# WEIGHT LISTS - HOW USEFUL ARE THEY?

Mrs D B Hanmer
Sucoma
Private Bag 50
BLANTYRE
Malaŵi

There are many published lists of African bird weights, but several concern museum specimens, not live birds. A netted bird voids stomach contents, but a shot bird does not, which suggests that the weights of museum specimens are often higher than netted weights. Conversely, birds intended as museum specimens may be shot in the morning, spend the afternoon in the refrigerator and not be weighed until evening. There is a weight loss under these conditions, due to dehydration. Many birds which end up as museum specimens were found dead and depending on the length of time between death and weighing, there will have been varying amounts of weight lost.

In a normal population the range of weights is such that if a few dead birds are included in a sample, they probably do not make much difference to the mean weight, but if there is a high proportion of dead birds (particularly of small species) the mean may be considerably lowered and not reflect the average weight of a live population.

It is very hot at Nchalo, Malaŵi and a bird weighing 30-40 g may have lost up to 10% of live weight when brought in dead of sunstroke, a mere 15-20 minutes after it was caught. Small birds (5-20 g) under these conditions may lose up to 20%. The figures would probably be less in a cooler climate. 30-40 g corpses placed in the refrigerator for 12 hours appear to lose 10-15% of live weight and tiny birds, as much as 30%. The weights therefore, of birds so treated, will not approximate to live weights and may even be below the minimum for the species. If shot birds are heavier than netted ones, it is

possible that if refrigerated for any length of time, the weight may reduce to that of netted birds, but one cannot be certain. All that is certain is that there is likely to be a difference between the weights of live and dead birds.

Six shot Boehm's Bee-eaters Merops boehmi from Mopeia, Mocambique, averaged 17,8 g (S.D. $\pm$ 1,1), but 28 live birds from Nchalo averaged 16,5 g (S.D. $\pm$ 1,0); a statistically significant difference ($P < 0,02$), not due to geographical or population differences. Therefore it does not seem sensible to compare live weights with the weights of museum specimens and particularly silly to compare them statistically and then state that birds from X Museum are significantly heavier (or lighter) than those netted at Y.

There have been several lists published giving live weights and these can be statistically compared with live weights from elsewhere, if sufficient information has been given. Unfortunately some papers do not give the standard deviation for groups of weights. Some papers give standard error, which at least allows one to work backwards to the S.D., but this seems to be an unnecessary complication. There should be standardization of the format of weight lists, with the S.D. compulsory.

Papers giving weights of individual birds and weights of groups, which were all taken on about the same date, should give the month in which the birds were weighed. Migrants have weights varying with date and resident species often show monthly variations due to breeding or moult. Thus, when comparing weights from two areas, a wrong picture may be obtained if one cannot also compare dates.

Finally, the Printer's Devil. Proof-reading long lists of figures is tedious and the odd error may occur, but one of the most comprehensive weight lists (mostly of museum specimens) by Ginn (1976) has been so bedevilled that it is difficult to use for comparative purposes. A Malachite Kingfisher Alcedo

cristata weighing 25,3 g must have eaten a huge fish prior to being filled with lead; or should it have been 15,3 g? Two male Giant Eagle Owls Bubo lacteus weighed 681 and 681,6 g while three females averaged 2554 g. There is a difference in size between the sexes, but 1681 g seems more probable for the males. This is unfortunate, as one wonders whether differences between the figures for Makgadigadi and one's own, are due to error and not to altitude, latitude or some other natural phenomenon. It is a pity this work was not published in a better journal.

I conclude therefore, that many published weight lists are not particularly useful, due to differences in the condition of the birds weighed or to the omission of important data from the lists. Probably the best paper I have seen is by Skead (1977), although even there some dates which might have been useful have been omitted.

References

Ginn, P.J. 1976. Birds of Makgadigadi; a preliminary report. Wagtail 15 : 21 - 96.

Skead, D.M. 1977. Weights of birds handled at Barberspan. Ostrich Suppl. 12 : 117 - 131.