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Continued inside back cover

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SCOPUS

BIRDS OF LATHAM ISLAND

J.D. Gerhart and D.A. Turner

Latham Island or Fungu Kizimkazi (6°54'S., 39°56'E.) lying 56 km south-east of Zanzibar is the most important seabird breeding station along the entire East African coast, and is the only known breeding ground of the Masked Booby *Sula dactylatra* and the Crested Tern *Sterna bergii*.

Fortunately the island lies sufficiently offshore (40 km) to deter canoe-borne fishermen from Dar es Salaam, while the scarcity of motor-powered boats in the area also prevents other fishermen and visitors from reaching the island. However, periodic visits have been made from as early as 1824 (Owen 1833), while the most comprehensive account of the island is that of Gwynne, Parker & Wood (1970) who visited it on 12 October 1967. Subsequent visits by ourselves in November 1971 and by Mathews (1973) in November 1972 noted considerable breeding activity and these findings, together with those of R.H.W. Pakenham in November 1948, are incorporated in this paper.

Latham is best regarded as an island in the Western Indian Ocean rather than an offshore islet similar to those in Kenya's Lamu archipelago (Britton & Brown 1974), and as described by Gwynne *et al.* (1970) is oblong in shape rising some 3 m above the high spring tide level. The main coral platform of the island is approximately 230 m long and 140 m at its widest point inclusive of a large sandbank which, depending on which monsoon is blowing, varies in size - as much as 120 m is exposed at certain times of the year (Moreau 1940). There are no trees or bushes on the island, and the very scanty vegetation consists mainly of two prostrate, fleshy-leaved herbs *Portulaca* spp. Guano deposits cover much of the island, though in general the surface is hard except in those areas where the guano is fresh and soft, when it varies in depth from 15 cm to as much as 1 m (Gwynne *et al.* 1970).

Latham Island is the most important East African breeding ground of several oceanic species, probably due to its relative remoteness and the fact that it is generally undisturbed during critical periods of breeding. As far as is known, breeding generally takes place from October - March during the calmer northeast monsoon, whereas breeding on inshore islets in Kenya takes place during July and August when seas are at their roughest (Moreau 1950, Britton & Brown 1974). Seas during April - August make approach to Latham extremely hazardous then, though local reports indicate that some birds (terns and possibly others) do breed during these months. Certainly the breeding season varies from year to year (e.g. C.J. Charlewood found Masked Boobies incubating eggs in May, R.H.W. Pakenham *in litt.*), but insufficient data are available at present to say just how varied these seasons may be. As suggested by Moreau (1950)

it is likely that breeding at Latham is correlated with optimum food supplies, though seasonal inaccessibility might be at least as important in determining seasons in more accessible sites (Britton & Brown 1974).

Unfortunately there are a number of rats resident on Latham, no doubt descended from survivors of some former shipwreck. R.H.W. Pakenham (*in litt.*) noticed large numbers in 1948 as did Gwynne *et al.* in 1967. Mathews (1973) saw only a few during his visit and although we did not actually see any ourselves in November 1971, broken eggs along one side of the Sooty Tern *Sterna fuscata* colony may well have been due to such a predator. R.H.W. Pakenham (*in litt.*) also came across a number of fragments of tern eggs, again no doubt due to rats.

To date a total of fourteen species has been recorded from Latham, which may best be categorized as follows:

BIRDS RECORDED BREEDING - 4 species

SULA DACTYLATRA Masked Booby

Recorded breeding on Latham as early as January 1824 when there were eggs and young in all stages (Owen 1833 given by R.H.W. Pakenham *in litt.*). Observations made on subsequent visits may be summarized as follows:

1918 Adult specimens with two nestlings in down collected by F.B. Pearce on 3 November and deposited in the Zanzibar Museum. The adults, which were first thought to be Brown Boobies *S. leucogaster* were later identified in the British Museum as *S. d. melanops* in immature plumage (Moreau 1940).

