

**Online Supplementary Material:** Damien Becker, Pierre-Olivier Antoine & Olivier Maridet. A new genus of Rhinocerotidae (Mammalia, Perissodactyla) from the Oligocene of Europe

**Table 1.** Comparison between the rodent assemblage of Poillat (Delémont valley, Canton Jura, NW Switzerland) and other European faunas having a similar composition (Theridomyidae, Cricetidae and Gliridae). Modified after Vianey-Liaud & Schmid (2009) and completed according to Aguilar *et al.* (1997), Engesser & Mödden (1997), Uhlig (2001) and Berger (2008).

	MP22		MP23			MP24			
	Cavalié (France)	Balm (Switzerland)	Montalban (France)	Pech Crabit (France)	Itardies (France)	Poillat (Switzerland)	Saint Martin de Castillon (France)	Lebratières 14 (France)	Heimersheim (Germany)
<b>Theridomyidae</b>									
<i>Suevosciurus ehingensis</i>				cf.	+				
<i>Sciurmys cayluxi</i>	+								
<i>Blainvillimys langeae/gregarius</i>	+	+	+						
<i>Blainvillimys varians/helmeri</i>		+		+	+	+	?	+	
<i>Blainvillimys avus</i>								+	
<i>Blainvillimys heimersheimensis</i>						<b>aff.</b>			+
<i>Protechimys truci/lebratierensis</i>						<b>cf.</b>	+	+	
<i>Theridomys margaritae</i>				cf.	cf.				
<i>Theridomys ludensis</i>								cf.	
<i>Pseudoltinomys major</i>	+		+	+	+				
<i>Issiodoromys balmensis</i>		+							
<i>Issiodoromys medius</i>				+	+				
<i>Issiodoromys minor 1</i>							+	+	
<i>Toeniodus ernii</i>		+							
<i>Toeniodus curvistriatus</i>							+		
<i>Toeniodus hexalophodus</i>									+
<i>Elfomys balmensis</i>		+							
<i>Elfomys nanus</i>			+						
<b>Cricetidae</b>									
<i>Melissiodon sp.</i>								+	
<i>Paracricetodon sp.</i>					+			+	
<i>Paracricetodon dehmi</i>		+				+	+		
<i>Paracricetodon walgeri</i>									+
<i>Pseudocricetodon montalbanensis</i>		aff.	+	+	+	<b>cf.</b>	?		
<i>Pseudocricetodon moguntiacus</i>									+
<i>Eucricetodon murinus</i>		+							
<i>Eucricetodon huberi</i>						<b>cf.</b>	cf.		
<i>Atavocricetodon nanus</i>	aff.		+						
<i>Atavocricetodon? atavus/atavoides</i>				+	+			+	+
<i>Atavocricetodon hugueneyae</i>			+						
<i>Atavocricetodon minusculus</i>			+						
<i>Atavocricetodon sp.</i>			+						
<b>Gliridae</b>									
<i>Schizoglivrus tenuis</i>		+		+	+	<b>cf.</b>			+
<i>Schizoglivrus majori</i>		+					aff.		
<i>Schizoglivrus sp.</i>			+						
<i>Bransatoglis misonnei</i>				+	+				
<i>Bransatoglis heissigi</i>									+
<i>Bransatoglis micio</i>					+				
<i>Bransatoglis planus</i>									+
<i>Glamys priscus</i>					+				

**Table 2.** Character coding sources (direct observation and/or literature) for each terminal taxon included within the present phylogenetic analysis (see Fig. 6). Taxa are arranged in alphabetic order. The ‘direct observation’ column indicates the institution where the material is stored (see Institutional Abbreviation list in text).

