Results from Banding Chestnut-crowned Babblers

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On the Mount Mary Plains, South Australia, the Chestnut-crowned Babbler *Pomatostomus ruficeps* is the common member of the genus. These birds inhabit fairly open scrub consisting of old regrowth Mallee often with little undergrowth. They also favour very open scrub with few tall trees where there is a dense stratum of large shrubs such as Sheep Bush *Geijera linearifolia*, Hop Bush *Dodonaea tenuifolia*, and Spiny Wattle *Acacia colletioides*. White-browed Babblers *P. superciliosus* on the other hand prefer tall, thick Mallee with good undergrowth or dense, medium height, regrowth Mallee.

The opening up of the area for agricultural and pastoral purposes created a habitat that became progressively more favourable for the Chestnut-crowned species by reducing the density of the scrub and by reducing the undergrowth. Flocks usually consist of eight to fifteen birds, but occasionally they number 20 or more. Sometimes flocks may be found along tree-fringed roads, a kilometre or more from the nearest patch of scrub.

Banding

Chestnut-crowned Babblers were first banded in the Bower district by Messrs M. H. Waterman and R. M. Gibbs in the winter of 1963. During 1963 and 1964, they banded 29; in the period October 1964 to 30 June 1974, I banded 300 individuals. Nearly all were caught in mist nets, a few were caught in maze traps, and only two broods of nestlings have been banded. They frequently avoid nets set in open situations when visibility is good, particularly those birds that have previously had experience with nets. Most successful retrapping has resulted from setting nets in groups to form a maze among shrubs. A detailed knowledge of the flock movements within their territories is necessary for success and, of course, sites must not be used too frequently. The number banded at each site was as follows:

Black Oaks Block, Bower	150
Geijera Scrub, Bower	61
Boxthorn Gully, Bower	57
Various locations, Sutherlands	61
Total	329

Recapture Data

Eighty (24%) of the 329 Chestnut-crowned Babblers banded in the Bower and Sutherlands area were recaptured a total of 99 times. The elapsed time between banding and final recapture of these birds is shown in Figure 1. All were recaptured at, or near, the banding place, with the exception of 050-67518 which was banded as an adult at Boxthorn Gully in July 1969 and recaptured 5 km to the north at Black Oaks Block in September 1971.

Of four nestlings which were banded in one nest, three were recaptured seven to 16 months later in the same territory in which they were banded. This suggests that some young birds may remain in the same flock as their parents. However, some dispersal of individuals undoubtedly takes place. This is shown by the movement made by 050-67518 and that, in some instances, groups of birds which have been banded have never been recaptured. From general observation it would appear that in the non-breeding season, flocks may join up with those in neighbouring

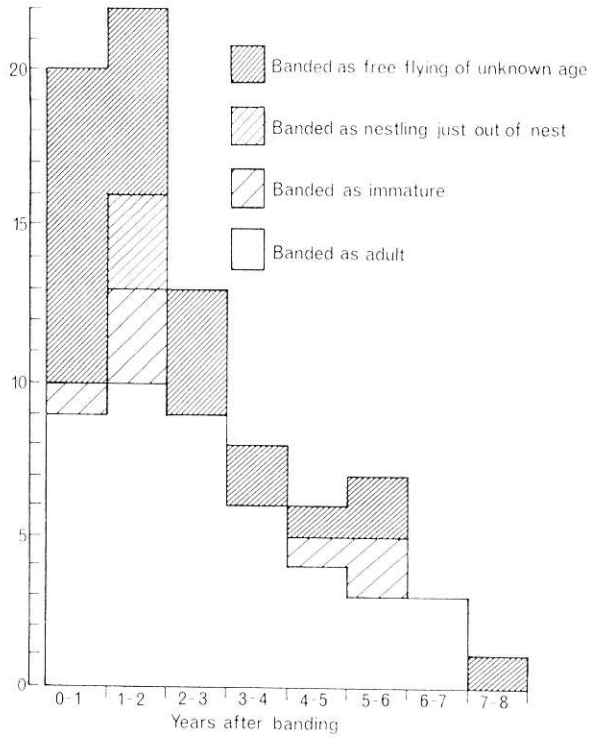
territories. At times, particularly during periods of drought, it is likely that whole flocks may move away from a particular locality. In Queensland, the Grey-crowned Babbler *P. temporalis*, may undertake movements of up to 25 km (Carruthers 1965).

The recapture data, however, leaves no doubt that many individuals and possibly whole flocks may remain in their territory for years; their well-used playgrounds have been described previously (Boehm 1955).

