

A NOTE ON THE DENTAL ERUPTION OF SOME MACROPODINAE, WITH PARTICULAR REFERENCE TO CAPTAIN COOK'S KANGAROO

There is a voluminous literature on the identity of Captain Cook's kangaroo (cited by Calaby, Mack, and Ride 1962; Iredale and Troughton 1962), with protagonists favouring the grey kangaroo, *Macropus major* Shaw, a wallaroo of the *Osphranter robustus* group, or the whiptail wallaby, *Wallabia elegans* Lambert (names after Iredale and Troughton 1934).

Two skulls collected by Cook's party have been described (Morrison-Scott and Sawyer 1950) and it is generally accepted that one is of a grey kangaroo and the other of a wallaroo: dental eruptions are either described (Owen 1853) or illustrated (Morrison-Scott and Sawyer 1950). The weights of the two large male macropods collected by Cook's party were 38 lb and 84 lb (Hawkesworth 1773); the 38-lb specimen is generally associated with the type of Captain Cook's kangaroo. The problem is to relate each skull to a body-weight, and for the purpose of an objective study, data on dental eruptions and body weights were obtained.

Specimens of three species were taken throughout their distribution ranges in Queensland. As eruption and loss of premolars are irregular, only information on molars has been considered as under:

<i>Index of Eruption (E)</i>	<i>State of Eruption</i>
1.0	M ₁ not through gum
1.5	M ₁ through gum to $\frac{1}{2}$ erupted
2.0	M ₁ more than $\frac{1}{2}$ erupted to fully erupted, M ₂ not through gum
2.5	M ₂ through gum to $\frac{1}{2}$ erupted
3.0	M ₂ more than $\frac{1}{2}$ erupted to fully erupted, M ₃ not through gum
3.5	M ₃ through gum to $\frac{1}{2}$ erupted
4.0	M ₃ more than $\frac{1}{2}$ erupted to fully erupted, M ₄ not through gum
4.5	M ₄ through gum to $\frac{1}{2}$ erupted
5.0	M ₄ more than $\frac{1}{2}$ erupted to fully erupted, but unworn
5.5	M ₄ well in place and worn
6.0	M ₁ lost

A molar was considered erupted when the anterior cusp had pierced the gum, more than half erupted when the posterior cusp had pierced the gum.

Results (W = body-weight in lb) are as follows.

Grey Kangaroo (male)

				$n = 102$
Regression equation	..	..	..	$W = 22.56 E - 18.08$
s.e. (estimated)	± 8.9
				$r = .9609$

Wallaroo (male)

				$n = 25$
Regression equation	..	..	..	$W = 21.33 E - 23.89$
s.e. (estimated)	± 7.2
				$r = .9517$

Whiptail Wallaby (male)

				$n = 14$
Regression equation	..	..	..	$W = 10.95 E - 13.69$
s.e. (estimated)	± 6.3
				$r = .9125$

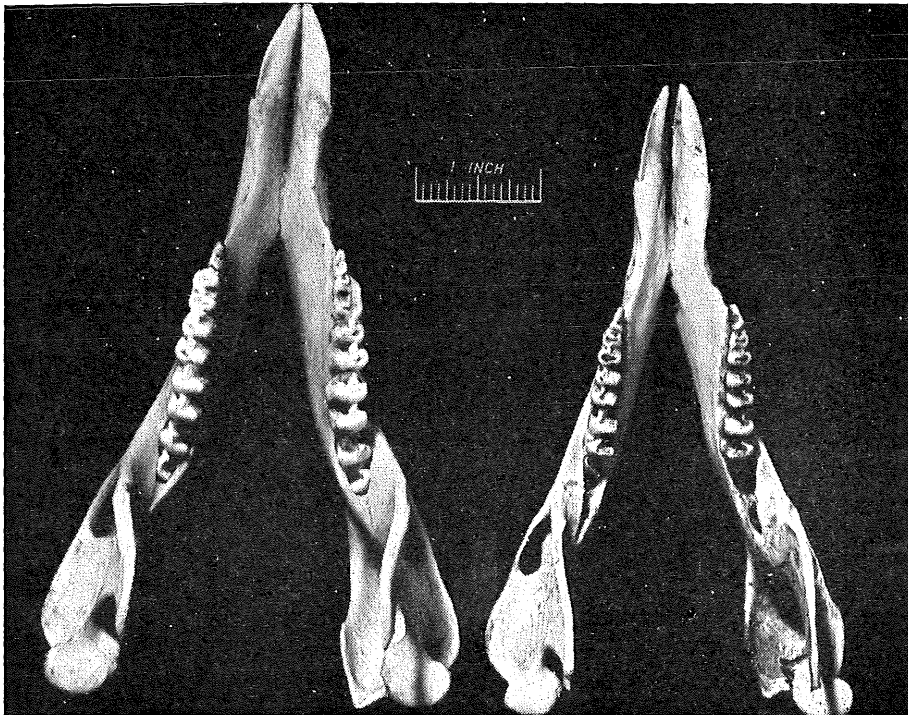


Fig. 1.—Mandibles of male wallaroos, *Macropus robustus*: teeth in molar rows—right $P_3dP_4M_1M_2$; left $P_4M_1M_2M_3$.

The results have been checked by obtaining relevant data on numerous other specimens of the three species. Accordingly, a male grey kangaroo with non-erupted 4th molars would normally weigh 72 ± 9 lb, with a maximum range of 72 ± 20 lb; a male wallaroo with dental eruption that of the drawn skull (Morrison-Scott and Sawyer 1950) would normally weigh 40 ± 7 lb; and a whiptail wallaby weighing 38 lb would normally have the 4th molar half to fully erupted. The dental eruption of the wallaroo skull (from the mandible) is $P_3dP_4M_1M_2$, with M_3 visible through an alveolus (note a similar mandible, Figure 1 right). Calaby, Mack, and Ride (1962) have interpreted the dentition as illustrated in Figure 1 left, which is actually that of a heavier specimen (72 lb).

The above data support the contention that the 38-lb specimen collected by Cook's party was a wallaroo, described by Müller in 1776 (p. 62) as *Mus cangaru* and currently known as *Macropus robustus* Gould. The colour of a young male of this species from North Queensland is normally ashy-grey.

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T. H. KIRKPATRICK,
Queensland Department of Primary Industries.

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