WADER STUDY GROUP

Bulletin No 20 June 1977

Contents

Editors

Mike Pienkowski, 1 West Fenton Cottages, North Berwick, East Lothian EH39 5AL. (Tel: Gullane (0620) 843580)
Tony Prater, BTO, Beech Grove, Tring, Herts. (Tel: Tring (044282) 3461)

Subscriptions

If you have not sent your 1977 subscription of £1.00 to Ron Birch please do so as soon as possible. Cheques please, payable to R. Birch, Wader Study Group. Address: 8 Thornberry Close, Saughall, Chester.

Requests for Information: continuing requests are:-

1) Colour ringed/colour dyed waders:- please report all schemes as well as all observations to Tony Prater (address above).
2) Weights of retrapped Ringed Plover chicks : Bull 17 (April 1976)
3) Jack Snipe, all measurements : Bull 18 (Aug. 1976)
4) Ornithologists visiting Tunisia : Bull 18 (" ")
5) Corpses of freshly dead waders : Bull 19 (Nov. 1976)

COLOUR RINGING: OYSTERCATCHERS: EXE ESTUARY - REQUEST FOR INFORMATION

Colour ringing of Oystercatchers on the Exe Estuary, S. Devon began in November 1976 and, to date, 200 birds have been marked.

The aim is to follow the feeding activities of individuals within the Exe and to discover the movements of birds elsewhere. It would be very useful if the date and place where birds have been seen could be sent to me. The distinctive colour scheme, devised by Chris Mead, consists of only two rings placed below the intertarsal joint on one leg. One is a tall (22 mm) ring, the other a much smaller ring (9 mm). The small ring may be above or below the large ring and is a uniform single colour (mainly red or blue at present). The large ring (all yellow at the moment but other colours are planned) may have bands of black engraved on it. These are either thin (1-1.5 mm) or thick (4-5 mm) and occur in one of three positions (top, middle or bottom) on the ring. Positions on the ring may also be left blank without a band. So a large ring could read, for example, thin over blank over thick, or any combination thereof. (Note that occasionally the end of the large ring, usually at the junction with the small ring, looks like a thin black band because the inside layer of the large ring is black). The colour of the small ring and whether it is above or below the large ring is needed as well as the leg on which both rings are placed. A complete record would read, for example, left leg, small red ring below large yellow ring; thin over thick over blank. A few birds are also ringed above the intertarsal joint on the other leg but this is unimportant. Thirty-five birds also have single-colour wing tags (either while, pale green or yellow). One needs to be fairly close (<100 m) with a good telescope to see the thin band, but even records of birds with a tall (yellow at the moment) and short ring next to each other on one leg would be well worth having.

J D Goss-Custard, ITE, Furzebrook Research Station, Wareham, Dorset BH20 5AS.

Ringing totals reported for October 1976 to February 1977

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	**
Oystercatcher	2	133		306	2			135		193	424	59	104		
Lapwing				1			7				6	2	160	12	
Ringed Plover		6	1	1			11			2	3	4	34	2	
Grey Plover		27	2	24			2	2		2	3	1		2	
Golden Plover										52			10		
Turnstone		51	8	68				2		10	15	11			
Snipe				2	16					2			10		
Woodcock			1												
Curlew	1	4		6	3		24	11			20	290	19		
Bar-tailed Godwit		2		17				14			1	11		2	
Common Sandpiper														2	
Redshank	22	2	5	90	15		4	28	1	1	35	37	11	10	
Greenshank						1						1			
Knot	15	155		87				16		31	13		3	1	
Purple Sandpiper											9		1		
Little Stint				1	1		23					3			
Dunlin	80	519	229	386	157		294	129	382	123	265	237	46	41	
Curlew Sandpiper					1		1					1			
Sanderling		37		204						175	5				
Ruff					20							6			
Buff-breasted Sandpiper							1								
Pectoral Sandpiper				1											
Jack Snipe					5								1		
Whimbrel												1	4		
Black-tailed Godwit												7			
Little Ringed Plover*														1	

* total for all 1976.

**

A = M Davies : Grangemouth. B = Durham Univ. : Teesmouth.
C = Spurn B.O. D = Wash W.R.G. E = Catchpole,Cockram & Peters : Suffolk.
F = P G Murton : Essex. G = S H Sporne : Hampshire. H = H P Sitters : Exe. I = R C Swinfen : Plym. (H & I work together). J = S W Lancs R.G.
K = Morecambe Bay R.G. L = K O'Brien : Co.Cork.* M = D O'Kill : Shetland.* N = C Sharr : Kent.*

A form for totals for March - June 1977 will be found at the end of this Bulletin.

Also notified were F. Argyles' Iranian ringing totals for 1976, these totalled 1083 birds, principal species being Little Stint (378), Wood Sandpiper (158), Kentish Plover (115), Ruff (113), Common Sandpiper (65), Temminck's Stint (48) and Curlew Sandpiper (44).

Recent recoveries

Oystercatcher

SS 75098	Ad	19. 8. 67	Wash	x Hordaland, Norway	0. 8. 75
SS 88723	1Y	19. 7. 70	"	x More & Romsdal, Norway	19. 7. 76
FS 15710	Ad	12. 8. 71	"	x Rogaland, "	7.11. 76
FV 04400	Ad	12. 8. 75	"	x Nordland, "	15. 8. 76
FV 04640	Ad	8. 9. 75	"	x " "	aut. 76
FS 12376	Ad	8. 8. 70	Morecambe Bay	x " "	0. 7. 76
FS 44432	Ad	7. 1. 73	Solway	x Sor-Trondelag, "	20. 9. 76
FS 33697	Ad	24.10. 72	Poole	x Sognoç Fjordane, "	0. 7. 76
SS 88183	Juv	18. 7. 70	Wash	x Friesland, Netherlands	0.8/9.75
FS 15733	Ad	12. 8. 71	"	+ Loire Atlantique, France	4.12. 76
FS 29903	1Y	5. 3. 72	Portsmouth	+ Seine Maritime, "	20. 2. 77
SS 95312	1Y	14. 8. 72	Camel, Cornwall	+ Manche, "	12.11. 76
FV 23279	1Y	8. 9. 75	Wash	+ Nord, "	26. 8. 76
FV 16256	Pull	22. 6. 76	Skokholm	+ Santander, Spain	5.10. 76
SS 77062	1Y	25. 8. 68	Wash	x Morecambe	5. 1. 77
FS 07973	Pull	7. 6. 73	North Uist	x Isle of Rhum	14. 2. 77
FS 45376	Pull	27. 6. 73	Hauda Isl.	+ Co. Clare, Ireland	31. 1. 77
FS 28030	Pull	29. 5. 76	Strathmiglo, Fife	x Belfast	29.12. 76
FS 93985	Pull	7. 7. 75	Skaill, Orkney	x Co. Kerry, Ireland	29.12. 76
FS 19341	Pull	13. 6. 76	Moy, Inverness	v Morecambe Bay	17. 1. 77
FS 61775	IS	22. 7. 75	Camel, Cornwall	x Dublin	8. 2. 77
FS 28111	Ad	6. 4. 74	Dunblane, Perth	v Beaumaris, Anglesey	19.12. 76
FS 15559	Ad	27. 3. 71	Wash	x Preesall, Lancs.	17.12. 76

There were six other medium distance movements within Britain

Lapwing

DS 24675	Pull	12. 5. 68	Salisbury, Wilts	+ Ille et Vilaine, France	0. 1. 77
DS 48048	Pull	19. 5. 69	Stockport, Chesh.	+ Pas de Calais, "	14.11. 76
DS 23987	Ad	6. 7. 75	Burton, Staffs	? Trinistere, "	20. 1. 77
DR 11397	Pull	30. 5. 76	Harray, Orkney	+ Chooente Maritime "	15. 2. 77
DS 21851	Pull	30. 6. 66	Bowes, Yorks	+ Cadiz, Spain	15. 1. 67
DS 08307	1Y	10.10. 66	Swale, Kent	x Colchester, Essex	1. 2. 77
DS 92866	Pull	13. 5. 72	Mainland, Orkney	x Co.Galway, Ireland	2.12. 76
DS 51846	Pull	27. 5. 72	Westray, Orkney	x " "	mid 1. 77
DR 00118	Pull	11. 6. 72	Pateley, Yorks	x Co.Down, N. Ireland	18. 1. 77
DS 67565	Pull	28. 5. 75	Aberdeen	+ Co. Kerry, Ireland	5. 1. 77
DR 31959	Pull	5. 6. 76	Empingham Res., Rut.	x Amble, Northumb.	25.10. 76

Ringed Plover

BV 49300	Pull	9. 7. 75	King's Lynn Norfolk	x Sunderland	1. 3. 77
BX 43451	Ad	17. 8. 74	Wash	x Studland, Dorset	29.10. 76
BV 25175	1Y	16.11. 74	Angle Bay, Pembs.	v Spurn	
				v Angle Bay	11.12. 76
BV 49653	Ad	20. 7. 76	Downham Market, Norfolk	v Wash	24. 8. 76

Grey Plover

DR 10707	Ad	14. 2. 76	Portsmouth	x Schleswig Holstein, FRG.	11.10. 76
DS 08839	FG	9.10. 76	Swale, Kent	+ Half Assini, Ghana	3.12. 76

Golden Plover

CC 97202	Adm	26. 5. 75	Banchory, Kincard.	v Carnoustie, Angus	5. 2. 77

Turnstone

CE 03371	Ad	11. 3. 74	N. Berwick, E. Lothian	v Hochstetter Foreland, Greenland	21. 7. 76
CC 51153	Ad	19. 8. 70	Morecambe Bay	x Rabat, Morocco	12.12. 76
CC 74362	Ad	30. 4. 76	"	x Dublin	1.12. 76
CK 93722	FG	18.11. 72	Conway, Caerns.	v Seaforth, Lancs.	22. 1. 77

