COMMON SANDPIPER BIOMETRICS

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This analysis is of the data collected by the Wader Study Group. Data are available for approximately 600 birds caught in Great Britain (S. England 265, Mid.England 290, N.England 5, Scotland 55, Ireland and Wales 0) from 1963 to 1973 and for 7 from Sweden, 37 from Jordan and 29 from Morocco.

1. Adult/Juvenile Ratio

Table I presents the numbers of adults and juveniles caught during the period from July to October in G.B. and the percentage of juveniles in these samples.

TABLE I

	1 -15 JULY	16-31 JULY	1-8 AUG	9-16 AUG	17-24 AUG	25-31 AUG	SEPT	OCT
No.Juvs	13	39	15	48	92	18	61	5
No.Ads	14	38	33	45	35	8	6	0
TOTAL	27	77	48	93	127	26	67	5
% Juvs.	50	50	30	50	72	70	90	(100)

From Table I it can be seen that the passage of adults tends to be earlier than that of juveniles - as in most species of waders. However, there is considerably more overlap in the migration period than in many other species with juveniles being present in significant numbers right from commencement of migration in early July.

2. Bill Length

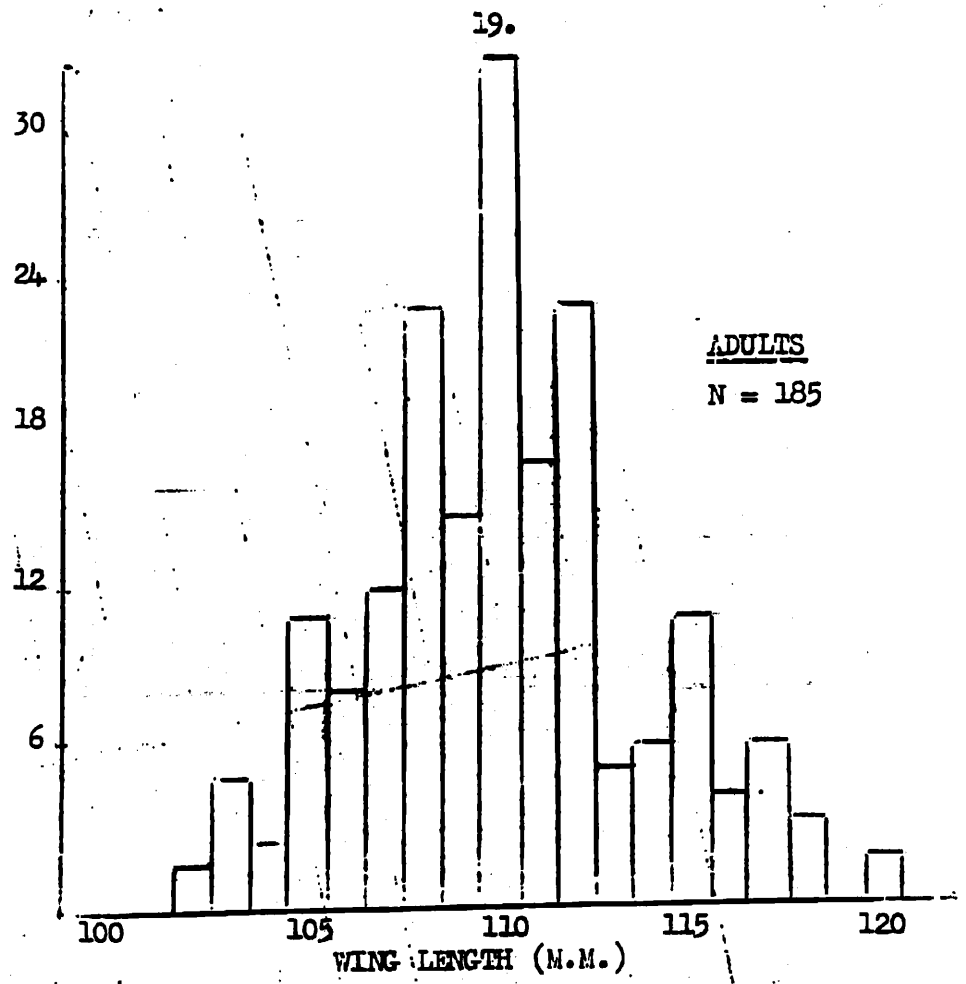
The distribution of bill lengths for both adults and juveniles has an apparently normal distribution. Mean Ads = 25.02 (n = 104) Juvs = 24.80 (n = 175). Range 22-31 mm.

