In contrast to the considerable advance in understanding of the autumn migration patterns of several species which resulted from the Moroccan and Mauritanian expeditions of the early seventies, information on spring migrations remains relatively scarce. Recently, interest has been directed towards this by two Wader Study Group projects (Ferns 1979; Dick 1979). However, of these, only the latter, that of Knot, was concerned with migration over a large geographical area. The notable absence of Knot from the present survey is consistent with the results of the W.S.G. study which concluded that only one major area on the Atlantic coast i.e. Baie d'Aiguillon in France, is used regularly by large numbers of this species on spring migration. The study of Dunlin, Sanderling, Turnstone and Ringed Plover movements was confined to the British Isles and for these and the other species seen in southern Spain these is little information available with which to compare present counts. Feeney et al. (1961) reported large numbers of waders only in the marismas of the Quadalquivir although they surveyed areas visited in the present study. Further they did not report any Curlew Sandpiper or Dunlin. Wilson et al. (1980) concluded that Curlew Sandpipers migrating south in autumn along the Atlantic coast of Europe followed a more easterly trans-Sahara and mid-Mediterranean route in spring. The counts reported here suggest that this view requires reconsideration. The large flock of Curlew Sandpipers at El Puerto de S. M. and the presence of birds at Cadiz suggest that northward migration, at least by some birds in some years, takes a more westerly course than suggested. Further study is required to confirm whether these areas are used regularly by Curlew Sandpiper and other species. It is hoped this can be carried out in the near future.

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IMPRESSIONS ON A TROPICAL MUDFLAT

by R.W. Summers

The habits of waders in the tropics are not well known in comparison to those in temperate and arctic regions. However the mudflats of tropical regions are the winter home of many species of waders. One of the most striking features of tropical mudflats is the fringe of mangroves at the top of the shore, rather than saltmarsh. These areas present problems for waders both at low tide and high tide.

I had the opportunity to make some observations on waders inhabiting the relatively tiny mudflats found in the Seychelles during November 1976. Observations were made at a small estuary on the west side of Mahe (the largest island) and at a bay near Victoria, the capital. At low tide the mudflat of the small estuary was about 40 m wide and there was a further 20 m of dense mangrove at the top of the shore. Both Red Mangroves Rhizophora mucronata and White Mangroves Avicennia marina were present and the tallest bushes reached about 5 m. The following waders were observed foraging on the open mudflat and among the mangroves; Grey Plover Pluvialis squatarola, Turnstone Arenaria interpres, Curlew Sandpiper Calidris ferruginea, Little Stint C.minuta and Whimbrel Numenius phaeopus. It was quite bizarre to hear Whimbrels calling from the depths of mangrove thickets when one usually associates these birds with wide open spaces. Most of the waders were solitary and groups of more than three were not seen. Actually, it would be difficult for flocks to maintain cohesion among the aerial and stilt roots. The mangroves were inundated to a depth of about 0.5 m at high tide and no waders were seen.

The bay at Victoria was more extensive and composed more from coral sand rather than river silt. The top of the shore had a belt of White Mangrove bushes which were small and scattered on the seaward side and taller and denser towards the land. In addition to the waders mentioned above, Greater Sand Plover Charadrius leschenaultii, Terek Sandpiper Xenus cinereus, Bar-tailed Godwit Limosa lapponica and Greenshank Tringa nebularia were also found here. Most fed on the open sandflat at low tide and few were seen in the mangroves. The impression was that wader densities were smaller than on temperate estuaries in winter. At high tide waders flew between the bushes to roost at the back of the mangrove fringe where patches of mud were still exposed. If the mangroves had graded straight into land forest the waders would have had difficulty in finding a roost site. It would seem that mist-netting waders by day in mangroves is a real possibility (see also A.L.Spaans 1979, WSG Bull. 25: 32-37). The roost was not large (about 150 birds) though fairly compact. The species present were Grey Plover, Greater Sand Plover, Mongolian Sand Plover Charadrius mongolus, Asiatic Golden Plover Pluvialis dominica, Turnstone, Curlew Sandpiper, Little Stint, Terek Sandpiper, Bar-tailed Godwit and Whimbrel.

Crabs were ubiquitous and probably formed the greatest biomass within the invertebrate community. Most were quite small (1-2 cm across the carapace) though large individuals (10 cm across the carapace) also occurred. They foraged on the mud surface within a short radius (about 20 cm) of a burrow down which they scuttled when disturbed. They quickly reappeared and resumed feeding when left undisturbed. Therefore, whilst waders foraged across the mudflat a moving circle devoid of crabs went with them, as crabs departed into and out of burrows. The waders which fed on small crabs (eg. Turnstone, Terek Sandpiper, Whimbrel and Greater Sand Plover) had to move very quickly over the mudflat in order to take the less wary. Crabs are not an easy prey to deal with once caught and I watched a Turnstone take several minutes to dismember and eat a Red-clawed Land Crab.

