

Supplementary information for:

## Identifying bird remains using ancient DNA barcoding

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**Table S1.** Identity of the sampled avian bones. Approximate ages are denoted as Eemian, Late Glacial (LG), Early Holocene (EH) and Roman.

Lab ID	Specimen label	Site	Material	Age	Identification
J1	MER (9) TR A, Spit 5	Merlin's Cave, UK	Right humerus	LG/EH <sup>1</sup>	J.S
J2	MER (9) TR A, Spit 5	Merlin's Cave, UK	Proximal left humerus	LG/EH <sup>1</sup>	J.S
J3	MER (9) TR A, Spit 5	Merlin's Cave, UK	Right humerus	LG/EH <sup>1</sup>	J.S
J4	MER (8) TR A, Spit 4	Merlin's Cave, UK	Carpometacarpus	LG/EH <sup>1</sup>	J.S
J5	1987.2 /I/ (972)	Beddingham Villa, UK	Right humerus	Roman <sup>2</sup>	J.S
J6	1987.2 /I/ (14)	Beddingham Villa, UK	Right humerus	Roman <sup>2</sup>	J.S
J7	1987.2 /I/ (101)	Beddingham Villa, UK	Tarsometatarsus	Roman <sup>2</sup>	J.S
J8	MER (2) W. front initial clean	Merlin's Cave, UK	Distal left humerus	LG/EH <sup>1</sup>	J.S
J9	1987.2 /I/ (367)	Beddingham Villa, UK	Left tibiotarsus shaft	Roman <sup>2</sup>	J.S
J10	1987.2 /I/ (367)	Beddingham Villa, UK	Proximal right carpometacarpus	Roman <sup>2</sup>	J.S
J11	1987.2 /I/ (367)	Beddingham Villa, UK	Distal left carpometacarpus	Roman <sup>2</sup>	J.S
J12	1987.2 /I/ (79)	Beddingham Villa, UK	Left humerus (juvenile)	Roman <sup>2</sup>	J.S
J13	1987.2 /I/ (79)	Beddingham Villa, UK	Left tarsometatarsus shaft	Roman <sup>2</sup>	J.S
J14	MER (8) TR A, Spit 4	Merlin's Cave, UK	Right coracoid fragment	LG/EH <sup>1</sup>	J.S
J15	MER (8) TR A, Spit 4	Merlin's Cave, UK	Right ulna	LG/EH <sup>1</sup>	J.S
J16	MER (8) TR A Spit 7	Merlin's Cave, UK	Right coracoid fragment	LG/EH <sup>1</sup>	J.S
J17	MER (8) TR A Spit 7	Merlin's Cave, UK	Synsacrum fragment	LG/EH <sup>1</sup>	J.S
J18	JM 96, TC2, Area A, Spit 5	Joint Mitnor, UK	Coracoid fragment	Eemian <sup>3</sup>	J.S
J19	AF OBZ/649, Layer II	Oblazowa Cave, Poland	Right tarsometatarsus	LG <sup>4</sup>	T.T
J20	AF OBZ/610, Layer IV	Oblazowa Cave, Poland	Left carpometacarpus	LG <sup>4</sup>	T.T
J21	AF OBZ/602, Layer IV-VI	Oblazowa Cave, Poland	Distal left carpometacarpus	LG <sup>4</sup>	Z.B
J22	AF OBZ/450, Layer IV	Oblazowa Cave, Poland	Left carpometacarpus	LG <sup>4</sup>	T.T
J23	AF OBZ/459, Layer II	Oblazowa Cave, Poland	Distal left humerus	LG <sup>4</sup>	T.T
J24	AF OBZ/483, Layer II	Oblazowa Cave, Poland	Proximal right ulna	LG <sup>4</sup>	T.T
J25	AF OBZ/482, Layer II	Oblazowa Cave, Poland	Right ulna	LG <sup>4</sup>	T.T

<sup>1</sup> Mean of published dates from the same site is 11 k BP [1]. <sup>2</sup> Rudling [2]. <sup>3</sup> The Eemian in Britain is dated to 125 k BP [3]. <sup>4</sup> Published dates from the sampled layers are 13 k BP (layer II) and 18 k BP and 29 k BP (layer V) [4].

**Table S2.** Output from BLAST+ showing the best taxon match for the successful ancient DNA sequences against the custom database.

