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The Natufian Culture and
the Origin of the Neolithic
in the Levant¹

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The Natufian culture occupies a special place in the evolu-
tion of human societies in the Near East, namely, that
of the threshold to the emergence of farming commu-
nities. The idea that the Natufians were the earliest
farmers is as old as the original discovery of their cul-
tural remains by Garrod [1932]. What seemed at the time
an intuitive suggestion is now considered perhaps the
right interpretation [Moore 1982, Unger-Hamilton
1989]. The shift from hunting-and-gathering with some
horticulture to a true farming economy seems a logical
continuum [Henry 1989]. The fact that most of the hard
evidence from the Natufian sites comes from the Early
or even Middle Natufian [Valla 1984], which predates
the Early Neolithic by at least 800 radiocarbon years,
is rarely taken into account [Bar-Yosef and Belfer-Cohen
1989]. The discovery of early farming sites in the Jordan
Valley and the adjacent hilly areas on both the east and
the west side of the Rift Valley has made it clear that the
origins of wheat and barley agriculture were in the
southern Levant [van Zeist 1988, Bar-Yosef 1989]. Thus
the need to understand cultural processes in and around
the Natufian homeland (Stordeur 1981) has assumed
special importance.

Explaining not only how but also why the Natufian
culture emerged from a world of hunter-gatherers appar-
etly not much different in material culture from their
contemporaries has become the concern of a number of
scholars. Henry [1989] has produced perhaps the most
substantial discussion, which takes population dynam-
ics into account. As more and more new data have been
retrieved from Natufian sites, pollen cores, and faunal
collections, the need for direct international discussion
has become obvious, especially since many scholars
working in various countries of the Near East have no
such communication because of the political situation.
The participants in the conference on the Natufian held
at the Centre des Recherches Archéologiques, Sophia
Antipolis, Valbonne, June 6–8, 1989, were archaeolo-
gists, zooarchaeologists, palynologists and palaeobota-
nists, and microwear analysts. The following is a sum-
mmary of the main topics discussed. The papers of the
conference will soon be published.

Paleoenvironments. After recent coring in the Hula
Valley, S. Bottema and U. Baruch were able to suggest a
general climatic sequence for the Levant from about
15,000 to 8,000 B.P. derived from their densely sampled
pollen cores. While previous work in the Ghab marshes
of the northern Orontes Valley was taken into account,
it seems that the conflict in chronological interpretation
between the Hula Valley and the Ghab sequence may
result from the paucity of radiocarbon dates from the
Ghab. The recent palynological profile from the Hula
Basin, as yet dated by only two readings, correlates well
with the earlier palynological graph from another
boreshore in the Hula Valley done by H. Tsukada, which
is dated by 16 radiocarbon samples [Bottema and van
Zeist 1981, Cowgill 1969]. Bottema views the Ghab se-
quency as well founded and considers the colder Plei-
glacial period to have been longer in the northern Le-
ant. Warming led to the expansion of forest vegetation
first in the southern Levant, where a peak was reached
around 11,500 B.P. The later slight decrease in arboreal
pollen in the Hula Basin possibly represents the Younger
Dryas, and a slight increase marks the onset of wetter
Holocene conditions probably around 10,000 B.P. The
pollen evidence indicates that the Early Holocene was
wetter than the Mid- and Late Holocene. Tchernov's
[Noy, Schuldenrein, and Tchernov 1980] faunal analysis
of large samples from Netiv Hagdud and Gilgal, Early
Neolithic [Pre-Pottery Neolithic A] sites 13 km north
of Jericho in the Lower Jordan Valley, supports this
climatic interpretation. He concludes that the only way
to account for the presence there of so many diverse
freshwater avian and rodent species is in terms of the
former existence of bodies of fresh water nearby. Palyn-
ological evidence from Netiv Hagdud studied by
Leroi-Gourhan and Darmon [1987] reflects the presence
of a rich aquatic flora and corroborates the geo-
morphological evidence produced by Schuldenrein and Gold-
berg [1981]. While there is disagreement about the value
of pollen data derived from archaeological sites, it is of
interest that Leroi-Gourhan and Darmon have reached
conclusions similar to those based on the pollen cores
from the Hula Valley.

