

WADER STUDY GROUP

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Editors: Tony Prater, BTO, Beech Grove, Tring, Herts.  
Mike Pienkowski, 10 West Fenton Cottages, North Berwick, E. Lothian.

Subscriptions : 1977

Members are requested to send their 1977 subscription as soon as possible to R. Birch, 8 Thornberry Close, Saughall, Chester.

The subscription was raised, after discussion at the winter 1976 meeting, to £1.00 per annum. Please make cheques or postal orders payable to: R. Birch; Wader Study Group.

WADER STUDY GROUP - WINTER MEETING

The regular winter meeting will again be held during the evening of Saturday 8th January 1977 at the Ringing and Migration Conference which will be held at Swanwick, Derbyshire. After the business session there will be three talks:- Keith Anderson - the recoveries of Oystercatchers,  
Ian Bainbridge - the recoveries of Curlew  
Humphrey Sitters - lunar periodicity in weights of Dunlin.

It is hoped that as many members as possible will be able to attend.

EDITORIAL

At the October meeting of the Wader Study Group, one of the editors, in reporting the progress and present state of the Bulletin, reviewed its aims and their degree of achievement so far. The meeting decided that this review ought to be published in the Bulletin, taking into account some of the resulting discussion. It is the hope of the editors that what follows will be considered by readers as very much open for discussion and they would welcome further comments.

The potential functions of the Bulletin can be grouped usefully under three headings: (i) an information service, (ii) encouraging the analysis and publication of data, especially where there is an accumulated backlog, and (iii) helping further research by keeping workers informed of other studies and methods, arranging cooperative ventures, etc. Although some parts of the Bulletin's contents fall into more than one of these categories, we shall consider below how well these functions are being fulfilled.

Information Service

The Bulletin publishes announcements, notices and requests for information or assistance. As far as we can tell from readers' comments, this seems to be fairly satisfactory or, perhaps more correctly, the means of improvement do not lie in our hands. This concerns requests for information which (apart from colour-marking sightings) are notoriously poor in drawing responses. Possibly they are too easily forgotten. Perhaps readers might bear in mind that people only take the trouble to make a request for information when they have a serious intention to analyse such material. In our attempt to overcome this problem, we are including a list of current requests which refer to the latest issues of the Bulletin in which addresses and details appear. We anticipate that this summary will appear in each Bulletin.

Also partly under this heading are the lists of recent recoveries and recent publications. Readers appear to be happy with these, but please remember that the recent publications list benefits from all additional references supplied, particularly those in fairly obscure, local or some foreign journals. Please send in (to MWP) a note (or reprint) of any publication by yourself or others when published or of it, if it has been omitted from previous lists.

Encouraging analysis and publication

Generally, this seems to be working well. The Bulletin provides a forum for publication of preliminary results and sounding out of ideas, as well as for interim publication on species for which recoveries or measurements accumulate at a slow rate. A preliminary paper in the Bulletin is not a substitute for subsequent publication in a recognised and widely-circulated journal, either as soon as analysis is complete or when slowly accumulating data allow. It is perhaps also useful to note that the Bulletin does not have a waiting list: articles normally appear in the next Bulletin after their receipt. There may be many advantages, therefore, in preparing preliminary reports, as many ornithological journals now have waiting lists of over two years - although 'British Birds' and 'Ringing and Migration' are notable exceptions. The appearance of initial reports in the WSG Bulletin definitely does not preclude publication elsewhere.

We have noted recently many cases of authors of journal papers making reference to articles in WSG Bulletins. While the editors of the Bulletin make every effort to ensure that statements and conclusions in analytical articles are adequately supported by the evidence presented, these articles are usually of a preliminary or speculative nature. There is certainly no objection in principle to reference being made to such analyses, and indeed, it is right that appropriate credit should be given. We request, however, that authors should bear in mind the above considerations when making reference to papers in the WSG Bulletin. The editors would be pleased to assist in cases of difficulty. They are also very ready to advise anyone

thinking of writing an article for the Bulletin and to comment on preliminary drafts, if so desired.

Aiding further research by information exchange and assisting of cooperative ventures. In many ways this aspect embraces and extends the two earlier headings. It is probably also the area in which most scope for improvement lies. The largest gap which we can see at present concerns information on the interests of the various groups and individuals, together with outlines of particular studies in progress.

One way in which the Bulletin has tried to cover this is by the list of ringing totals. Recently, however, very few ringers have submitted these and it had been our intention to discontinue this item. Despite this, meetings of the WSG have twice asked for the totals list to be continued and, in an attempt to carry out this wish, we intend to attach to each Bulletin a simple form to act as a reminder in this matter. The form with this Bulletin should be returned in March with the totals for the period October to February inclusive. This is not a competition for the largest ringing totals but a simple means of keeping each other informed on which species our activities are concentrated. We would be delighted if ringers overseas were also prepared to return these forms.

A second innovation in this general area is what we hope will become a series of articles outlining the activities of various groups. More of this is said elsewhere but we are hoping for more of this sort of article from both Britain and elsewhere - not, incidentally, at the cost of analytical articles, but in addition to them.

We have outlined our ideas above; what are yours? We would welcome your comments and, even more so, your articles.

#### CURRENT REQUESTS FOR INFORMATION

It is undoubtedly very easy to forget about continuing requests for information. This sort of study can, however, be very useful in providing enough material for analysis in situations where a single worker or group are unlikely to accumulate sufficient. For this reason we are listing below those requests which are current, together with a note of the Bulletin in which full details and addresses can be found.

Colour-ringed or dyed waders: various schemes. Tony Prater will forward records to appropriate persons.

Weights of re-trapped Ringed Plover chicks. Bull. 17 (April 76).

Jack Snipe, all aspects. Bull. 18 (August 76).

Ornithologists visiting Tunisia. Bull. 18 (August 76).

Corpses of freshly dead waders. (This Bulletin).

#### WADER CATCHING ON THE RIBBLE

In the near future it is hoped to establish a programme of regular wader cannon netting on the Ribble Estuary. At present the South West Lancashire Ringing Group has some Wash equipment on loan, and has made two catches, one of Sanderling and one of Oystercatcher. The Ribble holds very large numbers of waders (it was second only to Morecambe Bay in the 1973/4 Estuaries Enquiry counts), and to date is virtually unworked, with respect to wader ringing. If anyone is interested in the prospect of cannon netting on the Ribble, could they please contact Ian Bainbridge, Dept. of Biology, Liverpool Polytechnic, Byrom Street, Liverpool 3.

Recent recoveriesOystercatcher

ED 00868	Ad	13. 8.67	Wash	x Aust Agder, Norway	13. 8.76
SS 75693	Ad	18.11.67	"	v More & Romsdal, "	7. 7.76
SS 76313	Ad	29. 6.68	"	v Nordland, "	18. 6.76
SS 77010	Ad	25. 8.68	"	x Rogaland, "	11. 6.76
SS 77260	Ad	30. 8.68	"	x " , "	7. 8.76
SS 77793	1Y	5. 7.69	"	x Nordland, "	26. 6.76
FS 15687	Ad	12. 8.71	"	x Rogaland, "	23. 7.76
FS 29585	Ad	3. 8.73	"	v More & Romsdal, "	19. 4.76
FS 98038	Ad	17. 8.74	"	+ Hordaland, "	22. 8.76
FS 98150	2Y	18. 8.74	"	+ Rogaland, "	21. 8.76
FS 98188	Ad	18. 8.74	"	x " , "	24. 6.76
FS 54323	Ad	22. 8.74	"	" , "	28. 6.76
FV 04400	Ad	12. 8.75	"	v Nordland, "	30. 7.76
FV 04465	Ad	12. 8.75	"	x Rogaland, "	11. 5.76
FV 23433	Ad	8. 9.75	"	+ Sogn & Fjordane, "	29. 7.76
FS 12642	Ad	15.11.70	Morecambe Bay	v Nordland, "	25. 5.76
FS 27251	Juv	7.11.71	Dee	x More & Romsdal, "	0. 5.76
FS 40807	Ad	15.12.74	"	x " , "	18. 7.76
FS 66290	Ad	1. 3.75	Mersey	x " , "	11. 5.76
FV 08017	Ad	10. 8.75	Dee	x " , "	19. 6.76
SS 97701	2Y	17. 9.69	Morecambe Bay	x Faeroe Isl.	0. 5.76
FS 08645	Ad	8.12.69	"	x "	6. 7.76
FS 75286	Ad	10. 3.74	Solway	x "	17. 4.76
FV 08135	2Y	30.11.75	Dee	v "	28. 8.76
FS 99593	Ad	21. 8.74	Wash	x Friesland, Netherlands	19. 5.76
FV 04671	Ad	8. 9.75	"	x Drenthe, "	17. 5.76
FS 14330	Pull	20. 6.71	Shetland	+ Manche, France	23. 8.76
FV 36587	Pull	22. 6.76	Bardsey Isl.	+ Ille et Vilaine, France	20. 8.76
SS 63106	Pull	4. 6.75	Solway	x Burry Inlet	17. 4.76
SS 89978	Ad	3.11.68	Morecambe Bay	x Orkney	26. 6.76
SS 94993	Ad	3.11.68	"	x "	25. 8.76
FS 08691	Ad	23.11.69	"	x "	20. 6.76
SS 66489	Ad	30. 1.72	Solway	x "	8. 8.76
FS 77661	Ad	23.11.75	Cork	x "	10. 6.76
FS 54230	Ad	22. 7.74	Wash	v Fair Isle	17. 6.76

In addition there were three long distance non breeding movements within Britain and 17 Oystercatchers were recovered on Scottish breeding grounds; these came from Morecambe Bay (7), Dee (4), Burry Inlet (2) and one from each of the Camel, Conway, Solway and Eden estuaries.

