

Online Supplemental Material Cont.

Craniodental specimens used for comparative study of *Wakaleo pitikantensis* comb. nov. (SAM P37719)

Wakaleo schouteni: QM F45200, QM F23443, QM F24680, QM F57311, QM F57314, QM F20573, QM F30378, QM F23801, QM F52989

Wakaleo oldfieldi: QM F24745, QM F31294, QM F31398

Wakaleo vanderleueri: CPC 26604

Priscileo roskellyae: QM F23453, QM F23442, QM F 40116

Humerus Comparative Study

Humerus measurements for comparative study

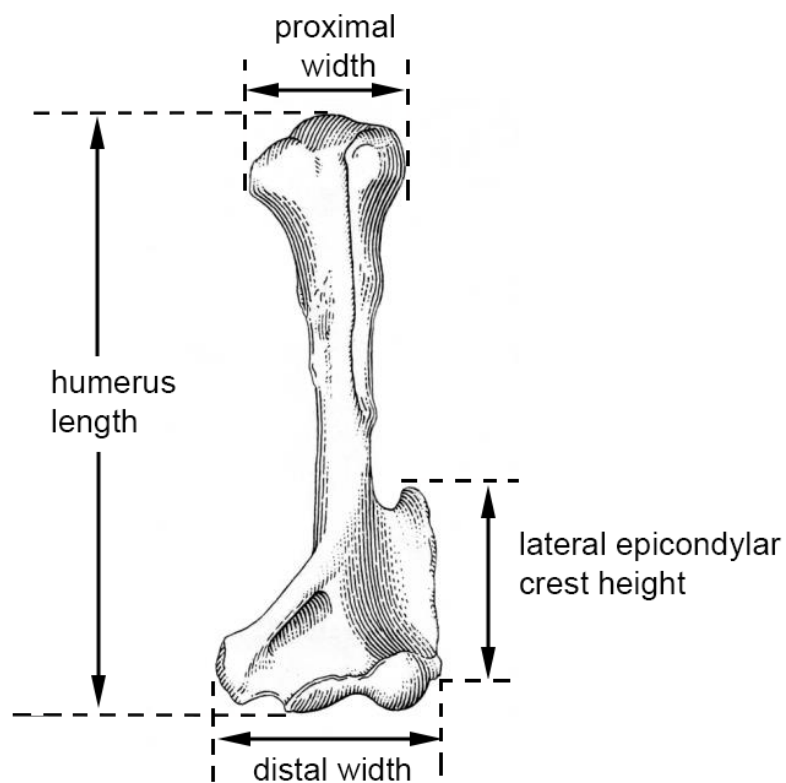


Figure 1. Measurements of the humerus taken for comparative studies (see Table 2).

Table 2. Measurements of thylacoleonid humeri (in mm).

*All humeri of *Thylacoleo carnifex* are from localities in or near Naracoorte Caves, South Australia, except SAM P13950/4 from Mairs Cave, Carrieton, South Australia and AM F106768 from Wellington Caves, New South Wales. e = estimate; ^ = mean does not include measures that are estimates.

| Specimen | length | proximal width | distal width | lateral epicondylar crest height |
|------------------------------|-----------|----------------|--------------|----------------------------------|
| <i>Wakaleo pitikantensis</i> | | | | |
| SAM P37720 | 109.8 | 32.1 | 43.1 | 36.5 |
| <i>Wakaleo schouteni</i> | | | | |
| QM F57904 | 119.7 | 29.8 | 42.5 | 35.5 |
| QM F57905 | - | - | 49.1 | 39.4 |
| QM F23443 | - | - | 52.9 | 46.0 |
| mean | | | 48.1 | 40.3 |
| <i>Thylacoleo carnifex</i> * | | | | |
| SAM P4007 | 219 | 56.9 | 76.9 | - |
| SAM P12384 left | 201 | - | - | - |
| SAM P12384 right | 200 | - | 68.8 | - |
| SAM P19057 | 218 | - | 78.9 | - |
| SAM P13950/4 | 212 | - | 67.8 | - |
| SAM P40009 | 231 | - | 77.5e | - |
| SAM P38793 | 215e | - | 75.6 | - |
| SAM P5013b | 226 | 58.8 | 79.6 | - |
| SAM P50129 | - | - | 82.7e | - |
| SAM P50128 | 210 | 56.2 | 71.9 | - |
| FU 0430 | - | - | 82.1 | - |
| FO/7 | - | - | 80.5 | - |
| mean ^ | 214.6 | | 75.7 | |
| range | 200 - 231 | | 67.8 - 82.7 | |
| AM F106768 | 197.0 | - | 72.3 | 51.0 |

