Both large and small point fragments, however, were placed into a single class, as neither type was frequent enough to be used by itself.

A few more dubious classes were also used or created. Gravers did not quite meet our criteria (a total of nine was found in seven sites) but were considered close enough. Core Scrapers and Choppers were placed together as they are often difficult to distinguish, but even then, the new group did not quite meet the criteria. Neither did "Other Drills," the dominant kind of drill form in Basketmaker III times but it was considered close enough. Combining "T Drills" and Drill Fragments together did result in a large enough class. Finally, Flaked Denticulates and Miscellaneous Ground stone were placed in the Miscellaneous Artifact category. The result was 22 artifact classes which included all the typed lithic tools found in the 34 sites (Table VI-4).

These types were used to develop a data matrix. Two different data matrices were used, one with all 34 sites and one using only the 24 largest sites. While the multidimensional scaling results of the two matrices were very similar, the cluster analyses differed. The results of the one using 24 sites appear to be superior in that

Matson, Lipe, and Haase (Aug 88) VI-12 they corresponded more closely to those from the scaling analyses, were more interpretable, and were more similar to the Grand Gulch R-mode results. For these reasons the 24-site analysis will be the only one discussed here. The reason for the superiority probably lies in the deletion of those sites having fewer than nine lithic tools present; this reduced the number of ties and the amount of sampling error in the data matrix.

The results of the Farthest Neighbor cluster analysis are seen in Figure VI-1 and the first 4 dimensions of a multidimensional scaling of the matrix are illustrated in Figures VI-2 and VI-3. The cluster analysis is possibly best interpreted as four clusters and one isolate (Choppers-Scrapers). The first cluster, consists of bifaces and lesser amounts of flake tools (Snapped Denticulates and Flake Scrapers). Note that Bifacially Retouched Flakes appear to be closely linked with Biface Fragments here.

The next cluster (II) is dominated by biface tool types (five out of eight). The first subcluster is of Other Drills, Large Knives, and Drill Fragments. The relatively close linkage of Other Drills and Drill Fragments suggests, contrary to the Grand Gulch case, that here they can be classed together with confidence. The presence of Pebble Hammerstones and Hammerstone Fragments in this cluster is not intuitively understandable.

Cluster III is dominated by the familiar triad of Manos, Metates, and Irregular Hammerstones. Note, though,

Matson, Lipe, and Haase (Aug 88) VI-13
that contrary to the Grand Gulch case, Miscellaneous Tools
and Choppers are not closely associated with this group,
no^R are pebble tools. The final cluster shows the two
types of Utilized Flakes linked closely together and that
these flake tools are joined by Cores, again a repeat
from some of the Basketmaker II analyses (group B).

Figure VI-2 presents the first two dimension of the
scaling results ~~47.2~~ (30.2 and 22.7% of trace or 47.2 and
21.6% of total distance, although these figures are
slightly suspect because of some violations of the
triangle inequality assumption). The heavy core tools are
all located on the bottom half of the figure, although the
Small Knives and Utilized Flakes are found here as well.
The cluster of Manos, Metates, and Irregular Hammerstones
is well represented here, and is joined by Hammerstone
Fragments. This close association of Hammerstone
Fragments and Irregular Hammerstones would appear to
justify classing them into the same category as done in
the Grand Gulch Phase analysis. The previously mentioned
cluster of Cores and Utilized Flakes (essentially the same
as the B group of Grand Gulch preliminary R-mode analysis)
is found here as well. Small Knives are located far from
Large Knives on this plot.

One the top half, we see Drill Fragments and Other
Drills relatively closely linked, repeating the cluster
analysis, and Bifacially Retouched Flakes relatively close
to Biface Fragments. Projectile Points and Projectile
Point Fragments are surprisingly far apart, possibly
justifying a continuing separation and indicating that the

Matson, Lipe, and Haase (Aug 88) VI-14
previous argument for keeping them apart may have some
basis in this data set.

Remembering that the main purpose here is to examine these classes for possible further linking, it is nonetheless interesting that all finished or retouched flake tools and bifaces are contrasted with the ground stone and core tools. This pattern is very similar to that obtained from the preliminary R-mode analysis carried out for the Grand Gulch, except that the "A" and "B" groups of that analysis are intermingled here on the bottom of the plot. Miscellaneous Tools, which were part of the ground stone-core tool "A" group in the Grand Gulch Phase analysis, are found well away from them on this plot. In general, though, the same basic patterns are seen as before.

The next two dimensions (18.8% and 17.5% of trace, or 13.6 and 11.3% of distance respectively) are plotted in Figure VI-3. Again, the core tools are found at the bottom, with the triad of Metates, Manos, and Irregular Hammerstones joined by Pebble Hammerstones and Miscellaneous Artifacts. Choppers-Scrapers are found in an extreme position not close to this group or to anything else. Both of the drill classes are relatively close together, as are Biface Fragments and Bifacially Retouched Flakes. Large Knives and Small Knives are also close together and Biface Fragments and Bifacially Retouched Flakes are again relatively near one another. Large Knives and Small Knives are close together here, although, they were not on the first two dimensions. While

Matson, Lipe, and Haase (Aug 88) VI-15
projectile point classes are not very close, they are
closer than on the previous two dimensions.

