

A Cave Bear Skull Section Showing Alteration likely made by Neanderthals from the Pleistocene Deposits of Aurisina (Pocala) Cave in Italy

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Abstract

A partial skull section of a cave bear *Ursus spelaeus*, recovered from the Aurisina Cave, Italy shows alteration including cut marks made by stone tools and the detachment of the upper portion of the brain case indicating likely Neanderthal cultural use of the skull. Interactions between Neanderthals and cave bears have been suggested historically but most cases reported have been shown to be mistaken or fabricated. This may well be a rare example of direct use of a cave bear skull by Neanderthals.

Methods

The fossil was examined with stereo microscopes under various lighting conditions and compared with a complete cave bear skull. A literature search was done including works on other interactions between Neanderthals and *Ursus spleaus*. We used various comparative materials from modern bears, other animals and forensic samples in the Rathbun faunal laboratory at Mercyhurst University.

Data

The fossil cave bear cranial section (*Ursus spelaeus*) is from the collection of the late zoologist Dr. Ivo Poglayen - Neuwall who obtained it in Europe. The fossil was found in the Grotta Pocala in the Friuli area of Italy sometime in the late 1890's to the early 1920's. Upon examination several cut marks were discovered that indicate the skull was worked with stone tools while fresh.

From the 44 stone tools Mousterian, levallois technique, recovered in the cave, and the age of the material, Neanderthals were the only humans present. The cave formations have been dated to approximately 308,000 to 326,000 years old, (Petronio, 2014) well prior to the entry of modern humans in the area.

The bear was recovered with associated skeletal material of other *Ursus spleaus*, *Panthera sp.* *Cervus sp.* and *Lepis europaeus*. Other faunal associations are listed in Battaglia's work but were not available to us in translation during the course of our study.



Photo by K. Rogers
Cranium was found in Pocala Cave, Austria from the Dr. Poglayen Collection
Complete Skull was found in Cave of Dragons, Austria borrowed from the McKenzie Collection



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Discussion and Conclusion

The Neanderthal /cave bear interactions reported in the older literature (cave bear cults) have mostly been disproven as misinterpretations or outright forgeries. In recent times several well documented cases for interaction have been reported relating to skinning marks and split bones presumably for the extraction of nutritious marrow.

In the present case we hypothecate that the unusual breakage might have been for one of two reasons: 1. Extraction of the brain for food or skin preparation or 2. Separation of the lower part of the skull to use the upper section for a bowl or tool. In either case, the skull section reported here is direct evidence for interaction between Neanderthals and cave bears.

We further speculate that the interaction may have occurred during the winter hibernation period when the bear was in the cave, torpid and approachable and when Neanderthals may have been in dire need of food.

Additional Work

It is hoped that this study will interest other investigators in examining other Pleistocene remains for tool marks helping clarify the Neanderthal's cultural interaction with animals.

References

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