Query id	Binomen	Subject id	% Identity	Alignment length	Mis-matches	Gap opens	q. start	q. end	s. start	s. end	evalue	Bit score
J2	Oenanthe lugubris *	gi 300432064 gb HM046851.1  Oenanthe schalowi isolate 447 16S ribosomal RNA gene, partial sequence; mitochondrial	100	74	0	0	119	192	323	396	1E-33	137
J3	Oenanthe lugubris *	gi 300432064 gb HM046851.1  Oenanthe schalowi isolate 447 16S ribosomal RNA gene, partial sequence; mitochondrial	100	74	0	0	119	192	323	396	1E-33	137
J4	Turdus pilaris	Turdus_pilaris_NRM20066901_16S.seq "Contig 23" (1,549)	98.7	78	1	0	1	78	212	289	9E-35	141
J5	Turdus merula	Turdus_merula_NRM20056091_16S.seq "Contig 42" (1,549)	100	58	0	0	135	192	347	404	9E-25	108
J6	Emberiza calandra	Emberiza_calandra_NRM20046026_16S.seq "Contig 5" (1,550)	100	78	0	0	1	78	211	288	7E-36	145
J7	Turdus philomelos	Turdus_philomelos_NRM976168_16S.seq "Contig 13" (1,550)	100	74	0	0	119	192	331	404	1E-33	137
J8	Emberiza calandra	Emberiza_calandra_NRM20046026_16S.seq "Contig 5" (1,550)	100	78	0	0	1	78	211	288	7E-36	145
J9	Anser anser	gi 544582183 gb KC984218.1  Anser anser 16S ribosomal RNA gene, partial sequence; mitochondrial	97.5	80	1	1	1	80	7	85	1E-33	137
J10	Gallus gallus	gi 29824878 gb AY236430.1  Gallus gallus 16S ribosomal RNA gene, partial sequence; mitochondrial gene for mitochondrial product	100	78	0	0	1	78	22	99	7E-36	145
J11	Columba livia	Columba_livia_NRM20076011_16S.seq "Contig 1" (1,546)	100	75	0	0	1	75	210	284	3E-34	139
J12	Gallus gallus	gi 29824878 gb AY236430.1  Gallus gallus 16S ribosomal RNA gene, partial sequence; mitochondrial gene for mitochondrial product	98.7	79	0	1	1	79	22	99	3E-34	139
J13	Anas penelope	Anas_penelope_NRM20036435_16S.seq "Contig 3" (1,557)	100	79	0	0	1	79	211	289	2E-36	147
J14	Corvus monedula	Corvus_monedula_NRM986450_16S.seq "Contig 7" (1,548)	100	77	0	0	1	77	212	288	2E-35	143
J17	Lagopus muta	Lagopus_muta_NRM986101_16S.seq "Contig 52" (1,554)	100	76	0	0	115	190	328	403	8E-35	141
J19	Turdus pilaris	Turdus_pilaris_NRM20066901_16S.seq "Contig 23" (1,549)	100	74	0	0	118	191	331	404	1E-33	137
J20	Turdus pilaris	Turdus_pilaris_NRM20066901_16S.seq "Contig 23" (1,549)	100	78	0	0	1	78	212	289	7E-36	145
J21	Turdus merula	Turdus_merula_NRM20056091_16S.seq "Contig 42" (1,549)	100	78	0	0	1	78	212	289	7E-36	145
J22_(frag2)	Alauda arvensis	Alauda_arvensis_NRM996263_16S.seq "Contig 4" (1,552)	98.7	74	1	0	1	74	331	404	5E-33	134
J24_(frag2)	Eremophila alpestris	gi 220900200 gb FJ465221.1  Eremophila alpestris	100	74	0	0	1	74	296	369	4E-34	137

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J25	Eremophila alpestris	albigula voucher MFUM 20042 16S ribosomal RNA gene, partial sequence; mitochondrial	gi 220900200 gb FJ465221.1  Eremophila alpestris	100	80	0	0	1	80	175	254	5E-37	148
		albigula voucher MFUM 20042 16S ribosomal RNA gene, partial sequence; mitochondrial											

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\* A corrigendum to the associated publication has stated that the deposited *Oenanthe schalowi* sequences were derived from incorrectly labelled specimens, and actually belong to the species *O. lugubris* [5,6].



**Figure S1.** Photo of the drilled humerus bone from specimen J1, illustrating the amount of material that is needed for ancient DNA analyses.

## References

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