Supporting information: phylogenetic analysis

Selected taxa:

We used 28 taxa for this analysis. 26 taxa were selected from the taxon sampling used in the phylogenetic analysis of Beard et al. (1). We augmented the taxon list with *Afrasia djijidae* and *Afrotarsius libycus*. All the taxa are Paleogene fossils with the exception of the platyrrhine *Dolichocebus* which is dated from the early Miocene (2) and the extant *Tarsius*.

Outgroup taxa (3):
Adapidae: *Leptadapis*, *Adapis*
Notharctidae: *Cantius*

Ingroup taxa (25):

Omomyidae: *Absarokius, Teilhardina americana, Shoshonius, Hemiacodon*
Tarsiidae: *Xanthorhysis, Tarsius*
Eosimiidae: *Eosimias*, *Phenacopithecus, Bahinia*
Afrotarsiidae*: Afrasia djijidae, Afrotarsius libycus*
Propliopithecidae: *Aegyptopithecus*, *Moeripithecus*
Oligopithecidae*: Catopithecus*
Amphipithecidae*: Myanmarpithecus, Pondaungia, Siamopithecus*
Platyrrhini: *Dolichocebus, Branisella*
Parapithecidae*: Apidium, Parapithecus, Simonsius, Qatrania, Biretia*
Proteopithecidae*: Proteopithecus*

Coding

The coding of the 26 taxa in common with the analysis of Beard et al. (1) remained unchanged from the latter analysis. *Afrasia djijidae* and *Afrotarsius libycus* were newly coded for this manuscript.

Analysis

The analysis was performed with PAUP 4b10 (3) using a heuristic search (hsearch command) with random step-wise addition (1000 replications with randomized input order of taxa) and tree bisection-reconnection (TBR) branch-swapping options.

List of Selected Characters for the Cladistic Analysis (316 characters)

Dental, cranial, and postcranial characters and character states used in the phylogenetic analysis. Characters followed by an asterisk are considered "ordered". The 316 characters of the present analysis were taken without modification from the phylogenetic analysis of Beard et al. (1). A score of " ? " is used if information is unavailable due to a lack of material or if the character does not apply to a particular taxon. Tooth areas are calculated as the product of mesiodistal length and buccolingual breadth. Characters were equally-weighted.

Lower Teeth:

Incisors

1. i1*. Lower incisor number: 0 = three; 1 = two; 2 = one: I_1 present, I_2 absent; 3 = lower incisors absent.
2. i2. Lower incisor occlusal arrangement: 0 = arcuate battery from lateral perspective (U-shaped arcade); 1 = cusp tips staggered (V-shaped arcade).
3. i3. Lower incisor crown spacing: 0 = no spaces; 1 = spaces present between crowns.
4. i4. I_2-C diastema: 0 = present; 1 = absent.
5. i5*. I_{1-2} size (ratio of I_{1-2} area to M_1 area): 0 = very small (≤ 0.69); 1 = moderate sized ($\geq 0.70, \leq 1.07$); 2 = large (> 1.07).
6. i6*. I_1:I_2 proportions (ratio of I_1 area to I_2 area): 0 = I_1 much smaller than $I2$ (< 0.65); 1 = I_1 smaller than I_2 ($\geq 0.65, < 0.82$); 2 = I_1 almost as large as I_2 ($\geq 0.83, < 1.00$); 3 = $I_1 > I_2$ ($\geq 1.01, < 1.25$); 4 = $I_1 >> I_2$ (≥ 1.25).
7. i7*. I_1 crown width (spatulate incisors only): 0 = considerably wider (m-d) than root (spatulate): 1 = narrow at apex, wider than root; 2 = "styliform" (crown apex approximately the same width as the cervical margin).
8. i8. I_2 crown cross-sectional shape (ratio of m-d length to b-l breadth): 0 = rounded oval (≥ 0.64); 1 = mesiodistally compressed (< 0.64).
9. i9*. Lower incisors crown height (crown heights judged from cementoenamel junction to crown tip on the buccal surface): 0 = low crowned; 1 = moderately high crowned; 2 = high crowned.
10. i11*. Lower incisor roots: 0 = erect or vertical; 1 = slightly procumbent; 2 = very procumbent.
11. i12*. Lower incisor crowns: 0 = erect or vertical; 1 = procumbent; 2 = very procumbent.
12. i14. I_1 crown shape: 0 = spatulate; 1 = lanceolate, pointed.
13. i15. I_2 heel development (a lingual swelling at the base of crown): 0 = heel absent; 1 = heel present.
14. i17*. Lower first incisor lingual cingulum: 0 = absent to weak; 1 = strong but incomplete; 2 = strong and complete.
15. i19*. Relative size of I_1 to M_1 (based on occlusal areas): 0 = I_1 very small ($I_1 << M_1$); 1 = moderately enlarged ($I_1 <$ or $= M_1$); 2 = grossly enlarged ($I_1 > M_1$).

Canines

16. c1*. Female C_1 cross-sectional area relative to molar cross sectional area: 0 = very small ($C_1/M_1 < 0.40$); 1 = moderate ($\geq 0.4, < 0.80$); 2 = large ($\geq 0.80, \leq 1.20$); very large (≥ 1.20)
17. c2*. $C^1/_1$ dimorphism (square root of male C_1 area/square root of female C_1 area): 0 = low (< 1.07); 1 = moderate ($\geq 1.07, < 1.17$); 2 = high (≥ 1.17).
18. c3. C_1 cross-sectional shape: 0 = rounded oval; 1 = mesiodistally compressed; 2 = buccolingually compressed.
19. c4. C_1 lingual crest development: 0 = rounded; 1 = sharp.
20. c5. Canine paracristid (not scored if species has canine incorporated into a tooth comb): 0 = oblique to occlusal plane; 1 = nearly horizontal to occlusal plane; 2 = forms part of cropping mechanism with I_{1-2}.
21. c6. Canine height (females): 0 = low, squat; 1 = narrow, short; 2 = tall, at or above tooth row.
22. ML18*. Lower canine crown: 0 = erect or vertical; 1 = procumbent; 2 = very procumbent.

