

From Foraging to Farming

The Contribution of the Mallaha (Eynan) Excavations, 1996–2001

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From foraging to farming The contribution of the Mallaha (Eynan) excavations 1996–2001¹

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Overview

It was probably during the eighteenth century that the idea first emerged in educated circles that farming and animal husbandry have nothing primitive about them. Both followed upon eras when people lived from hunting, fishing and gathering. This interpretation arose from observations of the peoples the Europeans discovered as they explored the planet. It derives from what we call ethnography. The eighteenth century, however, had not theorized the temporal depth of the history of mankind. This is doubtless why a coherent theory of cultural history did not emerge until 1843 with the work of Gustav Klemm, who defined three stages of civilization. The "Stage of Savagery", characterized by lawless family hordes living from predation, hunting and gathering, was followed by the "Stage of Tameness" (recognition of a coherent law, animal husbandry, farming and writing) and finally by the "Stage of Freedom" (characterized by the fall from power of the priests who had dominated in the previous stage).²

In 1843, prehistory had yet to acquire its rightful place in the scientific world. This situation would be rectified in 1859 when the Royal Society of London adopted Boucher de Perthes' conclusions: there were indeed "flint instruments" associated with "remains of extinct species in recent geological strata" to quote the title of Prestwich's decisive lecture. This field, which thus received its official seal of approval, already had a long tradition behind it. It was rooted to a greater

¹ This article reports exclusively on field data. Nicolas Samuelian wrote the section on architecture; Fanny Bocquentin wrote the section on graves. The Mallaha excavations are funded by the DGRCSST of the French Ministry of Foreign Affairs. They are supported by the Irene Levi-Sala Care Archaeological Foundation and by the Wenner Gren Foundation for Anthropological Research and the National Geographic Society. Additional support comes from the Israel Antiquities Authority and the CNRS, via the Equipe Ethnologie préhistorique de l'UM Archéologies et sciences de l'Antiquité (Nanterre) and the CRFJ. The authors wish to thank all the researchers and students who took part in the excavation (about 25 every year) and in particular Stéphanie Bréhard, François Bon, Teresa Cabellos, Sally Casey, Sylvain Griselin, Gaëlle Le Dosseur, Servane Olry, Yannick Trébouta and Boris Valentin whose enthusiasm guaranteed the success of the study.

² Laming-Emperaire, A. "L'archéologie préhistorique.", *Le rayon de la science 18*. Editions du Seuil, Paris, 1963. Poirier J. "Histoire de la pensée ethnologique", *Ethnologie Générale*, J.Poirier, éd, Encyclopédie de la Pléiade, 1968, 3-179. For a discussion in English on Gustav Klemm see the introduction by Eleanore Leacock to Engels, F. "*The Origin of the Family, Private Property and the State*", New World Paperbacks, Lawrence and Wishart, London, 1972, p.8-9.

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extent in geology and paleontology than in ethnography, which dictated its aim: to classify and organize its data to draw up a sequence of "civilizations." As early as 1836 the field had one classification that defined a Stone Age (Thomsen). In 1866, Lubbock differentiated the "Paleolithic", an age of knapped stone, from the "Neolithic" an age of polished stone. Prehistory thus focused on a typological analysis of tools and the study of animal and human bones -- the only objects it believed it had access to. Ethnography was not ignored. Some prehistorians even called themselves 'paleoethnologists'. Ethnography lent support to functional hypotheses prompted by tools found during excavations, and helped imagine the life of distant ancestors. However dialogue between prehistorians and ethnologists was difficult since neither found arguments from either side that was likely to enlighten them. How could accurate relationships be drawn between discoveries made by prehistorians and the issues that were haunting ethnologists as regards social organization (the family), beliefs or the economy? When chance provided prehistorians with data foreign to their familiar field of inquiry, they were at a loss to interpret them. For instance, when the first huts made of mammoth bones in the Russian steppes were excavated as of 1873, they were thought to be kitchen detritus.³

A radical change took place in the 1920s under the influence of Marxist thought. For Marx, the history of culture was dominated by economic occurrences. In the USSR, a school of prehistory developed aimed at corroborating the socio-economic epochs predicted by the theory -- basically ideas formulated by Engels in *The Origin of the Family, Private Property and the State*⁴. From an economic point of view, 'Savagery' (the Paleolithic) was divided into three stages. In the Lower Stage, man, emerging from the animal state, was totally vegetarian. In the Middle Stage, the mastery of fire enabled him to add fish to his sources of nourishment. The invention of the bow and arrow, and the development of hunting characterized the Upper Stage. From a social standpoint, primitive man engaged in economic and sexual communism within each band. The first form of progress, the first rule, consisted of prohibiting sexual relationships between generations, and the second rule, also concerning the marriage system within the group, was to prohibit marriage between brothers and sisters, initially between half brothers and sisters since true filiation was first purely matrilineal. These systems were maintained until the epoch of 'Barbarism' which followed 'Savagery' and corresponded to the Neolithic. This prehistory, influenced by Darwin and Morgan, and freed of its classificatory concerns, led to the first horizontal exposures and the discovery of the first Paleolithic habitations.

In the "West", the Australian Vere Gordon Childe (1892 - 1957), a professor at Edinburgh, was the most influential proponent of the Marxist view. He also argued that the history of mankind could only be understood within the framework of social and economic evolution, viewed as progress whose most obvious indicator is demographic success. In this respect, the Neolithic, no longer characterized by the

³ Soffer, O. *The Upper Palaeolithic of the Central Russian Plain*, Academic Press, Orlando-London, 1985. Pidoplichko I.G. *Upper Palaeolithic Dwellings of Mammoth Bones in the Ukraine*. Translated from the Russian, edited and with an introduction by P. Allsworth-Jones, BAR international series 712, Oxford, 1998.

