

The Origins of Modern Human in the Near East

Achievements from Qafzeh, Kebara and Hayonim Caves

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**THE ORIGINS OF MODERN HUMAN IN THE NEAR EAST:
ACHIEVEMENTS FROM
QAFZEH, KEBARA AND HAYONIM CAVES**

Started in 1982 by B. Vandermeersch (University of Bordeaux I) and O. Bar Yosef, then professor at the Hebrew University of Jerusalem, a french-israeli research program entitled "Evolution of the industries and the human types in the Levant, from the end of the Lower Paleolithic to the beginning of the Upper Paleolithic" is developed since then, which rests on interdisciplinary research carried out at Qafzeh (excavations by Vandermeersch), at Kebara Cave (excavations led in the frame of this project between 1982 and 1990) and finally Hayonim Cave (excavations in progress since 1992). Our research during these last years has thus focused mainly on the excavation of Hayonim Cave, but numerous studies are still in progress regarding Kebara Cave.

Sponsored by the French Ministry of Foreign Affairs, the National Science Foundation (NSF, USA) and the Israel Prehistoric Society, this project is led by an international team, working in collaboration in the field, constituted of:

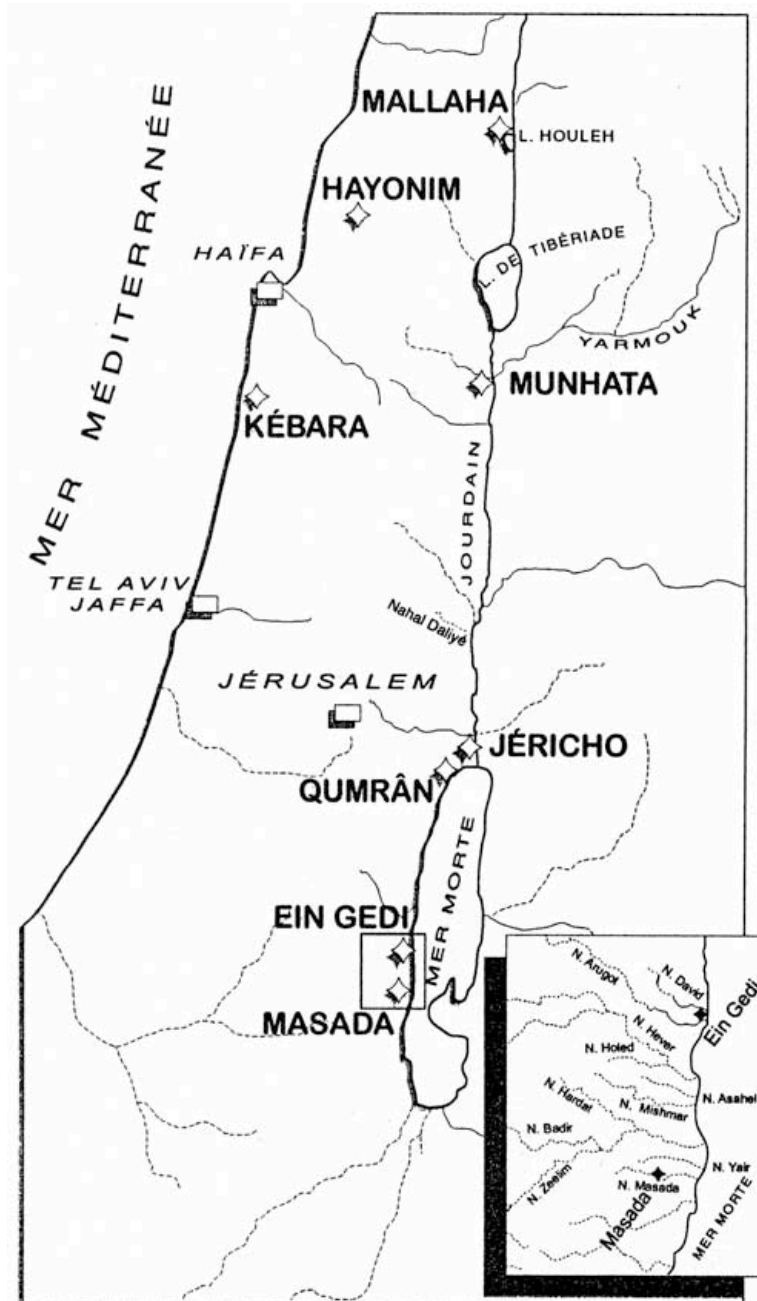
<i>prehistory:</i>	O. Bar-Yosef, Harvard University, USA L. Meignen, ERA 28 du CRA, France Belfer-Cohen, Hebrew University of Jerusalem, Israel S. Kuhn, University of Arizona, Tucson, USA C. Delage, CRFJ, Jerusalem, Israel
<i>physical anthropology:</i>	B. Vandermeersch, University of Bordeaux, France A.M. Tillier, URA 376, Bordeaux, France B. Arensburg, University of Tel Aviv, Israel Y. Rak, University of Tel Aviv, Israel
<i>soil micromorphology:</i>	P. Goldberg, Boston University, USA
<i>paleontology:</i>	E. Tchernov, Hebrew University of Jerusalem, Israel
<i>zooarchaeology:</i>	J. Speth, University of Michigan, USA (Kebara project)

