NORTH AMERICAN SECTION No. 5

Editor

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ANNOUNCEMENTS

Colour-marking

Currently and recently active colour marking projects were listed in Bulletin No. 26, p.36. Persons observing a colour-marked bird are asked to send details of the sighting to the bander who marked the bird if possible and to the U.S. Banding Laboratory, U.S. Fish & Wildlife Service, Office of Migratory Bird Management, Laurel, Maryland 20811, U.S.A.

Shorebird Surveys

The Canadian Wildlife Service and Manomet Bird Observatory are planning to continue the Maritimes Shorebird Survey and International Shorebird Survey schemes in 1980. Anyone who is not currently participating and wishes to do so should contact one of the following: for areas in Canada - Dr. R.I.G. Morrison, Canadian Wildlife Service, 1725 Woodward Drive, Ottawa, Ontario, Canada K1G 3Z7; for all other areas - B.A. Harrington, Manomet Bird Observatory, Manomet, Massachusetts 02345, U.S.A.

Proposed Shorebird Meeting

We should like to ascertain from members potential interest for holding a meeting concerned with shorebird research in the Americas at some point during the next couple of years. The Pacific Seabird Group has held highly successful shorebird meetings during the past several years and there is clearly considerable scope for a conference dealing solely with shorebird studies. We should like to request any members who may have opinions or ideas on this matter to contact the General Secretary of the North American Section, Dr. Marshall A. Howe, U.S. Fish & Wildlife Service, Migratory Bird and Habitat Research Laboratory, Laurel, Maryland 20811, U.S.A. If you would be interested in such a meeting and able to attend, please let Marshall Howe know.

Articles and Material for the Bulletin

Woefully little material is finding its way to the Editor from members except as the result of direct requests. If you are carrying out shorebird work, please consider submitting an article to the Bulletin. Articles need not be long and may contain preliminary results where these are of interest - publication in the Bulletin is not intended to preclude later publication in ornithological journals.

BIOMETRICS AND MOULT OF SANDERLINGS Calidris alba DURING THE AUTUMN IN SURINAME

by Arie L. Spaans

Biometric and moult studies of migrating birds may provide useful information about the birds' origin, their wintering areas or the migration routes they follow. This paper describes the biometrics and moult stage of Sanderlings Calidris alba caught on the coast of Suriname, northeastern South America, during late September and early October. The main purpose of this paper is to show that in mid autumn two groups of first-year Sanderlings, differing in weight and moult stage, are present. It is suggested that the two groups originate from different geographical areas.

Methods

From 30 September to 2 October 1975, 80 first-year and 10 adult Sanderlings were mist-netted around high tide on the Atlantic coast of Suriname near Krofajapasi, approximately 50 km ENE of Paramaribo. Birds were ringed and processed as soon as possible after capture. They were aged on the basis of plumage characteristics described by Prater et al. (1977). Bill lengths (exposed culmen) were measured to the nearest 0.1mm, wing lengths (maximum chord method) to the nearest mm. Weights were taken to the nearest 0.5g. Nearly all the birds were examined for moulting primaries, secondaries, tertials, scapulars and wing coverts in the right wing, and for moulting feathers of the crown, upperparts (hind neck and back), underparts (throat, breast and abdomen) and the tail. In some cases not all the measurements were taken or all the feather groups examined. This accounts for the differences in sample size.

Results

Biometrics

Measurements and weights are summarised in Table 1. First year birds had slightly shorter bills and longer wings than adults. Their weights were also slightly lower. Only the difference in bill length, however, appeared to be significant (Mann-Whitney U test, $p = 0.04$).

The bill and wing length distributions of the first-year birds suggest a bimodality (Figure 1). The Percentage Cumulative Frequency (PCF) method (Griffiths 1968) gives mean bill lengths for the two components of the population of 25.5 and 27.7mm, with a standard deviation of 0.8 and 0.9mm, respectively. The mean wing lengths of the two population components are 125.9 and 131.0mm, with a standard deviation of 1.7 and 2.0mm, respectively. In both cases

the sigmoid curves of the PCF distributions have points of inflexion at 50%, suggesting that both population components are present in similar numbers. Since in both cases the differences between the two population components fall within the variation given in the literature for the differences in size between males and females, the bimodal distribution in bill andwing lengths probably reflects sexual dimorphism in size.