Snipe

CH 86489	FG	18.11. 73	Sevenoakes, Kent	v Amager, Denmark	20. 9. 76
XB 16811	FG	13, 8, 75	Wellington, Shrops.	+ Berkane, Morocco	27. 2. 77
CC 92591	FG	26.12. 75	Uxbridge, Middx.	+ Bury St. Edmunds, Suff.	2.12. 76
CH 89170	FG	12.10. 75	Ratcliffe, Leics.	+ Wellington, Shrop.	20.12. 76

Jack Snipe

BV 47311	FG	30. 9. 76	Fair Isle	+ Gers, France	0.12. 76

Woodcock

EB 47880	FG	20.10. 76	Fair Isle	+ Bergen, Norway	13.11. 76
EF 82652	Ad	2. 5. 74	Isle of May	+ Jylland, Denmark	6.11. 76
EF 37490	Ad	18. 2. 76	Co. Mayo, Ireland	+ Sjaelland, "	5. 1. 77
EB 22814	Pull	17. 4. 76	Worksop, Notts	+ Coles-du-Nord, France	22.11. 76
EB 47888	FG	27.10. 76	Fair Isle	+ Stromness, Orkney	early 11. 76

Curlew

SS 70816	FG	21.10. 69	Butley, Suffolk	x Vaasa, Finland	0. 5. 76
FV 28205	Ad	6. 9. 75	Wash	x " "	16. 6. 76
FS 30494	Ad	17. 7. 71	New Cummock, Ayr.	+ Tipperary, Ireland	11.11. 76
FS 17789	Ad	24. 7. 72	Drakelow, Derby	x Gower, Glamorgan	10.11. 76

Whimbrel

EC 96431	Pull	15. 7. 76	Shetland	+ Keta, Ghana	29. 2. 77

Bar-tailed Godwit

DR 29719	Ad	29. 8. 76	Wash	x South Cove, Humber	4.11. 76

Redshank

DR 38803	Pull	14. 6. 76	South Uist	x	Conway	2.10. 76
DR 06881	Pull	15. 6. 76	Islay	x	Hayle, Cornwall	12. 1. 77
Dr 08193	Juv	17. 9. 76	Mainland, Shetland	x	Rosehearty, Aberdeen	3. 1. 77
DS 99153	Ad	25. 8. 73	inner Clyde	x	Rothesay, Bute	26. 2. 77
DR 21474	Ad	23. 8. 74	Wash	v	Hull, Yorks	27.10. 76
DR 28627	Ad	27. 7. 75	"	x	Whittlesey Wash,Cambs.	27.12. 76
DR 32548	Ad	27. 8. 76	"	v	Butley, Suff.	19.11. 76
DS 64085	Ad	14. 9. 74	Conway	+	Flint	0. 1. 77
DS 76528	Ad	14. 9. 74	Morecambe Bay	x	Teesmouth	12.12. 76
DS 76609	FG	14. 9. 74	"	x	Kirkcudbright	15. 1. 77

Knot

CK 58414	Juv	7. 9. 67	Wash	+	Disko, Greenland	0. 5. 76
CC 63692	Ad	4.12. 71	Swale	+	Umanak, "	12. 8. 75
CC 51103	Ad	24. 4. 70	Morecambe Bay	x	Schleswig Holstein, FRG	14. 8. 76
CC 51668	Ad	6. 3. 70	Dee	+	Seine Maritime, France	2. 2. 77
CE 04251	Ad	18. 8. 74	Wash	+	Illeet Vilaine, "	1. 1. 77
CE 29897	Ad	29. 8. 76	"	+	Charcute Maritime,"	29. 1. 77
CK 83801	Juv	12. 9. 75	Shannon	+	" "	2.12. 76
CC 74163	1Y	14. 2. 76	Morecambe Bay	+	" "	29.12. 76
CC 74538	Juv	24. 8. 76	"	x	Ipswich, Suffolk	30. 1. 77
CC 99822	Ad	31. 7. 76	Wash	v	Anglesey	19.12. 76
CC 94246	Ad	23. 7. 74	"	v	"	19.12. 76
CE 29912	Ad	22.12. 68	Morecambe Bay	v	Wash	29. 8. 76
CC 51475	Ad	24. 4. 70	"	v	"	20.11. 76
CK 91326	Ad	8. 2. 70	"	v	Lindisfarne	13. 2. 77
CE 16611	Ad	14.10. 74	Bardsea Island	v	Wash	29. 8. 76
CC 97465	PJ	1. 3. 68	Dee	v	Ribble	22.12. 76
CX 98267	Juv	7. 9. 67	"	v	Anglesey	19.12. 76
CC 66304	Ad	12. 8. 72	"	v	"	19.12. 76
CC 56289	Ad	24. 2. 71	Morecambe Bay	v	"	19.12. 76
CC 56880	FG	22. 9. 71	Ribble	v	Morecambe Bay	20.10. 76
CC 59511	Ad	27. 8. 68	Wash	v	Teesmouth	12. 2. 77
CC 72002	Ad	11. 8. 71	"	v	"	12. 2. 77
CC 89457	Ad	8.10. 72	"	v	"	12. 2. 77

Dunlin

There were birds caught on autumn migration in Finland, 1 in Sweden, 2 in Denmark, 1 in West Germany and 1 in Netherlands. Recoveries in less frequent countries were:

BE 13282	Ad	2. 1. 72	Conway	v	Mikoszewo, Poland	22. 7. 76
BE 89595	1Y	3. 3. 73	"	v	"	6. 8. 76
BX 58891	Ad	24. 5. 75	Wash	v	"	8. 8. 76
BX 38881	Juv	6.11. 75	Southampton	v	"	19. 7. 76
BB 96289	Juv	3.10. 72	Batley, Suffolk	v	Jersey	29. 1. 77
BX 86334	Ad	5. 9. 75	Wash	+	Somme, France	27.11. 76
BX 21884	1Y	8. 2. 76	Mansfield, Notts.	+	Pas de Calais, France	8.12. 76
NB 18686	Ad	28. 8. 76	Wash	+	Marsala, Sicily	1.11. 76
BB 95037	Ad	7.10. 76	"	+	Rabat, Morocco	18.11. 76
BX 89437	Juv	3. 8. 76	Shannon	v	Sidi Moussa, Morocco	26. 9. 76
BX 45410	Juv	21. 8. 76	Cork Harbour	v	Banc d'Arguin Mauritania	20.12. 76

Dunlin (Contd)

BX 43553	Ad	21. 7. 74	Wash	v Banc d'Arguin, Mauritania	20.12. 77
BX 08391	Ad	22. 7. 76	Garmouth, Moray	v Wash	30. 7. 77
BX 93947	Ad	30. 7. 76	Wash	v Anglesey	18.12. 76
BX 91544	Ad	31. 7. 76	"	v Southampton	29. 9. 76
BX 95262	Ad	26. 8. 76	"	x "	28.11. 76
BX 95995	Ad	27. 8. 76	"	v Teesmouth	12. 2. 77
NB 17609	Ad	29. 8. 76	"	v "	12. 2. 77
NB 17534	Ad	29. 8. 76	"	v "	12. 2. 77
NB 18393	Ad	28. 8. 76	"	v Anglesey	18.12. 76
NB 18338	Juv	28. 8. 76	"	v "	18.12. 76
NB 18375	Juv	28. 8. 76	"	v Spurn	11.12. 76

There were a further 60 movements between British and Irish estuaries outside the same winter period, mostly between the east (Wash) and west coasts.

Sanderling

BX 17264	Ad	29. 7. 73	Wash	+ Joal, Senegal	0. 1. 76
BB 44099	Ad	17. 5. 69	"	v Langebaan, S Africa	13. 2. 77
BB 52287	Ad	22. 8. 70	"	v Teesmouth	23.11. 76

At Seaforth, Liverpool on 20.11.76 Sanderling ringed at Morecambe 28.8.68 and Lytham 23.10.76, and on 22.1.77 one ringed on the Dee 27.4.75 were controlled. Also on 6.3.77 at Southport (Ribble) five birds from the Dee (ringed 3.5.69, 24.5.71 (three) and 16.5.72) were controlled.

Ruff

DS 29089	Adm	14. 8. 71	Wisbech, Lincs.	+ Ebro Delta, Spain	16.11. 75

Rings above the 'knee'

Barry Spence has reminded us of a problem that may occur if waders ringed by some European schemes are retrapped. Several of these schemes commonly place rings above the 'knee', a position where it is easy to overlook them, especially if many birds are being handled. They may also be missed if small waders are held upside down for ringing (a position more frequently used for passerines), when, the ring may slide out of sight into the feathers.

We do not, of course, know how often such rings go unnoticed but several people know of cases where birds have been accidentally double-ringed because of this or where, when two people examined a bird perhaps for ringing followed by measuring, one has noticed the ring and the other has not.

The message is that we should take care that these valuable data are not lost in this way.

WESTERN CAPE WADER STUDY GROUP : SOUTH WEST AFRICAN EXPEDITION 1976-77.

A team composed of W.C.W.S.G. members visited South Africa from 30 December 1976 to 14 January 1977. The main aim of the expedition was to census the wader populations on South West Africa's two largest coastal lagoons, Sandwich Harbour and Walvis Bay Lagoon. Other sites were to be censused including 200 km of shoreline. The second aim of the trip was to trap waders for migration studies and attempt to concentrate on those species which were not readily trapped in the western Cape.

Walvis Bay Lagoon was adequately covered on 5 January and a total of 29,000 waders counted. The most abundant species were Curlew Sandpipers (9,000) and Sanderlings (8,000). The large number of Chestnut-banded Plovers (2,000) was of interest for such numbers of this endemic plover have not been recorded before. Other water birds included 17,000 Flamingo's and 600 Pelicans making this lagoon a rather spectacular wetland.