⁴ Engels F., *The origin of the family, private property and the State*, Hottingen-Zurich, 1884.

introduction of pottery (as in Engels) but as the time when man ceased to be a predator (i.e. a parasite) and produced his own food, emerges as the most revolutionary feature of history. One of the first prehistorians, Childe attempted to determine where this could have occurred. It had been known for quite some time that domestication could only have taken place where the wild progenitors of domesticate plants and animals were found. Childe devised a scenario in which the warming of the climate at the end of the ice ages played a decisive role. Using the works of the Russian botanist and geneticist Vavilov (whom he also criticized), Childe designated the fringes of the deserts of the Near East as the "hearths of domestication" of wheat and barley, followed soon after by sheep, goats, pigs and cows. Contrary to other theorists before him, including Darwin in person, Childe attributed the first domestication to nomad populations, including the Natufians of the Carmel caves and the Judean desert.⁵

After such extensive theorizing, the American R. J. Braidwood (University of Chicago) was the first to set up a team associating prehistorians, geologists, botanists and paleontologists to test Childe's hypotheses in the field⁶. Braidwood's major interests were chronology, physical conditions (geography and climate), and human behavior in his search for the "appearance of the effective village farming community". A historian of culture, Braidwood stressed the need to seek not only the physical features of the life of prehistoric man but also what he termed its moral components, i.e. everything related to social and religious behavior, which had been disregarded, in his view, by the Marxist Childe. He believed that it was indispensable to ally the natural sciences to differentiate the technical from the moral. To understand behavior, he argued for large horizontal exposures of ancient villages and recourse to ethnology.

Our ongoing research borrows from these sources and attempts to extend them by drawing on the spirit and methods of A. Leroi-Gourhan, who succeeded in associating the concerns of the physical anthropologist, the technologist, the ethnologist and the prehistorian in an evolutionary perspective – one rooted in the natural sciences. However the prime originality of Leroi Gourhan as a prehistorian was his realization that spatial relationships – from cave drawings to objects in a habitation – was the key to an understanding of what remains of systems of thought and the daily life of prehistoric peoples. In this way his reasoning joins that of the Structuralists, who argued that the relationships between elements of discourse are more significant than these same discursive units taken separately. Nothing should be overlooked since everything is formative of the system. This is why excavation is viewed as the basic act of research and observation, followed by the obligatory phase of recording remains *in situ*, down to the most infinitesimal. This is also why analysis of these data alone can provide the keys to interpretation: external comparisons serve at best to support scientific imagination.⁷

⁵ Childe V.G., *What Happened in History*. Penguin Books, London, 1941. Childe V.G. *Man makes Himself*, C.A.Watts, London, 1942. Harlan, J., *Crops and Man*, American Society of Agronomy, Crops Science Society of America, Madison, Wisconsin, 1975.

⁶ Braidwood R.J. and Howe B. "Prehistoric Investigations in Iraqi Kurdistan." *Studies in Ancient Oriental Civilisation 31*. The University of Chicago Press, Chicago, 1960.

⁷ Leroi-Gourhan A., 1971 "Reconstituer la vie.", *Sciences et Avenir*. Repris dans *Le fil du Temps*, Fayard, Paris, 1983, pp. 234-255.

State of Research

For fifty years, work conducted by Braidwood and by those he inspired, including J. Perrot in Israel, has altered our vision of the Neolithic revolution in the Near East.

Little doubt remains that this was the region where the techniques that led to the cultivation and raising of plants and animals emerged, borrowed by the Europeans, and which enabled the first cities to develop in the Near East. Today it is generally believed that these same pre-agricultural practices could have emerged several times for different grains in slightly different environments, hills or valleys, on the fringes of the desert. The first food animals – sheep, goats and pigs – were domesticated in the hills bordering on the eastern Taurus.

This phenomenon was not however a sudden one. Although it is probable that it was prompted by the climatic changes that marked the end of the last Ice Age, it is also the outcome of a slow cultural maturation. Carbon14 datings suggest this took place between 12,000 and 8,000 cal.BC. The length of this period, some 4,000 years, suffices to show that it was not one simple mechanistic response to changes in previous plant and animal balances. It also suggests that it is a history in leaps and bounds in which multiple factors intervene, whose unfolding needs to be charted in its geographic and chronological diversity without giving too much credence to single explanations.

The first phase can be characterized by a tendency towards sedentism. This is the period when the first villages appear. Subsistence is based on hunting and gathering, but new methods aimed at increasing the efficiency of crop production have been identified: sickles to cut plants, use of arrowheads as weapons in the Negev as of 10,800 BC, which indicate the introduction of the bow, or the improvement of projectiles. The development of ornaments and art testifies to the intensity of social life. This phase lasted about 2,000 years. It has primarily been researched on the Levantine branch of the Fertile Crescent, ranging from the Negev to the Middle Euphrates. It corresponds to what is called the Natufian culture, which appears to be centered around the regions of Carmel and the Galilee. Contemporary cultures from the same level of development certainly existed in the eastern foothills of the Taurus and at the foot of Zagros but very little is known about them.