Terminal	Character coding sources	
	Direct observation	Literature
<i>Aceratherium incisivum</i> Kaup, 1832	MHNT; MNHN	Kaup 1832; Guérin 1980; Hünermann 1989
<i>Alicornops simorrese</i> (Lartet, 1851)	MHNT; MNHN; NHM	Guérin 1980; Cerdeño & Sánchez 2000
<i>Bugtirhinus praecursor</i> Antoine & Welcomme, 2000	MHNT; pers. obs. (POA)	Antoine & Welcomme 2000
<i>Diceratherium armatum</i> Marsh, 1875	AMNH	Prothero 2005
<i>Dicerorhinus sumatrensis</i> (Fischer Von Waldheim, 1814)	MNHN	Cuvier 1822; Guérin 1980
<i>Diceros bicornis</i> (Linnaeus, 1758)	MNHN	Guérin 1980
<i>Epiaceratherium bolcense</i> Abel, 1910	–	Dal Piaz 1930
<i>Epiaceratherium magnum</i> Uhlig, 1999	NMB	Uhlig 1999; Becker 2009
<i>Hispanotherium beonense</i> (Antoine, 1997)	MHNT	Antoine 2002, 2003; Antoine, Bulot & Ginsburg 2000
<i>Hoploaceratherium tetradactylum</i> (Lartet, 1851)	MHNT, MNHN	Guérin 1980
<i>Hyrachyus eximius</i> Leidy, 1871	AMNH	Leidy 1871
<i>Lartetotherium sansaniense</i> (Lartet, 1837)	MHNT; MNHN; NHM	Klaits 1973; Guérin 1980
<i>Menoceras arikareense</i> (Barbour, 1906)	AMNH	Tanner 1969; Prothero 2005
<i>Mesaceratherium pauliacense</i> (Richard, 1937)	MHNT; Rhinopolis	Richard 1937; de Bonis 1973
<i>Mesaceratherium gaimersheimense</i> Heissig, 1969	MHNT	Heissig 1969; Laudet & Antoine 2004; Antoine <i>et al.</i> 2006
<i>Mesaceratherium welcommi</i> Antoine & Downing, 2010	MHNT; HUPM	Falconer & Cautley 1846; Pilgrim 1912; Forster-Cooper 1934; Lindsay <i>et al.</i> 2005
<b><i>Molassitherium albigense</i> (Roman, 1912) comb. nov.</b>	MHNT; FSL	Duvernoy 1853; Roman 1912; Antoine <i>et al.</i> 2011; Lihoreau <i>et al.</i> 2009
<b><i>Molassitherium delemontense</i> gen. et sp. nov.</b>	MJSN; NMB; MHNT	Uhlig 1999
<i>Plesiaceratherium mirallesi</i> (Crusafont, Villalta & Truyols, 1955)	MHNT; MNHN; UCBL	Crusafont <i>et al.</i> 1955; Yan & Heissig 1986; Antoine <i>et al.</i> 2000
<i>Pleuroceros pleuroceros</i> (Duvernoy, 1853)	MHNL; UCBL; Rhinopolis; MNHN	Duvernoy 1853; de Bonis 1973
<i>Pleuroceros blanfordi</i> (Lydekker, 1884)	MHNT; HUPM	Lydekker 1884; Pilgrim, 1912; Forster-Cooper 1934

<i>Prosantorhinus douvillei</i> (Osborn, 1900)	MHNT; MNHN; UCBL	Wermelinger 1998; Antoine <i>et al.</i> 2000
<i>Protaceratherium minutum</i> (Cuvier, 1822)	MHNT; MNHN; UCBL	Roman 1924; de Bonis 1973
<i>Rhinoceros sondaicus</i> Desmarest, 1822	MHNT; MNHN	de Blainville 1839-1864; Guérin 1980
<i>Rhinoceros unicornis</i> Linnaeus, 1758	MNHN	de Blainville 1839-1864; Guérin 1980
<i>Subhyracodon occidentalis</i> (Leidy, 1851)	–	Scott 1941; Prothero 1998, 2005
<i>Ronzotherium filholi</i> Osborn, 1900	IPHEP; MHNT	Osborn 1900; Heissig 1969; Brunet 1979
<i>Tapirus terrestris</i> (Linnaeus, 1758)	MHNT; MNHN-AC (collection of comparative anatomy)	de Blainville 1839-1864
<i>Teleoceras fossiger</i> (Cope, 1878)	AMNH; UCBL	Osborn 1900
<i>Trigonias osborni</i> Lucas, 1900	AMNH	Lucas 1900; Wood 1927; Scott 1941; Prothero 2005

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**Appendix 1.** Morphological characters used in the phylogenetic analysis. The list corresponds to the 214 characters included in the list proposed by Antoine (2003) and Antoine *et al.* (2003b).

