Woodcock Research Group (IWRB)

MONICA SHORTEN

East Gate, Old Castle Road, Salisbury, Wiltshire SP1 3SF, UK

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The exasperating Woodcock *Scolopax rusticola* is a 'fringe species' amongst waders and waterfowl and woodland game, and tends to be neglected in any group study. Woodcock enthusiasts are perhaps as odd and solitary as the bird they have chosen, and the new Woodcock Research Group of IWRB is striving to flush some and induce flocking behaviour.

[. . .]

It seems that the occasional Woodcock does get ringed by the WSG – a total of five was recorded for 1974 – thank you, TRG and Humber! The capture and ringing of this bird during its breeding season really separates the men from the boys, yet there is a great need for 600–700, mainly pulli or juveniles, to be ringed in the British Isles each year. It has not been met since 1935 (763 pulli) and the average yearly total, including FGs on migration, has been about 30 in recent years with pulli averaging about 8. So every young Woodcock ringed will be a help. The recovery rate is 7.9%.

Two years ago Ib Clausager (Kalø, Denmark) published a good guide to methods of determining the age-class and sex of Woodcock from external features. Even very precise measurements of bill length and central tail feathers, expressed as a ratio, allow adult males and females to be confused: the best that can be done without dissection is to use the formula of Stronach, Harrington & Wilkins which reduces the probability of error to 28%:

$-0.2952 \times$ bill length $+ 0.1566 \times$ central tail feather length:

if greater than –8.3640 = male (72% correct), and
if less than –8.3640 = female (75% correct).

Birds in their first twelve months after hatching must be excluded, and this can be done by examining the tips and proximal edges of the outer primaries (ragged outline on first years; smooth on older birds, at least until April) and the terminal lighter bar on primary coverts (broader and browner on young birds). This quick, simple method correctly classifies 95–98%. Any Woodcock ringed during migration periods or in the winter is worth such extra records in the notebook. But can anyone sex Woodcock pulli?

The value of bill lengths of museum specimens in biometric studies

RON SUMMERS

Culterty Field Station, Newburgh, Ellon, Aberdeenshire, UK

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The measurement of bill, wing, or any other structure is a useful technique in the study of migration (Evans 1964). However, the technique is fraught with problems which make standardisation difficult. One of the difficulties is in the use of museum material. Standard bird text books give biometric data based on museum specimens but the application of these measurements to the field situation is problematical; e.g. it has been shown that wings of museum skins shrink (Vepsalainen 1968, Green & Williams 1973). Bill length, however, is believed to be the least variable of the biometric measurements though the possibility that the bills of museum skins shrink has not been investigated.

I have the opportunity to measure a series of freshly collected birds and to compare them with skins from various South African museums (Cape Town, Pretoria, Durban, East London). Being at the tip of Africa it is likely that the birds of a given species are drawn from the same origin and that one does not experience such a complex situation as seen in Europe. One would therefore expect the mean bill lengths of the freshly collected birds and museum specimens to be the same. However, the table shows that in the two species investigated, Turnstone *Arenaria interpres* and Sanderling *Calidris alba*, the museum birds tend to have lower bill lengths. In the Turnstone the difference amounts to 5.4% (males) and 4.4% (females). These differences were highly significant in the Turnstone, but not in the Sanderling where the sample size is smaller (Table 1). The explanation for the difference between the two species may lie partly in the structure of the bill, for in the Turnstone the rhamphotheca (the horny sheath) extends further beyond the bone point of the bill. The Sanderling on the other hand has a rounder tip to the bone around which the rhamphotheca fits more closely (Figure 1). Shrinkage of the rhamphotheca will therefore be limited by the bone.

Table 1. Mean bill lengths of freshly collected and museum skins of Turnstone and Sanderlings from South Africa.

	Fresh		Museum skins		
	Mean±SD	n	Mean ± SD	n	
Turnstone					
Male	22.1±0.8	29	20.9±0.9	18	(t = 4.83, p < 0.001)
Female	22.6±0.8	26	21.6±1.0	35	(t = 4.43, p < 0.001)
Sanderling					
Male	25.0±1.1	52	24.6±1.4	8	(t = 0.97, p < 0.1)
Female	26.2±1.1	15	25.5±1.2	22	(t = 1.89, p < 0.05)

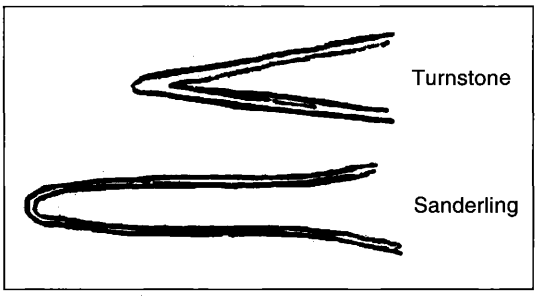

Figure 1. Dorsal views of the bills of Turnstone and Sanderling showing the outlines of the bone and rhamphotheca.

In conclusion, it appears that in the study of the biometrics of the Sanderling, and presumably other sandpipers, the problem of bill shrinkage in museum material will not be important when looking at gross differences but must be borne in mind when dealing with very small differences. However with the Turnstone, and perhaps other species, the bill lengths of museum specimens should not be used directly in biometric studies of live birds.

References

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Seasonal changes in bill lengths of Knots, and a comment on bill measuring techniques for waders

MIKE PIENKOWSKI

Department of Biological Sciencies, South Road, University of Durham, Durham, UK

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The problem

Wing-lengths and bill lengths are the methods at present most used by ringers in order to attempt to separate wader populations. The difficulties in standardising wing measurements between different observers are notorious, and, even when this is overcome, there may be problems concerned with seasonal changes of wing-length in individual birds (Pienkowski & Minton 1973). The measurement of bill-lengths is possibly easier to standardise between observers, but little attention has been given to the possibility of seasonal changes in these, although White & Gittens (1964) subjectively considered seasonal changes in the bill shapes of Oystercatchers *Haematopus ostralegus*.

While attempting to separate Palearctic and Nearctic Knot *Calidris canutus* populations on the basis of bill-lengths (to be published elsewhere), William Dick and I found that, in most areas, the mean bill-lengths of the Knots caught varied cyclically (Figure 1).

It was clearly important to discover if the variations were due to changes in the racial composition of the flocks or to changes in bill-lengths of individuals. Fortunately, a large number of retraps within the same year had been accumulated by the Wash Wader Ringing Group and these data show that the seasonal changes in the population means were due to variations in the bill-lengths of individuals during the year.

Elsewhere, (Dick, Pienkowski, Waltner & Minton, in prep.), we have shown that the seasonal changes shown by retrap data are statistically significant.

We can suggest two possible explanations for a seasonal change in measured bill-length of an individual bird:

a. seasonal changes at the feather-margin at the base of the upper mandible associated with abrasion and moult; or
b. seasonal changes in the growth or wear (or, perhaps, the degree of compression) of the rhampotheca, perhaps related to feeding conditions.

Effect b. has been suggested for some birds, especially passerines (e.g. Davis 1951, Stettenheim 1972). It could possibly occur in Oystercatchers (White & Gittens 1964) and Turnstones *Arenaria interpres* (see Summers 1976), both of which have rhampothecae extending well beyond the bone structure; but this is not the case in the Knot and many other