At the end of the Natufian a break occurred. Most of the sites were abandoned. New villages, founded a little later, were sometimes built on the same location as their predecessors but most were in a different setting that no longer is Mediterranean but rather semi-steppe. The first signs that the soil was tilled, doubtless to plant cereals or vegetables emerge throughout the Fertile Crescent between 9,500 and 8,000 BC. In terms of morphology, the seeds unearthed are still wild but they come with a whole host of adventitious additions – 'weeds' – which suggest that they were planted deliberately⁸. At the same time, social life involves increasingly larger groups, as is shown by the size of the villages followed by the emergence of communal structures. Some observations suggest that sheep, goats and perhaps pigs were kept in villages at the foot of the Taurus as of 8,500

⁸ Willcox G. "Nouvelles données sur l'origine de la domestication des plantes au Proche-Orient" in J.Guilaine, éd., *Premiers paysans du monde*. Errance, Paris, 2000, pp. 123-139.

BC.⁹ At about 7,500 BC a farming economy associating clearly domesticated forms of plants and animals had spread over most of the Near East.

This brief overview illustrates that in terms of what we know today, the Natufian is the only culture in the entire Fertile Crescent permitting a study of the first stage of the Neolithic. It is a preliminary stage, but the one that, characterized by the introduction of sedentism, created the conditions for the domestication of plants and animals. Earlier research, using methods in natural sciences, stratigraphy, typology, and seriation, showed that during the 2000 years of its trajectory, the Natufian did not remain the same¹⁰. Ongoing work at Mallaha deals with the Final Natufian, between 10,500 and 10,000 BC. This phase, which up to now has been the least well known, corresponds to a turning point. What happened at that time that prompted the villagers to move from a Mediterranean environment to a more steppe-like one?

Architecture, sedentism, social organization

Architecture was the key to identifying sedentism in the Natufian. When J. Perrot grasped that the Mallaha structures were probably habitations, he quickly suspected that they implied prolonged or even lengthy stays over several years. Their clustering suggested a small agglomeration, which was tempting to call a village. Since then, further research at Mallaha itself and at Hayonim, on the western slopes of the Galilee, has strengthened this hypothesis. Thus the lack of structures at the levels of the Final Natufian, in Mallaha and more generally in the Galilee were interpreted as a sign of a probable return to greater mobility. The abundance and variety of material in these levels could have raised doubts but the impression left by the previous architecture and also by the one that followed in the pre-ceramic Neolithic was too strong for its absence not to suggest a return to nomadic life.

It was thus a surprise, when the excavations began again in 1996 in Mallaha to discover at the surface of the dense gravel which corresponds, at this site to the Final Natufian, a set of structures which, by their size and shape, could be interpreted as habitations (*Figure 1*). At first sight, these structures appeared to be smaller than the ones on earlier levels. In addition, ethnologists and prehistorians are fully aware that permanent architecture does not equal permanent residence. What were these structures whose tops pecked through the top of the sediment? What did they look like? What did they mean? Did we need to rethink the interpretation of the mode of habitation of the site in the Final Natufian? Or should these structures be seen as seasonally occupied?

Little by little, as the excavation progressed, the features of this architecture began to emerge. It is now possible to identify two categories of constructions: those which can be considered traditional habitations and those which did not have this function. At the same time, certain features of the mode of habitation were made clearer and a study of the fauna provided some answers to the question of

⁹ Vigne J.D., "Les débuts néolithiques de l'élevage des ongulés au Proche-Orient et en Méditerranée : acquis récents et questions", in J. Guilaine éd. *Premiers paysans du monde*. Errance, Paris, 2000, pp. 143-168.

¹⁰ Valla F.R., "Les industries de silex de Mallaha et du Natoufien dans le Levant." *Mémoires et travaux du Centre de Recherche Français de Jérusalem 3*. Association Paléorient, Paris, 1984.

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the length of stay. All in all, the image of a more sophisticated form of daily life than what was expected has come to the fore.

Four main 'shelters' have been excavated at the Final Natufian level in Mallaha. Behind the apparent regularity of the dug out structures, bordered by a row of stones, is a diversity that manifests itself most clearly in terms of their interior layout¹¹. Each of these shelters had a complicated history, as is shown by a series of renovations.

The first group seems large enough for a family and to serve as a sleeping place. These habitations are illustrated by shelters 200 and 203 which were designed in an identical way. They are oval-shaped areas, whose the southern half, upslope, is lined by a wall of stones. In both cases these walls are built with medium sized limestone blocks on not more than 2-3 courses. Along the chord between both extremities of the wall, some domestic installations divide the area into two parts. In shelter 200, two fireplaces are dug next to each other as well as a set of limestone slabs whose function remains uncertain (*Figures 2 and 3*). In shelter 203, there are two postholes in this area (*Figure 4*). It seems likely that only the walled-in section was covered. This section also had no domestic installations. The second half of the oval area can be defined as an 'open air' activity zone. Interestingly, the northern end of shelter 203 is marked by the presence of a hearth (201) comparable to one of the two fireplaces in unit 200 (224). These structures have the same type of architecture, pits surrounded by limestone rocks. They also have a similar fill, which includes blocks of hardened ashes.

