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Bird remains from the Mousterian levels of Baume-Vallée (Haute-Loire, France): preliminary results

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Running title: Bird remains from the Mousterian levels of Baume-Vallée, France

Abstract / Zusammenfassung

This paper presents the preliminary results of the study of the bird remains from the Baume-Vallée rock shelter in the French Central Massif. More than 250 bird remains were recovered from five archaeo-stratigraphic phases which produced a Mousterian stone industry of the Charentian La Ferrassie type. Obviously site occupation was seasonal and linked to hunting activities. The bird assemblage is composed of species which might have died naturally at the site, for instance the Passeriformes and the birds of prey, and of species which may have been introduced to the site either by humans and/or animals (carnivores and/or raptors), e.g., the Galliformes and the Anseriformes. In this contribution the palaeoecological data and the results of the taphonomic analysis are discussed.

In diesem Beitrag werden die Ergebnisse der Analyse der Avifauna vom Baume-Vallée, einem Felsdach im französischen Zentralmassiv vorgestellt. Es wurden über 250 Vogelreste aus fünf archäo-stratigraphischen Phasen geborgen, die Moustérien Steinartefakte vom Typ Charentiens La Ferrassie enthielten. Offensichtlich war die Bewohnung saisonal und gebunden an Jagdaktivitäten. Die Ansammlung von Vogelresten besteht zum einen aus Arten die vor Ort eines natürlichen Todes gestorben sein könnten (Passeriformes und Greifvögel) und zum anderen aus Arten die von Menschen bzw. Tieren (Fleischfresser oder Greifvögel) dorthin gebracht wurden, wie etwa die Galliformes oder Anseriformes. In diesem Beitrag werden die paläoökologischen Daten und die Ergebnisse der taphonomischen Analyse diskutiert.

Keywords France, Mousterian, Seasonal occupation, Palaeoecology, Taphonomy
Frankreich, Moustérien, jahreszeitliche Bewohnung, Paläoökologie, Taphonomie

Introduction

The rock-shelter site of Baume-Vallée (Abri Laborde) is located in the Central Massif (Solignac-sur-Loire, Haute-Loire, Province of Velay) at 840 m asl (Fig. 1). The site was discovered in 1963-64 and excavated by A. Laborde until 1973 and by J.-P. Raynal from 1974 until 1996 (Bayle des Hermens & Laborde 1965; Raynal 1975; Raynal et al. 2005). It contains stratified deposits with a thickness of 7 m in a total area of 37 m². The TL-datings of burnt flint have produced an average age of 78,500 ± 7500 (OXTL 248e) (Raynal & Huxtable 1989), while the ESR dating of the enamel of *Equus*-teeth by E.J. Rhodes produced an average age of 80,100 ± 10,500 (Recent Uptake).

From five archaeo-stratigraphic phases yielding a Mousterian industry of the Charentian La Ferrassie-type (Raynal et al., 2005) and which are considered to represent seasonal occupations linked to hunting activities, numerous faunal remains have been recovered. Unfortunately, the bulk of these osteological remains is very fragmented and badly preserved due to frost processes (solifluction flows) causing splitting, strong abrasion and alteration of the bone surface.

The study of the mammalian remains (Raynal & Guadelli 1990) focused on the teeth. The dominant species is the wild horse (*Equus caballus germanicus* Nehring 1884), followed by aurochs, ibex, deer, reindeer and more rarely, by *Equus hydruntinus*. The archaeozoological and taphonomical analysis (Fiore et al., in press) of more than 3800 mammalian specimens shows the presence of different kinds of anthropogenic traces resulting from the use of stone tools, such as cut marks and traces of impact and bone flakes resulting from percussion.

Material and Methods

The osteological sample of avifauna is composed of more than 250 remains collected during the 1974-1996 excavation campaigns. Their study is still in progress and, for the moment, only the anatomical identifications have been completed, while the taxonomic status of some specimens still needs to be examined more closely, due to the strong abrasion of the bone surface, which makes it difficult to recognize the anatomical characteristics distinctive for the individual species, especially regarding the Passeriformes.