The logistics involved in censusing Sandwich Harbour were much more complicated such that a complete census was not achieved. Further, we underestimated the vastness of the southern salt pan and this coupled with shimmering mirages made the counting difficult. However, 10,000 waders were counted though a total figure may be double this number. Again Curlew Sandpiper and Sanderling were the most abundant species (2,000 each) and 1,000 Bar-tailed Godwits were also counted. There were fewer Flamingo's (5,000) but more terns (15,000).

The rocky shore between Walvis Bay and Swakopmund supported a surprisingly dense concentration of waders and 12,000 were counted on 22 km of shore. This population was composed primarily of 4,000 Turnstones, 3,000 Curlew Sandpipers and 2,000 Sanderlings. The shore was rich in mussel beds though the washed up kelp and shingle were also favoured feeding areas. Most of the other 190 km of shoreline censused was sandy and only supported a thin scattering of Sanderlings (4,000), Turnstones (1,000) and Grey Plovers (500).

Cape Cross Seal Colony was visited and all senses were suitably stimulated! As well as the thousands of seals there was a high tide roost of 600 Turnstones and 1,000 Sanderlings. We also saw 8 Black Oystercatchers which makes this sighting the most northerly recent record for this species. The Black Oystercatcher is endemic to the west coast of Southern Africa.

We trapped 1,084 waders, mostly by cannot net on the rocky shores of north of Walvis Bay (see Table 1). The catch included two long distance controls of Sanderlings, one from Port Elizabeth (E. Cape) and the other from the Olifants estuary (W. Cape). The

lack of controls of Curlew Sandpipers from the W.Cape, where many thousands have been ringed, suggests fidelity to the different non-breeding quarters. The large number of Turnstones caught was gratifying since the total ringed in South Africa to date is only 79. The high proportion of first year Turnstone, 58%, and Sanderlings, 37%, was of interest and contrasts with the situation in the W. Cape where ratio of first year birds is lower. There were fewer first year Curlew Sandpipers, 13%, but a high proportion of second year birds (a minimum of 40%.

A full report is in preparation and will be advised later.

Table 1 Ringing Totals

White-fronted Plover	18
Chestnut-banded Plover	2
Avocet	4
Stilt	2
Turnstone	323
Ringed Plover	3
Grey Plover	8
Curlew Sandpiper	557
Little Stint	7
Knot	12
Sanderling	141
Bar-tailed Godwit	7
TOTAL	1084

Ron Summers

WADER RINGING IN CO. CORK

A little wader ringing has been carried out at Ballycotton each autumn for about five years but in 1976 Kieran O'Brien and Patrick Smiddy began a programme of regular netting at Ballycotton and at a site in Cork Harbour. Ballycotton affords an excellent opportunity to catch Curlew as they fly to roost in a small saltmarsh adjacent to the seashore. Some 300 were ringed in the autumn of 1976, virtually all of which were in primary moult. Lack of manpower prevented us from processing these birds as fully as we would have liked but this situation should be remedied in 1977.

Some 250 Dunlin were ringed this year, the measurements of which confirm the pattern noted at other British and Irish estuaries i.e. schinzii passage in early autumn (Ballycotton bird recovered in Morocco), the wintering population consisting mainly of alpina birds. Reasonable samples of Oystercatcher and Redshank have also been caught.

Plans for next autumn include intensified efforts at Ballycotton and trial sessions at some new sites in Cork Harbour.

J K O'Brien, Trinity Hall, Dantry Road, Dublin 6, Ireland.

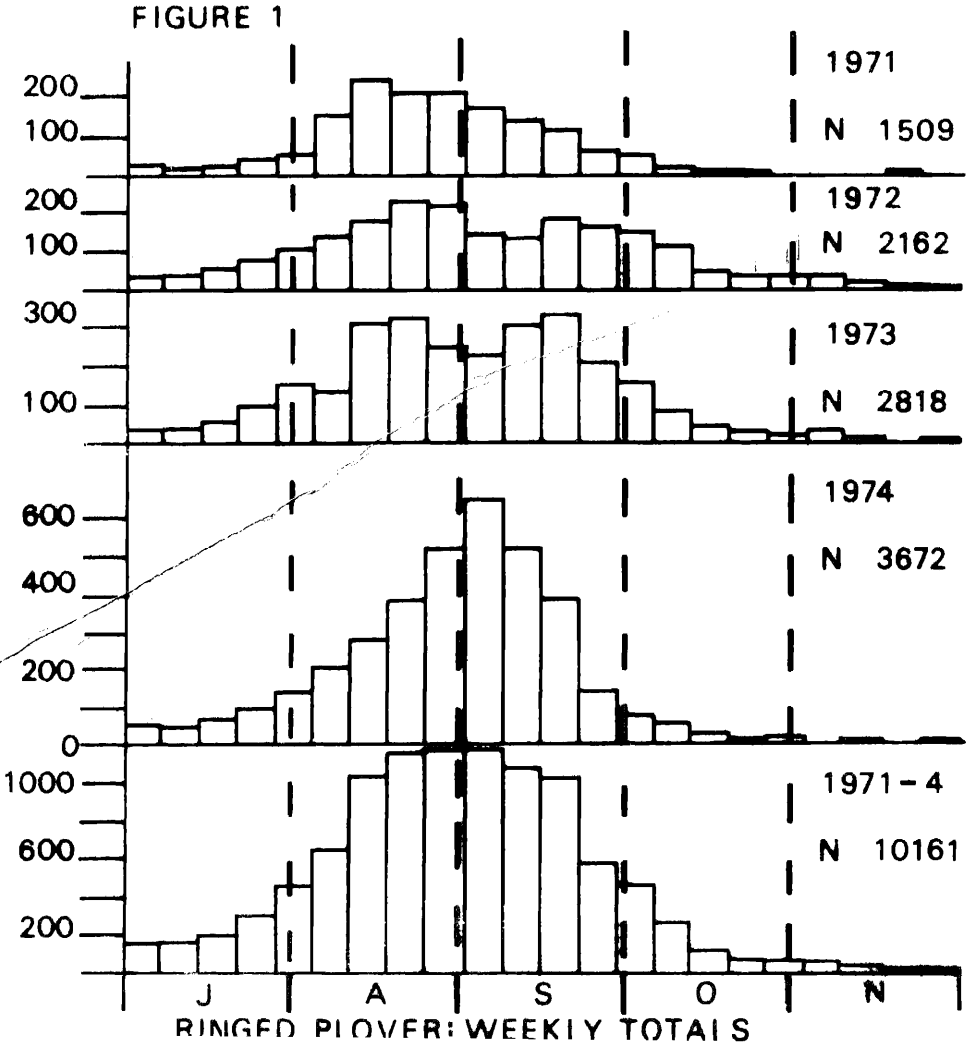
THE INLAND MIGRATION OF RINGED PLOVER (Charadrius hiaticula) IN AUTUMN

A paper summarising the data obtained from the Inland Wader Enquiry during 1971-1974 is in preparation. This analysis, intended as an interim report, summaries Ringed Plover data obtained from 21 selected inland sites in England and Wales. Ringed Plover was the fifth most abundant species recorded, being scarcer than Lapwing, Snipe, Dunlin and perhaps surprisingly, Ruff.

The graphs (Figure 1 below), illustrate the summated totals from these sites for the 22 weekly periods from July 1 to December 1. The 1971-4 total graph shows a large influx of birds in August followed by a rapid decline in late September and early October. Looking at individual years, however, 1972 and 1973 (when water levels were generally low in September) shows evidence of a bi-modal pattern, with peak numbers in mid/late August and mid/late September. 1971 shows only the earlier peak, and 1974 shows a large peak during the low water levels of early September; (although higher levels later in September may have masked a second influx). On the Wash, at least, adults predominate in August, with juveniles in September (Minton, 1975).. The two influxes suggested by 1972 and 1973 data may refer to passage adults followed by juveniles and/or local breeders moving (west?) after moulting, or perhaps to a more complex mixture of the two age groups of the populations involved (C.h. hiaticula from Britain, Iceland and Greenland, and C.h. tundrae from N Scandinavia and USSR.)

Brady (1949), giving totals for the Northumberland coast, recorded two peaks for each of the autumns from 1945 to 1947, the first being in late August or early September and the second four to six weeks later. Mason (1969) recorded peaks in late August and late September for Leicestershire during 1958-1967, but Eades and O'Kill (1976) only an August peak for the Dee Estuary. Baula and Sermet (1975) found peaks in mid-September and early October at Yverdon, Switzerland, for 1942-1972 data. Johnson (1974) recorded peaks in early and late September for the Camargue in 1972, and (in litt)late September peaks for 1973-1974. Harengerd et al. (1973) recorded peaks in mid- and particularly late September for 1962-1971 at Münster sewage farms. The timing of the peaks for the three continental sites implies that tundrae (presumably the population involved) is mainly a late September migrant in those countries. This study indicates, that while

FIGURE 1



RINGED PLOVER: WEEKLY TOTALS

adults of both hiaticula and tundrae pass through particularly in late August, mid-/late September influxes may be due to weather-drifted influxes of juvenile tundrae. Data indicate that these later peaks were more obvious in S E Britain, and that they occurred in years with low water levels in late September, along with influxes (especially in 1973) of Grey Plover, Greenshank, Spotted Redshank, Little Stint, Dunlin and Curlew Sandpiper.

Annual totals, representing the sum of weekly totals, are given with the graphs and may be used to assess annual changes in abundance. However, such a method may suffer from bias by several factors, notably the effects of water level fluctuations. The exaggeration in annual totals caused by long-staying individuals or flocks can be reduced by summating the weekly net gains (minimum arrivals) at individual sites. This laborious method gives annual totals of 428, 521, 670 and 843 for 1971-1974 respectively, thus confirming the degree of annual increases suggested by the easier method.

Summary

The overall picture for 1971-1974 tends to even out fluctuations noted in weekly Ringed Plover totals in individual years. Mid-/late August influxes may represent passage of mainly adults of both northern hiaticula and tundrae populations. Juveniles predominate in September and, in years with lower water levels, peaks towards the end of that month may represent influxes of weather-drifted juvenile tundrae. An impression of variations in annual abundance can be gained by comparing the simple summations of weekly totals.