	M. Stiner, University of Arizona, Tucson, USA (Hayonim project)
<i>palaeobotany:</i>	U. Baruch (Israel Antiquities Authority, Jerusalem, Israel)
<i>geochemistry:</i>	S. Weiner, Weizmann Institute, Rehovot, Israel
<i>dating:</i>	H. Valladas, N. Mercier, CNRS-CEA, Gif, France. H. Schwarcz, J. Rink, University of Toronto, Canada D. Godfrey-Smith, University of Dalhousie, Halifax, Canada.

For the Middle Paleolithic Period, the Near East serves as a unique example in the world, with the co-existence of two morphologically different human types (*Homo sapiens neandertalensis* and *Homo sapiens sapiens*) associated with the same lithic industry, Mousterian. Generally, the humans of modern type are considered as the authors of the Upper Paleolithic, with the whole range of technological, artistic, and symbolic novelties which characterize this period. The question asked then seeks to understand the relationships between these two morphologically different human groups, who have, in this case study, at least the same technological knowledge.

The research program aims thus to study the subsistence activities and the socio-economic behaviors of these different populations in order to better compare them, through the study of their lithic industries, of the intra-site organization, of their exploitation territory as it concerns hunter-gatherer groups, as well as of their mortuary practices as several burials have been recovered in these sites.

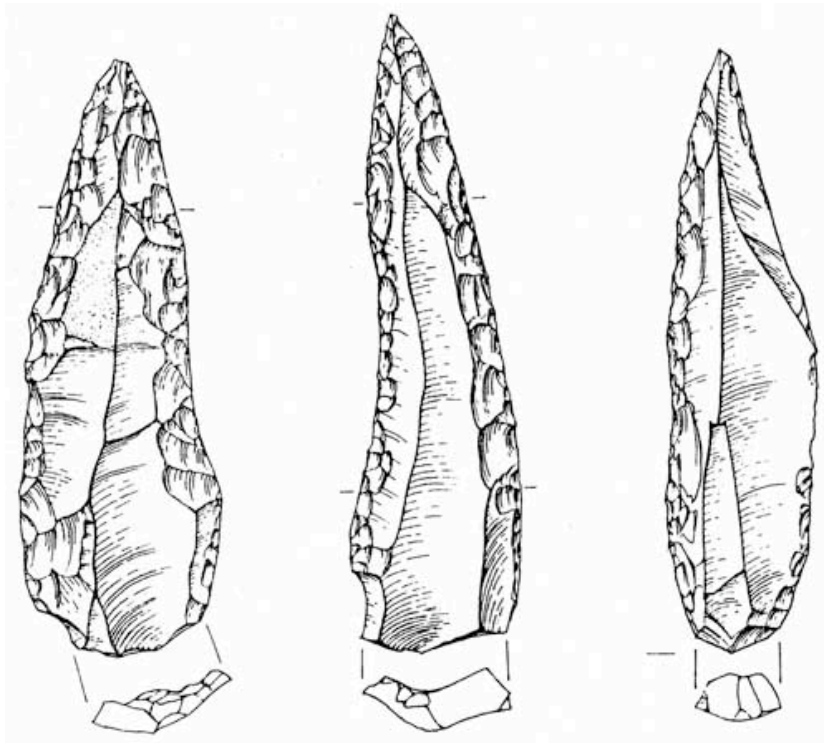
Regarding these early periods, the dating problems have been for years an obstacle to the comprehension of the biological and technological evolution. Over the last 15 years however, new dating methods which allow us to establish a more reliable chronology, have been developed. It is an aspect considered as essential to this research program, because of the necessity of a reliable chronological scale in order to deal with the relationships of potential contemporaneity between Neandertals (Kebara) and Modern Humans (Qafzeh). The excavations at Hayonim Cave, following those conducted at Kebara Cave, are thus the basis for a fruitful confrontation of the different currently known radiometric methods (TL, ESR, OSL, U/Th), as well as for methodological developments still necessary in this discipline (use of geochemical data obtained in the field by infra-red spectrometry for validating the dates). This work is made possible by a collaboration in the field between geochronologists from various laboratories, the geologist and the geochemist.