Humerus comparisons

To assess the significance of the differences in the two *Wakaleo* humeri, samples of humeri of *Thylacoleo carnifex*, *Phascolarctos cinereus*, *Spilocuscus maculatus*, *Trichosurus vulpecula* and *Tr. caninus* were examined for intraspecific and interspecific variation, with the main focus on the extent of the development and height of the greater and lesser tubercles in relation to the head of the humerus, as well as the shape and contour of the head of the humerus. A list of the specimens examined is given below. Complete elements (with

proximal epiphyses intact) from adults were photographed. Images of right limbs were mirrored for ease of comparison (see Fig. 2.1 - 2.6).

List of humerus specimens examined

Abbreviations: AM F = Palaeontology collection, Australian Museum, Sydney; AM M = Mammal collection, Australian Museum, Sydney; QM F = Palaeontology collection of the Queensland Museum, Brisbane; SAM M = Mammal collection, South Australian Museum, Adelaide; SAM P, FU & FO = Palaeontology collection, South Australian Museum, Adelaide.

Wakaleo pitikantensis

SAM P37720

Thylacoleo carnifex

AM F106768; SAM P12384, SAM P13950/4, SAM P19057, SAM P38793, SAM P40007, SAM P40009, SAM P5013b, SAM P50128, SAM P50129, FU 0430, FO/7

Phascolarctos cinereus

AM M23550, AM M23629, AM M28154, AM M32063, AM M35008, AM M37373, AM M38129, AM M38689, AM M41403, AM M46225; SAM M22217, SAM M2219, SAM M7985, SAM M8662, SAM M18863, SAM M20714, SAM M22361, SAM M23623, SAM M25111, SAM M26186, SAM M26247, SAM M26248

Trichosurus vulpecula

AM M12686, AM M23626, AM M24844, AM M34417, AM M35010, AM M35483, AM M36213, AM M39088, AM S946, AM S1081, AM S1304, AM S1349, AM S1851; SAM M828, SAM M3532, SAM M5238, SAM M18006, SAM M18397, SAM M20643, SAM M21447, SAM M23317, SAM M26219, SAM M26260

Trichosurus caninus

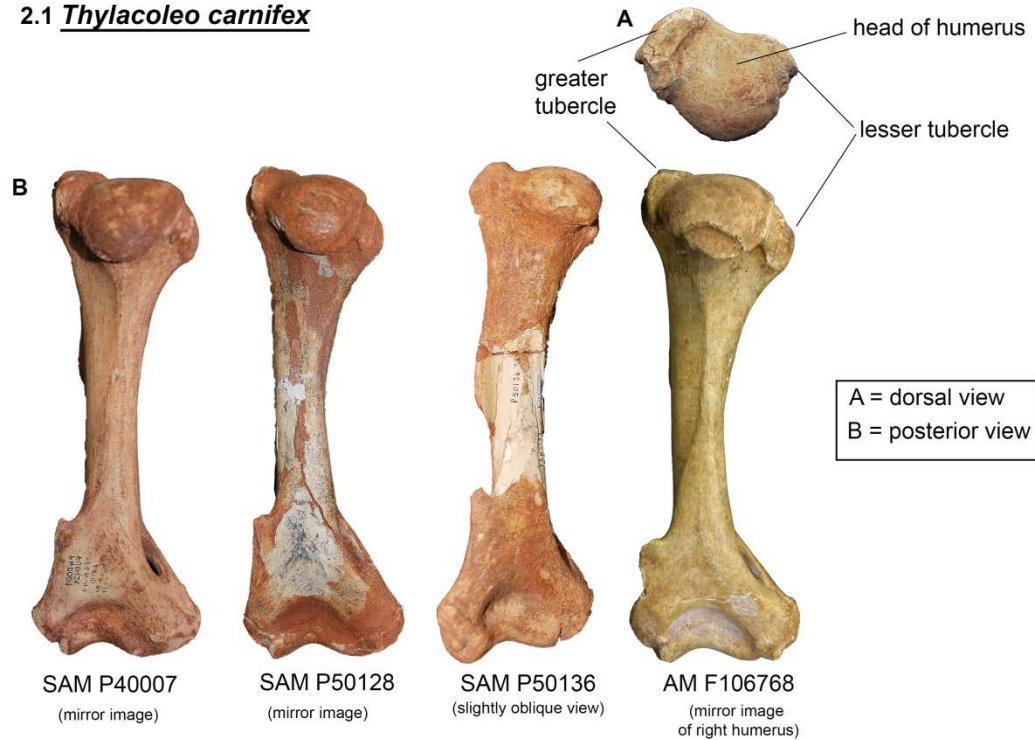
AM M138125, AM M33831, AM M35046, AM M37526, AM M35762, AM M38832