Lapwing

P 14797	Pull	3. 5.67	Dungeness, Kent	+ Somme, France	20. 3.76
DS 95040	Ad	31.12.70	Farlington, Hants	x Overijssel, Netherlands	30. 7.76
DR 21653	Ad	6. 7.75	Stafford	x Friesland "	2. 9.76
2037466	Pull	17. 5.67	Dungess	x Guildford, Surrey	28. 5.76
DA 22155	Juv	10. 6.76	Reeth, Yorks	x Horncastle, Lincs	1. 9.76

Ringed Plover

BX 02895	Ad	14. 8.73	Hayle, Cornwall	x Rugen, DDR	7. 6.76
BV 29394	Ad	24. 8.75	Farlington, Hants	x Schier Monnikoog, Netherlands	28.8.76
BV 42802	Juv	14.10.74	Ythan, Aberdeen	+ Setubal, Portugal	12. 9.76
BV 26302	Ad	27. 8.72	Belfast	? El Jadida, Morocco	(15. 6.76)
BV 06147	Juv	30. 8.71	Alwick, Northumb.	x Ribble	23. 8.76
BV 25175	Juv	16.11.74	Angle, Pembs.	v Humber	29. 8.76
BB 56059	Ad	13. 9.70	Morecambe Bay	v Cley, Norfolk	26. 7.76
BB 86335	Ad	29. 1.72	"	v Duddon (breeding)	2. 6.76

Little Ringed Plover

BV 00726	Pull	9. 6.76	Ringwood, Hants	v West Flanders, Belgium	3. 8.76
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Dotterel

CE 20630	Pull	5. 7.75	Grampians	x(long) Jutland, Denmark	13.10.76
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Turnstone

CC 50760	Ad	4.10.70	Morecambe Bay	+ Ellesmere, Canada	2. 6.76
CC 74346	Ad	30. 4.76	"	? Upernavik, Greenland	2. 6.76
CE 05064	Ad	5. 8.73	Wash	x Oulu, Finland	20. 6.76
CE 05265	Juv	1. 9.73	"	x Aland, "	3. 7.76
CC 99039	Ad	9. 8.75	"	v Lolland, Denmark	5. 8.76

Snipe

CK 49474	FG	13.11.68	Skokholm, Pembs	+ Callington, Cornwall	28.10.76
YA 04153	Ad	7. 5.76	Wicken, Cambs	+ Langholm, Dumfries	9.10.76

Curlew

GP 16899	Ad	11. 3.69	Skokholm	v Munster, W Germany	19. 4.76
FS 27602	Pull	13. 6.71	Glen Clova, Angus	v Skokholm	14.10.76
FV 37814	Pull	21. 6.76	Dufftown, Banff	x Islay, Argyll	1.10.76

Bart-tailed Godwit

DS 66507	Ad	3. 8.73	Wash	x Texel, Netherlands	11. 6.76
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Common Sandpiper

77326 S	FG	11. 8.69	Chigwell, Essex	v Abingdon, Berks	15. 7.76
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Redshank

DS 89500	Ad	29. 2.76	Morecambe Bay	+ Jutland, Denmark	1. 8.76
DA 04178	Pull	22. 6.73	Sutherland	x Noord Holland, Netherlands	30.4.76
DR 03581	Pull	22. 5.76	Angus	+ Charente-Mart, France	end 7.76

Redshank (Contd)

DS 90803	Juv	26. 8.72	Wash	+ Somme, France	13. 8.76
DS 66752	Ad	17. 8.74	"	+ Nord "	1. 9.76
DS 52243	FG	16.11.74	Portsmouth	x Peterborough, Hunts	16. 5.76
DS 73759	Ad	17. 1.76	Aylburton, Glos.	x Lunedale, Yorks	6. 5.76
DA 06122	Ad	1. 9.73	Dee	x Br. Alford, Aberdeen	16. 6.76
CR 30106	Ad	11. 2.68	Mersey	v Ribble	7. 5.76
DR 14533	FG	11.11.73	Clyde	x Dunkeld, Perth	24. 6.76
DS 66284	Ad	20. 7.74	Wash	v Wicken. Cambs	30. 4.76
DR 27203	Juv	28. 8.76	Tay	+ Swale	26. 9.76
DS 59677	Ad	3. 2.73	Teesmouth	x Wash	18. 9.76

Greenshank

DS 73742	FG	2. 9.70	Frampton, Glos.	v Niedersachsen, W Germany	31. 7.76
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Knot

CE 19589	2Y	10. 9.75	Wash	x Barents Sea (72.40 N, 33.25 E)	24. 7.76
CE 19287	Ad	10. 9.75	"	+ Holsteinsborg, Greenland	4. 6.76
CC 90071	Ad	8.10.72	"	x Jutland, Denmark	5. 9.76
CC 64225	Ad	3. 3.73	Morecambe Bay	+ " "	2. 8.76
CE 19561	Ad	10. 9.75	Wash	v Morecambe Bay	27. 4.76
CC 70601	Ad	1. 2.76	Solway	v "	27. 4.76
CC 87288	Ad	12. 8.72	Dee	v "	27. 4.76
CE 04667	PJ	23.10.68	Humber	v Wash	20. 2.76

Dunlin

BA 5045-	Ad	9. 8.67	Wash	v Jutland, Denmark	15. 5.76
BX 29992	Ad	3. 3.73	Portsmouth	x E.Frisian Isl. W Germany	12. 5.76
BX 8874-	FG	1.11.75	Wash	+ Somme, France	8. 8.76
BX 89437	Juv	3. 8.76	Shannon	v Sidi Moussa, Morocco	26. 9.76
BS 76304	Juv	11. 8.76	Hayle	+ Azenmour, "	11.10.76

The early autumn 1976 controls from the Baltic and Continental North Sea coasts are summarised below. Underlined ringed as Juv/1Y,

Finland (4) 20.9.68 Suffolk; 26.4.75 Monmouth; 23.1.76 Devon; 25.10.73 Somerset.

Norway (1) 19.5.74 Morecambe Bay.

Sweden (13) 18.8.74, 10.8.75, 6.2.70, 22.8.74 Wash; 24.3.74, 22.11.75 Humber; 31.1.71 Thames; 27.1.71, 1.5.76 Morecambe; 22.1.72 Pembs; 2.1.72 Caerns; 12.5.75 Monmouth; 16.11.74 Clyde.

DDR (5) 16.5.76, 5.12.71 Wash; 25.11.72, 5.3.75 Humber; 11.10.73 Forth.

Denmark (12) 1.11.75, 24.5.75 Wash; 25.8.73 Suffolk; 5.10.68 Thames; 17.1.71 Forth; 12.10.74 Eden; 5.5.73, 1.5.76, 26.4.75 Monmouth; 15.1.74, 7.2.76 Devon; 4.3.73 Morecambe.

W Germany (2) 13.2.71 Dee; 3.3.73 Portsmouth.

Netherlands

(2) 14.5.76 Dee; 29.4.73 Morecambe.

Dunlin (Contd)

BX 91544	Ad	31. 7.76	Wash	v Southampton	29. 9.76
BX 95940	Juv	27. 8.76	"	v Magor, Monmouth	25. 9.76
NB 18302	Juv	28. 8.76	"	v Bardsey, Caern.	15.10.76
NB 18629	Ad	28. 8.76	"	v Humber	26.10.76
BX 76008	Juv	30.11.75	Tay	v Wash	16. 5.76
BX 89375	1Y	4. 2.76	Shannon	v "	16. 5.76
NB 05801	1Y	6. 3.76	Shoreham, Sussex	v "	16. 5.76
BX 56589	Ad	29. 2.76	Morecambe Bay	v Humber	19. 4.76
BX 59752	Ad	13. 7.75	Wash	v Magor, Monmouth	1. 5.76
BX 86589	Ad	9. 9.75	"	v Morecambe Bay	12. 5.76

There were 13 other movements, but not in the same 'winter' between other British and Irish estuaries.