1923 Latham visited by C.J. Charlewood in November, whose photographs at the time 'showed numbers of very white and very dark Sulidae apparently nesting together. Of 36 recognizable birds in one photograph, 12 were dark, and of 34 in another 21 were dark' (quoted by R.H.W. Pakenham *in litt.*).

1936 Visit by G.F. Cole who found thousands of Sulidae (both brown and white birds) breeding in November. Photographs sent to Moreau of brooding examples, some brown, some white (Moreau 1940).

1938 Cole visited the island again (at Moreau's request) in December, but numbers breeding less than in the previous visit. However, Cole reported 'brown birds were actually on eggs and young' during this visit, many of which were driven off nests. As a result, Moreau (1940) concluded that it was clear that only one species of Sulidae bred on Latham, and that about one third of the population did so while in immature plumage. He also remarked that this was paralleled by other boobies e.g. *S. piscator* on its Galapagos station.

1944 Latham visited by L.P. Lane who recorded breeding on 18 February with *c.* 5000 present at dusk, but only 1000 at 0900 hrs the next day, and only 200 an hour later (R.H.W. Pakenham *in litt.*).

1948 Visit by R.H.W. Pakenham and party on 25 November. Breeding was in progress and 367 adults and 188 immatures were present by 0800 hrs, plus about 100 birds flying round and perhaps another hundred foraging in nearby fishing grounds, thus giving a total of about 750 birds in all, of which some 400-450 were breeding. Nests contained mainly one or two eggs, occasionally three, and young in all stages. At the time Pakenham, bearing in mind Cole's statement that he drove many

brown birds off their nests in December 1938, made a special point of observing whether immature birds were breeding or not, but did not see a single immature bird in charge of a nest. The only one seen taking any interest in a nest containing a chick a few days old, pecked gently at the chick as though teasing it but did not brood it. Presently this bird surrendered the nest to an adult and moved on to another nest from which it was also driven off by an irate owner.

1951 A visit by V.G. Glenday on 19 March when between 1000 and 2000 birds were nesting, many nests contained newly hatched young (R.H.W. Pakenham *in litt.*).

1967 The visit of Gwynne, Parker and Wood on 12 October. They reported nests of both *S. dactylatra* and *S. leucogaster* from eggs to young at all stages. Specimens of both species were reported by Parker (1970) and deposited in the National Museum, Nairobi. Gwynne *et al.* (1970) state that all breeding adults of *dactylatra* were in white plumage and that there were no signs of birds nesting in brown immature plumage as recorded by Moreau (1944). (See below.)

1971 Latham visited by ourselves on 19 November. 500-550 nests at all stages from eggs to quite mature young. Clutches with either one or two eggs and one with three. Approximately 200 nests contained small chicks while some had young almost the size of adults. We also saw 13 individuals in brown immature plumage but there was no indication that they were breeding.

1972 Mathews visited the island on 23 November when he found about 200 pairs breeding: all stages from eggs to almost mature young were present (Mathews 1973).

Latham was also visited by Frazier during one October in the early 1970s. His subsequent article which appeared in July 1976 (Frazier 1976) referred to both *dactylatra* and *leucogaster* nesting. Although Frazier himself realized that the recording of *leucogaster* was in error long before publication date, this was unfortunately not made clear in the article (A.W. Diamond pers. comm., and see below).

As can be seen from the above records, there have been many instances of 'brown birds' present on Latham during breeding, and thought by many to be breeding themselves. Theories on these 'brown birds' from several observers and authorities have ranged from a population of *dactylatra* breeding in immature plumage (Moreau 1940) to a breeding colony of *leucogaster* alongside *dactylatra* (Gwynne *et al.* 1970), from which specimens attributed to *leucogaster* were obtained by Parker (1970), and referred to subsequently by Britton (1977a).

