<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 preceeding 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

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 MEASURES 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 and these tend to be among the larger and better preserved ones, we cannot claim uequivocally 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

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

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 diagnostics 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

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

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

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

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

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 Baskemaker 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

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

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

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,

that contrary to the Grand Gulch case, Miscellaneous Tools and Choppers are not closely associated with this group, nor 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 (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 coninuing separation and indicating that the

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 respecitively) 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

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 possiblity 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.

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

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

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 misclassed 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.

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

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

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.

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

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.

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 distiquished 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

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

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 Clusteer 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

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 +.77 correlation between increasing amounts of Utilized Narrow Angle Flakes and the up direction on

Figure VI-13, a +.84 with Steep Angle Utilized Flakes and a -.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 +.925. Thus the sites toward the left have more

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

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 colletion 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).

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

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 "eveness" in diversity measures.

Two measures of diversity that might be independent of this eveness 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%).

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

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 as 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

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

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

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, Resharpening 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 Resharpening 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

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

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>

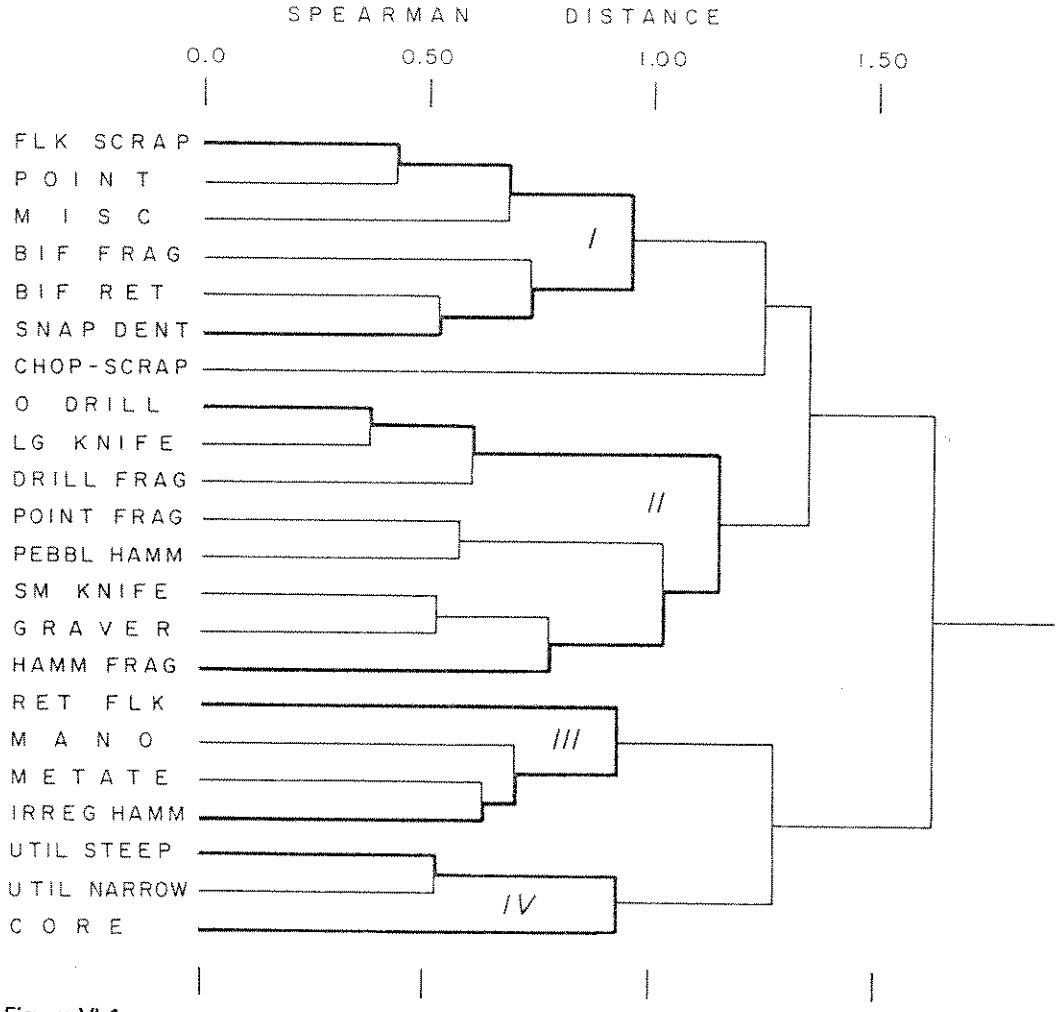
While initially the Mossbacks sites appeared to be very different than those of the Grand Gulch Phase, in the end the trends appear similar, although the results are not. By that we mean that the association between site furniture, habitation features and a wide range of debitage classes occurs in both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

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.

Figure Headings
Chapter VI, Basketmaker III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MISC
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BIF RET
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CHOP-SCRAP
O DRILL
LG KNIFE
DRILL FRAG
POINT FRAG
PEBBL HAMM
SM KNIFE
GRAVER
HAMM FRAG
RET FLK
MANO
METATE
IRREG HAMM
UTIL STEEP
UTIL NARROW
CORE
I
II
III
IV

Figure VI-1


FLK SCRAP
POINT
BIF RET
SNAP DENT
MISC
BIF FRAG
O DRILL
LG KNIFE
GRAVER
POINT FRAG
PEBBL HAMM
DRILL FRAG
RET FLK
CHOP-SCRAP
SM KNIFE
MANO
HAMM FRAG
UTIL NARROW
METATE
IRREG HAMM
UTIL STEEP
CORE
1
2

Figure VI-2

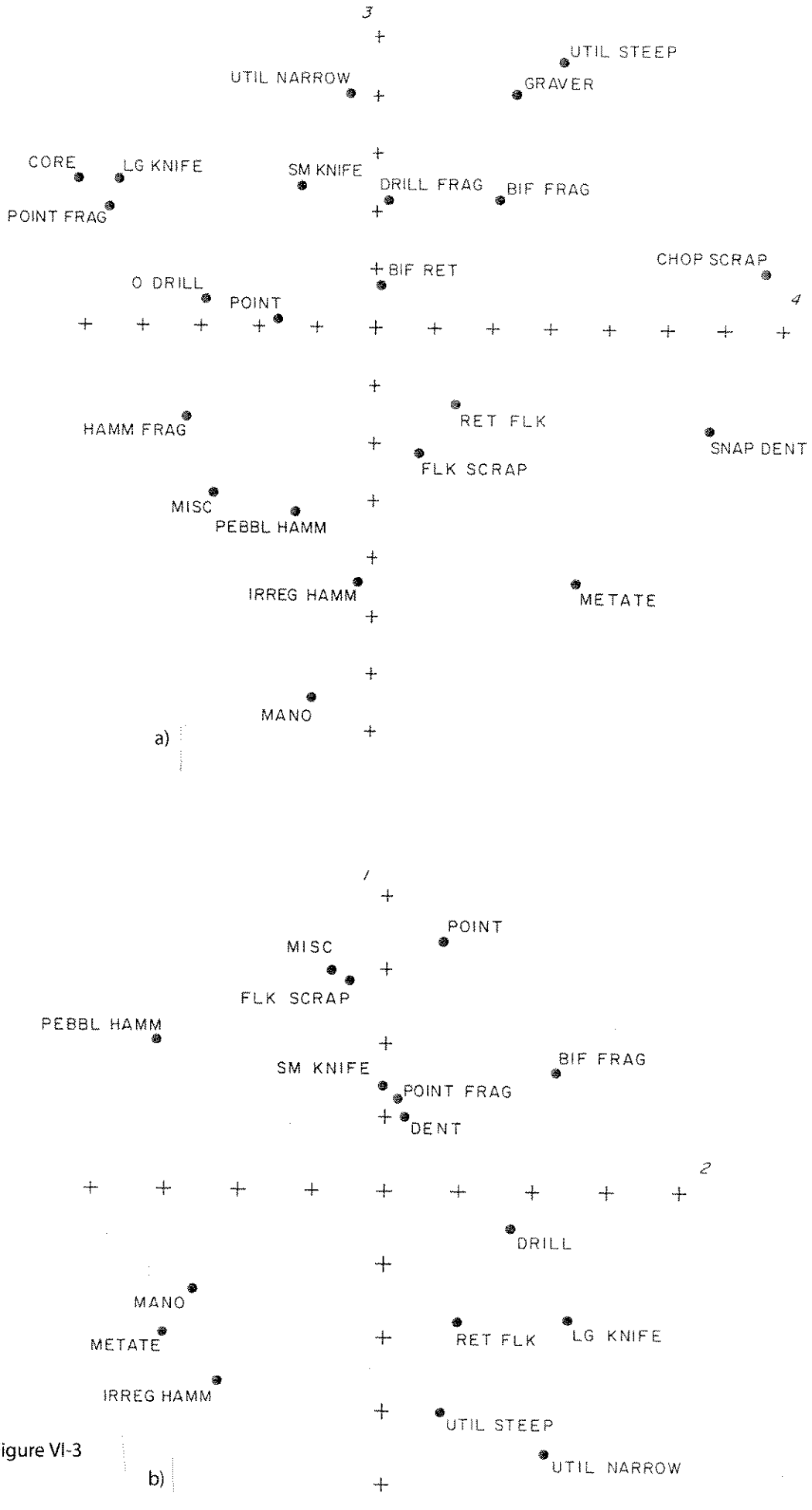

3
UTIL STEEP
UTIL NARROW
GRAVER
CORE
LG KNIFE
SM KNIFE
DRILL FRAG
BIF FRAG
POINT FRAG
BIF RET
CHOP SCRAP
O DRILL
POINT
4
HAMM FRAG
RET FLK
SNAP DENT
FLK SCRAP
MISC
PEBBL HAMM
IRREG HAMM
METATE
MANO
a)
1
POINT
MISC
FLK SCRAP
PEBBL HAMM
SM KNIFE
BIF FRAG
POINT FRAG
DENT
2
DRILL
MANO
METATE
RET FLK
LG KNIFE
IRREG HAMM
UTIL STEEP
UTIL NARROW
b)

