M. Otte et L.G. Straus (éds.). *La grotte du Bois Laiterie*. Liège, E.R.A.U.L. 80, 1997.

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THE AVIFAUNA OF LA GROTTE DU BOIS LAITERIE

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Quite a few bird remains were collected during the archaeological excavations in the Grotte du Bois Laiterie. As Tab.1 shows, nine avifaunal assemblages have been distinguished. The reader can find the definition of these assemblages in the other papers dealing with faunal remains of the cave (Gautier,this volume; Cordy and Lacroix, this volume and López Bayón *et al.*, this volume). These papers and others in this same volume provide further information on the site and its context. Most of the remains derive from the Magdalenian Yellow Sandy Silt (YSS) and from the same horizon in test trenches (TT) as a result of which systematic excavations were undertaken. No doubt, the finds from LBS, BSC, RS are also Magdalenian. The same would apply for the upper sequence (UGS, GBS, BR) and the backdirt (BD), as suggested by the prevalence willow grouse, which is well represented in the lower sequence.

The finds are almost exclusively derived from the postcranial skeleton and their identification is based mainly on the morphology and the dimensions of long bones. For comparison we used the bird collection in the Laboratory of Paleontology, University of Ghent, as well as several German monographs given in the references and dealing with the diagnostic features of some of the major bird groups found in Europe. The remains are generally rather fragmentary and in several cases the number of specimens assignable to a particular bird type is very limited. As a result several identifications had to remain tentative and do not reach species level. Moreover, as we found out during previous work, the duck family shows marked variation even within single species; this led us to adopt a general, threefold division of the duck remains according to size.

Clear traces on the bones due to biological agents are extremely rare. Slight vermiculations caused by plant roots occur on some specimens. On three long bone fragments of willow grouse from YSS, we found slight pitting which may be due to etching by gastric acid, but we can also think of other possible causative factors such as leaching in the soil. In general, clear traces of modification due to predators, comparable with those illustrated by Andrews (1990), are lacking, except in the case of the proximal humerus of an intrusive domestic fowl found in YSS. The articular end of this bone carries distinct depressed fractures such as are made by small carnivores and which we have noted on chicken bones treated by domestic cat.

Butchering marks have not been noted on any of the remains, suggesting that most of them are the result of causes other than people. Indeed, most of the larger birds, especially the geese, ducks, galliforms (willow grouse etc.) and whimbrel may have been victims of such predators as fox, wolf, lynx or wild cat. The buzzard and the falcon like to nest in cliffs, may have done so at the cave entrance and may thus have contributed some remains of their small prey animals to the deposits. Moreover, buzzard may have been attracted by prey remains in the cave, as it is a carrion eater. The two owls probably roosted in the cave and left their regurgitation pellets which provided most of the micromammals (see Cordy and Lacroix, this volume) and perhaps some smaller bird remains. Other birds that may have visited the cave are the swallow and the jackdaw; both live often

Tab.1 - The avifauna of Bois Laiterie (specimen counts).

