

Review

A Review on the Latest Early Pleistocene Carnivoran Guild from the Vallparadís Section (NE Iberia)

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Abstract: The Vallparadís Section encompasses various geological layers that span a significant chronological range, extending from the latest Early Pleistocene to the early Middle Pleistocene, covering a timeframe from approximately 1.2 to 0.6 Ma. This period holds particular importance, as it coincides with a significant climatic transition known as the *Early–Middle Pleistocene Transition*, a pivotal phase in Quaternary climatic history. This transition, marked by the shift from a 41,000-year obliquity-driven climatic cycle to a 100,000-year precession-forced cyclicity, had profound effects on the Calabrian carnivorous mammal communities. Notably, the once diverse carnivore guild began to decline across Europe during this period, with their last documented occurrences coinciding with those found within the Vallparadís Section (e.g., *Megantereon* or *Xenocyon*). Concurrently, this period witnessed the initial dispersals of African carnivorans into the European landscape (e.g., steppe lions), marking a significant shift in the composition and dynamics of the region’s carnivorous fauna.

Keywords: Early Pleistocene; carnivoran guild; Vallparadís Section; Epivillafranchian; Iberia

Supplementary Materials

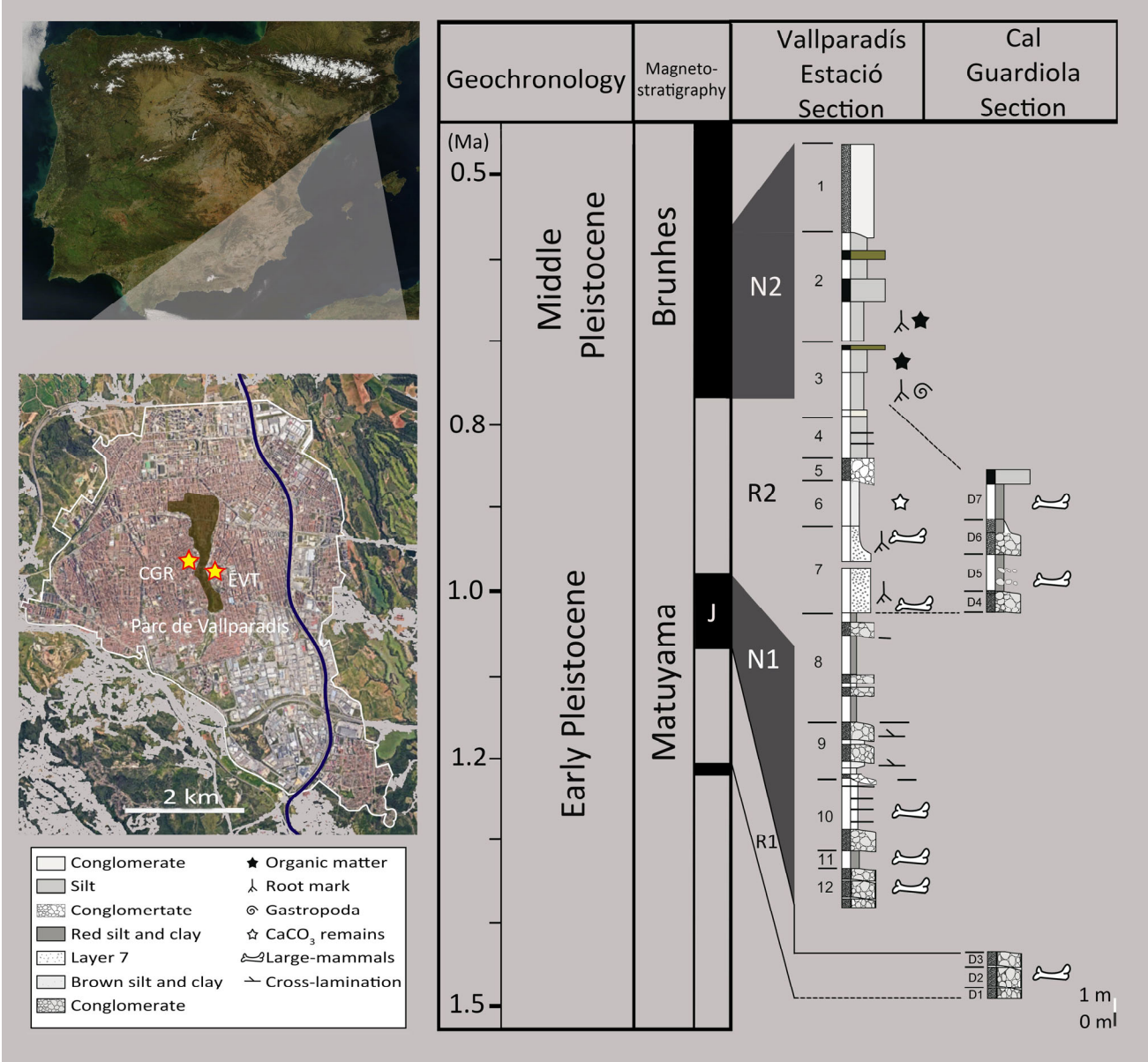


Figure S1. Geographical location of the Vallparadís Section within the Iberian Peninsula and the city of Terrassa. Additionally, composite stratigraphic section with the layer of precedence of the studied specimens.

