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**THE MOUSTERIAN POPULATIONS OF THE NEAR EAST:
ON THE PRESENCE OF NEANDERTHALS
IN THE NEAR EAST**

This article deals with the contribution of archeological excavations in Israel, as well as of studies of human fossils in the Near East¹. Over the last thirty years, discoveries of human fossil remains in Israel has given rise to a major debate concerning the status of Neanderthals in this region and their relationship to modern Man. After describing these discoveries of human fossil remains in Israel, I will present the current issues concerning the Middle Paleolithic populations of this region, in particular regarding the presence of Neanderthals in the Near East.

I The contribution of paleo-anthropological studies conducted in Israel

The anthropological specimens found in Israel during excavations conducted over the last thirty years at the Middle Paleolithic levels have been crucial in changing our ideas about the evolution of modern man. From 1856, when the first Neanderthal Man was discovered, up to the end of the 1950s, ideas on the origins of modern Man (*Homo sapiens sapiens*) changed very little. On the basis of evidence gathered by prehistorians and anthropologists during excavations in Europe, it was assumed that the Neanderthals, artisans of an industry known as Mousterian, had disappeared during the Middle Paleolithic, in other words roughly 40,000 years ago. In general, it was thought that this population was replaced by modern man (*Homo sapiens sapiens*) associated with the industries of the Upper Paleolithic (among which the oldest are the Castelperronian and Aurignacian). According to this hypothesis, the fossil populations were placed within the framework of a linear evolution that was both biological and cultural. From a biological standpoint, one population was thought to have replaced the former one. From a cultural standpoint, each evolutionary phase corresponding to a human "type" also apparently

¹ The excavations at Qafzeh and Kebara described in this article were supported by the CNRS and the French Ministry of Foreign Affairs within the framework of the permanent French mission in Jerusalem, currently the CRFJ.

corresponded to an industry, which seems to increase in complexity along with biological evolution.

According to this scenario, the emergence of *Homo sapiens sapiens* both in Europe and in the rest of the Old World constituted the final stage in this biological and cultural evolution. The lack of discoveries of figurative art in populations prior to *Homo sapiens sapiens* (the painters of such decorated caves as those found in Lascaux in France) only served to strengthen this hypothesis.

Discoveries over the last 50 years, however, in particular in the Near East, place serious doubts on this linear description of the evolution of populations based on the European model. These discoveries had implications not only for the paleo-anthropology of this region but above for human evolution in general. Two factors played a particularly important role in this regard. First of all, the discovery in Israel of a Mousterian industry associated not only with the Neanderthals but also with remains of modern man – the fossils of Qafzeh and Skhull – challenged established ideas concerning the parallelism between biological evolution and cultural evolution. Secondly, new dating techniques (TL or thermoluminescence, ESR or Electron-Spin-Resonance,...) which helped fine tune the data provided by biostratigraphy, showed that the fossils of modern man found in the Near East were extremely old (roughly 95,000 years). Thus the modern men of the Near East were the contemporaries of the oldest European Neanderthals. The linear schema of succession of fossil populations drawn up on the basis of data from European prehistory was disrupted.

In addition, these upheavals prompted paleo-anthropologists to raise the issue of the phylogenetic relationships between modern men and the Neanderthals of the Near East. Some researchers went so far as to doubt the existence of Near Eastern Neanderthals. We will return to this issue in the last section of the present article. Before examining the factors which led to the overthrow of the traditional picture of human evolution and the new debate which arose in the wake of this upheaval, a brief overview is in order of the most important human remains thought to belong to the Neanderthal population. I will then summarize the new data provided by datings of the Israeli sites and finally, as regards these dates, I will present the new questions which have arisen concerning the populations of the Levant and examine the current discussions these questions have evoked.

II. The Mousterian Industry in the Levant: Discontinuity between biological and cultural evolution

The first Middle Paleolithic human fossil from Mandate period Palestine was discovered in 1925 during an excavation directed by Turville

Petre in Zuttiyeh, located on the western shores of the Sea of Galilee. It was presumed that this fossil was the contemporary of specimens found in European excavations which had yielded Neanderthals.

The study of the Mugharet-el-Zuttiyeh fossil, known as the "Galilee skull", was entrusted to Sir Arthur Keith. While pointing out certain anatomical particularities of the skull as compared to European Neanderthals, Keith adhered to the ideas of his time and, in his 1927 publication², associated this ancient fossil with the Neanderthals.