This perhaps suggests that the bills of juveniles are not quite fully grown at the time of the first autumn migration. Also any difference in bill length between the sexes is probably small.

3. Wing Length

The distributions of wing lengths are also normal, for both adults and juveniles (Fig.1)

The means are; adults 110.1 mm (n = 185), juveniles 110.7 (n = 283). However, this may be misleading because the wing feathers of adults in autumn will have already been exposed to shortening by wear for 6-9 months (Pienkowski and Minton 1973). Therefore the wing lengths of newly moulted adults may well be rather greater than those of juveniles.



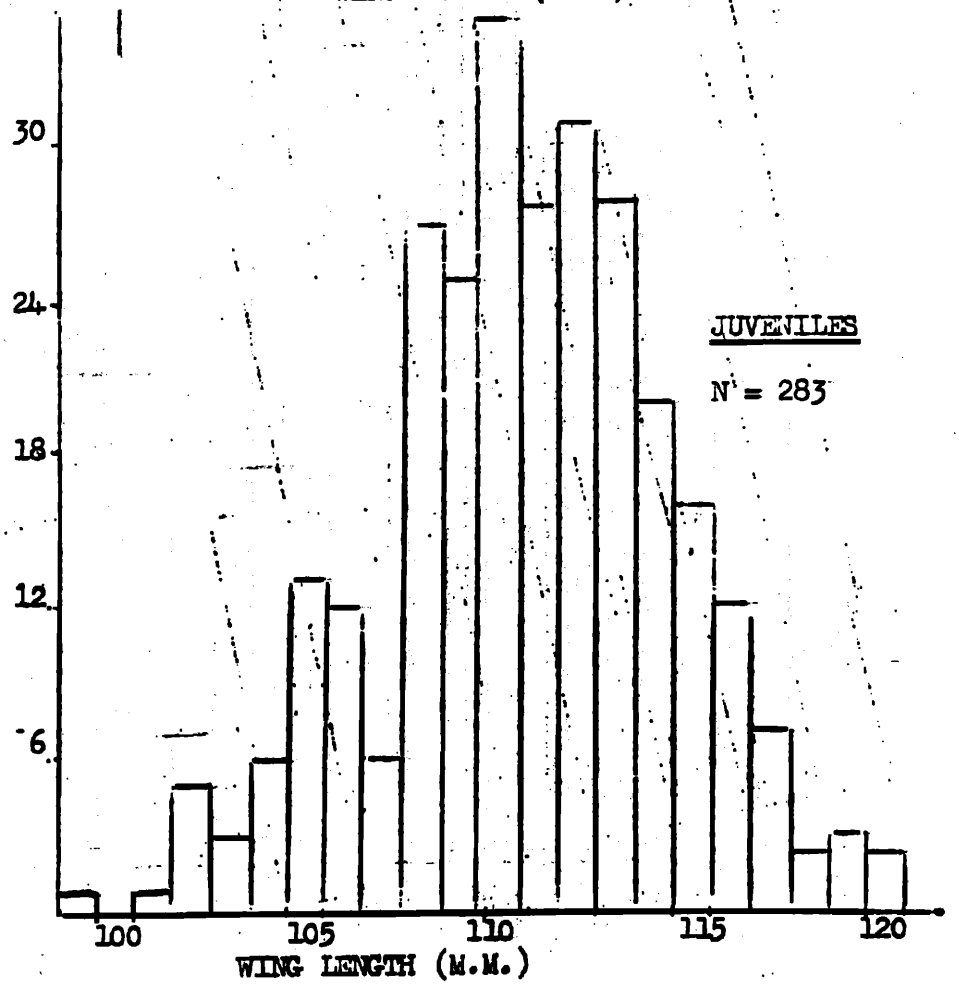
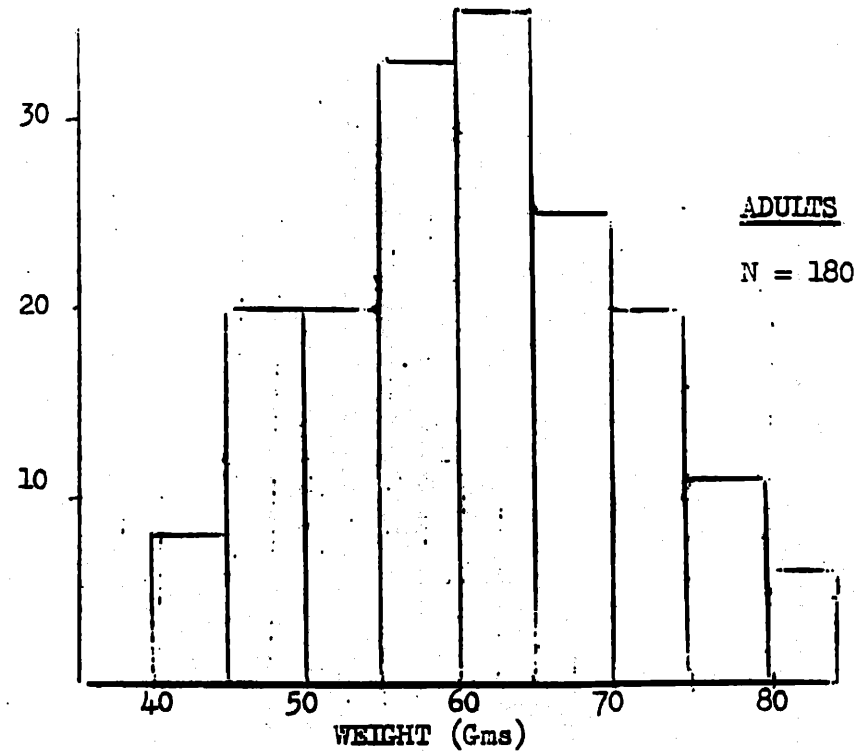


