

Other wader species wintering on the inlet, but not trapped were, in order of abundance, Bar-tailed Godwit (100+), Grey Plover (50), Curlew (15) and Oystercatcher and Greenshank (a few).

References

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The Use of Wing Length for Separating Populations

by Mike pienkowski

For many years the wing lengths of birds have been measured by ringers to give information of the separation of different populations. However, there are two prerequisites for this method to be reliable:-

1. A standard system of measurement is used, giving consistent results
 - a) for an individual measurer and
 - b) between different measurers
2. A knowledge that the wing length of an individual bird does not change over a period of time or, alternatively, a means of estimating and correcting for any changes that do occur.

Many of the problems concerned with the standard measuring system were solved by the general adoption of the maximum chord method. A check was made on the constancy of method of the usual measurer on the Wash by feeding 40 birds through the processing system twice (and the measurers did not know this). The apparent changes in wing belt length are shown in Fig.1, and these form a tight normal distribution about zero as would be expected. 31 birds stayed within 1mm. of their earlier wing length. Using a chi-squared test there was no significant difference between birds increasing in length and those decreasing in length.

- 9 A check between the "standard" Wash measurer and a second Wash measurer was made by comparing the wing lengths of about 200 birds measured by one with 200 measured by the other out of a catch of 400. Using a d-test to compare normal distributions, again there was no significant difference.

On the second prerequisite, some points have been obvious for some time - e.g. birds of some species have longer wings when adult than when juvenile and consequently these are normally analysed separately. It is often assumed that, once it reaches the adult stage, a bird has a constant wing length. However, measurements of 56 Knot caught and measured twice in the period between two consecutive moults show that this is not the case. Fig. 2 shows these wing length changes; each bird is represented by a line. It is at once apparent that most are decreasing in wing length during the period and also that many of the lines are roughly parallel, suggesting that the loss of wing length is linear. 10 birds increased wing length, 3 stayed the same and 43 decreased wing length. A chi-squared test comparing the number increasing with the number decreasing showed the difference to be highly significant (P 0.001). The mean

