

Lecture 17: *Homo ergaster, erectus* and slowly emerging modern human behaviors - additional notes

Finds at the Gesher Benot Ya'aqov site

One of the emerging central sites in our understanding of the Acheulian period is the site of Gesher Benot Ya'aqov in Israel. Two important papers on materials from this site have appeared very recently. These deal with the presence of early fire and evidence for diet and food processing.

The Gesher Benot Ya'aqov site has also appeared recently in a somewhat more unfortunate light as the news item below ("Mudslinging") relates. Part of the Gesher Benot Ya'aqov site has been intentionally destroyed by Israeli development authorities. One would hope in this day and age, and especially in a country like Israel which is usually very conscious of its archaeological resources, that this kind of thing shouldn't and wouldn't happen, BUT it is happening to irreplaceable archaeological resources regularly, all around the world.

Goren-Inbar, N., N. Alperson, M E. Kislev, O. Simchoni, Y. Melamed, A. Ben-Nun, and E. Werker
2004 Evidence of Hominin Control of Fire at Gesher Benot Ya'aqov, Israel.
Science 304: 725-727.

Abstract:

The presence of burned seeds, wood, and flint at the Acheulian site of Gesher Benot Ya'aqov in Israel is suggestive of the control of fire by humans nearly 790,000 years ago. The distribution of the site's small burned flint fragments suggests that burning occurred in specific spots, possibly indicating hearth locations. Wood of six taxa was burned at the site, at least three of which are edible-olive, wild barley, and wild grape.

Goren-Inbar, N., G. Sharon., Y. Melamed, and M. Kislev
2003 Nuts, nut cracking, and pitted stones at Gesher Benot Ya'aqov, Israel
Proceedings of the National Academy of Sciences, USA 99(4):2455-2460.

Abstract:

The Acheulian site of Gesher Benot Ya'aqov (Israel) has revealed a unique association of edible nuts with pitted hammers and anvils. Located in the Dead Sea rift, on the boundary between the Arabian and African plates, the site dates to the Early-Middle Pleistocene, oxygen isotope stage 19. In a series of strata, seven species of nuts, most of which can be cracked open only by a hard hammer, were uncovered. Five of the species are extant terrestrial nuts, and two are aquatic nuts now extinct in the Levant. In addition, the site yielded an assemblage of pitted hammers and anvils similar in pit morphology to those used by chimpanzees and contemporary hunter-gatherers. This is the first time, to our knowledge, that a site has offered both paleobotanical and lithic evidence of plant foods eaten by early hominins and technologies used for processing these foods. The evidence also sheds light on the structure of the community: ethnographic analogies suggest that mixedgender groups may have been active on the shores of paleo-Lake Hula.

Dredging at Israeli Site Prompts Mudslinging

Michael Balter
Science 287:205-206, (14 January 2000)

A prehistoric site critical for understanding early human evolution appears to have suffered permanent damage after a local Israeli drainage authority allegedly bulldozed a big chunk of it last month. Prehistorians claim that the earth moving, undertaken to prevent flooding of nearby farms during rainstorms, has destroyed their ability to make sense of the complex layers at Gesher Benot Ya'aqov, on the banks of the river Jordan in northern Israel. "This wanton destruction is a travesty that has caused irreparable damage to a site of worldwide significance," says archaeologist Steven Rosen of Ben-Gurion University in Beersheva, Israel. But according to the drainage official who oversaw the project, scientists are exaggerating the harm done to the site.

While the current state of Gesher is contested, the site's importance is not. Gesher Benot Ya'aqov was first discovered in the 1930's and has been excavated several times since. Along with the nearby prehistoric site of Ubeidiya, also in the Jordan valley, Gesher is a key location for understanding how and when *Homo erectus* - an ancestor of modern humans - moved out of Africa, probably through the so-called Levantine corridor that includes Israel. "Israel and the Jordan valley are one of the great crossroads of human prehistory," says Clive Gamble, an archaeologist at the University of Southampton in the United Kingdom. "A site like Gesher provides crucial information on the skills and capabilities of the earliest hominids as they came out of ... Africa". During recent excavations at Gesher, stone tools such as hand axes and cleavers found in layers dated to 780,000 years ago were very similar to those at African sites of the same age. "The destruction of a site like Gesher is the destruction of a vital piece of our global heritage," Gamble says.

However, the Kinneret Drainage Authority has argued for years that it needed to dredge a stretch of the Jordan near the Gesher site to prevent regular flooding of the nearby Hula valley and its farmland. "Our main concern was to protect human life," says Aitan Sat, the drainage authority's managing director. While not disputing the dredging project's necessity in principle, officials at the Israel Antiquities Authority (IAA) had insisted the any operation must leave Gesher unharmed. Thus they were shocked late last month to find that the drainage authority had proceeded, without their knowledge, with a week of dredging in mid-December. The IAA applied for a court injunction to stop any further work, which was granted and has now been made permanent.

But it may be too late to undo the damage. According to prehistorian Na'ama Goren-Inbar of Hebrew University in Jerusalem, who has led recent excavations at Gesher, the bulldozers obliterated "several hundred meters" of the 2.5 kilometer-long site, including portions of the riverbank immediately north and south of her own 50-meter excavation. Goren-Inbar, who has visited Gesher on foot and flown over it by aircraft since the dredging took place, says that the workers left the dirt and sand in heaps by the river. "Strata which contain fossil remains, manmade stone artifacts, and a lot of organic material were all destroyed," she claims. "We will never be able to scientifically study this material because it is now out of context." Sat disputes that characterization. "They are lying about the amount of damage," he says, insisting that his crew dredged only in the river and not on the banks. Sat says that despite attempts at negotiations between his authority and the IAA, the IAA would not compromise on dredging in the Gesher area. "They were preventing me from doing my job."

Recent excavations at Gesher had only begun to tap into a wealth of exceptionally well preserved plant and animal remains, which have allowed scientists to begin reconstructing the prehistoric climatic conditions and ecology, says Goren-Inbar. Thus experts in human evolution will be lamenting the destruction for a long time to come. "Sites like Gesher are found very rarely," says Gamble. "This is not a record that should be discarded into a drainage ditch."