23. ML19*. Lower canine root: 0 = erect or vertical; 1 = slightly procumbent; 2 = very procumbent.

Premolars

24. p1. $P^1/_1$: 0 = present; 1 = absent
25. p2. P_2: 0 = present; 1 = absent.
26. p3. P_2 roots: 0 = single; 1 = double.
27. p4'. P_3 roots: 0 = single; 1 = double.
28. p4". P_4 roots: 0 = single; 1 = double.
29. p5*. Premolar crowding (overlapping of crowns): 0 = no crowding; 1 = slightly crowded; 2 = very crowded—mesial root positioned buccal to distal root.
30. p6*. P_3 paraconid: 0 = large; 1 = small; 2 = absent or extremely small.
31. p7*. P_4 paraconid: 0 = large; 1 = small; 2 = absent or extremely small.
32. p9'. P4 paraconid position (mesiodistally): 0 = widely spaced from the metaconid ; 1 = twinned with metaconid.
33. p11*. P_{3-4} cristid obliqua: 0 = absent; 1 = weak; 2 = strong.
34. p13. P_2 protoconid height and shape: 0 = slender, projects above protoconids of P_{3-4}; 1 = massive, projects above protoconids of P_{3-4}; 2 = not projecting, in line with P_3; 3 = extremely short, shorter than P_3.
35. p14. P_4 metaconid position: 0 = close to protoconid; 1 = widely spaced from protoconid.
36. p15. P_2 metaconid size: 0 = absent or trace; 1 = small.
37. p16*. P_3 metaconid size: 0 = absent or trace; 1 = small; 2 = large (as big as protoconid).
38. p17*. P_4 metaconid size: 0 = absent or trace; 1 = small; 2 = large (as big as protoconid).
39. p18. P_4 trigonid—configuration of lingual wall : 0 = closed; 1 = open.
40. p19. P_3 entoconid and lingual talonid crest: 0 = absent; 1 = lingual talonid crest present but an entoconid does not stand out above it; 2 = entoconid forms a small discrete cusp.
41. p20. P_4 entoconid and lingual talonid crest: 0 = absent; 1 = lingual talonid crest present but an entoconid does not stand out above it; 2 = entoconid forms a small discrete cusp.
42. p21. P_4 lateral and medial protocristid: 0 = continuous between metaconid and protoconid; 1 = discontinuous between metaconid and protoconid.
43. p22. P_3 lateral protocristid orientation: 0 = transversely oriented; 1 = distolingually oriented; 2 = absent.
44. p23. P_4 lateral protocristid orientation: 0 = transversely oriented; 1 = distolingually oriented.
45. p24. P_{3-4} posterior trigonid wall: 0 = complete [taxa without metaconids are assigned this character state]; 1 = deeply notched.
46. p25. P_{3-4} hypoconid size: 0 = large; 1 = small or absent.
47. p26. P_{3-4} hypoconid (or distal terminus of oblique cristid) position: 0 = distal to protoconid; 1 = distal to metaconid, or between protoconid and metaconid
48. p27*. P_4 hypocristid shearing development: 0 = absent; 1 = weak; 2 = strong.
49. p28*. P_2 buccal cingulum development: 0 = absent; 1 = incomplete, broken at protoconid and hypoconid; 2 = complete.
50. p29*. Lower premolar inflation: 0 = not basally inflated; 1 = slightly basally inflated; 2 = very basally inflated.
51. p30*. P_4 exodaenodonty: 0 = not exodaenodont; 1 = slightly exodaenodont; 2 = very exodaenodont.

52. p31*. P_4 talonid length (ratio of midline m-d length of trigonid to m-d length of talonid): 0 = extremely short or non-existent (tri:tal $\geq$ 1.61); 1 = short (much shorter than trigonid) (tri:tal $\geq$ 1.27, < 1.61); 2 = equal or slightly shorter in length to trigonid (tri:tal $\geq$ 0.92, < 1.27); 3 = talonid longer than trigonid (tri:tal < 0.91).

53. p33*. Premolar orientation: 0 = Crown bases vertical in lateral perspective; 1 = slightly oblique; 2 = strongly oblique, projecting medial over the anterior.

54. p34. P_4 anterobuccal cingulum development: 0 = absent or trace; 1 = strong.

55. p36*. P_4 postprotoconid ridge: 0 = weak or absent; 1 = moderate; 2 = very strong.

56. p37*. P_4 postmetaconid ridge: 0 = weak or absent; 1 = moderate; 2 = very strong.

57. p40*. P_4 paraconid height: 0 = low; 1 = moderate; 2 = high (nearly as high as protoconid).

58. p41*. P_{3-4} protoconid height: 0 = P_3 much lower than P_4; 1 = P_3 slightly lower than P_4; 2 = P_3 equal in height to P_4; 3 = P_3 higher than P_4.

59. p42*. P_3 to P_4 area: 0 = 0.45-0.59; 1 = 0.60-0.69; 2 = 0.70-0.79; 3 $\geq$ 0.80.

60. p43*. P_4 m-d L/ b-l W: 0 = (< 0.95); 1 = ($\geq$ 0.96, < 1.14); 2 = ($\geq$ 1.15, < 1.20); 3 = ($\geq$ 1.21, < 1.35; 4 = ($\geq$ 1.36, < 1.46); 5 = (> 1.47).

61. p44*. Ratio of P_4 area to M_1 area: 0 = (< 0.62); 1 = ($\geq$ 0.63, < 0.72); 2 = ($\geq$ 0.73, < 0.82); 3 = ($\geq$ 0.83, < 0.92); 4 = ($\geq$ 0.93, < 1.02); 5 = (> 1.03).

62. p45. P_{3-4} root orientation: 0 = P_{3-4} roots aligned mesiodistally; 1 = P_3 root shifted laterally, P_4 mesial root aligned mesiodistally; 2 = P_3 roots aligned mesiodistally, P_4 mesial root shifted laterally. [Scored as missing if roots are single].

Molars

63. m4. M_3 root number: 0 = one; 1 = two.

64. m6*. M_2 trigonid width (ratio of buccolingual breadths of trigonid and talonid): 0 = much wider than talonid ($\geq$ 1.11); 1 = widths similar (< 1.11, > 0.90); 2 = much narrower than talonid ($\leq$ 0.90).

65. m7*. M_3 trigonid width (based on relative buccolingual breadths): 0 = much wider than talonid ($\geq$ 1.20); 1 = trigonid and talonid widths similar ($\leq$ 1.20-1.05); 2 = trigonid narrower than talonid (< 1.05).

66. m8'. M_1 paraconid position: 0 = mesiolingual, between protoconid and metaconid; 1 = mesial to metaconid.

67. m9'. M_2 paraconid position: 0 = mesiolingual, between protoconid and metaconid; 1 = mesial to metaconid.

68. m10. M_3 paraconid position: 0 = mesiolingual, between protoconid and metaconid; 1 = mesial to metaconid.

