LETTERS & TECHNIQUES

The following series of edited communications bear on a topic that must be of interest to all ringers. Ted Robson started the ball rolling .....

Dear Editor,

With great amazement I read your correspondent L.J. Bunning's "Notes on the Cape White-eye in the Transvaal" (Safring News Vol. 14 No. 1).

I find it most difficult to believe that the extreme weight (Table 3) of all the birds fell (with one exception) exactly on a whole gram. What probably happened is that Mr. Bunning weighed his birds to the nearest gram; if this is so he should have stated so in the text and omitted the decimal point.

Personally I feel that if birds in the range he describes (8-15 g) cannot be weighed to 0,1 g, it is hardly worth weighing them at all. If for example his bird(s) tabulated at 8,0 g actually weighed 8,4 g, there is an immediate error of 5%, which would have a considerable effect on any means calculated.

J.E. Robson, 49 Curvy Road, Blairgowrie, RANDBURG, 2194

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Dr. R. Prŷs-Jones, Editor of Safring News 14 (1), replied:

Dear Mr Robson

Thank you for your letter of 5 August 1985. In principle I am in agreement with the point you raise regarding the desirability of weighing small birds to the nearest 0,1 g. I always do so myself for birds under 50 g, providing conditions are reasonably still (spurious accuracy being, of course, pointless). However, whereas an error of up to *ca* 5% may occur for any individual white-eye weighed only to the nearest gram, means based on any

reasonable sample size should be less affected as inaccuracies will tend to balance out. In Mr. Bunning's paper, the emphasis was on seasonal trends in mean weights. I had already appreciated that he presumably had weighed most of his birds only to the nearest gram, but felt the results should, nevertheless, still be acceptable in the context they were used. I should, however, certainly have rounded off the mean weights in Table 3 to only one decimal place.

I have noticed that many ringers in South Africa tend only to weigh to the nearest gram, and some general observations on the subject may well be worth raising in the next issue of Safring News. Towards this end I have forwarded a copy of our correspondence to Mr. Bunning for any comments he may have.

R.P. Prŷs-Jones

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John Bunning's reply (condensed version!)

Dear Editor,

In reply to Mr. Robson's letter, the following points are relevant:

1. Melville Koppies Nature Reserve is the official training centre of the Witwatersrand Bird Club (WBC) and the basic purpose of the ringing undertaken there is to teach the younger members of the WBC the skills of bird ringing and to give demonstrations to the general membership of the Club and to the public.

2. The team at any one ringing session can consist of up to 10 individuals of whom up to five may be inexperienced trainees.

At any given session many of the birds caught are weighed and measured by inexperienced ringers. I personally feel that if only one ringer is involved in taking and recording the data then weighing or measuring to the first decimal place may be an advantage, but with up to 10 ringers involved, I think the amount of error will, if anything, be greater than when asking them to 'round off' to the nearest gram or millimetre.

With regard to taking weights of the birds ringed and trying to work to the accuracies suggested, we would have to empty out any feathers, droppings, etc. in the weighing bag and reweigh it between each bird processed. This is something I could (would) not do when a catch of 50 or more white-eyes, swifts, weavers, etc. are waiting to be ringed and processed. My first priority is, and always will be, the birds' welfare, and I am not prepared to hold birds longer than is absolutely necessary to try to get the suggested accuracies which are not, to my mind, justified in my work.

If Mr. Robson stops to consider for one moment - if one bird's actual weight is 8,4 g and it is rounded off to 8,0 g, the next one which has an actual weight of 8,5 g is rounded off to 9,0 g the error for averaging weights is rectified and with such a big sample (over 800 specimens), the error is negligible. A computer program has been run where a random sample of numbers was taken between 8 and 15 to establish the differences in the averages when figures were rounded off to the nearest whole number and when they were not. The answer was that there was no difference at all until the numbers were recorded to the fourth decimal place.

L.J. Bunning, 702 High Hylton, 21 Goldreich Street, Hillbrow, JOHANNESBURG, 2001

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Professor Les Underhill was shown the above correspondence and invited to comment.

ERRORS IN MEASUREMENTS

The correspondence generated by Bunning (1985a, 1985b) and Robson (1985) raises several important issues of which ringers need to be aware.

Accuracy of Measurements

Ultimately it is the quality of the instrument that determines the maximum accuracy with which it is possible to measure. A set of Pesola balances (say 30 g x 1 g, 100 g x 1 g, 300 g x 2 g and 1 000 g x 10 g) makes it feasible to measure the mass of birds up to 1 000 g with a relative error of at worst 2%. For example, on a 100 g balance, which serves for birds between 25 g and 95 g (allowing for the bird bag or cone), mass can readily