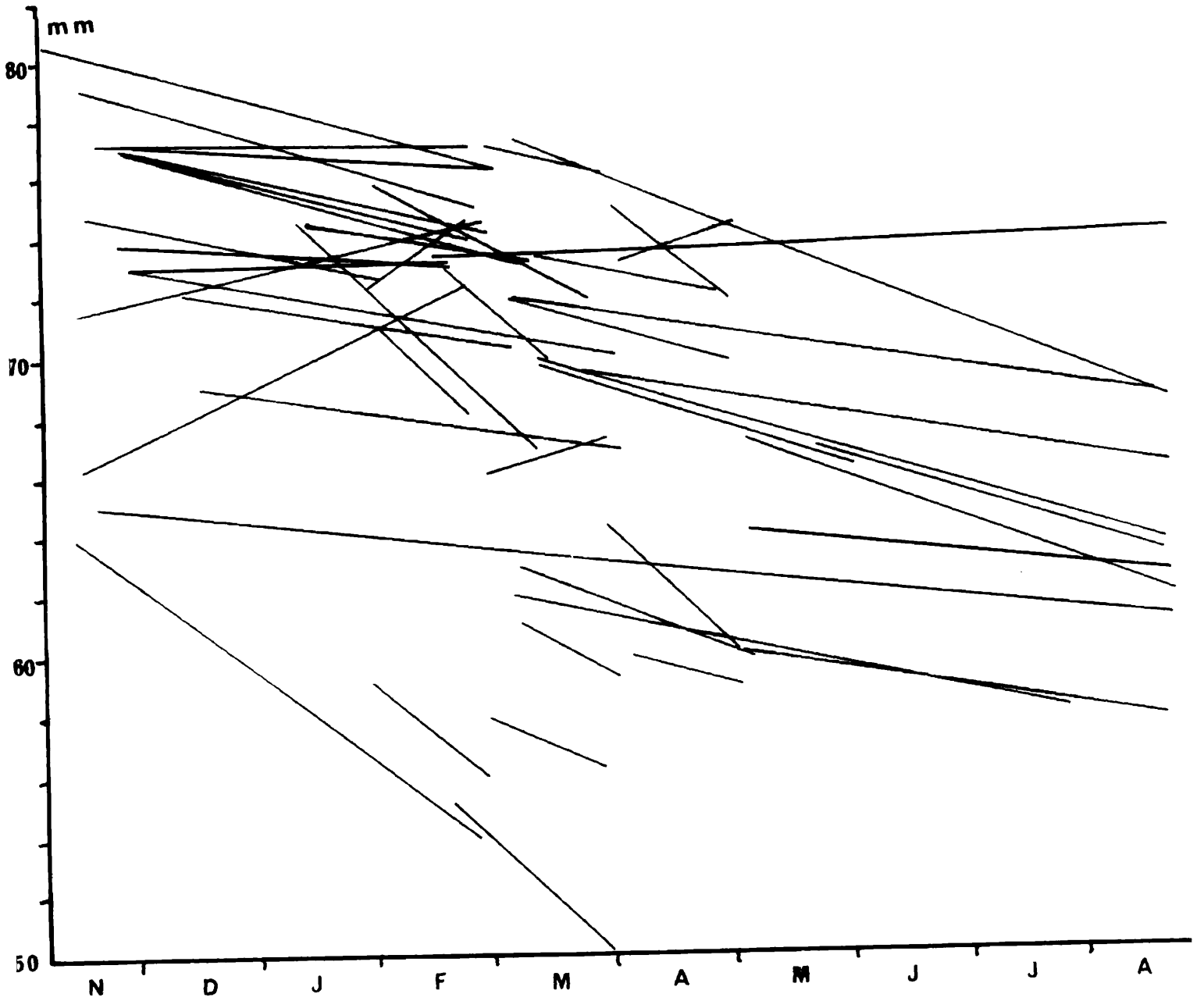


Fig 2 Change in wing length in same moult period

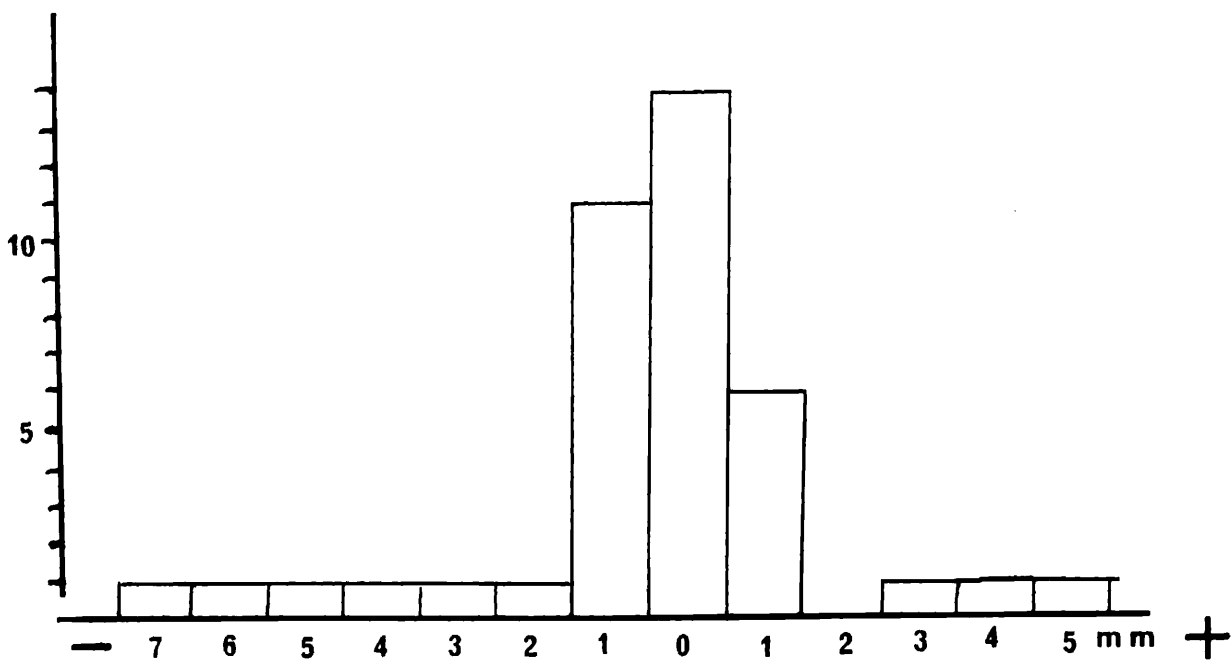


Fig 1 Apparent change in wing length on remeasuring

change was a decrease of 0.8mm. per month from October to August/September, i.e. 8-9mm. per year, this being about 5% of the total wing length.

Possible causes for the change are

1. Abrasion
2. Drying of the feather after growth
3. Physical and/or chemical changes to the feather structure
4. Stretching which would oppose the decrease.

Subjective judgement of the feather shape through the year suggests that not all could be accounted for by abrasion and some possible evidence for structural changes has been given by a few birds caught in November and January, these obviously having failed to moult. The feathers of these were rapidly abrading and disintegrating. In addition feather keratin is an extremely complex protein and there are suggestions that it may be capable of shrinking.

Not all data has yet been extracted for retraps after a moult period but what evidence there is suggests that feather length is regained and the wing lengths from corresponding months in different years are comparable.

In summary:-

1. Knot wing lengths decrease on average 8-9mm (5%) between moults.
2. This is fairly linear and it may be possible to correct the figure for the mean wing length of a catch to give the corresponding length for birds in fresh plumage.
3. The wing length is probably returned to its level of a year previously by the new feathers at moult.
4. Shortening is probably due to a combination of abrasion and shrinking, the latter possibly being due to drying and/or changes to the keratin structure.
5. It is important to process all controls and as many new birds as possible, particularly for the lesser-ringed species, so as to give data allowing possible correction.

I would be pleased to receive any information on retraps measured on both occasions of capture for any species, so that an attempt can be made to calculate corrections.

CAMBRIDGE ICELAND EXPEDITION 1971

by Guy Morrison

Following the success of the Cambridge/London Iceland Expedition last year, when over one thousand Knot were ringed on passage to and from their breeding grounds in Greenland, a further expedition, the Cambridge Iceland Expedition 1971, was organised this summer to continue the work, and, in particular, to extend it to other species of waders. Iceland was originally selected as a suitable location for catching, since the birds are found in large flocks and may be presumed to be part of the population breeding in Greenland: both ringing and measurements data may thus be particularly useful in separating populations of waders found in Britain in areas where birds from both the Greenland and Siberian breeding grounds may be present.