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Editor

# Encyclopedia of Global Archaeology

With 2619 Figures and 106 Tables

Springer Reference

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# Preface

Archaeology – the study of human cultures through the analysis and interpretation of artifacts and material remains – continues to captivate and engage people on a local and global level. The significance of such international heritage sites such as the pyramids – both Egyptian and Mayan – the Lascaux caves, Stonehenge, and Petra all provide insights into our ancestors and their actions and motivations. However, there is much more to archaeology than famous sites. When archaeologists are asked to elaborate about their job, they will touch on archaeological theory, chemistry, geology, history, classical studies, museum studies, ethical practice, and survey methods, along with the analysis and interpretation of their sites. Archaeology is a much broader subject than its public image and branches out to many other fields in the social and hard sciences.

The *Encyclopedia of Global Archaeology* provides a comprehensive and systematic coverage of archaeology that is unprecedented. It encompasses the breadth of the subject area along with those aspects that are tapped by other disciplines. In addition, it encompasses all time periods and regions of the world and all stages of human development. The entries range from succinct summaries of specific sites and the scientific aspects of archaeological enquiry, to detailed discussions of archaeological concepts, theories, and practice, the social and political dimensions of archaeology and archaeological ethics. The different forms of archaeology are explored, along with the techniques used for each and the challenges, concerns, and issues that face archaeologists today.

This 11 volume *Encyclopedia of Global Archaeology* is available in both print and eReference versions. The print version has 1,625 contributions from 1,356 authors and over 11,634 cross-references. At the time of publication, another 200 entries have been commissioned for the eReference version. Through constant updating, the eReference version of the *Encyclopedia of Global Archaeology* will continue to access the best scholarship from around the world. Our aim is to ensure that this reference work will be as useful in twenty years as it is in two years.

## An Encyclopedia for a Global World

The *Encyclopedia of Global Archaeology* was designed to be a definitive reference work for archaeologists, cultural heritage managers, and the general public. Its major aim is to disseminate global expertise in archaeology.

We have achieved this through four innovations: an unparalleled level of contributions from archaeologists who do not normally publish in English, the conscious inclusion of multiple perspectives on key topics, biographies of major archaeological figures from throughout the world, and the combination of print and continuously up-dated eReference publication.

The first major challenge for this encyclopedia was to access the best scholarship in the world. However, there was a fundamental problem – archaeological experts around the globe do not always write in English. The best scholars from throughout the world write in a variety of languages. For example, the problems of site conservation and preservation can be very different in different parts of the world – and the experts publish in their own languages. Moreover, not all specialist knowledge is published in English. Some of the most advanced thinking on archaeological theory comes from South America, while the French and Spanish have the deepest knowledge of Upper Palaeolithic rock art and the place to learn about large-scale urban excavations or historic reconstructions is Japan. The experts from these countries publish their research in their own language. While some also publish in English, many don't – and even scholars who speak English can be reluctant to publish in English, as they may not have the level of written competency to fully express the complexity of their ideas.

The answer was to allow non-English-language speakers to contribute to the encyclopedia in their own language. This accessed a torrent of hitherto untapped expertise. Around 140 entries and more than 300,000 words in the *Encyclopedia of Global Archaeology* have been translated from French, Italian, Portuguese, Russian and Spanish. In addition, many more entries were submitted by authors whose first language is Chinese, German, Japanese or Turkish. Often, these entries involved significant editing, re-writing, and polishing in order to ensure academic standards and clear communication. This painstaking work was undertaken by the editors of the relevant sections and by myself. The authors and translators often had to review several versions of the text, and they did this without complaint. This cooperative and cosmopolitan approach has brought enormous strengths to the encyclopedia and produced something that is quite different to what has come before.

The second challenge was to maximize the value of the *Encyclopedia of Global Archaeology* as a teaching resource for schools, colleges, and universities. Some of the best learning is achieved through comparison and debate. Accordingly, we have included multiple and regional perspectives on key topics to facilitate comparisons, especially at a global level, and provide rich materials for classroom debates. The ethics of commercial archaeology, for example, has individual entries that provide perspectives from Australia, Brazil, Japan, Nigeria, Southern Africa and the USA. While each entry provides an in-depth discussion of the issues that affect a particular region, taken together, these entries provide the materials required for students to undertake analyses of contrasts and comparisons at a global level.

The third challenge was to honor the work of archaeologists from throughout the world. The biographies in the encyclopedia were selected by section editors on the basis of the contribution of particular archaeologists to specific disciplinary areas and also through recommendations from archaeologists in underrepresented countries. While we attempted to obtain some form of uniform global coverage in archaeological biographies, this was not possible as archaeology is at different stages of development in different parts of the world. The need to build archaeological capacity is greatest on the African continent. The small number of biographies of African archaeologists reflects the small number of archaeologists in the continent as a whole. While the vast majority of these archaeologists are located in South Africa, there are key nodes in countries such as Kenya and Nigeria. Sometimes these nodes are an outcome of capacity building that occurred as part of colonial processes, as with the life work of Charles Thurstan Shaw. Some biographies honor the work of archaeologists who spent their lives building capacity in a part of the world that is not their home country, as with the work of Betty Meggers in South America. All of the biographies provide insights into the life histories of archaeologists in various periods and in diverse parts of the world. Moreover, cultural attitudes are apparent in the profiles of biographies for each region. For example, while many Portuguese biographies are of mid-career archaeologists who are still alive, the majority of biographies of Japanese archaeologists are of people who established important facets of the profession and have now passed away.

The final challenge was to harness the potential of an online environment not only to ensure global accessibility but also to enrich the encyclopedia's content. From the beginning, the *Encyclopedia of Global Archaeology* was conceived firstly as an online reference work, and then as a print reference. This interactive, online reference uses dynamic content to deepen discussions and to update material published in the print version, and to add information on new finds, or new ways of approaching the material. Hot links and extensive cross-references between keywords and related articles provide topics with greater depth and enable efficient searches in a user-friendly manner. The important innovation here is the continuous updating of entries and the addition of new entries to the eReference version. This will ensure that the encyclopedia maintains ongoing relevance.

15 July, 2013

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# West Asia: Paleolithic

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## Introduction

West Asia is a key locale for the investigation of Paleolithic human migration and adaptation because of the area's location at the crossroads between Africa and Eurasia as well as its diverse environmental settings. Geographic units in west Asia comprise the Levant, the Zagros and Taurus Mountains, Anatolia, the Caucasus, and the Arabian Peninsula. In the Levant, east Mediterranean coastal plains and the rift valley extending between the Red Sea and the Afrin Basin provided significant habitats and migration routes for early humans during the Paleolithic. To its east, inland areas of the Syrian Desert and the Jordanian Badia are presently under arid environments, but the inland basins, often associated with oases, such as el-Kowm, Palmyra, Azraq, and Jafr, used to hold Pleistocene lakes, around which prehistoric sites are clustered. The rugged terrains and cave systems in the Zagros–Taurus and the Caucasus Mountains have also been important fields for the study of early human habitations. In the Arabian Peninsula, a number of Paleolithic sites have been located in various environmental settings, including coastal plains, foothills of the Asir and Hadhramaut Mountains, as well as near wadis and lakeshores in interior plains.

Geographic connections between west Asia and surrounding regions are structured by water mass and mountain ridges (Fig. 1). One of the routes to Africa is through the northern Sinai between the Southern Levant and the Upper Nile area. Another is Bab el-Mandab between the Lower Awash River and the southwestern corner of the Arabian Peninsula. Land routes to northern areas are bounded by the Mediterranean Sea, Black Sea, and Caspian Sea, and the one between the latter two is truncated by the Caucasus Mountains. The landmass to South and Central Asia is the Iranian plateau flanked by rugged terrains of the southern Zagros Mountains along the Persian Gulf and the Alburz Mountains at the southern Caspian shore.