FIG. 1 - WING LENGTHS OF COMMON SANDPIPERS (G.B.)



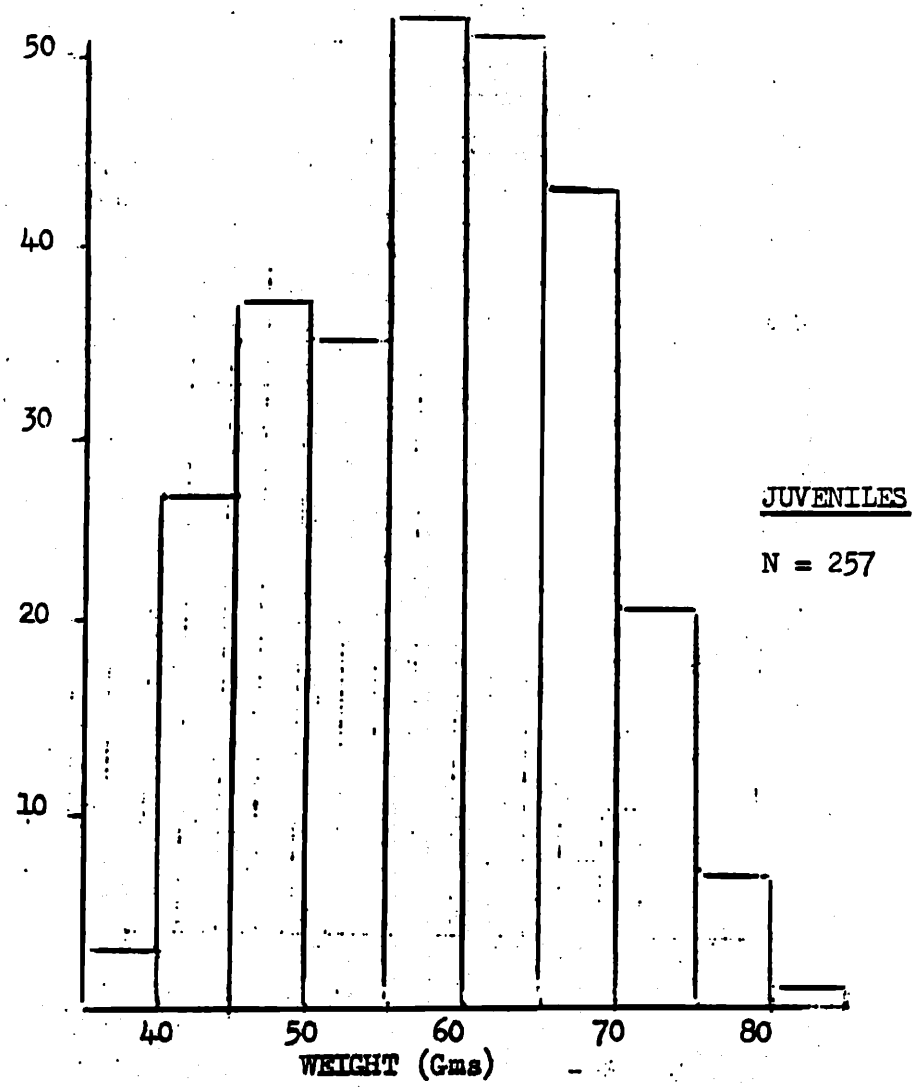


FIG. 2 - WEIGHT OF COMMON SANDPIPERS

The 21 mm range of wing lengths (99-120mm) is fairly large. This may be partly due to inter-person differences in technique of measuring maximum cord wing length. Nevertheless even in small samples of birds caught on the same day and measured by one person the range is up to 16 mm. It is possible, however, that the wide range is also due to the presence of populations with different origins each having a slightly different mean wing length. Samples of wing lengths of birds of known origin (e.g. British or Scandinavian populations) would help clarify the situation. Examination of the histograms of wing lengths for five periods from July to September sheds no additional light on the situation since both adults and juveniles showed no consistant pattern of change in the means or distributions of wing lengths; For the present therefore wing lengths of British caught common Sandpipers cannot be used to separate birds into discreet groups.

4. Weight

The weights of Common Sandpipers caught in Great Britain vary from 38 gms to 84 gms. Birds are rarely recorded below 40-45 gms and this therefore probably corresponds fairly closely to their fat-free weight (Dunlin of similar wing length have a similar average fat-free weight). Thus it would appear that at least some individuals are capable of doubling their weight before migration, putting these individuals in the "long hop migrant" category of waders.

However, from the weight histogramp (Fig.2) it would appear that most birds depart when they have reached a weight of about 65-70 gms.

An analysis of the birds weighing less than 45 gms showed that about a quarter (8 birds) were adult and three quarters (30 birds) were juvenile. Of the "heavy birds" (75 gms) two thirds (17 birds) were adult and one third (8 birds) were juvenile. This suggests that juveniles may have a smaller body size than adults and/or that they are less efficient at feeding, since they seem less capable than adults of reaching or maintaining the higher weights. Juveniles may therefore hav a smaller flight range.

Common Sandpipers caught in Morocco and Jordan were all below 55.5 gm (63 birds) with weights as low as 34 gms in both countries, such birds probably being near the minimum weight at which they can live. The Moroccon birds caught in autumn had a mean weight 42.5 gms (range 34-51 gm. 31 birds) 4 spring birds had a similar mean. The Jordanian birds were caught in a desert oasis in spring and may have been "lost" migrants; they had a weight 43 gms (range 34-55 gms, 32 birds).

Weight changes from retraps

