

## **OBSERVATIONS ON THE RELATIVE INTACTNESS OF THE MESOLITHIC STRATA AT L'ABRI DU PAPE**

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### **INTRODUCTION**

Given the often loose nature of the *éboulis* (or scree) deposits at l'Abri du Pape, an obvious question concerns the reality of the archaeological strata defined during the course of the excavations. The strata were largely defined on the basis of fairly subtle differences in color, texture, non-scree sedimentary matrix (more or less silty or clayey), and the presence of cultural residues. However, there are no real culturally sterile ones among the Mesolithic strata (20-22.2), just lenses of denser artifacts, faunal remains, ash and charcoal alternating to some extent with stratigraphic zones that are less rich, and practical distinctions between strata during the course of excavations were often rather arbitrary or subjective. Nor are the levels directly below these strata absolutely lacking in artifacts. Stratum 23 is far clayier than the overlying Mesolithic levels, and did yield 52 items of debitage and one tool, as well as four ungulate remains. The presence of limited numbers of artifacts and bones in this level (with no other cultural indices) and a mere handful ( $n=3$ ) of flakes and ungulate bones ( $n=2$ ) in underlying Strata 24 and 25, suggests only limited downward "percolation" from the Mesolithic horizons into layers that were possibly deposited at the end of the Tardiglacial -- rather than implying a Magdalenian or Epipaleolithic visit to the site. Certainly, while Stratum 23 itself may have "received" some items from above, its denser, clayier nature would seem to have all but blocked substantial downward movement into the underlying levels. It is the possibility of downward percolation that concerns us here; to what extent is the composition of each of these levels truly representative of items that were discarded contemporaneously?

The archaeological levels, while containing definite lenses of relatively highly concentrated artifacts, fauna and manuports, had no definite constructed features, such as hearthes or pits. Fires seem to have been lit on the ground surface of the "hollow" between lateral talus cones and the shelter's rear wall. Clusters of finds did exist within meter square units, yet extensive "living surfaces" were not apparent.

To at least partially check the integrity of the Mesolithic levels, we attempted lithic refitting and studied artifact weight to test the hypothesis that items may have migrated downward through the scree-rich sediments.

### **REFITTING**

Lithic refitting of the complete Pape Mesolithic collection from the 1993-94 excavations was attempted by Anthony Martinez, Rebecca Miller, Jennifer Summers and

Larsen. Despite their efforts, only 5 pairs of refits could be found, perhaps in part because of the small size of the artifacts - including the few core remnants.

Two pairs of refits came from Stratum 20: Square O20 spit 4 (both) and L21 spit 6 + K21 spit 8. The latter two items, from adjacent squares, were found at depths of 473 cm and 474 cm below datum. Movement in these two cases had been virtually nil.

Two items that refit both come from Square O20 in Stratum 22.

Two pairs cross-cut our stratum designations.

In Square O20 (subsquare D), an item from spit 4, Stratum 20 (541 cm below datum) refits with another from O20 (subsquare B) spit 5, Stratum 21 (556 cm below datum). Here the vertical movement had been 15 cm; not a large distance, though it did cross a limit that we (somewhat subjectively) considered to separate strata. The horizontal distance between these refits is c. 40 cm. In Square J20 (subsquare D) an item from spit 2, Stratum 21 refits with another from the same square and subsquare, but in spit 5, Stratum 22. The latter object was piece-plotted and came from a depth of 478 cm below datum. The former, however, was a screen find, so we can only give top and bottom depths for the spit from which it had come: 461-470 cm BD (top) and 470 cm BD (base). Maximum possible vertical movement would have thus been about 17 cm, but the minimum would have been c. 8 cm, again not very great.

These limited data do not suggest extensive vertical movement among Pape Mesolithic artifacts, despite the often loose nature of the sedimentary deposit. A further study was done to test the hypothesis that small (lighter) artifacts might differentially tend to percolate downward vis à vis larger (heavier) artifacts, since it would be easier for the former to move among the interstices of the sediments than for bigger artifacts to do so.

