The Australian
BIRD BANDER

Weights Of The Silvereye At Canberra

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The recent paper by D. M. Walker (1964) prompts me to place on record weights of 132 Silvereyes (*Zosterops lateralis*) taken near Canberra, A.C.T. from February, 1963, to April, 1963. The sample is not large, but is presented as unfortunately I am unable to continue this work.

From February 23 to April 14, 1963, a total of 132 Silvereyes were weighed on a balance with an accuracy of 0.1 gram. A small calico bag was used to hold the bird during weighing. The calico bag was weighed prior to the weighing of each bird and the weight of the bag subtracted from the total. In order to reduce the variation in weights, due to time of day and feeding, only Silvereyes caught in the first 90 minutes after sunrise were considered for analysis. In determining probable breeding locations of the Silvereyes handled I used the same plumage characteristics as given by Lane (in Walker, *loc. cit.*).

On dissecting some 20 Silvereyes, I found that sex could not be reliably determined by plumage differences. However, the Silvereyes dissected were not taken during the breeding season and it is possible that the plumage variation I encountered which had no reliable correlation with sex is attributable to a geographical cline in colouration. The criteria given by Kikkawa (1963) for New Zealand Silvereyes may yet prove reliable for local birds during the breeding season.

Results

Weights of Silvereyes given below in Table 1 and 2 are grouped according to the plumage characteristics of various localities. It should be noted that no birds with plumage characteristics of Sydney breeding birds were captured and weighed by me.

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Table 1

Weights of Silvereyes taken at Canberra from February 23 to April 14, 1963.

Plumage Characteristics	No. of Individuals Weighed	Mean Weight (grams)	Standard Deviation
Canberra	32	10.8	1.12
Victoria (inland)	2	9.8	—
Melbourne	62	11.0	1.32
Tasmania	36	11.5	1.51

Table 2

Weights of Silvereyes taken at Sydney from April 12 to June 30, 1963 (from Walker, 1964).

Plumage Characteristics	No. of Individuals Weighed	Mean Weight (grams)
Sydney	43	11.5
Canberra	39	11.9
Victoria (inland)	3	12.4
Melbourne	9	12.3
Tasmania	43	12.6

It can be seen from the Tables that at both localities the mean weights of Tasmanian and Melbourne Silvereyes were heavier than Canberra and Sydney Silvereyes. The Canberra measurements are consistently lower than those made in

Sydney although one could hardly regard either sample as being of sufficient size or over a sufficient period as to be statistically significant. This is borne out by the standard deviations of the Silvereyes weighed at Canberra. Furthermore the Sydney sample comprised Silvereyes captured at any time of day and therefore would be more likely to contain a higher percentage of birds that had been actively feeding and thus I assume they would tend to be heavier than birds in the Canberra sample which were captured in the first 90 minutes after sunrise.

It has been shown in recent years (e.g. King and Farner, 1959) that many migratory species accumulate fat deposits as energy reserves prior to migration. The fat deposits are used during migration and are again accumulated prior to return migration. With the idea of testing to see whether migrant Silvereyes accumulate fat deposits, I have in Table 3 compared the mean weights of Silvereyes with plumage characteristics of Canberra breeding birds captured in the first three weeks of the weighing period at Canberra with those captured during the remainder of the weighing period, and likewise compared the mean weights of Silvereyes with plumage characteristics of Melbourne breeding birds, except that 3-week period is taken as commencing from the first noted arrival date, which was February 24.

Unfortunately the weights of Silvereyes with plumage characteristics of Tasmanian breeding birds could not be analysed in this manner as, although the first bird was noted on March 12, all but four of the sample were captured and weighed on or after April 9, and thus all probably were newly arrived migrants.

Table 3

A Comparison of Mean Weights of Silvereyes taken at different Periods.

Plumage Characteristics	Period	No. of Individuals	Mean Weights
Canberra	23.2 to 15.3	25	10.8
	16.3 to 14.4	7	10.8
Melbourne	24.2 to 16.3	44	10.7
	17.3 to 14.4	18	11.5

Table 3 would seem to suggest that migrant Silvereyes with Melbourne plumage characteristics do store and expend energy reserves in the form of body fat. Certainly this is worthy of further investigation, but until a thorough analysis of Silvereye retraps and recoveries has been carried out to determine the period in which migrant birds are likely to arrive, and during that time at what stage would migrants commencing to winter outnumber migrants on passage, this form of analysis cannot be regarded as being valid. Studies should be made also of the weight of local breeding populations and retraps, particularly if some of the population depart and winter elsewhere. Such a study should show whether body fat deposits actually occur in migrant Silvereyes or whether the differences in weights are actually due to a cline in size.

Conclusion

If the points raised are to be solved a great number of Silvereyes from many areas will need to be weighed as part of general banding activity. A good deal more could be learned from dissection of specimens from the laboratory and field, but this will have to wait until some professional institution is interested and can obtain finance and staff for such work.

I hope some banders will be interested enough, in the near future, to weigh as well as band Silvereyes. Several points are worth remembering: (1) scales should be regularly tested for accuracy; (2) birds weighed at the same time of day, preferably early morning, are more desirable for analysis; (3) details of plumage, band number, time of day and date should also be recorded; (4) retraps, as well as newly banded birds, should be weighed.

Acknowledgements

S. G. Lane, Dr. D. M. Walker, and S. J. Wilson kindly read and commented on the manuscript.

References

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