

TPC Area

Moussab Albesso analyzed the TPC Area faunal material during the 2017 season (sponsored by the Polish Ministry of Science and Higher Education, contract Nr 3085/Kultura/2014/2), focusing on bones unearthed in the 2012 season. The main objective of this work was to analyze the largest number of faunal remains from the most important Neolithic strata, as it was the final excavation season for the project.

During the 2017 season, 20,034 bones were analyzed, from which 3,481 bone fragments were determined (17.4%) and the rest—16,553 fragments—could not be determined (82.6%). Hence, altogether a total number of 28,662 fragments from all excavation seasons from the TPC Area (2012-2017) was studied. Out of this number, 5,676 bones (19.8%) have been determined while the remaining 22,977 bones (80.2%) were undetermined (Table 4). The large percentage of undetermined remains indicates a poor preservation of the studied assemblage with more than half of the fragments being less than 2cm in size.

TPC Area	Previous seasons		2017		Total	
	NISP	%	NISP	%	NISP	%
Undetermined numbers of species	6424	74.5	16553	82.6	22977	80.2
Determined number of species	2195	25.5	3481	17.4	5676	19.8
NISP mammal TOTAL	8628		20034		28662	

Table 4. TPC faunal material recorded to date.

TPC Area	NISP	% NISP
<i>Ovis/Capra</i>	2196	63.1
<i>Ovis</i>	426	12.2
<i>Capra</i>	149	4.3
<i>Bos sp.</i>	574	16.5
<i>Equus sp.</i>	23	0.7
<i>Sus sp.</i>	21	0.6
<i>Cervidés sp.</i>	20	0.6
<i>Lepus europaeus</i>	7	0.2
<i>Canis sp.</i>	36	1.0
<i>Felis catus</i>	5	0.1
<i>Vulpes vulpes</i>	18	0.5
<i>Meles meles</i>	3	0.1
<i>Martes foina</i>	3	0.1
Total	3481	

Table 5. Species composition for the TPC Area (recorded in 2017).

The material studied in the 2017 season originates from 119 units representing 32 spaces. The archaeozoological analysis completed this year revealed a diverse faunal spectrum. The remains of small ruminants, sheep and goats, are the most abundant with 2,771 fragments that is an equivalent of 79.6% of the total number of identified fragments (Table 5). Among them, 426 fragments were identified as sheep (12.2% of the identified NISP) and 149 fragments as goats, giving a ratio of 3:1 sheep:goat. All the skeletal parts are characterized by a heavy fragmentation of the axial skeleton elements and a good preservation of the leg extremities (metapodials and phalanges) as well as teeth. Traces indicative of consumption were found on several caprine remains (cuts or burning).

Faunal analysis of the TPC materials carried out during this season corroborates the existing observations on the dominance of the caprine meat oriented economy being supplemented by cattle.

The bovine remains represent the second most important species with 574 fragments (16.5% of the identified NISP). Long bone extremities are better-preserved than skull fragments, the latter were heavily fragmented. The best preserved fragments are the hoof extremities, with complete bones present (talus, metapodials and phalanges), as well as the

scapula. Traces of consumption were identified on different bones, in particular breakages caused by marrow extraction.

Equids (0.7% of identified NISP) and pigs (0.6% of identified NISP) are rare. The domesticated or wild status of these two groups cannot be determined due to the degree of bone fragmentation. Other mammals were also identified; remains of 20 cervids (0.6% of identified NISP) were found from which five of them were red deer (*Cervus elaphus*). The presence of carnivores during the Neolithic period is attested by the scavenging traces found on bone fragments as well as some skeletal remains (1.9% of identified NISP), mandibles and paw extremities. Hare was represented by seven fragments, these included a distal humerus with cut marks indicative of consumption.

Although human activities were not the principal cause of the poor conservation of these remains, they have definitely contributed to their fragmentation. It is manifested by traces of cutting tools and burns observed on the bone surface. Various types of cuts reveal all major of carcass processing (slaughter, dismemberment, emaciation and cutting up). Two types of burning are discernible in the studied remains: (i) partial burning located at the end of bones and (ii) complete burning. The color of partial burning varies from brown to black and corresponds to a direct contact of the bone with fire while the rest of the bone was covered by meat. As in the case of complete burning, the bone is fully calcined with a color varying from brown, grayish white to black. This type of burning corresponds to the practice of an intentional or accidental throwing the bone into the fire. The analysis also revealed traces made by carnivores (e.g. human or dog) or rodents, as well as weathering traces due to outdoor exposure prior to burial (dissolving, crumbling). However, a small proportion of material appear to have been quickly deposited after consumption.

Bone tool analysis

Virginia Garcia-Díaz analyzed 1,021 bone implements from the GDN, North, South, and TPC Areas—primarily from priority units. The methodology used for the analysis was based on the one used for other authors for bone implements (Maigrot 2001, 2003; van Gijn 2005). Bones were analyzed with the help of a magnifying glass, a Dinolite and a stereomicroscope (5-50x) and a metallographic microscope (50-200x). Finally, casts were taken using silicon used by professional dentists.

Recorded bone tool types include points and awls, needles, knucklebones, spatulas, worked scapulae, knives, chisels, harpoons and hooks, rings and beads, antler implements, and figurines. Most of the knucklebones studied in the sample came from the GDN, TP, and TPC Areas (none derived from the South Area). Awls and points were present in the samples of all Areas, though were less common in the GDN Area sample.

In general, bone implements are well-preserved, although several macro and micro alterations were documented, as: burning (see Table 1), fractures, and several types of patina. However, antler tools show very poor preservation. Surfaces occasionally showed traces of burning, several types of patinas, and micro and macro fractures that in some cases even impeded the technological analysis of the implement. In most of the cases, use-wear analysis could not be performed on these artifacts, and little functional information was obtained from the analysis.

Preliminary technological and typological data indicate that, while knucklebones were used without technological modification, the rest of the implements were produced using different techniques. For example, points and needles were mainly produced after splitting long bones using the metapodia technique. Then implements were shaped by cutting and polishing bone surfaces.