Before going directly to the decision on which final categories to use, a brief look at Figure VI-4 is in order. This figure compares the percentages of various tool classes in Grand Gulch and Mossbacks assemblages. It is interesting to note that T Drills and Other Drills reverse in frequency as expected, with Other Drills being the common form in the Mossbacks Phase, although both forms occur.

More importantly, Large Knives and Small Knives show a similar switch in abundance. Earlier we discussed the possibility that "knives" were projectile point preforms in the Grand Gulch phase. In Mossbacks times the Small Knives may be preforms, but because of the scarcity of Large Points during this phase, this is not so likely for the Large Knives. The trend, however, is in accord with interpreting at least some of the members of these classes as being preforms. In any event, since the two knife classes do not show a constant frequency over time there is some justification for keeping them separate. The two knife types were also separate for the first two dimensions of the scaling results; this combined with the argument in the previous paragraph justifies keeping them as separate classes. The Projectile Point Fragments and typable Projectile Points can also be argued to be significantly different as they were not near to each other in the scaling analysis and were in different clusters in the cluster analysis.

Matson, Lipe, and Haase (Aug 88) VI-16
Unlike the tools discussed above, some tool classes

appear best joined together. Irregular Hammerstones and Hammerstone Fragments were relatively closely linked in these analyses and thus can be combined into one class as before; the same can be said for Other Drills and Drill Fragments. The combined Chopper-Scraper category was not closely linked to anything, was an isolate in the cluster analysis and only eight of these tools occurred in eight different sites. This class we can put into the miscellaneous category with no misgivings. Gravers, likewise, occur in low numbers and do not appear to be very closely related to any other tool. In the Grand Gulch analysis, where they were used as a separate class, they did not contribute much to the interpretation; they too, can be lumped into the Miscellaneous Artifact category. Cores will be relegated to the debitage for after-the-fact comparisons, as was done in the Grand Gulch analysis.

The final collapsing of classes is the joining together of Bifacial Retouched Flakes and Biface Fragments. While Bifacially Retouched Flakes are more abundant in Mossbacks times than Grand Gulch (.7% as opposed to .4% as percent of total assemblage) their total number is only 11 and they are associated with Biface Fragments in both the cluster analysis and the scaling results. Finally during artifact classification it was sometimes difficult to decide whether one had a Bifacially Retouched Flake or a fragment of a biface. All these considerations are in accord with combining these two

Matson, Lipe, and Haase (Aug 88) VI-17
classes.

The final Q-mode artifact list is shown in Table VI-5. Note that again 16 classes resulted but that these are not identical to the 16 used in the Grand Gulch analysis. The number of sites these tools are tabulated present at, is of the possible 34, not the subset of 23 that will be used in the Q-mode cluster analysis and scaling.

Why did we not use the same 16 types used in the Grand Gulch analysis? After all in order to make comparisons we will have to use some standard classes. There are a number of reasons. Although some standard classes must be used for cross cultural comparisons, these may not be the best for intraculture analysis. The purpose of the preliminary R-mode analysis is to discover what patterns among the full type list vary similarly so that they can be put into a single class in order to produce better Q-mode groups. As we have seen, while generally similar to the Grand Gulch preliminary R-mode analysis, the Mossbacks analysis did show differences which resulted in a different Q-mode character list. Further, the abundance of tools varies from period to period and this does have an effect on the usability of each artifact class. Artifact comparisons between periods, while important, are secondary to the Q-mode analysis and will be discussed separately.

<Mossbacks Q-mode Analysis>

In this section we attempt to produce groups of functionally distinct Basketmaker III sites via cluster analysis and multidimensional scaling for use in

Matson, Lipe, and Haase (Aug 88) VI-18
settlement pattern analysis. The resulting groups are
examined by means of the corresponding R-mode analysis,
debitage patterns, and architectural patterns, as well as
comparing the above with the perceived functions of
different artifact profiles.

In comparison with the preceding Grand Gulch analysis,
there are some significant differences. Not only is the
number of components only a quarter of that used before,
but the quality of the assemblages used is not as good.
Even reducing the previously used limit of 12 classified
stone tools to 11 only allows 23 components to be used in
the Q-mode analysis. (Lower site assemblage totals are
reliable in R-mode analysis than in Q-mode.) Eleven of the
23 components used in the Q-mode cluster analysis are
components from multiple component sites. Many of these
represent only portions of the complete Mossbacks
component, as other portions were not separable. Given
that sites are not homogeneous, these partial components
probably do not accurately represent the total Basketmaker
III material present. The vagaries of surface collection
also affect the representation of the components. Thus a
site could be misclassified because only certain functional or
discard location portions are present in this analysis.
This is not a problem in the R-mode analysis, as the
associations shown in a portion of the site ought still to
be valid (in this case we are partially retreating from the
procedure we used to avoid Schiffer's discard problems).
In the following analyses we must take care to check for
this and other problems.