Figure VI-3

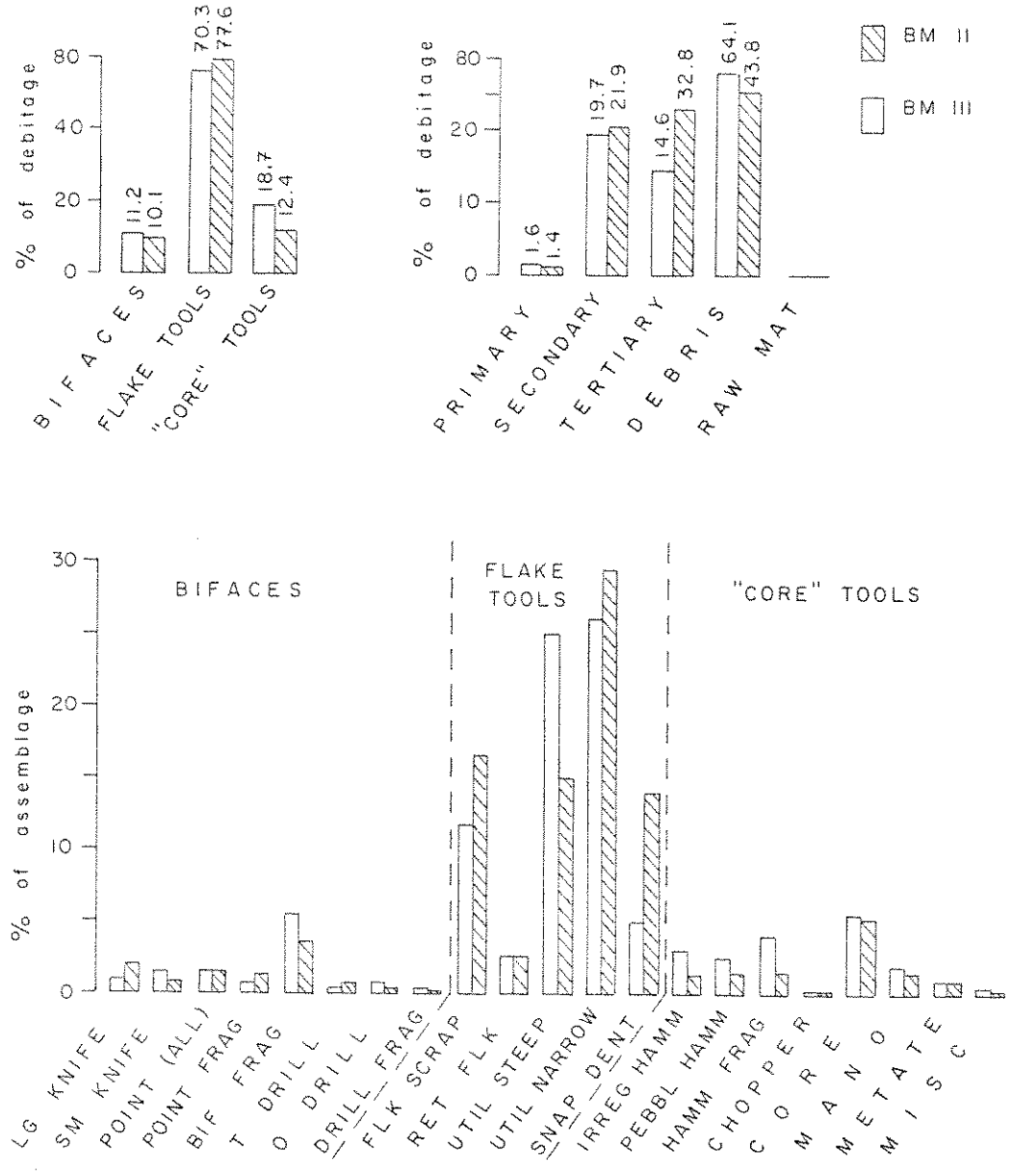

% of debitage
80
40
20
0
11.2
10.1
70.3
77.6
18.7
12.4
BIFACES
FLAKE TOOLS
"CORE" TOOLS
% of debitage
80
20
10
0
1.6
1.4
19.7
21.9
14.6
32.8
64.1
43.8
PRIMARY
SECONDARY
TERTIARY
DEBRIS
RAW MAT
BM II
BM III
% of assemblage
30
20
10
0
BIFACES
FLAKE TOOLS
"CORE" TOOLS
LG KNIFE
SM KNIFE
POINT (ALL)
POINT FRAG
BIF FRAG
T DRILL
O DRILL
DRILL FRAG
FLK SCRAP
RET FLK
UTIL STEEP
UTIL NARROW
SNAP DENT
IRREG HAMM
PEBBL HAMM
HAMM FRAG
CHOPPER
CORE
MANO
METATE
MISC

Figure VI-4

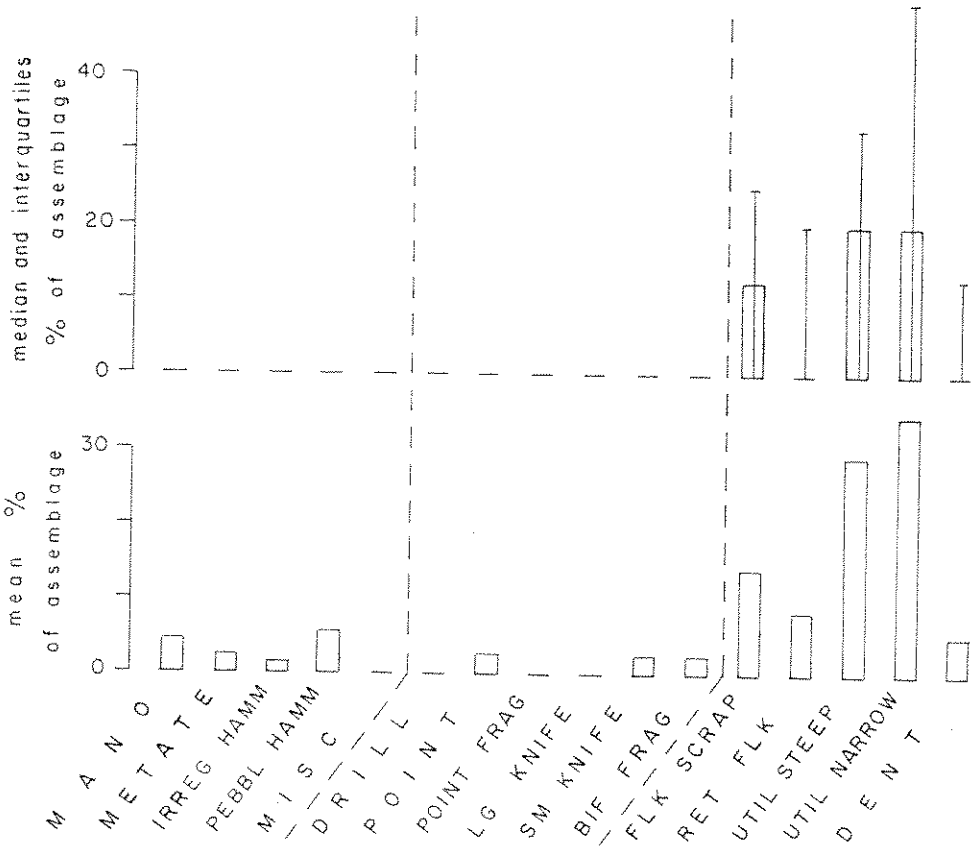


Figure VI-5

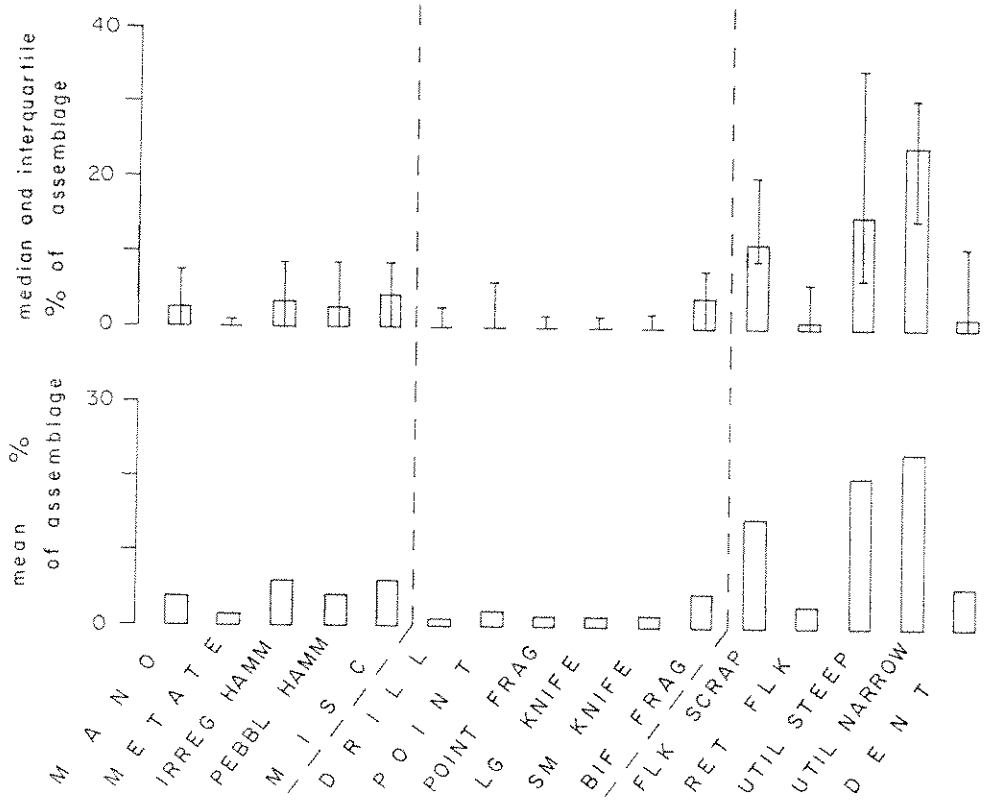
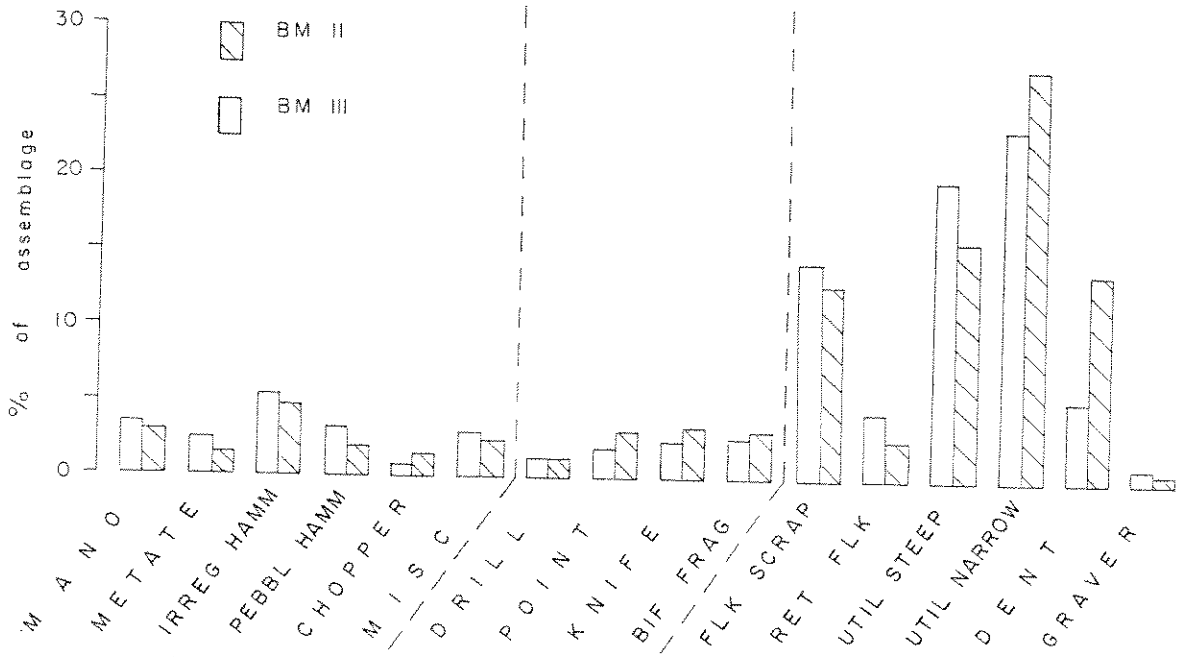