## Definition

### Early, Middle, and Late Pleistocene

In 2009, the International Union of Geological Sciences lowered the base of the Pleistocene epoch to include the Gelasian Stage that began c. 2.6 Ma. Thus, the former "Late Pliocene" corresponds to the current "Early Pleistocene." However, the stages for the Middle and Upper Pleistocene are unchanged with their beginnings at the Brunhes–Matuyama reversal and the last interglacial, respectively.

### Hominin

The term "hominin" is used to denote human ancestors instead of the old term "hominid," which is currently used to mean ancestors of humans, chimpanzees, gorillas, and orangutans.

## Historical Background

Investigations of some key Paleolithic sites in west Asia were initiated in the 1920s and 1930s, as exemplified by the excavations by Dorothy A.E. Garrod at Mt. Carmel and Southern Kurdistan, René Neuville at the Judean Desert, and Turville-Petre at the Galilee area and Kebara Cave. These early systematic excavations provided fundamental archaeological records for the definition of Paleolithic cultures and their chronological sequences. Initial influence from European prehistory on cultural names


**West Asia: Paleolithic, Fig. 1** Map of west Asia showing sites mentioned in the text. The following site names are in alphabetical order and associated numbers correspond to those in the map: Abu Hureyra (63), Abu Noshra (70), Abu Sif (34), Ain al-Buhayra (48), Ain Difla (47), Ain Mallaha (10), Ain Qasiyya (36), Ain Rahub (18), Amud (15), Antelias (6), Azariq (42), Azraq (36), Azykh (56), Beidha (49), Berekhat Ram (9), Bezez (8), Bisitun (75), Boker (44), Boker Tachtit (44), C-Spring (36), Dawādmi (83), Dederiyeh (60), Dhofar (82), Dmanisi (55), Douara (66), Dursunlu (58), Ein Aqev (44), Ein Gev (16), el-Kowm (64), el-Wad (24), Emireh (15), Erq el-Ahmar (33), Eshkaft-e Gavi (79), Evron (11), Far'ah II (40), FAY-NE 1 (81), Fazael (31), Gar Arjeneh (78), Gesher Benot Ya'aqov (13), Gharmachi 1b (65), Hatoula (29), Hayonim (12), Holon (27), Humian (77), Hummal (64), Jayroud (5), Jerf Ajla (66), Jilat (39), Karain (59), Kebara (25), Keoue (1), Khallat Azana (35), Kharaheh IV (38), Ksar Akil (6), Kudaro I (53), Kunji (78), Lagama (67), Latamne (65), Lion Spring (36), Mar Gurgalan Sarab (76), Mureybet (62), Mushabi (68), Naamé (7), Nachcharini (3), Nadaouiyeh (64), Nahal Aqev (44), Nahal Ein Gev I (16), Nahal Oren (23), Nizzana (43), Ohalo II (17), Öküzini (59), Ortvala Klde (54), Palegawra (73), Pa Sangar (78), Qafzeh (21), Qesem (26), Quneitra (14), Ramat Matred (45), Raqefet (22), Ras el-Kelb (6), Rasfa (20), Revadim (30), Rosh Ein Mor (44), Rosh Horesha (46), Rosh Zin (44), Saaide (2), Saflulim (46), Salibiyah (32), Shanidar (71), Shekaft-i Ghad-i Barm-i Shur (80), Shukba (28), Shunera (41), Skhul (24), Tabaqa (48), Tabun (24), Tor Faraj (52), Tor Fawaz (52), Tor Hamar (69), Tor Sabiha (51), Tor Sadaf (48), Tor Sageer (48), 'Ubeidiya (17), Üçağizli (61), Umm el-Tlel (64), Umm Qatafa (33), Uwaynid (37), 'Uyun al-Hammam (19), Wadi Aghar (52), Wadi Fatimah (84), Wadi Hammeh (19), Wadi Judayid (51), Wadi Mataha (50), Warwasi (74), Yabrud (4), Yafteh (78), Yarimburgaz (57), Yutil al-Hasa (48), Zarzi (72), Zuttiyeh (15)

(e.g., Aurignacian, Levalloiso–Mousterian, and Tayacian) was subsequently modified into or replaced with locally defined cultural entities (e.g., Levantine Aurignacian, Ahmarian, Levantine Mousterian, and Yabrudian). While early investigators tended to focus on deep cultural deposits at caves in an effort to establish Paleolithic cultural sequences, subsequent surveys, and excavations of open-air sites in the inland areas, such as Negev, Sinai, Badia, and Syrian Desert, led to the recognition of greater diversity of Paleolithic entities as well as dynamic adaptation of prehistoric populations to various environments.

The progress and intensity of Paleolithic research in west Asia varies depending on geographic areas. The Levant has been most intensively studied since the 1920s, providing fundamental data sets for studying Paleolithic populations in west Asia. Although the Zagros region received early investigations from the 1920s to 1950s, subsequent fieldwork has been prevented by geopolitical instability. Renewed investigations of Paleolithic sites have recently increased in Anatolia, the Caucasus, southern Iran, and the Arabian Peninsula in relation to the study of early *Homo* species and *Homo sapiens* dispersals out of Africa.

## Key Issues/Current Debates

### Lower Paleolithic

#### Earliest Hominin Occupation in West Asia

Currently, the earliest evidence for human occupation in west Asia is known at Dmanisi, Georgia, in the southern Caucasus (e.g., Gabunia et al. 2001). Archaeological deposits at Dmanisi overlie the Masavera basalt that was dated to c. 1.8–2.0 Ma by $^{40}K/^{40}Ar$ and $^{40}Ar/^{39}Ar$ dating. This basalt and the lower archaeological layers (units A1 and A2) show normal polarity directions (the Olduvai Sub-chron), while the upper ones (units B1 and B2) have a reversed polarity (the Matuyama Chron). Well-preserved bone remains include four hominin crania, three mandibles, and a number of postcranial specimens. These hominin remains have been identified as the primitive form of *Homo erectus*/*ergaster* or placed in a new taxon named *Homo georgicus*. Rich faunal remains at Dmanisi include Early Pleistocene types mostly of Eurasian species and indicate grassland with some forest as the local environment. Chipped stone artifacts from the site primarily consist of unmodified flakes and chopping tools, and this lithic industry is called "Pre-Oldowan." These observations let researchers to consider that the first colonization of west Asia took place at the early stage in the evolution of genus *Homo* before the appearance of the handaxe technology or the Acheulian tradition. Some researchers also propose the possibility that *Homo erectus* originated in Asia and that some of them migrated into Africa.

#### Acheulian Tradition

Much of the Lower Paleolithic records in west Asia comprise Acheulian assemblages with a varying amount of bifaces, i.e., hand axes and cleavers (Fig. 2). A large number of Acheulian finds are reported in west Asia, and their accounts accumulated in the last decade particularly in


**West Asia: Paleolithic, Fig. 2** Hand axes from the middle Euphrates region

Anatolia, the Caucasus (e.g., Azykh and Kudaro I), and the Arabian Peninsula (e.g., Wadi Fatimah and Dawādmi) in addition to the Levant. However, the number of sites with clear contexts and dates is limited. The dates are estimated by several different methods, including radiometric dating, paleomagnetic analysis, paleontological comparison, and the paleoenvironmental examination of marine and fluvial deposits. Researchers proposed several chrono-cultural entities within the Acheulian tradition, such as Early, Middle, Late, Late evolved, and Final Acheulian on the basis of techno-typological attributes of bifaces (Bar-Yosef 1994).

The earliest assemblages with bifaces in west Asia are currently known from the Early Pleistocene lake deposits at 'Ubeidiya, Israel, located 3 km south to the Sea of Galilee. The site has numerous publications on the geological and sedimentological studies as well as lithic and faunal analyses. The comparison of fauna with those dated in the African and European sequences provided a date estimate (c. 1.4 Ma) of the site. Only a small portion of animal bones show cut marks, and recent sedimentological and faunal analyses suggest that archaeological remains at 'Ubeidiya were deposited as a result of low energy fluvial processes rather than "living floors" at the lakeshore. The industry of chipped stone artifacts from 'Ubeidiya has been identified as Early Acheulian or Developed Oldowan, characterized by core choppers, polyhedrons, spheroids, and crude bifaces that occur in varying frequencies in different layers. These tool types tend to differ from each other in the selection of raw materials: bifaces are often made from basalt, chopping tools, and polyhedrons from flint, and most spheroids from limestone.

