

## Bird scraps from a Greek table: The case of Klisoura Cave

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Abstract. The paper analyses bird remains from Klisoura Cave, Eastern Peloponnese, Greece. The 449 remains belong to 10 taxa, of which two species Rock Partridge *Alectoris graeca* and Great Bustard *Otis tarda* clearly predominate. Traces of burning and the archaeological setting indicate that the bones were deposited by humans.

Key words: bird remains, Klisoura Cave, Greece, Aurignacian, Mesolithic

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Klisoura Cave has yielded interesting material not only from the archaeological point of view but also from the palaeontological perspective (KOU MOUZELIS et al. 2001). Although avian remains from that site were included in the first report, much more bones have been analysed since. Moreover, the data on fossil vertebrates from Greece are relatively scarce. Therefore, it is reasonable to present once more, this time in its entirety, the bird fauna from that site.

Klisoura Cave 1 is situated in Klisoura Gorge, Eastern Peloponnese, Greece (Fig. 1). The 500 m wide and about 3 km long gorge cuts deep into Triassic limestones and has numerous caves and rock shelters.

The excavations carried out during the last ten years yielded numerous artefacts ranging from the Middle Palaeolithic, Early Upper Palaeolithic, through Aurignacian and Epigravettian, to Mesolithic. Vertebrate remains include bones of mammals and birds. The remains of mammals (almost 2000 fragments) belong to 18 species, dominated by the Fallow Deer *Dama dama* (56%) and the Hare *Lepus europaeus* (32%). The majority of the animal remains were discovered in Aurignacian layers (KOU MOUZELIS et al. 2001). The remains of birds analysed in this study include 449 bones and their fragments.

The remains of birds, making up 20 percent of all vertebrate remains, belong to 10 taxa (Table I). The material was heavily fragmented: more than 97 percent of the bones were represented by their fragments. Two species – Rock Partridge *Alectoris graeca* and Great Bustard *Otis tarda* – build up



Fig. 1. Localization of Klisoura Cave.

92 percent of all the avian remains. With the exception of one bone of a thrush (*Turdus* sp.), the other remains belong to medium-sized birds (goose, duck, owl and corvids).

All the taxa found in Klisoura Cave have also been reported from other Greek sites of similar age (BACHMAYER et al. 1989; MOURER-CHAUVIRÉ 1981; REISCH 1976; TYRBERG 1998; WESSIE 1988). Also, all the taxa are either represented in the present day Greek avifauna or withdrew from Greece during the 20<sup>th</sup> century (CRAMP 1985, 1988; CRAMP & SIMMONS 1977, 1980; CRAMP & PERRINS 1994; LAMBERT 1957).

The composition of species indicates a mosaic habitat including open areas (Great Bustard) with rocky ground and low scrub (Rock Partridge), and adjoining sparse woods or at least clumps of trees and rocks (Jackdaw, Crow). A water body (duck) and a meadow (goose) must have also been present in the surroundings (CRAMP & SIMMONS 1977, 1980; CRAMP & PERRINS 1994).

The archaeological background – including hearths, numerous stone artefacts and a few tools made of mammalian bones – indicates that humans occupied the cave during the accumulation of the bone remains (KOUMOUZELIS et al. 2001). Traces of burning present on 25% of mammalian remains and on some bird bones, as well as possible signs of marrow extraction from limbs of mammals suggest that the animals were hunted (KOUMOUZELIS et al. 2001). People inhabiting the cave must have hunted selectively – partridges and bustards, being large, relatively poorly-flying birds, were preferred prey. Other, non ground-dwelling species were trapped only sporadically, and remains of such birds as *Columba livia* or *Corvus monedula* may have reached the sediments accidentally because the species could live on the rocks at the entrance to the cave. Finally, we cannot exclude the possibility that some remains – especially those of smaller species – belonged to birds that had been preyed upon by an owl.

Table I

Number of Identified Specimens and Minimal Number of Individuals (NISP/MNI) of birds from Late Quaternary layers of Klisoura Cave. Remains found in hearths are marked with asterisks (\*), followed by the number of heart (H)