Matson, Lipe, and Haase (Aug 88) VI-19
In the Grand Gulch analysis we were able to show tool profiles of Limited Activity Sites, overall expected from the 96 largest components and bona fide residential sites. We attempted to repeat this as well for the Mossbacks, but with less useful results for the first and last cases. The 11 sites with collections too small (less than 11 lithic tools present) to be used in the cluster analysis should be representative of Limited Activity sites; their artifact composition is plotted in Figure VI-5. This figure is not as reliable or as useful as in the Grand Gulch case because the number of sites is much lower, the average site size is smaller and because the differences from the expected are not as clear. Also most of these 11 small sites had architectural features present throwing into question their identification as limited activity sites. Four have possible habitations; four others have sandstone slab features present, including some interpreted as hearths and cists; and only three of the 11 sites lack features or sandstone slabs.

The central tendencies as measured by means of the 23 sites used in the cluster analysis and scaling are shown in Figure VI-6. Comparing these histograms with the previous ones we see that in terms of means, Manos, Metates and Pebble Hammerstones have higher values on the smaller sites. This is similar to the situation discovered in the Grand Gulch analysis where this effect was ascribed to the site furniture effect. Note that in contrast, Irregular Hammerstones and Miscellaneous

Matson, Lipe, and Haase (Aug 88) VI-20
Artifacts are more abundant on the larger sites. Except
for Small Knives, all bifaces are either as abundant or
more abundant on the larger sites. It will be remembered
that Projectile Points were relatively more abundant on
the small sites in the Basketmaker II case. All flake
tools, except for Denticulates, are more abundant on small
Mossbacks sites than on the larger ones.

In contrast with the Grand Gulch case, the Mossbacks
components with small collections, as indicated above, are
not clearly representative of limited activity sites.
While some features, such as the higher abundance of most
"site furniture" are in accord with an interpretation of
limited activity, other aspects, such as the abundant
architecture, and the low percentages of bifaces make this
less clear-cut. Our overall judgment is that the small
components consist both of limited activity and
residential sites. The proportion of limited activity
sites in this group is definitely higher than in the class
of larger sites. This interpretation is in agreement
with both the artifact profiles and the features.

If the small sites show more residential function in
Mossbacks times than in Grand Gulch times, one might expect
this to be true for the overall period as well. Figure
VI-7, compares the Mossbacks and Grand Gulch assemblages
by graphing for both phases the mean percentage abundance
of the same 16 types used in the previous Grand Gulch
analysis. The Mossbacks sites show increased amounts
of Manos, Metates, both kinds of hammerstones and
Miscellaneous Artifacts, all objects suggested in the

Matson, Lipe, and Haase (Aug 88) VI-21
Grand Gulch analysis to be site furniture and to be
associated with residential sites. Of this group of
residential furniture only Choppers are less abundant in
the Mossbacks group. Further, the two types of flake
tools associated with Grand Gulch residential sites--
Flake Scrapers and Retouched Flakes-- are also more
abundant in the 23 large Mossbacks components. Bifaces,
on the other hand, are more common in Grand Gulch
times. The biggest difference is seen in Denticulates,
which are over twice as common in the Grand Gulch Phase.
Figure VI-7, then, can be interpreted as indicating
relatively more residential artifacts in Mossbacks times,
with more limited activity tools in the Grand Gulch
material.

Figure VI-8 graphs the same 16 artifact types but only
for the larger sites used in the quantitative analysis in
both periods, with medians and interquartiles ranges as
measures of abundance. The site furniture contrast is
even stronger than in Figure VI-7, but the biface contrast
is reduced. Still, points and knives do appear to be more
common in the Grand Gulch phase. The retouched flake tool
contrast vanishes, although Narrow Angle Utilized Flakes
are more abundant in the Grand Gulch Material. The median
value of Denticulates for Mossbacks is only one-fourth of
that for the earlier phase. Figure VI-8 basically repeats
the earlier pattern, suggesting that, as a whole, the
Mossbacks artifact profile is more similar to the Grand
Gulch habitation sites than it is ^{to} the earlier phase as a
whole.

Matson, Lipe, and Haase (Aug 88) VI-22
The final comparison profile should be that of

habitation sites. Several problems exist here. One is that several definite Mossbacks habitation sites, such as Upper Grand Gulch 4-3 and Bullet 16-2, have other components present so that the material used is only a subsample, and a spatially biased subsample at that, of the Basketmaker III surface remains that are present. Another possible problem a large proportion of the Mossbacks sites are known habitation sites, as indicated by architectural features. In the Grand Gulch case, only one-tenth of the sites had definite pithouses, and less than one-quarter of the final habitation site class was in the original "known habitation" comparison group. With a much larger proportion involved in the Mossbacks case, more of a self-fulfilling prophecy is possible, with the architecture being used as the main determinant of the habitation class rather than as an independent check on the classes derived from artifacts. Because the architectural information is clearly relevant to defining habitation sites, this change is not necessarily a weakness, but it is a change in methodology.

