

Early Miocene soricids (Insectivora, Mammalia) from Limagne (Central France): New systematic comparisons, updated biostratigraphic data and evolutionary implications

Les soricidés miocènes inférieurs (Insectivora, Mammalia) de Limagne (Centre France) : nouvelles comparaisons systématiques, mise à jour des données biostratigraphiques et implications évolutives

Marguerite Hugueney *, Olivier Maridet

Auteur correspondant / *Corresponding author* : marguerite.hugueney@univ-lyon1.fr

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Matériel supplémentaire / *Supplementary materials*

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Table S1. List of characters coded for the parsimony analysis.

1. Mental foramen: before p4 (0); below p4 (1); between p4 and m1 (2); below m1 (3) [ordered]
2. Postsymphylar foramen: absent (0); before m1 (1); below m1 (2) [ordered]
3. Articular condyle: not divided (0); weakly divided (1); strongly divided (2) [ordered]
4. Internal temporal fossa: absent (0); present (1)
5. Internal temporal fossa base: slightly oblique (0); strongly oblique (1)
6. Lower anteromolars: differentiated (0); - not differentiated (1)
7. Number of lower incisors: more than one (0); one (1)
8. Shape of lower incisor: short (0); elongated (1)
9. Cusps of lower incisor: no cusp (0); two cusps (1); three cusps (2); more than three cusps (3) [not ordered]
10. Axis crown-root/lower incisor: forming an angle (0); aligned (1)
11. Extension of the post bucal surface of lower incisor: none (0); weakly developed (1); strongly developed (2) [ordered]
12. p4: not reduced (0); reduced (1)
13. Small anteromolar incrustrated under p4: absent (0); present (1)
14. Number of lower anteromolars before p4: more than three (0); three (1); two (2); one (3) [ordered]
15. Morphology of p4: molar-like (0); one labial crest (1); two sub-equal crests (2); two crests with the lingual one longer [not ordered]
16. Labial cingulum on m1-2: absent (0); almost discontinuous (1); continuous (2) [not ordered]
17. Talonid on m3: as long or longer than trigonid (0); shorter (1)
18. Entoconid on m3: clearly developed (0); weakly developed (1); absent (2) [ordered]
19. Zygomatic arc: absent (0); present (1)
20. Anteromolars before P4: more than five (0); five (1); less than five (2) [ordered]
21. Morphology of P4: with metacone (0); without metacone (1)
22. Shape of P4: trapezoid (0); triangular (1)
23. Protocone of P4: forming trigone (0); without trigone (1)
24. Talon P4-M1: lingually elongated (0); not elongated (1)
25. Dilambdodonty: absent or weak (0); strong (1)
26. Metaloph of M1-2: absent (0); present (1)
27. Hypocone of M1-2: absent or weak (0); strong (1)

Table S2. Matrix of characters processed for the parsimony analysis.

Character #	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>Saturninia gracilis</i>	0	0	0	0	?	0	0	0	1	?	0	0	0	0
<i>Srinitium marteli</i>	0	1	?	1	?	?	?	?	1	0	0	?	?	0
<i>Clapasorex sigei</i>	1	?	1	1	0	1	1	1	3	1	1	1	1	1
<i>Oligosorex antiquus</i>	1	2	1	1	0	1	1	1	1	1	1	1	1	1
<i>Oligosorex thauensis</i>	1	?	1	1	0	1	1	1	1	1	1	1	1	1
<i>Meingensorex ambiguus</i>	1	2	1	1	1	1	1	1	1	0	1	1	0	2
<i>Soricella discrepans</i>	1	?	1	1	1	1	1	0	1	0	1	1	0	2
<i>Carposorex sylviae</i>	1	?	?	?	?	1	1	1	?	1	1	1	1	2
<i>Crocidosorex piveteaui</i>	1	?	?	1	?	?	?	?	?	?	?	1	1	?
<i>Lartetium prevostianum</i>	1	1	?	?	?	1	1	1	1	1	2	1	1	1
<i>Miosorex grivensis</i>	1	2	1	1	1	1	1	1	1	1	1	1	1	2
<i>Miosorex desnoyersianus</i>	2	1	2	1	0	1	1	1	2	1	1	1	1	2
<i>Myosorex meini</i>	1	?	1	1	1	1	1	1	1	1	1	1	1	2
<i>Crocidura leucodon</i>	2	2	1	1	1	1	1	1	0	1	1	1	0	3
<i>Sorex araneus</i>	3	2	2	1	0	1	1	1	2	1	2	1	0	3