Spilocuscus maculatus

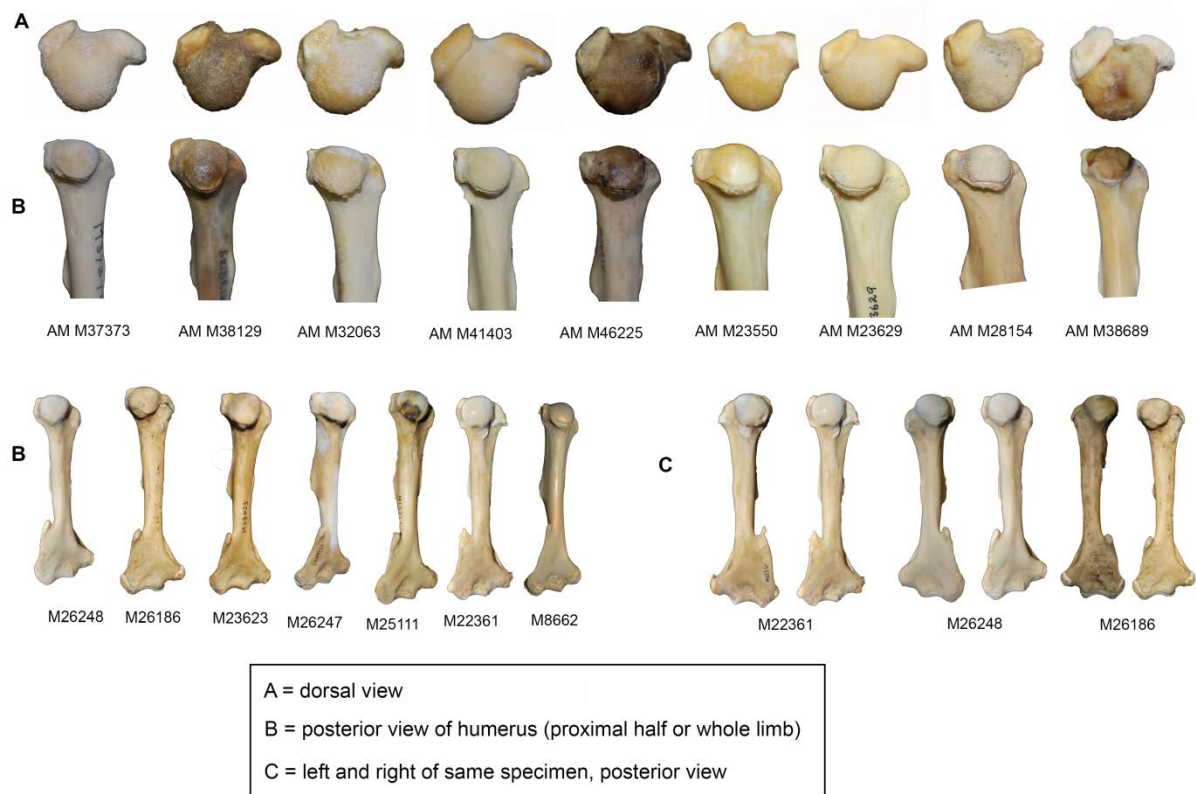
AM M11634, AM M23597, AM M23627, AM M32783

Figure 2. Comparison of humeri of *Thylacoleo carnifex*, *Phascolarctos cinereus*, *Spilocuscus maculatus*, *Trichosurus vulpecula*, *Tr. caninus*, and *Wakaleo* specimens QM F57904 and SAM P37720. Not to scale.