69. m8-9-10'. M_{2-3} paraconid location: 0 = widely spaced from the metaconid; 1 = twinned with metaconid.

70. m11. M_1 parastylid (= premetacristid): 0 = absent; 1 = present.

71. m12*. Molar metastylids (postmetacristids): 0 = absent; 1 = small; 2 = large.

72. m13. M_3 hypoconulid: 0 = single; 1 = double

73. m14*. M_3 heel: 0 = absent; 1 = narrower than talonid; 2 = approximately equal in width to talonid.

74. m15*. Molar enamel surface: 0 = smooth; 1 = slightly crenulated; 2 = highly crenulated.

75. m16*. M_1 trigonid height (ratio of trigonid height to talonid height measured on the buccal aspect of the crown): 0 = higher than talonid ($\geq$ 1.20); 1 = slightly higher than talonid ($\geq$ 1.10, < 1.20); 2 = trigonid and talonid of similar height(< 1.10).

76. m17. M_{1-2} cusp relief: 0 = moderate to high; 1 = low.

77. m18. M_1 trigonid lingual configuration: 0 = open; 1 = closed.
78. m19. M_1 metaconid position: 0 = transversely aligned—lingual to protoconid; 1 = slightly distolingual to protoconid.
79. m20*. M_2 paraconid development: 0 = absent; 1 = small; 2 = large.
80. m21. M_{1-2} lateral protocristid orientation: 0 = runs toward metaconid; 1 = runs toward hypoflexid.
81. m22. M_1 distal trigonid wall: 0 = complete; 1 = deeply notched by protoconid/metaconid sulcus; 2 = medial and lateral protocristid do not meet but no sulcus is visible.
82. m23. M_2 distal trigonid wall: 0 = complete; 1 = deeply notched by protoconid/ metaconid sulcus; 2 = medial and lateral protocristid do not meet but no sulcus is visible.
83. m24. M_{1-3} wear facet X: 0 = present; 1 = absent.
84. m25*. M_{1-2} entoconid: 0=barely stands out on lingual talonid marginal crest; 1 = a small discrete cusp; 2 = a large cusp.
85. m26*. M_{1-2} postentoconid sulcus: 0 = prominent; 1 = faintly visible; 2 = absent.
86. m27*. M_1 hypoconulid size: 0 = large; 1 = moderate; 2 = small; 3 = absent.
87. m28*. M_2 hypoconulid size: 0 = large; 1 = moderate; 2 = small; 3 = absent.
88. m29*. M_3 hypoconulid size: 0 = large; 1 = moderate; 2 = small; 3 = absent.
89. m30*. M_{1-2} hypoconulid position: 0 = twinned to entoconid; 1 = near midline; 2 = slightly buccal to midline.
90. m31*. M_{1-2} cristid obliqua development: 0 = weak (rounded); 1 = strong (trenchant); 2 = very strong (trenchant).
91. m32*. M_1 cristid obliqua orientation: 0 = reaches trigonid wall at a point distal to protoconid; 1 = reaches trigonid wall at a point distolingual to protoconid; 2 = reaches trigonid wall at a point distal to metaconid.
92. m33*. M_2 cristid obliqua orientation: 0 = reaches trigonid wall at a point distal to protoconid; 1 = reaches trigonid wall at a point distolingual to protoconid; 2 = reaches trigonid wall at a point distal to metaconid.
93. m34. M_1 cristid obliqua terminus: 0 = runs to base of trigonid; 1 = runs part way up the distal trigonid wall; 2 = connects with protoconid tip or protocristid; 3 = connects with metaconid.
94. m35. M_2 cristid obliqua terminus: 0 = runs to base of trigonid; 1 = runs part way up the distal trigonid wall; 2 = connects with protoconid tip or protocristid; 3 = connects with metaconid.
95. m36. M_3 cristid obliqua terminus: 0 = runs to base of trigonid; 1 = runs part way up the distal trigonid wall; 2 = connects with protoconid tip or protocristid; 3 = connects with metaconid.
96. m37. M_{1-2} centroconid development: 0 = present; 1 = absent.
97. m38*. M_{1-2} hypocristid development: 0 = absent or seen only as a trace; 1 = weak; 2 = strong.
98. m39*. M_3 hypocristid development: 0 = absent or seen only as a trace; 1 = weak; 2 = strong.
99. m40*. Lingual configuration of M_{1-2} talonid: 0 = open; 1 = notched lingually but not open; 2 = closed.
100. m41. M_{1-2} distal fovea: 0 = absent; 1 = present (weak); 2 = present (large).
101. m42. M_{1-2} hypocristid configuration: 0 = simple; 1 = with accessory cusp close to hypoconid.

102.   m43. M_{1-2} cristid obliqua: 0 = notched; 1 = straight.
103.   m44*. Molar cusp inflation: 0 = cusps not inflated, marginally positioned; 1 = slightly inflated; 2 = very inflated.
104.   m45*. M_{1-2} buccal cingulum development: 0 = absent to trace; 1 = partial, broken at protoconid and hypoconid; 2 = complete.
105.   m46*. M_1 hypoflexid depth: 0 = very shallow; 1 = moderate; 2 = deep.
106.   m47*. M_2 hypoflexid depth: 0 = very shallow; 1 = moderate; 2 = deep.
107.   m53*. Ratio of M_2 length to M_3 length: 0 = M_3 much longer than M_2 (0.71-0.80); 1 = M_3 longer than M_2 (0.81-0.90); 2 = M_3 equal than M_2 (0.91-1.00); 3 = M_3 smaller than M_2 (1.01-1.12); 4 = M_3 much smaller than M_2 ($\geq$ 1.13); 5 = if M_3 absent.
108.   m55*. M_1 mesiodistal length/buccolingual breadth: 0 = 1.0-1.15; 1 = 1.16-1.22; 2 = 1.23-1.32; 3 = > 1.33.
109.   m56. Convergence of buccal and lingual molar cusp walls: 0 = convergent; 1 = vertically sided.
110.   m57. M_{1-2} entoconid position relative to hypoconid: 0 = transverse to hypoconid; 1 = distal to hypoconid.
111.   ML88*. M_{1-3} Pre-entocristid: 0 = indistinct to absent; 1 = weakly developed (low); 2 = well-developed (strong and high).

