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SUPPLEMENTAL DATA

­A diminutive species of emu (Casuariidae: Dromaiinae) from the late Miocene of the Northern Territory, Australia

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TABLE S1. Measurements (in mm) of the tibiotarsus and tarsometatarsus for *Dromaius* *novaehollandiae.* **Abbreviations**: **DW**, distal width; **L**, length; **LCD**, depth of the condylus lateralis; **MSD**, depth of the shaft at midlength; **MSW**, width of the shaft at midlength; **PW**, proximal width; **SAM**, South Australian Museum.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Specimen (SAM #) | Tibiotar-sus  DW | Tibiotar-sus  LCD | Tarsomet-atarsus  L | Tarsomet-atarsus PW | Tarsomet-atarsus  MSW | Tarsomet-atarsus  MSD |
| B99 | 43.4 | 37.1 | 381 | 48.0 | 22.8 | 18.7 |
| B31581 | 44.0 | 40.3 | 366 | 48.8 | 17.5 | 24.2 |
| B31580 | 48.0 | 42.3 | 387 | 53.6 | 19.5 | 21.4 |
| B39369 | 48.6 | 41.1 | 389 | 53.8 | 20.8 | 19.7 |
| B39374 | 44.8 | 40.3 | 368 | 50.1 | 20.4 | 19.6 |
| B7067 | 44.3 | 39.3 | 326\* | 50.4\* | 23.0\* | 19.6\* |
| B7068 | 48.8 | 42.9 | 370 | 54.7 | 22.4 | 21.1 |
| B6863 | 44.3 | 41.4 | 367 | 47.6 | 17.7 | 20.9 |
| B39367 | 44.8 | 41.3 | 370.0 | 50.1 | 20.4 | 19.2 |
| B39368 | 46.9 | 39.3 | 362 | 52.0 | 21.3 | 20.1 |
| B6898 | 46.7 | 42.7 | 377 | 51.0 | 18.7 | 18.4 |
| B39372 | 46.5 | 42.1 | 376 | 51.5 | 20.5 | 20.2 |
| B39371 | 46.6 | 43.2 | 374 | 51.7 | 20.9 | 21.2 |
| B39370 | 47.7 | 43.7 | 371 | 53.0 | 21.1 | 22.7 |
| B39365 | 49.5 | 43.2 | 371 | 52.6 | 20.7 | 22.8 |
| B39366 | 46.8 | 40.4 | 368 | 51.6 | 21.8 | 20.1 |
| B39364 | 47.4 | 41.5 | 379 | 53.7 | 21.7 | 20.7 |
| B39377 | 50.8 | 44.0 | 396 | 55.1 | 22.9 | 21.5 |
| B39378 | 47.9 | 42.6 | 378 | 54.2 | 23.2 | 21.2 |
| B48272 | 44.0 | 40.6 | 361 | 48.9 | 18.1 | 21.8 |
| B39373 | 48.9 | 41.6 | 376.5 | 54.1 | 21.6 | 20.7 |
| B39375 | 47.2 | 42.4 | 386 | 50.2 | 19.2 | 21.8 |
| B39376 | 50.2 | 42.4 | 385 | 52.4 | 22.0 | 21.6 |

\* measurements not used due to deformity of the tarsometatarsus.