The water-logged site of Gesher Benot Ya'aqov (GBY), also located in the Jordan Valley, is dated to c. 0.7–0.8 Ma by paleomagnetic analyses, which show that lacustrine deposits with archaeological remains deposited over the Brunhes–Matuyama boundary. Lithic industry of GBY, designated as Acheulian, is characterized by the preferential use of basalt for bifaces, i.e., hand axes and cleavers, the blanks of which are frequently provided by the Kombewa technique. These technological features have been interpreted as evidence for a hominin dispersal from Africa. Both African and Levantine taxa constitute micromammalian remains. Notable is the recovery of an elephant skull from an archaeological horizon at level 1 in layer II-6. Whether this skull resulted from hunting, scavenging, or natural mechanisms has been investigated through a series of taphonomic studies. Well-preserved plant remains include fruit, seeds, bark, and wood, and the excavators suggest that numerous pitted stones from the site were used for cracking nuts. In addition, the use of fire at GBY has been suggested through taphonomic examination of burnt remains (Alperson-Afil & Goren-Inbar 2010).

The accounts of Latamne in the Orontes Valley and Joub Jannine II in the Beqqa Valleys often classify their lithic assemblages as Middle Acheulian or estimate their age to the Middle Pleistocene. In contrast to these Middle Acheulian sites that are clustered in the Mediterranean environmental zones, the Late Acheulian or late Lower Paleolithic sites are more widely distributed both in the Mediterranean areas (e.g., Holon, Tabun, Umm Qatafa, and Garmachi 1b) and at inland areas (e.g., Lion Spring, C-Spring, and the sites in the el-Kowm basin), suggesting the adaptation to drier settings or climatic amelioration during the Late Acheulian period.

The date of Berekhat Ram in the northern Golan Heights is broadly estimated as c. 230–780 ka, and its lithic assemblage is characterized by the high proportion of Levallois products and Upper Paleolithic tool types, i.e., end scrapers and burins, with few bifaces. The site is well known for the stone "figurine," which has been accepted as an artificially modified object after rigorous examination by microscopes and experimental production.

Hominin fossils associated with Acheulian artifacts are very limited. A right lower incisor from 'Ubeidiya has been broadly assigned to the genus *Homo*. At the site of Nadaouiyeh Aïn Askar in the el-Kowm basin, a fragment of left parietal bone was found in an Acheulian level that is characterized by oval hand axes and estimated as 450 ka. The bone was classed as *Homo erectus*.

### Technological Variability: Flake Assemblages and the Yabrudian Complex

Some Lower Paleolithic assemblages lack bifaces. Such examples include the sites of Evron Quarry, Bizat Ruhama, Tabun layer G, Hummal level 13–14, and some sites in the Orontes and Euphrates Valleys. These occurrences have been explained in several different ways. The first one regards them as representing separate cultural entities, naming them the Tayacian or the Khattabian. Another position is to see them as a response to limited availability of raw materials. In addition, insufficient sample size has been pointed out as a reason for the absence of bifaces at some sites.

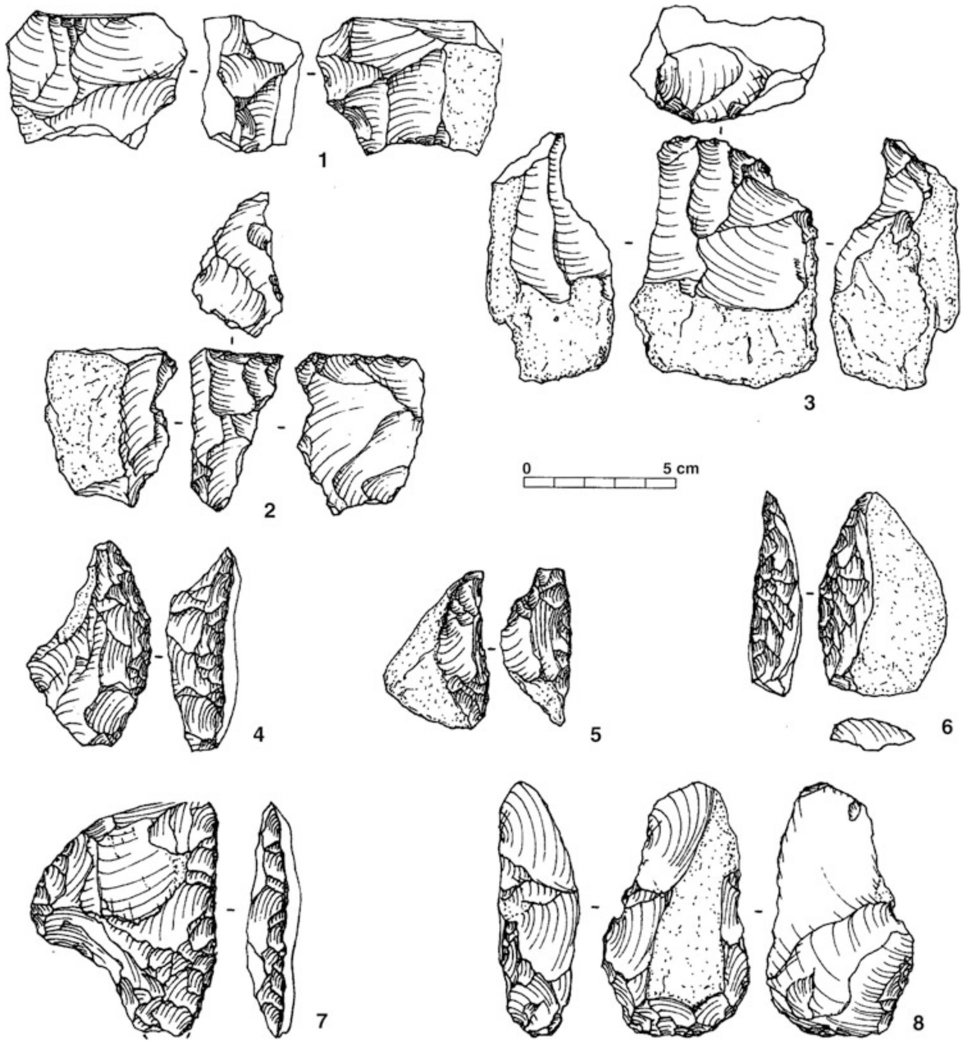
A more numerously documented example of the Lower Paleolithic technological variability is the Yabrudian complex (also called the Acheulo-Yabrudian or the Mugharan) (Ronen & Weinstein-Evron 2000). The complex comprises flake-based industries with heavily retouched scrapers and a varying amount of bifaces (i.e., the Yabrudian and the Acheulo-Yabrudian) and blade-based industries with higher proportions of Upper Paleolithic tool types (i.e., the Amudian and the Pre-Aurignacian). The distribution of this complex is currently known in the central and northern Levant. The southern end is at Qesem Cave, the northern limit is at Dederiyeh Cave (Fig. 3), and the easternmost site is in the el-Kowm basin. This complex always occurs stratigraphically above the Late Acheulian and below the Tabun D type of the Levantine Mousterian tradition as seen at Tabun, Yabrud I, el-Kowm, and Dederiyeh. Along with this stratigraphic evidence, radiometric dates obtained from Qesem, Yabrud I, and Tabun layer E suggest the age of the Yabrudian between 200 and 400 ka at the end of the Lower Paleolithic. The Acheulian tradition, however, may have continued during this period in the Southern Levant, where the Yabrudian complex is not distributed. Zuttiyeh Cave has yielded hominin fossil associated with this complex. The skull from this cave has been placed in several different taxons, including archaic *Homo sapiens*. More recently, human teeth from Qesem Cave have been suggested to represent a new, locally developed, post *Homo erectus* lineage.