Upper Teeth:

Incisors
112.   I1*. I^1-I^2 interstitial contact: 0 = absent; teeth widely spaced; 1 = present as narrow contact; 2 = I^2 tightly packed against I^1, I^1 preparacrista abbreviated.
113.   I2. I^1-I^1 interstitial contact: 0 = present; 1 = absent: a wide space occurs in the midline between these teeth.
114.   I3. I^2-C diastema: 0 = present; 1 = absent.
115.   I4*. I^1 area:I^2 area: 0 = areas approximately equal ($\leq$ 1.00); 1 = I^1 slightly larger than I^2 (> 1.00, < 1.40); 2 = I^1 much larger than I^2 (> 1.40).
116.   I5*. I^1 size (I^1 area: M^1 area): 0 = incisor small ($\leq$ 0.50); 1 = incisor moderate (> 0.50, < 0.56); 2 = incisor large ($\geq$ 0.56).
117.   I6*. I^1 occlusal shape (mesiodistal length/buccolingual breadth): 0 = rounded oval (< 1.05); 1 = buccolingually compressed (> 1.05, < 1.30); 2 = extremely compressed (> 1.30).
118.   I7*. I^2 occlusal shape (mesiodistal length /buccolingual breadth): 0 = rounded oval ($\leq$ 1.05); 1 = slightly buccolingually compressed (> 1.05, < 1.30); 2 = extremely buccolingually compressed $\geq$ 1.30).
119.   I10. I^1 occlusal edge orientation (for spatulate incisors only; all others scored as " ? "): 0 = occlusal edge orthogonal to long axis of root; 1 = occlusal edge wears at a steep angle to long axis of root; 2 = crown with pronounced mesial asymmetry (= mesial process) in unworn state.
120.   I11. I^{1-2} lingual cingulum: 0 = moderate, continuous; 1 = strong.
121.   I12. I^1 basal lingual cusp: 0 = absent; 1 = present.
122.   I13. I^1-I^2 buccal cingulum: 0 = absent; 1 = present.

Canines

123. C1. C^1 cross-sectional shape: 0 = oval; 1 = rounded.

124. C2*. Upper canine occlusion: 0 = C^1 wears against P_{1-2}; 1 = C^1 wears against P_2; 2 = C^1 wears against P_{2-3}; 3 = C^1 wears against P_3.

125. C3. C^1 mesial groove (females): 0 = shallow or absent; 1 = deep.

126. C4*. C^1 lingual cingulum: 0 = weak or absent; 1 = strong; 2 = very strong.

Premolars

127. P1*. P^2 root number: 0 = one (if tooth is absent, taxon scored " 0 "); 1 = two; 2 = three.

128. P2. P^3 root number: 0 = two; 1 = three.

129. P3. P^4 root number: 0 = two; 1 = three.

130. P4*. Ratio of P^2 area to P^3 area: 0 = P^2 much smaller (≤ 0.85) (if tooth is absent, taxon scored " 0 "); 1 = P^2 smaller ($> 0.85, < 0.95$); 2 = P^2 equal (≥ 0.95); 3 = clearly larger.

131. P5*. Ratio of P^4 area to M^1 area: 0 = $P^4 << M^1$ (≤ 0.66); 1 = $P^4 < M^1$ ($> 0.66, \leq 0.76$); 2 = $P^4 = M^1$ (0.77-1.05); 3 = $P^4 > M^1$ (> 1.06).

132. P6. P^2 occlusal outline: 0 = triangular; 1 = suboval with the long axis b-l; 2 = suboval with the long axis m-d; 3 = round.

133. P7. P^4 occlusal outline: 0 = triangular; 1 = suboval; 2 = squared.

134. P8. P^{3-4} trigon/talon proportions: 0 = trigon > = talon; 1 = trigon < talon.

135. P9. P^3 protocone: 0 = present; 1 = absent.

136. P10. P^4 metacone: 0 = absent; 1 = present.

137. P11. P^4 protocone: 0 = low relative to paracone; 1 = high relative to paracone.

138. P12. P^2 protocone: 0 = present; 1 = absent (if tooth absent, taxon scored " 1 ").

139. P13'. P^2 hypocone: 0 = absent; 1 = present·

140. P14*. P^4 paraconule: 0 = large; 1 = small; 2 = absent.

141. P15. P^{3-4} parastyles: 0 = present; 1 = absent.

142. P16. P^{3-4} metastyles: 0 = absent; 1 = present.

143. P17. P^{3-4} postprotocrista: 0 =strong; 1 = weak, short.

144. P18. P^{2-3} distal crown margin: 0 = smoothly rounded; 1 = waisted between buccal and lingual cusps.

145. P19. P^{3-4} lingual cingulum: 0 = absent or weak; 1 = strong.

146. P20. P^3 metacone: 0 = absent; 1 = present

147. P21. P^{3-4} buccal cingulum development: 0 = absent or weak; 1 = strong.

148. ML126*. P^4 hypocone: 0 = minute to absent; 1 = present but small; 2 = strong.

149. ML127*. P^3 hypocone: 0 = minute to absent; 1 = present but small; 2 = strong.

Molars

150. M1*. M^{1-2} root number: 0 = three, three; 1 = three, two; 2 = two, two.

151. M2*. M^3 root number: 0 = three; 1 = two; 2 = one.

152. M3*. M^2 shape (bl/md): 0 = very transverse (> 1.65); 1 = transverse ($< 1.65, > 1.30$); 2 = squared (≤ 1.30).

153. M4*. Ratio of M^1 area to M^2 area: $0 = M^1 >> M^2$ (≥ 1.40); $1 = M^1 > M^2$ (< 1.40, $>$ 1.0); $2 = M^1 \leq M^2$ (≤ 1.0).

154. M7'*. M^{1-2} metaconule: $0 =$ absent; $1 =$ single; $2 =$ double.

155. M9*. M^{1-2} preprotoconule: $0 =$ absent; $1 =$ weak; $2 =$ strong.

156. M10*. M^1 hypocone size: $0 =$ large; $1 =$ small; $2 =$ minute to absent.

157. M11*. M^2 hypocone size: $0 =$ large; $1 =$ small; $2 =$ minute to absent.

158. M12'*. M^{1-2} hypocone position: $0 =$ distal, far lingual to protocone; $1 =$ distal, slightly lingual to protocone; $2 =$ distal, slightly buccal to protocone.

159. M13*. M^{1-2} prehypocrista development: $0 =$ absent; $1 =$ weak; $2 =$ strong, reaches to postprotocrista, encloses the talon lingually.

160. M14. M^3 prehypocrista development: $0 =$ absent; $1 =$ strong, reaches to postprotocrista, encloses the talon lingually.

