

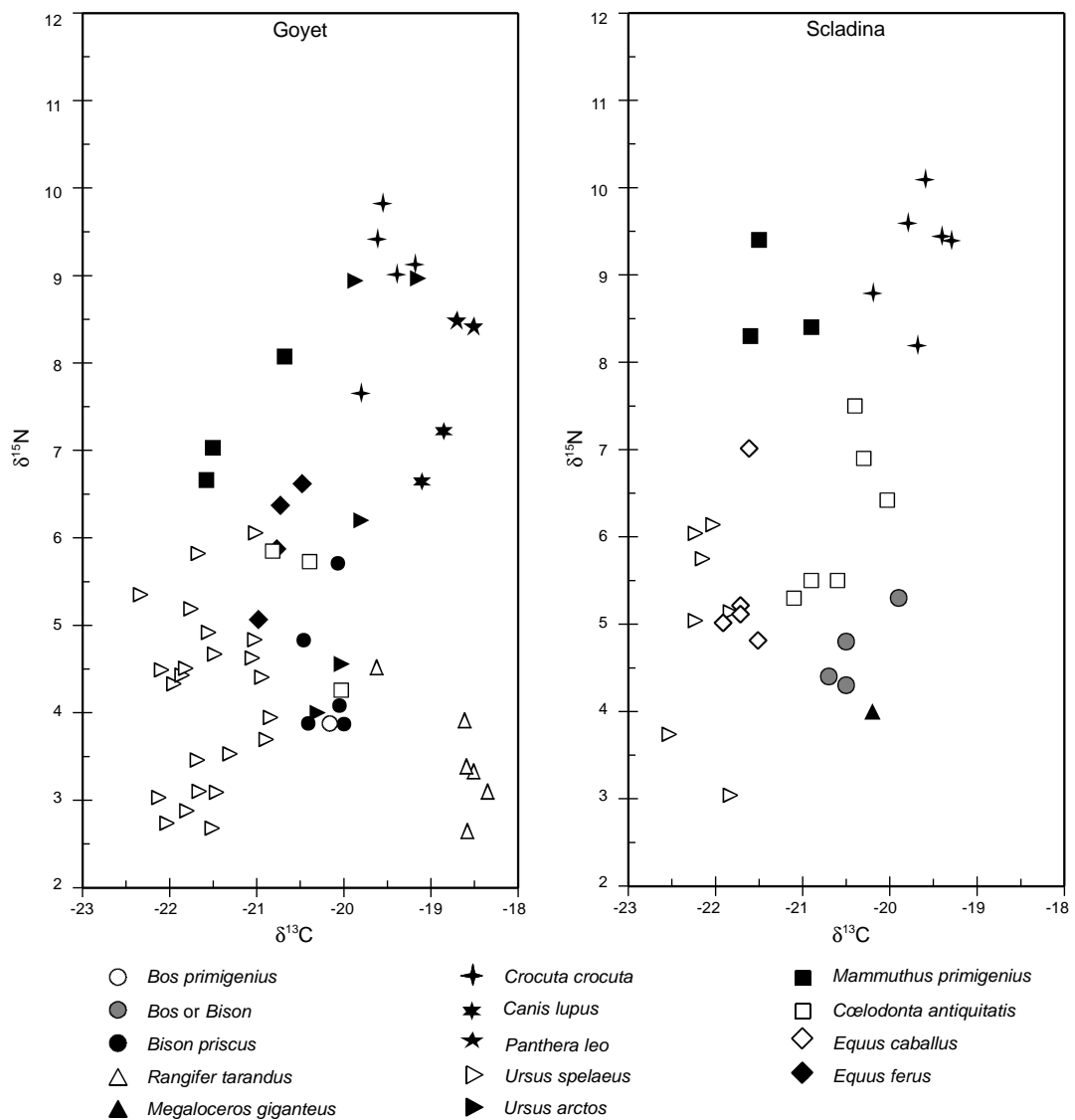
CHAPTER XVII

STABLE ISOTOPES

Supporting Information

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SF1. Comparison of the $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ values of different faunal species from Goyet and Scladina caves



ST1. Summary list of all faunal and human samples considered in the present study for isotopic analysis