In Anatolia, the cave of Karain E yielded flake-based assemblages in the first two phases of the archaeological sequence (called Clactonian and Charentian), followed by the Mousterian in phase 3. Another flake-dominated assemblage without bifaces or the Levallois technique has been documented from Yarimburgaz Cave, whose estimated age is mid-Middle Pleistocene on the basis of the faunal remains. The apparent contemporaneity of these industries with the Yabrudian complex in the Levant may have implications for some of their common technological aspects.

## Middle Paleolithic Period

### Cultural Variations and Their Chronology

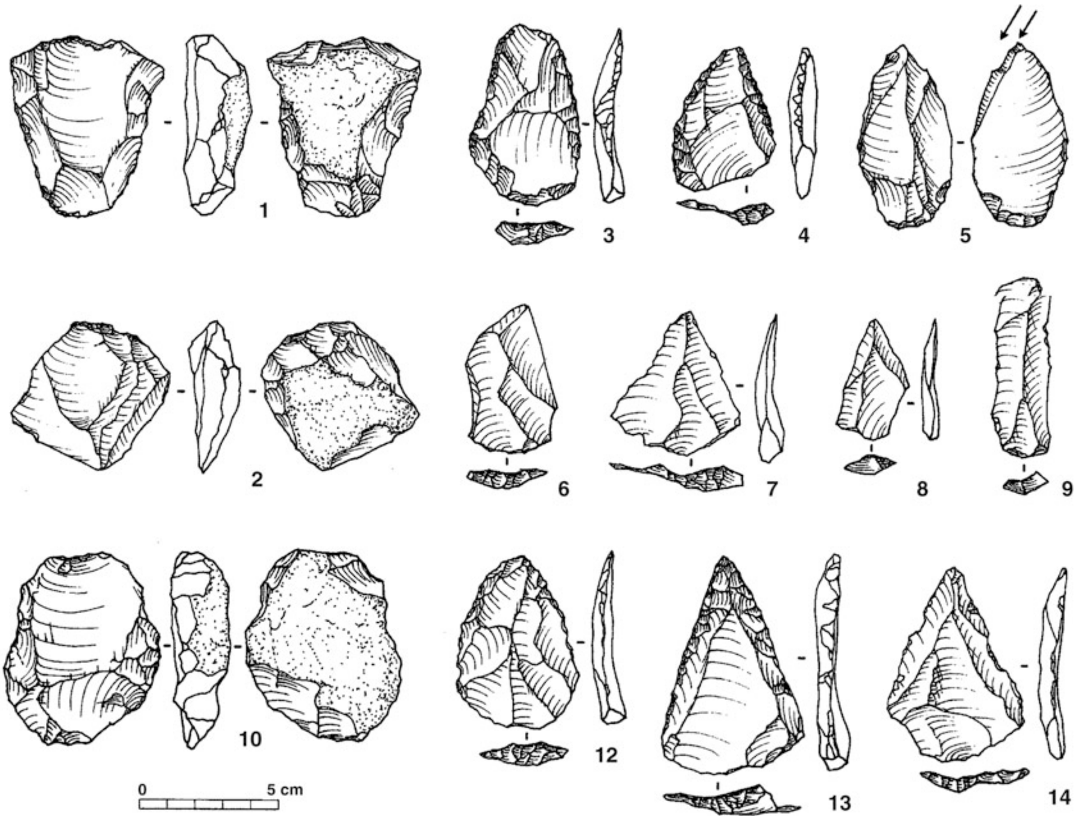
The account of the Middle Paleolithic cultural variability usually refers to three lithic industries, the Tabun B-, C-, and D-types (or phases 1, 2, and 3: Shea 2003), which have been defined by the techno-typological attributes of lithic assemblages from layers B, C, and D of Tabun Cave. The three industries are grouped under the Levantine Mousterian tradition (Fig. 4), and their common use of the Levallois technique distinguishes themselves from the preceding Yabrudian complex. The Tabun D-type is characterized by the production of blades and elongated points both with the Levallois method and the "laminar system." A significant number of Upper Paleolithic tool types occur in the D-type assemblages. In contrast, unilateral sidescrapers are representative in the Tabun C-type industry, which often produces oval flakes with some points and blades from centripetally and/or bidirectionally prepared Levallois cores. The Levallois cores of the Tabun B-type are frequently prepared by unidirectional convergent flaking that produces broad-based points with some blades. Sidescrapers are dominant in retouched tools with few Upper Paleolithic types. The attribution of some lithic assemblages to these industries is shown in Table 1.




**West Asia: Paleolithic, Fig. 3** Yabrudian stone artifacts from Dederiyeh Cave (layer F in K22 and K23) (after Nishiaki et al. 2011a)

Besides Tabun Cave, the stratigraphic sequence of the Tabun B-, C-, and D-type industries is observable at only a few sites, such as Hayonim Cave (the D-type in layers F and lower E followed by the C-type in upper layer E), and probably Douara Cave (the D-type in unit IV followed by the C-type in unit III). As such, the current scheme of the Levantine Mousterian chronology primarily draws upon radiometric dating methods, e.g., TL, ESR, U-series, and amino acid racemization, which have been applied to the sites including Tabun, Hayonim, ‘Ain Difla, Rosh Ein Mor, Qafzeh, Skhul, Naamé, Kebara, Amud, Tor Faraj, Tor Sabiha, Quneitra, Ksar Akil, and Far’ah II. These radiometric dates overall indicate that the three industries occurred in a general order from the Tabun D- through C- to B-type between 250 and 47 ka.

There are several dating results that could suggest the temporal overlap between different industries. For example, the dates proposed for ‘Ain Difla (c. 100 ka) and Nahal Aqev (c. 70–90 ka) indicate that the Tabun D-type industry lasted longer in the southern arid areas, while it was replaced by the Tabun C-type in




**West Asia: Paleolithic, Fig. 4** Mousterian stone artifacts from Dederiyeh Cave (layer E in K22) (After Nishiaki et al. 2011a)

the north. In addition, revised ESR dates (c. 100–120 ka) for Tabun layer B is closer to the dates of the Tabun C-type assemblages at Qafzeh and Skhul than those of Tabun B sites, such as Kebara and Amud. However, these anomalous dating results remain to be verified by additional samples with more secure contexts.

The faunal sequence has also contributed to the establishment of the Middle Paleolithic chronology. For example, faunal assemblages, particularly micromammals, from layers XV to XXV of Qafzeh, associated with the Tabun C-type assemblages, are characterized by the increase of Afro-Arabian elements adapted to savanna conditions. This is interpreted to represent the northward expansion of Afro-Arabian species with anatomically modern humans during MIS 5. In contrast, almost all the Afro-Arabian elements are eliminated in the faunal assemblages at Tabun B sites, such as Kebara and Amud, where Palearctic–European elements are dominant as a result of their southward dispersal with Neanderthals during the cold and dry climate of MIS 4. The faunal assemblages of both Hayonim lower and upper E, associated with Tabun D-type and C-type industries, respectively, are characterized by the presence of earlier Pleistocene elements and the dominance of Palearctic mammals, indicating their chronological precedence to Qafzeh. These accounts for bio-cultural chronology generally fit the radiometric dates of Qafzeh, Kebara, Amud, and Hayonim E, although the suggested correlation of the fauna from Tabun layer B to MIS 4 does not fit the ESR dates mentioned above.