**Cranial characters**

1. *Maxilla: foramen infraorbitalis*: (0) above premolars; (1) above molars.
2. *Nasal septum*: (0) never ossified; (1) ossified (sometimes->always).
3. *Nasal/lacrymal: contact*: (0) long; (1) punctual or absent.
4. *Zygomatic arch*: (0) low; (1) high; (2) very high.
5. *Zygomatic arch: processus postorbitalis*: (0) present; (1) absent.
6. *Zygomatic arch: processus postorbitalis*: (0) on jugal; (1) on squamosal.
7. *Jugal/squamosal: suture*: (0) smooth; (1) rugose.
8. *Skull: dorsal profile*: (0) flat; (1) concave; (2) very concave.
9. *Sphenoid: foramina sphenorbitale & rotundum*: (0) distinct; (1) fused (foramen ovale).
10. *Squamosal: area between temporal and nuchal crests*: (0) flat; (1) depression.
11. *External auditory pseudo-meatus*: (0) open; (1) partly closed; (2) totally closed (circular).
12. *Occipital side*: (0) inclined forward; (1) vertical; (2) inclined backward.
13. *Occipital: nuchal tubercle*: (0) small; (1) developed; (2) much developed.
14. *Pterygoid: posterior margin*: (0) nearly horizontal; (1) nearly vertical.
15. *Skull*: (0) dolichocephalic; (1) brachycephalic.
16. *Nasal bones: rostral end*: (0) narrow; (1) broad; (2) very broad.
17. *Nasal bones*: (0) totally separated; (1) anteriorly separated; (2) fused.
18. *Nasal bones*: (0) long; (1) short; (2) very long.
19. *Median nasal horn*: (0) absent; (1) present.
20. *Median nasal horn*: (0) small; (1) large.
21. *Paired nasal horns*: (0) terminal bumps; (1) lateral crests.
22. *Frontal horn*: (0) absent; (1) present.
23. *Frontal-parietal*: (0) sagittal crest; (1) close fronto-parietal crests; (2) distant crest.
24. *Occipital crest*: (0) concave; (1) straight; (2) forked.
25. *Maxilla: processus zygomaticus maxillari*: (0) progressive; (1) brutal.
26. *Vomer*: (0) sharp; (1) rounded.
27. *Squamosal: articular tubercle*: (0) smooth; (1) sharp, carinated.
28. *Squamosal: transversal profile of the articular tubercle*: (0) straight; (1) concave.
29. *Squamosal: processus postglenoidalis (articulation, in cross section)*: (0) flat; (1) convex; (2) right dihedron.
30. *Basioccipital: sagittal crest on the basilar process*: (0) absent; (1) present.
31. *Squamosal: posterior groove on the processus zygomaticus*: (0) absent; (1) present.
32. *Squamosal-occipital: processus posttympanicus and processus paraoccipitalis*: (0) fused; (1) distant.
33. *Squamosal: processus posttympanicus*: (0) well-developed; (1) little-developed; (2) huge.
34. *Occipital: foramen magnum*: (0) circular; (1) subtriangular.
35. *Basioccipital: median ridge on the condyle*: (0) absent; (1) present.
36. *Basioccipital: median truncation on the condyle*: (0) absent; (1) present.