Following this initial discovery, the number of fossils found in the Near East during the 1930s classified as Neanderthal continued to rise. For instance, D.A. Garrod and T.D. McCown, during digs conducted between 1929 and 1934 in the Skhull cave and in Tabun discovered fossils associated with Mousterian industry. In a preliminary note to the study of all of these fossils (1937) Keith and McCown, the famous English anthropologists who headed the study, divided the fossils into two groups: the Tabun fossils were classified as Neanderthal while the Skhull remains – although ancient – were associated with modern man. In a monograph on these human fossil remains (1939), the authors changed their opinion³. Consonant with the perspective of their time, they decided to place all of the Skhull and Tabun fossils into a single group, labeled Neanderthal. However, the authors pointed out the high variability of these fossils and identified a number of traits they considered to be "advanced." This is why Near Eastern fossils are often termed "Neanderthaloid" in an attempt to take their particularity into account.

At the same time as the English excavations in the 1930s, the French consul in Palestine in the Mandate Period, R. Neuville directed excavations in the Qafzeh cave located near Nazareth. Just as in Skhull, R. Neuville discovered a large number of skeletons in Qafzeh in the Mousterian levels. However, at that time the specimens were not studied. In 1965, Bernard Vandermeersch again began to excavate in this major site and, following new discoveries during these digs, conducted the study of the entire set of specimens found at Qafzeh. In a monograph on the human fossils of Qafzeh published in 1981⁴, Vandermeersch divided the Mousterian fossils of the Near East into two groups: *Homo sapiens sapiens* and Neanderthal.

² Keith A., "A report on the Galilee skull in Turville-Petre F., *Researchs in Prehistoric Galilee*, 1925-1926, British School of Archaeology in Jerusalem, 1927, pp. 53-106.

³ Mc Cown T.D. and Keith A., *The Stone Age of Mount Carmel*, vol. 2: *The Fossil Human Remains from the Levailloiso-Mousterian*. Oxford University Press, 1939, 390 p.

⁴ Vandermeersch B., *Les Hommes fossiles de Qafzeh (Israël)*, *Cahiers de Paléontologie (Paléanthropologie)*, Paris, éd. du CNRS, 1981, 319 p.

He included the Qafzeh and Skhull fossils among the *Homo sapiens sapiens*. Vandermeersch associated the famous Mousterian burial at Tabun (Tabun C) with the Neanderthals, much as the fossil remains from Amud found in the 1960s by Suzuki and published by Suzuki and Takai in 1970⁵. During the 1980s, the hypothesis of Neanderthal presence in the Levant was reinforced first of all by the discovery in Israel of the Kebara burial and then by the unearthing of new fossils in Amud during excavations conducted by Y. Rak and, outside Israel, by the study of fossils in Shanidar (Iraq) and the discovery of a Neanderthal burial in Dederiyeh (Syria).

While confirming the presence of Neanderthals in the Levant, Vandermeersch's study indisputably links *Homo sapiens sapiens* with Mousterian industry and hence demonstrates the lack of parallelism between biological and cultural evolution.

Although the anthropological evidence led to a radical change in the concept of a parallelism between biological and cultural evolution, the datings of the Near East sites where human remains were found also challenged the linear scenario of succession suggested for the human fossil remains in the Near East.

III. Datings of the sites in the Levant and the issue of the sequence of populations

The Qafzeh and Skhull sites were the first to have their datings revised (TL and ESR) in the Near East⁶. These datings of the *Homo sapiens sapiens* of the Levant confirmed their antiquity, which had already been demonstrated on the basis of biostratigraphy. The age now ascribed to the Mousterian levels where the human fossil remains were found is roughly 90,000 years at Qafzeh and 100,000 years at Skhull.

These dates are in line with the hypothesis put forward by B. Vandermeersch (1978)⁷ that modern man (*Homo sapiens sapiens*) originated in the Near East and had evolved from ancient fossils such as those at Mugharet-el-Zuttiyeh. According to this hypothesis, the Levantine

⁵ Suzuki H. and Takai F., *The Amud Man and his Cave Site*. The University of Tokyo, 1970, 439 p.

⁶ Valladas H., Reyes J.L., Joron J.L., Valladas G., Bar Yosef O. and Vandermeersch B., "Thermoluminescence dating of Mousterian Proto-Cro-Magnon remains from Israël and the Origin of modern man", *Nature*, 1988, t. 331, pp. 614-616; Stringer C.B., Grün R., Schwarcz H.P. and Goldberg P., "ESR dates for the hominid burial of Skhül in Israël", *Nature*, t. 338, 1989, pp. 756-758.