The weight changes of birds retrapped during the same autumn were plotted against date and are shown in fig.3.

There is no apparent change in the rate of weight increase during the period for which retraps are available.

This contrasts with the Curlew Sandpiper (Stanley and Minton 1972) where the rate decreases later in the season. Unfortunately there were no retraps among the late caught Common Sandpipers.

The weight changes of the birds retrapped more than three days after ringing, are plotted against the number of days between capture and recapture (Fig.4)

From this it can be seen that:-

1. The rate of weight increase varies considerably for different birds.

2. There does not seem to be any difference between adults and juveniles, indicating contrast to earlier suggestions that juveniles were less efficient feeders.

3. The maximum rate of increase is 3.2 gms per day, but the average rate of increase is 1.2 gms per day (An average rate of increase for juvenile Curlew Sandpipers is between 2.6 gms per day and 3.9 gms per day (Minton and Stanley 1972))

There is a suggestion that birds put on weight more rapidly to begin with, since the average initial weight (49.1 gms) of the five birds with the greatest rates of increase is less than the average initial weight (58.4 gms) of the five birds with the next greatest rates of increase, which in turn is less than the average initial weight (60.6 gms) of the five birds with the slowest rate of increase i.e. as weight increases the rate of deposition of fat decreases.

5. Primary Moult

All but six of the approximately two hundred adult Common Sandpipers caught in autumn showed no signs of active wing moult and no examples of arrested moult were recorded. It would appear therefore that most Common Sandpipers migrate through Britain before commencing their primary moult.

The six which were moulting were all following a pattern markedly different from that of most waders which regularly moult in Britain. Only one or two feathers at a time were in moult and therefore the pattern is similar to that of the Green Sandpiper which regularly moults while on migration. There was considerable variation between the number of primaries left to be moulted, i.e. 4 in one, 5 in two and 8 in two birds.

By a remarkable coincidence two of the records refer to the same bird from Wisbech Sewage Farm. On 24th September 1964 its moult was N^{8} 3'0 and on 23rd August 1969 its moult was N^{5} 4'2' 0. This eliminates any possibility that moult in the U.K.is limited to first summerbirds.

It is worth noting that on the first occasion this bird was "aged" as a juvenile! Some moulting birds caught in Morocco were also of questionable age.