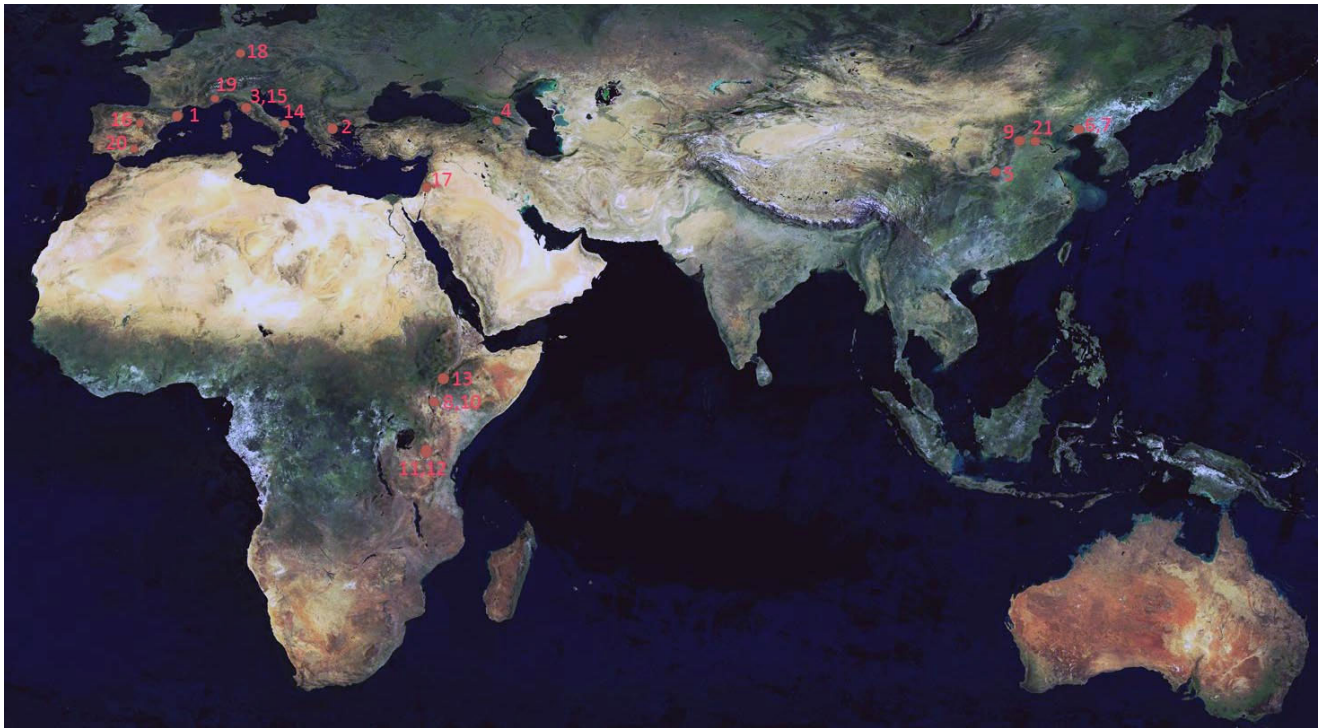


Figure S2. Map of the Old World showing the considered localities in the present study. Number: 1= Vallparadís Section (Iberia); 2=Apollonia 1 (Greece); 3= Casa Frata (Italy); 4= Dmanisi (Georgia); 5= Gongwangling (China); 6= Jinyuan Cave Lower fauna (China); 7= Jinyuan Cave Upper fauna (China); 8= KBS Member, Koobi Fora Formation (Kenya); 9= Xiashagou, Classic Nihewan (China); 10= Okote Member, Koobi Fora Formation (Kenya); 11= Olduvai Bed I (Tanzania); 12= Olduvai Bed II (Tanzania); 13= Members G-K, Shungura Formation (Ethiopia); 14= Pirro Nord (Italy); 15= Poggio Rosso (Italy); 16= Trinchera Dolina 6 (Spain); 17= Ubeidiya (Israel); 18= Untermassfeld (Germany); 19= Val-lonnet (France); 20= Venta Micena (Spain); 21= Zhoukoudian Locality 1 (China).