<i>Species</i>	<i>Site</i>	<i>Layer/Unit</i>	<i>Age</i>	<i>Number</i>	<i>Specimens</i>	<i>Reference</i>
<i>Mammuthus primigenius</i>	Spy	Déblais sup.	~42-43 kyr BP	1	milk tooth	this study
<i>Mammuthus primigenius</i>	Goyet	A2, A3, B4	~27-40 kyr BP	3	bones	this study
<i>Mammuthus primigenius</i>	Scladina	1A	~40 kyr BP	3	teeth	Bocherens <i>et al.</i> , 1997
<i>Coelodonta antiquitatis</i>	Spy	ZB	~44-45 kyr BP	1	milk tooth	this study
<i>Coelodonta antiquitatis</i>	Goyet	A2, A3, B4	~27-40 kyr BP	3	bones	this study
<i>Coelodonta antiquitatis</i>	Scladina	1A	~40 kyr BP	6	teeth	Bocherens <i>et al.</i> , 1997
<i>Equus ferus</i>	Goyet	A3, B4	~27-40 kyr BP	4	bones	this study
<i>Equus ferus</i>	Scladina	1A	~40 kyr BP	5	teeth	Bocherens <i>et al.</i> , 1997
<i>Bos</i> or <i>Bison</i>	Goyet	A3, B4	~27-40 kyr BP	5	bones	this study
<i>Bos</i> or <i>Bison</i>	Scladina	1A	~40 kyr BP	4	teeth	Bocherens <i>et al.</i> , 1997
<i>Rangifer tarandus</i>	Spy		~34-35 kyr BP	1	bone	this study
<i>Rangifer tarandus</i>	Goyet	A3, B4	~27-40 kyr BP	6	bones	this study
<i>Megaloceros giganteus</i>	Scladina	1A	~40 kyr BP	1	bone	Bocherens <i>et al.</i> , 1997
<i>Crocota crocuta</i>	Goyet	A3, B4	~27-40 kyr BP	5	bones	this study
<i>Crocota crocuta</i>	Scladina	1A	~40 kyr BP	6	bones	Bocherens <i>et al.</i> , 1997
<i>Canis lupus</i>	Goyet	A3	~27-40 kyr BP	2	bones	this study
<i>Panthera leo</i>	Goyet	A2, A3	~27-40 kyr BP	2	bones	this study
<i>Ursus arctos</i>	Spy		~35 kyr BP	1	tooth	this study
<i>Ursus arctos</i>	Scladina	1A	~40 kyr BP	1	tooth	Bocherens <i>et al.</i> , 1997
<i>Ursus arctos</i>	Goyet	A3, B4	~27-40 kyr BP*	5	bones	this study
<i>Ursus spelaeus</i>	Goyet	A2, A3, B4	~27-40 kyr BP	23	bones	this study
<i>Ursus spelaeus</i>	Scladina	1A	~40 kyr BP	7	bones	Bocherens <i>et al.</i> , 1997
<i>Homo neanderthalensis</i>	Spy		~34-37 kyr BP	3	bones/tooth	this study
<i>Homo neanderthalensis</i>	Spy		~32 kyr BP	1	bone	Bocherens <i>et al.</i> , 2001
<i>Homo sapiens</i>	Spy		4-5 kyr BP	5	bones/tooth	this study

* indicates a species which chronology is not perfectly secure and that may include samples younger than 15,000 years BP.

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XVII. Stable isotopes

ST2. Complete list of isotopic data for faunal samples from Goyet cave used in the present study