The second group of shelters apparently did not function as a habitation, in that the space is filled with secondary structures. Their functions have not been identified but it is more than likely that they were related to an intensive use of fire. The two examples (shelters 215/228 and 202/206) which illustrate this type of construction are shaped like more or less curved low walls, open in other directions than the habitations. The floor of shelter 215 is occupied by a large semi-circular structure made of poorly-matched stones (228). It is likely that this construction served as a fireplace. Its depositional fill, composed of burned and charred material, appears to attest to this. In its first state of occupation, shelter 202 apparently also was used as a place for fire-connected activities. Around a hearth is a large quantity of burned remains. Then a semi-circular basin was built on the stone foundation on which skeleton H157 was also placed. In addition, a structure that was first used for fire-related activities was sometimes turned into a house. The oldest state of shelter 203 was laid out very differently from the ones described above. The occupied area is slightly larger but it is crowded with at least four hearths, which restricts its functional capacities as a habitation. At this stage there was a large basin annexed to it (230).

¹¹ Valla F.R., Khalaily H., Samuelian N., Bocquentin F., Delage C., Valentin B., Plisson H., Rabinovich R., Belfer-Cohen A. "Le Natoufien final et les nouvelles fouilles à Mallaha (Eynan), Israël." *Journal of the Israel Prehistoric Society*, 28, 1999, pp.105-176.
Valla F. R., Khalaily H., Samuelian N., March R., Bocquentin F., Valentin B., Marder O., Rabinovich R., Le Dosseur G., Dubreuil L., Belfer-Cohen A. "Le Natoufien Final de Mallaha (Eynan), deuxième rapport préliminaire : les fouilles de 1998 et 1999". *Journal of the Israel Prehistoric Society*, 31, 2001, pp. 43-184

The successive remodeling of all the Final Natufian constructions in Mallaha are one of their most interesting features because they highlight the problems of duration of stays on the site.

A study of the fine stratigraphy inside the shelters indicates that they were occupied repeatedly, which gave rise to rebuilding separated by very thin layers of sediment. For instance in shelter 203, three successive stages have been identified, indicated by three floors, suggesting that the shelter did not always serve the same function. This strengthens the supposition that there was almost continuous occupation of the shelters over an extended period of time. A second piece of evidence lends weight to this: the repair of the walls, which are interlocked, one inside the other. Behavior of this type is illustrated by shelter 208, built in the fill of shelter 200. The most recent wall of this unit (208) is built parallel to and a few centimeters in front of wall 200, which remains visible. The floors were never paved or coated. One of the main problems of the excavation is due to this lack of floor cover. However, the absence of gravel in the shelters and the presence of domestic structures testify to the desire for comfort and the intent to organize space. The floors can reveal concentrations of special or precious objects as in shelter 200 between foyer 224 and the east end of the wall (*Figure 5a*). Seven cores (blocks of flint that prehistoric men knapped to extract blanks to make tools) were set there; four of which could have been used as well as pecking tools, perhaps to work on basalt. These cores were not all completely used up. Other objects are made of basalt: these are small slabs, vase fragments and a pestle. The most astonishing discovery in this concentration is a fragment of a rectangular plate worked in volcanic rock, whose face is decorated with an incised motif. It is a frame within which are wavy parallel lines. This collection is unusual. Its meaning remains to be clarified - is it stored material? It is clearly related to the nearby fire pit.

These levels of occupation contain postholes and fire pits. The postholes are the only sure indication that the shelters were covered. They are lined with stones serving to hold a pole vertically. They can be viewed as the negative of superstructures made of perishable materials (branches, reeds, skins, etc) that today have vanished.

The fire pits are omnipresent in all the shelters and at each level of occupation. Their high diversity in terms of mode of construction and fill probably testify to specialized functions. Firepit 222 in habitation unit 200 differs from firepit 224, its neighbor. It is shaped like a shallow, oval-lipped basin. The southern rim is marked by a curved arrangement of pebbles and limestone tools and basalt. Despite the presence of burned material, there are no ashes in its fill (*Figure 5b*).

The units that do not seem to be houses contain an extraordinary variety of hearths. The oldest occupied area of unit 203 is packed with four hearths. One of them (225), a pit ringed with stones, like foyers 224 and 201 in the housing units, is differentiated by a fill composed of concentrations of clay and ochre mixed in with the ashy soil. The presence of granules identified as coming from a paste similar to clay for pottery seems to herald an upcoming invention. Two piles of this same paste were found nearby. Another hearth designed differently is located next to it. It is shaped like a semi-circular stone wall, set on the ground; the fill is composed partially of blocks of ash (*Figure 6a*). Close by, a third hearth is shaped like a poorly defined pit, stuffed with hundreds of tiny stones, mixed into the

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ashes. Lastly there is a small ashy depression, filled with many small stones, also burned. The most striking hearth in terms of the care used in its construction and its unique features is located in shelter 202 (oldest phase). It is a small funnel-shaped pit carefully lined with small limestone parallelepipeds, with a fill of white ashes (*Figure 6b*). Yet another example is provided by structure 228 which appears to be a flat area, with its small piles of evacuated refuse a small distance away.

The abundance, variety and density of the archeological remains at all the phases of the Natufian argue in favor of a prolonged occupation of the site. These remains are as abundant at the final phase as at the preceding ones. If we wish to understand the lives of prehistoric peoples, the study of these artifacts cannot be dissociated from that of the constructions.