⁷ Vandermeersch B., "Quelques aspects du problème de l'origine de l'Homme moderne" in *Les origines humaines et les époques de l'intelligence*, Paris Masson, 1978, pp. 251-260.

Neanderthals were an allochthonous population which were a late arrival from Europe⁸. The late presence of the Levantine Neanderthals was confirmed by datings of roughly 60,000 years at Kebara in the levels which also yielded a Neanderthal burial⁹. A large number of researchers thus agreed that there were two separate populations in the Near East: *Homo sapiens sapiens* and Neanderthals. Whereas the presence of Neanderthals in the Levant was in no way challenged, the new datings made it necessary to reinterpret the chronological order of succession of these two populations.

Then, in recent years, new datings of the Tabun site once again overturned this chronological scenario regarding the succession of populations in the Near East. The Mousterian level in which the Neanderthal burial site of Tabun C was found is now believed to be much older (roughly 120,000 years by ESR and about 180,000 by TL)¹⁰ than the Mousterian levels which yielded *Homo sapiens sapiens* at Qafzeh and at Skhull.

Consequently, the Mugharet-el-Zuttiyeh fossil has now aged considerably. Since the publication of the paper by Gisis and Bar Yosef¹¹, the industry associated with this fossil is now thought to be Yabroudian rather than Mousterian. In Israel, Yabroudian industry precedes Mousterian industry. Given that the age of this fossil is estimated on the basis of its association with Yabroudian industry, it should be considered to be older than previously presumed due to the new Mousterian datings of

⁸ B. Vandermeersch, 1981 *op. cit.*; Condemi S., "Some considerations concerning Neandertal features and the presence of Neandertals in the Near East", *Rivista di Antropologia*, 1991, vol. LXIX, pp. 27-38; Condemi S., *Les Hommes fossiles de Saccopastore (Italie) et leurs relations phylogénétiques. Cahiers de Paléontologie (Paléanthropologie)*, Paris, C.N.R.S. Editions, 1992, 190 p.

⁹ Valladas H., Joron J.L., Valladas G., Arensburg B., Bar Yosef O., Belfer-Cohen A., Goldberg P., Laville H., Meignan L., Rak Y., Tchernov E., Tillier A.M. and Vandermeersch B., "Thermoluminescence dates for the Neanderthal burial site at Kebara in Israël", *Nature*, 1997, t. 330, pp. 159-160.

¹⁰ Grün R., Stringer C.B. and Schwarcz H.P., "ESR dating of teeth from Garrod's Tabun cave collection", *Journal of Human Evolution*, 1991, 20, pp. 231-248. Mercier N., *Apport des méthodes radionucléaires de datation à l'étude du peuplement de l'Europe et du Proche-Orient au cours du Pléistocène supérieur*, Thèse, Université de Bordeaux I, 1992, 139 p. Mercier N., Valladas H., Valladas G. and Reyss J.L., "TL Dates of Burnt Flints from Jelineks Excavations at Tabun and their Implications", *Journal of Archaeological Science*, 1995, 12, pp. 495-509.

¹¹ Gisis I. and Bar Yosef O., "New excavation de Zuttiyeh Cave, Wadi Amud, Israël", *Paléorient*, 1974, n° 2, pp. 175-180.

Tabun. On this basis the Zuttiyeh man could be more than 200,000 years old.

If we accept these new datings for the Tabun site, we must also accept the hypothesis of the presence in the Near East, 120,000 years ago, of morphologically well-defined Neanderthals. These datings lead to a new revision of the succession of populations in the Levant. First of all, there is presumed to be an undifferentiated ancient autochtone population more than 200,000 years ago, represented by Zuttiyeh, then a Neanderthal population (Tabun C), then modern man (Skhull and Qafzeh), followed by another Neanderthal population (Kebara, Amud).

Concomitant to these new datings and to the new complex line of succession of the fossil populations of the Levant (complex above all as regards the evolution of populations in Europe), two trends can be found among researchers working on the peopling of the Near East.