Figure VI-6



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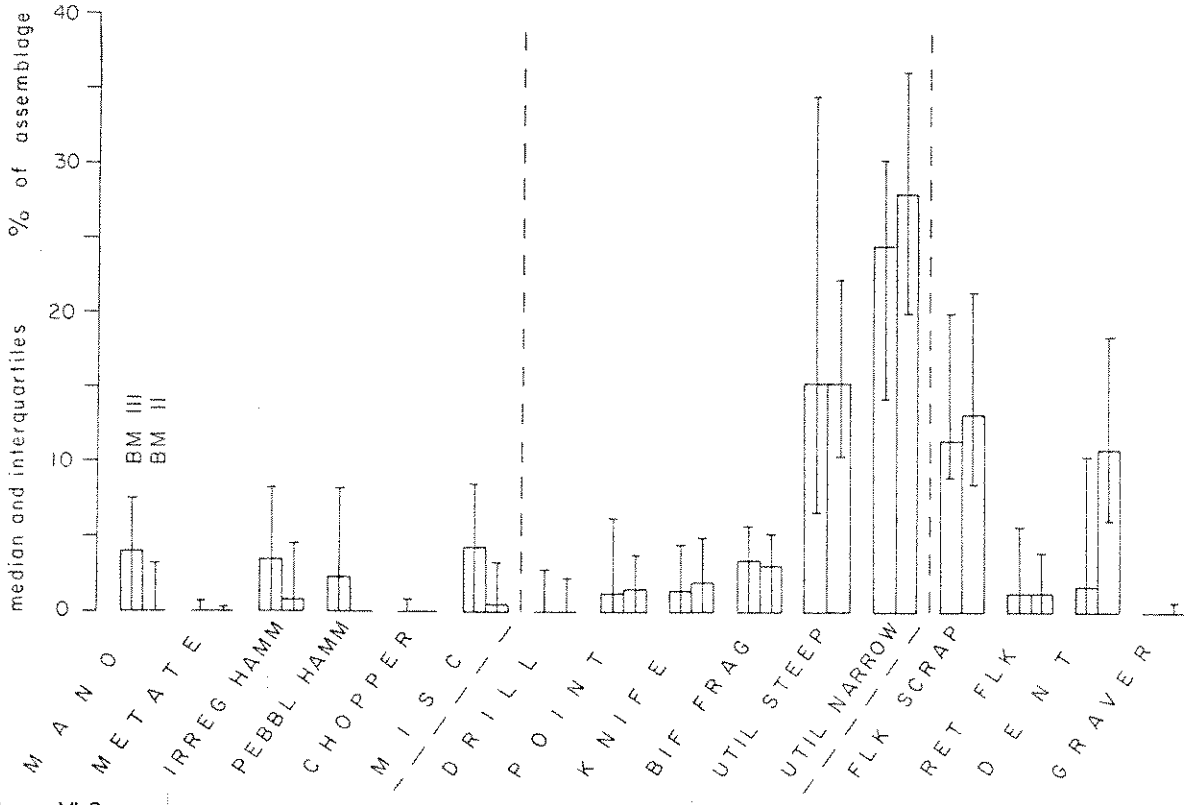


Figure VI-8

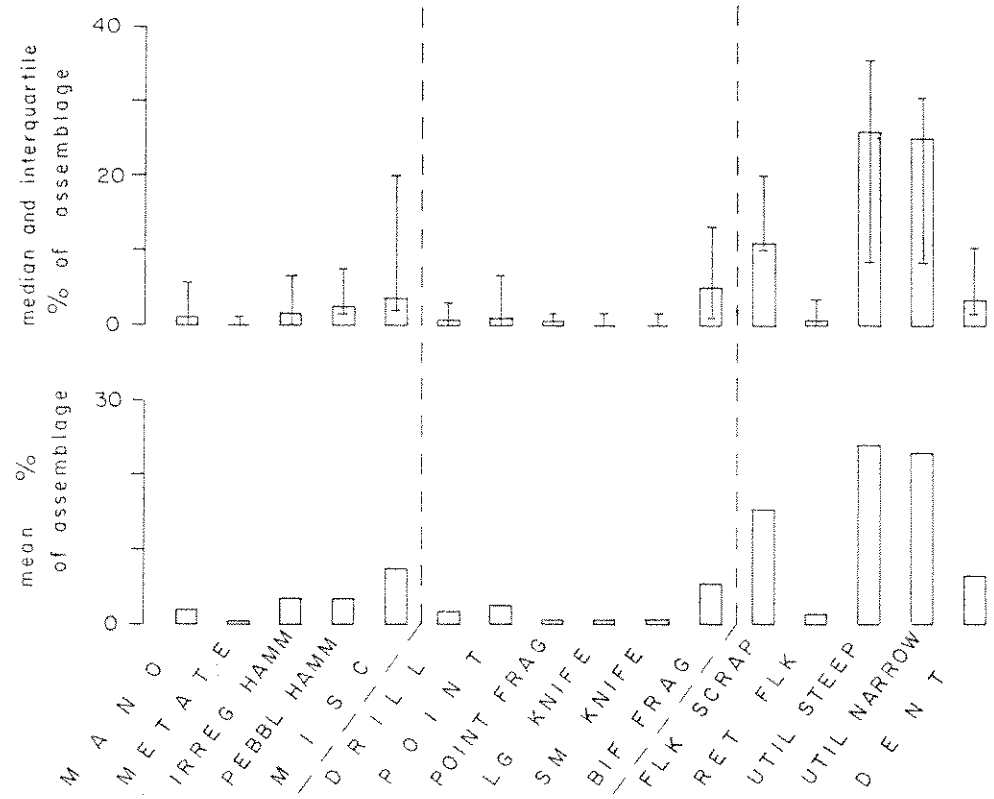
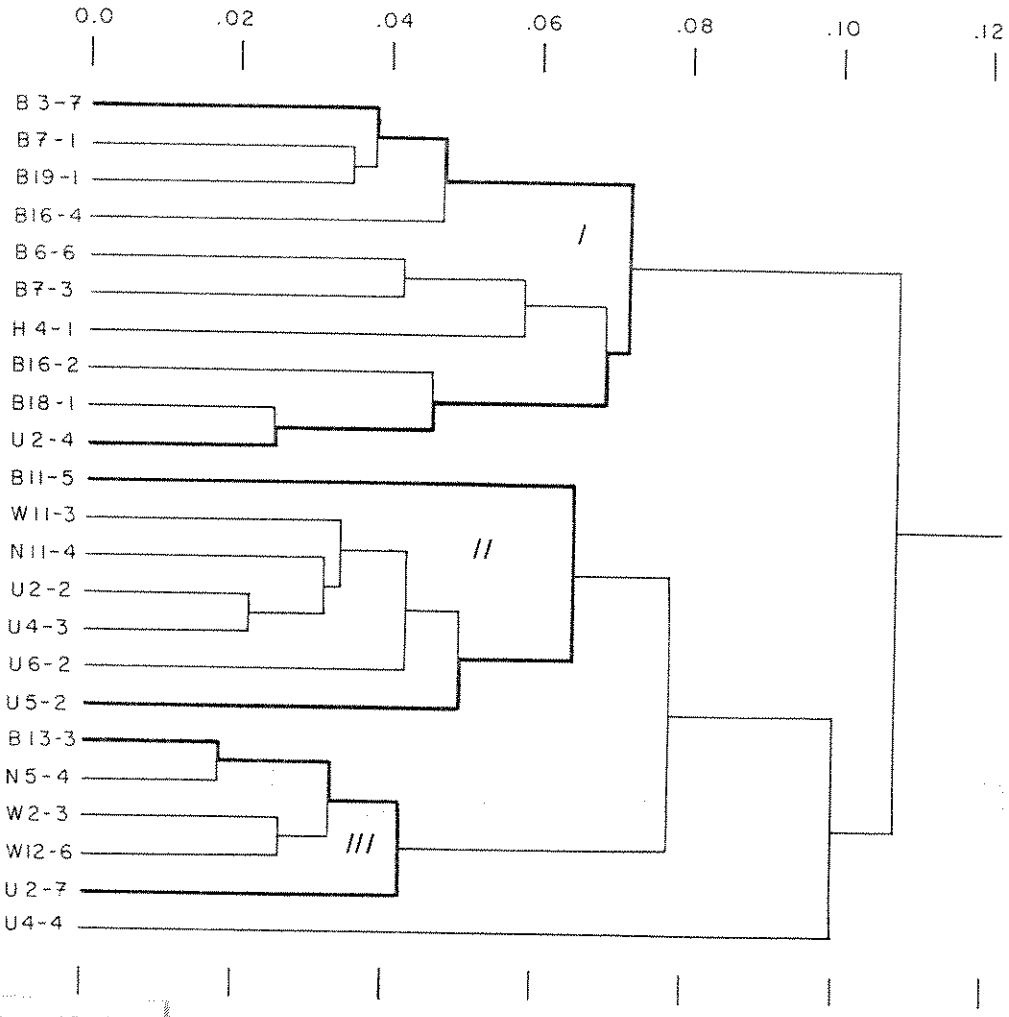

median and interquartile
% of assemblage
40
20
0
mean % of assemblage
30
0
MANO
METATE
IRREG HAMM
PEBBL HAMM
MISC
DRILL
POINT
POINT FRAG
LG KNIFE
SM KNIFE
BIF FRAG
FLK SCRAP
RET FLK
UTIL STEEP
UTIL NARROW
DENT