REMARKS

It is suggested that anyone handling Common Sandpipers in the future should be very careful about ageing them correctly. As well as measuring the wing, bill and weight carefully, attention should be paid for signs of active or arrested moult since it is possible that some instances have been overlooked in the past.

Any measurements of known breeding birds would be very useful.

An analysis of Common Sandpiper recoveries is to be carried out and will appear in a future edition of the W.S.G. bulletin.

ACKNOWLEDGEMENTS

My thanks are due to all those who have contributed data on Common Sandpipers to the Wader Study Group.

REFERENCES

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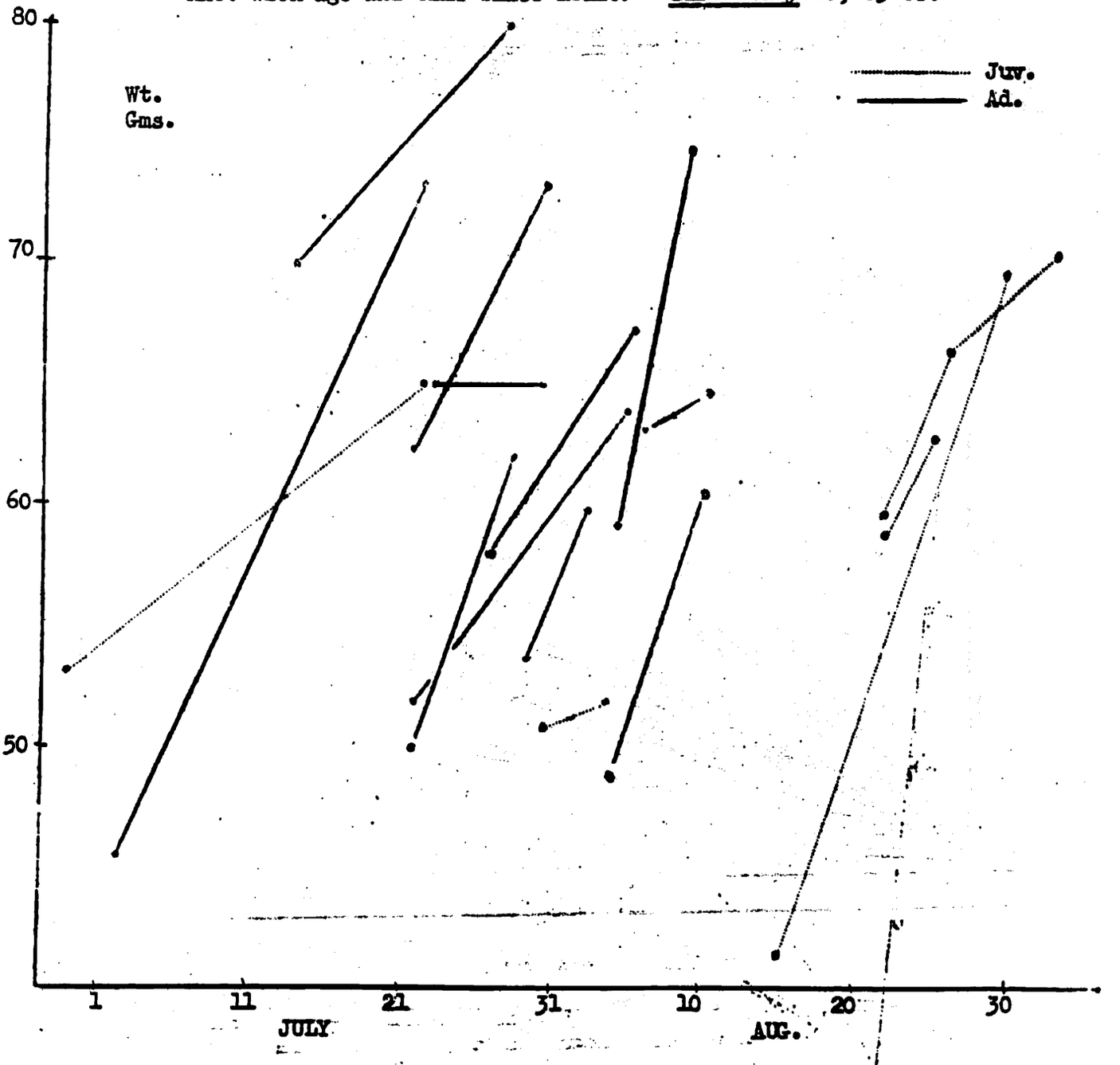

FIG. 3 - Weight Changes of Common Sandpipers retrapped during the same year.