

# Upper Palaeolithic and Epipalaeolithic Lithic Technologies at Raqefet Cave, Mount Carmel East, Israel

Gyorgy Lengyel

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It is always difficult to work with lithic assemblages from old excavations (Dibble et al. 2009), and the problems proliferate when the target collection comes from mixed cave deposits like those at Raqefet Cave, located on the southeastern side of Mount Carmel in Israel (first excavated by Eric Higgs and Tamar Noy in the 1970s). Here, Gyorgy Lengyel has determined that only 21% of the recovered material comes from contexts with sufficient documentation to make them appropriate for further study. Inevitably, almost all conclusions are dogged by reduced sample sizes.

After a brief introduction, the author presents the location of the cave, its research history, stratigraphy, and site formation processes (Chapter 1). Next, his methodology for the lithic analysis is detailed (Chapter 2). This is followed by a discussion of the various toolstones utilized throughout the occupation of Raqefet (Chapter 3). Chapters 4–8 deal with separate assemblages reflecting the classic Upper to Epipaleolithic sequence of the Carmel region—an Indeterminate Upper Paleolithic, Levantine Aurignacian, Late Kebaran, Geometric Kebaran, and Late Natufian. Chapter 9 presents the necessary comparisons between the assemblages, and then Chapter 10 attempts to place the Raqefet sequence within the broader framework of the Levantine Late Pleistocene. A coda summarizing the monograph's results completes the volume.

The lithic illustrations are geared to the needs of lithic technologists, and experimental archaeologists out there wishing to replicate any of Raqefet's assemblages through flintknapping should have little trouble. *Raqefet* does not dabble in theoretical issues—the strength of the volume derives from its commitment to the presentation of empirical data (though history buffs will enjoy the three page history of the site and its investigation). Although there is much tabulation of fossil traits, and extensive use of traditional typological labels, the analysis also incorporates the *chaîne opératoire* and strives to go beyond straight description of stone tools to explore their dynamic formation, reduction, and discard—in short, the entire use-life of the lithic assemblage.

However, the reader is often hampered by the lack of formal definitions for most of the recorded variables used, so that comparisons with lithics from other sites raises as many questions as answers (e.g., how curved is a “curved blade”? At what degree does a truncation become “oblique”?). A further example is Lengyel's running dis-

ussion of soft versus hard hammer, uncritically based on the frequency of certain traits as if the whole matter has long been settled. Consequently a trait-combination seen in one assemblage is taken to indicate soft-hammer, while a similar combination in another assemblage indicates that both soft and hard hammers were used (compare the blade debitage descriptions on page 46 versus page 74).

Artifact counts are erratic—one table may report that an assemblage possesses 153 bladelets (Table 6.3), while another reports 215 (Table 6.2). Percentages are often calculated incorrectly, and also are reported in isolation from their sample size, which becomes crucial when more than one total is on offer. Statistical tests would have helped determine which, if any, patterns are important.

There are instances where a measured trait, or combination of traits, does not correspond to the conclusion drawn from it. For example, in order to measure decoration activity, a graphed ratio of non-cortical blades to cortical blades is presented (Figure 9.5). It shows that the Levantine Aurignacian assemblage possesses the lowest ratio while the Late Natufian possesses the highest. From this graph, the author concludes that the former practiced the least amount of decoration at the site, while the latter practiced the most. However, it seems the opposite conclusion should be drawn—a lower ratio means greater equality of non-cortical blades to cortical blades, while a higher ratio means less cortical blades in relation to non-cortical blades. Going back to the data presented in the respective Levantine Aurignacian and Late Natufian chapters supports my interpretation—it is reported that 53% of the Levantine Aurignacian blades are cortical in contrast to only 22% from the Late Natufian.

Also of general interest is the author's characterization of toolstone. Throughout *Raqefet*, raw material quality is described as good, mediocre, or low based on the texture. Those with experience in flintknapping toolstone quality know that visual characterization is not the way to determine it. A lithic raw material may visually appear “poor” but fracture beautifully, and vice versa. The stone technology one knaps can also influence results; one technology may be carried out exquisitely on a so-called “poor” toolstone, while another may not. If anything, *Raqefet* illustrates the need for an objective classification of lithic raw material quality.

This text could be greatly enhanced by an editor fluent in English, not only to clean up the misspellings and gram-

mathematical errors, but in some cases to help the reader grasp the point being made. That said, Lengyel is to be commended for unveiling the research possibilities of a site with a troubled past. His will certainly be the new starting point for any future work on the collections.

#### REFERENCES

- Dibble, Harold L., Shannon P. McPherron, Dennis Sandgathe, Paul Goldberg, Alain Turq, and Michel Lenoir. 2009. Context, curation, and bias: an evaluation of the Middle Paleolithic collections of Combe-Grenal (France). *Journal of Archaeological Science* 36(11): 2540–2550.