

**Brigitte Hilpert**

## **The Ursids from Hunas - Revision of the bear finds from the Steinberg-Höhlenruine near Hunas, Community of Pommelsbrunn, Bavaria**

### **Zusammenfassung:**

Das Bärenmaterial aus der Steinberg-Höhlenruine bei Hunas wurde neu aufgearbeitet. Dabei wurden sowohl die Funde aus der Grabung Heller (1956-1964) als auch die der laufenden „neuen“ Grabung (seit 1983) eingehend biologisch, taphonomisch, metrisch und morphologisch untersucht. Die Höhlenruine von Hunas wurde von den Bären als Winterquartier genutzt. Die Hauptmenge der juvenilen Tiere starb während der ersten 4 Monate bzw. während des 7.-8. und 10.-14. Monats. Einwirkungen auf die Knochen wie Biß- und Nagespuren treten nur in geringem Umfang auf. Es sind meist Jungtierknochen, die Verbißspuren zeigen. Schnittspuren sind an den Bärenknochen aus Hunas nicht zu beobachten. Eine Bejagung der Bären kann somit mit großer Wahrscheinlichkeit ausgeschlossen werden. Eine Häufung oder das Fehlen bestimmter Knochen, wie sie bei Jagdbeute des Menschen oft in Erscheinung tritt, kann ebenfalls nicht festgestellt werden. Insgesamt treten an 12 Knochen Pathologien auf (0,4%).

### **Summary:**

The bear remains from Steinberg-Höhlenruine near Hunas were revised. Both the remains found during Heller's excavation (1956-1964) and the current excavation (since 1983) were examined biologically, taphonomically, metrically and morphologically. The cave ruin near Hunas were used as hibernation place by bears. Most of the juvenile animals died during the first four months or between the 7<sup>th</sup> – 8<sup>th</sup> and 10<sup>th</sup> – 14<sup>th</sup> months. There are not many impacts on the bones like bite or gnaw marks. Most of the bite marks were found on bones of young animals. There are no cut marks on the bones of the bears from Hunas. Therefore the bears were probably not hunted. There was neither an accumulation nor a lack of certain bones – which is often a hint that human beings hunted bears. Altogether 12 bones showed signs of pathologies (0,4%).

## Résumé:

Les ursidés de Steinberg-Höhlenruine (grotte effondrée de Hunas) ont été reconsidérés. Tant les pièces provenant des fouilles de Heller (1956-1964) que celles issues des fouilles actuelles en cours depuis 1983 ont été analysées du point de vue biologique, taphonomique, métrique et morphologique. Hunas a été utilisé par les ours pour hiberner. La plupart des individus juvéniles sont morts durant les quatre premiers mois ou à l'âge de 7-8 ou 10-14 mois. Très peu de traces de morsures ont pu être identifiées. Il s'agit dans ces cas d'ossements d'individus jeunes pour la plupart. Aucune trace de découpe n'a pu être découverte sur les ossements, et il peut être exclu que les ours ont été chassés. Une sous- ou sur-représentation de certains éléments du squelette, telle qu'elle peut être observée pour les proies des êtres humains, n'a pu être démontrée. 12 ossements (0,4%) présentent des pathologies.

**Key words:** Steinberg-Höhlenruine near Hunas, biology, pathology, taphonomy, *Ursus spelaeus*

## Introduction

The bear finds from Steinberg-Höhlenruine near Hunas were revised in a PhD-thesis (HILPERT 2005). In the following text only some of the results are presented, detailed information can be found in the thesis. The finds are found during Heller's excavation (1956-1964) and during the current excavations which take place annually since 1983. They were examined biologically, pathologically, taphonomically and also morphologically (cf. examinations of the morphology of bears from the Steinberg-Höhlenruine near Hunas in this volume). The analysis of the fauna found during Heller's excavation showed that the fauna was comparable to faunas from the Middle Pleistocene. The U/Th-dating of dropstones from Heller's excavation seemed to confirm this. Heller assigned the bears to *Ursus spelaeus*, but noticed some primitive characteristics. However, he had only analysed the cranial material of the bears. He didn't take into account the other finds. An analysis of the whole material and of the finds of the current excavation was necessary. New TIMS-U/Th-dating of speleotheme found during the current excavation showed an age of about 80,000 years (ROSENDAHL et al. 2004), which led to many questions above all regarding the fauna. After a comparison of the finds from Hunas with material from other excavations in Germany and Austria the position of the bears regarding the line of development *Ursus deningeri* - *Ursus spelaeus* is discussed and newly analysed. This time also ecological factors are taken into consideration.