The wealth of minerals in the Mallaha environment gave rise to highly developed use of limestone, flint and basalt. Limestone is the most easily accessible type of stone in the surrounding area. It provided most of the stones for the gravel. It was mainly used for buildings. It was also used for tools such as hammer stones (to chop flint or basalt). In some hearths, limestone pebbles were doubtless used to maintain heat. Flint is found at some distance from the site. It is the preferred type of stone for cutting tools. The very small Natufian industry produced weapons above all designed to be hunting projectiles, but also knives used to process organic and plant matter. The remains of flint chippings are numerous. All the steps in the manufacturing process from the raw material (block of stone) to the finished product (tool) are represented. The third type of rock found in abundance by the Natufians is volcanic in origin. The basalt comes from flows near the site, or from the Golan heights. In contrast to flint, it was used to make "heavy equipment" in particular grinding tools such as grindstones, mortars and pestles which are suggestive of grinding of plants. It was used at times to make recipients. The large quantity of blocks brought into the village is a good indication of the journeys the Natufians were willing to make to obtain supplies of raw materials.

Other materials, and very rare ones, could have been obtained through exchanges. They reveal at times unexpectedly distant contacts. Obsidian is doubtless the most surprising stone. The closest sources are located hundreds of kilometers away, in Anatolia. Some green stones could have come from the Negev or the Sinai.

A large number of animal bone remains are indicative of the species eaten by the Natufians and the way they dealt with carcasses. However, the fauna can also provide precious information on the period of occupation of the site.

The most frequent animals are the gazelle, deer and boar. In smaller numbers there are remains of goats, hares, foxes, rodents and birds. The aquatic fauna include a large number of fish and freshwater shellfish. The Natufians also ate land turtles. The bones were used as raw material for some tools. Above all they were systematically cracked, doubtless to extract the marrow. They could also perhaps have been used as fuel, since about one third of them are burned. The knowledge of the reproductive cycle of animals makes it possible to determine the season when the game was hunted. On the last floor of habitation unit 203, bones of boar fetus indicate an occupation during the spring. On the same level, roe deer antlers found connected to the skull suggest a hunt between spring and the beginning of winter. The data gathered on the floor of structure 200 are even more telling. The age of the animals killed, evaluated by the state of their teeth, shows that they

were hunted all year round. This provides fairly robust arguments to support the claim for a sedentary mode of living.

Population and burial rites

The discovery of a large number of Natufian graves (over 350), often clustered into true small graveyards, has enabled archeologists to extend their knowledge – in particular their biological knowledge – as regards this community. They also confirm the change which took place in mode of occupation. The Natufians are without question the 'first archeological population' in the sense that they form a homogeneous unit that evolved in a bounded time and space, making a true biological study of a population possible (variability, kinship relationships, lifestyle, state of health, growth, demography, relocations, etc.). This group differs from populations in the more distant past for which archeological studies must be satisfied with individuals scattered over several countries and dispersed over a period of time. Contrary to what might be expected, the difference does not arise from differential preservation of bones. In fact, among the multiple parameters which affect the preservation of skeletons, the time factor has little impact. In fact, all things being equal, the Neanderthal sepulchers are even better preserved than the Natufian ones.

What most clearly highlights the separation between Paleolithic groups and the Natufians are the burial customs themselves. The latter preferred burial, a custom which was rare in previous eras and which leaves a physical trace for anthropologists to study. In addition, the custom of the Natufians to bury their dead close by their houses and even under the houses, facilitates the discovery of graves, which if several meters further away could be missed in archeological excavation. The sedentary lifestyle adopted by the Natufians probably led to a densification of the population and hence to graves. Not all Natufians buried near houses however; this custom was found in groups around Mt. Carmel and in the Galilee. The other sites, large or small, have only rarely revealed graves. In addition, in the burial sites that have been excavated, selection criteria for the dead could have existed, and other burial customs could have been used. Data show that there was a selection in Mallaha. During the Late Natufian phase of occupation, children below the age of one were excluded from collective graves¹².

In the Final Natufian in contrast, as in the Early Natufian, no selection as regards age has been found and the demographic curve of the population buried is comparable to that which would arise from natural mortality. This does not mean that all the burials were identical. On the contrary, Natufian culture is characterized by the diversity of its modes of burial¹³. The orientation of the body, position, number of deceased in each grave, and their location as regards the site in general and the various structures in particular are extremely variable. This is true to such

¹² Bocquentin F., Sellier P., Murail P., "La population natoufienne de Mallaha (Eynan, Israël) : dénombrement, âge au décès et recrutement funéraire", *Paléorient*, 27 (1), 2001, pp. 89-106

¹³ Garrod D.A.E., Bate D.M.A. *The Stone Age of Mount Carmel*. Oxford, Clarendon Press, 1937.
Perrot J., Ladiray D., Solivères-Massei O., "Les Hommes de Mallaha, (Eynan) Israël.", *Mémoires et Travaux du Centre de Recherche Français de Jérusalem*, 7, Paris, Association Paléorient, 1988, Belfer-Cohen A. "The natufian graveyard in Hayonim Cave". *Paléorient*, 14,(2) 1988, pp. 297-308. Valla et al. 2001, *op.cit.*

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an extent that it is worth inquiring whether the Natufians were still in an exploratory phase as regards dealing with the dead within their new context of sedentary living. It is more likely that the factors governing well- defined customs still elude us and will remain partially so forever. However the growth of archeo-anthropological studies associating information drawn from biological anthropology and those from archeology will doubtless yield further information. Separated for many years, these two fields are nevertheless highly complementary. Isn't it crucial to take into consideration the pathologies and hereditary morphological variations – one example out of many – in a discussion of grave or skeleton positioning, on the same level as gender and age which appear to us intuitively as determinant?