Recently, A.W. Diamond, who has had considerable experience with the Sulidae, both in the Caribbean and the Indian Ocean, found, on closer examination of the two specimens in the National Museum labelled *leucogaster* collected on Latham on 12 October 1967, that they had been wrongly identified and were in fact immature *dactylatra*. This finding has been readily accepted by I.S.C. Parker (pers. comm.). A.W. Diamond (pers. comm.) has also questioned *dactylatra* breeding in immature plumage since no species of booby is known to do so; he also believes that Moreau (1940), who remarked that the breeding of *dactylatra* in immature dress was paralleled by *piscator* in the Galapagos, was in error in that *piscator*

(=*Sula sula*) has two colour morphs in the Galapagos, the commoner one being brown, very similar to the immature plumage (but quite distinct, once known).

Visits to the island by Pakenham in November 1948 and ourselves in November 1971 confirm that while brown plumaged birds were present at the breeding colony and observed standing alongside nests with either young or eggs, they were not the occupiers or parents of those nests or young. There is no evidence whatsoever that brown immature plumaged *dactylatra* have bred at Latham Island, only that immature birds are present during the breeding season, often in quite large numbers, and frequently in close association with nests when the adults are absent at the time. We feel that Cole, in December 1938, may have mistaken immature birds standing alongside nests as the occupiers of those nests.

It is hoped that the confusion which has long surrounded the 'brown birds' on Latham has now been clarified.

ANOUS STOLIDUS Brown Noddy

On 19 November 1971 the Brown Noddy appeared to be just beginning to breed. Approximately 2500-3000 birds were present on the island, though only 300-400 appeared to be actually nesting. All nests examined contained a single egg. The birds showed a marked preference for the rocky edges of the island, and nests were on the ground among small stones and rocks on the extreme edge of the Sooty Tern colony.

This was the first time the species had been recorded from Tanzania; in Africa it rarely occurs south of the equator, though it breeds annually in small numbers in Kenya south to Whale Island (Britton & Brown 1974). Mathews (1973) also recorded this species from Latham in November 1972 when he estimated that there were two colonies of fifty or more birds, again nesting on the rocky promontories of the island, though he did not indicate whether the nests held eggs or young.

STERNA BERGII THALASSINA Crested or Swift Tern

On 19 November 1971 we observed approximately 750-1000 birds in two small breeding colonies, although only 200-300 nests were actually located. All nests contained a single egg except one which had two; the eggs had been laid in a scrape in bare soil at the edge of the booby and Sooty Tern colonies. At the time this was the first confirmed breeding record of this species from Tanzania, though Gwynne *et al.* (1970) had found the remains of tern eggs during their visit in October 1967 which were later thought to have possibly belonged to this species. Similarly Pakenham, in November 1948, came across large fragments of a tern egg which, from its size and description, may also have belonged to this species. Mathews (1973) also recorded Crested Terns breeding in November 1972, when he estimated 200-500 pairs all with young about a week old.

STERNA FUSCATA Sooty Tern

Thousands of Sooty Terns rose from Latham like a dust storm as our boat approached when we visited the island in November 1971. It was impossible to make an accurate count during our visit, though we estimated that there were at least 30 000 birds present, and at least 10 000 nests with birds incubating a single egg. All nests were amongst the short fleshy-leaved succulent *Portulaca* growing over much of the island, and along one side of the colony we noticed many broken egg shells, though there was no sign of young birds. In November 1972, Mathews (1973) reported a similar scene, and at the time he estimated between 50 000 and 100 000 birds as not an

unreasonable estimation with both chicks and eggs present. As Gwynne *et al.* (1970) did not record this species during their visit in October 1967 and only broken egg shells (possibly of this species) were found by Pakenham in November 1948, it may be that Sooty Terns breed only sporadically on Latham. The only other reference to the occurrence of Sooty Terns there was by Cole who found terns breeding, though not regularly, which Moreau (1940) felt were Sooty Terns - possibly 'the Sooty petterels' of Owen's visit in 1824.

MIGRATORY WADERS AND OCEANIC SPECIES RECORDED - 11 species

PHAETHON LEPTURUS White-tailed Tropic Bird
Mathews (1973) saw two birds between Mafia Island and Latham in November 1972. This was the first record from Tanzania.