Figure VI-9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.08
.10
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B 3-7
B7-1
B19-1
B16-4
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H 4-1
B16-2
B18-1
U 2-4
B11-5
W11-3
N11-4
U2-2
U4-3
U6-2
U5-2
B13-3
N5-4
W2-3
W12-6
U 2-7
U4-4
I
II
III

Figure VI-10

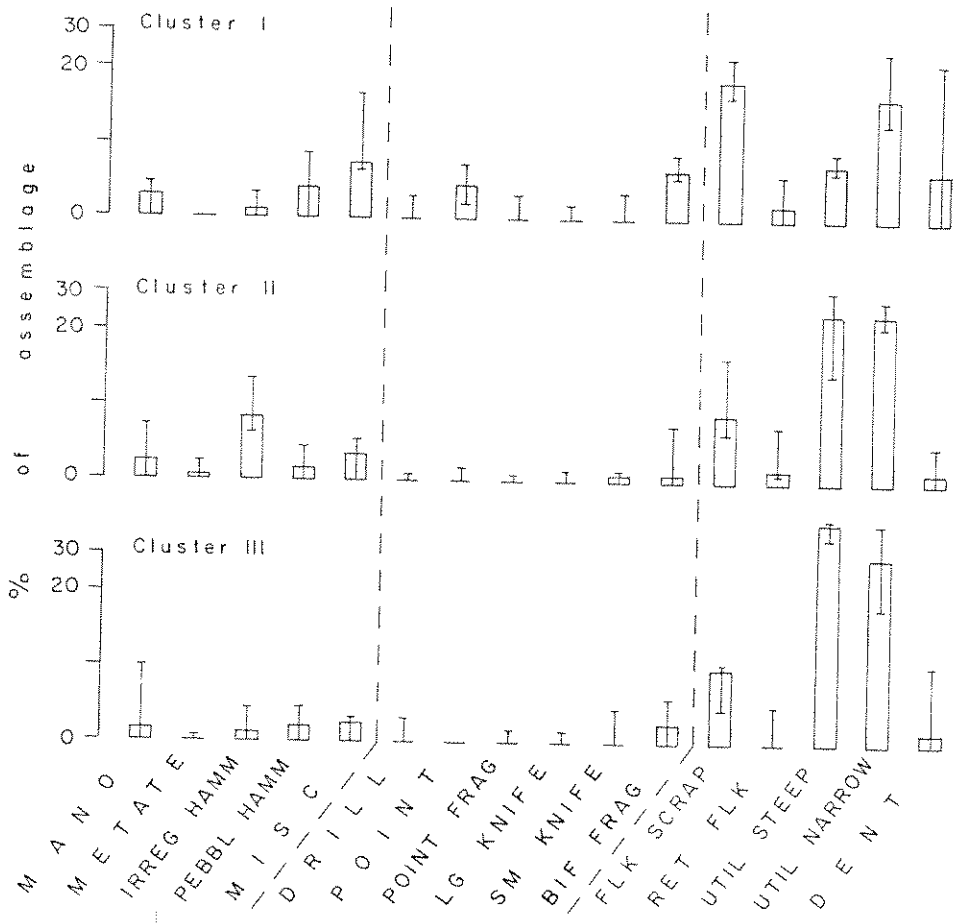
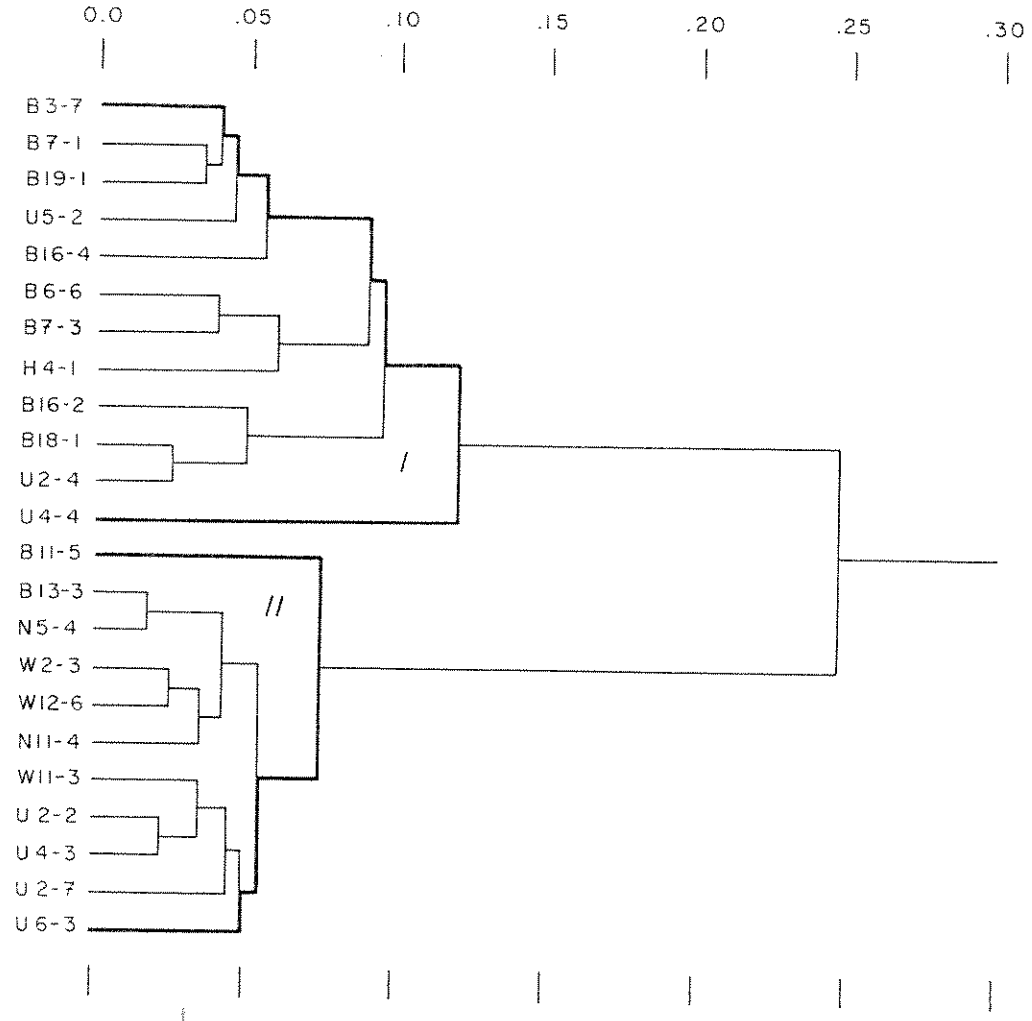

Cluster I
Cluster II
Cluster III
30
20
0
% of assemblage
MANO
METATE
IRREG HAMM
PEBBL HAMM
MISC/DRILL
POINT
POINT FRAG
LG KNIFE
SM KNIFE
BIF FRAG/FLK SCRAP
RET FLK
UTIL STEEP
UTIL NARROW
DENT

Figure VI-11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B7-3
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U2-4
U4-4
B11-5
B13-3
N5-4
W2-3
W12-6
N11-4
W11-3
U2-2
U4-3
U2-7
U6-3
/
//