Species	Specimen	Excavation no.	Remark	Yield (mg.g ⁻¹)	%Cc	%Nc	C/N	δ ¹³ C	δ ¹⁵ N
<i>Mammuthus primigenius</i>	long bone	2827		63.2	41.0	15.0	3.2	-20.7	8.1
<i>Mammuthus primigenius</i>	long bone	2216-1		74.7	43.9	15.6	3.3	-21.5	7.0
<i>Mammuthus primigenius</i>	skull	2737-1		142.1	41.0	14.6	3.3	-21.6	6.7
<i>Coelodonta antiquitatis</i>	unciform	2755		130.7	43.8	16.2	3.2	-20.0	4.3
<i>Coelodonta antiquitatis</i>	scaphoid	2792		169.2	43.8	15.2	3.4	-20.4	5.7
<i>Coelodonta antiquitatis</i>	1st metacarpal	2235-1		87.2	40.0	14.6	3.2	-20.8	5.9
<i>Equus ferus</i>	ectocuneiform	2224-1	individual ≠ Goyet-A3-11,12	165.2	44.9	15.9	3.3	-21.0	5.1
<i>Equus ferus</i>	ectocuneiform	2224-2	individual ≠ Goyet-A3-10,12	154.3	41.9	15.4	3.2	-20.7	6.4
<i>Equus ferus</i>	ectocuneiform	2224-3	individual ≠ Goyet-A3-10,11	127.5	43.9	15.4	3.3	-20.8	5.9
<i>Equus ferus</i>	tibia	2737		74.5	41.0	14.8	3.2	-20.5	6.6
<i>Bos primigenius</i>	centrotarsal	2737-2	individual ≠ Goyet-B4-5,7	150.2	38.7	14.1	3.2	-20.0	3.8
<i>Bison priscus</i>	tibia	2230-1	individual ≠ Goyet-A3-14	105.5	40.9	14.6	3.3	-20.0	4.1
<i>Bison priscus</i>	tibia	2230-2	individual ≠ Goyet-A3-13	103.6	41.4	14.6	3.3	-20.4	4.8
<i>Bison priscus</i>	centrotarsal	2737-1	individual ≠ Goyet-B4-6,7	103.1	40.9	14.7	3.2	-20.0	5.7
<i>Bison priscus</i>	centrotarsal	2737-3	individual ≠ Goyet-B4-5,6	65.2	38.8	14.1	3.2	-20.4	3.9
<i>Rangifer tarandus</i>	astragalus	2791-1	individual ≠ Goyet-A3-16,17,18,19	122.8	42.3	15.5	3.2	-18.5	2.6
<i>Rangifer tarandus</i>	astragalus	2791-2	individual ≠ Goyet-A3-15,17,18,19	95.2	43.0	15.1	3.3	-18.5	3.3
<i>Rangifer tarandus</i>	astragalus	2791-3	individual ≠ Goyet-A3-15,16,18,19	141.7	43.4	15.3	3.3	-18.6	3.4
<i>Rangifer tarandus</i>	astragalus	2791-4	individual ≠ Goyet-A3-15,16,17,19	167.0	43.9	15.4	3.3	-18.3	3.1
<i>Rangifer tarandus</i>	astragalus	2791-5	individual ≠ Goyet-A3-15,16,17,18	115.2	44.1	15.2	3.4	-19.6	4.5
<i>Rangifer tarandus</i>	centrotarsal	2737		95.8	41.1	14.9	3.2	-18.6	3.9
<i>Crocota crocuta</i>	3rd metatarsal	2237-1	individual ≠ Goyet-A3-6,7,8	116.8	44.3	15.5	3.3	-19.2	9.1
<i>Crocota crocuta</i>	3rd metatarsal	2237-2	individual ≠ Goyet-A3-5,7,8	114.5	43.2	15.5	3.2	-19.6	9.4
<i>Crocota crocuta</i>	3rd metatarsal	2237-3	individual ≠ Goyet-A3-5,6,8	141.7	43.8	16.0	3.2	-19.6	9.8
<i>Crocota crocuta</i>	3rd metatarsal	2237-4	individual ≠ Goyet-A3-5,6,7	184.6	43.5	15.8	3.2	-19.4	9.0
<i>Crocota crocuta</i>	humerus	2842-1		42.5	41.9	15.0	3.3	-19.8	7.7
<i>Canis lupus</i>	4th metatarsal	2240-1	individual ≠ Goyet-A3-4	166.5	43.5	15.6	3.3	-19.1	6.6
<i>Canis lupus</i>	4th metatarsal	2240-2	individual ≠ Goyet-A3-3	170.9	43.5	15.3	3.3	-18.8	7.2
<i>Panthera leo</i>	phalanx	2760		171.3	41.3	15.3	3.1	-18.5	8.4
<i>Panthera leo</i>	astragalus	2765		157.4	44.7	15.5	3.4	-18.7	8.4
<i>Ursus arctos</i>	tibia	2788-8		157.5	46.1	15.8	3.4	-19.1	9.0
<i>Ursus arctos</i>	radius	G3.4.82		53.7	37.9	13.8	3.2	-19.9	8.9
<i>Ursus arctos</i>	tibia	2745-33		159.2	44.7	16.0	3.3	-20.0	4.6
<i>Ursus arctos</i>	3rd metacarpal	G3.4.400	individual ≠ Goyet-B4-37	176.5	43.0	15.1	3.3	-20.3	4.0
<i>Ursus arctos</i>	3rd metacarpal	G3.4.401	individual ≠ Goyet-B4-36	151.2	42.9	15.1	3.3	-19.8	6.2
<i>Ursus spelaeus</i>	3rd metacarpal	2758-10		100.6	39.9	14.3	3.3	-22.1	4.5
<i>Ursus spelaeus</i>	3rd metacarpal	2758-6	individual ≠ Goyet-A2-5,6	127.5	44.3	15.3	3.4	-21.7	3.4
<i>Ursus spelaeus</i>	3rd metacarpal	2758-7	individual ≠ Goyet-A2-4,6	122.4	39.2	13.5	3.4	-21.6	3.1
<i>Ursus spelaeus</i>	3rd metacarpal	2758-8	individual ≠ Goyet-A2-4,5	93.2	38.7	13.3	3.4	-22.1	3.0
<i>Ursus spelaeus</i>	3rd metacarpal	2820-16	individual ≠ Goyet-A3-21,22,23	151.0	43.5	16.0	3.2	-21.8	2.8
<i>Ursus spelaeus</i>	3rd metacarpal	2820-11	individual ≠ Goyet-A3-20,21,23	140.0	40.7	14.6	3.2	-21.5	2.6
<i>Ursus spelaeus</i>	3rd metacarpal	2820-12	individual ≠ Goyet-A3-20,21,22	158.3	39.4	13.7	3.4	-21.9	4.3
<i>Ursus spelaeus</i>	3rd metacarpal	2820-13	individual ≠ Goyet-A3-25,26,27,28	162.0	40.1	14.4	3.2	-21.5	4.9
<i>Ursus spelaeus</i>	3rd metacarpal	2820-14	individual ≠ Goyet-A3-24,26,27,28	133.8	41.2	15.7	3.1	-21.4	3.1
<i>Ursus spelaeus</i>	3rd metacarpal	2820-15	individual ≠ Goyet-A3-24,25,27,28	74.4	38.8	13.4	3.4	-21.6	5.8
<i>Ursus spelaeus</i>	3rd metacarpal	2820-29	individual ≠ Goyet-A3-24,25,26,28	104.3	43.5	15.5	3.3	-21.5	4.6
<i>Ursus spelaeus</i>	3rd metacarpal	2820-30	individual ≠ Goyet-A3-24,25,26,27	80.4	36.8	13.4	3.2	-22.3	5.3
<i>Ursus spelaeus</i>	3rd metacarpal	2857-19	individual ≠ Goyet-B4-10,11,12,13	32.7	41.2	14.9	3.2	-21.3	3.5
<i>Ursus spelaeus</i>	3rd metacarpal	G3.4.307	individual ≠ Goyet-B4-9,11,12,13	84.8	37.9	13.7	3.2	-21.8	4.4
<i>Ursus spelaeus</i>	3rd metacarpal	2857-22	individual ≠ Goyet-B4-9,10,12,13	126.3	39.3	13.3	3.4	-20.9	4.4
<i>Ursus spelaeus</i>	3rd metacarpal	2857-25	individual ≠ Goyet-B4-9,10,11,13	133.6	43.7	15.8	3.2	-20.9	3.7
<i>Ursus spelaeus</i>	3rd metacarpal	G3.4.212	individual ≠ Goyet-B4-9,10,11,12	139.0	42.2	15.3	3.2	-21.0	4.8
<i>Ursus spelaeus</i>	3rd metacarpal	2857-20	individual ≠ Goyet-B4-15,16,17	66.7	42.0	14.9	3.3	-21.8	4.5
<i>Ursus spelaeus</i>	3rd metacarpal	2857-26	individual ≠ Goyet-B4-14,16,17	150.0	43.0	15.3	3.3	-21.0	4.6
<i>Ursus spelaeus</i>	3rd metacarpal	G3.4.206	individual ≠ Goyet-B4-14,15,17	50.6	36.4	14.5	2.9	-21.0	6.0
<i>Ursus spelaeus</i>	3rd metacarpal	G3.4.214	individual ≠ Goyet-B4-14,15,16	126.9	41.8	14.5	3.4	-20.8	3.9
<i>Ursus spelaeus</i>	radius	G3.4.81		58.0	40.7	14.8	3.2	-21.7	5.2
<i>Ursus spelaeus</i>	3rd metacarpal	2742-10	very large	167.6	41.2	14.1	3.4	-22.0	2.7
				min	36.4	13.3	2.9		
				max	46.1	16.2	3.4		