Middle Paleolithic assemblages are profuse also in other areas in west Asia. Those in the Zagros–Taurus regions are classed as the Zagros Mousterian, which is characterized by the frequent application of retouch that produces

**West Asia: Paleolithic, Table 1** List of Paleolithic entities in west Asia and their principal information

| | Archaeological entities | | MIS[1] | Dates (Ka)[2] | Sites with hominin remains[3] | Some of other excavated or systematically surveyed sites[4] |
|---|---|---|---|---|---|---|
| **Epipaleolithic** | Zarzian | | 2 | | | Mar Gurgalan Sarab (B–C), Palegawra, Pa Sangar, Shanidar (B2), Warwasi (A–O), Zarzi |
| | Late Epipaleolithic | Late Natufian | 2 | 13–11/10 | Abu Hureyra (1), Ain Mallaha, Hayonim, Nahal Oren, Saaide II, Shukba | Abou Sif, Ain Rahub, Jayroud, Khallat Azana, Mureybet, Raqefet, Rosh Horesha, Rosh Zin, Saflulim, Salibiyah I, Wadi Humeima |
| | | Early Natufian | | | Ain Mallaha, Ain Saratan, Azraq 18, El-Wad (B), Erq el-Ahmar, Hayonim (B), Kebara (B), Wadi Hammeh 27, Wadi Metaha | Beidha, Dederiyeh (B), Fazael VI, Salibiyah XII, Tabaqa, Wadi Judayid, Yutil Hasa (D) |
| | Middle Epipaleolithic | Mushabian-Ramonian | | 16/15–13 | | Azariq XII, Ein Qadis II, Har Harif K V, Mushabi V, Mushabi XIV/1, Nahal Sekher 23, Ramat Matred II, Shunera XXI |
| | | Geometric Kebaran | | | Neve David and ‘Uyn al-Hammamm | Azariq II, Douara II (A&B), Ein Gev III, Fazael III & VIII, Hamifgash I, Haon II, Hayonim Terrace, Hefzibah, Kharaneh IV (D), Lagama North VIII, Mushabi XIV/2, Nadaouiyeh, Nahal Oren, Palmyra Site 50 (Spots B, C, F), Raqefet, Umm el-Tlel |
| | Early Epipaleolithic | Nizzanan | | 22/20–16/15 | | Azariq IX, Azraq 17 (Trench 1), Hamifgash IV, Jilat 6 (A) |
| | | Nebekian-Qalkhan | | | | Ain Qasiyya (Area D), Tor Hamar (E), Uwaynid 14 & 18, Jilat 6 (C), Yabrud III (6–7), Yutil Hasa (C, E) |
| | | Kebaran | | | Ain Qasiyya (Area A&B), Ein Gev I, Kebara (C), Kharaneh IV (B) | Fazael III, Hayonim (Ca-Ce), Nahal Oren (9), Raqefet (I), Urkan el-Rubb II |
| **Upper Paleolithic** | Baradostian (Zagros Aurignacian) | | 3–2 | | | Eshkaft-e Gavi, Gar Arjeneh, Mar Gurgalan Sarab (D–E), Pa Sangar, Shanidar (C), Shekaft-i |

(*continued*)

**West Asia: Paleolithic, Table 1** (continued)

| | Archaeological entities | | MIS[1] | Dates (Ka)[2] | Sites with hominin remains[3] | Some of other excavated or systematically surveyed sites[4] |
|---|---|---|---|---|---|---|
| | | | | | | Ghad-i Barm-i Shur, Warwasi, Yafteh |
| | Levantine Aurignacian (a former grouping) | Arqov/ Divshon | | 30/26–17 | | Boker BE (I), Boker C, Ein Aqev, Har Horesha I, Tor Fawaz? |
| | | Atlitian | | 27–26 | Nahal Ein Gev I | Antelias (I & II), el-Wad (C), Ksar Akil (6) |
| | | Classic Levantine Aurignacian | | 32–26 | el-Wad (D) | Antelias (III & IV), Hayonim (D), Kebara (1 & 2) Ksar Akil (8–7), Raqefet (III) |
| | | Levantine Aurignacian A? | | 36–32 | | Ksar Akil (11–13), Umm el-Tlel |
| | Ahmarian | Late (including Masraqan) | | 25–16 | Ohalo II | Ain al-Buhayra (Unit C, F, and H-I), Ein Aqev East, Fazael X, Lagama X, Yutil al-Hasa (Areas A and B) |
| | | Early | | 43–25 | Ksal Akil (14–20) and Qafzeh (D) | Abu Noshra I, Boker A, Boker BE, Erq el-Ahmar (E–F), Jebel Humeima, Kebara (III-IV), Lagama VII, Thalab al-Buhayla, Tor Aeid, Tor Hamar (F–G), Yabrud II (5–6) |
| | Initial Upper Paleolithic (Emiran) | | 3 | 47/42–38/ 33 | Üçağızlı Mughara?[5] | Boker Tachtit, Ksar Akil (21–25), Tor Sadaf (A & B), Umm el-Tlel (IIBase & III2A), Wadi Aghar |
| **Middle Paleolithic** | Zagros Mousterian | | 7?–3 | 200/250 (Karain E, Layer III.2). 148 (Humian) | Neanderthals from Bisitun, Karain E (III.2)[5], Shanidar (D) | Humian, Kunji, Warwasi |
| | Levantine Mousterian | Tabun B | 5/4–3 | 75–47 | Neanderthals from Amud (B1 & B2), Dederiyeh (3, 11, & 13), Kebara (VII–XII), Shukba (D), Tabun (C1)?[5] | Bezez (B), Erq el-Ahmar (H), Far'ah II, Keoue, Quneitra, Sefunim, Tor Faraj, Tor Sabiha |
| | | Tabun C | 6–5 | 160–75 | Qafzeh (XV–XXII), Skhul (B), Tabun (C2)?[5] | Dederiyeh (D), Douara (III), Hayonim (upper E), Naamé, Nahr Ibrahim, Ras el-Kelb |

(*continued*)

**West Asia: Paleolithic, Table 1** (continued)

| | Archaeological entities | MIS[1] | Dates (Ka)[2] | Sites with hominin remains[3] | Some of other excavated or systematically surveyed sites[4] |
|---|---|---|---|---|---|
| | Tabun D | 8/7–6 | 250/ 200–160 | | Abu Sif, Ain Difla, Dederiyeh (E), Douara (IV), Hayonim (lower E and F), Hummal (II), Jerf Ajla, Nahal Aqev, Rosh Ein Mor, Tabun (D), Yabrud I |
| **Lower Paleolithic** | Yabrudian/Acheulo-Yabrudian/Amudian/Pre-Aurignacian/Hummalian | 11–7 | c. 400–200 | Qesem (post *Homo erectus* lineage), Zuttiyeh (variously identified, including Archaic *Homo sapiens*) | Adlun, Dederiyeh (F), el-Kowm, Masloukh, Tabun (E), Yabrud I (11–25) |
| | Flake-dominant assemblages with no or few bifaces | – | c. 750–200 | | Bizat Ruhama, Evron-Quarry, Hummal (14–13), Karain E (Phases 1&2), Tabun (G), Yarimburgaz |
| | Acheulian (including assemblages that have been classed as Middle or Late/ Upper Acheulian) | 19–7 | c. 800–200 | Nadaouiyeh Aïn Askar (*Homo erectus*) | Azych, Berekhat Ram, C-Spring, Dawādmi, Gesher Benot Ya'aqov, Gharmachi 1b, Holon, Joub Jannine II, Kurdaro I, Latamne, Lion Spring, Revadim, Tabun (F), Umm Qatafa (D & E), Wadi Fatimah |
| | Early Acheulian or developed Oldowan | – | c. 1,400 ('Ubeidiya) | | 'Ubeidiya |
| | Assemblages dominated by cobbles/pebbles and unmodified flakes | – | c. 1,750 (Dmanisi) | Dmanisi (*Homo georgicus*) | Dursunlu, Hummal |

[1]MIS correlation is uncertain for most Lower Palaeolithic sites
[2]Dates for Upper and Epipaleolithic entities are uncalibrated radiocarbon years, and those for Middle and Lower Paleolithic are other radiometric dates including TL, ESR, U-series, AAR, and OSL, as well as age estimates from faunal spectra
[3]*Homo sapiens* unless indicated
[4]Layer numbers/alphabets are shown in parentheses
[5]Either identification of hominin types or association with lithic industries is unclear

various forms of scrapers. Recent studies suggest that core reduction technology involves Levallois methods that tend to produce elongated blanks by linear flaking directions. Similar technological characteristic is noted at Ortvala Klde in the southern Caucasus. Revised TL dates for the earliest Mousterian assemblage (F) at Karain E are c. 200–250 kya, indicating that the Mousterian tradition in this region started before the last interglacial like the Levantine Mousterian. In addition, recent finds in southern Iran and southern Arabia report the association of bifacial foliates or Nubian Levallois products, indicating greater variability of Middle Paleolithic assemblages in west Asia.