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D. Smallshire, 25 Caspian Way,
Wheaton Aston, Stafford ST19 9PR.

WADER STUDIES ON THE MORAY FIRTH

The Beauly, Cromarty and Dornoch Firths, which together constitute the Moray Firth in its broadest sense, are the most northerly estuaries of importance to waders in Britain. The Estuaries Enquiry showed that in winter the Moray Firth held a total of about 28,000 waders, of which the totals of 2,800 Redshank and 1,700 Bar-tailed Godwit were of particular importance. The Firths, particularly the Cromarty Firth, are also of international importance for ducks, geese and swans. All the Firths are of outstanding natural beauty, surrounded by a varied agricultural and woodland landscape backed by the mountains of Inverness-shire and Ross and Cromarty. So far there has been relatively little industrial development, in contrast to the situation on almost every other British estuary. The Moray Firth is, however, a prime target for development, being in the centre of the North Sea oil boom. There are already Platform Fabrication Yards at Ardersier in the Inverness Firth and at Nigg in the Cromarty Firth.

The political weight behind oil was amply demonstrated recently by the decision by the Secretary of State for Scotland to over-rule the recommendations arising from the Public Enquiry into the proposed oil refinery at Nigg.

The Highland Ringing Group, already actively involved with seabirds, raptors and passerines, is keen to extend its operations to include studies on the waders in the Firths and will shortly have its own cannon net. Using a cannon net from The Wash, two successful catches were made in March this year, totalling 130 waders, including about 60 Redshank and 30 Oystercatchers, and a survey was made of the Firths for suitable cannon netting sites. There are many excellent sites for netting and the potential is enormous, once the vagaries of the local tides and feeding habits of the numerous peregrine falcons have been evaluated! The possibilities for catching Redshank and Bar-tailed Godwit, normally difficult species, appear to be very good.

The Moray Firth is on the same latitude as southern Norway and parts of the Baltic Sea, and is the most northerly important wintering area for waders in Europe. As such, studies could yield an interesting insight into the ecology of waders in a northerly wintering area which could be compared with areas further south. For example, what is the influence of shorter days and lower temperatures on wader feeding habits and mid winter fat accumulation? Why are there relatively fewer small wader species, e.g. Dunlin, on these estuaries? The Firths could be important staging posts for migrants either of Icelandic and Greenlandic origin or from Scandinavian and Russia. Similarly little is known of the relationship of the wintering populations to those further south or to local breeding populations. For example, many local breeding Oystercatchers are known to winter on the west coast of Britain, but do any winter in the Firths or are all the Oystercatchers wintering there of Norwegian origin?

Thus the ringing of waders by the Highland Ringing Group will have both strong scientific and conservation interest. The conservation interest will be of the most immediate importance as it has already proved difficult to present hard facts to planning committees considering the siting of oil developments. Information on local movements of waders within the Firths is urgently required to back up the conservation lobby, already well represented in the area. The Nature Conservancy Council has published its Moray Firth Prospectus and has carried out studies on the invertebrate and Zostera (eel-grass) distribution. Ringing studies will complement this and the Birds of Estuaries Enquiry and will provide some very interesting information in an area where little is at present known of the waders.

It is hoped that ringers from established wader groups, particularly those with cannon netting licences, may like to visit the Moray Firth to help with cannon netting. If so, they are asked to contact the secretary. David McAllister at 3 Springfield, Morangie Road, Tain, Easter Ross.

W.J.A. Dick and Roy Dennis

WAX LINING FOR RINGS PLACED ON NEWLY-HATCHED CHICKS

(this article is reprinted from the IWRB Woodcock Research Group Newsletter 2, Oct. 1976)

The BTO Ringing Committee are reluctant to permit general use of this on Woodcock pulli before trials have shown it to be harmless for the bird. Because of the difficulties in ringing Woodcock pulli and re-capturing them at regular intervals under natural conditions, we asked R & J Jackson to test the method during their work on Vanellus vanellus. They very kindly did so, and sent the following report:

1) Conclusions: Due to adverse dry conditions prevailing throughout the breeding season, the results of the experiment are inconclusive, although in our opinion treatment of rings with florists wax does not appear to have any adverse effect on the development of the pullus or leg growth.

2) Method: Green florists wax (a soft wax) was applied in an even coating inside 'D' rings placed on the legs of a sample number of Lapwing pulli, during the period 2-10 May 1976, in order to reduce the internal diameter of the ring and thus minimise ring loss (N.B. We have never encountered ring loss using 'D' rings on pullus Lapwing previously, but the species was being used as test). As far as possible the wax was applied evenly to an overall'depth'of 1 mm. The average measurement of a day-old Lapwing pullus tarsus at its broadest part (from 30 measured) was found to be 2.2. mm x 3.1 mm, therefore the effect of reducing the internal diameter of the 'D' ring was that the ring barely moved up and down the tarsus, but was nevertheless free to allow development.

3) Results: 14 one day-old pulli were ringed using the method, one from each of 10 broods of 4 or 3 and one complete brood of 4. Normally one would have expected to re-capture most of these individuals at least twice during the 30-35 days following ringing, up to the free-flight stage. However, due to the dry adverse conditions an extraordinary number of pulli failed to survive (this had nothing to do with the experiment as those ringed in the normal manner fared no better). By 10 days from hatching the average tarsus had developed to 2.4 mm x 4.2 mm and from two individuals recaptured at this age the wax had pushed up and over the edges of the ring, the legs had developed normally and there appeared to be no adverse effects. Only one of the 'waxed ring' individuals was recovered subsequently, 23 days after hatching, and there was no trace whatsoever of wax on the ring and the tarsus had developed normally.

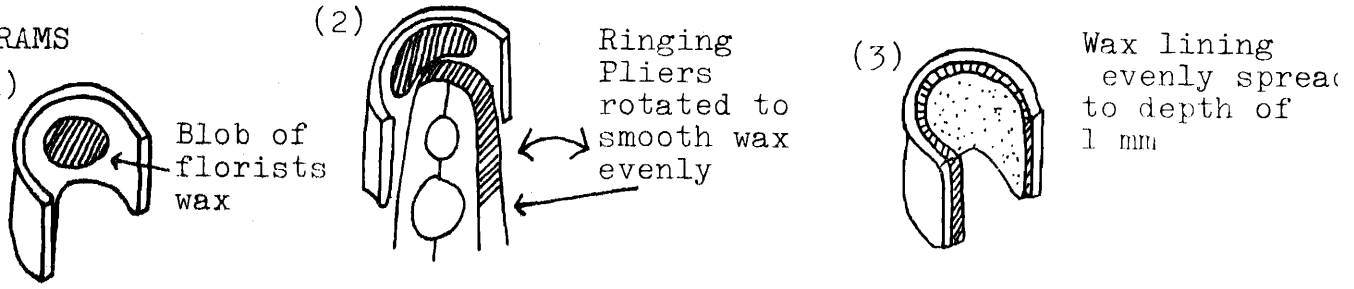
4) Opinion: We would prefer to see a further season's work under more normal weather conditions before expressing a firm opinion, as the re-capture data are too few, but from what we have seen so far we would not consider that adverse effects result from application of the wax, and it would appear to be an ideal preventative against ring loss.

5) Hint on application: We found that if a small blob of wax was placed internally in the half-open ring, and then smoothed over the whole internal surface evently with the outer edge of ringing pliers (see diagram), followed by ring application in the normal way, a more easy application resulted. Prior preparation was not favoured. The process took little time in the field.

Editor's Note: The best opportunity to ring a complete brood of Woodcock is at the nest, especially if a low meshed screen has been placed round the nest before hatching (c. 2 m away) while the sitting bird is off. 'E' rings may possibly be lost from newly-hatched pulli - and every one matters.

Monica Vizoso Shorten

DIAGRAMS



(This technique may enable many more pulli to be ringed but in Britain special permission is needed from the Ringing Office at the BTO. Workers abroad should consult with their ringing authorities before experimenting with it . Eds.)

Foreign ringed waders recovered in Britain and Ireland 1975

Oystercatcher

Arn	5047960	Pull	14. 6. 75	Friesland, Netherlands	v Wash	11. 9. 75
As	400036	Pull	14. 6. 73	Aust Agder, Norway	v "	12. 7. 75
Stv	536830	Pull	6. 7. 75	Hordaland, "	v "	5. 9. 75
Stv	543402	Pull	19. 6. 69	Rogaland, "	v "	8. 9. 75
Stv	545218	Pull	14. 7. 68	Sor-Trondelag,"	v "	6.10. 75
Stv	548142	Pull	28. 6. 74	More & Romsdal,"	v "	31. 3. 75

Lapwing

Arn	1016454	Pull	26. 6. 64	Friesland, Netherlands	x Broome, Warwk	12.10. 75
Arn	1023481	Pull	12. 6. 68	" "	x Alford, Lincs	30. 6. 75
Arn	1116677	Pull	31. 5. 75	Noord Brabant, "	x Newent, Glos	7. 8. 75
Arn	3054774	Pull	26. 5. 64	Noord Holland, "	v Blithfield, Staffs	16. 2. 75
Helg	5093094	Pull	6. 5. 67	Niedersachsen, W Germany	x Goole, Yorks	6. 2. 75
Stk	6049564	Pull	10. 6. 73	Halland, Sweden	+ Chelmsford, Essex	3.11. 75
Stk	6056527	Pull	18. 5. 71	Gotland, "	x Walton, Essex	0. 2. 75

Ringed Plover

Arn	H 117728	Pull	11. 5. 74	Noord Holland Netherlands	v Morecambe Bay	7. 9. 75
Arn	H 125124	Af	12. 5. 75	" "	v Portsmouth	24. 8. 75
Helg	80513133	Pull	7. 6. 69	Schlesing Holstein W Germany	x Spurn, Yorks	7. 3. 75

