

Golden Eagle Remains from Buran-Kaya III Level C

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Typically, when bird remains are found in a site, they are few in number for each species and represent but a small portion of all skeletal elements. It is therefore interesting that all of the bird bones recovered for Level C, numbering 208 pieces, belong to a single individual and, moreover, that they should belong to a bird of prey—the golden eagle (*Aquila chrysaetos* L.). Practically an entire eagle skeleton, still articulated, was found during the 1996 excavations of this level (Table 6-1). The skeletal elements discovered in this square of Buran-Kaya III in relation to the entire skeleton of the eagle are shown in Figure 6-1.

Fossils of Pleistocene birds were typically accumulated in caves and rockshelters by two principle manners: as the remains of the food of ancient humans (“kitchen garbage”) and as the remains of the food of birds of prey (Falconiformes) and owls (Strigiformes) (Kurochkin 1979). Discoveries of virtually intact fossils of large birds of prey have not yet been described in such a Paleolithic context.

We compared most of the bones of the fossil golden eagle found at Buran-Kaya III Level C with modern examples from the collection of the Paleontological Museum of the Ukrainian Academy of Sciences (Tables 6-2 to 6-10). There do not appear to be any essential differences in the sizes of the fossil and modern bones; the Buran-Kaya III specimen falls within the average modern dimensions for nearly all skeletal elements.

Tugarinov (1937) has noted that the Pleistocene golden eagle was superior in size to modern golden eagles, based on two fragments of a tibiotarsus found

in the Siuren I rockshelter (Crimea) during excavations in the 1920s. It is more than likely, however, that this reported size difference between Pleistocene and modern golden eagles is actually sexual dimorphism. Females are considerably larger than males in the Falconiformes order in general, and in the genus of *Aquila* in particular. In addition to the fossil from Siuren I, found in an Upper Paleolithic Aurignacian assemblage, one other fossil golden eagle find is known from Crimea. The fragment of a left tibiotarsus was found during the excavation of Kara-Koba cave in association with a Quaternary faunal assemblage and flints of uncertain association. The faunal assemblages of this multi-layered site (Paleolithic and Mesolithic) were studied and reported as a single unit, although some researchers consider it as only Upper Paleolithic (Voynstvenski 1967). Aside from Crimea, two separate finds of fossil golden eagle fragments are known from the Caucasus (Ossetia) region, which date to the Middle Pleistocene (Acheulian) and to the Late Pleistocene (Mousterian) (Baryshnikov and Cherepanov 1985).

At the present time, the golden eagle is only seen in Crimea during its migrations, when it winters there (Kostin 1983). In all probability, it inhabited the Crimean Mountains periodically through the middle of the nineteenth century, but there is no definite confirmation for this. Today, this species breeds very infrequently in Ukraine (mostly in the Carpathian Mountains), and it currently numbers no more than a few pairs in the region.

Given the completeness and the articulation of the golden eagle skeleton at the site, it is possible that it

TABLE 6-1

List of *Aquila chrysaetos* skeletal elements from Level C

	Fragments	Complete
Scapula, right	2	—
Humerus, right	3	—
Humerus, left	9	—
Ulna, right	11	—
Ulna, left	5	—
Radius, right	6	—
Radius, left	4	—
Metacarpus, left	2	—
Phalanx I, left	1	1
Triquetral, left	1	1
Scaphoid, left	1	1
Femur, left	10	—
Fibula, right	1	—
Patella, left	1	1
Cranium†	14	—
Mandible	3	—
Cervical vertebrae	2	1
Thoracic vertebrae	5	1
Coccygeal vertebrae	5	1
Sternal-costal bones	7	—
Vertebral column	2	—
Rib	9	—
Sternum	5	—
Coracoid bone	4	—
Ilium	3	—
Unidentifiable fragments	83	—

†Including fragments of the frontal bone and occipital with *protuberantia occipitalis*, *foramen magnum*, *foramen hypoglossi*, and *foramen vagi et glossopharyngici*.



Figure 6-1—The complete golden eagle (*Aquila chrysaetos*) skeleton (after Ilichev et al. 1982) in relation to bones identified at Buran-Kaya III Level C (in black).

