

ARRIVAL AND DEPARTURE TIMES OF PALAEARCTIC WADERS ON THE KENYA COAST

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Visiting Palaearctic waders account for a considerable proportion of the birds of the East African seashores in every month of the year. Harvey (1974) described their occurrence in the Dar es Salaam area, giving details of numbers and migration timing. However, apart from an account of a two-month study north of Lamu (Fogden 1963) and the data given by Britton & Britton (1976) there are few published details on the waders of the Kenya coast to add to the scanty information provided in the standard reference works (e.g. Mackworth-Praed & Grant 1957), whilst the recent summarized accounts of Britton (1980) are necessarily brief. In his review of trans-African migration in coastal waders Dowsett (1980) emphasized the need for further information from East Africa on migration timing in these species.

This paper summarizes our observations on the arrival and departure, visible passage and oversummering of the main waders species occurring on the Kenya coast from Diani north to the Sabaki/Malindi area. PLB has been resident near Mombasa since 1973, and made regular counts of waders during 1973-1975. DJP has made frequent visits to the coast since 1975, chiefly to study wader numbers and distribution.

OVERSUMMERING AND DISTINCTION OF AGE GROUPS

Twelve principal migrant wader species winter on the Kenya coast, using the intertidal zone as their main feeding area. These are the Ringed Plover *Charadrius hiaticula*, the Great Sandplover *C. leschenaultii*, the Mongolian Sandplover *C. mongolus*, the Grey Plover *Pluvialis squatarola*, the Common Sandpiper *Actitis hypoleucos*, the Whimbrel *Numenius phaeopus*, the Greenshank *Tringa nebularia*, the Terek Sandpiper *Xenus cinereus*, the Sanderling *Calidris alba*, the Curlew Sandpiper *C. ferruginea*, the Little Stint *C. minuta* and the Turnstone *Arenaria interpres*. The Little Stint and the Common Sandpiper are practically absent during the northern breeding season, but the other species all oversummer to a greater or lesser extent. Very few indeed of these oversummering birds are in breeding plumage, and most are presumably one year old.

To assess meaningfully the timing of autumn arrival it is important to be able to distinguish returning adults from oversummering yearlings, and also to be able to identify birds in their first autumn. In most species, returning breeders arrive with at least some trace of nuptial plumage, whereas oversummering birds are typically in full 'winter-type' body plumage. Moreover, many yearlings are already in advanced primary moult by August - early September, at a time when wing moult in adults has just started or has yet to do so. The first year birds of most species are identifiable early in autumn by distinctive juvenile plumages, but tend to replace these with adult-type winter body plumages during October. Whereas, however, most adult waders are in obvious primary moult during late September-November, first year birds then exhibit a full set of fresh looking flight feathers. Using good binoculars, characters such as the above provide a means of assessing the composition of populations in the field during the period August - early November.

In spring, the adults of most species moult partially or completely into distinctive summer body plumage before departure for their breeding grounds, and thus become distinguishable from first year birds. Only in the Little Stint, the Common Sandpiper, the Ringed Plover and, probably, the Terek Sandpiper (see Prater, Marchant & Vuorinen 1977) do first year birds typically

acquire a full summer plumage similar to that of adults. In some species, conclusions on the migration timing of different age groups have been reinforced by data on birds aged in the hand during regular ringing visits to Mida Creek during 1978-1980.

OBSERVATIONS ON INDIVIDUAL SPECIES¹

Ringed Plover *Charadrius hiaticula*

Winters in relatively small numbers, a few hundreds only, on sandflats and coral. Very few individuals oversummer. This species remains scarce during August, most adults arriving during September. It has not been possible to identify the main period of first winter influx. Numbers decrease in spring mainly during the second half of April, and few birds remain in early May.

Great Sandplover *Charadrius leschenaultii*

Numbers a few thousands in winter, particularly favouring tidal and estuarine sandflats in the Mida/Malindi area (e.g. over 500 frequently counted at Mida Creek tidal gatherings). Birds in non-breeding plumage commonly oversummer, with over 30 recorded during June-July at Malindi. Adults return quite early, building up almost to winter numbers during August, when much southward coasting of passage birds is evident. First year birds probably arrive mainly from late September to October. One was caught at Mida on 23 September, and mid-October catches there have involved a high proportion of young birds. It seems likely that the first and second waves of birds recorded at Dar es Salaam by Harvey (1974) would have represented the influx/passage of adults and first year birds respectively.