Figure VI-9 shows the artifact assemblage of the 8 separable Mossbacks components that have definite pithouse habitation features. Almost as many other separable Mossbacks components have possible or probable habitation features. The expected contrast between the "habitation" group of Figure VI-9, and that of all 23 separable components in Figure VI-6 is not very evident, with the 23 sites as a whole having more site furniture items and the

Matson, Lipe, and Haase (Aug 88) VI-23
8 architecturally defined "habitation" sites having more
Utilized Steep Angle Flakes and Denticulates. Of course,
with 16 of the 23 separable components, having definite,
probable, or possible pithouse habitations present,
residential aspects should be dominant. Several
differences are apparent when one compares the 8
architectural habitation sites with Figure VI-5, that of
the 11 smallest Mossbacks sites. The Miscellaneous
category is much more abundant in the habitation class, and
Utilized Flakes are less common, according to their mean
abundances. According to medians, the Utilized Flake
situation is not so clear. As one would expect, with use
of medians, the less abundant categories are not usually
present on small sites, but occur on most of the
habitation site class.

In general these histograms have not been very
informative except to suggest the presence of a higher
proportion of habitation sites in Mossbacks times than
before, and to indicate, via architecture and artifact
profiles, that habitations are abundant throughout the
entire set of Mossbacks components, including the group of
11 small sites as well.

Turning to the cluster analysis, the 23 separable large
components were clustered using unstandardized city-block
distance and six different clustering algorithms from Wood
(1974). Most of these methods, such as Farthest Neighbor,
Average Linkage, and Lance-Williams Flexible methods,
showed three clusters, while Ward's method resulted in
only two clusters.

Matson, Lipe, and Haase (Aug 88) VI-24
Turning to the Farthest Neighbor dendrogram (Figure
VI-10) we see the three clusters in question. Table VI-6
and Figure VI-11 show the summary artifact type statistics
for each of these clusters. The first cluster of 10 sites
is distinguished by its high number of bifaces. All six
categories of bifaces have their highest frequencies in
this cluster, with Drills being only slightly more
abundant and the other five biface classes being more than
twice as abundant either at the median or third quartile
quantiles. Manos, Metates, and Irregular Hammerstones are
either low or moderately abundant. Pebble Hammerstones
and Miscellaneous Artifacts are the highest of any
cluster.

The third broad group of artifacts, the flake tools,
show contrasting trends. Flake Scrapers occur in the
highest frequency, with the median in the first cluster
being higher than the other two clusters' third quartile.
Retouched flake values fall in between those of the other
two clusters, while both utilized flake categories are by
far the lowest, with the Steep Utilized Flakes having an
upper quartile lower than the other two lower quartiles.
Denticulates, on the other hand, have by far their highest
value here.

Using the criteria established for Grand Gulch sites,
this cluster, which has high numbers of bifaces,
Denticulates and low numbers of site furniture would grade
from a residential to "less than residential" function.
The variation in flake tools is hard to interpret.

Cluster II shows the highest overall amounts of site

Matson, Lipe, and Haase (Aug 88) VI-25
furniture of the three clusters, although some individual
types are less than in the other two clusters. Biface
types are much less frequent than in Cluster I, although
they are equal to or higher than in Cluster III. The
flake tools show moderate amounts of Utilized Flakes, in
between those seen in Cluster I and III, and moderate
amounts of Flake Scrapers and Retouched Flakes, as well as
low amounts of Denticulates. This pattern of low bifaces,
moderate flake tools, and high amounts of core tools and
ground stone is that expected of habitation sites, at least
as it would be for Grand Gulch sites. Not only does this
cluster have a majority of sites with possible or probable
habitation sites, but it also has the three largest sites,
NR 11-4, UGG 2-2 and UGG 4-3.

The last cluster in many ways represents the simplest
assemblage, with the lowest numbers of ground stone and
core tools, very few biface tools, the lowest numbers of
Retouched Flakes, and the highest numbers of Utilized
Flakes. Snapped Denticulates have the lowest values of
the three clusters. Even though Cluster III has the
lowest numbers of core tools and ground stone implements of
the three clusters, the amounts found of these items are
not out of line for some clusters interpreted as
habitation in function in the Basketmaker II analysis.

The two-cluster solution provided by Ward's method is
shown in Figure VI-12. The summary artifact type
statistics for the two clusters are shown in Table VI-7. A
comparison of Wards and Farthest Neighbor results are
shown in Table VI-8 which demonstrates that the second and

Matson, Lipe, and Haase (Aug 88) VI-26
third clusters of the Farthest Neighbor method are
basically joined together to make the second cluster of
Wards. The only two exceptions to this are UGG 5-2, which
is found in the center of Cluster I of Wards but in
Cluster II of Farthest Neighbor and UGG 4-4, which
is only weakly associated with Cluster III of the Farthest
Neighbor and is the most peripheral member in Cluster I of
Ward's method.