The bird remains were identified with the aid of the reference collection of the Istituto Italiano di Paleontologia Umana, Roma, Italy.

Results

The majority of the remains is attributable to the order of the Passeriformes, of which various species of Corvidae and a number of smaller songbirds are present. Remains of Galliformes (Tetraonidae and Phasianidae) are also numerous, while those of Anseriformes (ducks) and of predatory birds (Falconiformes and Strigiformes) are much rarer. The complete absence of pigeons (Columbiformes) is also noteworthy (Table 1; Fig. 2).

Various ducks of the genus *Anas* are present (wigeon, mallard, garganey) and a single bone (carpometacarpus) of a ferruginous duck (*Aythya nyroca*) has been identified. Diurnal birds

of prey are represented probably by the marsh harrier (*Circus* cf. *aeruginosus*) and the buzzard (cf. *Buteo buteo*), while a few fragments are referable to *Falco* sp. The probable presence of a tarsometatarsus of a marsh harrier (Fig. 3) is of interest because of the rarity of this species in the Pleistocene fossil record from France (Mourer-Chauviré 1975; Tyrberg 1998, pers. comm. 2004). Among the remains of Galliformes we noted the relatively high frequency of black grouse (*Tetrao tetrix*), partridge (*Perdix perdix*) and quail (*Coturnix coturnix*). The genus *Lagopus* is represented by two fragments which could not be identified to the species level. As to the Strigiformes two bone fragments could be attributed with certainty to the long-eared owl (*Asio otus*), while three other remains probably represent two other species, i.e. the short-eared owl (*Asio flammeus*) and the tawny owl (*Strix aluco*). Of the Passeriformes three species which all belong to the Corvidae have been identified so far: magpie (*Pica pica*), jackdaw (*Corvus monedula*) and chough (*Pyrrhocorax pyrrhocorax*).

Discussion

The species composition (Table 1) indicates different kinds of habitat but principally reflects open (partridge and quail) to slightly wooded (magpie and jackdaw) landscapes. Species inhabiting coniferous forests (black grouse and long-eared owl), aquatic biotopes (ducks) and rocky escarpments (chough) are also present. The avifauna indicates a climate characterized by moderate temperatures, but there is evidence for taxa associated with colder climates (*Lagopus* sp., black grouse and chough).

For the moment comparisons can only be established with the Mousterian deposits of Balazuc in the Ardèche region (Mourer-Chauviré 1975), where three species of ducks (including *Aythya nyroca*) as well as large and medium-sized Galliformes (*Lagopus* sp., *Tetrao tetrix* and *Perdix perdix*), *Strix aluco*, *Falco tinnunculus* and Corvidae (including *Pyrrhocorax pyrrhocorax*) have been identified. In contrast to Baume-Vallée, however, species such as the lammergeier (*Gypaetus barbatus*), the common moorhen (*Gallinula chloropus*), the curlew sandpiper (*Calidris ferruginea*) and the rock pigeon (*Columba livia*) could also be evidenced at Balazuc. As such, the avifauna of Balazuc is indicative of a colder and more humid climate compared to the present-day one. However, the absence of any traces produced either by human beings or by animal predators has not allowed to establish the taphonomic agent responsible for the accumulation of this avifauna.

With respect to the latter issue the Baume-Vallée bird assemblage is composed of species which might have died naturally in the site (Passeriformes and raptors) and of species like the Galliformes and the Anseriformes which might have been introduced to the rock shelter by humans or animals (carnivores and/or raptors). However, the general poor state of bone preservation and the post-depositional alterations of the bone's surface render an identification of possible traces very difficult. So far the taphonomic analysis has not shown any trace of anthropogenic origin on the bird bones, but has brought to light some traces of chewing by small carnivores.