Some researchers, such as B. Vandermeersch, still believe that the Near East had two separate populations: *Homo sapiens sapiens* (evolving out of archaic specimens such as Zuttiyeh) and Neanderthals. Other of these researchers, far from challenging the presence of Neanderthals in the Levant, go even further in this tendency to distinguish the two populations and, indeed, do not hesitate to classify the Neanderthals as a special species¹². By contrast, for another group of researchers, the Near East illustrates the continuous chronological sequence of a single population ranging from the oldest fossils such as Mugharet-el-Zuttiyeh, up to *Homo sapiens sapiens*¹³. In their view, the local population of the Levant simply presents a wide variability in which traits considered to be typically Neanderthal appear although there is no Neanderthal population in the Near East. The partisans of this hypothesis argue that not enough attention is paid to intra-population variability.

Regardless of the datings put forward for the Mousterian levels in Israel, the anthropological evidence is in my opinion clear. Our research on the anatomy of fossils from the Near East has led us to support the hypothesis of the presence of two separate populations in the Near East

¹² Rak Y., "On the Differences of Two Pelvises of Mousterian Context from the Qafzeh and Kebara Caves, Israël", *Am. Jour. Phys. Anthropol.*, 1990, vol. 81, pp. 323-332; Rak Y., "Does any mousterian Cave present Evidence of two Hominid species?" in *Neandertals and Modern Humans in Western Asia*, ed. Akazawa *et al.*, Plenum Press, New York, 1998, pp. 353-365.

¹³ Arensburg B. and Belfer-Cohen A., "Sapiens and Neandertals" – Rethinking the Levantine Middle Paleolithic Hominids", in *Neandertals and Modern Humans in Western Asia*, ed. Akazawa *et al.*, Plenum Press, New York, 1998, pp. 311-321.

(*Homo sapiens sapiens* and Neanderthals). The presence of Neanderthals in my opinion is supported entirely by the morphological study of fossils from Tabun C, Amud, and Kebara. This point will be the topic of the section that follows.

IV. The Presence of Neanderthals in the Levant

Who are the Neanderthals? What distinguishing features enable us to identify them unambiguously, at times even on the basis of a single fragment?

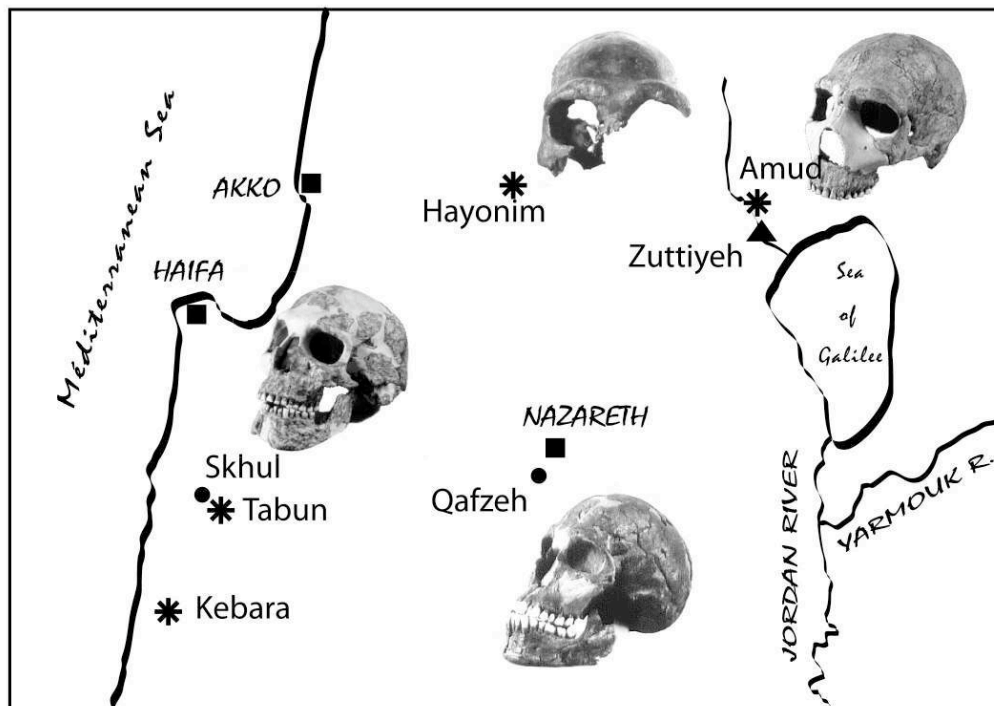
Very early in the present century, the first studies undertaken of Neanderthal fossils identified the anatomical particularities of this population. However, it is only recently that their diagnostic features have been described. Given the previous absence of ancient fossils other than Neanderthals, the scientific community for many years tended to view any ancient feature absent in modern man as being a Neanderthal feature. The fact that virtually all the fossils were European led to an overestimation of the role of European Neanderthals in the evolutionary history of mankind. Today we know that the Neanderthals represent only a brief period in the history of humanity from both an evolutionary and a geographic point of view. Thanks to the many recent discoveries of fossils older than the Neanderthals belonging to *Homo erectus (sensu lato)*, we can specify the ancient features (some of which persist in Neanderthals) and those diagnostic of Neanderthals. This is because an archaic feature can be found in different populations at different periods and in different geographic areas. Taken individually, these archaic features cannot be considered to be discriminant. What is discriminant are the derived features observed in a single line. We can thus pinpoint today the archaic features still present among the Neanderthals, the features which these fossils have in common with modern humans and, finally, the features which are particular to them, constituting their characteristic features. (see tables 1 and 2).