Sanderling

BX 57310	Ad	6. 8.75	Morecambe Bay	x Jutland, Denmark	21. 5.76
BX 59983	Ad	26. 7.75	Wash	? Somme, France	24. 7.76
BX 59750	Ad	9. 8.75	"	+ Casablanca, Morocco	16. 5.76
BB 44165	Ad	18. 5.69	"	v Morecambe	24. 8.76
BX 58435	Juv	23. 8.74	"	x Ribble	30. 8.76
BX 86382	Juv	5. 9.75	"	x Dee	26. 8.76

Stone Curlew

EF 80653	Pull	11. 6.76	Royston, Herts	+ Manche, France	29. 9.76
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REQUEST FOR WHOLE BODIES OF FRESHLY DEAD WADERS

Many WSG members know of the difficulties in interpreting the weight data gathered during ringing activities, and may have seen a recent paper which provided information on changes in body composition, thereby helping in such interpretations (P.R. Evans and P.C. Smith, 1975. Studies of shorebirds at Lindisfarne, Northumberland. 2. Fat and pectoral muscle as indicators of body composition in the Bar-tailed Godwit. Wildfowl 26: 64-76). It would be valuable if such studies could be extended, particularly to other species, and maximum use should be made of any casualties of catching operations.

Peter Evans requests that whole bodies of any casualties or birds found recently dead be wrapped in a polythene bag and sent to:

Dr P.R. Evans, Dept. of Zoology, University of Durham, South Road, Durham DH1 3LE.

Mark the package: "Pathological specimen(s) - URGENT". Please include a note of details of how obtained and of weight at the time of capture/death. Postage can be refunded if desired; please indicate on the note.

RINGING TOTALS

Once again a disappointing response, the four totals sent in were:

S.W. Lancs R.G. (606), including 161 Sanderling, 160 pull. Lapwing, 144 Dunlin and 65 Oystercatcher.

K. O'Brien (Cork) (454), including 244 Curlew, 113 Dunlin, 34 Oystercatcher and 28 Redshanks.

B. Etheridge (Banff) (242), including 78 Common Sandpipers, 72 pull. Lapwing, 24 pull. Oystercatcher, 16 pull. Ringer Plover and 10 pull. Woodcock.

S. Sporne (Hants) (205), including 94 Dunlin, 50 Ringed Plover, 20 Redshank, 10 Bar-tailed Godwit and 2 Kentish Plovers.

ACTIVITIES OF WADER STUDY GROUPS

As outlined in the editorial, we are hoping to increase the degree of information exchange and cooperative studies and aid planning of programmes by a series of articles on various local wader study groups. Peter Challinor has kindly written the first of these which appears below. We hope to receive many more from both Britain and overseas. The content of each will obviously depend to some extent on the activities of the relevant groups but some possible subjects to consider covering include: areas of work: activities of the group: methods used, especially when these may have more general application: species or aspects of special interest: any conservation importance; seasonal activities: suggestions or requests for cooperative studies with other groups: note of any reports published: outline of results etc. The Editors would be pleased to receive articles or discuss possibilities.

SCAN Ringing Group

by Peter Challinor

The SCAN ringing group has been in existence for almost three and a half years and was formed primarily to catch birds by cannon netting. The name SCAN always produces the question of what such a name stands for. Sounding more like a slick name for a trendy TV documentary, it is, in fact, simply the initials, or nearly so, of the places in which the group operates; this is to say, Salop, Conway Bay and part of Anglesey.



Our prime interest to date has been with the waders of the Conway Estuary and the Lavan Sands, where we have been catching waders at high tide roosts on the shore and on adjoining fields. We have also done some catching on wet, marshy areas on and near the Newborough Warren Reserve in Anglesey, and we have tried inland for Lapwings and Golden Plovers in Salop. The latter area is very much third on the list at the moment and, in practice, the only serious ringing we have done in Salop has been of Canada Geese in June at a time when the Welsh coast is very quiet wader-wise.

The techniques we employ are very similar to the ones used on the Wash, which is not surprising as nearly all our members have W.W.R.G. training! We also encounter in our area problems slightly different from those on the Wash. Not the least of these is the much greater interference and disturbance at our sites, by members of the public, especially during the spring and autumn months. On the other hand, we do work amongst some of the most beautiful scenery in Wales.

Since the inception of the group, we have concentrated on three species - Dunlin, Redshank and Ringed Plover and recently have added Curlew, perhaps rather hopefully, to our list. We have managed to take samples of Dunlin for most months from September to May, including one or two quite large ones of 700-800 birds. All the weight data from these catches have been pooled with the data being studied by the W.W.R.G. and we regard our work on Dunlin as very much helping to fill the gaps in our knowledge of Dunlin movement and passage within the U.K. We were particularly keen to test our ability to separate the various races of Dunlin in May, on plumage colouration but we have discovered that the passage through the Lavan Sands is of very short duration, only involving relatively small numbers of birds and that the dates and times of arrival are very variable indeed - a very different situation from what seems to be the case at other west coast sites, such as the Dec Estuary.

So far we do not have enough data on Redshank over a wide enough spread of dates to be able to produce much in the way of results. From several reasonable autumn catches - one of almost 600 - it does seem that we have quite a high proportion of long-winged birds, probably Icelandic in origin (as one would expect) and we have had one of these birds recovered from the west coast of Scotland in early spring - possibly a returning 'foreigner'. We do have a very rapid build-up of Redshank in July but we have yet to make a significant catch of birds in the summer or early autumn.

Ringed Plover is the third species we particularly go for but most of our catches are made at one site. We have ringed around 200 birds, not a very large number, but we have had some very pleasing recoveries and controls. One of these was an East German bird, ringed as a pullus, while another was a bird ringed by us and controlled on the nest in West Germany. Several of our birds have been recovered in Scandinavia and one in Ireland. It appears that all our data on the British and continental Ringed Plovers ties in nicely with the overall composite picture being built up the WSG. Again, we still need more birds from early autumn and spring and the gathering of information is slow with small catches of twenty to fifty birds the rule.

Our interest in Curlew was awakened when we made a catch of moulting birds in September two years ago. On the high spring tides, large number of these birds roost in grass fields adjacent to the shore but it seemed an impossibility to camouflage the nets satisfactorily. On this occasion, however, a field had been partially cut for silage and we were able to conceal net and cannons in the uncut grass. With the aid of a decoy, we collected all the birds in front of the nets. I suspect that the number of Curlew one can catch under a net may be relatively small as their size and strength enable them to keep a net 'airborne' for much longer than is usual. We had over 2,000 birds in front of our nets and actually fired over some 1,000 but only caught 300; I can only explain the difference between potential and actual catch in this way. It would be interesting to know what other ringers feel about this. In the winter Curlew's break up into larger numbers of smaller units and only occasionally does a chance of a catch present itself. .../

This winter, we hope to fill in some more the many gaps that exist in the data accumulated so far and, on the equipment side, to experiment with a new idea for attaching projectiles to traces, which, if successful, should virtually eliminate the problems of wear on ropes and, hence, the possible danger of a projectile breaking free. Incidentally, we have re-designed our firing box as we felt there were too many shortcomings and even dangers present in the 'standard' type and we are now able to fire four nets simultaneously off one box which is energised by a D.C. source.

Unfortunately, time and space does not permit the setting out here of any recoveries or controls nor even of ringing totals, but the group has published two reports so far and the third is in the pipe-line. These contain all details of recoveries and so forth and are available at a cost of 25p each (we have to charge this to help cover the cost of printing).

The Nature Conservancy has been carrying out a five year survey of the ecology of Lavan Sands and, earlier this year, produced their report. Unfortunately our effort came very late on in the study and so we were not able to play a full part in the work but we do feel that all our results make up a valuable pool of information on an area which, at present, is under great pressure, both from commerce and industry, as well as the tourist trade. Consequently we will, in future, work closely with the Nature Conservancy Council.

Finally, any reader who finds himself or herself in a position to join us in the field will be most welcome.

P. W. Challinor, Las Alondras, Trussell Close, Acton Trussell, Nr Stafford.

MEASUREMENTS OF WADERS LESS FREQUENTLY RINGED IN BRITAIN (1): Little Ringed Plover  
Charadrius dubius.

by C. M. Reynolds

Unlike most species of waders ringed in Britain, Little Ringed Plovers are mainly caught as pulli, with smaller numbers trapped as fledged juveniles or adults at or near the breeding grounds. Adults arrive in April and leave apparently soon after breeding in late July and August (and probably before moulting) as is shown by foreign recoveries in early August. Pulli are ringed between late May and early August, and the pattern of weights (see below) suggests that there may be some second broods as well as repeat clutches. The juveniles appear to migrate later although most have left by the end of August, with stragglers as late as October. Many juveniles are trapped before their primaries are fully grown; a condition not always noted by ringers.

In this analysis the measurements from 27 adults and 76 juveniles have been used. Of these 5 (4 adults and 1 juvenile) were measured twice. The data were obtained from the WSG files, my own records and as the results of personal requests. In recent years the sample represents about a quarter of the fledged birds handled. They are mainly from Herts (Rye Meads Sewage Farm 1962-6), Oxfordshire and Lincs (Wisbech Sewage Farm), with smaller numbers from 8 other counties as shown in Table 1. There were also single migrants from Scilly (April) and Fair Isle (juvenile in September).