Table S1. Database of species occurrences per selected sites used in the analysis. Abbreviations: APL, Apollonia 1 (Greece); CF, Casa Frata (Italy); DMA, Dmanisi (Georgia); EVT10/12, Vallparadís Estacio layers 10-12 (Spain); EVT7/CGRD7, Vallparadís Estacio layer 7/Cal Guardiola 7 (Spain); GWC, Gongwangling (China); JYCLow, Jinyuan Cave Lower fauna (China); JYCUpp, Jinyuan Cave Upper fauna (China); KBS, KBS Member, Koobi Fora Formation (Kenya); Nihew, Xiashagou, Classic Nihewan (China); Okot, Okote Member, Koobi Fora Formation (Kenya); Old 1, Olduvai Bed I (Tanzania); Old 2, Olduvai Bed II (Tanzania); OMO G-K, Members GeK, Shungura Formation (Ethiopia); Pirro, Pirro Nord (Italy); PR, Poggio Rosso (Italy); TD6, Trinchera Dolina 6 (Spain); UBEL, ‘Ubeidiya (Israel); UMD, Untermassfeld (Germany); Vallonnet, Vallonnet (France); VM, Venta Micena (Spain); ZKD1, Zhokoudian Locality 1 (China). References: [9,21,23,28–44].

Sites	Diet	Ecological pref	Environment	DMA	TER	KBS	Okot	Old 2	Old 3	OMO G-K	PR	CF	VM	Pirro	APL	Vallonnet	EVT10/12	EVT7/CGRD7	TD6	UMD	UBEL	Nihew	JYCLow	GWC	JYCUpp	ZKD1
<i>Crossarchus transvaalensis</i>	Omnivorous	Omnivorous	Closed					1																		
<i>Herpestes ichneumon</i>	Mesocarnivorous	Mesocarnivorous	Open					1																		
<i>Galerella debilis</i>	Mesocarnivorous	Mesocarnivorous	Open					1																		
<i>Ichneumia albicaudata</i>	Insectivorous	Insectivorous	Mixed					1																		
<i>Mungos minutus</i>	Insectivorous	Insectivorous	Mixed					1																		
<i>Pseudocivetta ingens</i>	Mesocarnivorous	Mesocarnivorous	Mixed			1		1	1	1																
<i>Genetta genetta</i>	Mesocarnivorous	Mesocarnivorous	Mixed				1																			
<i>Helogale hirtula-kitafo</i>	Mesocarnivorous	Mesocarnivorous	Open							1																
<i>Lutra gr simplicidens</i>	Piscivorous	Piscivorous	Aquatic					1	1																	
<i>Lutra licenti</i>	Piscivorous	Piscivorous	Aquatic																			1				
<i>Vormela peregusna</i>	Hypercarnivorous - small prey	Hypercarnivorous - small prey	Open																		1					
<i>Pannonictis nestii</i>	Mesocarnivorous	Mesocarnivorous	Mixed										1													
<i>Martellictis ardea</i>	Mesocarnivorous	Mesocarnivorous	Mixed																		1					
<i>Eirictis gr pachygnatha</i>	Hypercarnivorous - small prey	Hypercarnivorous - small prey	Mixed																			1				
<i>Oriensictis melina</i>	Piscivorous	Piscivorous	Aquatic																						1	
<i>Pocilictis lybica</i>	Mesocarnivorous	Mesocarnivorous	Open		1																					
<i>Mellivora gr capensis</i>	Mesocarnivorous	Mesocarnivorous	Mixed		1																					
<i>Meles gr thoralis-meles</i>	Omnivorous	Omnivorous	Closed									1	1	1	1	1	1		1							
<i>Meles gr chiai-teihardi</i>	Omnivorous	Omnivorous	Closed																			1	1			
<i>Arctonyx minor</i>	Omnivorous	Omnivorous	Closed																					1		1
<i>Arctonyx coillaris</i>	Omnivorous	Omnivorous	Closed																					1		
<i>Martes crassa-andressoni</i>	Hypercarnivorous - small prey	Hypercarnivorous - small prey	Closed																						1	
<i>Mustela palerminea</i>	Hypercarnivorous - small prey	Hypercarnivorous - small prey	Mixed											1					1							
<i>Homotherium latidens</i>	Hypercarnivorous - large prey	Cursorial hunter	Open	1							1	1	1	1	1	1		1		1		1	1			

[illegible]