In fact, the interaction of these two anthropological and archeological approaches in the study of burial rites begins in the field, where the presence of the archeologist is crucial. The excavation of a grave is a specialized technique since inhumation is followed inevitably by the decomposition of the flesh, a decomposition which can change the original arrangement of the skeleton. The work of the anthropologist is, first of all to define the original position of the body, the one which the undertakers intended, up to its most minute details: it is these details, in fact, which by their recurrence, may be the most revealing signs of a codified system. Secondly, the study of taphonomic movements following the placement of the body is also crucial to a reconstitution of the conditions in which the body was buried. The amplitude of these movements, their type, the anatomical parts involved, all enable the researcher to differentiate burial directly in the ground from burial in a coffin or a shroud, materials which disappear without leaving any tangible traces.

The excavation of 17 graves discovered between 1996 and 2001 in Mallaha was guided by this approach, specific to funereal archeology, which has developed in France over the last twenty years under the impetus of H. Duday.¹⁴ It involves an adaptation of methods used by A. Leroy- Gourhan to the specific case of graves, and integrates knowledge of human anatomy and the laws of taphonomy. Too often relegated to the background, the skeleton is now the focus of funereal archeology just as the body was the focus of burial rites. The study of graves in Mallaha confirms once again that nothing appears to have been left to chance.

For some of the deceased, the preparation of the body before inhumation was apparently the high point of the ritual. Two graves are remarkable in this respect. They are located at the top of the gravel and are more recent than all the structures described above. It is obvious that the two corpses were bound tightly in positions in which the contortion of the body was extreme. In one, the knees were brought up under the chin, one elbow was crushed between the thigh and the leg while the hand was closed over the knee on the other side; the other arm goes over the thigh, but the hand is stuck under the feet (H 154). The position of the second body is even more impressive (H 170: *Figure 7*). The top of the body is in a vertical position, the head is tilted towards its right side. The lower part of the body has been forced towards the left. The right arm is turned backwards but the

¹⁴ Duday H., Courtaud P., Crubezy E., Sellier P., Tillier A-M. "L'Anthropologie de "terrain" : reconnaissance et interprétation des gestes funéraires", *Bulletins et Mémoires de la Société d'Anthropologie de Paris*, 2, 1990 , pp. 29-50.

forearm is brought along the side of the body and the hand is open under the bone of the right foot; the left arm, along the ribcage reaches between the thighs and the forearm is also stuck between the left femur and tibia. The twisting of the skeletons is such that it is worth inquiring whether these were not 'secondary' burials, i.e. the inhumation not of bodies but of bones that had already dried after a first burial. This is what is called 'burials in stages': the body is buried and then after a given period of time – which corresponds in general to the decomposition of the flesh and mourning – the bones are dug up and eventually scattered, burned, redistributed or buried once again in other locations. Only this second burial gives the archeologist testimony to the complexity of burial rites, since all the intermediate stages have vanished to achieve the final state of the grave. Nevertheless, in the two cases described above, all the bones are present and the joints, even the most fragile, are mostly preserved. These are thus "primary" graves, which provide a perfect illustration of the degree of bending of cadavers during the Natufian period. The bent position increases in frequency in the Final Natufian but, remarkably, observations also show bending as of the Early Natufian. In all the documented cases one of the upper limbs is moderately bent and is placed to the side, while the other is mixed with the lower limbs. This organization of the various body parts was clearly not accidental.

For other deceased, the choice of location of the grave appears to be the key feature. Despite the stratigraphic complexity of the Mallaha site, which is often difficult to interpret, there is a particularly strong link between certain individuals and certain structures. Graves in houses are not unusual in the Natufian and it is even likely that, in most cases, this association was deliberate. Nevertheless, the relative chronology of the different events (construction, inhumation, occupation of the house, disturbances, abandonment) is often difficult to disentangle. Nevertheless, in unit 203, the sequence of events is clear-cut: the grave of a woman (H156) which covers a first phase of habitation is itself enclosed in a floor. This reoccupation of the place made it possible in addition to confirm the taphonomic diagnosis which suggested that the body was not placed directly in the ground, but in a wooden coffin. This burial structure enabled the new occupants to open the grave which was not covered by sediment and to reorganize its contents in order apparently to level the floor before moving in. This anecdote is precious for the archeologist because it makes it possible to draw firm connections between different events discovered as the excavation proceeds. Above all it introduces an important notion of micro-time that is not available through dating methods. It was doubtless after a brief period of time (several years or several dozens of years) that the house was reoccupied, at a time when, very probably, the memory of the deceased had not entirely faded. The grave of another woman (H 157) was found closely associated with a double structure (Str. 202-206), whose function remains uncertain. It is nevertheless clear that it is not a house because the morphology itself of the structure makes daily occupation improbable (*Figure 8*). The skeleton was placed partially in the structure, directly above the foundation stones of a basin; in contrast the feet bones were crushed by the peripheral wall. In this case the interval of time which separates the placement of the cadaver and the building of the wall must have been very short: thus gradually the rites emerge more clearly.

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Other features of the rite remain more sketchy. These include in particular those following inhumation. Although no secondary grave has been discovered yet in the Final Natufian (although they are present in the Early and the Late Natufian), a certain number of human bones scattered throughout the structures raise questions. Even more astonishing, in one of the structures, (str. 228: *Figure 9*) there is an intertwining of stones and bones as though all were used indiscriminately in building the wall. It is difficult to tell whether this phenomenon, which has never been seen elsewhere, is truly an innovation of the Final Natufian or whether it is rooted in previous customs.