## The Timing of Neanderthal and Modern Human Occurrences

The Neanderthal occupation in west Asia is attested by the fossil evidence from Kebara, Amud, Tabun, Dederiyeh, Shukhba, Shanidar, and Bisitun Caves. The contexts of Neanderthal fossils are mostly dated to the late Middle Paleolithic between 47 and 75 ka during MIS 4 on the basis of radiometric dates, stratigraphic positions, faunal spectra, and/or lithic-technological attributes. In contrast, early modern humans recovered in the Middle Paleolithic strata of Qafzeh and Skhul have been given earlier dates (c. 75–130 ka) corresponding to MIS 5 by a series of radiometric dates and the analyses of faunal assemblages.

There are some fossil records that indicate the earlier occurrence of Neanderthals in west Asia, but these cases need further supporting data to be accepted. For example, layer III.2 of Karain E, associated with human remains with some Neanderthal traits, has been dated around 200–250 kya by TL. Another case is the Tabun C1 skeleton, which is broadly recognized as representing Neanderthal features, but some researchers, including excavators, consider that the specimen may have infiltrated down from layer B on the basis of the field observation as well as the more recent analysis of U/Th ratios. Although this makes the fossil stratigraphically later, the revised ESR date for Tabun layer B (c. 100–120 ka) is significantly older than the dates of other sites with Neanderthal fossils, such as Amud and Kebara, and closer to those of Qafzeh and Skhul with early modern humans. In addition, the stratigraphic affinity of the Tabun C2 specimen to layer C is unequivocal, but its biological affinity has been controversial, representing both Neanderthal and modern human attributes. If the Neanderthal affinity is accepted, the TL and ESR dates of Tabun layer C (120–180 ka) suggest that Neanderthals appeared in the Levant before modern humans at Qafzeh and Skhul. In contrast to these possibilities of the early appearance of Neanderthals, there is currently no evidence for the existence of *Homo sapience* during the age between 47 and 75 ka in west Asia.

### Hunting, Residential, and Symbolic Behavior

Faunal remains deposited as human refuse in the Middle Paleolithic include various ungulates (e.g., gazelle, fallow deer, red deer, roe deer, aurochs, and onager) and large reptiles that are easy to capture (e.g., tortoise and legless lizards). The seasonality of site use and mobility appears to have been variable. For example, the analyses of cementum increment of gazelle teeth suggest multi-seasonal occupation of the sites with Neanderthal fossils, such as Tabun layer B and Kebara, in contrast to shorter-term occupation at sites associated with *Homo sapiens* fossils, such as Tabun layer C and Qafzeh XVI–XXIII (Lieberman 1993). The relatively high residential stability at Kebara, indicated by dense accumulation of refuse and the prolonged use and maintenance of hearths, contrasts to the ephemeral occupation at Hayonim layer E (Meignen et al. 2006). At the rockshelter of Tor Faraj, associated with the Tabun B-type assemblage, the structured use of living space has been documented through the examination of the arrangement of hearths and the distribution of artifacts and phytoliths (Henry 2004). The evidence for symbolic objects is limited, but the use of ochre in burials and ochre-stained ground stones at Qafzeh is well known (Hovers et al. 2003). In addition, perforated sea shells from Qafzeh and Skhul may have been used as beads.

## Upper Paleolithic Period

### Origin: Initial Upper Paleolithic

The beginning of the Upper Paleolithic period is marked by the Initial Upper Paleolithic (IUP or Emiran) industry that is technologically characterized by the introduction of prismatic cores and the production of pointed blades with relatively large, sometimes facetted, striking platforms. The IUP is also typologically defined by the high occurrences of Upper Paleolithic tools, i.e., burins and end scrapers, with some fossil indices, such as Emireh points and chamfered pieces. A series of $^{14}C$ and TL dates from IUP sites range between 47 and 33 ka, within which Boker Tachtit is dated older than northern IUP sites at Üçağızlı Mughara, Umm el-Tlel, and Jerf Ajla. Despite the recent accumulation of IUP assemblages, the debate over their origin continues (Bar-Yosef & Belfer-Cohen 2010) with a view of this industry as representing a transitional phase from the Middle to Upper


**West Asia: Paleolithic, Fig. 5** Upper Paleolithic chipped stones from the middle Euphrates region

Paleolithic period and the other position maintaining that the IUP culture was brought by *Homo sapiens* dispersing from Africa.

### Upper Paleolithic Cultural Variations

Accounts for the techno-typological variability of Upper Paleolithic chipped stones after the IUP often refer to two cultural traditions, i.e., the Ahmarian (Fig. 5) and the Levantine Aurignacian. The former appeared earlier at c. 43/38 ka, following the IUP, and it features dominant production of blades/bladelets that are modified into pointed or backed forms. In contrast, the beginning of the Levantine Aurignacian is dated to at least a few millennia later around 35 ka, and it is characterized by numerous flakes created into burins and scrapers, and high occurrences of twisted bladelets detached from carinated tools/cores.

The variations within the Levantine Aurignacian tradition have been traditionally grouped into phases A, B, and C on the basis of stratified assemblages from Ksar Akil layers VI–XIII. Among the three phases, part of the Levantine Aurignacian B and C (i.e., layers VII and VIII) shows "classic" Aurignacian elements, such as flat frontally carinated and nosed scrapers along with bone and antler artifacts, such as split-based points, similar to the European Aurignacian. The origins of the Levantine Aurignacian tradition are usually assumed outside the Levant, such as southeastern Europe and the Zagros region (Olszewski & Dibble 2006). Relevance of flake-based assemblages mainly distributed in the arid marginal zone to the Aurignacian tradition has been debated, and they have recently been classed as a separate industry called the Arqov/Divshon (Goring-Morris & Belfer-Cohen 2006).

The Ahmarian tradition is often subdivided into the early and late phases. The Late Ahmarian is characterized by the increase of Ouchtata bladelets replacing el-Wad points, as well as the employment of multiple core-reduction strategies for bladelet production. In addition, some of the Late Ahmarian assemblages, such as Ohallo II, include microlith types that are hallmarks of the Kebaran, one of the early Epipaleolithic entities. As such, the Late Ahmarian has been renamed by some scholars as Masraqan (Goring-Morris 1995). In either way, Late Ahmarian/Masraqan lithic assemblages are likely to represent a transitional phase from the Upper to Epipaleolithic period. Their continuous transition is also indicated by the overlapping range of $^{14}$C dates between the Late Ahmarian and the Early Epipaleolithic, particularly the Nebekian sites in Wadi el-Hasa.

### Settlement, Subsistence, and Symbolic Behaviors

The extensive distributions of Upper Paleolithic settlements, particularly those of the Ahmarian and the Arqov/Divshon, in the steppe/arid zone have been documented in the Negev, northern Sinai, and southern Jordan. In contrast, the sites of the “classic” Levantine Aurignacian and the Atlitian tend to occur in the Levantine core areas. In both regions, the sites are small with relatively thin deposits containing several hearths at most, indicating their ephemeral nature and the high residential mobility, which are consistent with the circular settlement pattern proposed for the Upper Paleolithic inhabitants in the central Negev. A similar view on Upper Paleolithic occupation has been presented by the seasonality study of gazelle hunting (Lieberman 1993) and the decreasing trend in the proportions of commensal species (e.g., house mice) from the Middle to Upper Paleolithic layers at Qafzeh, Sefnim, and Kebara caves.