The majority of adult birds acquire partial or even full breeding plumage during late March and April. These brightly coloured birds depart mostly during the second half of April. Only small numbers remain in May, and these typically contain no breeding plumage birds by the middle of the month.

Mongolian Sandplover *Charadrius mongolus*

Occurs in thousands in winter on sandflats and coral. Small numbers of non-breeders oversummer, most of which have begun wing moult by August. The main adult arrival does not appear to be until September, later than in *leschenaultii*. First year birds have been caught at Mida in late September, and frequently during October. In spring, few adults acquire more than a trace of breeding plumage during April. Departure appears to be rather late, and some adults remain into the first two weeks of May, when full breeding plumage is more commonly seen.

Grey Plover *Pluvialis squatarola*

Numbers well over a thousand birds in winter, and particularly favours the estuarine sandflats of Mida Creek where counts of 400-600 birds are typical at tidal gatherings. Many non-breeding plumaged birds - perhaps all of those in their first summer - remain during May-July. The first adults, still in full or partial summer body plumage, arrive back early in August, but the main adult influx is during late August - early September. First year birds appear from mid-September, but mainly from October. In spring, most adults acquire at least partial summer body plumage before departing during the second half of April; few remain into May.

Common Sandpiper *Actitis hypoleucos*

Occurs in small numbers on coral, in mangroves and along muddy creeks. Adult

¹ Numbers refer to estimated abundance from Diani to Sabaki.

arrival is typically from mid-July, with full winter numbers already back by mid-August. Early autumn passage is, however, less marked than in the rift valley and at other sites inland in Kenya (authors' pers. obs.). Spring departure occurs mainly late in April, and this species appears to be totally absent during May - early July, first year birds as well as adults evidently migrating north.

Whimbrel *Numenius phaeopus*

Hundreds winter on mudflats and coral reefs. Many oversummer, and these birds, probably yearlings, are typically well advanced in wing moult by August. Adults, yet to begin wing moult, arrive mainly from about mid-August to mid-September, and birds can be observed at this time passing south offshore. The spring departure period is not easy to ascertain since summer and winter plumages are identical, and so many non-breeding individuals remain. However, a decrease in numbers at Mida seems to occur late in April, and birds have been recorded that month passing northward overhead calling at night.

Greenshank *Tringa nebularia*

A bird of mudflats, creeks and coral shores, which winters in hundreds. This is another species which remains in relatively large numbers throughout May - July, when the birds involved begin their wing moult. Adults appear to return mainly late in August, whilst birds in their first year have been netted at Mida only from October. Spring counts at Mida suggest dwindling numbers throughout April, with only oversummering birds present by early May.

Terek Sandpiper *Xenus cinereus*

A bird of sandflats and coral reefs, which winters in many hundreds, with counts of 100-150 typical at Mida Creek. A few birds oversummer. The main adult arrival is during August - early September. Unworn, unmoulted birds, presumably in their first year, have been caught at Mida from October onwards. To judge from spring counts at Mida, adults depart northwards mainly during late April, with only a few remaining to the first week of May.

Sanderling *Calidris alba*

One of the commoner wader species, occurring in thousands in all on tidal sandflats and sandy beaches. Small parties of non-breeding plumaged birds occur from May to early August, numbers fluctuating locally from day to day. These birds mostly begin wing moult about the end of June. Adults, with traces of breeding plumage remaining on the upperparts, begin to reappear in mid-August, and arrival and passage continues to at least mid-September. First year birds, with dark juvenile feathering above, appear in small numbers later in September, but arrive in force only in October. During April, adult birds again acquire traces of breeding plumage above. Such birds have left the beaches by early May, and the main spring departure appears to occur during the second half of April.

Curlew Sandpiper *Calidris ferruginea*

Probably the most abundant coastal wader, wintering in thousands, on tidal flats, muddy creeks and coral. Again, many non-breeding plumaged birds, perhaps all those in their first year, remain during May to July. Adults, with at least traces of breeding plumage, reappear on the creeks and beaches early in August, with continued arrival and a marked passage of coasting birds throughout that month and into September. Juvenile birds have been noted as early as 1 September, and are already common by the middle of the month. However, the main influx of young birds appears to occur during October. In spring, adults acquire partial and often full breeding plumage during late March - April.