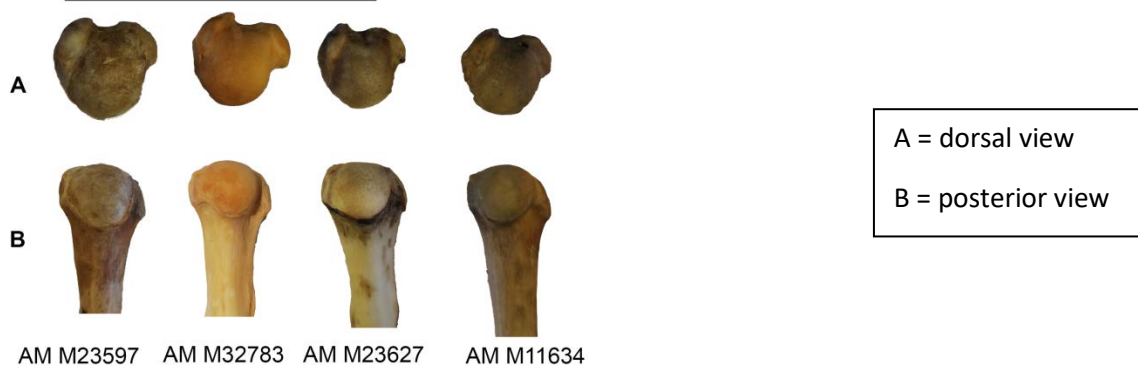
2.1 *Thylacoleo carnifex*



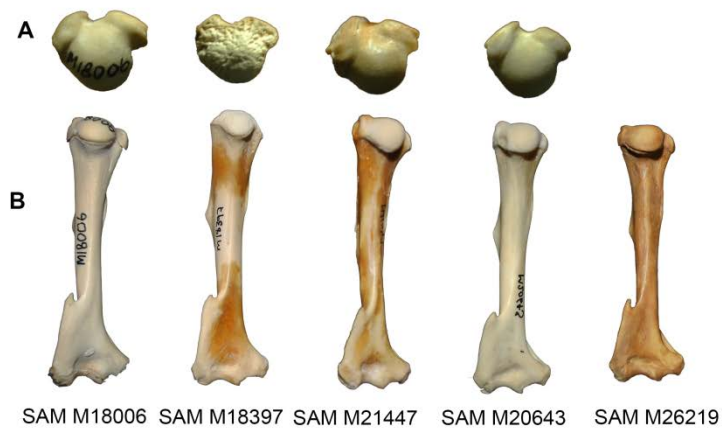
2.2 *Phascolarctos cinereus*



2.3 *Spilocusculus maculatus*



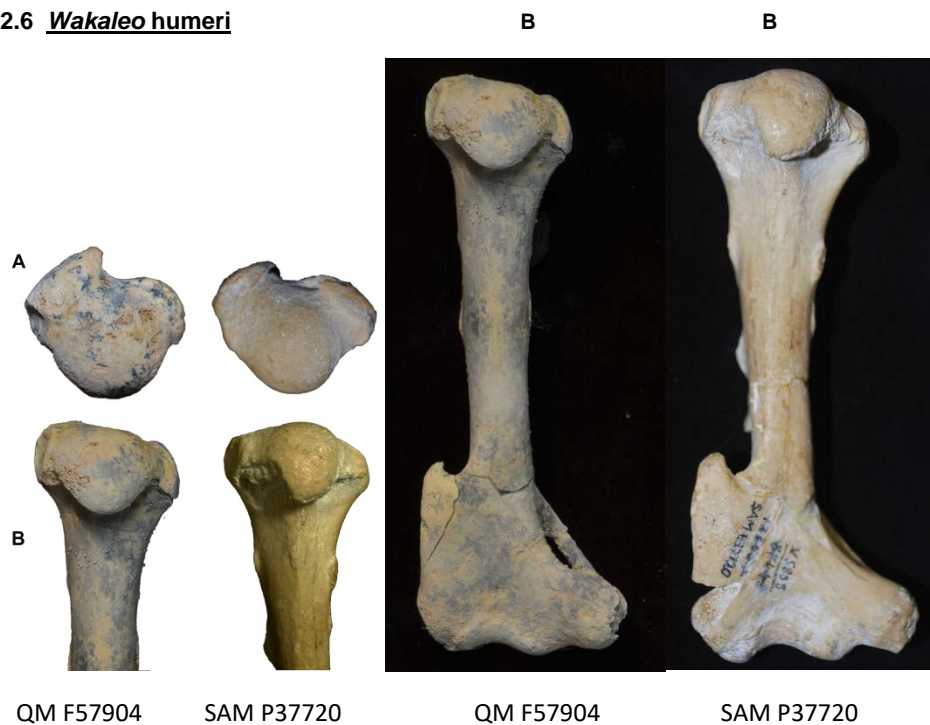
2.4 *Trichosurus vulpecula*



2.5 *Trichosurus caninus*



2.6 Wakaleo humeri



In all the humeri of *Thylacoleo carnifex* the greater tubercle is prominent and is much taller than the humeral head (Fig 2.1). The lesser tubercle is broad but is distinctly shorter than the humeral head. These features were consistent throughout the sample.

The humerus of *Phascolarctos cinereus* has a greater tubercle that is relatively closely appressed to, and similar in height to the head of the humerus (Fig.2.2). In comparison, the lesser tubercle is much broader than the greater tubercle and forms a distinctive medially-projecting process that is situated well below the humeral head. The shape and width of this tubercle was consistent across all specimens. In one specimen (AM M28154) the lesser tubercle had a relatively greater anteroposterior depth. The dorsum of head of the humerus is broadly-rounded.

The humerus of *Spiloglossus maculatus* has a greater tubercle that is closely appressed to and slightly shorter than the humeral head (Fig.2.3). The lesser tubercle is relatively small and is slightly broader than the greater tubercle and is also situated well below the head of the humerus. The dorsum of the humeral head is well-rounded and protrudes above the both the greater and lesser tubercles.

The greater tubercle of the humerus of *Trichosurus vulpecula* is situated close to and is very slightly taller than the humeral head (Fig. 2.4). The lesser tubercle is relatively broader than the greater tubercle and forms a small but prominent medially-projecting process. The dorsum of the humeral head is rounded. These features were consistent across the sample.

