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The age of the Lower Paleolithic site of Kefar Menachem West, Israel—Another facet of Acheulian variability☆

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ABSTRACT

A salvage excavation at the Lower Paleolithic site of Kefar Menahem West in the interior of the Israeli coastal plain yielded a flake industry devoid of handaxes and their byproducts. The archeological finds covering an area exceeding 2000 m^2, are found at the contact of two distinct sedimentological units: Quartzic Brown and hamra (red clay loam paleosols). The absence of handaxes hamper placing the site within the relative chronology of the Lower Paleolithic record of the Levant.

New paleomagnetic analysis coupled with optically stimulated luminescence (OSL) and thermally transferred optically (TT-OSL) dating yielded a chronological range between 780 and 460 ka for the archeological occupation. The techno-typological similarities with Late Acheulian assemblages together with possible variations in the mode of occupations by early hominids at the site, both suggest that the KMW should be conceived as part of the Late Acheulian variability.

1. Introduction

The Lower Paleolithic period and the Acheulian techno-complex in particular have been conceived as a phase of cultural stasis (Isaac, 1972; Isaac, 1976; Lycett and Gowlett, 2008). The research of the Acheulian techno-complex has gravitated toward analysis of handaxes, and cleavers, rather than the flakes, cores, and smaller flaked pieces that numerically dominate most assemblages (e.g., Bordes, 1961; Kleindienst, 1961; Leakey and Roe, 1994). Initially, the Acheulian was defined according the handaxe presence within an assemblage. Handaxes characteristics played a decisive role in the attempts to sub-divide the Acheulian chronologically and culturally (Ashton and White, 2003; Gilead, 1970; Gowlett, 1986; Saragusti, 2003; Sharon, 2007; Bridgland and White, 2015 to name a few). The inner divisions of Lower Paleolithic into taxonomic classificatory units are based on varied criteria, mixing history of research, chronology, geography, and techno-typology or any of their combinations.

The Levantine Lower Paleolithic extends over more than million years, spanning from the Early through most of the Middle Pleistocene (Fig. 1; Bar-Yosef and Belmaker, 2011). Gilead (1970), in his seminal work, divided the Levantine Lower Paleolithic record according to the handaxes affinities into three main categories, Early, Middle and Late Acheulian, while the Late was further divided into four cultural units. In the current state of research, integrating sites with flake production with no handaxes into this relative chronology scheme is challenging. It is difficult to create a relative chronology for Lower Paleolithic flake production. Thus, such assemblages, devoid of evidence supporting handaxes production are hard to place chronologically and culturally within the known variability of the Lower Paleolithic. The current paper aims to radiometrically date and articulate such a Lower Paleolithic lithic assemblage within the Lower Paleolithic diachronic variations.

The Lower Paleolithic site of Kefar Menahem West (KMW), is located in the interior part of the coastal plain of Israel, at the interface between the Mediterranean and the semi-arid climate zone of the Northern Negev desert fringe (Fig. 2a). The salvage excavation of the

☆ This paper is dedicated to the memory of Professor Hagai Ron, which this project was one of the last fieldworks he participated in.