Summary and conclusions

The study of over 250 bird remains from five archaeo-stratigraphic phases of Baume-Vallée rock shelter which yielded a Mousterian industry of the Charentiens La Ferrassie type is only beginning and the results are therefore still preliminary. About half of the remains come from Passeriform birds (Corvidae and smaller songbirds), of which three species could be identified: the magpie (*Pica pica*), the jackdaw (*Corvus monedula*) and the chough (*Pyrrhocorax pyrrhocorax*). Among the other bird remains those from the Galliformes predominate (black grouse, *Tetrao tetrix*, partridge, *Perdix perdix*, quail, *Coturnix coturnix* and *Lagopus* sp.), while those from the Anseriformes (ducks) and from the predatory birds (Falconiformes and Strigiformes) are much rarer. The genus *Anas* is represented by different species: wigeon, mallard, garganey and ferruginous duck. Birds of prey probably include marsh harrier (*Circus* cf. *aeruginosus*), buzzard (cf. *Buteo buteo*) and falcons (*Falco* sp.). It is of interest to note that in Pleistocene France marsh harrier must have been very rare. As to the Strigiformes some remains can be attributed with certainty to the long-eared owl (*Asio otus*), while three other fragments can be assigned to the short-eared owl (*Asio flammeus*) and the tawny owl (*Strix aluco*). The complete absence of pigeons (Columbiformes) is also noteworthy.

From a palaeoecological viewpoint the species composition reflects different kinds of environments, especially open landscapes. The climate is characterized by moderate temperatures but some faunal elements (*Lagopus* sp., black grouse and chough) indicate colder conditions.

The general poor state of preservation and the post-depositional alterations of the surface of the bones complicate the identification of possible traces. An eventual anthropogenic involvement in the capture and in the introduction of medium-sized birds usually not associated with caves (Anseriformes and Galliformes) still remains to be clarified. So far the taphonomic analysis has not shown any kind of trace of anthropogenic origin on the bird bones, but has brought to light traces of chewing by small carnivores. Future archaeozoological and taphonomical work on this avifaunal sample will perhaps provide an answer to this question.



Fig. 1: The location of the rock-shelter site of Baume-Vallée (Abri Laborde).

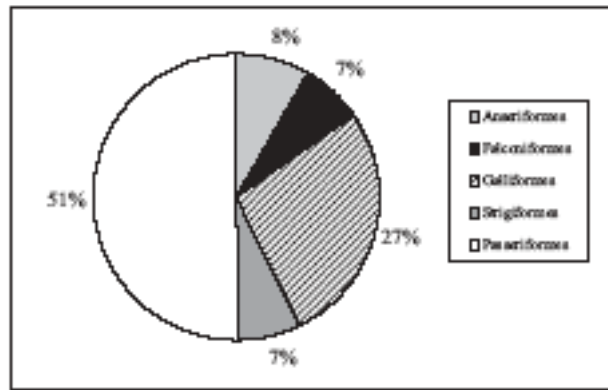


Fig. 2: Diagram showing the relative frequency of each order identified.