Situation map of the archaeological sites

In sum, the results gained in this research program have documented the presence of modern human types (Qafzeh, Skhul) from ca. 100,000 years BP in the Near East, a period much earlier than what was classically accepted so far. The Neandertal remains found at Kebara, dated to ca. 60,000 years BP, marked then a later arrival of these groups in the region. These results have considerably modified the hypotheses known on the phyletic relationships between these two groups.

The research project in progress since 1992 has mainly focused on Hayonim Cave where the hypothesis of a stratigraphic sequence completing those of Kebara and Qafzeh Caves was assumed based on the data yielded by the earlier excavations conducted by O. Bar-Yosef. An early date was suggested by the microfaunal data, as well as a preliminary study of the lithic industries. The recent results obtained in the frame of our research confirm this early age (between 130 and 200,000 years BP).



Mousterian points from Hayonim Cave

The current observation of the stratigraphy reveals a sequence more than 4 m thick, only for the Mousterian layers, which is overlaid by Aurignacian, Kebaran and Natufian levels.

The Mousterian industries show important and significative variations:

- the base of the sequence exhibits a production of characteristic elongated blanks (blades and points often retouched similar to those of Abou Sif);
- and in the upper part, a more classical production of short Levallois blanks (flakes and points) is found.

The levels at the base of the sequence are the most remarkable, for they present all of the features of what we call blade industries, that is a technological production rare in the Middle Paleolithic, but which is widely developed in the Upper Paleolithic. The technological studies achieved reveal that these flintknapping conceptions (on raw material nodules, systematic production of elongated blanks by a specific shaping) are already part of the technological knowledge of the Middle Paleolithic humans ca. 180-200 000 years BP, and are not a characteristic of modern humans, as it has been defended for a long time.

The studies on raw material procurement (C. Delage) reveal that the Mousterian people have exploited at least 4 sources of flint, located in a radius of 10 km, in the surroundings of the cave. The study of some exogene flints, for which the sources seem to be located at distances of ca. 30 km, helps to define more precisely the territorial range of the paleolithic groups.

The studies on the fauna (M. Stiner) have documented a predilection, in the Middle Paleolithic, for the hunting of ungulates of medium to large size (deer, aurochs...), converse to what has been observed for the later periods (Upper Paleolithic, Natufian) where the selection is in favor of herbivores of smaller size. But one of the most striking aspects is, no doubt, the exploitation of the greek turtle, which constitutes an important part in the diet of the paleolithic people. This practice will persist in the Upper Paleolithic, and later on it will be replaced by the consumption of birds. These data on the composition of the food resources (hunted species, collected small fauna) are important elements to take into account in the perspective of studying the social behaviors which interest us, for these different activities are not usually carried on by the same social groups.

The long sequence at Hayonim Cave focusing on several tens of millenia should enable us to document these important socio-economic changes.

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