The humerus of *Trichosurus caninus* (Fig. 2.5) is very similar to that of *Tr. vulpecula*; the greater tubercle is slightly taller than the humeral head, the lesser tubercle has a width similar to that of the greater tubercle and is also situated slightly below the head of the humerus. The similarities between the two species are so great that it is difficult to identify any distinctive morphological differences in these features.

The differences in the two *Wakaleo* humeri (Fig. 2.6) are greater than any apparent difference in the two *Trichosurus* species and are more similar to the degree of difference between the two phalangerid genera *Trichosurus* and *Spilocuscus*. The three phalangerid taxa used in this analysis have similar lifestyles, i.e., they are all primarily tree-dwellers, with the species of *Trichosurus* possibly being slightly more scansorial than *S. maculatus*. In light of these similarities, the differences between the phalangerid humeri possibly reflect phylogenetic differences more than functional morphological differences.

In dorsal view, SAM P37720 (Fig. 2.6) is most similar to *Trichosurus vulpecula* and *Tr. caninus*, and to a lesser extent *Phascolarctos cinereus*, having a moderately-thickened greater tubercle and a lesser tubercle that forms a distinctive medially-projecting process. In posterior view, SAM P37720 is most similar to these species having a lesser tubercle that is broader than the greater tubercle and results in its overall proximal width being greater than that of QM F57904. In contrast, QM F57904, in dorsal view, has a much broader, thicker and more prominent greater tubercle than that of SAM P37720 (Fig. 2.6). The height and width of the greater tubercle is most similar to that of *Trichosurus* spp. and *Phascolarctos*, however, its lesser tubercle is much narrower and more closely appressed to the humeral head (Fig. 2.6) and in the latter feature it differs greatly from *Phascolarctos* and species of *Trichosurus* and is more similar to *Spilocuscus maculatus*.

Phylogenetic analysis

Character description

Description of 64 characters used in the phylogenetic analysis. Ordered characters are indicated by an asterisk (*). pgp = postglenoid process.