Species	Meso-lithic	Mesolithic or Aurignacian			Aurignacian									Total	
	Layer														
	6	6/III or 6/IIIb	6/IIIc	6/7	6a	III	III'	IIIb/c	IIIc	IIIe	IIIe'	IIIg	IV		
<i>Anser anser</i> (LINNAEUS, 1758)					1/1										<b>1/1</b>
<i>Anas querquedula</i> LINNAEUS, 1758/ <i>Anas crecca</i> LINNAEUS, 1758											1/1* H16				<b>1/1</b>
<i>Alectoris graeca</i> (MEISNER, 1804)	8/3	4/2	5/2	40/8	173/25	1/1	10/2	2/1* H11a	2/1	4/1	1/1* H16	1/1* H14a	2/1	<b>253/49</b>	
<i>Alectoris cf. graeca</i>					3/1				1/-				1/-* H31a	<b>5/1</b>	
cf. <i>Alectoris</i> sp.	1/-				18/-		1/-		2/-	1/-				<b>23/-</b>	
<i>Otis tarda</i> LINNAEUS, 1758	9/1	3/1	4/1	21/2	87/5					1/1* H13	1/1* H16			<b>126/12</b>	
cf. <i>Otis</i>			1/-	3/-										<b>4/-</b>	
<i>Asio</i> sp.							1/1							<b>1/1</b>	
<i>Columba livia</i> GMELIN, 1789	1/1			1/1										<b>2/2</b>	
<i>Turdus</i> sp.					1/1									<b>1/1</b>	
cf. <i>Garrulus glandarius</i> (LINNAEUS, 1758)			1/1											<b>1/1</b>	
<i>Corvus monedula</i> LINNAEUS, 1758							1/1							<b>1/1</b>	
<i>Corvus corone</i> LINNAEUS, 1758					2/1									<b>2/1</b>	
<i>Corvus cf. corone</i>				2/1										<b>2/1</b>	
Aves indet.		1/-	13/-	2/-	9/-			1/-* H11a						<b>26/-</b>	
<b>Total</b>	<b>19/5</b>	<b>8/3</b>	<b>24/4</b>	<b>69/12</b>	<b>294/34</b>	<b>1/1</b>	<b>13/4</b>	<b>3/1</b>	<b>5/1</b>	<b>6/2</b>	<b>3/3</b>	<b>1/1</b>	<b>3/1</b>	<b>449/72</b>	

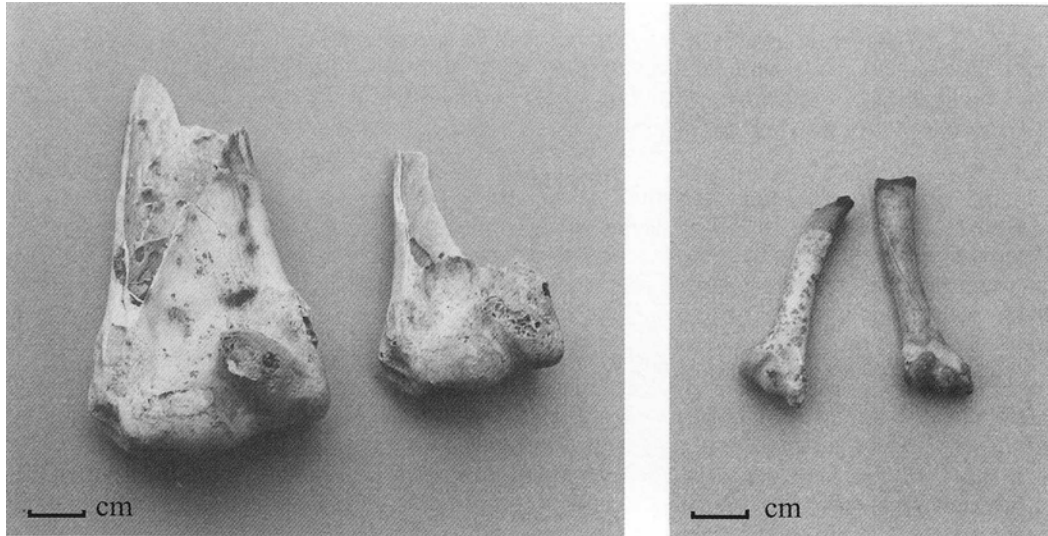


Fig. 2. Traces of burning on humera of *Otis tarda* (left) and *Alectoris graeca* (right).

Some bones of the Rock Partridges and Great Bustards as well as the single fragments of an owl and the Jackdaw showed distinct traces of burning (Fig. 2). No cut marks were found on the material.

All major skeletal elements of Great Bustards and Rock Partridges were found in the material (Fig. 3). The most numerous skeletal elements of the Great Bustards were vertebra, humeri, ulnas and coracoids, whereas in Rock Partridges it was tibiotarsi, humeri, and coracoids. The three most numerous bones of the Rock Partridge showed over representation of one of their parts: distal tibiotarsi, distal humeri and scapular coracoids outnumbered their counterparts constituting 91, 76 and 77 %, respectively.

Only some bones recovered from food remains of humans bear cut marks on their surfaces. Good examples are distal tibiotarsi of Rock Partridges from one of the Late Pleistocene layers of Kephalaria Cave in Greece (REISCH 1976), and palaeolithic bones of Bustards from Grotta Romanelli (CASSOLI & TAGLIACCOZZO 1997). It is difficult to say why certain assemblages yield numerous cut marks and the others do not. A probable explanation is that different methods of butchering and/or different methods of hunting were used. For example, REISCH (1976) believes that the Rock Partridges from an Upper Palaeolithic layer D2 of Kephalaria Cave (numerous cut marks on distal tibiotarsi) were hunted for their skins and feathers. The material from Klisoura Cave, bearing no cut marks, resembles other layers of Kephalaria Cave, where Rock Partridges predominated over other species but showed no cut marks.