Large mammal bones from Upper Paleolithic sites mostly consist of ungulates including gazelle, fallow deer, red deer, aurochs, wild goat, boar, and equid with greater focus on smaller species (i.e., gazelle) than that of the Middle Paleolithic. In addition, intentional exploitation of small prey (e.g., hares, birds, and small turtles) is suggested at sites like Ksar Akil, Hayonim, Kebara, and Ohalo II. At the latter site, evidence for fishing is also present. Although botanical remains from Upper Paleolithic sites are scarce in west Asia, they are exceptionally well preserved at a waterlogged, Late Ahmarian/ Masraqan site of Ohalo II at the lakeshore of Galilee. The record suggests the exploitation of a wide range of grass species, including wild barley and emmer wheat, which were probably processed on ground stones, as suggested starch grain analysis (Piperno et al. 2004).

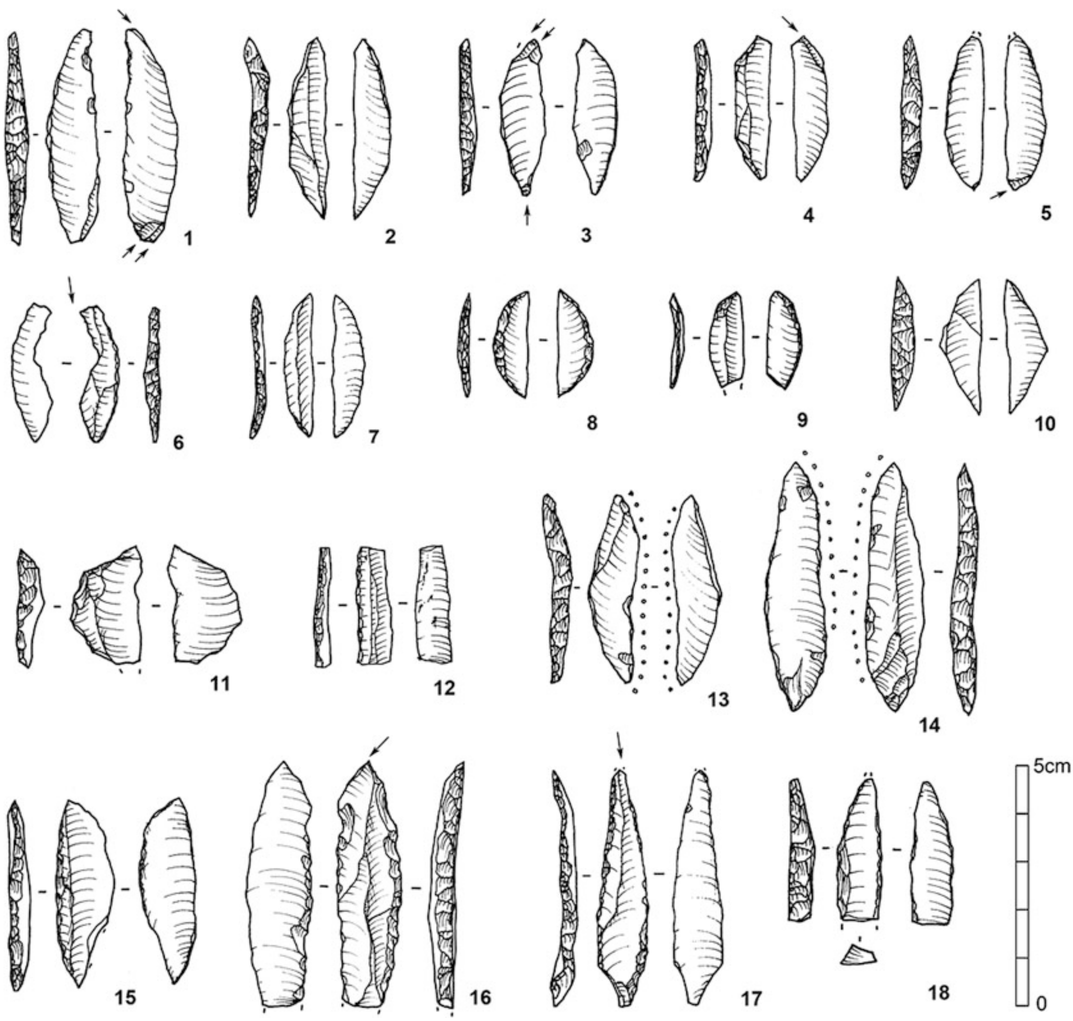
Art objects rarely occur in the west Asian Upper Paleolithic, but animal teeth pendants and incised limestone slabs from Hayonim Cave offer common features between the Levantine and European Aurignacian. In addition, numerous sites of both the Ahmarian and Levantine Aurignacian traditions yielded ochre fragments, ochre-stained stones, or marine shells, the latter of which are sometimes perforated, as reported at Üçağızlı and Yabrud II. Rare human burials have been discovered at Nahal Ein Gev I and Ohallo II, while isolated human bones have been recovered from Ksar Akil, Antelias, Qafzeh, Kebara, and el-Wad. The paucity of burials may be related to the ephemeral nature of Upper Paleolithic settlements.

## Epipaleolithic Period

### Cultural Chronology

Like preceding Paleolithic periods, Epipaleolithic material cultures are primarily defined by lithic evidence but classed into much greater numbers of categories. This is mainly related to the variability in the morphology and production technique of Epipaleolithic microliths, on which researchers draw to define cultural entities (Goring-Morris 1995; Olszewski 2008). In the Levant, Epipaleolithic cultures are often grouped into the early, middle, and late phases (Table 1). In general, non-geometric forms of microliths are dominant in the early phase, while geometric microliths mark the middle (e.g., trapeze/rectangle and triangle) and late phase (e.g., lunate) (Fig. 6). Furthermore, the presence/absence of microburin technique, a specific method for segmenting bladelets, shows temporal and geographic patterns, providing a criterion to distinguish between the Kebaran (absent) and the Nebekian (present) in the early phase, and between the Geometric Kebaran (absent) and the Mushabian (present) in the middle phase. The microburin technique is more widespread in the Late Epipaleolithic, or the Natufian cultural complex, which is divided into the early, late, and sometimes final phases. Recent recovery of some Early Natufian sites in steppe areas in Jordan indicate that a range of environment inhabited by Early Natufian foragers was wider than previously envisioned.

Microlithic assemblages in the Zagros region are classified as the Zarzian, although their chronological data are limited. Numerous Epipaleolithic cave sites have also been discovered in the Antalya area, Turkey, including Öküzini Cave, where stratified assemblages show a diachronic trend from non-geometric to geometric microliths as in the Levant and the Zarzian. Another microlithic industry with geometric microliths, the Trialetian, has been




**West Asia: Paleolithic, Fig. 6** Late Epipaleolithic chipped stones from Dederiyeh Cave (After Nishiaki et al. 2011b)

proposed for the assemblages in the Caucasus, eastern Anatolia, and the Iranian plateau.

While some researchers suggest that morphological variability of microliths can be caused by their re-modification for prolonged use rather than by intentional stylistic differences, others consider that both functional and stylistic variability recognized for distinguishing between different entities is likely to represent social groups with different technological traditions, adaptive strategies and/or territories. In the case of the Natufian complex, its regional and temporal variability is also manifested in groundstone artifacts, architecture, ornamental objects, decoration motifs, and burials.

### Mobility Pattern, Subsistence, and Society

Early and Middle Epipaleolithic sites are generally small and have thin occupational deposits, indicating that inhabitants have continued high residential mobility since the Upper Paleolithic period. The seasonality analysis of gazelle hunting also suggests that Kebaran and Geometric Kebaran occupations were seasonal in contrast to multi-seasonal occupations during the Natufian and Mousterian periods (Lieberman 1993).