- 1.*Molar morphology: tribosphenic (0); bunodont (1).
- 2.* Number of upper incisors: five (0); three (1).
3. Size of I^1 relative to I^{2-3} : equal/similar length (0); large, elongate (1).
- 4.* Position of C^1 relative to P^1 : anterior (0); anterolingual (1); lingual (2).
5. *Upper canine: long, recurved (0); short, recurved (1); short, non-recurved (2).
6. C^1 - P^1 diastema: very short (0); short (1); long (2).
- 7.* Number of upper premolars: three (0); two (1); one (2).
8. P^3 posterior cusp: absent/weakly-developed (0); well-developed (1).
9. * P^3 occlusal shape: wider posteriorly than anteriorly (0); fusiform, broadest centrally (1); wider anteriorly than posteriorly (2).
- 10.* Absolute size of P^3 : small ($< 5\text{mm}$) (0); moderate (5-10mm); (1); large (10-20mm) (2); very large (20-30mm) (3); extremely large ($>30\text{mm}$) (4).
- 11.*Size of $P^3/3$ relative to cheektooth row length: very short (0); short (1); long (2); very long (3).
12. P^3 longitudinal blade curvature: straight (0); buccally convex (1); lingually convex (2).
13. P^3 anterior crest, basal lingual curvature: absent (0); present (1).
- 14.*Development of the anterolingual crest on P^3 : absent (0); weak, long crest (1); moderate, long crest (2); cuspule (3).
15. Slope of the posterior end of P^3 longitudinal blade: steep (0); shallow/subhorizontal (1); gently convex (2).
16. P^3 Posterolingual crest: absent (0); present (1).
17. P^3 posterior crest: absent (0); well developed (1); moderately developed (2); weakly developed (3).
- 18.* Size of P^3 relative to M^1 : $P^3L/M^1L \leq 1.4$ (0); $1.4 \leq P^3L/M^1L < 1.6$ (1); $1.6 \leq P^3L/M^1L < 2.0$ (2); $P^3L/M^1L \geq 2.0$ (3).
19. * P^3 angle to the molar row: straight (0); slightly angled (1); moderately angled (2); acutely angled (3).
20. Enamel crenulations: absent (0); present (1).

21. Styler cusp development: strong (0); weak/absent (1).
22. Parastyle development on M¹: absent/small (0); moderately developed with expansion of anterobuccal tooth corner (1).
23. M¹ occlusal outline: trapezoidal (0); triangular (1).
24. M¹ metacone: moderate (0); large (1).
25. *M¹ buccal anteroposterior gradient: paracone much shorter than metacone (0); paracone slightly taller than metacone (1); paracone slightly taller than metacone (2); paracone much taller than metacone (3).
26. Cheektooth root exposure: small (0); large (1).
27. M² paracone placement: medial (0); buccal (1).
28. *M² buccal height vs lingual height: similar (0); slightly taller (1); moderately taller (2); much taller (3).
29. M² buccal inflation of crown below paracone: absent (0); present (1).
30. M² postprotocrista and premetaconule crista: confluent (0); not confluent, separated (1).
31. M² postprotocrista direction: posterior (0); posterobuccal (1).
32. M² postparacrista direction: posterobuccal (0); posterior (1).
33. M² width of trigon basin relative to crown width: broad (0); narrow (1).
34. M² lingual metacrista: absent (0); anteriorly-bowed (1); straight (2).
35. M³/₃: present (0); absent (1).
36. M⁴/₄: present (0); absent (1).
- 37.* Number of lower incisors: three (0); two (1); one (2).
38. *Number of lower premolars: three (0); two (1); one (2).
39. M₁ talonid basin: extends to posterolingual corner of crown (0); posterolingual edge curves buccally/truncated (1).
- 40.* M₁ talonid width relative to trigonid width: broader (0); slightly narrower (1); much narrower (2).
41. M₂ trigonid basin height relative to talonid basin height: similar (0); taller (1).
42. *M₂ talonid basin width: broad/to edges of crown (0); slightly narrowed/oval (1); strongly narrower/ocular (2).
- 43.*M₃ talonid basin: broad (0); narrow (1); absent/lost (2).
44. Premaxilla height relative to rostrum depth: moderate (0); tall (1).