In sum, the various lines of evidence demonstrate
cold, wet conditions during the Geometric Kebaran/
Mushabian period [14,000–12,800/12,500 B.P.] preceding
the Natufian, a dry spell during the very Early Natufian,
a steady increase in arboreal pollen during the Early
Natufian, and an ensuing drier period in the Late
Natufian [Younger Dryas]. An increase in humidity is
documented for the Early Holocene both from Mureybet
in the middle Euphrates Valley in northern Syria and
from the Lower Jordan Valley.

The archaeology of Natufian sites. The presentation
of archaeological reports was an inevitable mixture of final
site reports from the excavations carried out in the 1960s
and 1970s and preliminary reports on new excavations
or sites discovered in recent surveys.

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here. We also thank Mme. Pallier and L. Meigne, who helped in
organizing it.
J. Perrot described and discussed the types of burials exhumed in the excavations of Ain Mallaha (Eynan), now fully published [Perrot and Ladiray 1988]. Skeletal remains were often found in flexed and semiflexed position, rarely with body decorations made of series of Dentatium shells. According to Solivers-Massei [1988], the population of Ain Mallaha demonstrates marked sexual dimorphism, often greater stature than among other Natufian groups, and greater morphological robusticity [which Ferembach [1976] has attributed to dietary differences].

B. Byrd described the scanty Natufian remains excavated under the Pre-Pottery Neolithic B village of Beidha, dated to 12,500 B.P. [Byrd 1989]. He stressed that, contrary to earlier reports, there is no evidence for the use of mud bricks by the Natufian occupants. In an additional communication he described the potential of another site recently discovered in a tributary of Wadi Hasa [southern Jordan], where numerous mortars were found in what seems to be a rich Early Natufian occupation.

A paucity of Natufian occurrences was reported by A. Garrard for the Azraq Basin [Garrard et al. 1987] and by A. Betts for the Black Desert in Jordan. The only site in the Azraq Basin at which a few secondary burials were uncovered was destroyed by subsequent development activities. Ephemeral Natufian occupations left only impoverished lithic assemblages in the Black Desert, where water sources are only seasonal [Betts 1982].

Hayonim Cave was excavated in the late 1960s and 1970s by O. Bar-Yosef, E. Tchernov, and B. Arvensburg. Most of the lithics and the bone tools [Bar-Yosef and Goren 1973] have recently been studied by A. Belfer-Cohen [1988], who discussed typological and technological changes through time on the basis of samples from the internal stratigraphy of the Natufian deposits. F. Valla, who is currently excavating the Hayonim Terrace, stressed the advantages of meticulous horizontal excavation in tracing hearths, burials, dumping zones, and the remains of houses. The skeletal material is being analyzed by F. Le Mort. A selected sample of flint artifacts is being studied by H. Plisson to determine their functions.

Work in the Lower Jordan Valley was represented by the current excavations at Salibiya I, carried out jointly by P. Crabtree, D. Campana, and A. Belfer-Cohen. At this site was found a small incised pebble, one of the rare Late Natufian art objects. Additional art objects were described by T. Noy from the excavations of Nahal Oren, a terrace site dug in the 1960s and the early 1970s and known mainly from preliminary reports.