The sorting out of these features allows us to interpret isolated bones and the identification of diagnostic features enables us to assign them to Neanderthals. What we find in the Tabun, Amud and Kebara fossils are the diagnostic features characteristic of Neanderthals, whereas these features are not present on the fossils assigned to *Homo sapiens sapiens* (Qafzeh and Skhull). These Neanderthal features in my opinion enable us to document the presence of Neanderthals in the Near East.

In the present state of our knowledge, we are led to support the sole hypothesis of the presence of two separate populations in the Near East. However, if we accept the recent datings for the Near Eastern sites, how can we explain that the Neanderthals present at Tabun were followed by modern man who in turn was replaced by the Neanderthals? This is the

difficult issue which will be the topic of our research at the Centre de recherche français de Jérusalem.

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Localisation of Middle Palaeolithic sites in Israel with human remains.
(* Neanderthal, ● Modern Man, ▲ Archaic Hominid)

		EUROPE	MIDDLE EAST	
35	H.S.S.	Cro-Magnon		
60	Neanderthals	Circeo, La Chapelle-aux-Saints, La Ferrassie, la Quina, Néanderthal, Spy	Amud, Shanidar, Kebara	
90				90 ↑ 100 ↓ Qafzeh Skhul
120	Pre-Neanderthals	Saccopastore	120 ↑	
135			Tabun	
180		Biache La Chaise Suard	180 ↓	
300		Swanscombe		200 ↑ 250 ↓ Zuttiyeh

The Peopling of Europe and Middle East.

DERIVED FEATURES, DIAGNOSTIC FOR NEANDERTHALS CRANIUM, FACE AND MANDIBLE	
Superior view: <ul style="list-style-type: none"> . Maximum width of the cranium in posterior position. 	
Lateral view: <ul style="list-style-type: none"> . The zygomatic process is on the same level as the <i>meatus acusticus externus</i>; . on the temporal bone, the presence of a <i>tuberculum mastoideus anterior</i>. 	
Occipital view: <ul style="list-style-type: none"> . The so-called "bomb shape" of the cranium; . the shape of the occipito-mastoid region with the juxtamastoid eminentia more developed than the mastoid process; . the morphology of the occipital bone with the taurus transverse occipital bi-arched and the presence of a suprainiac fossa. 	
Facial view: <ul style="list-style-type: none"> . The ciliar and supra-orbital parts of the supra-orbital torus are fused; . the shape "in extension" of the face with the modification of the zygomatic bones, the frontal apophysis and the nasal bones; . the body of the maxillary bone with the absence of canine fossa. 	
<ul style="list-style-type: none"> . The lateral development of the condyle. 	
<ul style="list-style-type: none"> . The displacement of the mental foramina below the first molar. 	
<ul style="list-style-type: none"> . The retromolar space. 	

DERIVED FEATURES, DIAGNOSTIC FOR NEANDERTHALS POST-CRANIAL		
SCAPULA	Muscular insertions of <i>teres minor</i>	1) Neanderthals exhibit a dorsal groove, a ventral groove is present on <i>Homo sapiens sapiens</i> .
PELVIS	Pubis	2) On Neanderthals the pubis ramus is long and thin, longer than the pelvis ramus of a female <i>Homo sapiens sapiens</i> .
HAND	First finger	3) On Neanderthals the first finger exhibits two phalanges having almost the same size, whereas on <i>Homo sapiens sapiens</i> the second is smaller than the first.
FEMORA	Diaphysis	4) Rounded and not triangular diaphysis that is typical of <i>Homo sapiens sapiens</i> .