45. Anterior palatal foramen relative to premaxilla: long (0); moderate (1); short (2).
46. Posterior palatal vacuities: anteriorly extensive to opposite or anterior to M¹ (0); extends anteriorly to opposite M² (1); confined within palatine, opposite M³⁻⁴ (2); absent (3).
47. Masseteric process: absent (0); present (1).
48. Frontal/squamosal contact: absent, alisphenoid-parietal contact (0); present (1).
49. Sagittal crest development: weak (0); moderate (1); strong (2).
50. Nuchal crest development: small (0); moderate (1); large (2).
51. Infratemporal crests: absent (0); weakly-developed (1); well-developed (2).
52. Ventrolateral pterygoid processes of alisphenoid: absent (0); present (1).
53. Pterygoid fossa: shallow (0); deep (1).
54. Medial glenoid process: absent (0); present (1).
55. Glenoid fossa: flat articular eminence, shallow mandibular fossa (0); flat articular eminence, deep mandibular fossa (1); prominent articular eminence, mandibular fossa absent (2).
56. Postglenoid cavity: narrow, opens ventrally (0); opens posteriorly, laterally expanded across pgp (1); opens posteriorly, medial end of pgp (2).
57. Well-developed postglenoid cavity: absent (0); present (1).
58. Position of postglenoid foramen: posteromedial to postglenoid process within squamosal (0); medial to or in line with postglenoid process (1); enlarged in postglenoid cavity (2).
59. Tympanic cavity roof elements: alisphenoid and petrosal (0); alisphenoid and squamosal (1); squamosal (2).
60. Tympanic wing elements: alisphenoid (0); alisphenoid and squamosal (1); squamosal (2).
61. Rostral tympanic process of periotic: well-developed point (0); weak bump (1).
62. Palatal ridges: absent (0); present (1).
63. Masseteric foramen: absent (0); present (1).
64. Posterior extent of mandibular symphysis: anterior to P₃ (0); below P₃ (1).

Data Matrix

Data matrix used for phylogenetic analysis of Vombatiformes. Abbreviations: '?' signifies 'missing data'; '-' signifies 'inapplicable'. Polymorphic states indicated by: **A**, (0,1); **B** (1,2); **C** (0,1,2).

| | | | |
|--|---|---|---|
| | 1 | 2 | 3 |
| | 0 | 0 | 0 |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| <i>Barinya wangala</i> | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | | |
| <i>Galadi speciosus</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | - | 0 | |
| <i>Microleo attenboroughi</i> | 1 | ? | ? | ? | ? | ? | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 0 | 1 | 1 | ? | 0 | ? | ? | ? | 0 | 1 | 0 | 0 | 1 | | |
| <i>Priscileo roskellyae</i> | 1 | 2 | 1 | 1 | ? | 2 | 0 | 1 | 0 | 1 | 1 | 2 | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | |
| <i>Wakaleo pitikantensis</i> | 1 | ? | ? | ? | 1 | ? | 1 | 0 | ? | 0 | 2 | 1 | ? | ? | ? | ? | ? | ? | ? | ? | 2 | 1 | 1 | ? | ? | 1 | 2 | 0 | 0 | ? | ? | ? | ? |
| <i>Wakaleo schouteni</i> | 1 | 2 | 1 | 1 | 1 | ? | C | 1 | 0 | 2 | | 1 | 2 | 1 | 3 | 1 | 0 | 1 | 1 | 2 | 1 | | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 2 | 1 | 0 | |
| <i>Wakaleo oldfieldi</i> | 1 | 2 | 1 | ? | ? | ? | B | 1 | 0 | 2 | | 2 | 2 | 1 | 3 | 1 | 0 | 1 | 1 | ? | 1 | | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 2 | 1 | 0 | |
| <i>Wakaleo vanderleueri</i> | 1 | 2 | 1 | 1 | 1 | 1 | B | 1 | 0 | 2 | | 2 | 2 | 1 | 3 | 1 | 0 | 1 | 2 | 2 | 1 | | 1 | 0 | 0 | 1 | 2 | 1 | 0 | 3 | 1 | 0 | |
| <i>Wakaleo alcootaensis</i> | 1 | ? | 1 | ? | ? | ? | 2 | 1 | 0 | 3 | | 2 | 2 | 1 | 3 | 1 | 0 | 1 | 2 | ? | ? | | 1 | ? | 1 | ? | ? | ? | ? | ? | ? | ? | ? |
| <i>Thylacoleo hilli</i> | ? | ? | ? | ? | ? | ? | ? | 0 | 2 | 3 | | ? | 2 | 0 | 0 | 2 | 1 | 0 | ? | ? | ? | | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? |
| <i>Thylacoleo crassidentatus</i> | 1 | 2 | 1 | 2 | 2 | 0 | 0 | 0 | 2 | 4 | | 3 | 2 | 0 | 0 | 2 | 1 | 0 | 3 | 3 | 1 | | 1 | 1 | 0 | 1 | 2 | - | 1 | ? | ? | ? | |
| <i>Thylacoleo carnifex</i> | 1 | 2 | 1 | 2 | 2 | 0 | A | 0 | 2 | 4 | | 3 | 2 | 0 | 0 | 2 | 1 | 0 | 3 | 3 | 1 | | 1 | 1 | 0 | 1 | 2 | - | - | - | - | - | |
| | | | | | | | | 4 | | | | | | | | 5 | | | | | | | | | | 6 | | | | | 6 | | |
| | | | | | | | | 0 | | | | | | | | 0 | | | | | | | | | | 0 | | | | | 4 | | |
| <i>Barinya wangala</i> | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <i>Galadi speciosus</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <i>Microleo attenboroughi</i> | 0 | 0 | 0 | 1 | 0 | 0 | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? |
| <i>Priscileo roskellyae</i> | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| <i>Wakaleo pitikantensis</i> | 1 | ? | 1 | 2 | 0 | 0 | ? | ? | ? | ? | | ? | ? | ? | ? | ? | ? | ? | ? | ? | | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? |
| <i>Wakaleo schouteni</i> | 1 | 1 | 1 | 2 | 0 | A | 1 | 1 | 1 | 1 | | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 2 | 2 | | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 0 |
| <i>Wakaleo oldfieldi</i> | 1 | 1 | 1 | 2 | 0 | 1 | 1 | 2 | 1 | 1 | | 2 | 1 | 1 | ? | ? | ? | ? | ? | ? | | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | 1 |
| <i>Wakaleo vanderleueri</i> | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 1 | | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 2 | 2 | | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 1 | 0 |
| <i>Wakaleo alcootaensis</i> | ? | ? | ? | ? | 1 | 1 | 2 | 2 | ? | ? | | ? | ? | ? | ? | ? | ? | ? | ? | ? | | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? |
| <i>Thylacoleo hilli</i> | ? | ? | ? | ? | ? | ? | 2 | 0 | ? | ? | | ? | ? | ? | ? | ? | ? | ? | ? | ? | | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? |
| <i>Thylacoleo crassidentatus</i> | ? | ? | 1 | - | 1 | 1 | 2 | 0 | 1 | 2 | | 1 | ? | - | ? | 2 | 0 | 1 | ? | ? | | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? |
| <i>Thylacoleo carnifex</i> | - | - | - | - | 1 | 1 | 2 | 0 | - | 2 | | 1 | - | - | - | 2 | 2 | 1 | 1 | 2 | 0 | | 1 | 1 | 0 | 1 | 2 | 2 | 0 | 2 | 2 | 2 | 1 |