	BD	BR	GBS	UGS	LBS	TT	YSS	BSC	RS	TOTAL
grey lag goose *(Anser anser)*?	-	-	-	-	-	1	2	-	-	3
large duck(a)	-	1	-	1	-	-	5	-	-	7
medium sized duck(b)	-	-	-	-	-	1	-	-	-	1
small duck(c)	-	-	-	-	1	-	-	-	-	1
buzzard *(Buteo* sp.)	-	-	-	-	-	1	2	-	-	3
falcon *(Falco* sp.)	-	-	-	-	-	1	1	-	1	3
willow grouse *(Lagopus lagopus)*	1	3	3	1	3	10	23	-	1	45
black grouse *(Tetrao tetrix)*	-	1	-	-	2	2	-	-	-	5
partridge *(Perdix perdix)*	-	-	-	-	-	2	1	2	-	5
domestic fowl *(Gallus gallus* f. domestica)(d)	-	-	-	-	-	-	1	-	-	1
whimbrel *(Numenius phaeopus)*	-	-	-	-	-	1(?)	1	-	-	2
eagle owl *(Bubo bubo)*	-	-	-	-	-	2	1	-	-	3
long-eared owl *(Asio otus)?(e)*	-	-	-	-	-	-	-	1	-	1
swallow *(Hirundo rustica)*	-	-	-	-	1	1	-	1	-	3
jackdaw *(Corvus monedula)*	-	-	-	-	-	6	9	-	-	15
jay/magpie *(Pica pica/Garrulus glandarius)*	-	-	-	-	-	1	-	-	-	1
Turdus sized passerine(f)	1	-	-	4	-	-	-	-	-	5
small passerines(g)	-	-	-	-	-	13	6	1	1	21
not identified	1	2	-	3	2	12	27	2	-	49
Total	3	7	3	9	9	54	79	7	3	174

(a) size of *Anas platyrhynchos*; (b) size of *Aythya fuligula*; (c) size of *Anas crecca*; (d) late intrusive; e) long- or short-eared owl *(A. otus / flammeus)*; (f) thrushes etc.; (g) at least three species.

near cliffs and nest in them. The passerines may also have lived near the cave and its entrance. Some of them are perhaps prey animals, others met death accidentally near the cave. Something comparable applies no doubt for the magpie or jay.

Summing up, it would seem that basically the Bois Laiterie birds can be put into the category of penecontemporaneous intrusives with respect to the fauna caused by the Magdalenians. As to the domestic fowl in YSS, it is clearly a late intrusive due to the burrowing of badgers, which are also responsible for the presence of rabbit in the Magdalenian sequence (Gautier, this volume); the state of preservation of this bone also indicates a recent origin.

As already stated, most bird remains from the upper deposits may be derived from the Magdalenian, but we cannot exclude the possibility that some of these finds, especially among the passerines, are in fact associated with the post-Magdalenian history of the cave. In the same way, some finds in the Magdalenian sequence may be late intrusives with histories comparable with those of the domestic fowl and rabbit remains. The foregoing does not fundamentally affect the taphonomic partioning of the Magdalenian avifauna. Furthermore, it cannot be excluded that some of the game birds are leftovers of birds killed by the Magdalenians, who processed them without leaving telltale traces. Since most of the fox remains seem to derive from animals using the cave as a den (Gautier this volume), it remains more reasonable to regard the fox as the killer and accumulator of most of the many hare remains in the deposits, as well as of those of most game birds.

The appraisal of the avifauna in terms of landscape combines ecological notes found in Peterson *et al.* (1962), Bruun *et al.* (1986) and Jonsson (1994). The geese, ducks and whimbrel point to the river Meuse and perhaps its small tributary, the Burnot, while the grouse and partridge suggest quite open biotopes that may have prevailed on the plateau. Nearer to the cave, on the cliffs and in the woods on the slopes of the Burnot Valley lived the cliff-dwelling birds, the magpie or jay and the passerines. The eagle owl would have no particular habitat preferences, but the long-eared owl *(Asio otus)* seems to prefer wooded habitats, especially with conifers, while its relative, the short-eared owl *(A. flammeus)* would choose more open habitats. The foregoing suggests that the cave may have been occupied by the first *Asio* species rather than the second one.

Most of the bird groups identified are resident species or comprise such species. The grey lag goose and the whimbrel appear to be exceptions, as today these migratory birds visit Belgium only in the colder season. In the late Pleistocene, however, they may have nested in Belgium, migrating south for winter. The foregoing could indicate that the grey lag geese and whimbrel of Bois Laiterie met death in the warmer period of the year and provide a clue as to the seasonal use of the cave by people, if these were indeed involved in their killing. The Magdalenians would, in that case, have visited the Bois Laiterie shelter in the warmer season.

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