If the relationship of the two different cluster
analyses is simple and direct, the relationships between
the interpretations should also be simple. Unfortunately
the Ward's analysis combines the least residential
(Cluster III) and most residential (Cluster II) of the
Farthest Neighbor analysis, so this is not the case. Table
VI-7 shows the summary statistics with Cluster I being
essentially the same as that of the Farthest Neighbor,
with more bifaces, Flake Scrapers, and Denticulates than
Cluster II. Cluster II is, as one might expect, a cross
between the previous Farthest Neighbor Clusters II and
III, with much higher amounts of utilized flakes. Core
tools and ground stone amounts are approximately equal for
the two clusters, with five of the 11 sites in Cluster II
having Metates but only two of the 12 sites in Cluster I
having Metates. Irregular Hammerstones are more abundant
in Cluster II, Pebble Hammerstones in Cluster I. As in
the previous cluster analysis, Miscellaneous Artifacts are
far more abundantly in Cluster I.

Both Ward's clusters have abundant remains of features
interpreted as possible habitations, 6 in Cluster I, 7 in

Matson, Lipe, and Haase (Aug 88) VI-27
Cluster II; in addition WJ 11-3 in Cluster II has

remains of habitations, but is not clear that these are associated with the Mossbacks component. Cluster II, then, in terms of artifact profiles and surface architectural features appears to be the slightly more residential than does Cluster I. The relative amounts of Utilized and retouched flakes, however, are reversed from what was expected on the basis of Grand Gulch Phase analyses of residential versus non-residential components.

The matrix of unstandardized city block distances was also metrically scaled and the results of the first two dimensions are shown in Figure VI-13. Together these first two dimensions account for 71 percent of the total pair-wise distance in the initial matrix. Examining the coding on the sites readily illustrates the differences in the two described cluster analyses. Both cluster analyses results are well represented here, with the groupings resulting from Ward's method corresponding most closely with these main break observable on these two dimensions. Upper Grand Gulch 4-4 is shown to be an extreme isolate here, not closely related to any other sites. Bullet 16-2 is also isolated but not nearly as much.

The first dimension of the scaling is clearly related to abundance of flake tools. If we use the Spearman rank order correlation to measure the relationship between the position of sites on this dimension and their position when ranked according to the percentage of flake tools we find a $+0.77$ correlation between increasing amounts of Utilized Narrow Angle Flakes and the up direction on

Matson, Lipe, and Haase (Aug 88) VI-28
Figure VI-13, a $+0.84$ with Steep Angle Utilized Flakes and
a -0.62 with Flake Scrapers. Restated, sites with abundant
Utilized Flakes are found at the top of this figure, and
sites with abundant Flake Scrapers are found at the
bottom.

Remembering that R-mode and Q-mode analyses ought to
be comparable, let us look at the R-mode analysis of this
same data set (percentages of 16 artifact types on the 23
largest Mossbacks components) using the Spearman rank
order derived distance as our R-mode measure of
similarity. (The earlier R-mode analysis illustrated in
Figures VI-1, -2 and -3, used 22 types and the 24 largest
Mossbacks components.) Figure VI-14 shows the plot of the
first two dimensions, which together account for 75
percent of the total pairwise distance. The Utilized
Flakes are seen at the very bottom of Figure VI-14, while
Flake Scrapers are near the top. Thus there is a close
correspondence between the first dimensions of these two
R- and Q-Mode analyses.

The second dimension contrasts the two hammerstone
types and the ground stone types with the other types.
The other end of the R-mode dimension 2 is primarily
bifaces with four of the six biface types located
substantially on this end. If we turn to the second
dimension of the Q-mode analysis (Figure VI-13) and group
all four heavy tools into one class and compare the order
of the sites according to the frequency of this class and
their position on dimension 2, we find a very high rank
order of $+0.925$. Thus the sites toward the left have more

Matson, Lipe, and Haase (Aug 88) VI-29
core and ground stone tools than those on the right. The
first two dimensions of the two different analyses, then
do show a very nice correspondence.

If the parallelism between the R- and Q-mode is
complete we might expect to find the opposite end of the
Q-mode dimension 2 (Figure VI-13) to be dominated by those
sites with abundant bifaces. If we rank the sites
according to the abundance of the bifaces that are heavily
weighted on the R-mode second dimension (all but Small
Knives and Projectile Point Fragments) we find a Spearman
rank order correlation of + .671, suggesting that this is
the case.