ST3. Average and standard-deviation of $\delta^{13}C$ and $\delta^{15}N$ values for the main faunal species at Scladina and Goyet. *P* values stand for results of Mann-Whitney statistical tests, with significant values in bold

<i>Species</i>	$\delta^{13}C_{SC}$	$\delta^{13}C_{Goyet}$	<i>p</i>	$\delta^{15}N_{SC}$	$\delta^{15}N_{Goyet}$	<i>p</i>
<i>Crocota</i>	-19.7 ± 0.3	-19.5 ± 0.2	0.459	9.3 ± 0.6	9.0 ± 0.7	0.522
<i>Mammuthus</i>	-21.3 ± 0.3	-21.3 ± 0.4	0.822	8.7 ± 0.5	7.3 ± 0.6	0.049
<i>Equus</i>	-21.7 ± 0.1	-20.7 ± 0.2	0.014	5.4 ± 0.8	6.0 ± 0.6	0.268
<i>Bos or Bison</i>	-20.4 ± 0.3	-20.4 ± 0.2	0.209	4.7 ± 0.4	4.4 ± 0.7	0.389
<i>Ursus spelaeus</i>	-22.1 ± 0.2	-21.5 ± 0.4	0.003	4.9 ± 1.1	4.1 ± 1.0	0.077

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