Little Ringed Plover

Par	SA 447834	1Y	24. 7. 74	Camargue, France	v Abingdon, Berks	26. 7. 75

Grey Plover

Par	FL 7167	Ad	12. 5. 67	Vendee, France	v Wash	10. 9. 75

Golden Plover

Arn	2011736	FG	20. 4. 68	Friesland, Netherlands	+ Earnley, Sussex	25. 11. 7

Turnstone

Rey	725549	Ad	6. 8. 72	Kjosar, Iceland	x Portstewart, Londonderry	30. 1. 75
Stv	7116372	Juv	18. 8. 70	More & Romsdal, Norway	v Teesmouth	14.11. 75

Snipe

Arn	1096955	FG	8. 8. 74	Friesland, Netherlands	+ Skipton, Yorks	13. 9. 75
Arn	2040764	FG	10. 8. 71	Noord Holland, "	+ Leiston, Suff.	15.12. 75
Arn	2020663	FG	12.10. 65	Texel, "	+ Banbridge, Co. Down	11.12. 75

Snipe (Contd)

As	721879	Juv	12. 9. 75	Akershus, Norway	+	Turriff, Aberdeen	15.11. 75
Hel	7408097	Juv	18. 8. 75	N. Westfalen, W Germany	+	Omagh, Co.Tyrone	29.10. 75
Helg	7537184	Juv	31. 7. 74	" "	+	Rockcorry, Co. Monaghan	26.12. 75
Helg	7560014	FG	2. 5. 74	Helgoland, "	+	Preston, Lancs	9.11. 75
Hels	B 44087	FG	27. 8. 70	Uusimaa, Finland	x	Corby, Northants	17. 6. 75
Hels	A439394	Pull	3. 7. 74	Kuopio, "	+	Omagh, Co.Tyrone	12.11. 75
Hid	7098929	FG	13.10. 75	Mecklenburg, DDR	+	Retford, Notts	6.12. 75
Kal	701563	FG	23.10. 69	Jutland, Denmark	+	Curry, Co.Westmeath	24. 1. 75
Kal	702551	Ad	16. 9. 70	" "	x	Selsey, Sussex	8.12. 75
Pol	F525750	Juv	4. 9. 74	Gdansk, Poland	+	Gt. Yarmouth, Norfolk	30.10. 75
Stv	7132230	FG	14.10. 73	More & Romsdal, Norway	+	Florencecourt, Co. Fermanagh	22.11. 75
Stk	4116813	Juv	24. 8. 75	Ottenby, Sweden	+	Glastonbury, Som.	12.11. 75
Stk	5086303	Juv	28. 8. 74	Malmohus "	v	Ratcliffe, Leics.	12.10. 75
Stk	4117713	FG	23. 7. 75	" "	+	Drumskanbo, Co. Leitrim	22.11. 75
Stk	5053359	FG	5. 8. 66	Narke, "	+	Coventry, Warwk.	0.11. 75

Woodcock

Arn	1034477	FG	25.10. 73	Texel, Netherlands	+	Diss, Norfolk	8. 1. 75
Arn	1110218	FG	29.10. 74	Friesland, "	+	" "	18. 1. 75
Arn	1110214	FG	23.10. 74	" "	+	Feakle, Co. Clare	21.12. 75
Hels	A449378	Pull	2. 6. 74	Uusimaa, Finland	+	Guisborough, Yorks	4. 1. 75
Stk	6033632	Pull	19. 5. 74	Oland, Sweden	+	E. Carmarthen	28.12. 75

Curlew

Arn	4046847	Pull	11. 6. 75	Overijssel, Netherlands	+	Kingsbridge, Devon	23.10. 75
Arn	5051759	Pull	21. 6. 75	Friesland, "	+	Canvey, Essex	22.10. 75
Brx	L 3252	Ad	12. 8. 68	W. Flanders, Belgium	+	Wash	31.12. 75
Helg	487043	Pull	6. 7. 75	N. Westfalen, W Germany	+	Connemara, Co. Galway	3.10. 75
Helg	490245	FGm	11. 5. 75	Niedersachsen, "	v	Camel, Cornwall	14. 8. 75
Hels	C244168	Pull	12. 6. 75	Lappi, Finland	+	Ytham, Aberdeen	10.10. 75

Bar-tailed Godwit

Stv	612990	FG	1. 9. 65	Revtangen, Norway	x	Tichwell, Wash	28.12. 75

Common Sandpiper

Cop	837680	Juv	15. 8. 62	Amager, Denmark	v	Yeovil, Somerset	22. 8. 75
Par	SA540304	Juv	13. 8. 74	Loiret, France	x	Cove, Dumbarton	21. 6. 75

Redshank

Hid	7107091	FG	2. 9. 75	Rugen, DDR	v	Butley, Suffolk	3.10. 75
Rey	619375	Pull	30. 6. 72	Holt, Iceland	v	Hull, Yorks	4. 3. 75

Knot

Arn	K472481	Ad	2. 9. 73	Vlieland, Netherlands	v Wash	6.12. 7
Arn	K545083	FG	13.12. 74	Friesland, "	v Wash	12. 7. 7
Rey	721503	Ad	15. 5. 70	Eyri, Iceland	v Ribble	6. 8. 7
Rey	721646	Ad	15. 5. 70	" "	v Wash	10. 9. 7
Rey	724830	Ad	21. 7. 72	Skogarnes, Iceland	v "	10. 9. 7
Rey	725211	Ad	28. 7. 72	" "	v "	10. 9. 7
Rey	725333	Ad	28. 7. 72	" "	v "	6.12. 7
Rey	723134	Ad	2. 5. 72	Hlidsnes, "	+ Strangford Lough	15.11. 7
Stv	7120077	Juv	29. 8. 71	Revtangen, Norway	v Wash	10. 9. 7

Little Stint

Osl	CA00249	Juv	17. 8. 75	Finnmark, Norway	+ Lough Neagh Co, Armagh	13. 9. 7

Dunlin

BTO	BX14562	Ad	10. 9. 72	Sidi Moussa, Morocco	v Newport, Gwent	1. 5. 7
Par	SA542159	Juv	2.11. 73	Banc d'Arguin, Mauritania	v Wash	9. 9. 7
Par	SA542396	Juv	6.11. 73	" "	v "	13. 7. 7
Prg	R 87385	Ad	9. 9. 73	Senne, Czechoslovakia	v "	10. 8. 7

Dunlin from the following countries were recovered, mostly controlled, in Britain and Ireland in 1975:

Finland (13), Sweden (44), Norway (43), Poland (7), DDR (1), Denmark (13), FRG (5), Netherlands (2), France (1) and Jersey (1).

Sanderling

Bol	CCF84236	Ad	9. 5. 75	Piza, Italy	v Wash	26. 7. 7
Rey	920146	Ad	14. 5. 72	Skogarnes, Iceland	v Dee	11. 5. 7
Rey	924508	Ad	2. 6. 74	" "	x Linisfarne	20. 3. 7

ALTERNATIVE WADER CATCHING

Introduction

Most full-grown waders are caught using cannon-nets or multi-shelf mist nets. Both are specialized techniques, best suited to group efforts where there are large numbers of waders. In 1974 the Oxford Expedition to Varangerfjord (a large fjord in north east Norway; see WSG Bulletin 13) had to find alternatives; the expertise and equipment for cannon-netting were not available, and multi-shelf mist nets are not effective in the arctic twilight. So, walk-in traps, single-shelf mist nets and clap-nets were used; over 3,000 captures were made by four people in a month, and, on one occasion 286 birds were caught in twelve hours; there must be many sites in Britain where these techniques could be used to advantage. Our experiences show that they certainly are not outdated, but are simply suited to different circumstances to the two major catching methods. We hope to convey some of the experience gained from intensive use of the three methods described, and enable wader ringers to catch more birds more safely.

Walk-in traps

a) Construction: two designs of traps were used: the "Ottenby" and "Revtangen", named after their sites of origin in Scandinavia. The former will be described in detail, as we found it to be the more efficient of the two. 'Twilweld' galvanized wire netting (2.5 x 1.3 cm mesh) was used. This netting has its own rigidity, so a frame is not essential.

The Ottenby is rectangular, with two slightly curved entrance funnels, one on each of the two long sides, and offset from each other (see diagram). On the two shorter sides smaller gathering cages are attached, with hinged lids for extracting birds. The main cage of our traps were 120 cm long, by 60 cm wide, and 45 cm high, but the size of the trap could undoubtedly be reduced, at least to 90 cm by 45 cm by 30 cm. The gathering cages were about 25 cm long, 18 cm wide and 20 cm high.

The roof of the trap is a single piece of netting, and the main walls two pieces. The ends of these two pieces are curved inwards to form the entrance funnels. The parts are sewn together with a suitable gauge wire, and even with our large traps the resulting structure was quite strong; if a trap gets a bit squashed it can be moulded back into shape. However, the strength could be increased by sewing a straight piece of thicker wire into the seam along each edge, and the traps used at Ottenby Bird Observatory have a wire netting floor which increases their strength and durability.

The gathering cages are attached to 18 cm x 20 cm openings cut out of either end of the main cage. They are built on the same principle as the main cage with small funnels of their own. The half of the roof furthest from the main cage is removed and a hinged lid attached to cover the opening. This lid must be held closed with a hook, or the occupants will be able to escape. It is possible to cut the gathering cage from a single piece of netting, with a second piece for the lid.

The funnels should be set surprisingly narrow, as birds will literally force their way in; a gap of 1.9 cm to 2.5 cm is right for Dunlin, and only 0.6 to 1.2 cm extra is needed for Ruff. We did not secure the funnels to the roof, but reset the gap each time we repositioned the traps. Spiky ends were not left on the netting, except on the bottom of the walls, where they could be dug into the substrate to hold the trap in position.