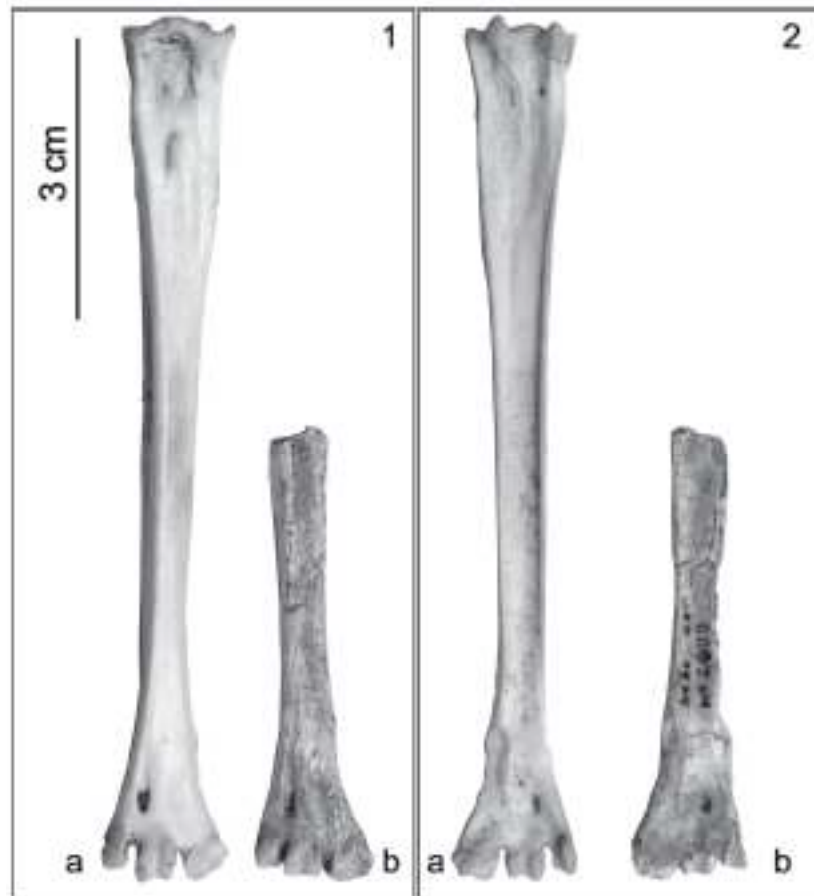


Fig. 3: Tarsometatarsi of marsh harrier. a) recent tarsometatarsus from female marsh harrier (reference no. 448 collection L. Cardini of the Istituto Italiano di Paleontologia Umana, Roma Italy); b) tarsometatarsus probably of marsh harrier (*Circus cf. aeruginosus*) from Baume-Vallée. 1) dorsal view; 2) plantar view. (Photographs: Ivana Fiore).

Bird taxa	NISP	%
Wigeon, <i>Anas penelope</i>	1	0.4
Gadwall/shoveler, <i>Anas strepera</i> / <i>A. clypeata</i>	2	0.8
Mallard, <i>Anas platyrhynchos</i>	2	0.8
Garganey, <i>Anas querquedula</i>	2	0.8
Duck, <i>Anas</i> sp.	2	0.8
Ferruginous duck, <i>Aythya nyroca</i>	1	0.4
Anatinae indet.	3	1.2
? Marsh harrier, <i>Circus</i> cf. <i>aeruginosus</i>	2	0.8
? Buzzard, cf. <i>Buteo buteo</i>	4	1.6
Accipitridae indet.	1	0.4
Falcon, <i>Falco</i> sp.	4	1.6
<i>Lagopus</i> sp.	2	0.8
Black grouse, <i>Tetrao tetrix</i>	6	2.3
Tetraonidae indet.	2	0.8
Grey partridge, <i>Perdix perdix</i>	9	3.5
Quail, <i>Coturnix coturnix</i>	6	2.3
Phasianidae indet.	11	4.3
Galliformes indet.	7	2.7
? Tawny owl, <i>Strix</i> cf. <i>aluco</i>	2	0.8
Long-eared owl, <i>Asio otus</i>	2	0.8
? Short-eared owl, <i>Asio</i> cf. <i>flammeus</i>	1	0.4
Owl, <i>Asio</i> sp.	1	0.4
Strigiformes indet.	5	2.0
Magpie, <i>Pica pica</i>	1	0.4
Chough, <i>Pyrrhocorax pyrrhocorax</i>	5	2.0
Jackdaw, <i>Corvus monedula</i>	3	1.2
Corvidae indet.	12	4.7
Passeriformes indet.	58	22.7
Aves identified	157	61.3
Aves unidentified	99	38.7
Total Aves	256	100.0

Table 1. Number of Identified Specimens (NISP) of bird remains of Baume-Vallée.

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