Chapter 3

Stratigraphy and Sedimentology

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INTRODUCTION

Geologic investigations at Aetokremnos focused on the sedimentary strata that encompass all of the physical space within and immediately above the collapsed rockshelter. In addition to defining and describing strata, sediments were studied to determine their source and mode of transport and to identify postdepositional modification. Collectively, this information helps explain how the faunal remains and associated artifacts were buried in situ by sediment prior to being sealed beneath the collapsed roof of the shelter. It also allows us to make statements about the duration of human occupation at the site and the magnitude of site disturbance after the period of occupation. Although the sedimentological information from Aetokremnos cannot be used to reconstruct regional paleoclimates, it sheds light on past environments that existed at and near the site.

This chapter is divided into four major sections. The first section describes field methods and laboratory analyses used in the geologic investigation. The second section focuses on depositional processes that contributed sediment to the site before and after the roof of the rockshelter collapsed. The third section presents the results of field observations and laboratory analyses, including detailed descriptions of strata and sediments. The last section summarizes the history of sediment accumulation within rockshelter and considers how geologic processes affected the archaeological record during and after the period of human occupation at Aetokremnos. Additional detailed discussion may be found in Mandel and Simmons (1997).

METHODS

Field Methods

Field investigations at Aetokremnos went through several stages. Work was initially hindered by the presence of large roof-fall blocks mantled by a veneer of colluvium. During the 1987 field season, excavation units were concentrated along the fringes of the
shelter in order to avoid these obstacles. Several large roof-fall blocks were removed in 1988 to allow excavation within the interior of the shelter. However, one massive roof-fall block remained in place over a large area of the site. Hence, the full thickness and lateral extent of the underlying deposits could not be determined until the final field season. Complete removal of the collapsed roof in 1990 exposed a package of unconsolidated sediment that was about 1 m thick (Fig. 3-1). The thickness of this package was fairly consistent from the outer edge to the back of the shelter. The sediment rested directly on the bedrock floor of the shelter.

Because the excavation of Aetokremnos progressed from the surface downward over a period of three years, we did not follow geologic protocol and number stratigraphic units sequentially from the bottom of the shelter upward. Instead, we followed archaeological convention in numbering our units from the surface downward; that is, the lowest numbered unit is at the top of the stratigraphic sequence and is also the youngest deposit. Bone and artifact provenience was keyed into this numbering system during the excavation.

Four stratigraphic units were identified on the basis of presence/absence of in situ cultural deposits. Arabic numerals (1–4) were used to identify these “archaeological” units, beginning with the uppermost zone, Stratum 1. The stratigraphic units were subdivided into sedimentary units that were designated by the addition of an upper-case letter after the stra-

Figure 3-1. View of the interior of the Aetokremnos rockshelter during the 1990 field season. Note the bone bed (Stratum 4B) at the bottom of the excavation units. There is a basin-shaped feature in Stratum 2A (right-center). The rod is 50 cm long.