However, a few Early and Middle Epipaleolithic sites are quite large, even allowing for the effect of deflation and sheetwash (e.g., Jilat 6), associated with hut structures (e.g., Ein Gev III, Kharaneh IV, and Umm el-Tlel), and/or human burials (e.g., Neve David, Kharaneh IV, and 'Uyun al-Hammam). These sites point to a long-term change rather than a sudden shift in settlement system towards the Natufian culture. The increased sedentism of Natufian foragers is illustrated by many lines of evidence, including stone-walled structures, storage facilities, numerous human burials, large site size, dense archaeological remains, and the increase in human commensals, such as house mice (Valla 1995). Multi-seasonal occupation is also indicated by seasonally available faunal and botanical species and the analysis of cementum increment of gazelle teeth.

Game species during the Epipaleolithic period include gazelle, equids, aurochs, cervids, caprines, hare, tortoise, and birds. While similar range of species was exploited in the Natufian, gazelle hunting was more intensified. Direct evidence for plant diet during the Epipaleolithic is rare, but botanical remains from a few Natufian sites, such as Abu Hureyra, Dederiyeh Cave, Wadi Hammeh 27, and Hayonim Cave, attest the use of wild cereals (e.g., barley, einkorn, and rye), wild legumes (e.g., lentils and vetches), wild nuts (e.g., almonds and pistachios), and wild fruits. Intensive exploitation of cereals during the Natufian is also suggested by indirect evidence, such as glossed blades and numerous food processing tools, particularly mortars and pestles.

Long-distance distribution of marine shells continued, and possibly was enhanced, from the Upper to Epipaleolithic period. Their occurrences at inland sites and patterned associations with particular lithic industries are interpreted as representing social interactions through the exchange of shells that are often pierced (Ritcher et al. 2011). Some Early Natufian sites (e.g., el-Wad) yielded numerous shell/bone beads as grave goods, such as a necklaces and a headdress, but their social significance remains controversial. The increase of human burials also distinguishes the Epipaleolithic from the Upper Paleolithic culture. In early Natufian villages, burials are often placed in and near residential space.

In sum, the generally increasing trend in sedentism and cereal use, as well as the development of burial customs and exchange of exotic materials during the Epipaleolithic, is widely considered precursors of sedentary villages, food production, and social practices in the following Neolithic period, although the transitional process was complex and variable at different parts in west Asia.

## International Perspectives

Although Paleolithic research in southern Arabia and southern Iran has been underdeveloped in comparison to those in the Levant, recent fieldwork in the former areas discovered Middle Paleolithic stone assemblages that are techno-typologically distinct from the Levantine Mousterian or the Zagros Mousterian. More specifically, bifacial foliates associated in the FAY-NE 1 assemblage C and Nubian Levallois products in the Dhofar region show affinities with Middle Stone Age assemblages in eastern and northeastern Africa. OSL dates indicate that these recent finds in southern Arabia represent the southern dispersal of early *Homo sapiens* out of Africa during MIS 5 in addition to the northern route to the Levant at Qafzeh and Skhul (Armitage et al. 2010; Rose et al. 2011). Although the southern route hypothesis still needs to be verified with fossil remains in the future, the investigation of the southern and eastern parts of west Asia can contribute greatly to archaeological testing of the southern dispersal route of *Homo sapiens*, linking the population history in west Asia to those in southern and eastern Asia.

## Future Directions

Although Paleolithic records in west Asia are well organized on the basis of numerous cultural entities and their chronological sequences, as a result of almost a century of research history, increasing number of new assemblages indicate greater material variability, as exemplified by various non-bifacial Lower Paleolithic assemblages from the Levant and Turkey, Middle Paleolithic assemblages with bifacial foliates in southern Iran and Arabia, and variable flake-based assemblages of the Levantine Upper Paleolithic. On the other hand, the validity of numerous cultural labels assigned for local Epipaleolithic assemblages is becoming under reexamination. Regardless of the theoretical orientations in the interpretation of cultural entities, their definition and chronological placement continue to be significant issues, particularly along with the progress of radiometric dating methods that allow researchers to make chronological correlations among archaeological assemblages both at the local and regional scales.

Explaining the variability, both synchronic and diachronic, of archaeological entities is a challenging task. Recent accumulation of radiometric dates and paleoenvironmental records led some researchers to reexamine temporal correlations between the occurrences of archaeological entities (Epipaleolithic and Neolithic) and climatic events (Maher et al. 2011), although such examinations would be more difficult for earlier time periods due to greater range of estimated dates. Functional interpretation of material variability has been pursued by several regional studies in Negev, southern Jordan, Azraq, and Wadi Hasa in relation to raw material availability and proximity to water sources, i.e., factors that vary according to daily and seasonal mobility patterns. The continuation of these regional studies should accumulate data regarding the ecological aspects of material variability. On the other hand, the interpretation of lithic industries as representing social groups can add evidence from other material records, such as the association of specific types of bone/antler objects in the Classic Levantine Aurignacian and the composition of imported shells in the Epipaleolithic industries, although the preservation of organic materials can vary under different environmental settings.

In depth studies of particular Paleolithic behaviors include the use of fire, the use of space, hunting behaviors, diets, hunting weapon technology, land-use patterns, burial practices, and creation of symbolic objects. While the synchronic variability of these behaviors can provide insights into the repertoire of adaptive strategy and cultural variability, their diachronic examination can contribute to such issues as the behavioral evolution of early *Homo* populations, the socioeconomic and cognitive aspects of the so-called Upper Paleolithic Revolution and the increasing complexity of subsistence/settlement systems and social structures in the Epipaleolithic period.

## Cross-References


- ▶ Abu Hureyra: Agriculture and Domestication
- ▶ Acheulean Industrial Complex
- ▶ African Stone Age
- ▶ ‘Ain Difla Rockshelter
- ▶ Archaic *Homo sapiens*
- ▶ Dmanisi Hominins and Archaeology
- ▶ East Asia: Paleolithic
- ▶ Europe: Middle to Upper Paleolithic Transition
- ▶ Fossil Records of Early Modern Humans
- ▶ Handaxes and Biface Technology
- ▶ *Homo erectus*
- ▶ *Homo neanderthalensis*
- ▶ *Homo sapiens*
- ▶ Human Evolution: Theory and Progress
- ▶ Human Evolution: Use of Fire
- ▶ Hunter-Gatherer Settlement and Mobility
- ▶ Hunter-Gatherer Subsistence Variation and Intensification
- ▶ Hunter-Gatherers, Archaeology of
- ▶ Lithic Technology, Paleolithic
- ▶ Material Culture and Education in Archaeology
- ▶ Middle East Middle to Upper Paleolithic Transitional Industries
- ▶ Middle East, Central Asia, and the Indian Subcontinent: Lower Paleolithic
- ▶ Middle East: Epipaleolithic
- ▶ Mousterian Industry Tradition
- ▶ Neanderthals and Their Contemporaries
- ▶ Oldowan Industrial Complex
- ▶ Out-of-Africa Origins

► Radiocarbon Dating in Archaeology
► South Asia: Paleolithic
► West and Central Asia: Early *Homo* Fossil Records
► Zooarchaeology

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# Western Europe: Historical Archaeology

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## Introduction

Archaeology is traditionally divided into two subdisciplines: prehistoric and historic archaeology. The latter might seem as an ambiguous subdiscipline of being neither history nor prehistory (Deagan 1988), or prahistory, or protohistory, as it is called in some European countries (France, Germany, Poland, Russia). There is a significant distinction, however, in how European and American archaeologists understand and practice historical archaeology. The term is commonly used in the USA, where historical archaeologists study the colonial and postcolonial times, while European archaeologists prefer using specific terms, such as postmedieval, industrial, urban, and military archaeology. The term "historical archaeology" has several meanings but it generally relates to researching societies living at times for which we have written records, thus it is about peoples who recorded themselves and others, who may not have access to script, in writing and produced complex cultures. There are, however, two ways of understanding what historical archaeology is about: broad, favored by many European archaeologists, and narrow, followed by some European and most American archaeologists. The broader understanding refers to the methodology of researching past societies and identifies the