Whatever the case, in the Final Natufian, a terminal and perhaps unstable period, burial rites draw on earlier customs. The variability identified in the early and recent Natufian phases continues. This diversity emerges even more clearly as more numerous parameters become available. There is a return to individual primary burial as was conducted at Mallaha in the Early Natufian and which was abandoned during the late occupation of the site. The graves however are more spread out: there is no longer an area where the graves are grouped together as was the case in the Early Natufian. Should this be interpreted as a weakening of social cohesiveness? The effect of relative dispersal of the population? The village seems to be smaller, the houses narrower, but these last Natufians were still strongly attached to their territory. The association of defunct ancestors to architecture and at times even including their bones in the structures are, among other indices, striking testimonies.

The Final Natufian and the coming of the Neolithic

It is never easy to 'reconstitute the life' of a vanished people. The task is made even more difficult when it involves a people whose ideas and behavior are very far removed from those of all the existing groups, as is the case for the groups predating the Neolithic. Nevertheless we clearly feel that the history of these groups, as different as it may be, is also ours. Through a strange paradox, the greater the distance separating us from them, the more they seem to touch deep-seated fibers of being. This is why we are so interested in not losing the remains that have been preserved up to our time, and to interpret them to make them comprehensible. For the Natufians, their role as forebears of the Neolithic adds an additional historical dimension to our interest, which is also sparked by the relative richness of the remains they left behind.

Our research on the Final Natufian in Mallaha is continuing. The picture which we have now of the life of the people of this culture on the site is incomplete and provisional as compared to what we hope to achieve by the end of the investigation and is even more sketchy as compared to what time has caused to vanish. Nevertheless we see emerging small units of the size of 'nuclear' families composed of two parents and their young children, grouped into small communities; a lifestyle which implies relative sedentism; at least long stays in structures carefully arranged according to a stable code; activities which involve considerable and varied constructions which were clearly not all linked to the immediate satisfaction of basic needs; a people governed by pre-Jennerian laws of demography - i.e. where many die before the age of 5 but where the survivors can reach respectable old age; and lastly, complicated burial rites which confirm the existence of a highly elaborate mode of thinking.

All these data, which root the Final Natufian in the tradition developed in the Early and Late phases, are new. They reveal features of the Final Natufian in the Carmel and Galilee which were unknown until recently and confer on it a diversity which raises in unprecedented terms the question of the transmission of lifestyles, ways of being and thinking of the last Natufian hunters to their successors. The available data until now suggested at that time, in this region, a society in disarray. There were no more constructed villages. Certain sites were abandoned. The sedentary mode of life, its gains, and the impact it had had for more than a thousand years on the villages of the region appeared to be vanishing. The image which arises today is more complex and in a sense, more satisfying. We will need more work and thought to draw all the conclusions, but is already clear that all the villages did not disappear at the same time. The Final Natufian is still is a poorly known period at the end of which new sites were selected in different environments for the establishment of new villages where other attempts were made. However Mallaha remained for a long time in Galilee an important place, both a conservatory of an architectural tradition in a favorable milieu for technical innovation and a center which attracted exotic materials sometimes from distant places such as obsidian, some seashells and probably some green stones.

It is striking to observe that analysis of mode of subsistence indicates little change as compared to previous phases. We would like to know more about what our Natufians ate and above all how they obtained this food. Hunting and fishing are obvious. But what part of the daily diet was composed of plants? Clearly a large part. Did this proportion increase or decrease? Was it gathered or were plants manipulated to increase growth of certain types? It is hard to answer these questions when the seeds have been preserved and even more difficult when they have not. In Mallaha, we only have indirect indications or negative ones, which leave little room for interpretation; a situation where the presuppositions of the analyst risk to lead to conclusions as much as the facts themselves. In any case, and this is the striking feature, the available data suggest rather traditional behavior.

The resumption of excavations at Mallaha was designed to shed light on the first eras of a history lasting several thousand years; namely, the transition of Near Eastern hunting and gathering cultures to farming. The key question, as formulated by historians of civilizations, consists of shedding light on forms of an economic upheaval. This upheaval can be seen as a chapter in the history of techniques, a history that is best suited to archeology since, more than any other facet of human activity, technical activities are likely to leave physical remains that are more or less indelible. From this point of view, manipulations of plants and animals are nothing but technical activities among others. But these manipulations, and even more their pervasive spread, were only made possible by a set of transformations that affected all aspects of social life. It is symptomatic that when looking for economic features, the first data encountered are linked to societal structure, in particular the history of habitation and burial rites. These data stem from practices that are clearly inscribed in tradition but which profoundly modify it. The Natufian houses are the chronological (and perhaps in architectural design) next step after the mammoth bone huts of the Russian steppe. However sedentism, which changed the huts into houses, brought about a radical transformation of meaning. Tangible evidence for this change is provided by the multiplicity of graves. Men buried their dead eighty or one hundred thousand years before the Natufians. However, the

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Natufian period marks the first time that graves are systematically associated with houses. This constitutes a change in the way the group becomes part of its surroundings, and its emotional relationship to the land. This altered perspective clearly had an impact on the later development of economic practices that led to farming.

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Figure 2: Picture of House 200. Note the semi-oval wall and the three structures aligned along the chord.