1. Weights

(a) Adults. There are 30 weights of adults from probable breeding grounds between 24th April and 22nd August, mainly in July. These weights show little variation being usually between 35 and 41 gms. (see Fig 1) with mean 37.5 and st. deviation 3.3. Two in mid-summer were as light as 31 gms. which was about the weight of the Scilly bird (31½ gms.). There were two very much heavier birds of 46½ on 26th April and 46gms. on 18th August. These were presumably a female about to lay, and a migrant about to leave. Weights of 34-38½ gms. for males and 35-45 gms. for females were recorded for nesting adults in Germany (Bub. 1958), and of 31½-41½ in Spain in August. Spring migrants in

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Morocco and wintering birds in Kenya had lower weights (26-34 gms.).

(b) Juveniles. The figure shows the distribution by date for the 76 weights of juveniles. Weights of up to  $33\frac{1}{2}$  gms. are recorded for birds without fully grown primaries, which occur until at least mid-August. The weights then show a fairly steady increase estimated at about  $\frac{1}{2}$  gm. per day during late July and August, with many in excess of 40 gms. The maximum weights recorded (53 gms.) represent an increase of about 40% above the mean adult weight recorded. The average weights for fully fledged birds were 36 gms. in July and 41 gms. in August. The few light birds in September are likely to be from late broods hatched in August. The Spanish juveniles in August, did not show the same increases weighing between 29 and 38 gms (mean  $32\frac{1}{2}$ , N = 22). The Fair Isle bird weighed 29.2 gms. on September 4.

## 2. Wing Lengths

All wing lengths of less than 109 mm were of juveniles without fully grown primaries (least length 89 mm), whereas all the others were between 110 and 121 mm (one of 125 mm) with mean 115.8 mm (st.Dev. 3.0, N = 48). The adults were similar with mean 117 (N = 18). The samples from Spain, Morocco and Kenya all showed similar ranges, but with a much lower mean (113) for spring migrants in Morocco.

## 3. Tarsus

This measurement showed little variation especially for the adults. The mean for 20 (Herts and Oxon only) was 23.7 mm (st. Dev 0.9) with a range of 22-25 mm. The 37 juveniles averaged a little higher at 24.6 mm (st. Dev 1.5) with the range extended to 28 mm.

## 4. Bill

Unlike the other measurements there appeared to be considerable differences between measurers at different sites, and years, with two groups of values, namely 11-14 mm and 15-18 mm. This must be due to different methods of taking the small measurement; i.e. from the feathering or the skull. The means for the smaller measurement 12.4 (N = 45) juveniles and 13 mm (N = 13) for adults. For the larger measurement method they are 16.5 (N = 6) and 15.8 (N = 6) respectively.

## Acknowledgements

I should like to thank the following who have provided data on Little Ringed Plover measurements: - Rye Meads Ringing Group, D. Budworth, Birklands R.G., Brandon R.G., Attenborough R.G., M.J.H. Cook, F.C. Britton, Fair Isle R.G., A. Harris, D. Limentani, C.M. Hemmings, Wash Wader Ringing Group and R. Spencer (Morocco) and G. Bathurst (Kenya).

C.M. Reynolds  
203 South Avenue  
Abingdon, Oxon.

## Reference

Bub, H. 1958. Untersuchungen an einer Population der Flussregenpfeifers (Charadrius dubius curonicus). Beitrage zur Vogelkunde 5: 268-283.

TABLE 1 Numbers of Little Ringed Plover measured per county

<u>County</u>	<u>Adults</u>	<u>Juveniles</u>
Herts	12	19
Oxon	12	17
Lincs	1	16
Staffs		11
Norfolk		6
Cambs	3	
Derby		3
Worcs		3
Warwicks	1	1
Others (Scilly, Kent, Notts, Fair I)	2	2
Total	31	78

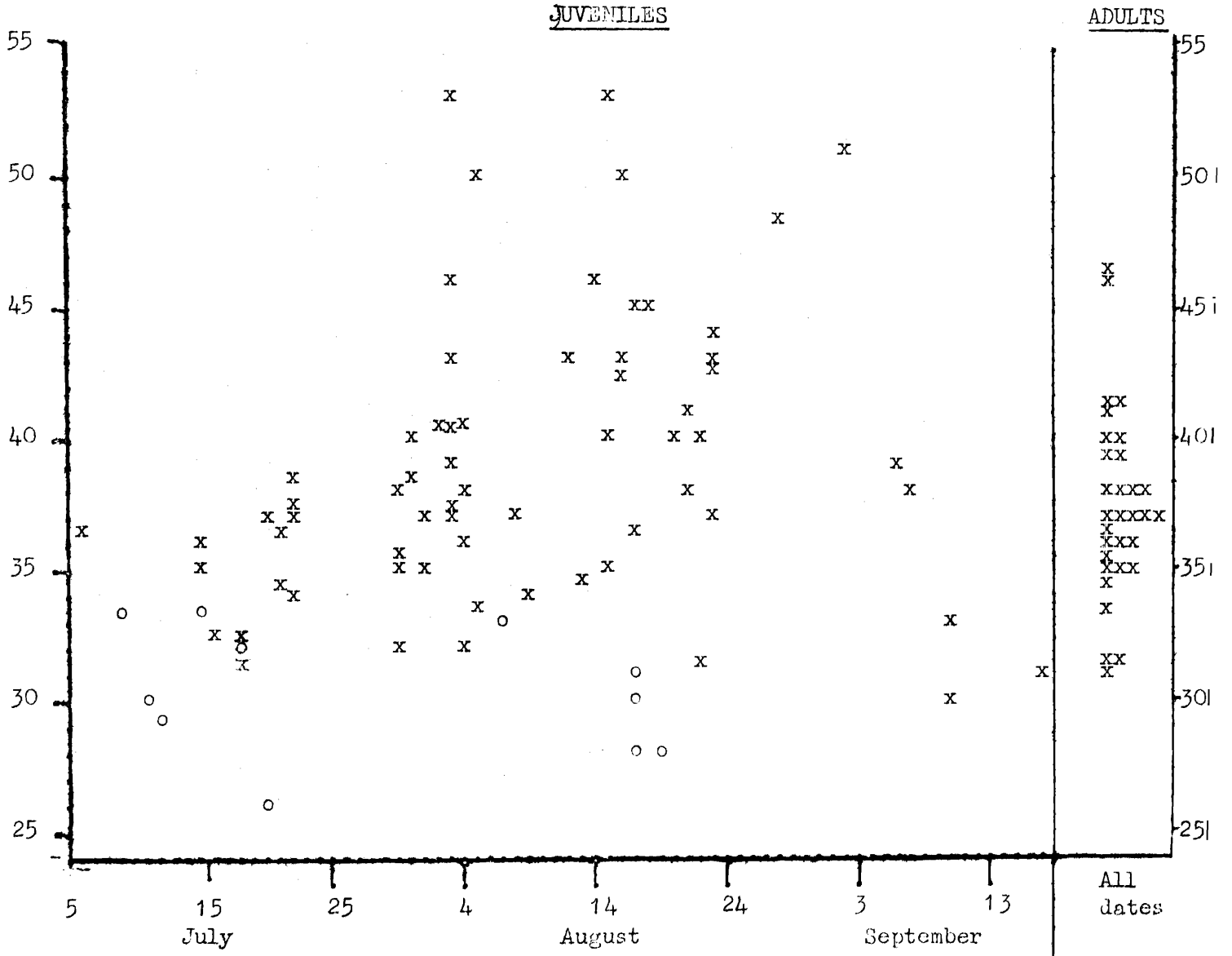


Fig. 1 Weights of Little Ringed Plovers

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Colour dye sightings

Will anyone colour dyeing

Ruff

Little Stint

Ringed Plover

Philomachus pugnax

Calidris minuta

Charadrius hiaticula

during summer/autumn 1976 please let Tony Prater have details of ringing area and colours used.

Also is anyone colour ringing Golden Plover, Pluvialis apricaria?

WADER RINGING IN JAMES BAY, CANADA, 1974-1976

by R.I.G. Morrison

Introduction

The Canadian Wildlife Service (CWS) began a program of research on waders in 1974. A basic objective of the work has been to identify all the areas of major importance to the birds in eastern Canada. One such area is James Bay, which is used by many waders during their autumn migration southwards from breeding grounds in the arctic to wintering grounds in South America. Owing to its remoteness, little was known of the occurrence of waders in James Bay, or of their migration pathways and dispersal routes once they left the Bay. This article is a narrative account outlining ringing and other studies that have been carried out in James Bay by the CWS over the past three years to investigate the use of the area by waders.

The Development of Ringing Studies in James Bay

Preliminary ringing studies were started in James Bay in 1974 by Guy Morrison. Aerial surveys were conducted from Churchill, on the Hudson Bay coast, to Moosonee at the south end of James Bay, to identify areas where waders concentrated and to select a location suitable for work on the ground. The site chosen for ringing studies was at North Point, in the southwest corner of James Bay, where the James Bay Goose Camp (which operates commercially as a hunting camp in September and October each year) provides excellent facilities on the coast 17 miles (27 km) N.E. of the only town in the area, Moosonee. Early thoughts about establishing a banding operation near Churchill were 'reconsidered' after the aerial survey had revealed 140 polar bears in as many miles in that area! Polar bears would be a serious nuisance and danger to a large scale operation and are fortunately rare in the southern part of James Bay. Approximately 300 waders were ringed by two people during a two week period in August 1974 (see Table 1).