Unambiguous apomorphies

| | | |
|-----------------------|----|-------------------|
| | 19 | $1 \rightarrow 2$ |
| | 26 | $0 \rightarrow 1$ |
| | 28 | $0 \rightarrow 2$ |
| | 29 | $0 \rightarrow 1$ |
| | 31 | $0 \rightarrow 1$ |
| | 42 | $0 \rightarrow 1$ |
| | 33 | $0 \rightarrow 1$ |
| | 34 | $1 \rightarrow 2$ |
| | 39 | $0 \rightarrow 1$ |
| | 40 | $0 \rightarrow 1$ |
| | 42 | $0 \rightarrow 1$ |
| | 43 | $0 \rightarrow 1$ |
| | 44 | $0 \rightarrow 1$ |
| | 45 | $0 \rightarrow 1$ |
| | 49 | $1 \rightarrow 2$ |
| | 50 | $1 \rightarrow 2$ |
| | 52 | $0 \rightarrow 1$ |
| | 62 | $0 \rightarrow 1$ |
| Node 4 | 7 | $0 \rightarrow 2$ |
| | 11 | $1 \rightarrow 2$ |
| | 23 | $0 \rightarrow 1$ |
| | 38 | $1 \rightarrow 2$ |
| Node 5 | 8 | $1 \rightarrow 0$ |
| (<i>Thylacoleo</i>) | 9 | $0 \rightarrow 2$ |
| | 10 | $2 \rightarrow 3$ |
| | 13 | $1 \rightarrow 0$ |
| | 14 | $3 \rightarrow 0$ |
| | 15 | $1 \rightarrow 2$ |
| | 16 | $0 \rightarrow 1$ |
| | 17 | $1 \rightarrow 0$ |
| | 37 | $1 \rightarrow 2$ |
| Node 6 | 10 | $3 \rightarrow 4$ |