Figure VI-12

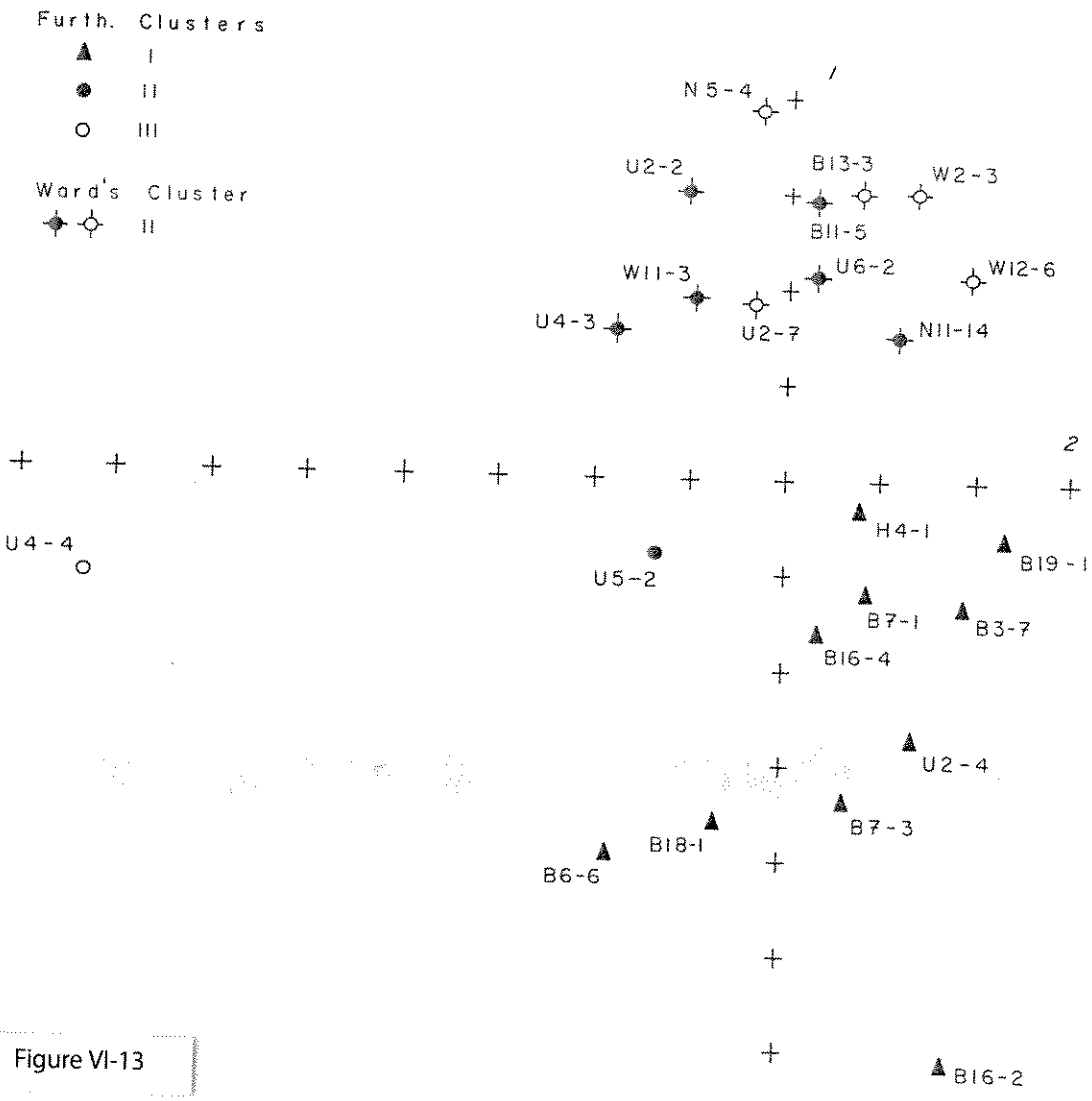
Furth. Clusters
I
II
III
Ward's Cluster
II
N 5-4
1
U2-2
B13-3
W2-3
B11-5
W11-3
U6-2
W12-6
U4-3
U2-7
N11-14
2
U4-4
H4-1
B19-1
U5-2
B7-1
B3-7
B16-4
U2-4
B7-3
B18-1
B6-6
B16-2

Figure VI-13

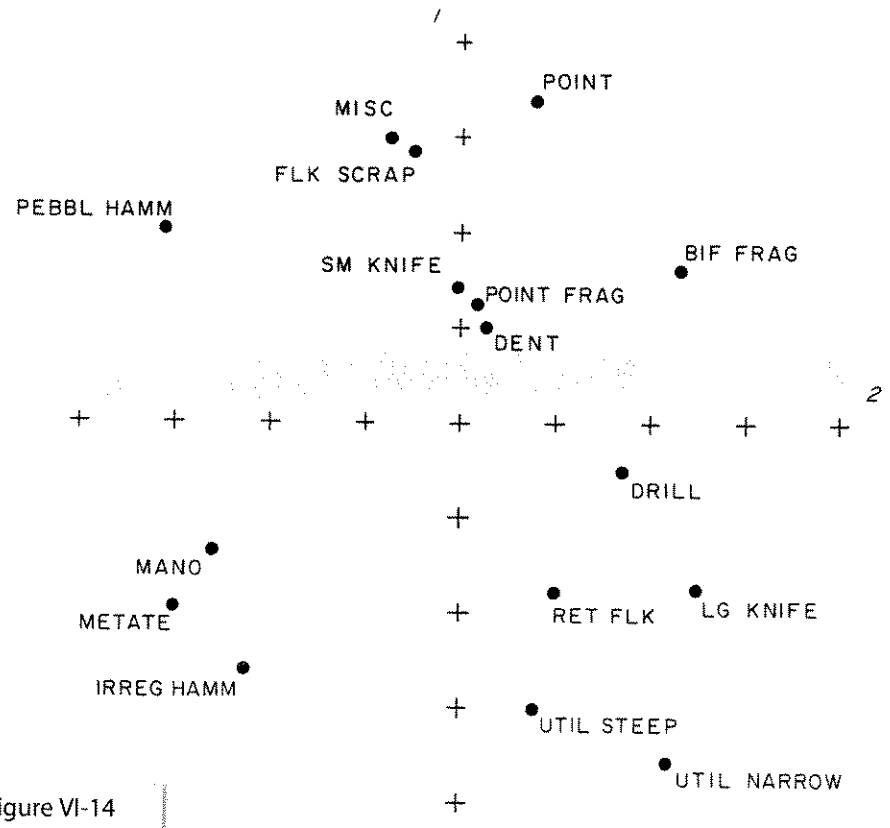
1
2
POINT
MISC
FLK SCRAP
PEBBL HAMM
SM KNIFE
BIF FRAG
POINT FRAG
DENT
DRILL
MANO
METATE
RET FLK
LG KNIFE
IRREG HAMM
UTIL STEEP
UTIL NARROW