In 1975 the operation was expanded, with a larger team of 5-8 working for 5½ weeks at North Point. A core of experienced personnel is essential to operate efficiently in a remote and difficult area (see below) and with relatively little wader ringing being carried out in Canada, two U.K. 'experts', James Wilson and Stuart Brown, were imported to provide the necessary experience. Between mid-July and late August, 4,028 waders were caught, processed and colour-marked (see Table 1).

This summer, a team averaging 8 people worked for 2 months from early July to early September, and a massive total of 12,402 waders were caught (Table 1). The influence of the Wash Wader Ringing Group was strongly felt, with a number of WWRG members providing the experience essential for the operation. Stuart Brown and Les Goodyer were employed for the entire period and William Dick, leader of the Oxford and Cambridge Expedition to Mauritania 1973 (see WSG Bull. 10: 4-7, 1973), volunteered his services for 6 weeks in July and August. Dr C.D.T. Minton, leader of the WWRG can perhaps claim that his influence on wader ringing studies extends even as far as the shore of James Bay, as his parting comment to U.K. participants of '10,000 or bust!' became a challenge that the team was unable to ignore.!

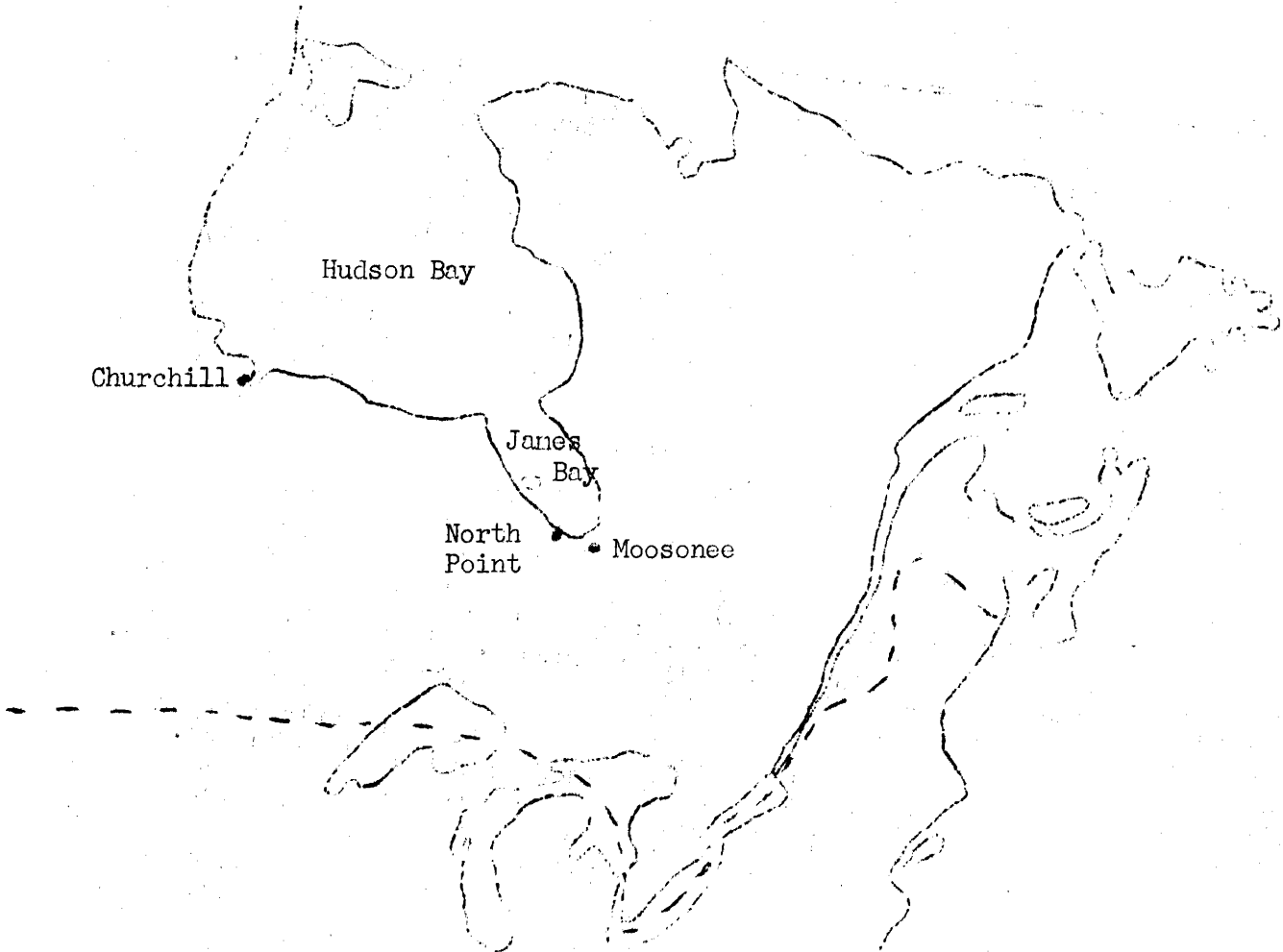
The Nature of the James Bay Coastline

The west coast of James Bay is extremely flat. Marshes and mud-flats, both of which may be several miles or more in width, stretch for approximately 350 miles (560 km) from the south to the north end of the Bay, and continue still further to and beyond Churchill, a distance of some 1,000 miles (1,600 km) from Moosonee. The coast is very remote, the only habitation being 4 small Indian villages near the mouths of major rivers between Moosonee and Churchill.

Moosonee is at about the same latitude as London, but the climate is considerably more severe. Temperatures in January average -5 to -10°F (-20 to -23°C) and the

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annual snowfall is over 100 inches (250 cm). The sea ice covering James Bay does not break up at North Point until the latter half of May, as the waders make their way northwards to the breeding grounds. July temperatures at Moosonee average over 60°F (16°C), though southwesterly winds from the interior of the continent regularly bring periods of hot, humid, unpleasant weather, with temperatures over 90°F (32°C). Such periods often end with a series of intense and very violent thunderstorms, which may be very localised and can be a distinct hazard to mist netting on the flat coastline.



MAP SHOWING LOCATION OF RINGING CAMP, TOWNS ETC.

The tidal range at North Point is about 11 feet (3 m) on high tides and only 3-4 feet (1 m) on the lowest ones. With such a flat coastline, however, the weather exerts a profound influence on the tides, and heights often bear little or no relation to those predicted. This may be a considerable problem and at time a potential danger, as storm tides may completely cover the coastal marsh leaving few or no places of refuge for anyone stranded on the shore.

The marshes in James Bay are famous for their mosquitoes, and rightly so. When the season is at its height, it is necessary to cover oneself completely from head to toe in protective clothing, including a headnet, even in the hottest weather. Switching on a headlamp on a night mist net round can be a disorientating experience, the hordes of insects swirling violently like snow in a raging blizzard. Some much quoted published statistics, invaluable for morale during bad periods, included the conservative estimate of 5,000,000 mosquitoes per acre on the Hudson Bay coast, the calculation that a man would

receive 280 bites per minute on the forearm alone during an intense attack (or 9,250 bites per minute if totally unprotected!) and that at this rate, half the total blood volume of a man would be removed by the insects in  $1\frac{3}{4}$  hours!

### Netting Operations

Owing to the very flat terrain and unpredictable tides, cannon netting is not a reliable trapping method, though some catches were made on a series of gravel ridges which were used as roosting islands by the birds on the highest tides. In 1975, approximately 25% (c. 1,000 in 4,000) of the birds were caught in cannon nets, and in 1976 about 5% (c. 600 in 12,000). Mist netting was the most important technique, and in 1976 over 12,000 birds were trapped in this way (c. 11,800 waders and c. 500 passerines) during the 8-9 week period. Generally, from 70-80 nets (900-1,000 m of netting) were set up in to six lines, within a  $1\frac{1}{2}$  mile ( $2\frac{1}{2}$  km) stretch of coastline. Nets were operated continuously, personnel being divided into two teams of four as a night shift and a day shift, the teams changing shift once per week. Peak catches, which were over 500 birds, required the assistance of all hands! A variety of nets was used, including 4-shelf monofilament nets of very low visibility which caught well even during daylight, but which suffered the disadvantage of being rather difficult to extract birds from. The nets were rarely closed, except for periods of particularly bad weather. Small numbers of birds were caught using walk-in traps, by clap-netting and by dazzling with lights at night. After capture, birds were returned to the buildings at the Goose Camp for processing.

An essential feature of operating on the scale achieved was the use of two Honda motor tricycles. These machines have large balloon tyres; they are ideal for operating over saltmarshes and even float, a property which may at times prove to be of considerable value! Without them, it would not have been possible to tend the number of nets utilized in an efficient manner with only a small team.

### Some Preliminary Results

A total of 16,727 waders has been captured on ringing operations in James Bay from 1974-1976 (Table 1). All birds were weighed and measured (with the exception of several hundred which were only weighed during peak catching periods), ringed, colour-ringed and dyed with picric acid. In addition, birds were examined for moult and a collection of feather parasites made. Many aspects of the biometrics, weight changes and moult of waders are currently being analysed, a few of which are mentioned below.