161. M15. M^1 or M^2 paraconule position: $0 =$ attached to preprotocrista; $1 =$ unattached to preprotocrista.

162. M16*. M^{1-2} metaconule: $0 =$ absent to indistinct; $1 =$ small; $2 =$ moderate; $3 =$ large.

163. M17'*. M^{1-2} mesostyle size: $0 =$ absent to indistinct; $1 =$ moderate; $2 =$ strong.

164. M17". M^{1-2} mesostyle position: $0 =$ attached to ectocrista; $1 =$ present on buccal cingulum.

165. M20*. P^4-M^1 pericone: $0 =$ absent; $1 =$ small; $2 =$ large.

166. M22*. M^{1-3} lingual cingulum development: $0 =$ absent to indistinct; $1 =$ weak, broken; $2 =$ strong, complete.

167. M24*. M^{1-2} buccal cingulum development: $0 =$ absent to indistinct; $1 =$ weak; $2 =$ strong.

168. M27. M^{1-2} pre-metaconule cristae: $0 =$ absent or weak; $1 =$ strong

169. M28. M^{1-2} post-metaconule cristae: $0 =$ absent or weak; $1 =$ strong

170. M30*. M^3 paraconule: $0 =$ absent; $1 =$ small-moderate; $2 =$ large

171. M31*. Molar protocone lingual inflation: $0 =$ not inflated; $1 =$ slightly inflated; $2 =$ very inflated.

172. M33*. M^2 buccal expansion of paracone (specify which tooth): $0 =$ no expansion; $1 =$ slight expansion; $2 =$ considerable expansion.

173. M34*. M^3 metacone: $0 =$ absent or very small; $1 =$ moderate (but smaller than paracone; $2 =$ large (equal to paracone).

174. M36*. M^3 hypocone: $0 =$ absent or very small; $1 =$ small; $2 =$ large.

175. M37*. M^1 paraconule size: $0 =$ absent; $1 =$ small-moderate (smaller than paracone); $2 =$ large (nearly as large as or larger than paracone).

176. M44*. M^{1-3} anterior cingulum: $0 =$ strong, complete, long (connected to parastyle); $1 =$ strong, short; $2 =$ weak or absent.

177. M46*. M^3 size relative to M^1: $0 =$ very small (half the size of M^1 or less); $1 =$ small (two thirds); $2 =$ large (approximately as large).

178. ML147*. M^{1-2} metastyle: $0 =$ indistinct to absent; $1 =$ moderate; $2 =$ strong.

179. ML148*. M^{1-2} parastyle: $0 =$ indistinct to absent; $1 =$ moderate; $2 =$ strong.

180. ML149. M^{1-2} parastyle position: $0 =$ mesial to paracone; $1 =$ mesiobuccal to paracone.

181. ML150. M^{1-2} metastyle position: $0 =$ distal to metacone; $1 =$ distobuccal to metacone.

182.	ML151. M^{1-3} posterior cingulum: 0 = moderate, does not reach the metastyle; 1 = connected to metastyle.

183.	ML152*. M^{1-3} posterior margin (waisted between buccal and lingual cusps): 0 = indistinct to absent; 1 = present but shallow; 2 = present, deep.

184.	ML153*. M^{1-2} postparacrista: 0 = indistinct to absent; 1 = weakly developed; 2 = well developed (but well-marked notch between postparacrista and premetacrista); 3 = strongly elevated (weak notch between postparacrista and premetacrista).

185.	ML154*. M^{1-2} premetacrista: 0 = indistinct to absent; 1 = weakly developed; 2 = well developed (but well-marked notch between premetacrista and postparacrista); 3 = strongly elevated (weak notch between premetacrista and postparacrista).

186.	ML155. M^{1-3} protocone arrangement: 0 = normal position; 1 = oblique.

187.	ML156. M^{1-2} postprotocrista development: 0 = strong; 1 = tiny.

188.	ML157*. M^{1} postprotocrista length: 0 = indistinct to absent; 1 = short; 2 = long.

189.	ML158*. M^{2} postprotocrista length: 0 = indistinct to absent; 1 = short; 2 = long.

190.	ML159. M^{1} postprotocrista direction: 0 = transverse, directed toward metaconule (or virtual metaconule emplacement); 1 = lateral, directed toward the lingual posterior cingulum (post-protocone fold-like).

191.	ML160. M^{2} postprotocrista direction: 0 = transverse, directed toward metaconule (or virtual metaconule emplacement); 1 = lateral, directed toward lingual posterior cingulum (post-protocone fold-like).

192.	ML161. M^{1} postprotocrista terminus: 0 = runs to base of metacone (with hypometacrista); 1 = runs to metaconule (at the level of the small or virtual metaconule); 2 = runs to posterior cingulum; 3 = limited at a point distal to protocone.

193.	ML162. M^{2} postprotocrista terminus: 0 = runs to base of metacone (with hypometacrista); 1 = runs to metaconule (at the level of the small or virtual metaconule); 2 = runs to posterior cingulum; 3 = limited at a point distal to protocone.

194.	ML163. M^{1-2} preprotocrista: 0 = low; 1 = elevated.

195.	ML164. M^{1} preprotocrista connection (buccal side): 0 = connected to parastyle (by way of preparaconule crista); 1 = connected to paraconule (or near to it or to a virtual paraconule).

196.	ML165. M^{2} preprotocrista connection (buccal side): 0 = connected to parastyle (by way of preparaconule crista); 1 = connected to paraconule (or near to it or to a virtual paraconule).

197.	ML166*. M^{1-2} postparaconule crista: 0 = indistinct to absent; 1 = moderate; 2 = well-developed (connected to paracone).

198.	ML168*. M^{1-2} hypometacrista: 0 = absent; 1 = weakly developed (low and short); 2 = well-developed (high).

199.	ML169*. M^{1-2} hypoparacrista: 0 = absent; 1 = weakly developed (short); 2 = well-developed (high).

200.	MLN*. Hypometaconulecrista: 0 = indistinct to absent; 1 = moderate (not connected to protocone); 2 = well-developed (connected to protocone or postprotocrista).

Cranial characters:

201. Cr 1. Transverse septum arising from the cochlear housing: 0 = Absent; 1 = present and forming the lateral wall of an anterior accessory cavity pneumatized from the tympanic cavity; 2 = present and forming the lateral wall of an anterior accessory cavity pneumatized from the epitympanic recess.

202. Cr 2. Extent of pneumatization of anterior accessory cavity: 0 = Anterior accessory cavity lies anterior to the tympanic cavity and is not trabeculated; 1 = anterior accessory cavity extends medial to the tympanic cavity, and is trabeculated.