Figure VI-14

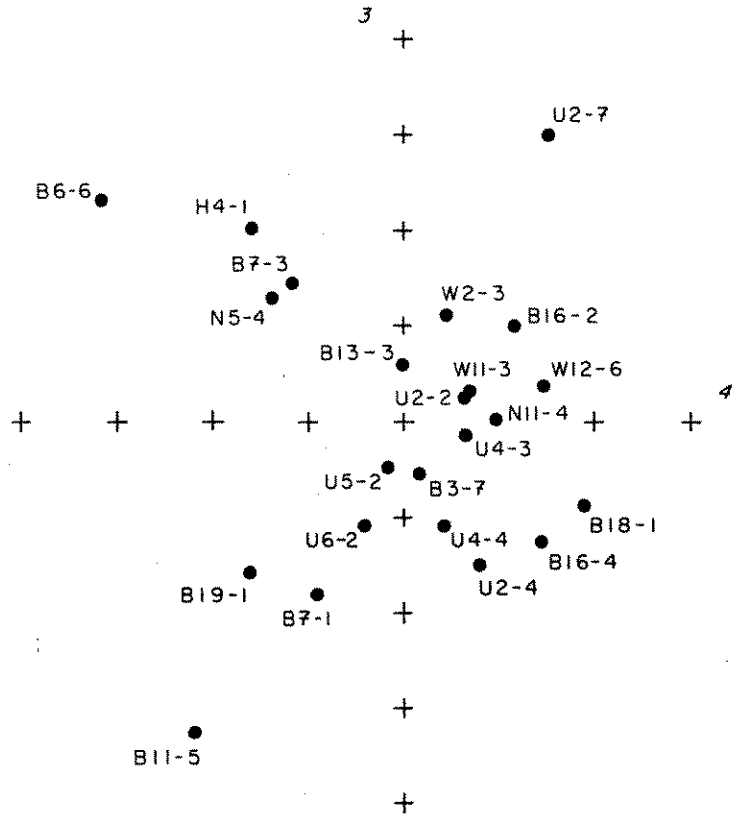

Figure VI-15

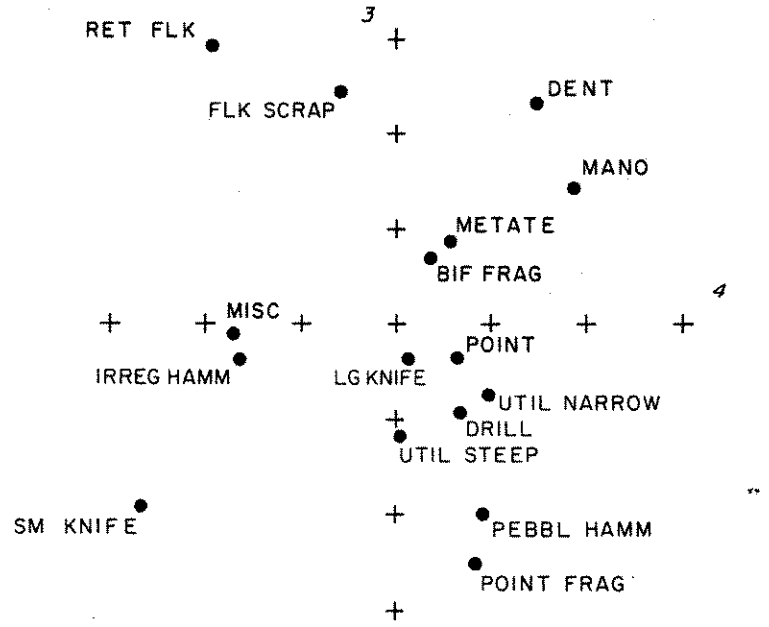

Figure VI-16

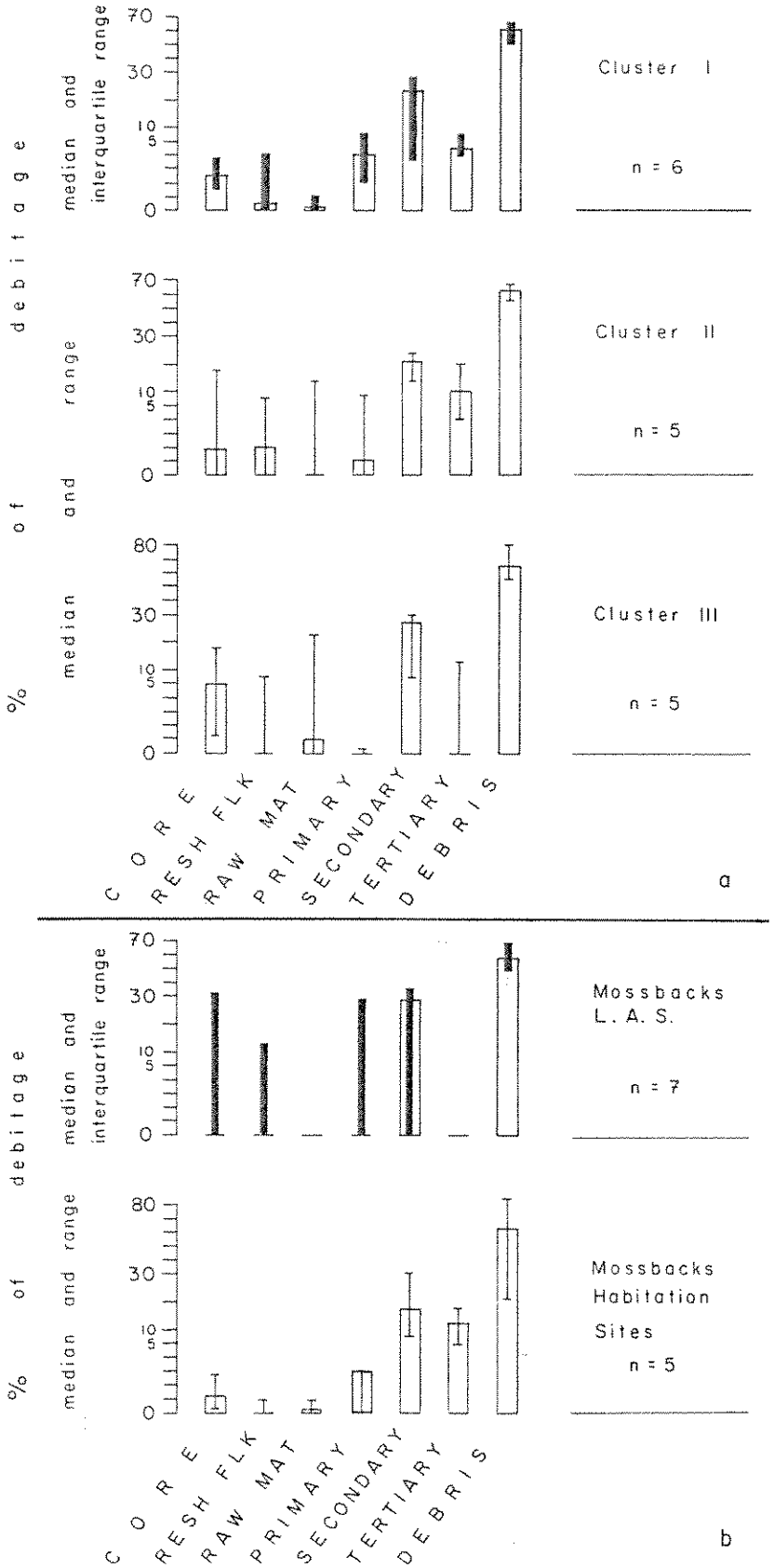
% of debitage
median and interquartile range
70
30
10
5
0
Cluster I
n = 6
% of debitage
median and range
Cluster II
n = 5
Cluster III
n = 5
CORE
FRESH FLK
RAW MAT
PRIMARY
SECONDARY
TERTIARY
DEBRIS
a
% of debitage
median and interquartile range
Mossbacks
L. A. S.
n = 7
% of debitage
median and range
Mossbacks
Habitation
Sites
n = 5
b

Figure VI-17

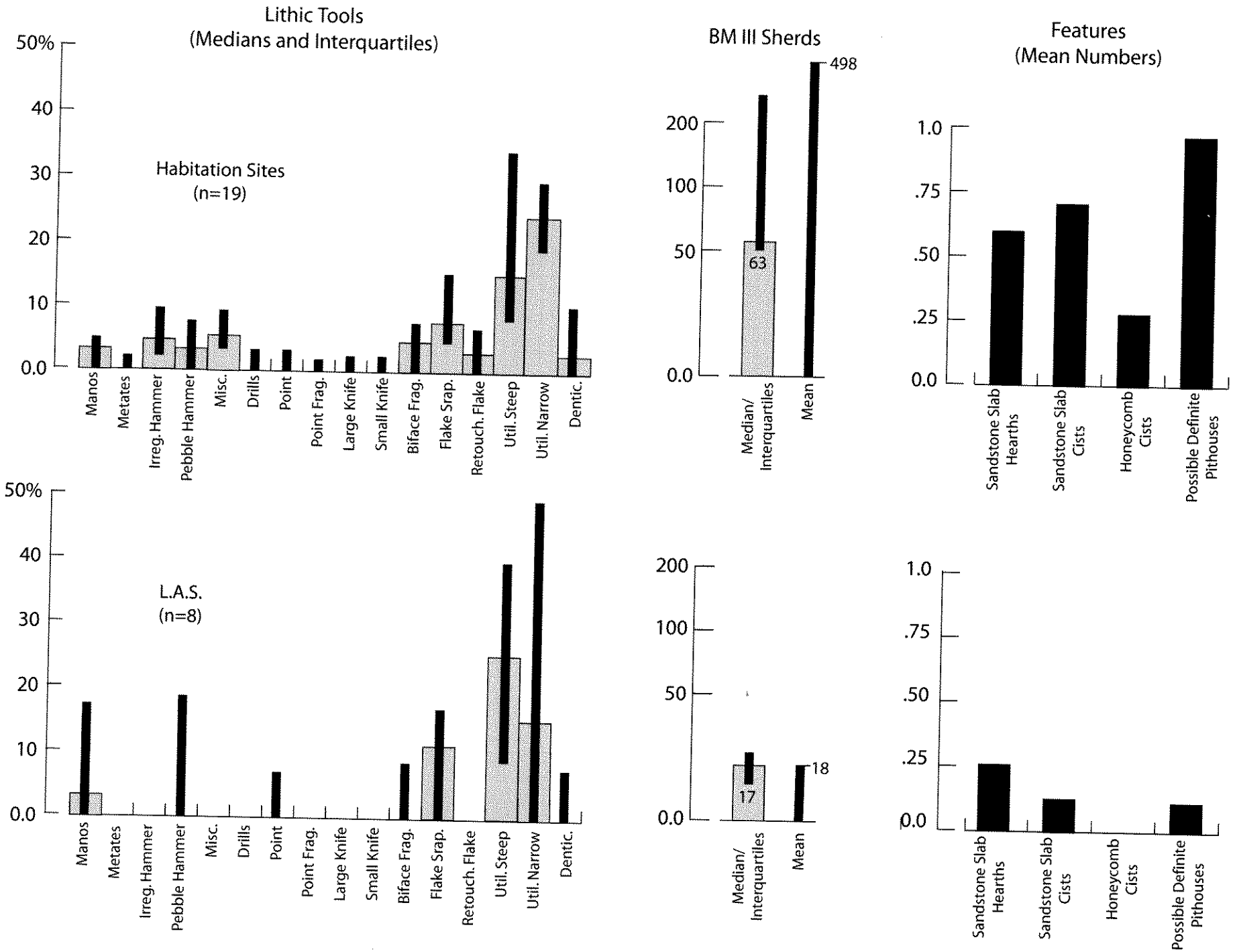
Lithic Tools
(Medians and Interquartiles)
50%
40
30
20
10
0.0
Habitation Sites
(n=19)
Manos
Metates
Irreg. Hammer
Pebble Hammer
Misc.
Drills
Point
Point Frag.
Large Knife
Small Knife
Biface Frag.
Flake Srap.
Retouch. Flake
Util. Steep
Util. Narrow
Dentic.
BM III Sherds
498
200
100
50
0.0
63
Median/
Interquartiles
Mean
Features
(Mean Numbers)
1.0
.75
.50
.25
0.0
Sandstone Slab
Hearths
Sandstone Slab
Cists
Honeycomb
Cists
Possible Definite
Pithouses
50%
40
30
20
10
0.0
L.A.S.
(n=8)
Manos
Metates
Irreg. Hammer
Pebble Hammer
Misc.
Drills
Point
Point Frag.
Large Knife
Small Knife
Biface Frag.
Flake Srap.
Retouch. Flake
Util. Steep
Util. Narrow
Dentic.
200
100
50
0.0
17
18
Median/
Interquartiles
Mean
1.0
.75
.50
.25
0.0
Sandstone Slab
Hearths
Sandstone Slab
Cists
Honeycomb
Cists
Possible Definite
Pithouses

Figure VI-18

Table of Contents
Tables

TABLE VI-1

MOSSBACKS TREE RING DATES

Provenience	Species	Dating Inside	Outside
UGG 4-3 Feature E	PNN	450	519vv
"	JUN	482fp	537vv
"	PNN	475	539vv
"	PNN	451	550vv
"	JUN	479fp	555vv
"	PNN	512	568vv
"	PNN	564fp	600vv
"	PNN	546fp	603vv
"	PNN	529p	627vv
"	PNN	575fp	628vv
"	PNN	535p	634+rB
"	PNN	556p	636vv
"	PNN	595	645vv
"	PNN	505p	666vv
"	PNN	543p	668vv
"	PNN	501p	677vv
"	PNN	521	684vv
"	PNN	620fp	684vv

Provenience	Species	Dating Inside	Outside
Feature E	PNN	484p	685++vv
"	PNN	499p	690vv
"	PNN	499fp	690v
"	JUN	488p	691r
"	PNN	584fp	695vv
B-3-7 Feature H	PNN	0507p	0674vv
"	PNN	0496p	0600vv
BU-3-7, Feature K	PNN	0484fp	0548+vv
" "	PNN	0510p	0636+vv
WJ-12-6, Feature B	JUN	0429	0597+vv
" "	JUN	0536p	0698++vv
" "	JUN	0553p	0652vv
Feature F	JUN	0527p	0613+vv
WJ-2-3, Feature Q	PNN	0543p	0652+vv
" "	PNN	0494p	0655vv
" "	PNN	0484p	0681+vv
" "	JUN	0498p	0611+vv
" "	JUN	0557p	0655+vv
" "	JUN	0525p	0648+vv
" "	PNN	0470p	0572+vv

Provenience	Species	Dating Inside	Outside
UGG-4-3, Feature 0	PNN	0432p	0605+vv
" "	PNN	0485p	0627++vv
" "	PNN	0530	0673+vv
" "	PNN	0381	0627+vv
" "	PNN	0326p	0562vv
" "	PNN	0375p	0493+vv

EXPLANATION OF SYMBOLS

The symbols used with the inside date are:

year - no pith ring present

p - pith ring present

fp - the curvature of the inside ring indicates that it is far from the pith

The symbols used with the outside date are:

B - bark present

r - less than a full section is present, but the outermost ring is continuous around available circumference

v - a subjective judgment that, although there is no direct evidence of the true outside on the specimen, the date is within a very few years of being a cutting date

vv - there is no way of estimating how far the last ring is from the true outside

+ - one or more rings may be missing near the end of the ring series whose presence or absence cannot be determined because the specimen does not extend far enough to provide an adequate check

++ - a ring count is necessary due to the fact that beyond a certain point the specimen could not be dated