## Age structure

The individual age of all cranial and postcranial finds was determined. There were no bones of new born bears. The youngest finds were bears of

1-2 weeks. Most of the juvenile bears were 7-9 months old, some were 0-4 months old and some 10-14. The young bears died in the cave where they were born and during their first hibernation, the 7-9-month-old bears died outside at the beginning of autumn. The grown-up animals cannot be put into categories. The analysis of the teeth showed that most of the teeth are not worn, some teeth were slightly worn, there are practically no heavily worn teeth. Obviously the grown-up animals were not extremely old when they died during the winter. They might have been 10-15 years old, only some were older.

## **Pathology**

There were pathologies found on 12 bones, i.e. 0,4% of 2800 finds. The most important pathology is a growth at the sagittal crest of skull number 2509. The injury is perfectly healed and is not the direct cause of death. In addition to this injury caused by a blow there are two fractures at metapodial bones (Mt 2, Mt 3) and smaller growths (exostoses) at 2 tibiae, 3 phalanges II and one patella. The processus articularis is bent like an „S“ instead of being horizontally straight at one pair of mandible. Another mandible shows only a slight change of shape of the processus articularis. One side of the fossa olecrani of one humerus is grown a little bit inwards. This could be a malformation during growth.

## **Bite and gnaw marks**

Five bones (0,18%) show bite marks of a carnivore. There is only the diaphyse of two radii, two ulnae and one metapodial bone, mostly of young animals, left. There are bite marks on one or both sides. Four bones show gnaw marks. Because of the width of the grooves they seem to be caused by mice.

The small number of gnaw marks is a hint that the bones in the cave of Hunas were not lying at the surface for a long time. The small number of bite marks shows that the cave was not very often used as shelter or depository or birth cave by carnivores.

## **Summary**

The cave ruin of Hunas were used by bears for hibernation. Most of the juvenile animals died during the first four months or during the 7<sup>th</sup>-8<sup>th</sup> and 10<sup>th</sup>-14<sup>th</sup> months. Altogether 12 bones showed signs of pathologies (0,4%). There are not many impacts on the bones like bite or gnaw marks. There are no cut marks on the bones of the bears from Hunas. Therefore the bears were probably not hunted. There was neither an accumulation nor a lack of certain bones – which is often a hint that human beings hunted bears.

## References

- HILPERT, B. (2005): Die Ursiden aus Hunas - Revision und Neubearbeitung der Bärenfunde aus der Steinberg-Höhlenruine bei Hunas (Gde. Pommelsbrunn, Mittelfranken, Bayern).- Unveröffentlichte Dissertation, 115 S., Erlangen.
- ROSENDAHL, W., WIEGAND, B., NORDHOFF, P., KAULICH, B. (2004), Zur Chronostratigraphie der mittelpaläolithischen Schichtenfolge aus der Höhlenruine Hunas/Ldkr. Nürnberger Land - Alte und neue Speläothemdaten.- 110-111. In: SCHÜSSLER, V., PERNICKA, E. (hrsg.): Archäometrie und Denkmalpflege. Kurzberichte 2004.- Archäometrie und Denkmalpflege, Jahrestagung in den Reiss-Engelhorn Museen Mannheim, 6.-9. Oktober 2004, 210 S., Würzburg.

Address of author:

Dipl.-Geol. Brigitte Hilpert, Institut für Paläontologie, Loewenichstr. 28, 91054 Erlangen;  
brigitte.hilpert@pal.uni-erlangen.de