203. Cr 3. Pneumatization of mastoid (from epitympanic recess?): 0 = absent; 1 = present.

204. Cr 4. Presence or absence of perbullar pathway: 0 = absent; 1 = present and formed exclusively by the petrosal bone.

205. Cr 5. Anteroposterior location of posterior carotid foramen in bulla: 0 = Posterior to line joining midpoints of tympanic bones; 1 = anterior to this line.

206. Cr 6*. Mediolateral position of posterior carotid foramen in bulla: 0 = medial; 1 = midline of the bulla; 2 = lateral.

207. Cr 7. Ventrodorsal position of the carotid foramen in the bulla: 0 = dorsal, adjacent to basioccipital or mastoid bone; 1 = ventral.

208. Cr 8*. Position of posterior carotid foramen relative to fenestra cochleae: 0 = posterior; 1 = ventral; 2 = anterior.

209. Cr 9. Position of the internal carotid canal relative to the fenestra cochleae: 0 = runs across ventral lip of the fenestra cochleae, shielding it from ventral view when a canal is present; 1 = internal carotid canal does not shield the fenestra cochleae from ventral view.

210. Cr 10. Position of the portion of the internal carotid/promontory artery (or its accompanying nerves) lying on the promontorium anterior to the fenestra cochleae: 0 = on ventrolateral surface of promontorium; 1 = contacting only the cupula of the cochlea.

211. Cr 11. Size of stapedial and promontory canals: 0 = both stapedial and promontory canals are large; 1 = stapedial slightly smaller than promontory; 2 = stapedial highly reduced or absent altogether; 3 = stapedial larger than promontory; 4 = both promontory and stapedial canals absent.

212. Cr 12. Morphology of promontory canal, when present: 0 = open trough; 1 = complete canal.

213. Cr 14. Position of ventral edge of the tympanic bone: 0 = intrabullar, or aphaneric; 1 = extrabullar or phaneric.

214. Cr 15. The shape of the tympanic bone: 0 = ribbon-like or only slightly expanded; 1 = laterally expanded into a collar or tube; ? = due to fusion with surrounding bones, of unknown shape.

215. Cr 16. Morphology of annular bridge: ? = This character is not analyzable in those taxa with an extrabullar tympanic, or those in which this region is not known; 0 = Linea semicircularis or partial anular bridge formed on a entotympanic bulla; 1 = linea semicircularis formed on a petrosal bulla; 2 = a complete annular bridge.

216. Cr 17. Encroachment of the auditory bulla on the pterygoid fossa: 0 = absent; 1 = present and formed by anterior accessory cavity; 2 = present and formed by the tympanic cavity.

217. Cr 18. Nature of contact between the lateral pterygoid plate and the bulla wall: 0 = absent; 1 = laminar; 2 = abutting.

218. Cr 19. Extent of contact between the lateral pterygoid plate and the bulla wall: 0 = slight; 1 = or very extensive.

219. Cr 20. Flange of basioccipital overlapping medial bulla wall: 0 = absent or minimal; 1 = extensive.

220. Cr 21. Suprameatal foramen: 0 = absent; 1 = present, small and in the posterior root of the zygomatic arch; 2 = present, large, and above the external auditory meatus.

221. Cr 22. Patent parotic fissure: 0 = present; 1 = absent.
222. Cr 23*. Size of orbits: 0 = small; 1 = large; 2 = extremely large.
223. Cr 24*. Postorbital closure: 0 = none; 1 = postorbital bar present; 2 = postorbital septum present.
224. Cr 25. Composition of the postorbital septum: 0 = zygomatic forms most of the septum; 1 = frontal forms most of the septum.
225. Cr 26. Zygomatic-lacrimal contact: 0 = present; 1 = absent.
226. Cr 27. Pronounced interorbital constriction: 0 = absent; 1 = present below olfactory tract.
227. Cr 28. Contact between lacrimal and palatine: 0 = present; 1 = separated by a large fronto-maxillary contact (and in some taxa, a small os planum of the ethmoid); 2 = separated by a large os planum.
228. Cr 29. Foramen rotundum: 0 = absent; 1 = present.
229. Cr 30. Position of lacrimal foramen: 0 = outside orbital margin; 1 = within the orbit or on the rim.
230. Cr 31. Metopic suture in adult: 0 = unfused; 1 = fused.
231. Cr 32. Orbital convergence: 0 = less convergent than primates; 1 = primate-like values for convergence.
232. Cr 33*. Posterior nasal spine: 0 = reduced or absent; 1 = small but distinct; 2 = robust and long
233. Cr 34. Posterior palatine torus: 0 = present; 1 = absent.
234. Cr 35. Pyramidal processes: 0 = medially placed; 1 = laterally placed.
235. Cr 36*. Length of medial pterygoid plate: 0 = long medial pterygoid plate extending one-third to one half of the distance to the anterior surface of the bulla; 1 = short but distinct from lateral pterygoid plate for its entire dorsoventral extent; 2 = medial pterygoid plate entirely absent, or reduced to a low rugosity.
236. Cr 37. Snout length: 0 = long snouts; 1 = short snouts.
237. Cr 38. Maxillary depth: 0 = deep; 1 = shallow.
238. Cr 39. Complete symphyseal fusion: 0 = absent; 1 = present.
239. Cr 40. Temporomandibular joint morphology: 0 = biconcave and transversely wide; 1 = anteroposteriorly oriented trough.
240. Cr 41. Entoglenoid process morphology: 0 = weak or absent; 1 = strong.
241. Cr 42. Inter-incisor diastema width: 0 = broad and wider than that of extant haplorhines; 1 = narrow, haplorhine-like.
242. Cr43. Coronoid height relative to condyle: 0 = very far above; 1 = slightly above or equal.
243. Cr44*. Condyle height relative to toothrow: 0 = at level of tooth row; 1 = slightly above; 2 = well above tooth row.
244. Cr45. Corpus robusticity: 0 = shallow; 1 = deep.
245. Cr46. Zygomatico-parietal contact at pterion: 0 = no postorbital closure; 1 = zygomatico-parietal contact; 2 = alisphenoid-frontal contact.
246. Cr48. Epitympanic crest: 0 = absent; 1 = present.
247. Cr49. Broad ascending wing of premaxilla: 0 = narrow; 1 = broad.
248. Cr 50/301. Basioccipital stem: 0 = narrow; 1 = broad.
249. Cr51/302. Choanal shape: 0 = narrow; 1 = broad.
250. Cr52/292. Orientation of the mandibular symphysis: 0 = symphysis procumbent; 1 = symphysis erect.