By far the most numerous bird caught was the Semipalmated Sandpiper (Calidris pusilla). It is a species which was, in fact, rather difficult to keep out of the nets, even when the latter were furled! A preliminary analysis of the 1975 data indicates that the average bill length of birds decreases during July and August, probably as a result of the presence of an increasing proportion of smaller birds from the western and northern parts of the breeding range. Changes in the sex ratio and in feather wear may also be contributing factors. The occurrence of a small proportion of birds which had apparently moulted their outer primaries in spring was noted. In 1975, 62 sightings of colour-marked Semipalmated Sandpipers were reported, ranging from eastern Canada and the eastern seaboard of the U.S.A. to South America (Table 1). This year, approximately 300 'bird-days' of sightings have already been received.

Unlike their counterparts in Europe, races of the Dunlin Calidris alpina in North America undergo a complete wing and body moult before the main autumn migration to the wintering grounds. Complete documentation of the moult in James Bay was made in 1975 and 1976.

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TABLE 1. TOTALS OF WADERS CAPTURED IN JAMES BAY, 1974-1976, AND SIGHTINGS OF COLOUR-MARKED BIRDS IN 1975.

	1974			1975			1976			GRAND TOTAL	
	AD.	JUV.	TOTAL	AD.	JUV.	TOTAL	SIGHTINGS	AD.	JUV.		TOTAL
Semipalmated Plover	-	2	2	40	14	54	5	77	72	149	205
Killdeer	-	-	-	1	2	3	-	1	-	1	4
American Golden Plover	-	-	-	1	1	2	-	7	2	2	4
Black-bellied Plover	-	-	-	1	-	1	-	7	-	7	8
Ruddy Turnstone	-	-	-	19	27	46	-	42	53	95	141
Common Snipe	-	-	-	1	1	2	-	-	17	17	19
Spotted Sandpiper	-	-	-	-	2	2	-	2	4	6	8
Solitary Sandpiper	-	-	-	-	2	2	-	-	1	1	3
Greater Yellowlegs	-	-	-	2	-	2	-	10	2	12	14
Lesser Yellowlegs	2	-	2	8	31	39	1	47	18	65	106
Red Knot	-	-	-	15	40	55	-	6	26	32	87
Pectoral Sandpiper	-	-	-	32	3	35	-	84	11	95	130
White-rumped Sandpiper	17	-	17	616	1	617	2	448	11	459	1,093
Baird's Sandpiper	-	-	-	-	74	76	1	27	1	28	29
Least Sandpiper	-	18	18	2	1	3	-	401	36	437	433
Dunlin	24	-	24	162	1	163	-	-	312	339	624
Short-billed Dowitcher	1	-	1	1	-	1	-	-	6	6	8
Stilt Sandpiper	-	-	-	-	-	-	-	1	-	1	1
Semipalmated Sandpiper	29	204	233	2,343	538	2,881	62	7,045	3,475	10,520	13,634
Buff-breasted Sandpiper	-	-	-	-	2	2	-	-	-	-	2
Marbled Godwit	-	-	-	-	3	3	-	-	5	5	8
Hudsonian Godwit	-	-	-	-	6	6	-	4	-	4	10
Sanderling	-	-	-	26	3	29	3	70	45	115	144
Wilson's Phalarope	-	-	-	-	-	-	-	-	4	4	4
Northern Phalarope	-	-	-	-	7	7	-	10	19	29	36
TOTALS	73	224	297	3,270	758	4,028	74	8,282	4,120	12,402	16,727



Data on weight gain, turnover rates, moult and migration were obtained from many other species. The value of colour-marking is well illustrated by the studies.

Other studies carried out by the CWS have included work on the food resources and feeding ecology of waders on the James Bay coast and on breeding populations near North Point. Studies on the feeding ecology of the Hudsonian Godwit Limosa haemastica were carried out in 1976 at a second camp at Longridge Point about 30 miles (50 km) north of the ringing operation. Current information indicates that the majority of Hudsonian Godwits may fly directly from staging areas on the west coast of James Bay to South America. James Bay is also an important migration area for the North American race of the Knot Calidris canutus rufa. This sub-species appears never to have recovered completely from excessive shooting in the days of market hunting, and pressure on the habitat used during migration by those remaining is increasing. Considerable excitement occurred in August, when a possible sighting was made of two Eskimo Curlews Numerius borealis, a species which has been considered on the verge of extinction, if not actually extinct, since it was practically wiped out mainly through excessive shooting in the late nineteenth and early twentieth centuries.

Work at North Point in 1975 resulted in the first breeding records for James Bay of two species of waders, the Marbled Godwit Limosa fedoa and Wilson's Phalarope Phalaropus tricolor, both of which were found breeding again in 1976.

It is planned to continue the work in 1977, with a third year of the intensive banding operation and further studies of the feeding ecology of waders on the James Bay coast.

REFER OVER PAGE FOR TABLE 1.

D.I. G. Morrison, Canadian Wildlife Service, Ottawa, Canada.

#### CATCHING BREEDING WADERS ON THEIR NESTS

by Klaas Koopman and Jan Hulscher

In the WSG Bulletins 16, 17 and 18 methods for finding nests of waders and catching breeding birds are described. In 1975 and 1976 we caught several waders in Friesland in the north of the Netherlands, and perhaps it is worthwhile reporting on our methods and experiences.

#### Locating nests

In our study area most wader species breed in pastures, Oystercatchers and Lapwings on arable land too. Densities are relatively high: for Godwit and Lapwing 10-60 (mean about 35), for the Oystercatcher 10-40 (mean 25) pairs/100 ha. When the vegetation is not too tall an experienced observer can locate Oystercatchers, Lapwings and Godwits whilst they are sitting on the nest. If the vegetation is rather tall the observer must scan the field first and take in the positions of all the birds present, then he must enter the field and take in those birds that rise but were not seen before. These birds come from the nest. A bird that has already been incubating several days, will either walk over a short distance before it rises, or rise directly from the nest. Ruff, Redshank and Snipe always rise directly from their nest. Birds coming from the nest can be recognised by their particular flight: a low flight over a short distance. The non-breeding bird of an Oystercatcher pair is often on guard, for instance standing on a fence pole or polderdike. The partner usually breeds in its immediate neighbourhood in the tall grass. If one enters the field the incubating bird is bound to rise.

Catching breeding waders ..... continuedCatching the birds on their nests

Birds were caught on their nest with a self operating trap described by Bub (1974). We would like to add a description of this trap (Figure 1) to those described in the WSG Bulletins 16, 17 and 18.

The rectangular frame is made of concrete reinforcing steel (diameter 6-8 mm), roof and side walls of garden or fishing net (mesh width 15 x 15 mm). The shortest side (a) of the trap is supported by a stick composed of two parts of unequal length, the upper part about 15 and the lower about 12 cm respectively. We used bamboo sticks (diameter 20-25 mm). A piece of thin black sewing-thread running from the lower part of the stick to side (b) of the trap, is stretched tightly above the eggs. When the bird sits down it pushes the thread downwards, this makes the two parts of stick to fold together, whereupon the trap tumbles down capturing the bird. The trap must be placed in such a position that the eggs are near side (a) of the trap in its dropped position. The trap should be approached from this side. The bird tries to escape at the other side where it does not harm the eggs.

Measurements according to Bub :

small plovers (Charadrius sp.)	35-40 x 30 x 18 cm
Lapwing and Redshank	45-50 x 35 x 22 cm
Oystercatcher	55-60 x 40-50 x 27 cm
Godwit	50-60 x 40-50 x 27 cm

We used the Oystercatcher-trap only, other species were successfully caught with it too. In our experience a trap of 55 x 40 x 27 cm is too small for Oystercatchers as well as for Godwits. As minimum measurements we recommend 60 x 50 x 27 cm. For easy transport we used a set of four traps, telescoped into each other, the smallest was of the 60 x 50 x 27 cm size, the other increased in length and breadth with 2-3 cm each time.

According to Bub the heart shaped cage trap mentioned in WSG Bulletin 17 is particularly useful for gulls, terns and Oystercatchers. He advises against this trap for catching smaller waders (Charadrius). He also considers use of the elastic powered clapnet inadvisable, because eggs are sometimes damaged and the nest is often deserted.

