

Human Paleoecology in the Levantine Corridor

Edited by Naama Goren-Inbar and John D. Speth (2004).

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This volume represents the proceedings of a 2002 conference at the Institute for Advanced Studies, Hebrew University of Jerusalem. Unlike most conferences, the presentations were part of an occasional series that extended over six months. The goal of the Human Paleoecology in the Levantine Corridor project was to examine the palaeoecology, palaeoenvironments, and the Pleistocene human history in this eastern Mediterranean coastal region. The volume is dedicated to Eitan Tchernov, the palaeontologist whose research has contributed the most to our understanding of the past fauna and environments of this part of the Near East and the role they played in various periods of human evolution. The papers represent a mixture of topics and concerns; some are data based, while others take a more theoretical perspective. Many combine the two approaches. The authors represent a diverse range of specialists, some of whose relationship to the theme seems initially to be rather peripheral. Many are based at the Hebrew University of Jerusalem, and were invited to participate in this inter-disciplinary project, even though their real expertise lies outside of its major focus. Other participants were from outside Israel, but have closer ties to the main themes of past environments and humans. The choice of authors thus makes the resulting volume somewhat disjointed.

The main focus of this book is the role of the Levant in Pleistocene and early Holocene human and animal migrations. This is a critical issue, especially in light of the Out-of-Africa I and II models of dispersals of *Homo erectus* and *Homo sapiens*, respectively. It contains fourteen papers as well as a brief introductory chapter by the editors; I will discuss each in the order in which they appear.

The first chapter after the introduction is by Dov Por. Titled the Levantine waterway, it provides information about present and past springs, rivers and lakes. These permanent sources of fresh water could have permitted the dispersals of animals and humans at various times during the Pleistocene and Holocene. Craig Feibel, a geologist who is well known for his palaeoanthropological work in the Lake Turkana basin of Kenya, shifts to the northernmost extremes of the African rift valley in order to describe the geology and palaeoenvironments of similar lake margin areas. In the Levant, these are associated with important Lower Palaeolithic archaeological sites such as 'Ubeidiya and Geshert Benot Ya'acov.

Bienvenido Martinez-Navarro describes the dispersals and migrations of mammals through the Levant during the Late Pliocene and Pleistocene. Like Tchernov, he emphasizes the role of this region as a bottleneck for both

animals and humans. He shows that over the Quaternary, there were fluctuations between Holarctic and Ethiopian faunal assemblages, in other words, between Eurasian and African mammal groups. Animal and human distribution also could have been affected by major palaeoenvironmental changes, such as the waxing and waning of Northern Hemisphere ice sheets. Martinez-Navarro additionally discusses faunal changes in the Levant compared to coeval events in Eurasia and Africa. The palaeontologist Adrian Lister reviews similar questions in relation to the evolutionary history of Eurasian elephants between 800,000 and 600,000 years ago.

Gideon Hartman discusses turtle evolution. He shows that a distinct turtle subspecies, *Auremys caspica rivulata*, is present at Geshert Benot Ya'acov 780,000 years ago. Because this same taxon is present here today, he concludes that there may be long term environmental stability and population continuity in turtles from the Middle Pleistocene onwards. How this corresponds to the presumed regular changes in large mammal fauna remains unclear. But it shows that the well-documented tectonic and volcanic events associated with the Jordan Rift Valley may not have changed some freshwater ecosystems in any substantial way.

Sabine Gaudinski analyzes seventeen faunal assemblages from the Lower Palaeolithic archaeological and fossil site of 'Ubeidiya. This site was first excavated from 1961 to 1963, and then again from 1968 to 1974. Gaudinski examines the role of hominins in the accumulation of these faunal remains by focusing attention on the assemblage from II-24. She sees evidence in the faunal remains for both carnivore and hominin activity. The former left tooth marks on bones, and different skeletal element distributions from those that should be naturally present or present in hominin sites. The presence of humans can be seen in cut marks on bone and in the presence of stone tools. But, somewhat surprising, there is no evidence of marrow processing. She suggests that if early hominins were not interested in marrow, it might mean that animal fat was obtained from other sources, most likely from meat acquired through true hunting behavior.

Emanuel Marx presents a theoretical paper on Acheulean social organization. Making use of ethnographic data on modern and recent hunter-gatherers, Marx sees Acheulean people as essentially human in their behavior. This is in contrast to recent ideas about modern human origins which suggest that all humans prior to 40,000 years ago are people without true culture regardless of which species is involved. A related topic is discussed by Daniel Dor and

Eva Jablonka, the origins of language. They stress the inter-relationships between genetic and cultural innovations, and argue that natural selection promoted the ability to learn to respond to stimuli. This pattern of gene-cultural co-evolution led to the transformation of a learned response to a more genetically fixed or instinctive response. It also operates at the group level, as language allows social control. This paper takes an almost Lamarckian perspective on the role of language in human evolution, and also suggests that it had a key role over the evolution of the genus *Homo*.