FREGATA sp. frigate birds
Whereas frigate birds are recorded almost annually off the East African coast, and undoubtedly occur also at Latham Island, only Mathews (1973) is able to provide a record. He observed two birds in November 1972 but was unable to positively identify them to species.

HAEMATOPUS OSTRALEGUS Oystercatcher
Mathews (1973) saw a small group flying along the shoreline at Latham in November 1972. Although there are only a few records of this species from the East African coast it has, on a number of occasions, been recorded from off-shore islands and out at sea, which suggests that this Palaearctic species may prefer such off-shore habitats to the mainland (Backhurst, Britton & Mann 1973).

The following seven species are all common Palaearctic migrants along the East African coast and would normally be expected to occur annually on Latham: *Charadrius leschenaultii* Greater Sand Plover, *Numenius phaeopus* Whimbrel, *Tringa hypoleucos* Common Sandpiper and *T. nebularia* Greenshank all recorded by R.H.W. Pakenham (*in litt.*) on 25 November 1948; *Pluvialis squatarola* Grey Plover and *Calidris ferruginea* Curlew Sandpiper were seen by ourselves on 19 November 1971 and the Turnstone *Arenaria interpres* has been seen in small numbers by Pakenham, Mathews and ourselves.

In addition, Mathews (1973) reported seeing a phalarope which he thought was possibly a Grey *Phalaropus fulicarius* at Latham in November 1972. This is recorded only very rarely from the Indian Ocean (Feare & High 1977).

PROBLEMATICAL RECORDS

[*SULA LEUCOGASTER* Brown Booby
This has only been recorded from East African waters on very few occasions. There is no record from Latham, see discussion under *dactylatra* above.]

ARDEIDAE herons and egrets
Gwynne *et al.* (1970) refer to the possibility of Reef Herons *Egretta schistacea* having nested on Latham Island in the past: they refer to Moreau (1940) who considered that the bluish egg shells found on Latham by Cole in 1936 could have been those of Reef Herons. Although we consider this extremely unlikely both on zoogeographical grounds and because the Reef Heron is a tree-nesting species, we think there is a distinct possibility the egg shells in question may have belonged to dark phase

Little Egrets *E. garzetta*. P.L. Britton (*in litt.*) informed us that *garzetta* (mainly dark phase) nest on the ground at Kisite Island off Shimoni on the south Kenya coast, and may well have done so on Latham in the past.

PLATALEIDAE spoonbills

Gwynne *et al.* (1970) mention that D.W.I. Piggott (*in litt.* to R.E. Moreau) said that, according to local reports, spoonbills spent the period April to October on the island. Moreau (1944) considered that if this were so, there might be an outlying colony of the Red Sea race of the European Spoonbill *Platalea leucorodia archeri* on Latham. However, we consider this most unlikely: *archeri* is non-migratory, and spoonbills are, on the whole, generally uncommon along the East African coast. We feel that such local reports probably referred to an oceanic species.

GLAREOLIDAE pratincoles

Mathews (1973) reported seeing a small flock of pratincoles, which he thought were probably Madagascar Pratincoles *Glareola ocularis*, off Latham in November 1972. This species occurs annually on the East African coast from April to September before returning to its breeding grounds in Madagascar (Britton 1977b). While it is possible that Mathews saw a late group on their return journey, we feel that it is unlikely. Pratincoles *G. pratincola* from the African mainland are unlikely to occur at Latham, while Eastern Collared Pratincoles *G. maldivarum*, which on occasion reach Seychelles and Mauritius (Féare & High 1977), are even less likely to occur as far west as Latham.