In two seasons we caught the following numbers (one of us (K) tried to catch all wader species, H confined himself to catching Oystercatchers):

	Oystercatcher	Godwit	Lapwing	Redshank	Ruff
Koopman 1975	108	44	9	1	1
1976	40	26	8		
Hulscher 1975	12				
1976	109				

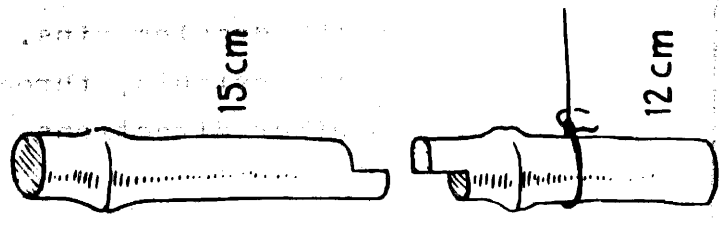
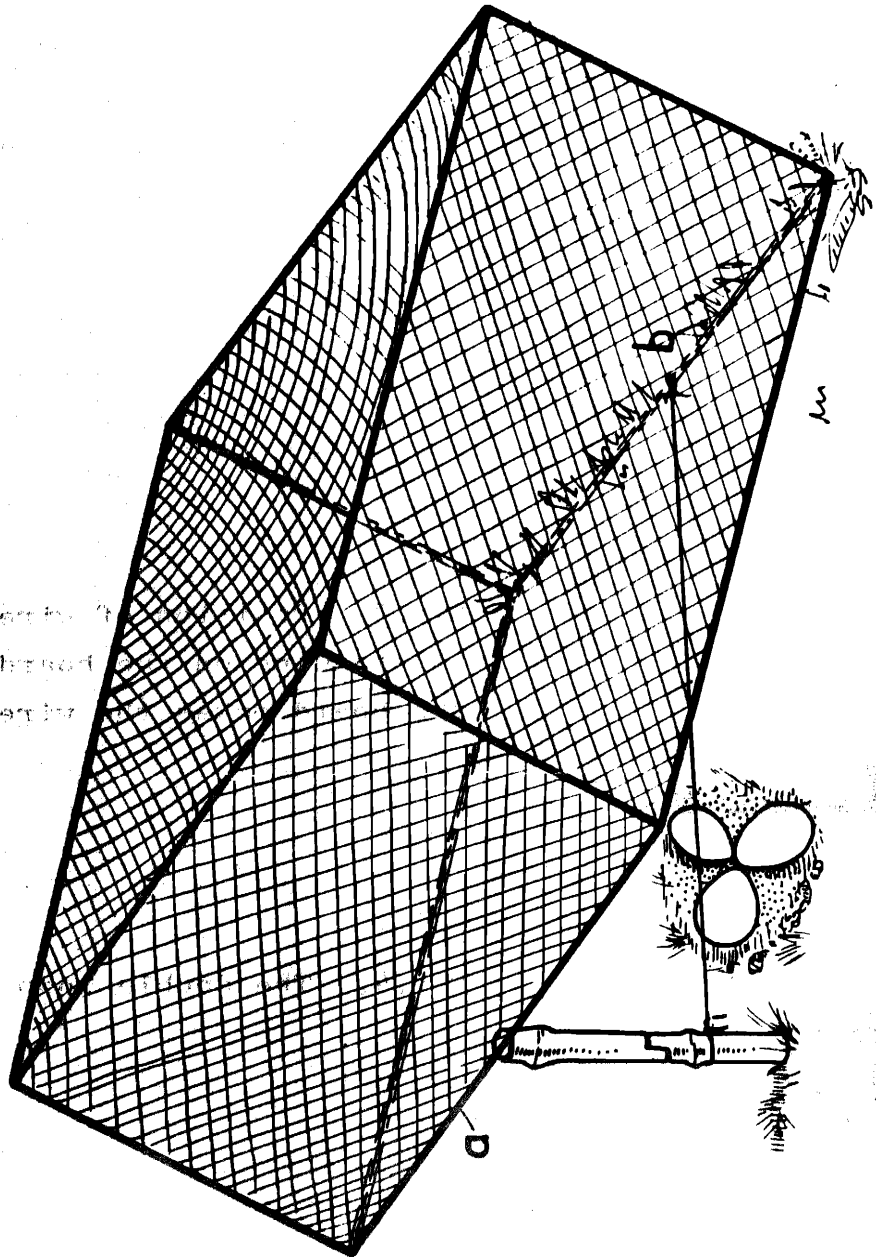


Figure 1 for "Catching breeding waders on their nests" by K.Koopman & J.Hulscher

FOR THE METHOD OF MAKING WADERS

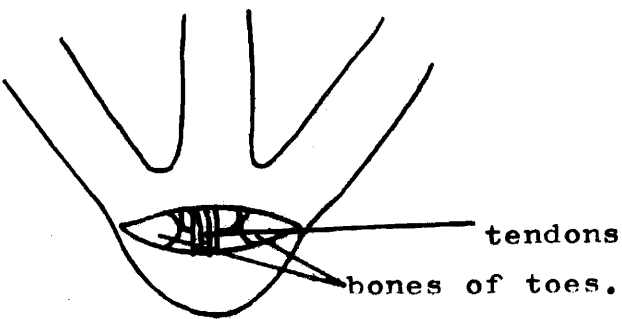


Fig. 1. When the foot pad is slit the tendons will show between the bones of the toes.

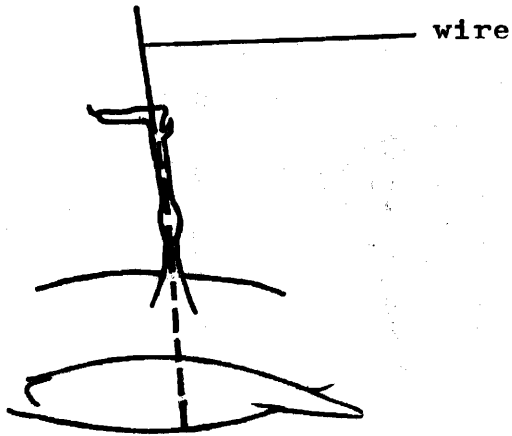


Fig. 2. Position of wire when fully inserted into leg.

N.B. This must be on the inside of the leg.

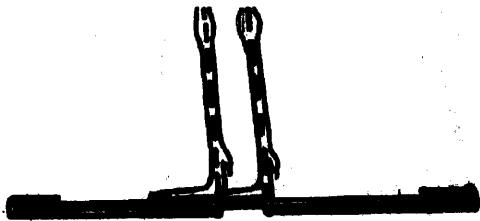


Fig. 3. Position of wires when bird is standing on the board. The bend of the board makes the wires more rigid.

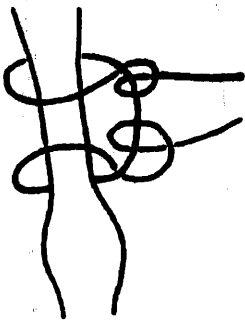


Fig. 4. The double loop knot.

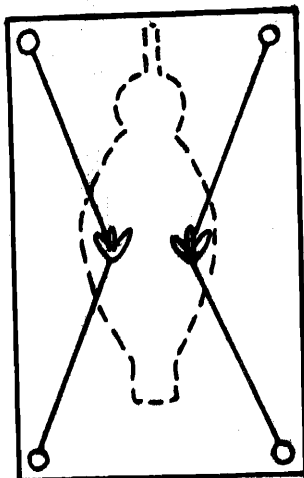


Fig. 5. Points of tying the leg strill to the drawing pins. If the bird is still unstable, threads can be added in other directions.

FIGURES FOR "A METHOD OF MAKING WADER DECOYS" by I.P. Bainbridge

The relatively high densities of Godwit and Oystercatcher enabled us to keep an eye on three to four traps at a time. If a trap clapps the bird mostly continues to incubate. We therefore waited till all traps and dropped. Oystercatchers are easy to catch. Catching times of five minutes or less frequently occurred. For 79 birds the mean catching time was 24 minutes. In many cases the second bird of a pair was caught shortly after the first. In 30 cases this was on the mean 41 minutes after resetting the trap for the second time. Sometimes the first bird was caught again. In these cases it proved better to try again on another day, at another time. In our experience the two birds of a pair of Oystercatchers keep to a fairly constant time pattern in incubation day after day (this probably applies to other species too). If the bird had not returned to the nest after an hour we removed the trap. The permissible length of this period depends on the weather. We had the impression (no figures) that it was more difficult to catch Oystercatchers in the same area during the second year than during the first.

About 2-4% of the Oystercatcher-pairs from which one or two birds were caught abandoned the nest. In three cases one of the eggs was broken. Therefore, it is advisable to use dummy eggs when possible.

Godwits can be caught easily too. The shortest catching time was two minutes, but there were great differences between individuals. Relatively more birds than with the Oystercatcher did not return to the trap at all. Two birds of a pair can be caught with a delay of two days or more. A few individuals caught in 1975 were also caught in 1976.

Lapwings are difficult to catch. The minimum catching time was 10 minutes. Many birds did not return to the trap at all.

The sole Redslank that was caught abandoned the nest although it had already been incubating for a long time. Also one Reeve was caught, brooding small pulli, she returned to the trap within a minute.

#### References

- Bub, H. 1974. Vogelfang und Vogelberingung zur Brutzeit, pp. 31-38. A. Ziemsen Verlag: Wittenberg, Lutherstadt.
- K. Koopman, Nieuweweg 50, Rotsterhaule (Fr.), Netherlands.
- J.B. Hulscher, Zoological Laboratory, Kerklaan 30, Haren (Gr.), Netherlands.

#### A METHOD OF MAKING WADER DECOYS

by I.P. Bainbridge

Over the past few years the use of stuffed or preserved decoy waders for wader catching, particularly cannon netting, has become commonplace with certain groups. I have received several enquiries on the methods of making wader decoys. The simplest method is to use concentrated formalin solution to preserve the birds intact. This then is another use for the odd wader casualty or birds found freshly dead.