**Mandibular characters**

37. *Symphysis (orientation)*: (0) very upraised; (1) upraised; (2) nearly horizontal; (3) sloping down.
38. *Symphysis*: (0) spindly; (1) massive; (2) very massive.
39. *Corpus mandibulae: lingual groove*: (0) present; (1) absent.
40. *Corpus mandibulae: lingual groove*: (0) still present at adult stage; (1) present at juvenile stage only.
41. *Corpus mandibulae: base*: (0) straight; (1) convex; (2) very convex.
42. *Ramus*: (0) vertical; (1) inclined forward; (2) inclined backward.
43. *Ramus: processus coronioideus*: (0) well-developed; (1) little-developed.
44. *Foramen mandibulare*: (0) below teeth-neck line; (1) above teeth-neck level.

**Dental characters**

45. *Compared length of P-p/M-m*: (0)  $(100 * LP3-4/LM1-3) > 50$ ; (1)  $42 < (100 * LP3-4/LM1-3) < 50$ ; (2)  $(100 * LP3-4/LM1-3) < 42$ .
46. *Cheek teeth: cement*: (0) absent; (1) present.
47. *Cheek teeth: aspect of the enamel*: (0) wrinkled; (1) wrinkled and corrugated; (2) corrugated and arborescent.
48. *Cheek teeth: crown*: (0) low; (1) high.
49. *Cheek teeth: roots*: (0) distinct; (1) joined; (2) fused.
50. *I1*: (0) present; (1) absent.
51. *I1: shape of the crown (cross section)*: (0) almond; (1) oval; (2) halfmoon.
52. *I2*: (0) present; (1) absent.
53. *I3*: (0) present; (1) absent.
54. *C*: (0) present; (1) absent.
55. *i1*: (0) present; (1) absent.
56. *i1: crown*: (0) developed, with a pronounced neck; (1) reduced and/or vestigial.
57. *i2: shape*: (0) incisor-like; (1) tusk-like.
58. *i2: orientation*: (0) parallel; (1) diverging rostrally.
59. *i3*: (0) present; (1) absent.