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THE AFRICAN PITTA AT GEDI RUINS, KENYA

Galen B. Rathbun

The African Pitta *Pitta angolensis* is a seldom seen bird in East Africa, partly because it lives in dense forest habitats not often visited by people, but also because it is probably relatively rare (Moreau 1966). Thus it is not surprising that little is known of its natural history (Burke 1969). The following observations are based on 121 sightings of the African Pitta (= Pitta) at the Gedi Historical Monument (Gedi Ruins, Gedi Forest), Malindi, Kenya. The monument is a 44 ha area which protects 13th Century Arab ruins. Except for some clearings around the major ruins, the area is covered with a lowland, semi-deciduous forest, dominated by the large *Commbretum schumanii* and *Gyrocarpus americana* trees, and the smaller *Lecaniodiscus fraxinifolius* in the understorey. All the Pittas were seen on the forest floor.

I lived within the forest from April 1971 to December 1972 while studying the ecology and social structure of the golden-rumped elephant-shrew *Rhynchocyon chrysopygus*. The principal study site was located in the southern third of the forest and consequently all the Pitta observations were restricted to this area (Fig.1a and Rathbun 1976).

The Pitta was not seen between 6 November 1971 and 22 April 1972. Its absence during this dry period, and its migratory behaviour in eastern Africa generally, are discussed by Britton & Rathbun (1978).

DAILY ACTIVITY

During 1972 47 per cent. of my search time was between dawn and noon and 53 per cent. between noon and dusk: I saw Pittas 74 times during this year year, 39 in the morning and 35 in the afternoon period. These figures are not significantly different from the expected number of sightings based on the proportions of my search time before and after noon ($P < 0.5, \chi^2$ test). Thus the suggestion by A.D. Forbes-Watson (pers. comm.) that the Pitta might be more active in the morning does not seem to be true at Gedi Ruins.

It has also been suggested that the Pitta may restrict its activity to areas of deep shade, avoiding the frequent patches of sunlight on the forest floor; however, there was no indication of a pattern in the location of the bird sightings at Gedi in this respect.

The Pitta appears to be a very sedentary bird during the time it is at Gedi. I often observed a bird in the morning and, when I returned later in the afternoon, it was seen only 3 or 4 m from its earlier location. On a visit to Gedi Ruins in August 1975 I spotted a Pitta on the morning of 23rd; Tom Huels, a visiting ornithologist, made at least 20 repeated sightings of presumably the same individual during all times of the day over the next two days, always within 10 m of the initial sighting location (Fig.1a).

FLIGHT REACTION

The African Pitta, despite its rather bizarre colouration, is exceedingly difficult to spot on the poorly illuminated forest floor. Observation is made even more difficult by the bird's motionless foraging strategy. It is most easily detected when the leaf litter is very dry - the bird then produces a characteristic 'crunch, crunch, crunch' sound as it makes large hops on the forest floor. If approached slowly and quietly, the Pitta is very tolerant of ones presence: it takes flight at a distance of about 7 m and, when cautiously approached, it will maintain this distance by hopping away from the observer.

While trapping elephant-shrews at Gedi with brown nylon fishing nets (10 m long, 1 m high, 7 cm mesh) strung loosely along the forest floor, I accidentally captured four Pittas. I netted a fifth Pitta, after frequently seeing it in the same area for many weeks, by taking advantage of its tolerant and cautious retreat behaviour and slowly herding it into a previously strung elephant-shrew net (see 'Red Pitta' below).

If a Pitta is suddenly startled or is persistently disturbed, it will take flight and usually flies directly to a limb about 3 m above the ground and perches motionless, as described by Mackworth-Praed & Grant (1957). If further disturbed, it will fly away through the forest at about the same height, but if left undisturbed it will drop to the forest floor in a few minutes.

I heard no vocalizations nor the wing flapping sound produced by perching birds as described by Chapin (1953).