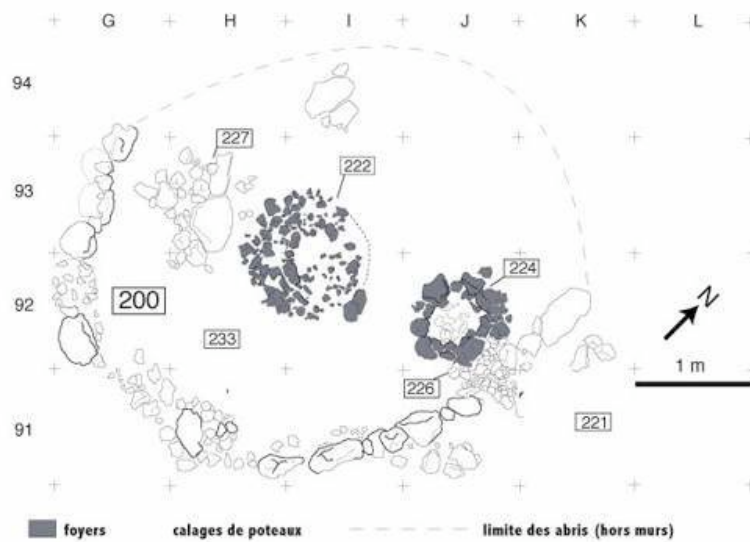


Figure 3: Diagram of House 200.

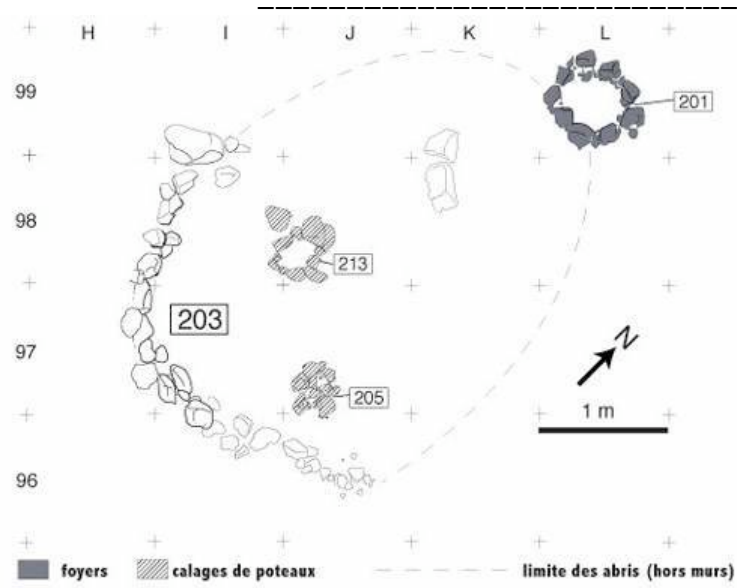


Figure 4: Diagram of House 203 (upper floor)

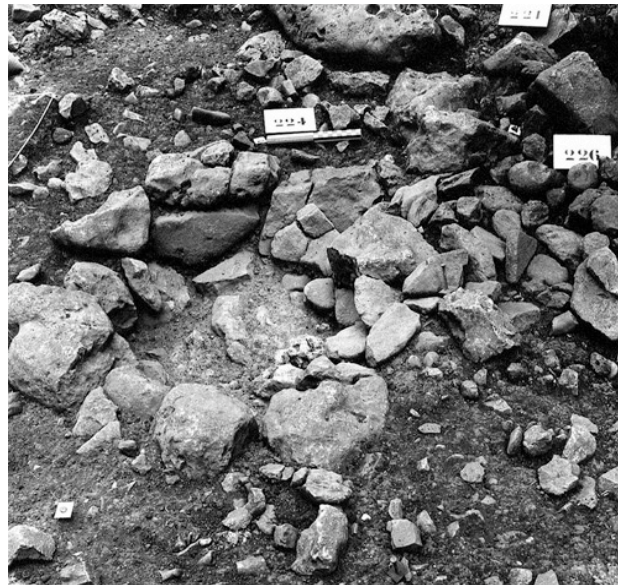


Figure 5a: Fire pit 224, and the group of objects attached to it in house 200.



Figure 5b: Basin-shaped pit with its associated paving slabs (house 200).



Figure 6a: Open horseshoe hearth 232 in structure 203 (old floor).

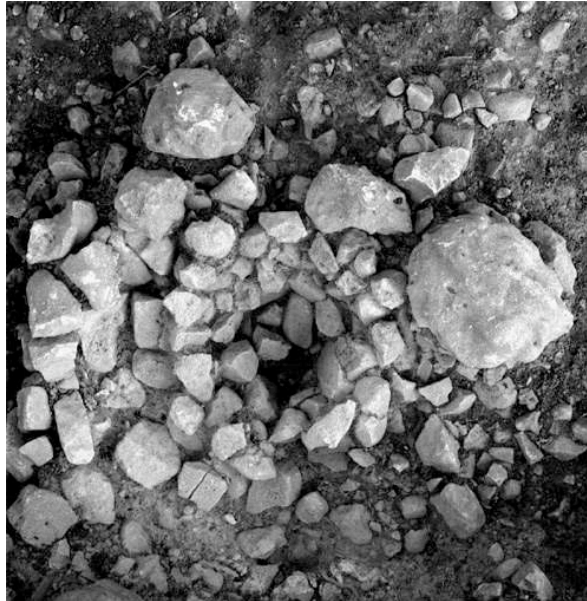


Figure 6b: Hearth 235, perhaps an oven (in structure 202).



Figure 7: Grave of H170 at the top of the layer. The body was placed in a remarkably bent and twisted position. The torso is vertical and the lower limbs are bent to the left side.



Figure 8: Overview of structure 206 on which skeleton H157 was placed, itself partially covered by structure 202.



Figure 9: Isolated human bones integrated into the foundations of structure 228.