60. c: (0) present; (1) absent.
61. *Upper premolars: labial cingulum*: (0) always present; (1) usually present; (2) usually absent; (3) always absent.
62. *P2-4: crochet*: (0) always absent; (1) usually absent; (2) usually present; (3) always present.
63. *P2-4: crochet*: (0) always simple; (1) usually simple; (2) usually multiple.
64. *P2-4: metaloph constriction*: (0) absent; (1) present.
65. *P2-4: lingual cingulum*: (0) always present; (1) usually present; (2) usually absent; (3) always absent.
66. *P2-4: lingual cingulum*: (0) continuous; (1) reduced.
67. *P2-4: postfossette*: (0) narrow; (1) wide; (2) posterior wall.
68. *P2-3: antecrochet*: (0) always absent; (1) usually absent; (2) usually present; (3) always present.
69. *P1 (in adults)*: (0) always present; (1) usually present; (2) usually absent.
70. *P2: protocone and hypocone*: (0) fused; (1) lingual bridge; (2) separated; (3) lingual wall.
71. *P2: metaloph*: (0) hypocone posterior to metacone; (1) transverse; (2) hypocone anterior to metacone.
72. *P2: protocone/hypocone*: (0) equal or stronger; (1) less strong.
73. *P2: protoloph*: (0) present; (1) absent.
74. *P2: protoloph*: (0) joined to the ectoloph; (1) interrupted.
75. *P3-4: constriction of the protocone*: (0) always absent; (1) usually absent; (2) usually present; (3) always present.
76. *P3-4: protocone and hypocone*: (0) fused; (1) lingual bridge; (2) separated; (3) lingual wall.
77. *P3-4: metaloph*: (0) transverse; (1) hypocone posterior to metacone; (2) hypocone anterior to metacone.
78. *P3: protoloph*: (0) joined to the ectoloph; (1) interrupted.
79. *P4: antecrochet*: (0) always absent; (1) usually absent; (2) usually present; (3) always present.
80. *P4: metacone and hypocone*: (0) joined; (1) separated.
81. *Upper molars: labial cingulum*: (0) always present; (1) usually present; (2) usually absent; (3) always absent.
82. *Upper molars: antecrochet*: (0) always absent; (1) usually absent; (2) usually present; (3) always present.
83. *Upper molars: crochet*: (0) always absent; (1) usually absent; (2) usually present; (3) always present.
84. *Upper molars: crista*: (0) always absent; (1) usually absent; (2) usually present; (3) always present.
85. *Upper molars: medifossette*: (0) always absent; (1) usually absent; (2) usually present.
86. *Upper molars: lingual cingulum*: (0) always present; (1) usually present; (2) usually absent; (3) always absent.
87. *M1-2: constriction of the protocone*: (0) always absent; (1) usually absent; (2) usually present; (3) always present.
88. *M1-2: constriction of the protocone*: (0) weak; (1) strong.
89. *M1-2: metacone fold*: (0) present; (1) absent.
90. *M1-2: metastyle*: (0) short; (1) long.
91. *M1-2: metaloph*: (0) long; (1) short.
92. *M1-2: posterior part of the ectoloph*: (0) straight; (1) concave.
93. *M1-2: posterior cingulum*: (0) continuous; (1) low and interrupted.
94. *M1: metaloph*: (0) continuous; (1) hypocone isolated.
95. *M2: protocone, lingual groove*: (0) always absent; (1) usually absent; (2) always present.
96. *M2: metaloph*: (0) continuous; (1) hypocone isolated.
97. *M2: mesostyle*: (0) absent; (1) present.
98. *M3: ectoloph and metaloph*: (0) distinct; (1) fused (ectometaloph).
99. *M3: shape*: (0) quadrangular; (1) triangular.
100. *M3: constriction of the protocone*: (0) always absent; (1) usually absent; (2) always present.
101. *M3: posterior groove on the ectometaloph*: (0) present; (1) absent.
102. *p2-3: vertical external rugosities*: (0) absent; (1) present.
103. *Lower cheek teeth: external groove*: (0) developed; (1) smooth (U-shaped); (2) acute (V-shaped).
104. *Lower cheek teeth: trigonid*: (0) angular; (1) rounded.
105. *Lower cheek teeth: trigonid*: (0) obtuse or right dihedral; (1) acute dihedral.
106. *Lower cheek teeth: metaconid*: (0) joined to the metalophid; (1) constricted.
107. *Lower premolars: lingual opening of the posterior valley (lingual view)*: (0) U-shaped; (1) V-shaped.
108. *Lower premolars: lingual cingulum*: (0) always present; (1) usually present; (2) usually present; (3) always present.
109. *Lower premolars: lingual cingulum*: (0) reduced; (1) continuous.
110. *Lower premolars: labial cingulum*: (0) present; (1) abse\_h.
111. *Lower premolars: labial cingulum*: (0) continuous; (1) reduced.
112. *D1/P1 (in adults)*: (0) always present; (1) usually present; (2) usually absent; (3) always absent.
113. *d1*: (0) always biradicate; (1) usually biradicate; (2) always one-rooted.
114. *p2: paralophid*: (0) isolated, spur-like; (1) curved, without constriction.
115. *p2: posterior valley*: (0) lingually open; (1) usually closed; (2) always closed.
116. *Lower molars: lingual cingulum*: (0) reduced; (1) continuous.
117. *Lower molars: hypolophid*: (0) transverse; (1) oblique; (2) almost mesiodistally oriented.
118. *m2-3: lingual groove of the entoconid*: (0) absent; (1) present.
119. *D2: mesostyle*: (0) present; (1) absent.
120. *D3-4: mesostyle*: (0) absent; (1) present.
121. *D2: secondary folds*: (0) absent; (1) present.
122. *Lower milk teeth: constriction of the metaconid*: (0) present; (1) absent.
123. *Lower milk teeth: protoconid fold*: (0) present; (1) absent.
124. *d2-3: vertical external rugosities*: (0) absent; (1) present.
125. *d2-3: ectolophid fold*: (0) present; (1) absent.
126. *d2: anterior groove on the ectolophid*: (0) absent; (1) present.
127. *d2: paralophid*: (0) simple; (1) double.
128. *d2: posterior valley*: (0) always open; (1) usually open; (2) usually closed; (3) always closed.
129. *d3: lingual groove on the entoconid*: (0) always absent; (1) usually absent; (2) always present.

