

QUEENSLAND DEPARTMENT OF PRIMARY INDUSTRIES

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STUDIES OF MACROPODIDAE IN QUEENSLAND.
8. AGE ESTIMATION IN THE RED KANGAROO
(MEGALEIA RUFA (DESMAREST))

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SUMMARY

Data are presented for estimating age based on a study of 35 pouch young and 16 adults.

Methods of estimating the age of pouch young of the grey kangaroo (*Macropus giganteus* Shaw), the eastern wallaroo (*Osphranter robustus* (Gould)) and the red-necked wallaby (*Wallabia rufogrisea* (Desmarest)) from length of tail and hind feet, and regressions relating age to an index of progression of the molar teeth (Kirkpatrick 1964) for adults of these species and the red kangaroo (*Megaleia rufa* (Desmarest)), have been published (Kirkpatrick 1965).

In this paper full data for estimating age in the red kangaroo, resulting from a study of 35 pouch young and 16 adults of western Queensland stock, are presented.

From Table 1 ages of pouch young up to the end of pouch life (235 days) may be estimated from lengths of tail and hind feet. The regression relating age to molar index (M.I.) for animals older than 235 days is as follows:—

$$\text{Log age (days)} = 2.2278 + 0.3590 \text{ M.I.}$$

Confidence limits (95%) lie between $\pm 23\%$ and $\pm 27\%$ of estimated age.

From this equation Table 2, giving calculated molar index at 1-year intervals, has been constructed: the information contained is not significantly different from that derived from the provisional equation published earlier (Kirkpatrick 1965, Table 4), for which 95% confidence limits were not available.

For some years these data have proved adequate for field studies of this species.

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TABLE 1

AGES OF RED KANGAROO POUCH YOUNG ESTIMATED FROM LENGTH OF TAIL AND MEAN LENGTH OF HIND FEET

Length of Tail (mm)	Age (days)	Days added per Additional mm	Mean Length of Hind Feet (mm)	Age (days)	Days added per Additional mm
7	2	2.0	5	6	2.8
10	8	1.3	10	20	2.1
20	21	1.0	20	41	1.6
30	31	1.0	30	57	1.2
40	41	1.0	40	69	1.2
50	51	0.8	50	81	1.2
100	90	0.6	60	93	0.8
150	120	0.4	100	125	0.7
200	140	0.3	140	153	0.7
250	155	0.3	160	167	0.7
300	170	0.3	170	174	0.7
350	185	0.2	180	181	0.7
400	195	0.3	200	195	1.0
450	210	0.3	210	205	1.3
500	225	0.5	220	218	2.4
Standard deviation (days) at ages	10	±3		10	±2
	50	±3		50	±3
	100	±9		100	±7
	200	±10		200	±14

TABLE 2

MOLAR INDICES OF THE RED KANGAROO AT 1-YEAR INTERVALS FROM 1 TO 20 YEARS

Age (years)	Molar Index	Age (years)	Molar Index
1	0.93	12	3.94
2	1.77	13	4.03
3	2.26	14	4.12
4	2.61	15	4.21
5	2.88	16	4.29
6	3.10	17	4.36
7	3.29	18	4.43
8	3.45	19	4.49
9	3.59	20	4.56
10	3.72		
11	3.83		
		95% Confidence limits (approx.)	±0.30

REFERENCES

- KIRKPATRICK, T. H. (1964).—Molar progression and macropod age *Qd J. agric. Sci.* 21:163-5.
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