Following the description of the Natufian sites from what is considered to be the homeland of this archaeological entity, the marginal regions were discussed. N. Goring-Morris described the Late Natufian sites from the Negev highlands and went on to report on the latest Natufian adaptation to increasing aridity, known as the Harifian [Scott 1977, Magaritz and Goodfriend 1987, Goring-Morris 1987]. It would appear that the disappearance of the Harifian from a region of about 25,000 km² was due to the failure of its subsistence strategy. Although one might hypothese that its bearers joined the successful Early Neolithic [Pre-Pottery Neolithic A] farming communities in the Jordan Valley or southern Jordan, it seems more probable that the onset of the wet Early Holocene conditions, which must have improved the success of early cultivators, did not entirely coincide with the disappearance of the Harifian, as has been indicated recently by C¹⁴ dates obtained from Pre-Pottery Neolithic A sites in the Jordan Valley [Bar-Yosef 1989].

The other marginal zone for the Natufian distribution was the Euphrates Valley. Together with A. Moore, who described the stratigraphic and architectural remains from Abu Hureyra, D. Olszewski presented some ideas concerning the taxonomy of the lithic industry derived from the deposits. The comparison with Tell Mureybet, which lies only 20 km away on the opposite bank of the river, is inevitable. Cauvin [1982] and Calley [1986] suggest that there is no good reason not to include the lithic assemblage from Mureybet IA in the Natufian. This does not necessarily mean that the same can be said for Abu Hureyra [Olszewski 1986]; it is not impossible that it was occupied by a different group with the same subsistence strategy as the preceding Epi-Paleolithic hunter-gatherers of the region. The stratigraphic sequence at Mureybet, which leads to the Early Neolithic and resembles Khamian and Sultanian sites in the southern Levant, indicates that there are real differences between the cultural sequences of these two mounds.

Technology. Several of the archaeological reports touched upon questions related to knapping methods, utilization of raw material, and typological variability. Two papers dealt specifically with the bone industry. D. Campana summarized his research on the bone industry from Hayonim Cave, while D. Stordeur discussed the large assemblage from Ain Mallaha [Campana 1989, Stordeur 1988]. Many of the Natufian bone tools were made by shaving, scraping, or incising with flint tools. Signs of utilization are evident on most pieces, and the piercing of soft materials seems to have been one of their most common tasks.

The results of intensive microwear studies were presented by R. Unger-Hamilton, who carried out systematical experiments with sickles both in Western Europe and in the Levant. Her suggestion [Unger-Hamilton 1989] that the Natufians were the first farmers met with some challenge; participants generally wanted more direct evidence, such as carbonized plant remains. It was suggested that the large number of striations associated with the sickle gloss on Natufian sickle blades could have been caused by disturbance of the earth other than cultivation, such as yearly burning to enhance the natural growth of such annuals as cereals. The increase in the number of striations that is seen on Pre-Pottery Neolithic A and especially on Pre-Pottery Neolithitic B sickle blades is perhaps explained as reflecting the establishment of farming communities. In this context P. Anderson-Gerfaud reported ongoing experiments in Berrias [a research center in the Ardèche directed by J. Cauvin] in replicating the techniques of early farmers in the northern Levant and Turkey.
Population. The fossil Natufian populations were described and discussed by B. Arensburg and P. Smith. In Hayonim Cave there is a clear bias in the skeletal remains toward males (Henry 1989). The percentage of children (0–12 years old) is 22–30%. Natufian life expectancy was around 32–35 years; the range of causes of death is still unknown. The population was healthy, and there are no clear indications of stress or of prolonged food shortages. According to Smith, a difference between Natufian and Neolithic populations in the Levant may be expressed in the width of the ramus of the jaw. The Natufians are more like hunter-gatherers than like farmers. The degree of dental attrition varies, however, with the sample; the Early Natufian sample from Kebara resembles hunter-gatherer samples while those from Ain Mallaha, Hayonim, and Nahal Oren resemble those from farming groups.

Subsistence. Various aspects of subsistence were described and discussed. It is very clear that the paucity of plant remains from Natufian sites does not reflect deficiencies in excavation techniques but is a real problem caused by the poor conditions of preservation at most of the sites excavated; flotation only slightly increases the size of the available samples. The few sites which do contain plant remains are Mureybet and Abu Hureyra on the Euphrates River, Wadi Hammeh 27 in northern Jordan, and Salibiya I in the Lower Jordan Valley. S. Colledge reported some finds from a series of Epi-Paleolithic sites from the Azraq Basin in Jordan (Garrard et al. 1987). She suggested that tubers were preferred to seeds in this region during the Natufian.