FORAGING BEHAVIOUR

The most common foraging pattern I observed was that of a lone bird standing motionless on the forest floor and presumably listening and watching for invertebrates in the 3-5 cm deep leaf litter. These periods of watchful immobility lasted for approximately 3-5 min, after which the bird hopped 1 or 2 m away to a new location. When a prey item was detected, the Pitta hopped and then lunged towards the item, and captured it with its bill. On one occasion I saw an individual forage by sweeping the leaf litter aside with its bill, then pausing for one or two seconds with its head turned to one side, presumably examining the newly cleared spot for prey items. The only food items eaten which were large enough to be identified were 10 cm-long earthworms. The worms were ingested by being slowly mandibulated and partially swallowed several times before they were finally swallowed entirely. This food item was not found in the stomachs examined by Harvey (1935). My overall impression of the Pitta's foraging behaviour is that it is very thrush-like.

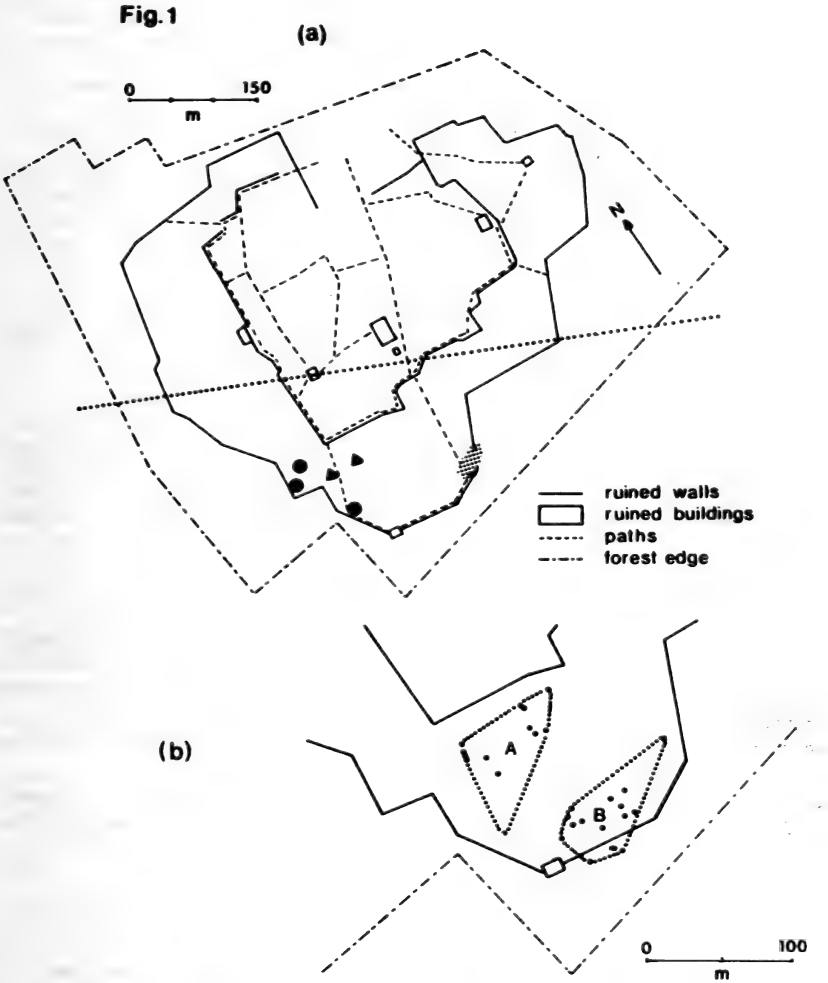

Fig.1 a) *Map of Gedi Historical Monument, showing main study area within the ruins (south of heavy dotted line) and African Pitta sighting loci for 1973 (●), 1974 (▲), and 1975 (shaded). The 1975 area represents about 20 sightings over three days*

b) *Home ranges of two African Pittas within the main study area in 1972.* A = *'Red Pitta',* B = *unmarked Pitta*

HOME RANGE

I ringed three of the five Pittas netted; two with E.A.N.H.S. metal rings (the right leg on one bird, the left on the other) and one with a metal E.A.N.H.S. ring and a red PVC ring. I only resighted the red-ringed bird, which became known as 'Red Pitta'.