Postcranial characters:

Humerus
251.   H1*. Shape of distal edge of the humeral trochlea: 0 = cylinder, distal edge perpendicular to shaft; 1 = distal edge somewhat angled to shaft; 2 = distal edge very angled.
252.   H2. Relative heights of medial and lateral edges of humeral trochlea: 0 = subequal; 1 = medial edge more flared than lateral edge.
253.   H3*. Trochleocapitular ridge: 0 = absent; 1 = weak but distinct; 2 = moderately distinct; 3 = very distinct.
254.   H4. Waisted trochlea (Minimum trochlear diameter/maximum trochlear diameter x 100): 0 = > 70 (unwaisted); 1 = ≤ 70 (waisted).
255.   H5*. Width of capitulum relative to trochlea (100 x ventral capitulum width/ventral trochlear width): 0 = < 100; 1 = between 100 and 140; 2 = 140-200; 3 = greater than 200.
256.   H6. Entepicondylar foramen: 0 = present; 1 = variable; 2 = absent .
257.   H7. Entepicondylar foramen position: 0 = above medial epicondyle; 1 = above ventral trochlea; 2 = above dorsal trochlea.
258.   H8. Medial epicondyle size: 0 = reduced; 1 = prominent.
259.   H9. Dorsal placement of medial epicondyle: 0 = parallel ; 1 = slight dorsal; 2 = large dorsal angle.
260.   H10'*. Shape of the lateral edge of the dorsal trochlea: 0 = not pronounced; 1 = moderately pronounced; 2 = very pronounced.
261.   H10"*. Shape of the medial edge of the dorsal trochlea: 0 = not pronounced; 1 = moderately pronounced; 2 = very pronounced.
262.   H11*. Dorsoepitrochlear fossa: 0 = present (strong); 1 = small, shallow; 2 = absent.
263.   H12*. Olecranon fossa shape: 0 = shallow; 1 = moderate; 2 = deep.
264.   H14*. Brachialis flange; 0 = broad; 1 = moderate; 2 = narrow.
265.   H15. Bicipital groove morphology: 0 = shallow; 1 = deep.
266.   H18/. Capitular tail: 0 = ventral articular wdth <2.5 times the ventral capitular width; 1 = ventral articular wdth > 2.5 times the ventral capitular width.
267.   H19/*. Ratio of humerus length to femur length (H/F): 0 = 100* H/F ≤ 65; 1 = H/F > 65, ≤ 80; 2 = H/F > 80.

Carpal bones
268. W2. Ulnar-pisiform articulation: 0 = Facet on pisiform for ulnar styloid process is roughly equal in size to that for triquetrum; 1 = Facet on pisiform for ulnar styloid process is much enlarged and deeply excavated.

Os pelvis
269. OP1/299. Gluteal tuberosity: 0 = present; 1 = absent.
270. OP2/300. Position of posterior gluteal tuberosity: 0 = Proximal to or level with lesser trochanter; 1 = distal to lesser trochanter.

Femur
271. F1*. Length of femoral neck: 0 = ≤ 75; 1 = 75-120; 2 = ≥ 120.
272. F2*. Angle of femoral neck: 0 = < 60; 1 = 60-70; 2 = > 70.
273. F3. Angle of lesser trochanter: 0 = medial (0-30°); 1 = posterior (>30°)
274. F4*. Size of third trochanter: 0 = large; 1 = small; 2 = low crest or absent.
275. F5*. Knee index (Antero-posterior diameter of distal femur/ mediolateral diameter of distal femur): 0 = < 90 (shallow knee); 1 = 90 – 100; 2 = > 100 (deep knee).

276. F6*. Femoral head shape: 0 = spherical; 1 = semicylindrical; 2 = cylindrical.
277. F7. Anterior extension of greater trochanter: 0 = no extension; 1 = extension present.
278. F8. Anterior bend of proximal femur: 0 = none; 1 = bent
279. F9*. Relative length of trochanteric fossa: 0 = long (> 125); 1 = moderate (110-125); 2 = very short (< 110).
280. F10. Presence of intertrochanteric crest: 0 = crest absent; 1 = crest present.
281. F11*. Size of lesser trochanter: 0 = large; 1 = intermediate; 2 = small.
282. F12. Lateral rim of knee: 0 = low; 1 = high.

Tibia
283. T1'. Fusion of tibia and fibula: 0 = absent; 1 = present.
284. T1"*. Articulation tibia/fibula: 0 = small; 1 = moderate; 2 = extensive.
285. T3. Shape of distal surface of tibia: 0 = square/parallel; 1 = triangular.
286. T4*. Rotation of the medial malleolus: 0 = none; 1 = slight; 2 = strong.
287. T5*. Shape of medial malleolar articular surface: 0 = flat; 1 = anteriorly convex, posteriorly flat; 2 = all convex.
288. T6. Shape of distal tibial shaft: 0 = no compression; 1 = anteroposteriorly compressed.
289. T7. Position of tibialis posterior groove: 0 = on medial side of malleolus; 1 = on posterior side of malleolus.

Talus
290. A1. Position of the flexor hallucis longus groove: 0 = lateral to trochlea; 1 = central to trochlea.
291. A2'*. Shape of talo-fibular facet: 0 = steep-sided; 1 = steep-sided with a platar lip; 2 = sloped obliquely.
292. A4'*. Development of the talar posterior trochlear shelf: 0 = none; 1 = weakly developed; 2 = well developed (prominent).
293. A5'. Talar neck length (NL/TL x 100): 0 = short (< 50); 1 = long (> 50).
294. A6. Medial talo-tibial facet: 0 = short (does not reach to plantar edge of bone); 1 = long.
295. A7/295. Lateral talar trochlear asymmetry: 0 = absent; 1 = present.
296. A8/296. Talar cotylar fossa: 0 = shallow; 1 = deep, medially projecting.
297. A9'/297. Width of the head of the talus (HW/HHT x 100): 0 = < 120; 1 = > 120.
298. GEB1*. Talar neck angle: 0 = < 20°; 1 = 20-30°; 2 = > 30°.
299. GEB2*. Talar body height (HT/MTRW x 100): 0 = < 100; 1 = 100-120; 2 = 120-150.
300. GEB3*. TW/TL x 100: 0 = < 60; 1 = > 60.

