

Supplementary Information 1: List of *Ursus deningeri* occurrences

Cranial and mandibular morphology of Middle Pleistocene cave bears (*Ursus deningeri*): implications for diet and evolution

Anneke H. van Heteren^{1,2,3}, Mikel Arlegi^{4,5}, Elena Santos^{6,7}, Juan-Luis Arsuaga^{8,6}, Asier Gómez-Olivencia^{4,9,6}

¹Sektion Mammalogie, Zoologische Staatssammlung München, Staatliche Naturwissenschaftliche Sammlungen Bayerns, Münchhausenstraße 21, 81247 Munich, Germany

²GeoBio-Center, Ludwig-Maximilians-Universität München, Richard-Wagner-Straße 10, 80333 Munich Germany

³Department Biologie II, Ludwig-Maximilians-Universität München, Großhaderner Straße 2, 82152 Planegg-Martinsried, Germany

⁴Dept. Estratigrafía y Paleontología, Facultad de Ciencia y Tecnología, Euskal Herriko Unibertsitatea, UPV-EHU. Barrio Sarriena s/n, 48940 Leioa, Spain

⁵Université de Bordeaux, PACEA UMR 5199, Bâtiment B8, Allée Geoffroy Saint-Hilaire, 33615 Pessac, France.

⁶Centro UCM-ISCIH de Investigación sobre Evolución y Comportamiento Humanos, Avda. Monforte de Lemos 5 (Pabellón 14), 28029 Madrid, Spain

⁷Laboratorio de Evolución Humana, Edificio I+D+I, Plaza Misael Bañuelos s/n, Universidad de Burgos, 09001 Burgos, Spain

⁸Dpto. de Paleontología. Fac. Ciencias Geológicas. Universidad Complutense de Madrid, Avda. Complutense s/n, Madrid 28040, Spain

⁹IKERBASQUE. Basque Foundation for Science, 48013 Bilbao, Spain

Supplementary table 1: Selected list of occurrences of *Ursus deningeri* and *Ursus dolinensis*^a, which is sometimes considered a junior synonym of the former. This list is primarily based on the New and Old Worlds (NOW) – Database of fossil mammals (<http://www.helsinki.fi/science/now/index.html>) and the Paleobiology Database (<https://paleobiodb.org>). Occurrences used in the analyses herein are indicated in bold. (Continued on the following page.)

Species	Locality	Country	Age	Reference
<i>U. deningeri</i>	Soleilhac	France	Early Pleistocene	Bonifay (1991)
<i>U. deningeri</i>	Vallonnet Cave	France	Early Pleistocene	De Lumley et al. (1988)
<i>U. deningeri</i>	Mosbach 1	Germany	Early Pleistocene	von Koenigswald and Heinrich (1999)
<i>U. deningeri</i>	Dorn-Dürkheim 3	Germany	Early Pleistocene	Franzen et al. (2000)
<i>U. deningeri</i>	Cal Guardiola	Spain	Late Early Pleistocene	Madurell-Malapeira et al. (2009)
<i>U. dolinensis</i>	Gran Dolina (Sierra de Atapuerca)	Spain	Early Pleistocene	García and Arsuaga (2001)
<i>U. ex. gr. deningeri</i>	Nalaikha	Mongolia	Early Pleistocene	Eisenmann and Kuznetsova (2004)
<i>U. cf. deningeri</i>	Cimay	France	Early/Middle Pleistocene	Bonifay (1973)
<i>U. deningeri</i>	Chlum 6	Czech Rep.	Early/Middle Pleistocene	von Koenigswald and Heinrich (1999)
<i>U. deningeri</i>	Venosa	Italy	Early/Middle Pleistocene	D'Erasmus (1933)
<i>U. dolinensis</i>	Untermaßfeld	Germany	Early/Middle Pleistocene	Musil (2001)
<i>U. aff. deningeri</i>	Emirkaya-2	Turkey	Middle Pleistocene	Sen et al. (1991)
<i>U. cf. deningeri</i>	La grotte de l'Escale	France	Middle Pleistocene	Bonifay and Bonifay (1963)
<i>U. cf. deningeri</i>	Miesenheim 1	Germany	Middle Pleistocene	van Kolfschoten and Turner (1996)
<i>U. cf. deningeri</i>	Uppony Rock Shelter 1	Hungary	Middle Pleistocene	Jánossy (1986)
<i>U. cf. deningeri</i>	Betfia 7	Romania	Middle Pleistocene	Terzea (1996)
<i>U. cf. deningeri</i>	Cueva del Agua	Spain	Middle Pleistocene	Martínez and Bustos (1977)
<i>U. de. praekudarensis</i>	Kudaro 1	Georgia	Middle Pleistocene	Baryshnikov (2002)
<i>U. deningeri</i>	Hundsheim	Austria	Middle Pleistocene	von Koenigswald and Heinrich (1999)
<i>U. deningeri</i>	Koneprusy C718	Czech Rep.	Middle Pleistocene	von Koenigswald and Heinrich (1999)
<i>U. deningeri</i>	La grotte d'Aldene	France	Middle Pleistocene	Bonifay (1991)
<i>U. deningeri</i>	Grotte de l'Eglise	France	Middle Pleistocene	Bonifay (1973)
<i>U. deningeri</i>	L'Aragó	France	Middle Pleistocene	Moigne et al., 2006