Ahuva Almogi-Labin et al. present a review of environmental conditions for the last 400,000 years. Factors that control climate in both the Levant and Northeast Africa are compared, showing that the Mediterranean Sea has a major role in the Levant, while monsoons are the primary agents in African climate. They also discuss the record available from deep sea cores in the eastern Mediterranean and Red Sea. A proxy record is available, not only from foraminifera and their oxygen isotopes, but also from sapropels or dark, organic rich layers deposited in the Mediterranean due to heavy flow of the Nile River during wetter periods. A terrestrial record is available from speleothems in Levantine caves, especially those that have yielded the important Upper Pleistocene fossil human record. Almogi-Labin et al. also review Milankovitch forcing of glacials and interglacial conditions, and the shift to the 100,000 years orbital eccentricity cycle sometime after 1.2 million years ago. By 600,000 years ago, the orbital eccentricity cycle becomes the most important cause of ice age periodicity. This shift is the basis for Rick Potts' (1998) variability selection model of later human biocultural evolution. The authors conclude by reviewing dates for wetter and drier periods, as well as the role of changing environment in human evolution and dispersals.

Anne-Marie Tillier and her co-authors discuss dental pathologies and trauma in people who lived at Skhul and Qafzeh during the Middle Palaeolithic. One of the significant discoveries of the last twenty years is that these people are anatomically modern or near-modern. While one of the original workers at Qafzeh, Bernard Vandermeersch (1981), classified them as proto-Cro-Magnons in 1981, it was almost another decade before it was revealed that they lived in the Levant over 100,000 years ago, well before Neanderthals appeared in the same area. Despite their antiquity, there are numerous skeletons in buried context. The authors conclude that few individuals at Qafzeh survived to reproductive adulthood. In contrast, at Skhul there are only three juveniles represented. Despite the demographic evidence, or perhaps because of it, there is little evidence of dental problems or skeletal trauma. Whatever caused their demise did not leave an obvious skeletal marker.

John Speth, an American zooarchaeologist and co-editor of this volume, addresses the key question of Neanderthal hunting behavior. He examines the Middle Palaeolithic faunal assemblages at Kebara, dated between 60,000 and 40,000 years ago, which are dominated by mountain

gazelle and Persian fallow deer. From estimates of distance of transport of faunal packages to the cave, as well as seasonality of prey acquisition (late winter or spring), he argues that Neanderthals were active hunters rather than the occasional scavengers that Lewis Binford and others have promoted. Speth makes an intriguing argument about the role of hunting pressure on various mammal species. The numbers of large animals decrease over time in the Middle Palaeolithic, and this trend continues into the Early Upper Palaeolithic, where this pattern must be associated with anatomically modern *Homo sapiens* populations. He proposes a model of intensification of resource use over time which is shared by both the Kebara Neanderthals and later anatomically modern people.

Shoshana Ashkenazi describes the modern draining of Levantine lakes, and its impact on birds and other wetland animals, while Tal Simmons focuses on bird exploitation in past archaeological sites in the Jordan Valley. Simmons points out that Natufian hunter-gatherers at the end of the Pleistocene focused on aquatic species rather than terrestrial ones. There is no sign of an increasing bird diversity that would hint at Kent Flannery's broad spectrum dietary adaptation that promoted the first domestication of both animals and plants. But by the time of the Pre-Pottery Neolithic A, when there is clear evidence of such domestication, arid and terrestrial bird species increase in frequency. These may have been game birds taken in farmer's fields.

François Valla discusses the Natufian at Eynan in the Hula area of northern Israel. He measures territoriality and resource acquisition by examining the frequency of exotic stone artifacts and changes in faunal remains.

So what does this book offer researchers interested in general palaeoanthropological issues? It highlights a region that, while geographically small, has had extensive attention from researchers interested in human evolution, one that has played a significant role in the development of models of the origins of anatomically modern humans, as well as those dealing with earlier hominin migrations. This volume offers a welcome review of the environmental context of human biological and cultural evolution in the Eastern Mediterranean, and presents an important case study that could be a model for research elsewhere. The papers also raise other possibilities and more questions to be addressed in the future. Was the Levant an isolated cul-de-sac at any point in the human past? It was clearly connected to the wider world of Eurasia and Africa at various times. During some periods, it is more accurately discussed as an extension of one or the other region. The Levant offers what to us today would be an obvious route in and out of Africa, but so far has not yielded strong proof for substantial human migrations at any period during the Pleistocene. Generally, while this book is a mix of papers that do not necessarily fit together into a complete package, it is an important contribution to the study of this region and to the general field of human biological and cultural evolution.

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