#### **Postcranial characters**

130. *Atlas: outline of the rachidian canal*: (0) bulb; (1) mushroom.
131. *Atlas: alar notch*: (0) absent; (1) present.
132. *Atlas: foramen vertebrale lateralis*: (0) absent; (1) present.
133. *Atlas: condylar facets*: (0) comma-like; (1) kidney-like.

134. *Atlas: axis-facets:* (0) straight; (1) sigmoid; (2) transversally concave.
135. *Atlas: foramen transversarium:* (0) present; (1) absent.
136. *Scapula:* (0) elongated ( $1.5 < H/APD < 2$ ); (1) very elongated ( $2 < H/APD$ ); (2) spatulated ( $H/APD < 1.5$ ).
137. *Scapula: glenoid fossa:* (0) oval; (1) medial border straight.
138. *Humerus: fossa olecrani:* (0) high; (1) low.
139. *Humerus: distal articulation:* (0) egg cup-shaped (shallow median constriction); (1) diabolo-shaped (strong median constriction).
140. *Humerus: scar on the trochlea:* (0) absent; (1) present.
141. *Humerus: distal gutter on the epicondyle:* (0) absent; (1) present.
142. *Radius: anterior border of the proximal articulation:* (0) straight; (1) M-shaped.
143. *Radius: medial border of the diaphysis:* (0) straight; (1) concave.
144. *Radius: proximal ulna-facets:* (0) always separate; (1) usually separate; (2) usually fused; (3) always fused.
145. *Radius: insertion of the m. biceps brachii:* (0) shallow; (1) deep.
146. *Radius/ulna:* (0) independent; (1) in contact or fused.
147. *Radius: gutter for the m. extensor carpi:* (0) deep and wide; (1) weakly developed.
148. *Radius: posterior expansion of the scaphoid-facet:* (0) low; (1) high.
149. *Ulna: angle between diaphysis and olecranon:* (0) open; (1) closed.
150. *Ulna: anterior tubercle on the distal end:* (0) absent; (1) present.
151. *Scaphoid: postero-proximal facet with semilunate:* (0) present; (1) absent or contact.
152. *Scaphoid: trapezium-facet:* (0) large; (1) small.
153. *Scaphoid: magnum-facet in lateral view:* (0) concave; (1) straight.
154. *Scaphoid: comparison between anterior and posterior heights:* (0) equal; (1) antH < postH.
155. *Semilunate: ulna-facet:* (0) absent; (1) present.
156. *Semilunate: anterior side:* (0) keeled; (1) smooth.
157. *Pyramidal: distal facet for semilunate:* (0) symmetric; (1) asymmetric; (2) L-shaped.
158. *Trapezoid: proximal border in anterior view:* (0) symmetric; (1) asymmetric.
159. *Magnum: indentation on the medial side:* (0) absent; (1) present.
160. *Magnum: indentation on the medial side:* (0) always shallow; (1) usually shallow; (2) always deep.
161. *Magnum: posterior tuberosity:* (0) short; (1) long.
162. *Magnum: posterior tuberosity:* (0) curved; (1) straight.
163. *Unciform: pyramidal- and McV-facets:* (0) always separate; (1) usually separate; (2) always in contact.
164. *McII: magnum-facet:* (0) curved; (1) straight.
165. *McII: posterior McIII-facet:* (0) always absent; (1) usually absent; (2) always present.
166. *McII: anterior and posterior McIII-facets:* (0) separated; (1) fused.
167. *McII: trapezium-facet:* (0) always present; (1) usually present; (2) always absent.
168. *McIII: magnum-facet in anterior view:* (0) visible; (1) invisible.
169. *McIV: proximal facet, outline:* (0) trapezoid; (1) pentagonal; (2) triangular.
170. *McV:* (0) functional; (1) vestigial.
171. *Metacarpals: insertion of the m. extensor carpalis:* (0) flat; (1) salient.