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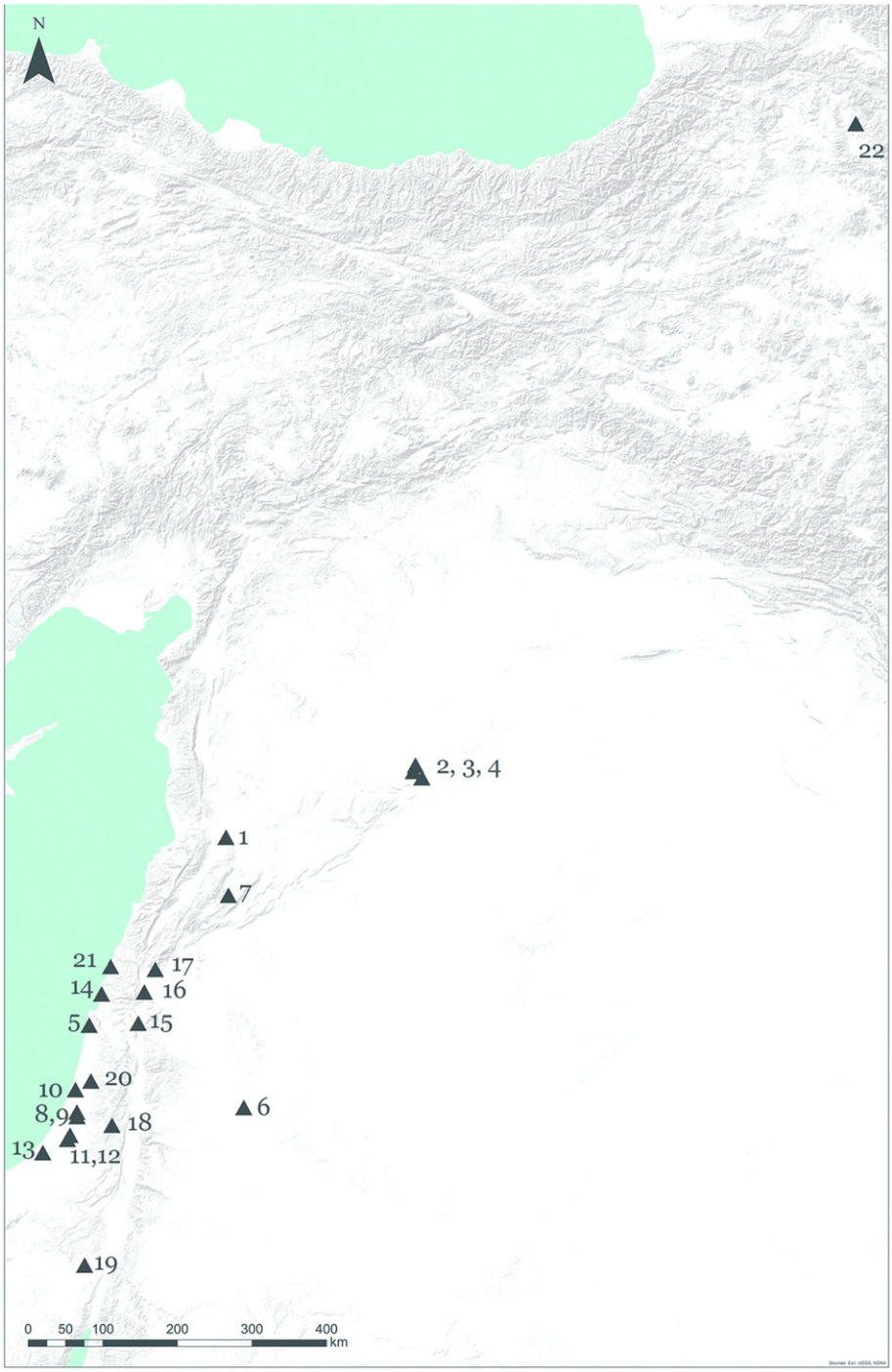

Fig. 1. Map of the main Lower Paleolithic sites in the Near East 1. Yabrud. 2. El Kowm. 3. Umm El Tlel. 4. Hummal. 5. Tabun cave. 6. Azraq sites. 7. Latamne. 8. Kefar Menachem West. 9. Revadim. 10. Holon. 11. Bizat Ruhama. 12. Nahal Hesi. 13. Kisufim. 14. Evron. 15. Ubediya. 16. Gesher Benot Yaakov. 17. Berekhat Ram. 18. Umm Qatafa. 19. Nahal Zihor. 20. Qesem Cave; Eyal 23. 21. Adlun cave sites: Bezez. Adlun and Abri Zumoffen caves. 22. Dmanisi.

Lower Paleolithic site yielded a flake industry devoid of handaxes and their byproducts (Barzilai et al., 2006). Later in 2011 and 2012 two trench sections (hereafter, T-1 and T-2), dug approximately 30 m west of the original salvage excavation (Figs. 2b, 4b). The exposed sections were studied using sedimentological, pedological, isotopic, and granulometric analyses. Three complementary dating methods (paleomagnetic dating, optically stimulated luminescence [OSL] and thermally transferred OSL [TT-OSL]) were applied. The age estimates helped articulating the KMW site within the regional framework and the Levantine Middle Pleistocene chrono-stratigraphical framework. Moreover, the behavioral inference gained from the study of the lithic assemblage of the site sheds light on the variability in the behavioral record of the Middle Pleistocene.

1.1. Kefar Menachem West

The KMW site, lies 15 km north of the current 350 mm isohyet that comprises a desert fringe with the semi-arid Northern Negev desert. North of the isohyet lies the Mediterranean climate zone where C3 Mediterranean steppe forest gradually changes to a mix of C3 and C4 semi-desert Irano-Turanian vegetation (Vogel et al., 1986; Goodfriend, 1990; Cerling, 1992; Feinbrun-Dothan and Danin, 1998; Goodfriend,