TABLE S2. Body mass estimates based on approximate femoral midshaft circumference for extinct insular dwarf subspecies of *Dromaius novaehollandiae*. Methods for calculating approximate circumference and mass are described in the text. **Abbreviations**: **SD**, shaft depth; **SW**, shaft width.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Taxon | SW (mm)\* | SD (mm)\* | Approximate circumference (mm) | Estimated mass (kg) |
| *D. n. baudinianus* | 25 | 23 | 75.43 | 28.96 |
| *D. n. baudinianus* | 21.6 | 20.4 | 65.99 | 20.98 |
| *D. n. baudinianus* | 24.6 | 23.0 | 74.79 | 28.37 |
| *D. n. baudinianus* | 22.8 | 19.8 | 67.0 | 21.76 |
| *D. n. baudinianus* | 24.0 | 22.0 | 72.29 | 26.14 |
| *D. n. baudinianus* | 23.8 | 22.5 | 72.74 | 26.53 |
| *D. n. baudinianus* | 22.6 | 20.7 | 68.05 | 22.59 |
| *D. n. baudinianus* | 23.4 | 20.4 | 68.88 | 23.26 |
| *D. n. baudinianus* | 23.5 | 20.7 | 69.50 | 23.77 |
| *D. n. baudinianus* | 22.4 | 21.4 | 68.81 | 23.20 |
| *D. n. baudinianus* | 23.3 | 23.2 | 73.04 | 26.79 |
| *D. n. baudinianus* | 25.7 | 24.0 | 75.04 | 28.60 |
| *D. n. baudinianus* | 23.9 | 21.4 | 71.21 | 25.20 |
| *D. n. baudinianus* | 24.7 | 22.8 | 74.64 | 28.23 |
| *D. n. baudinianus* | 22.9 | 21.2 | 69.30 | 23.61 |
| *D. n. baudinianus* | 22.4 | 22.0 | 69.74 | 23.97 |
| *D. n. baudinianus* | 24.0 | 20.4 | 69.86 | 24.07 |
| *D. n. minor* | 20.8 | 16.4 | 58.84 | 15.91 |
| *D. n. minor* | 22.4 | 18.2 | 63.95 | 19.45 |
| *D. n. minor* | 22.3 | 18.1 | 63.63 | 19.21 |
| *D. n. minor* | 20.5 | 17.0 | 59.03 | 16.03 |
| *D. n. minor* | 20.0 | 16.9 | 58.06 | 15.41 |
| *D. n. minor* | 20.5 | 18.3 | 61.0 | 17.36 |
| *D. n. minor* | 23.8 | 20.3 | 69.44 | 23.72 |
| *D. n. minor* | 21.2 | 17.9 | 61.53 | 17.72 |
| *D. n. minor* | 22.9 | 17.8 | 64.16 | 19.60 |
| *D. n. minor* | 23.5 | 19.3 | 67.36 | 22.04 |
| *D. n. minor* | 24.2 | 22.0 | 72.68 | 26.48 |
| *D. n. minor* | 23.5 | 19.2 | 67.24 | 21.95 |
| *D. n. minor* | 21.6 | 17.4 | 61.44 | 17.66 |
| *D. n. minor* | 19.4 | 16.4 | 56.33 | 14.32 |
| *D. n. minor* | 19.72 | 15.3 | 55.23 | 13.66 |
| *D. n. minor* | 20.9 | 18.0 | 61.19 | 17.49 |

\*Data from Thomson et al. (2018).

APPENDIX S1. Description of characters used in the phylogenetic analysis. Characters 1–179 are from Worthy and Scofield (2012). The following new characters were added:

180. Horn covered cranial casque in adults: absent (0), or present (1).

181. Spatium intermetacarpale: present (0), or absent (1).

182. Height of the ilium dorsal to the acetabulum: much less than twice height of acetabulum (0), or approximately twice the height of the acetabulum (1).

183. Lateral wall of the sulcus extensorius of the tibiotarsus: raised above the floor of the sulcus, forming a ridge along its lateral margin (0), or almost level with the floor of the sulcus so that only a weak line demarcates the lateral margin (1).

184. Distal profile of the condyles lateralis of the tibiotarsus: rounded (0), or flattened (1).

185. Elongation of the tarsometatarsus: length less than (0), or greater than (1), 6.5 times the proximal width.

186. Width of trochlea metatarsi II: greater than 88% of the width of trochlea metatarsi IV (0), between 76–88% of the width of trochlea metatarsi IV (1), or less than 76% of the width of trochlea metatarsi IV.

LITERATURE CITED

Worthy, T. H., and R. P. Scofield. 2012. Twenty-first century advances in knowledge of the biology of moa (Aves: Dinornithiformes): a new morphological analysis and diagnoses revised. New Zealand Journal of Zoology 39:87–153.

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