TABLE VI - 2

BASKETMAKER III (MOSS BACKS) COMPONENTS

Site	Status	BM III Ceramics	Number of Tools	Other Components	Used in Quantitative Analysis
B 3- 1	Mixed, Intermingled	170	- -	3 P	- -
B 3- 7 + B 6- 5	Mixed, Separable	244	59	3 P	+
B 5- 7	Pure	17	4	- -	+
B 6- 2	Pure (?)	1	2	- -	+
B 6- 4	Mixed, Intermingled	58	- -	3 P	- -
B 6- 6	Pure	25	13	- -	+
B 7- 1	Mixed Separable	125	79	3-4 P	+
B 7- 2	Mixed Intermingled	7	- Deleted from BM III list		
B 7- 3	Pure	18	13	- -	+
B 11-5	"Pure"	12	14	P ??	+
B 12-1	Mixed, Intermingled	107	- -	3 P	-
B 13-3	Mixed, Separable	559	135	3 P	+
B 15-3	Pure	32	6	- -	+
B 16-2	Mixed, Separable	63	15	BM II	+
B 16-4	Mixed, Separable	89	43	P ?	+
B 17-2	Mixed, Separable	12	- -	3 P	- -
B 18-1	Pure	115	23	- -	+
B 19-1	Mixed, Separable	69	34	1 P	+
B 19-3	Pure	20	2	- -	+
B 21-6	Pure (?)	4	6	- -	+
B 22-2	Mixed Intermingled	232	- -	1 P	- -
H 4- 1	Mixed Separable	16	11	? P, BM II	+

TABLE VI - 2 (Contd.)

BASKETMAKER III (MOSS BACKS) COMPONENTS

Site	Status	BM III Ceramics	Number of Tools	Other Components	Used in Quantitative Analysis
H 14-2	Mixed, Intermingled	178	- -	3 P, BM II	- -
N 4 - 2	Mixed	128	- -	3 P, BM II	- -
N 4 - 3	Mixed, Intermingled	18	- -	2, 3 P	- -
N 4 - 5	Mixed, Intermingled	305	- -	2, P	- -
NR 5- 4	Pure	12	11	- -	+
NR 5- 8	Mixed Separable	15	6	BM II; ? P	too small
NR 9- 1	Mixed Separable	61	1	4 P	too small
NR 10-1	Mixed Intermingled	7	Deleted form BM II list		
NR 11-1	Mixed Intermingled	30	- -	3, 4 P	- -
NR 11-2	Mixed Intermingled	11	Deleted from BM II list		
NR 11-4	"Pure" (Mixed)	4886	462	3 P	+ (ignore small Pueblo comp.)
NR 10-5	"Pure"	24	1 (2?)	- -	+
WJ 2 -3	Pure	44	75	- -	+
WJ 11-3	Mixed Separable	63	19	3 P	+
W 12-1	"Pure"	4	4	- -	+
W 12-4	Mixed Intermingled	42	140	3 P	- -
W 12-6	Pure	54	116	- -	+
W 16-4	Mixed Separable	18	9	? P	+
W 16-5	Pure	14	5	- -	+
UGG 2-2	Pure	530	161	- -	+
UGG 2-4	Mixed Separable	54	50	? P	+
UGG 2-7	Pure	18	24	- -	+
UGG 4-2	Pure	12	5	- -	+

TABLE VI - 2 (Contd.)

BASKETMAKER III (MOSS BACKS) COMPONENTS

Site	Status	BM III Ceramics	Number of Tools	Other Components	Used in Quantitative Analysis
UGG 4 - 3	Mixed Separable	2098	114	4 P	+
UGG 4 - 4	Pure	49	12	- -	+
UGG 5 - 2	Mixed Separable	360	77	2 P	+
UGG 6 - 1	Mixed Intermingled	179	- -	3 P	- -
UGG 6 - 2	"Pure"	63	16	2 P ?	+
UGG 6 - 3	Mixed Intermingled	477	- -	4 P	- -
UGG 9 - 1	Pure	24	5	- -	+

TABLE V1 - 3

DISTRIBUTION AND ABUNDANCE OF MOSSBACKS ARTIFACT TYPES (34 SITES)

Type No.	Name	Total Number	Total Number of Sites Present
1	Flake Scraper	179	28
2	Retouched flake	39	16
3	Steep angle utilized flake	378	29
4	Narrow angle utilized flake	397	28
5	Bifacial resharpening or thinning flake	(also treated as debitage)	
6	Bifacially retouched flake	11	9
7	Graver	9	7
8	Snapped denticulate	78	18
9	Flaked denticulate	4	3
10	Core scraper	3	3
11	Biface fragment	82	16
12	Large point fragment	6	4
13	Small point fragment	5	5
14	Jumbo corner-notched point	0	0
15	Large corner-notched straight base	3	3
16	Large corner-notched round base	1	1
17	Large side-notched point	1	1
18	Small corner-notched; barbed point	6	5
19	Small corner-notched; broad base point	5	4
20	Triangular point	4	1 (NR 11-4)
21	Desert side-notched point	2	2
22	Small shallow side-notched or stemmed point	1	1
23	Large knife	14	7
24	Small knife	21	10
25	"T" drill	5	3
26	Other drill	9	7
27	Drill fragment	5	5
28	Irregular hammerstone	44	14

TABLE V1 - 3 (continued)

Type No.	Name	Total Number	Total Number of Sites Present
29	Pebble hammerstone	39	15
30	Hammerstone fragment	61	8
31	Chopper	5	5
32	Core	86	21 (also treated as debitage)
33	Mano	32	18
34	Metate	14	9
35	Miscellaneous groundstone	4	4
36	Gizzard stone	72	12
37	Miscellaneous artifacts	37	11

TABLE VI - 4

CLASSES USED IN PRELIMINARY R-MODE ANALYSIS (34 SITES)

Type No.	R-Mode Name	Total Number	Total Number of Sites Present	Table VI-3 Categories Used
1.	Flake Scraper	179	28	1
2.	Retouched Flake	39	16	2
3.	Steep Angle Utilized Flake	378	29	3
4.	Narrow Angle Utilized Flake	397	28	4
5.	Biface Fragment	82	16	11
6.	Projectile Point	23	12	14-22
7.	Projectile Point Fragment	11	8	12-13
8.	Large Knife	14	7	23
9.	Small Knife	21	10	24
10.	Bifacially Retouched Flake	11	9	6
11.	Scraper-Chopper	8	8	10 +31
12.	Snapped Denticulate	78	18	8
13.	Graver	9	7	7
14.	Mano	32	18	33
15.	Metate	14	9	34
16.	Irregular Hammerstone	44	14	28
17.	Pebble Hammerstone	39	15	29
18.	Hammerstone Fragment	61	8	30
19.	Drill	9	7	26
20.	Drill Fragment	10	6	25 +27
21.	Core	86	21	32
22.	Misc. Artifacts	45	13	35 +9 +37

TABLE VI - 5

THE 16 ARTIFACT CLASSES USED IN Q-MODE BM III ANALYSIS (34 SITES)

No.	Name	Total Number	Total Number of Sites Present	Table VI-3 Categories Used
1.	Mano	32	18	33
2.	Metate	14	9	34
3.	Irregular Hammerstone	105	18	28+30
4.	Pebble Hammerstone	39	15	29
5.	Misc. Artifacts	62	17	31+35+37+9+10+7
6.	Drill	19	10	25+26+27
7.	Projectile Point	23	12	14-22
8.	Projectile Point Fragment	11	8	12+13
9.	Large Knife	14	7	23
10.	Small Knife	21	10	24
11.	Biface Fragment	93	17	6+11
12.	Flake Scraper	179	28	1
13.	Retouched Flake	39	16	2
14.	Steep Angle Utilized Flake	378	29	3
15.	Narrow Angle Utilized Flake	397	28	4
16.	Snapped Denticulate	78	18	8

TABLE VI - 6

SUMMARY STATISTICS OF FARTHEST NEIGHBOR MOSSBACKS Q-MODE CLUSTER ANALYSIS

(1/10%'S) MEDIANS

	Mano	Metate	Irregular Hammerstone	Pebble Hammerstone	Misc. Artifacts	Drill	Projectile Point	Projectile Point Fragment	Large Knife	Small Knife	Biface Fragment	Flake Scraper	Retouched Flake	Utilized Steep Angled Flake	Utilized Narrow Angled Flake	Denticulate
							Cluster I n=10									
Median	30	0	9	41	75	0	45	0	0	0	67	188	19	75	166	65
1/4	0	0	0	0	62	0	18	0	0	0	55	166	0	66	130	0
3/4	43	0	33	83	166	29	31	18	33	83	83	216	58	88	243	233
							Cluster II n=7									
Median	24	6	83	14	36	0	0	0	0	9	9	100	18	250	250	14
1/4	7	0	63	0	0	0	0	0	0	0	0	62	12	153	223	0
3/4	76	27	137	44	52	9	18	9	14	16	76	166	76	315	287	52
							Cluster III n=5									
Median	15	0	15	23	26	0	0	0	0	0	23	99	0	399	303	15
Range Low	0	0	0	0	0	0	0	0	0	0	0	45	0	346	181	0
High	99	8	45	45	30	30	0	15	15	45	60	115	52	500	399	104
UGG 4-4 (Isolate)	181	181	272	181	0	0	0	0	0	0	0	90	0	0	90	0

TABLE VI - 7

SUMMARY STATISTICS OF WARD'S METHOD MOSSBACKS Q-MODE CLUSTER ANALYSIS

(1/10%'S) MEDIANS

	Mano	Metate	Irregular Hammerstone	Pebble Hammerstone	Misc. Artifacts	Drill	Projectile Point	Projectile Point Fragment	Large Knife	Small Knife	Biface Fragment	Flake Scraper	Retouched Flake	Utilized Steep Angled Flake	Utilized Narrow Angled Flake	Denticulate
						Cluster I n=12										
Median	30	0	25	55	71	0	30	0	0	0	64	188	7	75	166	38
1/4	0	0	0	0	29	0	0	0	0	0	14	166	0	43	90	0
3/4	71	0	67	86	166	29	71	31	29	33	83	208	58	111	243	233
						Cluster II n=11										
Median	15	0	52	14	26	0	0	0	0	0	9	99	12	324	269	18
1/4	0	0	15	0	0	0	0	0	0	0	0	62	0	250	247	0
3/4	76	8	83	30	43	12	0	9	14	16	60	105	52	399	392	46