The faunal remains seem to indicate that the Natufians hunted the species common in their environment. Thus at Mureybet the main species represented are gazelle and equids, with low frequencies of wild ox, rabbit, wild sheep, and fox. Evidence of stress on the gazelle population in the form of decrease in average size and increase in the frequency of younger animals was reported from Hayonim Cave and Hayonim Terrace by C. Cope and from Hatula by S. Davis (1989). J. Pichon (1984) compared the avifaunas of Mureybet, Ain Mallaha, and Hayonim Cave and reported that the various assemblages reflect both the nearby environments and more intense exploitation of waterfowl than in earlier prehistoric periods.

A. Sillen reported on a 1984 study using the ratio of strontium to calcium as an indicator of herbivorous as opposed to carnivorous diets. He admitted that the results probably do not reflect the true picture but register differences between sites. Additional studies are under way.

Assemblages of microvertebrates from Hayonim Cave have been studied by Tchernov (1984). Recent chromosomal and paleontological research by Aufray and Tchernov (1989) indicates that during the Natufian wild mice [Mus spretoides] underwent a process of self-domestication and became what is currently identified as Mus musculus domesticus, the house mouse. The prevalence of this species in Natufian microfaunal assemblages indicates an increase in human sedentism—a major change from the mode of life of the Late Paleolithic hunter-gatherers known from Levantine cave sites. An additional self-domesticated species is the house sparrow [Passer domesticus]. Thus Natufian sedentism is reflected by the overexploitation of gazelles and the presence of commensal species.

Art objects and marine shells. Natufian art objects are rare, and most of them have already been reported [e.g., Cauvin 1972]. Belfer-Cohen described the as-yet-unpublished engraved limestone slabs from Hayonim Cave, and Noy added a description of the small-animal skulls uncovered in Nahal Oren Terrace at Mount Carmel.

Marine shells, until not long ago a neglected subject, have received the recent attention of three researchers. D. S. Reese, reporting the finds from Jordanian sites, stressed the fact that although the shells often originate from the nearest coast, either the Mediterranean or the Red Sea, the rare finds from elsewhere are very interesting. For example, the presence at Ain Mallaha of Aspatharia rubens, a large freshwater mussel from the Nile, is an interesting indication of the distance that shells travelled through exchange networks [Mienis 1987]. Most marine shells at the Natufian sites originated in the Mediterranean, and the assemblages are by and large dominated by Dentalium shells [Bar-Yosef 1985]. Many of these were used for body decorations, but large quantities are always found dispersed in the deposits wherever domestic activities were performed.

C. Perles and J. L. Phillips, serving as discussants, concentrated on the need for [1] a redefinition of the Natufian on the basis of the wealth of data now available and the large number of sites, which represent considerable lithic variability, [2] a search for evidence of sedentary communities in biological and archaeological, qualitative and quantitative sources, and [3] the development of models that take into account the various reciprocal relationships among neighboring communities in terms of geographic orientation to the Euphrates River [i.e., northward], the Syro-Arabian desert [eastward], and the Sinai [southward]. A combined and probably more complex socioeconomic model ought to be able to reconcile short-term residential mobility with the logistical mobility of task groups.

References Cited


Earlyest Gold Artifacts in the Levant

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Archaeological excavation in Nahal Kana Cave, discovered in the early 1980s and investigated in 1986–88 by a team from Tel Aviv University, has revealed a Chalcolithic [4th-millennium-B.C.] cemetery of a scale and complexity hitherto unknown in the period. Eight gold artifacts discovered in one of the graves (fig. 1) are the earliest yet to be found in the Levant. Their discovery

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