While there are clear artifactual correlates with the
first two dimensions of the Q-mode scaling analyses, it is
difficult to use these results to assess site function as
was done in the Grand Gulch analyses. Note, for instance,
that the first Q-mode dimension is much more important
than the second (53% of distance as compared to 18%) and
shows a closer relationship than the second with the
cluster analyses. Yet the first dimension is determined
by varying amounts of flake tools which have not
previously been shown to be related to anything of
residential significance. The sites on the left of the
less important second Q-mode dimension show more emphasis
on the site furniture categories, but this also turns out
not to be very interpretable. In the Basketmaker II
analyses, the sites with more common site furniture would be
interpreted as being more residential than the rest. If
the was the case for Figure VI-13, we would expect the

Matson, Lipe, and Haase (Aug 88) VI-30 sites on the left to be more residential than those on the right. In this case, the architectural information goes in the reverse direction, with the seven sites furthest to the right all have evidence of probable or possible habitations compare with only seven of the 16 remaining sites! On further inspection this distribution is not as startling as it appears at first, with five of the seven components on the right having either manos and/or metates present; all have some form of core or ground stone tools present. In the Grand Gulch setting this would be a most impressive amount of site furniture, indicating a residual function. This observation again indicates that overall the the Mossbacks material has a profile most similar to the Grand Gulch habitation sites.

The two sites on the right of Figure VI-13 that do not have any ground stone (B 3-7 and B 16-2) are both multicomponent sites which have separable Mossbacks components in the immediate vicinity of habitation structures. Bullet 16-2 has a very small spatially separable collection of lithic tools (15) and while Bullet 3-7 has a larger separable component (54), it is still small compared with the number of Basketmaker III ceramics (minimum of 220, maximum of 340, including unidentified undecorated gray). Bullet 16-2 and Bullet 3-7 have the highest amounts of Miscellaneous Artifacts recorded for Mossbacks sites, which is a category that was high for Grand Gulch habitation sites, and, although the picture is not as clear, this is probably also true for Mossbacks habitation sites as well (Figure VI-6 and VI-9).

Matson, Lipe, and Haase (Aug 88) VI-31
Either 7 or 8 (depending on how one classes NR 11-4)

out of the components on the right are from multicomponent sites. Since the tool categories that covary with dimension 2 are those of site furniture, which are large, reusable tools, we might expect these tools to be reused by the later Pueblo occupants. Thus the lesser numbers of site furniture on the right may well be due to later exploitation of the on-site resources, or to the vagaries of separating out the different components.

While some of the same trends are present in both Basketmaker periods, the same interpretations are not possible, mainly because most Mossbacks sites have the amounts of ground stone and core tools that earlier are associated only with residential sites. Certainly, the amount of site furniture does not correspond as well with the amount of architectural features during the Mossbacks phase as in the Grand Gulch phase. The cluster that appears to have the most residential mixture of artifacts and features-- Cluster II of the Furthest Neighbor method-- is found in the upper center of the first two dimensional plot in Figure VI-13. It may be that almost all the sites we are dealing with here are "residential" or "habitation" sites; certainly over half of the sites have architectural features in accordance with this interpretation. The few sites that do not have such surface feature information may include summertime habitation sites, and sites that have only subsurface architectural features, and non-habitation sites. This last would be probable only if habitation and

Matson, Lipe, and Haase (Aug 88) VI-32
non-habitation sites had similar artifact compositions
which is intuitively plausible only if non-habitation
sites were really short term or seasonal habitation
sites-- campsites, if you will. As we will see in the
chapter on Mossbacks settlement patterns, this does not
appear to be the case.

If the artifacts present on our mixed bag of Mossbacks
sites do not vary systematically with the presence of
architectural features, perhaps the diversity of artifacts
present might covary. In fact, the measure of similarity
used in the Q-mode analysis partially includes this
notion. That is, if two sites have the same kinds of
artifacts present, they would differ only in the relative
amounts of each kind (the height of the bars on the
histograms) and it is this difference that is measured by
city block distance and by the notion of "evenness" in
diversity measures.

Two measures of diversity that might be independent of
this evenness notion is total diversity (St in Southwood's
notation (1978:421)), which is the number of artifact
types present, and the dominance index, which is simply
the percentage accounted for by the most common category.
The median total diversity of the seven probable
habitation sites on the right end of dimension 2 in Figure
VI-13 is 11 (mean 11.11) out of the 16 possible. The
comparable figure for the nine sites not treated as having
probable/possible habitations, we find a median of 9 (mean
9.1). The median dominance of the seven sites is 27.2%
(mean 30.5%); that of the nine 26.0% (mean 27.2%).

Matson, Lipe, and Haase (Aug 88) VI-33
Neither of these two differences are significant at the
0.10 level, according to the Wilcoxon two sample test.

Both of these two measures of diversity are sensitive
to sample size, in this case, the size of the collection.
While the total diversity measure is in the expected
direction, the difference is small compared to the
difference in samples sizes. The median sample size for
the seven probable habitation sites is 54 tools (mean
115): that of the nine sites, 23 (mean 41.6).

This difference in assemblage size is significant at
the .05 level (.05 rank sum is 43; this rank sum 42)
according to the Wilcoxon test and probably accounts for
the difference in total diversity. According to this
analysis the main difference between sites without
probable/possible habitation features and those seven
sites on the right of dimension 2 is site size. A
possible inference from this observation would be that all
"large" Mossbacks sites are habitation sites.