The weight distribution also suggests a bimodality. Using the PCF method the mean weights of the two population components are 46.3 and 61.0g, with a standard deviation of 5.0 and 5.4g, respectively. In contrast to bill lengths (Spearman rank correlation coefficient: $r_s = 0.41$, $n = 79$, $p < 0.0005$), weights are not significantly correlated with wing lengths ($r_s = 0.14$, $n = 78$, $p > 0.1$), suggesting that the wide variation in weights reflects differences in fat content rather than differences in size.

Three individuals were caught twice. All were ringed on 30 September when they weighed 51.5, 53 and 61g, and were retrapped 1-2 days later when their weights were 55.5, 55.5 and 62g, respectively, an increase of 4.0, 1.25 and 0.5 (mean 1.5)g per day. This indicates that some birds were rapidly putting on fat.

Moult

Seven of the 10 adults and 32 of the 73 juveniles were actively moulting tertials, retrices, lesser and median coverts, scapulars or body feathers. In 9 adults and 49 juveniles (including 3 adults and 36 juveniles not actively renewing feathers in any tract) moult of one or more feather groups was suspended. In addition, several actively moulting birds appeared to have just resumed moult of some feather tracts from such a suspended state. The high incidence of suspended moult may suggest that Sanderlings reach Suriname from North America via a long uninterrupted flight rather than by making a series of short hops (cf. Holmes 1966).

In Table 2 the proportion of first-year birds in active moult is given in relation to the birds' weight. The birds were divided into a lean and heavy group. The lean group comprises birds weighing less than 52.5g (= the mean weight of the heavy population component minus 1.645 x s.d.); the heavy group of birds weighs more than 54.5g (= the mean weight of the lean population component plus 1.645 x s.d.). This means that, theoretically, only 5% of the birds of each population component have been placed in the wrong weight class. From Table 2 it appears that significantly more heavy than lean birds were actively moulting scapulars and body feathers.

Table 1. Measurements (mm) and weights (g) of Sanderlings caught on the coast of Suriname during the autumn.

Age-class	Bill length			Wing length			Weight		
	Mean	s.d.	n	Mean	s.d.	n	Mean	s.d.	n
First-year	26.6	1.4	80	128.3	3.1	79	53.5	9.0	79
Adults	27.5	0.9	10	127.4	3.4	10	58.2	7.0	9

Table 2. Number of first-year Sanderlings actively renewing feathers in relation to the birds' weight (see text for determination of the weight-classes). Total sample size given in brackets.

Feather tract	Weight				Chi-square[1)]	Significance
	< 52.5g		> 54.5g			
Scapulars	5	(39)	14	(36)	5.42	$p < 0.02$
Head	2	(39)	7	(36)	2.40	$p > 0.10$
Upperparts	8	(39)	16	(36)	3.89	$p < 0.05$
Underparts	1	(35)	9	(32)	6.53	$p < 0.02$
Other tracts	1	(36)	1	(33)	0.43	$p > 0.50$
Any tract	11	(36)	19	(33)	4.07	$p < 0.05$

1) corrected for continuity

Discussion

The data show that two groups of first-year Sanderlings were present among the birds caught: a lean group with few birds in active moult and a heavy group with significantly more birds renewing feathers.

Many southbound migrating juvenile North American waders arrive in Suriname in a rather lean condition. Shortly after arrival they rapidly increase in weight after which they start or resume moult (Spaans in prep.). It thus appears likely that the lean group of Sanderlings mainly consisted of birds that had newly arrived and partly still had to put on fat and start or restart moult. The heavy group, on the other hand, probably mainly comprised birds that had arrived sometime before the lean birds: therefore, they had time to increase significantly in weight, and moult could already start or resume in many of them.

The difference in mean arrival dates between the two groups could result either from different hatching dates or from different distances the birds had to cover between breeding and wintering areas. Although the start and duration of the hatching period may vary between nearby areas (Pienkowski & Green 1976), large differences in hatching dates between groups of birds probably mainly result from differences in latitude, northern birds breeding later than southern ones. Thus different hatching dates probably also reflect different distances to the breeding area. It is therefore suggested that the lean group of birds, on an average, originated from more northern and/or western breeding areas than the birds of the heavy group. Unfortunately, there are no ringing recoveries available to test this hypothesis. A difference in arrival dates, however, was also found by Harrington and Morrison (1979) in James Bay, Canada, and on the Atlantic coast of the U.S.A. for Semipalmated Sandpipers (Calidris pusilla) of eastern and western origin.