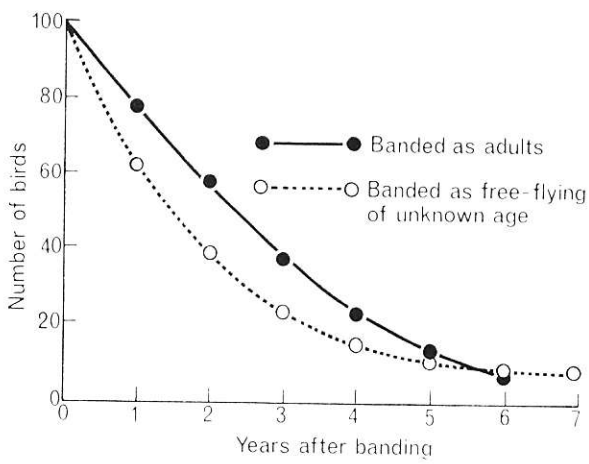
The longest elapsed time recorded between banding and recapture was for 050-72330 which was banded as a free-flying individual of unknown age and recaptured at its banding place 7 years, 1 month and 27 days later.

Although the number of birds recaptured is small, the length of the study makes it possible to attempt the construction of a life-table (see Table 1). This table is constructed in the same way as used by Lack (1954). The sample is limited to birds which have been recaptured at least once, and which were known to be alive on 1 September in each of nine years (i.e. they have survived at least one winter). The size of the sample is not large (66 birds) but this is offset by the length of the study (10 years). The method used is based on the assumption that all losses from the marked population are by mortality alone, but emigration, band loss, and net or trap shyness may account for part of the disappearance of banded birds. Allowance for these factors would give a higher figure for the further life expectancy than the 2.4 years shown. The further life expectancy of 2.4 years is greater than those for the passerines included in Lack's review (Lack 1954). The 13 species of passerines reviewed by Lack had further life expectancies of from 0.9 years to 1.9 years for adult birds. However, these were all northern hemisphere species and the longevity data collected to date does suggest that, in general, passerines in Australia may live longer than those in the northern hemisphere. Consequently, a further life expectancy of 2.4 years for Chestnut-crowned Babblers which have survived at least one winter does not seem unreasonable.

Figure 2 illustrates the survival of (a) birds banded as adults, and (b) birds banded as free-flying individuals of unknown age. This shows the number of individuals remaining alive each year. The figure has been adjusted to a starting



• Figure 1. *Illustration of the elapsed time between banding and final recapture of Chestnut-crowned Babblers.*



• Figure 2. *Survivorship curve of Chestnut-crowned Babblers banded as adults and free-flying birds of unknown age.*

TABLE 1

Survival of Chestnut-crowned Babblers

Year Banded	Number of each year group present on 1 September									
	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
1963	2	2								
1964		2	1	1						
1965			13	13	7	6	6	3		
1966				6	4	3	2	1		
1967					14	10	5	4	2	1
1968						10	7	5	3	3
1969							13	7	6	3
1970								4	2	2
1971									2	1

Year	Numbers of banded birds present	Number still present one year later	Percentage survival
1963	2	2	100%
1964	4	1	25%
1965	14	14	100%
1966	20	11	55%
1967	25	19	76%
1968	29	20	69%
1969	33	20	61%
1970	24	13	54%
1971	15	10	66%
1963-1971	166	110	66%

Further life expectancy $= \frac{2\text{-}m}{2m}$ (where m = percentage mortality)

$= \frac{166}{68} = 2.4$ years (29 months).

point of 100 individuals in each of the two classes. The greater decline of the survivorship curve in the early years for birds banded as free-flying individuals suggests that many of them may be young birds which could be expected to show both a greater rate of mortality and dispersal during this period than adult birds.

Weighing

A number of the birds were weighed either at the time of banding or when retrapped. The 124 adults ranged from 47 grams to 71 g; most, 89 individuals, ranged from 55 g to 61 g with an overall average of 57.8 g.

Band Wear

Wear on bands was found to be considerable, probably because of the 'bounding gait' of the babblers. I have used only monel metal bands, yet considerable wear has been evident on these bands after the sixth year, at which stage they should be replaced. Aluminium bands should not be used because of the soft nature of the metal.

Acknowledgement

I wish to thank Mr D. Purchase for the assistance given in the preparation of the life-table and survivorship curve.

References

Boehm, E. F. (1955), 'Playground of the Chestnut-crowned Babbler', *Emu* 55: 159-160.

Carruthers, R. K. (1965), 'Grey-crowned Babblers', *Aust Bird Bander* 3: 8.

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