If this is so we might inspect the largest sites of
the group of nine small sites on the right of Figure VI-13
to see if there is evidence of possible habitation on them
(Table VI-9). The two largest sites are Upper Grand Gulch
2-2 and Bullet 7-1 and there is evidence on both that
might be considered an indication of possible habitations.
Upper Grand Gulch 2-2 does have burned daub reported, as
well as a concentration of sandstone slabs dispersed by a
wash. (illustration?). At other sites such evidence was
often interpreted as indicating possible habitations, but
the UGG 2-2 set of field notes do not record this

Matson, Lipe, and Haase (Aug 88) VI-34 inference, nor are they up to the usual standard so an independent assessment could be made by using the maps and other site information. Bullet 7-1 is less clear but does have areas of extensive ash and some clusters of sandstone chunks. While Bullet 7-1 has little positive evidence of a structure, the ash indicates substantial use. The third largest site in this group (Bullet 16-4 with 43 stone tools) had two devolved sandstone slab features which were not interpretable.

To summarize, every spatially separable Mossbacks components which had 30 or more stone tools has features that may be interpreted as being evidence of a habitation, as do four of the 10 smaller sites. The smaller sites that do not have surface features indicating habitation structures do not have artifact assemblages very different from the rest. According to both architectural and artifactual characteristics, the Mossbacks sites with more than 10 stone tools present appear to be predominantly residential or habitation sites and the most common form of this includes a shallow pithouse. Because of this homogeneity in the function of the "larger" Mossbacks sites, the first two dimensions of the Q-mode scaling do not correlate with the expected functional differences.

The next two dimensions of the Q-mode scaling (Figure VI-15) account for only 16% of the total distance. The equivalent R-mode (Figure VI-16) dimensions account for 23% of the total distance. The third dimension of the R-mode contrasts Retouched Flakes with Projectile Points Fragments; this is faithfully reflected in the Q-mode

Matson, Lipe, and Haase (Aug 88) VI-35 analysis, with Retouched Flakes being more abundant in the sites shown at the bottom of Figure VI-15, and Projectile Point Fragments at the top. The only clear trend in the fourth dimension of the Q-mode analysis is that Denticulates are more common to the right, something also seen in the R-mode fourth dimension. These trends do not appear to be very interpretable, nor do they sort out sites with surface evidence of structures from those few lacking such evidence.

<Lithic Debitage>

Continuing the procedure followed in the Grand Gulch analysis, we compare and contrast the debitage profiles with the classes derived by other means. The seven lithic debitage classes are shown in Table VI-10 and Figure VI-17a tabulated according to the three site classes that resulted from the Farthest Neighbor cluster analysis. Note that the number of sites in each group is less than the number of components in each original cluster; this reduction is the result of additional spatial separation problems when dealing with the more abundant lithic debitage classes in multicomponent sites.

The main feature of this table and figure is the wide range of lithic reduction seen in all three clusters. If we compare this table with Table V-18, the summary of debitage distribution among the final Grand Gulch site classes, we see that all three Mossback clusters are most similar to the third group, the Grand Gulch habitation class. This, yet again, reinforces the interpretation

Matson, Lipe, and Haase (Aug 88) VI-36 that the Mossbacks sites as a whole are most like the Grand Gulch habitation sites. Comparison of Table VI-10 with Table V-18 shows the Mossbacks material is like the Grand Gulch habitation " only more so."

More primary lithic reduction debris occurs on Mossback sites as a whole, than on any site class in the Grand Gulch phase except for the Lithic Reduction class, which has 70% compared to 62%, 63% and 67% for the Mossbacks clusters. Since the main way that the Grand Gulch Habitation and Limited Activity sites in lithic debitage is that the habitation sites increased evidence of primary reduction, one can argue that this trend has continued further with the Mossbacks habitation sites.

Of the three Mossbacks clusters, Cluster II shows the widest range of lithic reduction products. This indicates that it is the most residential of the three clusters, which is in agreement with the interpretation based on the architecture and the tools. Cluster III, on the other hand, is the one that looks the least residential, although it is still residential, as compared with Grand Gulch phase sites. The same interpretation was also made on the basis of architecture and tools. While overall this cluster (III) appears to be composed of residential sites, it is one most likely to have Limited Activity sites included.

Instead of comparing the Mossbacks clusters with Grand Gulch sites, we can look at sites of "known" function from the Mossbacks Phase. Table VI-11 and Figure VI-17b show the values for two "known" groups, the 11 smallest Limited

Matson, Lipe, and Haase (Aug 88) VI-37
Activity Mossbacks sites not used in the Q-mode analysis
and the habitation sites. The Limited Activity Sites are
the seven of 11 small Mossbacks sites that do not have
evidence of "possible" pithouses present. The habitation
class consists of the five of the eight habitation sites
for which we have good debitage data.