In 1972 Red Pitta was sighted 13 times between 24 September, when it was captured and ringed, and 22 October, after which it presumably migrated. Connecting the loci of these sightings so as to construct a convex polygon (Jennrich & Turner 1969) I calculated a home range of 3523 m^2. During the same period I made 14 sightings of an unringed Pitta in the area adjacent to that of Red Pitta. If these sightings are considered to be of a single individual, which I believe to be the case, then it was occupying a home range calculated to be 3056 m^2. The two birds' home ranges were very near one another (Fig.1b), exclusive, and no territorial behaviour was observed.

While carrying out the elephant-shrew research during September and October, I systematically searched the study area portion of Gedi Forest every day and saw only the two Pittas, which indicates that it was not a common bird.

I completed the research and left Gedi Ruins in December 1972, but I revisited the area subsequently in order to monitor the elephant-shrews on 27 October 1973, and 17 to 21 June 1974. On the first visit I resighted Red Pitta three times and on the second visit twice (Fig.1a). These five loci were all close to the 1972 home range of this individual. I did not see Red Pitta on a visit to the forest in June 1975, despite an intensive search.

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TWO MIGRATORY THRUSHES AND THE AFRICAN PITTA IN COASTAL KENYA

P.L. Britton & G.B. Rathbun

The movements of many intra-African migrants are now well documented, especially at higher latitudes where they form an important element in the avifauna, typically arriving with the summer rains and breeding during these wet months. In Kenya, which straddles the equator, movements of many species are obscure and often overlooked. Contrary to popular belief, many tropical environments are highly seasonal, though forest habitats are comparatively equable. Coastal Kenya is the most southerly part of the country, at 2-5°S., but with April-July rains rather than the typical November-April pattern of the southern tropics (Griffiths 1958).

This paper presents data on three species which reside in the forests of coastal Kenya during and after these wet months: the Red-capped Robin-Chat *Cossypha natalensis*, the little known Spotted Ground Thrush *Turdus fischeri fischeri*, and the seldom observed African Pitta *Pitta angolensis longipennis*. G.B.R. was resident at Gedi Ruins, south of Malindi and adjacent to the Arabuko-Sokoke (=Sokoke) Forest, from April 1971 to December 1972, studying the elephant-shrew *Rhynchocyon chrysopygus*. During this time, and on later study visits, he made incidental observations on the forest birds, especially species dwelling on or close to the ground. P.L.B. has lived near Mombasa since May 1973, and has made numerous visits to Sokoke Forest during this period and earlier.

COSSYPHA NATALENSIS

Data available to Britton (1971) suggested that this robin-chat is mainly absent from the Kenya coast between January and April, with only 6 per cent. of records in this four month period. At the time he considered the possibility of any movement speculative in the absence of an obvious ecological explanation. Recent data in Tables 1 and 2 confirm that it is present only from late April or early May to November or early December.

TABLE 1

Extreme dates of occurrence of Cossypha natalensis, Turdus fischeri *and* Pitta angolensis *at Gedi (1971, 1972), and of* C. natalensis *at Sokoke Forest and Bamburi (1973-1977)*

Species	year	arrival	departure	
C. natalensis	1971	13 May	23 November*	*GBR absent for a
	1972	21 April	23 November	few weeks after
	1973	4 May	24 November	this date.
	1974	16 May	17 November	+PLB on overseas
	1975	9 May	24 October+	leave from
	1976	1 May	12 December	28 October.
	1977	22 April	26 November	
	1974	24 April	19 November#	#data from Bamburi
	1977	11 May	23 November#	(see text)
T. fischeri	1971	27 May	23 November*	
	1972	20 April	20 November	
P. angolensis	1971	9 June	6 November	
	1972	22 April	22 October	