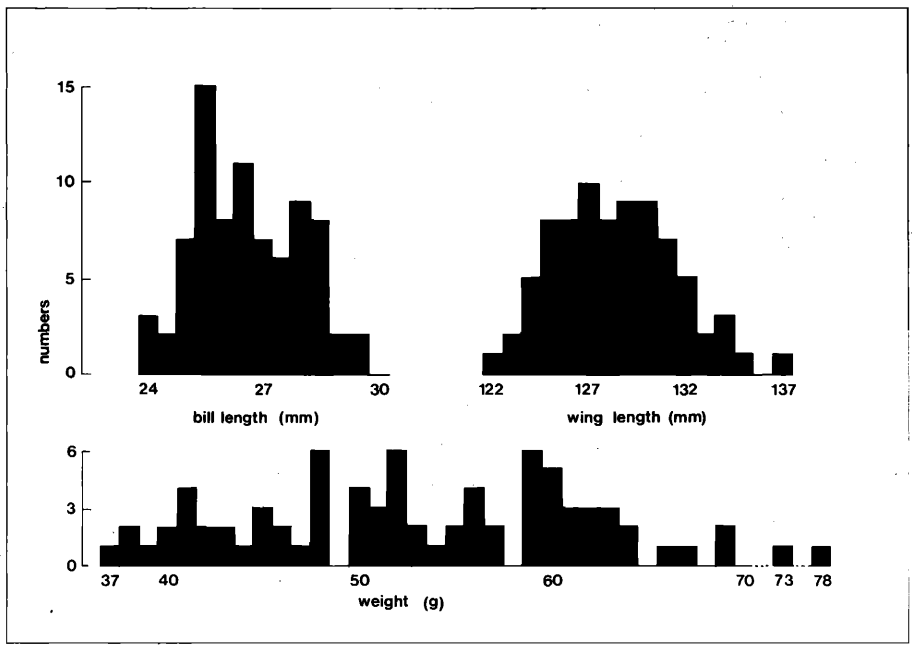

Figure 1. Distribution of measurements and weights of first-year Sanderlings caught on the coast of Suriname.

Acknowledgements

This paper is a by-product of a study on the biology of North American waders in Suriname supported by the Netherlands Foundation for the Advancement of Tropical Research (WOTRO), The Hague. I thank Mr. L. Autar, Mrs. Dr. Franciska Feekes and Mr. and Mrs. S. Karamantana for their assistance in catching the Sanderlings. Mrs. Carol Odarty corrected the English text, which is gratefully acknowledged.

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MIGRATION ROUTES AND STOPOVER AREAS OF NORTH AMERICAN RED KNOT Calidris canutus WINTERING IN SOUTH AMERICA

by R.I.G. Morrison, B.A. Harrington and L.E. Leddy

Introduction

The Red Knot Calidris canutus is a classic, long-distance migrant, breeding and wintering in widely separated areas, which for some populations are located in the Northern and Southern Hemispheres, respectively. The New World population, which comprises the subspecies C. c. rufa, breeds in the central Canadian arctic, migrates southwards through James Bay and the eastern seaboard of North America, and a substantial proportion moves on to wintering grounds in the southern part of South America. As such, the species is an excellent example of an internationally shared wildlife resource, and its future can clearly only be effectively guaranteed through work and protection on an international scale (Morrison and Harrington 1979). A knowledge of the distribution and ecological requirements of the Red Knot throughout its range is essential in identifying resources which are critical in its yearly cycle. This paper will review our knowledge of the status of the species and present some recent advances in our understanding of its distribution in North America obtained through the International Shorebird Survey (ISS) scheme, organised jointly by the Canadian Wildlife Service, Ottawa, Canada, and the Manomet Bird Observatory, Massachusetts, U.S.A. New information on its distribution on South American wintering grounds is presented elsewhere (Harrington and Morrison 1980).

Materials and Methods

The ISS scheme involves a network of volunteer participants extending principally throughout the Maritime Provinces of Canada and the eastern seaboard of the United States, with additional observers in the Caribbean, Central America, South America and interior areas of Canada and the United States. Counts in Canada are organised by the Canadian Wildlife Service, those in the remaining regions by the Manomet Bird Observatory. Participants select a well-defined local study area in which they regularly count shorebirds in a consistent manner throughout the migration period and into the wintering period where appropriate. Counts in Canada occur every two weeks and in remaining areas three times per month.