The differing widths of the main and gathering cages makes the traps awkward to handle. The modern design of the trap used at Ottenby B O has the width and height of the main trap reduced a little, while those of the gathering cages are increased, so that

these dimensions are the same for the two cages. The resultant trap is box-shaped with no projections, and is easier to store and make (see sketch).

b) Principles of Operation: the trap works on the principle of a maze. Feeding waders are chanelled towards the trap by 15 cm to 23 cm high wire netting guide walls; these are essential to efficient catching. The birds easily find their way in through the entrance funnels, but because the funnels are curved and offset from each other the birds inside the trap cannot see straight out of a funnel (c.f. duck decoys). Nor is it possible for a bird to walk in through a funnel on one side and straight out of the other (which did happen with the Revtangen.). The birds search around inside the trap and eventually end up in the gathering cages, having made their way through the funnels on these.

c) Siting: one of the biggest problems with wader trapping is finding a good site, ideally a feeding area which is not regularly flooded. In Norway, we initially trapped on an area of semi-tidal pools through which a river flowed; good feeding conditions were maintained by flooding by the sea at spring tides, at which times the traps could not be used. Later, the traps were set at a drinking and bathing place, and on vast mounds of rotting kelp heaped above the normal tide-line by a storm combined with spring tides. Traps are best set in groups, interconnected with guide walls, but single Ottenbies can be used effectively on the waters edge (in non-tidal waters) with the long axis parallel to the shore, and guide walls extending up and down the beach (see sketch). The floor of the main cage may be wet, or even have water to a depth of a few millimetres, but it is imperative that the floor of the gathering cage is not wet, or the birds will get damp surprisingly quickly. We found that several handfulls of sand in the bottom of the gathering cage prevented this.

d) Operating: traps are extremely safe to operate; conditions can be closely controlled and the problem of over-catching does not occur as birds can easily be released by opening the trap, thus making the technique ideal for single ringers. In good weather it was found that traps could be left as long as four hours between emptying. This does not mean that they can be left unattended that long, and they should be emptied more frequently in wet or windy weather or if many birds are caught. Birds do not become agitated until a person approached the trap, and will continue feeding inside, apparently unaware that they have been trapped. When waders are approached they usually walk to the opposite end of the trap and can be coaxed into the gathering cage in this way. Passerines, on the other hand, tend to flap around and if they cannot be persuaded into a gathering cage quickly it is better to release them. Some birds, particularly Snipe, are less calm in traps, and tend to abrade their head plumage by jumping repeatedly. If you are likely to catch this species the traps should be emptied regularly, and also, as suggested to us by Nigel Clarke, the roof can be made of a softer material, such as fine mesh terylene or plastic netting.

It is important to remember that birds in traps are vulnerable to human and animal predation. We had trouble with a Merlin which killed a Dunlin through the wire when it crowded into the 'V' shaped space between the funnel and side of the gathering cage; baffles fitted over this spot solved the problem. Dogs, people and especially children also pose a threat, so traps should be kept under observation from a distance.

If a trap is out of action for any reason, the two main funnels can be closed by pulling one side of each of the funnels to the outside of the trap, and the lids of the gathering cages fixed open. Alternatively the whole trap can be turned upside down, provided, of course, that it does not have a sewn-in base.

e) Ottenby versus Revtangen design: the Ottenby proved to be a better design than the Revtangen, the latter being triangular with a funnel in the centre of each side, and a single gathering cage at one corner. Whiltst the curved and offset funnels of the Ottenby held birds well, waders tended to walk straight through the Revtangens and out of an opposite funnel. Permanant gathering cages were not initially fitted to the Revtangens, which also resulted in escapes. The funnels had to be made and sewn in separately, as they were only half the height of the trap, and the triangular shape resulted in nasty edges to sew, and made the traps more difficult to store and transport.

A great deal can be discovered about the effectiveness of a trap by watching the behaviour of birds from a distance; whether it is designed well, sited correctly, and the funnels set at the correct width.

Single-shelf Mist Netting

During August we caught 1,600 birds in eight nets, a total length of under 100 metres. In the conditions there, from a few hours twilight at the end of July to five hours darkness each night at the end of August, this technique proved highly effective. The nets were made up from loose netting and tethered on the bottom shelf string. The nets were set on four foot (1.2 m) poles, and even long lines were easily set by one person.

Mist nets were often used in the same places as traps. Because the nets are not tall even slight rises in the ground can be exploited to provide backgrounds for the nets, and in some of these sites nets were effective even in broad daylight; Ruff were caught coming in to feed in a marshy depression surrounded by a metre-high bank. Multi-shelf nets, on the other hand, were not effective even when it became quite dark at the end of August.

Usually single-shelf mist nets are most successful when set at right angles to a shore, but we found that we caught many birds with the nets set parallel to the shore, but seaward to the feeding area, from which the birds were disturbed into the nets.

Nets were set as low as possible, and in general over dry ground. We found that large birds, like male Ruff, often did not become enmeshed and simply bounced out of the nets; setting the nets so that the pockets were much deeper alleviated this but of course reduced the catching area of the net. The largest birds we caught were Bar-tailed Godwits, Oystercatchers invariably bounced and most of our catch were Dunlins.

Single-shelf mist netting can be used wherever it is too light for multi-shelf nets; Ian Forsyth is using them successfully where city lights make multi-shelf netting impossible.

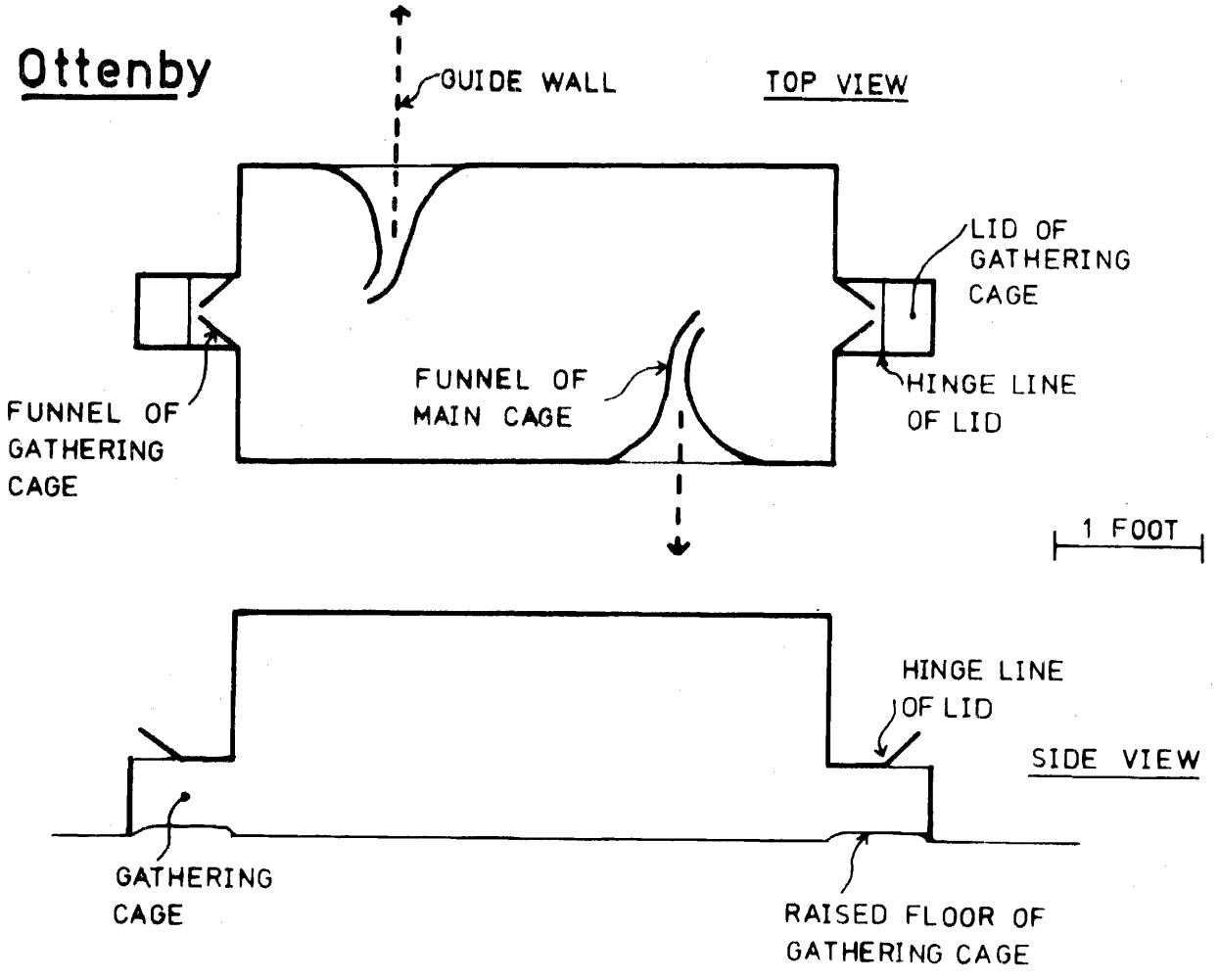
Clap-netting

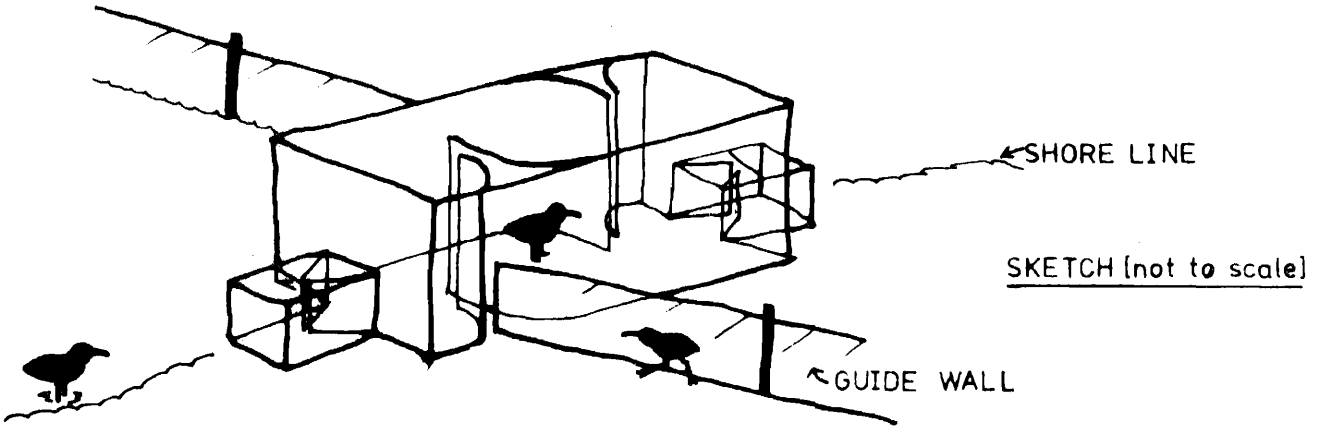
The nets we used had poles at both ends and were elastic powered. The tensioned elastic made the nets very fast but also potentially dangerous and great care must be taken. We do not intend to detail their construction, as clap-netting is best learnt from someone who knows how.