<i>U. deningeri</i>	La Fage	France	Middle Pleistocene	Mourer-Chauviré et al. (2003)
<i>U. deningeri</i>	Vayssiere	France	Middle Pleistocene	Brugal and Fosse (2005)
<i>U. deningeri</i>	Vergranne	France	Middle Pleistocene	Campy (1983)
<i>U. deningeri</i>	Voigtsted	Germany	Middle Pleistocene	von Koenigswald and Heinrich (1999)
<i>U. deningeri</i>	Wurzburg-Schalksberg	Germany	Middle Pleistocene	von Koenigswald and Heinrich (1999)
<i>U. deningeri</i>	Mosbach 2	Germany	Middle Pleistocene	von Koenigswald and Heinrich (1999)
<i>U. deningeri</i>	Jockgrim	Germany	Middle Pleistocene	von Koenigswald and Heinrich (1999)
<i>U. deningeri</i>	Mauer	Germany	Middle Pleistocene	von Koenigswald and Heinrich (1999)
<i>U. deningeri</i>	Kovesvarad	Hungary	Middle Pleistocene	Jánossy (1986)
<i>U. deningeri</i>	Slivia	Italy	Middle Pleistocene	Di Stefano et al. (1994)
<i>U. deningeri</i>	Isernia la Pineta	Italy	Middle Pleistocene	Masini and Sala (2007)
<i>U. deningeri</i>	Visogliano	Italy	Middle Pleistocene	Sardella et al. (2006)
<i>U. deningeri</i>	Treugolnaya Cave	Russia	Middle Pleistocene	Baryshnikov (2002)
<i>U. deningeri</i>	Sima de los Huesos (Sierra de Atapuerca)	Spain	Middle Pleistocene	García, 2003; García and Arsuaga, 2011; Santos et al., 2014, 2017
<i>U. deningeri</i>	Galería (Sierra de Atapuerca)	Spain	Middle Pleistocene	Rodríguez et al., 2001
<i>U. deningeri</i>	Santa Isabel de Ranero	Spain	Middle Pleistocene	Torres et al., 2001, 2014; Gómez-Olivencia et al. (in preparation)
<i>U. deningeri</i>	Cueto de La Lucia (La rampa)	Spain	Middle Pleistocene	Torres, 2013
<i>U. deningeri</i>	Cueva Bunica	Spain	Middle Pleistocene	Torres, 2013
<i>U. deningeri</i>	La Brecha del Rincón	Spain	No chronology available	Rabal-Garcés and Sauqué, 2015
<i>U. deningeri</i>	Yarimbuz Cave	Turkey	Middle Pleistocene	Stiner et al. (1996)
<i>U. deningeri</i>	W. Runton Freshw. Bed (Pakefield and Bacton)	UK	Middle Pleistocene	Stuart (1995)
<i>U. deningeri</i>	Artenac-en-Charente	France	Middle/Late Pleistocene	Delagnes et al. (1999)
<i>U. de. kudarensis</i>	Kudaro 3	Georgia	Late Pleistocene	Baryshnikov (2002)
<i>U. aff. deningeri</i>	Erpfingen 1	Germany	Pleistocene	von Koenigswald and Heinrich (1999)
<i>U. cf. deningeri</i>	Les Valerots-2	France	Pleistocene	Erbajeva et al. (2001)
<i>U. cf. deningeri</i>	Randersacker	Germany	Pleistocene	Nobis (1981)
<i>U. deningeri</i>	La Belle-Roche	Belgium	Pleistocene	Cordy et al. (1992)
<i>U. deningeri</i>	Akhalkalaki	Georgia	Pleistocene	Baryshnikov (2002)

<i>U. deningeri</i>	Süssenborn	Germany	Pleistocene	Haynes (1991)
<i>U. deningeri</i>	Petralona Cave	Greece	Pleistocene	Baryshnikov and Tsoukala (2010); Santos et al., 2014, 2017
<i>U. deningeri</i>	Selva Vecchia	Italy	Pleistocene	Bon et al. (1991)
<i>U. deningeri kudarensis</i>	Akhstyrskaia Cave	Russia	Pleistocene	Baryshnikov (2002)

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