The Limited Activity site class has very clear
differences from the Grand Gulch habitation sites, with
fewer Cores, Resharpending Flakes, and Primary flakes, as
well as dramatically fewer Tertiary Flakes. The Debris
category(block shatter and flake fragments), however, is
still quite high. The known habitation site class has a
profile very similar to that of the Mossbacks Farthest
Neighbor Cluster II, differing only slightly in having
slightly more Primary Flakes, less Secondary Flakes and
having slightly more Resharpending Flakes. These
differences, however, are almost certainly insignificant.
The high similarity with Cluster II occurs with two sites
being common to both groups of five. The interpretation of
most of the sites used in the cluster analysis being
habitation sites appears to be supported by the relative
abundance of the lithic debitage categories, as well as
supported the previous inference that such limited
activity sites as exist among the 23 sites used in the
Q-mode analysis are found in Cluster III.

The known Limited Activity site class in Table VI-11,
however, differs from any Grand Gulch Phase limited
activity site class. The amount of debris is higher than
in any but the Grand Gulch Lithic Reduction sites and the

Matson, Lipe, and Haase (Aug 88) VI-38
absence of Tertiary Flakes even at the first quartile is
very striking. The high number of Secondary Flakes and
low numbers of Primary and Tertiary Flakes brings to mind
the pattern reported by Matson (1981) for Pueblo Limited
Activity sites where it appeared that blanks or prepared
cores were brought to limited activity sites. This is a
very different pattern than seen at most Grand Gulch
Limited Activity sites where the lithic reduction appeared
to be a mixture of primary reduction, tertiary flaking and
resharpening. The complete lack of tertiary flakes on the
Mossbacks Limited Activity Sites suggests that complex
lithic tools were not finished on these sites. This
pattern is not too clear here, but is discussed further
with reference to Pueblo Limited Activity sites in the
next chapter.

A single limited activity site with too few tools
present (five) to be included in the clustering and
scaling, Upper Grand Gulch 9-1, is the only Mossbacks site
tha can be seriously considered as a primary lithic
reduction site. Some 95 pieces of lithic debitage were
found, along with 42 sherds, on this featureless site.
The abundance of Resharpening Flakes (12%) and
Tertiary Flakes (23%) indicate that tool finishing was
more important on this site than on typical Grand Gulch
Phase Lithic Reduction sites. With only a single site
like this, it is difficult to know whether this is a
single representative of a larger site class-- Mossbacks
Lithic Reduction sites-- or whether it is just an
anomalous site. At this point, we will leave it as a

Matson, Lipe, and Haase (Aug 88) VI-39
Limited Activity site, but keep in mind its unusual
characteristics when the settlement pattern analysis is
carried out.

To summarize the lithic debitage data, the major point
is that as a whole, the Mossbacks sites are like Grand
Gulch Habitation sites, only more so. Both the Mossbacks
artifact and architectural information support this
inference as does the comparison of the known habitation
sites from the two Basketmaker phases. Mossbacks Farthest
Neighbor Cluster II is the one which appears most
residential, and Cluster III, the least, although it also
has residential characteristics overall. The Mossbacks
limited activity lithic debitage profile is different from
any discussed before, and lacks substantial evidence of
primary reduction which occurs on residential sites.
Lithic material on limited activity sites appears to have
been transported to these sites in the forms of blanks or
prepared cores. Little finishing of complex lithic tools
appears to have occurred on these sites-- another
contrast with Grand Gulch Phase sites.

<Final Site Classification>

While initially the Mossbacks sites appeared to be very
different than those of the Grand Gulch Phase, in the end
the trends appear similar, although the results are not.
By that we mean that the association between site
furniture, habitation features and a wide range of debitage
classes occurs in both periods. In the Mossbacks case the
great majority of the sites belongs to the habitation

Matson, Lipe, and Haase (Aug 88) VI-40
class in contrast to the Grand Gulch case. A poorly
defined and relatively rare Limited Activity class that at
least in terms of Lithic Debitage is not similar to any
Grand Gulch class is the only other Mossback site class
recognized.

Another complicating feature is the multicomponent
nature of most of the large sites. In particular this
makes classifying sites by artifact and lithic profiles
impossible for some sites and dubious for others.
Fortunately, architectural information is relatively
abundant and correlates well with other aspects. Thus the
most useful classification information is the presence of
features indicating the presence of a habitation pithouse.
As we stated before, every site with more than 30 lithic
tools appears to fit the habitation site class either by
having evidence of a pithouse present or an artifact
profile of a habitation site.

Table VI-12 gives the Mossbacks components placed into
the Habitation and Limited Activity site classes, while
Figure VI-18 summarizes the tool and feature information
available for each. Inspection of Table VI-12 and Figure
VI-18 shows that many components could not produce the
artifact information needed for the tabulation. When it
is recognized that 16 which did are from multicomponent
sites, one realizes that this summary is undoubtedly less
representative than the corresponding one from the last
chapter. The pattern, though, is thankfully much simpler,
consisting of two classes rather than four or five.

Matson, Lipe, and Haase (Aug 88) VI-41