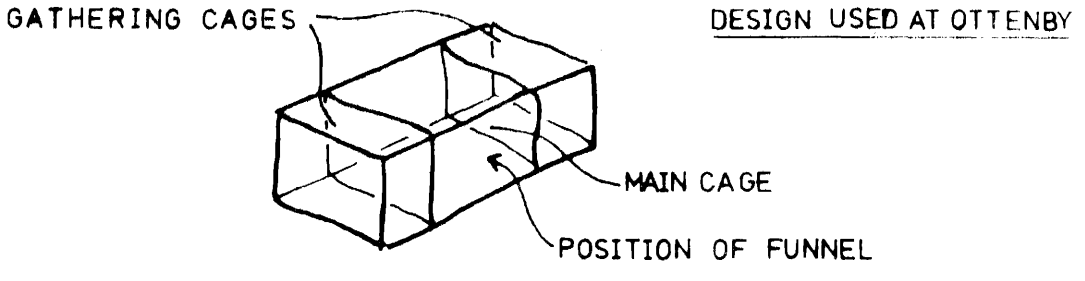
We caught nearly 400 birds on a tidal beach, but rarely more than three birds in one 'pull'. The nets were set on the tide-line, where birds fed on the tidalwrack all the time, or lower on the beach to catch feeding birds as they were forced up the beach by the tide. Catching on the rising tide was a matter of chance; there was only about a quarter of an hour when the tide was at the right height to keep birds in the catching area before the nets were washed out and had to be moved. However, frequently more than one catch was possible before this happened.

Clap-netting is hard work, but has certain advantages. It is highly selective, one can wait for a particular bird while others move in and out of the catching area. The fact that Curlew Sandpipers skirted the catching areas while Dunlin wandered amongst

Ottenby


GUIDE WALL
TOP VIEW
LID OF GATHERING CAGE
FUNNEL OF MAIN CAGE
HINGE LINE OF LID
FUNNEL OF GATHERING CAGE
1 FOOT
HINGE LINE OF LID
SIDE VIEW
GATHERING CAGE
RAISED FLOOR OF GATHERING CAGE


SHORE LINE
SKETCH (not to scale)
GUIDE WALL


GATHERING CAGES
DESIGN USED AT OTTENBY
MAIN CAGE
POSITION OF FUNNEL

our markers with gay abandon was just one of the frustrations attached to clap-netting. The second advantage was that clap-nets could be used in bad weather. In a four day gale, when traps were out of operation, and mist nets would not stand up, let alone catch, it was possible to continue clap-netting throughout.

Kate Lessells & Roderick Leslie
Miss C M Lessells, Edward Grey Institute,
Dept of Zoology, South Parks Road, Oxford.

INSTRUCTIONS FOR THE CONSTRUCTION OF BOXES SUITABLE FOR THE KEEPING OF WADERS

designed by Jack Sheldon, text by Anthony Williams

These instructions should be used in conjunction with examination of the diagram of a completed box.

(Measurements are given here in feet and inches as materials are still commonly supplied in this way in Britain. Overseas readers may like to note that 1 inch = 2.5 cm, 1 foot = 30.5 cm, approximately.)

Materials required

Plywood	:-	1 sheet (2 ft x 4 ft) of 3/8 inch Outdoor Ply.
1 in. x 1 in. timber	:-	This is probably not available, but there is a metric equivalent which is slightly smaller but is as good for the job. It is usually available in 6 ft lengths which is suitable as 5 ft 4 in. is needed for each box made.
Aluminium Strip	:-	1 inch wide. As far as I know it can only be bought in 6 ft lengths. Four strips are required for each box, the length depending on the height required for each box. (The large box I made had 16 in. strips, the small ones 9 in. strips).
Bolts, Wing nuts and washers	:-	For each box, four $\frac{3}{8}$ in. hexagonal headed bolts either 5 in. or 6 in. long. With these are required four of the respective sized Wing nuts and 8 washers.
Hop sack	:-	Choose one of medium thickness and of dark material. The sack should obviously have as few holes in as possible.
Varnish	:-	Any outdoor wood varnish, i.e. the cheapest.
Screws & Nails	:-	All screws should be steel, brass ones are not strong enough.
		12 x 1 inch screws.
		10 screws for the lid, size depends on the thickness of wood used for making the runners, see notes in assembly instructions.
		8 x 1 inch nails (panel pins).

Tools required

The only tools required that might not be found in the ordinary household tool kit (if such a thing exists) are:-

:- a $\frac{3}{8}$ in. bit and a bit the size of the panel pins to be used, both must be able to drill metal.

:- a key-hole saw.

:- a stout stapler.

:- the availability of an electric drill, although not essential, will save a great of time and patience.

Assembly instructions

The plywood should be sawn into 3 equal parts, 2 ft. x 16 2 pieces are used for the top and base of the box, the other piece being spare (but the correct size for constructing your next box, i.e. 2 pieces of plywood make 3 boxes). (Alternatively the base can be made of chipboard, covered with laminate. This can be washed very easily after use.)

IMPORTANT. Before sawing the plywood, mark with a pencil and score along the line on both sides using a sharp knife, the wood should not then splinter as much.

The hole for the lid should be cut in one of the pieces. This should obviously be large enough for the easy extraction of bird and hand together. I found 5 in. x 8 in. to be suitable. The best method I found of doing this was to mark out the hole, drill a hole wi a large bit, then use a key-hole saw.

Next cut the 1 in. x 1 in. timber into four 16 in. pieces.

The 6 pieces of wood should now be varnished well, preferably with 2 coats.

Saw each bolt in half, place the wing nuts on the 4 bolt halves without heads, and by using a fairly hefty hammer, knarl the ends of the bolts so that the wing nuts cannot come off. They will not now be lost in the field (or mud) whilst in use.

The 16 in. pieces of 1 x 1 should now be drilled at each end with the $\frac{3}{8}$ in. bit. It is difficult to get the holes straight and the presence of someone else to guide would be advantageous. The holes need to be of the correct length (of course), 2 pieces of 1 x 1 will have the head halves of the bolts in either end, the other two the thread halves in either end. The amount of bolt left protruding is important, the diagrams will, I hope, explain.

Cut the aluminium strip into 4 pieces of the required length. Drill $\frac{3}{8}$ inch holes in each end of the 4 aluminium support arm Then for each support arm cut out a section from 1 end, file down the ends and any nasty corners, the aluminium support arms are now complet

Now is the time to join the bolts and pieces of 1 x 1. Before putting the half bolts into the holes in the timber, make sure the washers and aluminium support bars are in their correct positions on the half bolt. It is best to put some glue into the holes in the wood before inserting the half bolts, it gives a stronger finish. Now drill with small bit of panel pin size in the correct position try and get the hole through the centre of the half bolt, and then knock the panel pin in place. It is best to have the head of the panel pin in a position where it will eventually be against the plywood; then it cannot come out.

The hop sack should now be sewn (difficult). Cut a piece 80 inches long, (2 x 16 + 2 x 24) - plus a few inches spare. Its width should be the desired height of the box plus two inches for an attachment hem at top and bottom, i.e. add an extra 4 inches. Merely sew the two ends together to give a continual band of sacking 80 inches long.

You are now ready to put the pieces together.

The 1 in x 1 in pieces are attached by three 1 inch steel screws, these should be counter-sunk and once in place varnish over the screw heads a couple of times to prevent rusting.