The differences between the Great Bustard and the Rock Partridge in the share of particular skeletal elements may be attributed to human influence although they may also be due to physical properties of particular bones (Bustard is much larger than Partridge). At this stage it would be difficult to solve the problem, especially since the remains of Great Bustards are far less numerous than those of Rock Partridges.

The same three skeletal elements (humeri, coracoids and tibiotarsi) outnumbered other bones in Kephalaria Cave (REISCH 1976). This suggests a certain regularity in the preservation of Rock Partridge remains left by the man. Moreover, in both caves (Kephalaria and Klisoura) distal tibiotarsi greatly predominated their proximal parts. Unfortunately in the literature there are no detailed data on the preservation of other bones which prevents further comparisons.

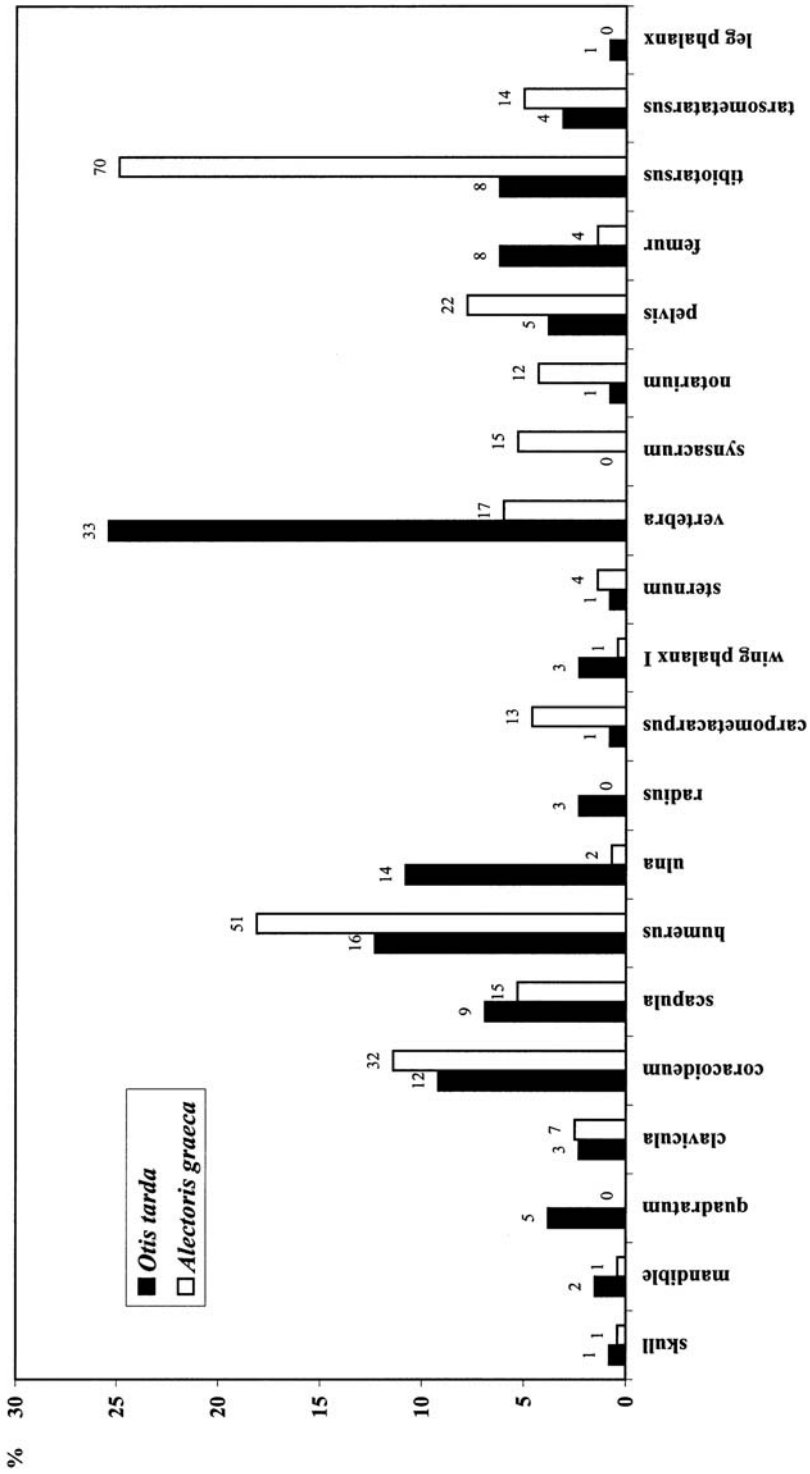


Fig. 3. Share of skeletal elements. Figures indicate total number of bones (fragments and complete elements). The category *Otis tarda* includes *Otis tarda* and cf. *Otis*, whereas *Alectoris graeca* includes also *Alectoris cf. graeca* and cf. *Alectoris* sp.

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