They depart mainly during the last ten days of April, and only a few remain to early May. By mid-May, flocks consist entirely of non-breeding plumaged birds.

Little Stint Calidris minuta

Far less numerous on the coast than the Curlew Sandpiper, and more restricted to mudflats, sheltered sandflats and lagoons. Very few birds occur during mid-May - July. Adult arrival takes place mainly during August, and probably early September, whilst juvenile birds appear in increasing numbers during September and become abundant by October. Young and adult birds acquire full breeding plumage during March - April, and most depart late in April. Only a few birds remain to early May, and practically none thereafter.

Turnstone Arenaria interpres

Occurs in relatively small numbers, mainly on coral coasts and on sandy beaches with accumulations of wrack. A few non-breeding plumaged birds oversummer, beginning their wing moult about the end of June. Adults reappear at the end of August and during September, whilst young birds arrive late in September and in larger numbers during October. Adults acquire breeding plumage in spring before departing, mainly late in April.

DISCUSSION

The main influx of adult Palaearctic waders on the Kenya coast occurs during August and September, only a few weeks after their departure from northern breeding grounds, as detailed, for example, by Dement'ev & Gladkov (1969). Some species, such as the Curlew Sandpiper, the Little Stint and the Common Sandpiper, appear earlier than others, and are already numerous by mid-August. Adult Sanderlings, Turnstones and Grey Plovers arrive mainly from late August, and Ringed Plovers and Mongolian Sandpipers not until September. It is not easy to establish for how long the arrival of adult birds continues, but adults appear to be up to, or even above, wintering numbers by the end of September, whilst by October the great majority are in active wing moult. Many of the adult waders present in early autumn are undoubtedly passage birds. Southward coasting movements of small groups of birds are regular at this time. Earlier in August, these movements involve mainly Curlew Sandpipers, but later in the month, when they reach a peak, they include also many Sanderlings and Great Sandpipers, as well as Turk Sandpipers, Grey Plovers, Whimbrel and Turnstones.

First year Curlew Sandpipers are already common by mid-September, but the young of most species remain scarce until late September, and arrive in force only during October. Harvey (1974) recorded peak numbers for several wader species at Dar es Salaam during October. This is probably a time when the full overwintering adult population is present, together with peak first year passage numbers. Further counting would be required throughout the autumn to ascertain the extent and timing of any such peaking on the Kenya coast, but first year birds certainly tend to dominate flocks of the smaller wader species later in October, and much passage of young birds clearly occurs then.

In spring there is little evidence of wader passage on the Kenya coast. Diurnal coasting movements are not observed, nor do numbers appear to be any higher during March or April than in mid-winter. Most birds from wintering areas further south presumably cross Kenya or pass by offshore without stopping. Local wintering populations appear to maintain full numbers up to early April, but dwindle rapidly later that month. Only a few adult waders, mainly Curlew Sandpipers, Little Stints and Mongolian Sandpipers linger until early May.

The timing of migration in Kenya coastal waders makes an interesting comparison with that of waders wintering inland, particularly on the rift valley lakes, where recent ringing studies have provided much information. Arrival times inland are similar to those on the coast. Thus, adults of such major

species as the Little Stint, the Ruff *Philomachus pugnax*, the Wood Sandpiper *Tringa glareola* and the Curlew Sandpiper appear mainly during late August - early September, and first year birds mainly from mid-September, October or November. Spring departure, however, provides an interesting contrast, for many adult female Ruffs remain until mid-May. Moreover, the main departure of the large concentrations of overwintering Little Stints occurs over the first three weeks of May, as does the main departure/passage of adult Curlew Sandpipers. These last two species, which winter commonly both on the coast and in the rift, clearly adopt very different northward migration strategies in the two areas. Departure is delayed until much later inland, so that gatherings of hundreds of breeding plumaged birds are encountered regularly in the rift during the third (and even fourth) week of May, some two to three weeks after their virtual disappearance from the coast.

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(Received 20 November 1980)



Pearson, D J and Britton, P. L. 1980. "Arrival and departure times of Palaearctic waders on the Kenya coast." *Scopus* 4, 84–88.

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