	15	16	17	18	19	20	21	22	23	24	25	26	27
<i>Saturninia gracilis</i>	0	0	0	0	1	0	0	0	0	0	0	0	0
<i>Srinitium marteli</i>	?	2	1	0	?	?	1	?	?	1	1	1	1
<i>Clapasorex sigei</i>	3	2	1	2	0	1	1	0	1	1	1	0	0
<i>Oligosorex antiquus</i>	2	1	1	1	0	1	1	0	0	1	1	0	1
<i>Oligosorex thauensis</i>	2	2	1	2	0	1	1	0	0	1	1	0	1
<i>Meingensorex ambiguus</i>	2	2	1	1	?	1	1	1	1	0	1	0	1
<i>Soricella discrepans</i>	2	2	1	1	0	1	1	0	0	1	1	1	1
<i>Carposorex sylviae</i>	1	1	1	2	?	?	?	?	?	?	?	?	?
<i>Crocidosorex piveteaui</i>	1	0	1	0	?	?	?	?	?	?	?	?	?
<i>Lartetium prevostianum</i>	2	2	1	1	0	?	1	1	?	1	1	0	1
<i>Miosorex grivensis</i>	2	2	1	2	0	1	1	0	1	1	1	0	1
<i>Miosorex desnoyersianus</i>	2	2	1	2	0	?	1	0	0	1	1	0	1
<i>Myosorex meini</i>	2	2	1	2	0	2	1	0	1	1	1	0	1
<i>Crocidura leucodon</i>	2	2	1	2	0	2	1	0	1	1	1	0	1
<i>Sorex araneus</i>	1	2	1	1	0	1	1	0	1	1	1	0	1

Table S3. Measurements of soricid mandibular teeth from Limagne.

Specimen Number	a1		a2		p4		m1			m2			m3			p4-m3	m1-m3
	L	W	L	W	L	W	L	TrW	TaW	L	TrW	TaW	L	TrW	TaW	L	L
<i>Meingensorex ambiguus</i> - Montaigu																	
NMB Ph.2255	0.99	0.53	-	-	0.97	0.53	1.38	0.75	0.84	1.35	0.82	0.87	1.10	0.67	0.55	-	3.60
NMB Ph.11	0.91	0.57	0.52	0.49	1.00	0.52	1.40	0.74	0.85	-	-	-	-	-	-	4.37	3.50
NMB Ph.2222	0.98	0.54	0.53	0.44	1.01	0.59	1.40	0.74	0.85	1.34	0.78	0.85	-	-	-	4.25	3.50
NMB Ph.9	-	-	-	-	-	-	1.30	0.72	0.84	1.22	0.77	0.78	-	-	-	-	3.39
NMB Ph.10	-	-	-	-	-	-	1.37	0.77	0.90	-	-	-	-	-	-	-	-
NMB Ma.7593	-	-	-	-	-	-	1.29	0.78	0.89	1.20	0.78	0.84	-	-	-	-	3.42
<i>Crocidosorex piveteaui</i> - Marcoin																	
MNHN Cr.39	-	-	-	-	0.86	0.62	1.34	0.85	0.91	1.34	0.90	0.91	1.13	0.73	0.52	4.43	3.70
<i>Oligosorex antiquus</i> - Montaigu																	
NMB Ph.12	0.93	0.62	0.57	0.51	0.82	0.82	1.32	0.79	0.86	1.26	0.83	0.85	1.10	0.70	0.42	4.20	3.52
NMB Ph.7	-	-	-	-	0.93	0.84	1.27	0.90	0.97	1.25	0.83	0.82	1.05	0.74	0.40	4.25	3.47
NMB Ph.8	-	-	-	-	1.00	0.62	1.24	0.92	0.96	1.36	0.92	0.92	-	-	-	4.27	3.48
NMB Ma.7589	0.90	0.62	0.55	0.52	0.80	0.86	1.28	0.78	0.85	1.24	0.80	0.85	1.03	0.64	0.44	4.20	3.48
NMB Ma.7592	-	-	-	-	-	-	1.24	0.80	0.90	1.19	0.80	0.86	1.03	0.63	0.50	-	3.48
<i>Oligosorex antiquus</i> - Le Vendant																	
FSL 98191	-	-	-	-	-	-	1.34	0.83	0.91	1.37	0.86	0.89	1.14	0.77	0.54	-	3.58
FSL 98192	-	-	-	-	-	-	1.39	0.80	0.89	-	-	-	-	-	-	-	3.65
FSL 98193	-	-	-	-	0.84	0.60	1.29	0.91	0.91	1.38	0.91	0.89	1.10	0.71	0.42	-	3.48

Table S4. Measurements of soricid maxillar teeth from Limagne.

Specimen Number	A3		A4		A5		P4		M1		M2		M3		P4-M3	M1-M3
	L	W	L	W	L	W	L	W	L	W	L	W	L	W	L	L
<i>Meingensorex ambiguus</i> - Montaigu																
NMB Ph.2219	-	-	-	-	-	-	1.50	1.15	1.32	1.46	-	-	-	-	-	-
<i>Oligosorex antiquus</i> - Montaigu																
NMB Ma 5274	0.54	0.46	0.42	0.42	0.42	0.44	1.47	1.35	1.35	1.45	1.27	1.59	0.74	1.33	4.30	3.05
ML Stg 838	-	-	-	-	-	-	1.37	1.27	1.26	1.54	1.24	1.44	0.66	1.30	4.10	2.99