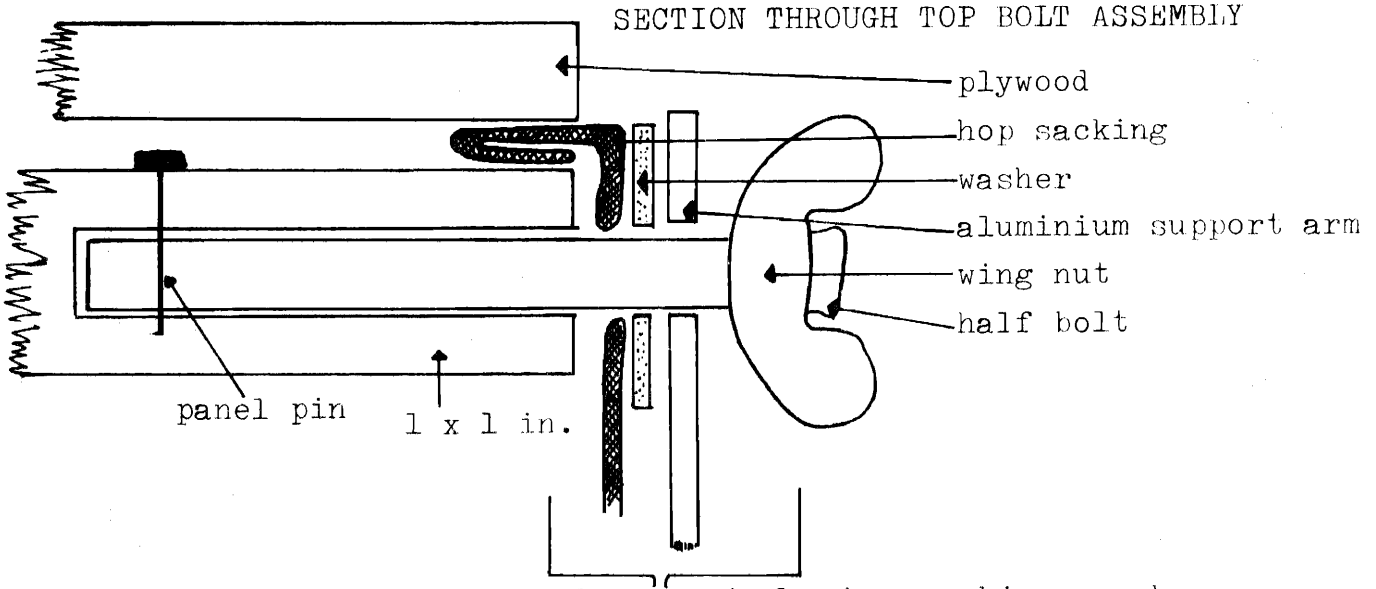
The correct sequence of assembly is important; in fact I doubt very much if you could get the complete lot together in any other sequence.

a) Firmly attach the two 1 x 1 pieces with wing nuts to the top piece of plywood.
b) Attach the other two pieces of 1 x 1 to the bottom piece of plywood, but only partially do up the screws as the sacking hem needs to go between the two yet.
c) Staple the sacking to top and bottom, if the support arms are fixed in the open position at this stage thingsmay go a little better.
d) Now by placing your hand through the hole in the top, whilst holding a screwdriver the two bottom pieces of 1 x 1 can be tightened up, with difficulty.

Once all these pieces have been put together all that remains to be done is the making of the sliding lid. The construction from look at the diagram of a made-up box. If the runner parts are made of thicker woodthan the door itself, then it will slide quite easily. Make sure that the screws used to not protrude into the box, or birds may damage themselves on the points.

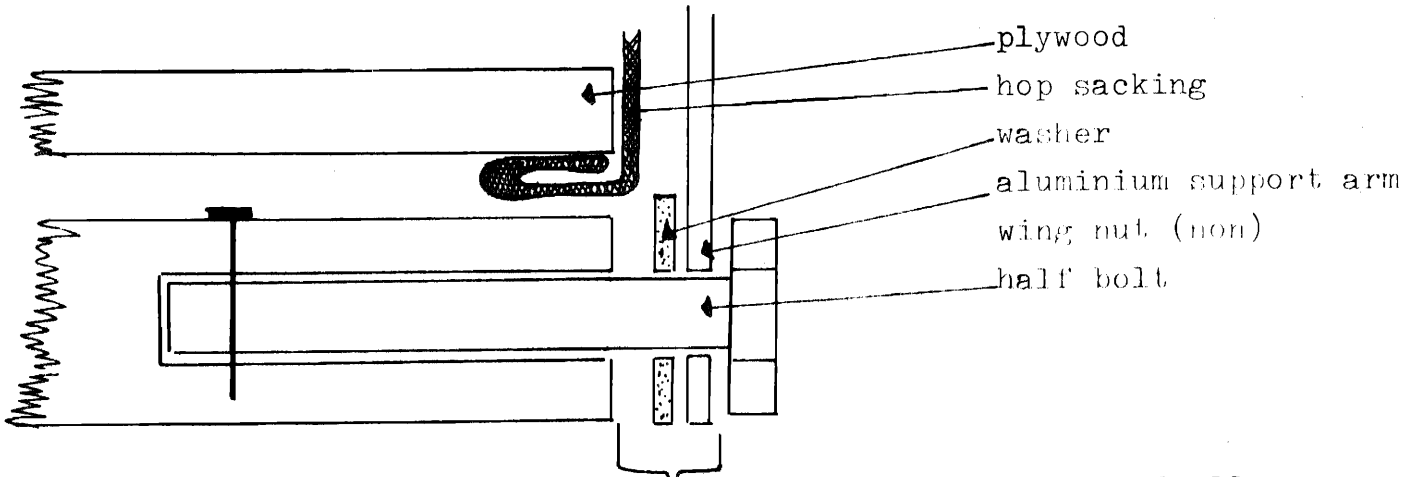
You are now ready to make another box, aren't you? Have fun.

SECTION THROUGH TOP BOLT ASSEMBLY

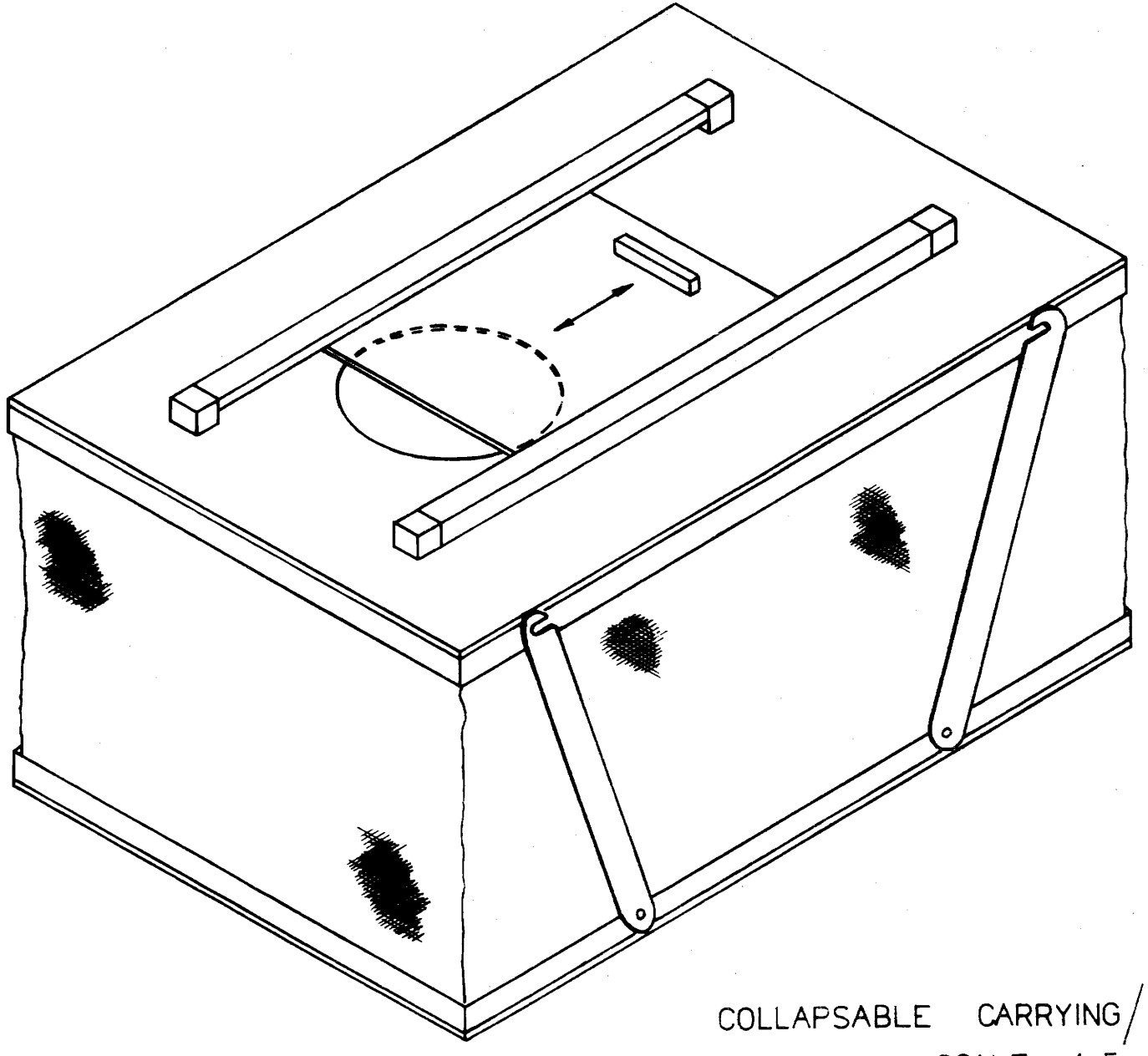


protrudence from 1 x 1 has to be enough for hop sacking, washer, width of aluminium strip and a certain amount of movement of the wing nut along the bolt, approx 1 inch.

SECTION THROUGH BOTTOM BOLT ASSEMBLY



protrudence from 1 x 1 has to be enough for the washer and allow some play of the aluminium strip.



COLLAPSABLE CARRYING/KEEPING BOX.

SCALE :- 1:5

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See also abstracts in Ibis, Auk and Bird-Banding

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Greenwood, J.G.	92 Liscard Road, Wallasey, Merseyside L44 8AB.
Pienkowski, M.W.	1 West Fenton Cottages, North Berwick, E. Lothian. EH39 5AL, Scotland.
Sitters, H.P.	Tanglewood, Plymbridge Road, Roborough, Plymouth, Devon.
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Please enter totals below, in separate columns for different ringing sites, if so desired. Full grown and pullus may also be entered separately.

				Total					Total
Oystercatcher					Other species:				
Lapwing									
Ringed Plover									
Little Ringed Plover									
Grey Plover									
Golden Plover									
Turnstone									
Snipe									
Woodcock									
Curlew									
Whimbrel									
Black-t Godwit									
Bar-t Godwit									
Green Sandpiper									
Common Sandpiper									
Redshank									
Spotted Redshank									
Greenshank									
Knot									
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