TABLE VI - 8

COMPARISON OF WARD'S AND FARTHEST NEIGHBOR CLUSTER ANALYSES

Site	Farthest Neighbor			Wards	
	I	II	III	I	II
B 3-7	X			X	
B 7-1	X			X	
B 19-1	X			X	
B 16-4	X			X	
B 6-6	X			X	
B 7-3	X			X	
H 4-1	X			X	
B 16-2	X			X	
B 18-1	X			X	
U 2-4	X			X	
B 11-5		X			X
W 11-3		X			X
N 11-4		X			X
U 2-2		X			X
U 4-3		X			X
U 6-2		X			X
U 5-2		X		X	
B 13-3			X		X
N 5-4			X		X
W 2-3			X		X
W 12-6			X		X
U 2-7			X		X
U 4-4			X	X	

TABLE VI - 9

BM III FEATURE SUMMARY

SITE	MULT COMP	SS SLAB HEARTH	SS SLAB CIST	SS SLAB HONEYCOMB	PITHOUSE	n BM III SHERD	COMMENTS
B 3-1	+					170	NO DEF BM III STRUCTURES 1 POSSIBLE BURIAL
B 3-7 B 6-5	+		? FEA. ? A		FEA. A	222	FEA.A JACAL + STORAGE?
B 5-7	-				FEA. A 5 m DIAM.	17	JACAL PITHOUSE?
B 6-2	-			+	?	1	OFF QUAD, HONEYCOMB CIST A POSSIBLE HAB.
B 6-4	+					58	NO DEF BM III FEATURES, SOME PUEBLO STUFF
B 6-6	-		?	?	FEA. A 4.5 m DIAM	25	JACAL PITHOUSE + SS SLABS
B 7-1	+	?				125	NO GOOD FEATURES BUT ASHY SPOTS & SOME SS SLABS
B 7-3	-					18	NO GOOD FEATURES BUT A NUMBER OF ASHY SPOTS
B 11-5	-	FEA. A	FEA. B		FEA. B 4-5 m DIAM	12	FEA. B GOOD PITHOUSE (SS SLAB) + SS SLAB CIST OR HEARTH. -POSSIBLE PUEBLO
B 12-1	+				??	107	NO CERTAIN BM III FEATURE, BUT POSSIBLE
B 13-3	+	~~0-6~~ ?			FEA. B 4 m DIAM	559	TRASH (FEA. A) POSSIBLY BM III + POSSIBLE HEARTH IN 0-6
B 15-3	-				4-5 m DIAM	32	POOR NOTES & JACAL & SLAB. + 1 ASH HEARTH
B 16-2	+	2 (FEA. C)			(FEA. C?)	63	THERE MAY BE MORE IN FEA. C THAN NOTED IN THE FIELD
B 16-4	+	FEA. A				89	OTHER FEATURES APPEAR TO BE DEVOLVED
B 17-2	+					12	NOTHING OBVIOUS, NO CLUSTERING OF SHERDS
B 18-1	-		FEA. A ?		FEA. B ?	115	VERY POOR NOTES, BUT MOST LIKELY HABITATION
B 19-1	+	?	?		FEA. B ANTE-CHAMBER? MOST LIKELY A PITHOUSE	69	JACAL IN FEA. B, SOMEWHERE A STRUCTURE THERE

TABLE VI - 9 (continued)

SITE	MULT COMP	SS SLAB HEARTH	SS SLAB CIST	SS SLAB HONEYCOMB	PITHOUSE	n BM III SHERD	COMMENTS
B 19-3	-				?	20	EXTENSION OF LARGER HABITATION (?) SITE LOCATED OFF QUAD.
B 21-6	-	FEA. A				4	A BM III HEARTH?
B 22-2	+				?	232	LOTS OF FEATURES BUT BM III OR PUEBLO?
H 4-1	+	FEA. A				16	HEARTH FOR CERTAIN, ALSO POSSIBLE ASH HEARTHS
H 14-2	+	FEA. B?	?		FEA. A??(2m) FEA. B??	178	FEA. A IS LISTED AS PUEBLO BUT LOOKS MORE BM III, FEA. B IS MORE LIKELY BM III BUT FUNCTION INDEFINITE.
N 4-2	+					128	IF ANYTHING IS THERE IT IS SWAMPED BY LARGE P. CLIFF DWELLING
N 4-3	+					18	AGAIN SWAMPED BY PUEBLO COMP. POSSIBLE SS SLAB + ASHY SPOT - STORAGE??
N 4-5	+				?	305	VERY CONFUSED BECAUSE OF LARGE PUEBLO COMP. BUT POSSIBLE BM III PITHOUSE IN FEA.B
N 5-4	-					12	NO FEATURES
N 5-8	+					15	NO BM III FEATURES
N 9-1	+					61	1 ASHY SPOT, NO OTHER FEATURES
N 11-1	+					30	1 DEVOLVED SS SLAB FEATURE, MOST LIKELY PUEBLO
N 11-4	+	YES	YES	?	MOST DEFINITELY	4886	LOTS OF STUFF, ALL BUT HONEYCOMB CIST
N 10-5	-	1				24	ONE SS SLAB HEARTH IS THE ONLY FEATURE
W 2-3	-	?	FEA. R	FEA. R?	FEA. B	44	GOOD HABITATION & CISTS
W 11-3	+	GRID A-1			FEA. A?	63	CONFUSED MULTI COMPONENT SITUATION BUT QUITE POSSIBLE BM III HABITATION
W 12-1	-		?			4	POSSIBLE CIST

TABLE VI - 9 (continued)

SITE	MULT COMP	SS SLAB HEARTH	SS SLAB CIST	SS SLAB HONEYCOMB	PITHOUSE	n BM III SHERD	COMMENTS
W 12-4	+					42	NOTHING BM III FOR CERTAIN IN THIS PUEBLO DOMINATED SITE
W 12-6	-		FEA. A FEA. B?	FEA. B?	FEA. B SIZE? 4+ m	54	DEFINITE HABITATION + CIST(S)
W 16-4	+					18	1 ASHY SPOT IN BM III AREA ONLY
W 16-5	-				4 m	14	JACAL + UPRIGHT SLABS + CHAR = PITHOUSE
U 2-2	-				IN I - 1	530	JACAL + SS SLABS IN WASH IN I-1, BADLY DIST.
U 2-4	+		FEA. A FEA. A		FEA. A? 3-4 m DIAM	54	2 CISTS + 3m DIAM SS SLAB HABITATION?
U 2-7	-				?	18	JACAL + SS SLAB = HABITATION?
U 4-2	-					12	NOTHING, NO FEATURES, SAME SITE AS U2-2
U 4-3	+		FEA. I?	FEA. C	AT LEAST 2 FEA. E, F	2098	ALL KINDS OF HABITATION + STORAGE STRUCTURES
U 4-4	-				??	49	ASH + SS SLABS TRASH? HABITATION?
U 5-2	+			FEA. A??	FEA. A?	360	JACAL, 3 UPRIGHT SLABS 1 POST = HABITATION?
U 6-1	+				??	179	NOTHING CERTAIN BM III, JACAL NOTED OFF QUAD
U 6-2	-				??	63	STRUCTURES OFF QUAD BM III?
U 6-3	+				?	477	HIGHLY DISTURBED PRUDDEN UNIT + PROBABLY BM III HAB. SOMEWHERE
U 9-1	-					24	NOTHING

TABLE VI - 10

LITHIC DEBITAGE IN FARTHEST NEIGHBOR CLUSTERS

(1/10% S)

	"A" Primary Flakes	"B" Secondary Flakes	"C" Tertiary Flakes	"D" Debris	"E" Raw Material	Bifacial Res. Flakes	Cores	Sum of Debitage
				Cluster I n=6				
Median	40	225	105	615	2	5	23	65
1/4	20-	50-	70-	500-	0-	0-	17-	41-
3/4	70	290	130	650	10	40	37	150
				Cluster II n=5				
Median	10	210	120	630	1	20	17	239
Range	0-	140-	40-	540-	0-	0-	3-	19-
	90	230	190	650	140	80	174	3650
				Cluster III n=5				
Median	0	270	0	670	10	0	50	40
Range	0-	80-	0-	600-	0-	0-	12-	5-
	3	290	120	800	220	70	181	432

TABLE VI - 11

DEBITAGE IN "KNOWN" SITE CLASSES

(1/10% 's)

MOSSBACKS L. A. S.

n=7	A	B	C	D	E	RES FLAKES	CORES	SUM OF DEBITAGE
Median	0	290	0	570	0	0	0	3
1/4-	0-	0-	0-	500-	0-	0-	0-	2-
3/4	290	330	0	670	0	120	11	14
		MOSSBACKS HABITATION SITES						
n=5								
Median	30	170	120	630	1	0	12	432
Range Low	0-	80-	50-	210-	0-	0-	2-	41-
High	30	290	180	790	10	10	27	3650

Table VI - 12

Final Mossbacks Site Classfication

Habitation Sites.		Limited Activity Sites.
B 3-7 + B 6-5 (Same site)		B 3-1
B 5-7		B 6-4 (?)
B 6-2 (?)	H 14-2 (?)	B 7-3
B 6-6	U 2-4	B 17-2
B 7-1	U 2-7 (?)	B 21-6
B 11-5	U 2-2 + U 4-2 (Same site)	H 4-1
B 12-1 (?)	U 4-3	U 4-4 (?)
B 13-3	U 5-2	U 9-1
B 15-3	U 6-1	N 4-3
B 16-2	U 6-2	N 5-4
B 16-4	U 6-3	N 5-8
B 18-1	N 4-2 (?)	N 9-1
B 19-1	N 11-4	N 10-5
B 19-3 (?)	W 2-3	N 11-1
B 22-2	W 11-3 (?)	W 12-1
	W 12-6	W 12-4
	W 16-5	W 16-4

Totals.

Definite Habitation sites----------24
Questionable Habitation sites---------7
Total Habitation sites----------31

Definite Limited Activity Sites------15
Questionable Limited Activity Sites---2
Total Limited Activity Sites----------17

Total Mossbacks Sites----------48

(Note that two sites are found in adjacent quadrats and counted here as two, although they are found in four separate quadrats [B 3 & B 6 and U 2 & U 4])