Before the method though, a warning about the 40% formalin solution used; it is a strong irritant and will sting in cuts and cause severe distress if it gets into an eye. It will also harden fingertips. It is thus necessary to have a supply of fresh running water at hand, in case of any accidents. I also wear safety goggles. Formalin also has a noxious vapour and will choke, so take care!

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Requirements

Cotton wool, stout needle, button thread, sharp pointed scissors, strong forceps, galvanised wire (1-2 mm gauge), hypodermic syringe, hypodermic needle, 40% formalin solution, glass eyes or map pins, enamel paint, hardboard, awl, drawing pins, long pins, wire cutters, toothbrush or similar, safety goggles.

And of course a fresh or deep frozen bird!

1. Fresh birds from any source can be used, provided they are undamaged. If they are stored frozen, wrap them in soft tissue so the plumage is undisturbed, and frozen flat. If frozen birds must be thawed before treatment.
2. Birds up to the size of Redshank and Knot can be treated whole. With bigger birds the gut should first be removed (if this is not done the bird will be rather heavy and somewhat unstable). With this the bird can also be sexed before injection. (Measurements of such birds are very useful and can be submitted on standard WSG forms.) Part the feathers of the stomach centrally, and slit the body wall from the end of the sternum to the cloaca. Remove the guts, pad the resulting cavity with cotton wool, sew up the body wall and replace the feathers over the stitching.
3. Slit the pad of the foot, and remove the tendons of the legs by pulling the intact tendons with a strong pair of forceps (Fig 1). Insert a suitable gauge of galvanised wire up the tarsi, the inside of the knee and thigh and vertically up through the body to the dorsal skin (Fig 2). This may or may not hold the legs firmly upright. 20 cm of wire should be left projecting from the leg when it is fully inserted.
4. If the bird is to be in a sleeping position, no wire is necessary in the throat. If it is to be alert, insert galvanised wire down the throat into the thorax. Stretch the neck tight - the wire should then all be in the throat, it's tip at the back of the skull, at the foramen magnum. Push the head back onto the wire, inserting the wire into the skull through the foramen. This wire can later be bent into a realistic position.
5. Using the hypodermic inject the bird with 40% formalin. For a small bird inject 5 - 10 cm<sup>3</sup> into the abdomen, thorax, and through the foramen magnum into the brain. If the latter causes the eyeball to swell firm but gentle pressure should revert this. For bigger birds increase the amount of formalin proportionately. The thighs and wings may also need injecting in bigger birds (inject 1-2 cm<sup>3</sup> into the fleshy part of the limbs). The abdomen must still be injected despite the removal of the gut. A curlew may need up to 30 cm<sup>3</sup> of formalin.
6. Put in glass eye (for smaller birds small map pins will do - if need be they can be painted later with 'Humbrol' kit enamel!). Using forceps, bring the eyelids over the eyes to hold them in place. It is best to insert the eyes at an angle away from the bill.
7. Take a piece of hardboard  $1\frac{1}{2}$  times as long and twice as wide as the bird. Make two holes in the centre, as wide apart as the birds legs need to be. Push a large drawing pin into each corner. Insert the decoys leg wires through the holes in the hardboard. Hold one leg and bend the projecting wire flat, and forwards under the board, and bend it flat over the front of the board. Bend the other leg wire backwards under the board similarly (Fig 3). Put the board flat on a table and the decoy should stand fairly upright.
8. Double loop a length of button thread around one leg above the knee (Fig 4). (The leg will not slip along this knot, as it can with a single loop.) Tie the loose ends to the two nearest drawing pins, so the leg is held upright (see Fig 5). A clove hitch around the drawing pin is best - by pulling on the loose end of the knot any slack can be taken up in the cotton. Tie the other leg similarly and the decoy should stand upright.

9. Using long pins, pin the wings to the body at the carpal and metacarpal joints.
10. The head: a) if asleep: using a needle, insert a thread through the nares, and tie it over the bill. Put a pin through the soft part of the lower mandible, under the tongue, and pin this into the back. Tie the nares threads to the back drawing pins and adjust the tension so the head lies correctly.  
b) if alert: adjust the wire in the neck to a lifelike position. If need be, support the head with a wire under the chin and threads through the nares.
11. Make sure all the feathers are in place. A small stiff brush (toothbrush) will help.
12. The decoy should not be set in its finished position. Put it in a warm, dry, fly-free place for two to three weeks. The threads can then be cut off and if need be the eyes, bill and legs painted. Leave all the pins in place. Take the decoy off the large piece of hardboard, and put it onto a smaller piece, roughly the width of the bird square. If the bird is left on this, the legs are strengthened. In the field the hardboard can be covered with sand or soil; this is often easier, both for ringer and decoy, than sticking galvanised wire into hard ground. Decoys like this should last for years if looked after, though cannon netting tends to be rather hard on them. However they still seem to last longer than conventionally stuffed decoys.

On the Wash, decoys are used mostly for field cannon net catches, placed in a group in front of the nets. They should be put facing the wind, and generally the incoming birds will land slightly upwind of the decoys. They can be very effective; it is most rewarding to watch your decoys disappear in a flock of several thousand waders! Generally, the slightly bigger birds make better decoys - Dunlin may be just too small to attract the attention of a circling wader flock. Knot and Oystercatcher tend to be excellent for mixed wader flocks, and Curlew work quite well on their own species. Turnstone have recently been used on beach catches, and seem quite effective at luring passing flocks of birds onto the appropriate bit of beach.

One last word though; there is no substitute for putting the cannon nets in the right field at the outset. Decoys will bring the birds to the right spot in the field, but get the field right first!

I. Bainbridge, Dept of Biology, Liverpool Polytechnic,  
Byron Street, Liverpool L3 3AF.

## RECENT PUBLICATIONS ON WADERS

See also abstracts in Ibis, Auk and Bird-Banding  
 Details of omissions to Mike Plenkowski, please.

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NEW MEMBERS

Appleton, G.	18 Old Barn Road, Bourneville, Birmingham B30 1PY
Brandon Ringing Group.	D.A. Stone, Overbury, Wolverton, Stratford, Warwickshire.
Brockway, I.K.	The Schoolhouse, Ardross, Ross-shire.
Clarke, H.	51 Napier Avenue, Bathgate, West Lothian.
Fuller, R.J.	B.T.O. Beech Grove, Tring, Herts.
Innes, J.	Balchrystie, by Colinsburgh, Fife.
Kuyken, Dr. E.	Laboratory of Animal Ecology and Nature Conservation, K.L. Ledeganckstraat 35, B-9000, Gent, Belgium.
Parkinson, Miss S.	Dept of Biology, Liverpool Polytechnic, Liverpool L3 3AF.
Pitelka, Prof. F.	Museum of Vertebrate Zoology, 2593 Life Sciences Building, Berkeley, California, 94720, U.S.A.
Quammere, Miss M.L.	Dept of Ecology, School of Biological Sciences, Irvine, California 92717, U.S.A.
Thomas, Dr. D.	4 Langland Villas, Mumbles, Swansea, W. Glamorgan.
Vader, Dr. W.	Tromsø Museum, Dept of Zoology, N-9000, Tromsø, Norway.

CHANGES OF ADDRESS

Atkinson, N.K.	140 Linefield Road, Carnoustie, Angus.
Corris, W.	c/o 19 Longfields, Bicester, Oxon.
Elphick, D.	28 Coniston Drive, Holmes Chapel, Crewe, Cheshire.
Fellows, Dr. E.	19 Airds Drive, Dumfries.
Goodyear, L. R.	Dept of Zoology, University of Durham, South Road, Durham.
Harvey, W.G.	17 Barton Road, Canterbury, Kent.
Jensen, Mr & Mrs K.	Gabels Gate 48, Oslo 2, Norway.
Leslie, R.	Conway House, High Street, Rothbury, Morpeth, North'br'lnd.
Lessells, Miss K.	Edward Grey Institute, South Parks Road, Oxford.
Marsh, P.	Grafham Water Residential Centre, West Perry, Huntingdon, Cambs.
Moller, H.S.	Skoufogedhuset, Snaptum, DK-9700 Horsen, Denmark.
Moon, S.	Keufig Pool PLNR, Local Plans, Mid-Glamorgan County Council, Greyfriars Road, Cardiff.
Peart, R.	56 West Street, Fontmell Magna, Shaftesbury, Dorset.
Pienkowski, M.W.	10 West Fenton Cottages, North Berwick, East Lothian EH39 5AL
Ponting, E.D.	26 Fieldway, Berkhamsted, Herts.
Taylor, R.C.	38 Marriott Road, Millhouse, Sheffield 7. S Yorks.
Tree, A.J.	101 Lomagundi Road, Salisbury, Rhodesia.
Watson, Dr. D.	12 Hillview Gardens, Liverpool, L25 7XE.
Whittles, C.	The Bungalow, 1 School Lane, East Keele, Spilsby, Lincs.

PLEASE NOTE THE FOLLOWING ERRATA

Page 17. D.I.G. Morrison - should read 'R.I.G. Morrison'.

Page 21. 12. The decoy should not be set in its .....

should read:

12. The decoy should now be set in its .....