Calcaneus
301. C1*. Anterior calcaneal elongation: 0 = not elongate (ACL or anterior calcaneal ratio < 40); 1 = moderate (ACL ≥ .40-45); 2 = long (> .45).
302. C2*. Position of the peroneal tubercle: 0 = distal to joint; 1 = at joint; 2 = proximal to joint.
303. C3. Posterior calcaneal bowing: 0 = absent; 1 = present.
304. C4/298. Calcaneo-cuboid articulation: 0 = articular wedge absent (fan-shaped); 1 = articular wedge present (more circular).

Navicular
305. N1*. Length relative to width: 0 = short (<90); 1 = moderate (100-150); 2 = long (>150).
306. N3. Morphology of the naviculocuboid articulation: 0 = cuboid facet on navicular contacts only the ectocuneiform; 1 = cuboid facet contacts the ectocuneiform and mesocuneiform facet.

Entocuneiform

307. E1*. Shape of Entocuneiform/MT1 articulation: 0 = dorsally reduced; 1 = dorsal moiety of joint enlarged relative to ventral moiety; 2 = dorsal moiety greatly enlarged.
308. E2. Lateral process of entocuneiform: 0 = small; 1 = hypertrophied.

General Foot

309. O1. Foot axis: 0 = mesaxonic; 1 = paraxonic; 2 = ectaxonic.
310. O2. Toilet claw: 0 = absent; 1 = present.
311. O3. Prehallux: 0 = present; 1 = absent.
312. O4. Metatarsus length: 0 = short; 1 = long.

Metatarsal

313. MT1*. Peroneal tubercle of MTI: 0 = very large; 1 = large; 2 = small.
314. MT2. Hallux length: 0 = short; 1 = long.

Visual system:

315. V1/288. Optic fovea: 0 = absent; 1 = present.
316. V2/290. Tapetum lucidum: 0 = present; 1 = absent.

Data Matrix

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Proteopithecus 1????????? ??????2??? 2001001122 1110100210 2010011121 1201000112 211100???0 10(01)0100100 0012112(123)01 1000012210 0111113010 2???1????? ??01110110 2010000002 0111101100 1011011100 ?{01}0?022000 0100010010 0101100220 0111000?00 1111001210 ?110?00?00 ?02011??11 2211110001 1020??0101 110?112111 1011?11?00 221010?0?1 0????????1 0000000221 ?????????? ????11

Qatrania 2????????? ?????????? ????00110? 111?0??11? 01?11110?0 1200000??(01) 021000???0 0010110110 0012000110 100001{01}112 0121210100 1????????? ?????????? ?????????? ?????????0 ?1?100?10? 020?02000? 1???10???? ?10??000?0 ???01?0??0 ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ??????

Simonsius 3????????? ?????1?000 2001001101 1?01001110 0110110001 020011?230 22100????0 1010211101 1102000211 0000011111 0111112000 1????????? ???1??1110 1110000000 1000000000 0211000100 120?02(12)001 1100110010 010110?00? ???1000010 1111001??? 2110?0110? ?02011??11 2011010101 1?102?0101 ?????????? ?????1??1? ?????????? ?????????? ????000??? ?????????? ????11

Biretia ?????????? ?????????? ????001102 211?100110 1111010020 ?101000233 ?211000?00 001010(01)010 00?20110(01)1 1000011121 010111(23)210 1????????? ??????2111 1110000002 0110000110 0121000100 020?021001 0110111010 010110100? 0?110001(01)0 ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ??????

Dolichocebus 1????000? 0011?12000 2??1000012 2?12011211 2011010002 000002??30 1??1?????0 0??0201100 0012022?11 1012?12?11 011111?010 ?1000?1000 000111100? 0010000?02 0110100110 1{01}2000011? 000?021000 0111110110 0101100110 0331000200 ?0???????? ?????????? ?02??????? ???????1?? ?????????? ?????????? ?????????? ?????????? ?????????0 ???0?????? ?????????? ????11

Branisella 110111?1?0 0?0?01?00? ?001000002 2?02101211 2000011101 010001?220 0?111????1 1000111100 0012222210 0011012120 0010113010 1????????? ??????0000 0?10001??2 0110100000 1110000000 000?{01}20000 0000020120 0101100100 0131000100 ?????????? ?????????? ?????????? ???????1?? ?????????1 ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ??????

Myanmarpithecus ?????????? ?????1?0?? 2001001?2? ????2?00??1 ??1?01??01 ??{12}??????? ??112????1 1012101100 0012331?1 0001211121 011(01)110011 2????????? ???????1? 0?10?01??1 110?000000 02210111?? 0111011000 1020101110 0101110110 0111110100 ?????????? ?????????? ?????????? ???????0?? ???1?????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ??????

Pondaungia 1?0103?0?0 ????02?0?? 2001001102 11(12)2001100 (12)010000101 12101012(23)(01) 0111(01)0???1 1012111110 11022{23}{23}0{12}0 001{12}2111(12){01} 01(12)100(012)000 21???22?00 0001010110 1310000??1 0100000000 012(01)01021? ?1(01)10(12)100? 121?001010 ?101110111 1331110220 ?????????? ?????????? ?????????? ?????110?? ??11?????1 ?????????? ?????????? ?????????? ?????????1 1010001211 ?????????? ??????

Siamopithecus ?????????? ?????1?000 2001001102 2?1?0?0110 1000010?1?1 111001?23(12) 21110????0 0011211000 0011222120 0011212120 0120000000 2????????? ???1???110 1?10?00??2 (01)000000000 1010111121 ?00?000000 22?101000? ?101110111 13310002(12)0 ?????????? ?????????? ?????????? ???????0?? ???1?????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ??????

Afrasia djijidae ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ??121?100? 1010?0??20 ?0121?2011 ?0?0012220 0101?13?10 1????????? ?????????? ?????????? ?????????0 ?1210?2?0? 010001201? 00???1?111 1113300220 0011(12)(12)1222 ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ??????

Afrotarsius libycus ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ??111?000? 1010?0??20 ?012??2011 ?0?0012220 0102?12?10 1????????? ?????????? ?????????? ?????????0 ?1?10?2?0? 0100?1001? 00???1?111 111330?2? 0?11?(12)2?22 ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ?????????? ??????

Tarsius 2??1???120 01?0010010 0001000122 2?1200011{01} {01}011010021 101111000(12) (01)111(01)00000 1010000120 001(12)2{23}{23}112 0000011120 01{01}2111100 1200200121?1 0111110110 0310100102 (01)101001000 01210{12}{12}100 0{01}0?02(12)001 00201(01)2010 ?111100220 01110001{01}0 1001121211 2111?11112 0221012101 2100110011 1110200011 0030201100 0200000000 0200221120 111?011101 100100(01)000 1110201121 101111

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