172. *Coxal: acetabulum:* (0) oval or subcircular; (1) subtriangular.
173. *Femur: trochanter major:* (0) high; (1) low.
174. *Femur: head:* (0) hemispheric; (1) medially acuminated.
175. *Femur: fovea capitis:* (0) high and narrow; (1) low and wide.
176. *Femur: third trochanter:* (0) developed; (1) very developed.
177. *Femur: angle between the medial lip of the trochlea and the diaphysis:* (0) broken angle; (1) ramp.
178. *Femur: proximal border of the patellar trochlea:* (0) curved; (1) straight.
179. *Tibia: antero-distal groove:* (0) present; (1) absent.
180. *Tibia: medio-distal gutter:* (0) shallow; (1) deep.
181. *Tibia-fibula:* (0) independent; (1) in contact or fused.
182. *Tibia: posterior apophysis:* (0) high; (1) low.
183. *Tibia: posterior apophysis:* (0) acute/sharp; (1) rounded.
184. *Fibula: proximal articulation:* (0) low; (1) high.
185. *Fibula: distal end:* (0) slender; (1) robust.
186. *Fibula: latero-distal gutter (tendon m. peroneus):* (0) shallow; (1) deep.
187. *Fibula: position of the latero-distal gutter:* (0) posterior; (1) median.
188. *Astragalus: TD/H:* (0)  $TD/H < 1$ ; (1)  $1 < TD/H < 1.2$ ; (2)  $1.2 < TD/H$ .
189. *Astragalus: APD/H:* (0)  $APD/H < 0.65$ ; (1)  $0.65 < APD/H$ .
190. *Astragalus: orientation of the fibula-facet:* (0) subvertical; (1) oblique.
191. *Astragalus: fibula-facet:* (0) flat; (1) concave.
192. *Astragalus: collum tali:* (0) high; (1) low.
193. *Astragalus: posterior stop on the cuboid-facet:* (0) present; (1) absent.
194. *Astragalus: caudal border of the trochlea, in proximal view:* (0) sinuous; (1) nearly straight.
195. *Astragalus: orientation trochlea/distal articulation:* (0) very oblique; (1) same axis.
196. *Astragalus: expansion of the calcaneus-facet I:* (0) always present; (1) sometimes absent; (2) always absent.
197. *Astragalus: expansion of the calcaneus-facet I:* (0) always wide and low; (1) usually wide and low; (2) always high and narrow.
198. *Astragalus: calcaneus-facet I:* (0) very concave; (1) nearly flat.
199. *Astragalus: calcaneus-facets 2 and 3:* (0) always independent; (1) usually independent; (2) usually fused; (3) always fused.
200. *Calcaneus: fibula-facet:* (0) always absent; (1) usually absent; (2) usually present; (3) always present.
201. *Calcaneus: tibia-facet:* (0) always absent; (1) usually absent; (2) always present.
202. *Calcaneus: tuber calcanei:* (0) massive; (1) slender.
203. *Calcaneus: insertion of the m. fibularis longus:* (0) salient; (1) invisible.
204. *Navicular: cross section in proximal view:* (0) lozenge; (1) rectangle.
205. *Cuboid: proximal side:* (0) oval; (1) triangular.
206. *MtIII: proximal border of the anterior side, anterior view:* (0) straight; (1) concave; (2) sigmoid.
207. *MtIII: posterior MtIII-facet:* (0) present; (1) absent.
208. *MtIII: distal widening of the diaphysis (in adults):* (0) absent; (1) present.
209. *MtIII: cuboid-facet:* (0) absent; (1) present.

210. *MtIV: postero-proximal tuberosity: (0) isolated; (1) pad-shaped and continuous.*
211. *Phalanx I for MtIII: symmetrical insertions: (0) lateral; (1) nearly anterior.*
212. *Limbs: (0) slender; (1) robust (brachypod).*
213. *Metapodials: intermediate reliefs: (0) high and acute; (1) low and smooth.*
214. *Lateral metapodials: insertion of the m. interossei: (0) long; (1) short.*