## COMPARISON OF AVERAGE WEIGHTS OF LITHICS AMONG STRATA

The histogram for weight classes (Figure 1) shows that the samples from all three strata are highly skewed to the right (that is, not normally distributed), with most of the artifacts weighing 1 gram or less. T-tests and comparisons of multiple means are based on an assumption of normality and are thus not applicable in this case. A chi-square test comparing weight classes by stratum is appropriate. The sample contains all weighed artifacts.

Significance for the chi-square test comparing weight classes and strata is .846, indicating that there is no statistical difference in weight class distributions between strata (Figure 2). This means that small items did *not* differentially migrate down through the open-work éboulis sediments. We do not find higher frequencies of small items in the lower strata nor an increase in frequencies of smaller artifacts as one descends in the stratigraphy.

Rather, each stratum contains similar relative frequencies of large-, medium-, and small-size artifacts; there is no statistically significant difference among the strata in terms of

artifact weight. The smallest artifacts have not tended differentially to migrate downward as one would expect if such percolation were a major process within the Pape sediments.

## CONCLUSIONS

These (admittedly limited) results suggest that we can have some degree of confidence in the reality of Mesolithic Strata 20-22.2 at Pape and in the integrity of their artifact and faunal collections. Despite the appearances of the sediments in the rockshelter, it would seem that anthropological and zooarchaeological interpretations are justified, albeit within the limits imposed by the limited area of the excavation (and indeed of the whole site) and by the small size of many of the collections.

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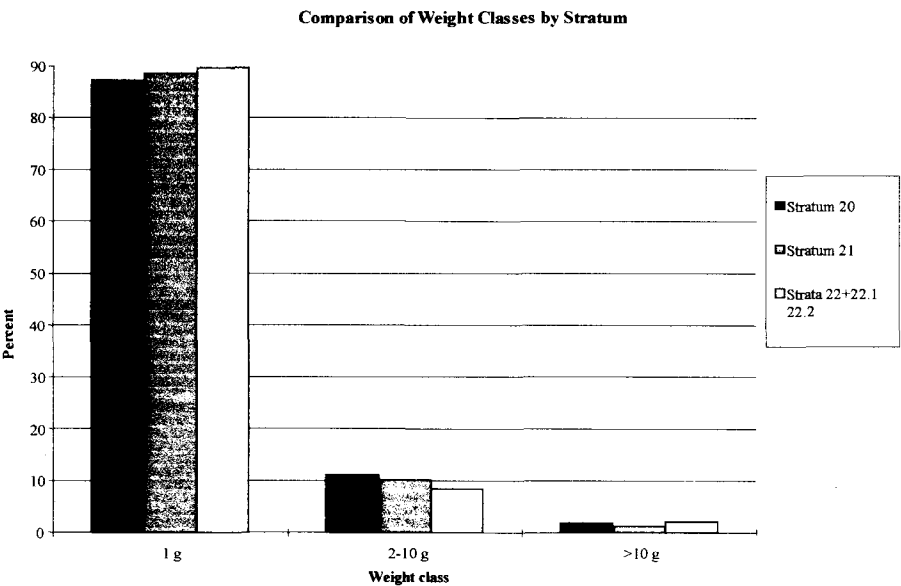


Figure 1. Comparison of weight classes by stratum for Mesolithic strata at Abri du Pape.

		WT_CAT			Row Total
Count		1 g	2-10 g	> 10 g	
Exp Val	Row Pct				
STR		1	2	3	
20		749	73	13	835
		751.8	69.2	14.0	58.1%
		89.7%	8.7%	1.6%	
21		155	14	2	171
		154.0	14.2	2.9	11.9%
		90.6%	8.2%	1.2%	
22		389	32	9	430
		387.2	35.6	7.2	29.9%
		90.5%	7.4%	2.1%	
Column		1293	119	24	1436
Total		90.0%	8.3%	1.7%	100.0%

Chi-Square	Value	DF	Significance
Pearson	1.38850	4	.84619
Likelihood Ratio	1.39584	4	.84492
Linear-by-Linear Association	.02303	1	.87939

Figure 2. Chi-square cross-table (weight categories by stratum) and significance results.



Plate 1. L'Abri du Pape, west section of square N20, Strata 16-25. (Photo: L.G. Straus)



Plate 2. L'Abri du Pape, north section of square N20, strata 20-25. (Photo: L.G. Straus)