The Seychelles have tiny patches of mudflat and mangrove in comparison to continental areas: eg. in Africa, mangroves occur from Somali to the Transkei on the east coast, mainly at the deltas of the Rufiji (Tanzania) and Zambesi (Mozambique), and from Gambia to Nigeria on the west coast. The importance of these areas to western Palaearctic waders is relatively unknown!

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DURHAM UNIVERSITY EXPEDITION TO SIDI MOUSSA, MOROCCO - SEPTEMBER 1980

The Atlantic coast of Morocco is known to have several sites important as staging posts for waders migrating between their northern Palaearctic breeding grounds and their wintering area in Mauritania (Pienkowski and Dick 1975, Dick et al 1976, Pienkowski et al. 1976). The University of East Anglia (UEA) expedition in 1971 established Sidi Moussa (35 km south of El Jadida) to be one of the three most important sites in Morocco, and certainly the best for mist-netting waders. The site is a complex of artificial salt pans, intertidal lagoons and saltmarsh. Further expeditions in 1972 and 1973 successfully caught large numbers of waders at this site, and Sidi Moussa therefore seemed ideally suited to the aims of the current expedition, which are outlined below.

The expedition consisted of seven members, mainly from Durham University (past & present), and was timed to coincide with the spring tides occuring in early September.

At the time of writing (early October), there has been no opportunity for analyses, and we simply present the main aims and achievements of the expedition. The four principal aims were:

1. To capture migrating waders at a staging post to measure body condition of live birds (lipid and protein reserves), using techniques recently developed at Durham (Davidson 1979).
2. To measure the duration of stay of migrating waders at one such staging post, by means of dye-marking and follow-up counts.
3. To continue previous studies on the migration routes, geographical origins and moult patterns of the waders using this area.
4. To census waders and other species present in the area.

Achievements

Mist nets were in continuous use between 5 and 19 September, and despite attacks of suspected dysentry (causing various members to take up running) and several windy nights (no connection!!), a satisfying number of birds were caught. In addition to the wader totals (Table 1), 137 passerines and 106 terns were ringed. The latter include 68 Black Terns Chlidonias niger, a Whiskered Tern Chlidonias hybrida and a control of a British ringed Sandwich Tern Sterna sandvicensis (origin as yet unknown).

		New Rings	Controls [1]	Retraps [2]
Black-winged Stilt	*Himantopus himantopus*	6	-	-
Avocet	*Recurvirostra avocetta*	2	-	-
Ringed Plover	*Charadrius hiaticula*	71	-	1
Kentish Plover	*Charadrius alexandrinus*	67	1	6
Grey Plover	*Pluvialis squatarola*	5	-	-
Knot	*Calidris canutus*	4	-	1
Little Stint	*Calidris minuta*	106	1	3
Temmincks Stint	*Calidris temminckii*	1	-	-
Curlew Sandpiper	*Calidris ferruginea*	52	2	1
Dunlin	*Calidris alpina*	365	2	23
Ruff	*Philomachus pugnax*	8	-	-
Black-tailed Godwit	*Limosa limosa*	28	1	-
Bar-tailed Godwit	*Limosa lapponica*	4	-	-
Curlew	*Numenius arquata*	1	-	-
Spotted Redshank	*Tringa erythropus*	7	-	-
Redshank	*Tringa totanus*	65	1	4
Greenshank	*Tringa nebularia*	2	-	-
Common Sandpiper	*Actitis hypoleuca*	10	-	-
Turnstone	*Arenaria interpres*	43	-	1

Table 1. Numbers of waders ringed, controlled and retrapped at Sidi Moussa, September 1980.
1 Ringed by others 2 Ringed by this expedition

The waders captured on the first six nights were classified by weight as either good or poor condition individuals, and were marked accordingly with date-specific colour dyes. Subsequent counts and observations of these birds are hoped to yield interesting information on the duration of stay at the staging post.

The controls included 2 British-ringed Dunlins and a Dutch-ringed Black-tailed Godwit. Sightings of two darvic-ringed Flamingoes Phoenicopterus ruber were also made from a flock of 15 individuals present in the area. These were known to have been ringed in the Camargue breeding colony, as pulli in 1979.

Work is in progress to produce an expedition report, which we hope to complete by February. With memories of ringing Stilts and Avocets in shirtsleeves, our enthusiasm for attacking the Tees waders this winter must surely have suffered!

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