TABLE 6-2

Dimensional comparison of Level C *Aquila chrysaetos* right scapula with modern specimens

	Fossil			Modern			
Total length	—	94.7	105.7	99.2	101.3	103.8	96.7
Proximal height I (humeral articular facet to coracoid tubercle)	22.8	21.3	24.7	23.0	23.1	24.9	21.8
Proximal height II (humeral articular facet to acromion)	25.4	24.0	26.9	25.8	26.6	27.2	23.7
Proximal width (acromion to coracoid tubercle)	9.3	9.6	10.2	11.7	9.7	11.9	9.5
Height of humeral articular facet	15.6	15.2	16.9	—	16.2	—	15.4

represents a sacred, purposeful ritual. Ethnographic examples of an eagle cult and its presumed origins have been described by some researchers (e.g., Propp 1986; Shternberg 1936). Notably, this cult was present among the inhabitants of ancient Siberia, where, after an eagle was caught, it had to be fed and kept for a period of time, and then ritually killed and buried. In this case, then, the eagle was a sacrificial animal. The aim of the ritual was to attract the eagle god and creator. At Buran-Kaya III, the presence of nearly all parts of the eagle skeleton, its position, along with the very good preservation of the many bones, suggest that its emplacement might have been purposeful and that it might be the result of a cult. This is a unique phenomenon for paleoornithology.

It appears that the absence of foot bones, claws, and beak of the *Aquila chrysaetos* at Buran-Kaya III might be the result of their removal from the carcass for religious purposes. These skeletal parts are symbols of power for the totem, imparting protection under the bird and assistance in the hunt. Special cultic use of the golden eagle by the prehistoric inhabitants of Buran-Kaya III Level C can be indirectly confirmed by the absence of remains of other birds. Moreover, among ancient peoples (Propp 1936) one of the functions of the eagle cult was so that the eagle spirit could convey other sacrificial animals to the various gods. represents a sacred, purposeful ritual.

TABLE 6-3
Dimensional comparison of Level C *Aquila chrysaetos* left femur with modern specimens

	<i>Fossil</i>		<i>Modern</i>		
Total length	—	127.3	127.4	128.1	129.0
Proximal width	29.2	27.7	29.3	27.3	30.0
Width of femoral head	12.0	10.7	11.1	11.0	11.3
Minimum width	10.9	9.5	9.9	9.7	9.8
Minimum diameter of shaft	12.1	11.7	13.0	12.0	12.7
Maximum diameter of shaft	14.4	12.5	13.5	12.6	14.0

TABLE 6-4
Dimensional comparison of Level C *Aquila chrysaetos* right humerus with modern specimens

	<i>Fossil</i>		<i>Modern</i>	
Total length	—	197.6	185.9	197.3
Width of articular head	10.3	10.9	9.7	10.3

TABLE 6-5
Dimensional comparison of Level C *Aquila chrysaetos* left humerus with modern specimens

	<i>Fossil</i>		<i>Modern</i>	
Total length	—	197.0	197.0	186.4
Distal width (flexor process to dorsal condyle)	33.5	34.3	36.8	31.9
Minimum diameter of shaft	11.0	12.1	12.2	11.4
Maximum diameter of shaft	16.2	14.0	14.7	12.9
Maximum diameter of ulnar condyle	9.7	9.3	9.1	9.1

TABLE 6-6

Dimensional comparison of Level C *Aquila chrysaetos* left ulna with modern specimens

	<i>Fossil</i>	<i>Modern</i>		
Total length	—	226.7	215.4	227.8
Minimum diameter of shaft	10.5	10.3	10.3	10.7
Maximum width of dorsal condyle	17.8	17.3	16.1	17.8

TABLE 6-7

Dimensional comparison of Level C *Aquila chrysaetos* right ulna with modern specimens

	<i>Fossil</i>	<i>Modern</i>		
Total length	214.8	228.5	214.9	
Maximum proximal width	24.3	25.3	22.6	
Height of dorsal cotyloid process	8.8	8.6	7.6	

TABLE 6-8

Dimensional comparison of Level C *Aquila chrysaetos* left radius with modern specimens

	<i>Fossil</i>	<i>Modern</i>		
Total length	—	201.9	214.9	215.2
Height of bicipital tubercle	14.1	13.0	14.3	15.5
Maximum proximal diameter	11.7	10.8	8.2	8.7
Minimum proximal diameter	7.9	8.0	11.3	12.3
Minimum diameter of shaft	5.4	5.2	6.0	5.6
Distal width	15.7	14.3	15.3	16.0

TABLE 6-9

Dimensional comparison of Level C *Aquila chrysaetos* right radius with modern specimens

	<i>Fossil</i>	<i>Modern</i>
Total length	—	200.9
Height of bicipital tubercle	14.6	13.6
Maximum proximal diameter	11.4	11.5
Minimum proximal diameter	8.0	8.0

TABLE 6-10

Dimensional comparison of Level C *Aquila chrysaetos* left carpometacarpus with modern specimens

	<i>Fossil</i>	<i>Modern</i>	
Total length	—	101.9	109.0
Maximum width of distal part of lesser metacarpal	4.0	4.4	4.1
Length of distal symphysis	8.2	7.6	9.2
Maximum distal width	19.8	18.8	20.3