The data from Bamburi (near Mombasa) are based on twice-monthly ringing visits by H.A. Britton and P.L.B. to thicket on coral rag. This habitat,

previously forest and now mainly secondary growth thicket and scrub, is imporatnt as a habitat for this species, occupying as much as 400 km² (Moomaw 1960), approximately the same area as Sokoke Forest. In remnant forest alongside his house near Bamburi, P.L.B. hears this species only between May and November, and in his few visits to the Kaya forests near Ribe (inland from Mombasa) he did not record it in March but found it very common in May. J.Squire (*in litt.*) found it common in Jadini Forest south of Mombasa in August 1975, but found very few in April 1975. M.Heath (*in litt.*) recorded it daily in her garden at Malindi; 13 April - 19 November 1977, and noted its absence after 5 November 1975 and 18 November 1976. The evident absence of this species between December and April is especially striking as it is so numerous when present; it is the commonest ground bird at Gedi and the most frequently caught bird in most of the coastal forests worked by P.L.B.

TABLE 2

Numbers of Cossypha natalensis *captured at two localities in coastal Kenya in different months*

	J	F	M	A	M	J	J	A	S	O	N	D
SOKOKE birds	-	-	-	-	5	15	23	23	21	13	5	2
Net-hours	112	200	174	110	55	80	120	800	175	110	80	164
BAMBURI birds	-	-	-	1	4	4	3	4	2	1	1	-
Net-hours	135	100	125	135	85	85	65	75	85	80	100	70

Notes: net-hours refer to 3 or 4 panel mist-nets of length 60 feet (about 18 m) set by P.L.B., evening and early morning only, except in August at Sokoke when nets were usually open throughout four day periods (closed only at night).

Rainfall figures from Gedi over a 30 year period show that the five months November-March are on average the driest, with virtually no rain in January and February, so that food might be expected to be scarce in these months. However, data on invertebrate abundance in the leaf litter of Sokoke Forest do not support this view. G.B.R. considers it possible that his sampling technique, with ten samples each month, may not be fine enough to fairly reflect the food of this species. Compared with the *Turdus* and *Pitta* it is a generalized feeder which will hawk insects, glean leaves, scrape in the leaf litter and feed on insects flushed by driver ants *Dorylus* spp. and elephant-shrews (Elliott 1950, Rathbun 1976) or exposed by *Turdus fischeri* (M. Robbins *in litt.*).

Dates of occurrence on the Kenya coast suggest a southerly origin, like that of the African Golden Oriole *Oriolus auratus*, Pygmy Kingfisher *Ceyx picta natalensis* and Black Cuckoo Shrike *Campephaga flava*, which breed in the southern tropics and spend part or all of the off-season in coastal Kenya (Jackson 1938, Britton 1973, Britton & Britton 1974). It is, however, still numerous in coastal Kenya in September-November, when it is also at its most numerous in Zambia (Britton 1971). Available data suggest that it breeds in coastal Kenya. Well-developed song is heard only in May and June when there are other clear signs of territoriality, and the majority of partly spotted immatures are caught in August and September (never in May). The only bird moulting remiges had almost completely replaced its primaries on 22 June, and these had been fully replaced when

retrapped on 21 July. It is extremely unlikely that both breeding and moult could take place during the species' absence from coastal Kenya, as a complete moult of the remiges of the African passerines handled by P.L.B. takes a minimum of 4 - 5 months.

Racial differences recognized by Clancey (1959) and Benson *et al.* (1971), show that Kenya birds do not originate from inland sites at higher elevations, whether in Kenya (e.g.Teita) or farther south (e.g.Zambia). Coastal Kenya birds are referable to *C.n.intensa* which occupies coastal areas from Somalia to Mozambique. The lack of a pattern of occurrence in coastal Tanzania led Britton (1971) to suggest that some coastal Kenya birds might spend December-April along the lower Tana River (Kenya) and the lower Juba River (Somalia), where records were confined to January-March and June. Later J.F.M.Horne (*in litt.*) saw an adult feeding an immature (out of the nest) on 31 August 1972 in gallery forest on the lower Tana, and P.Agland (*in litt.*) saw six on the lower Tana near Mnazini on 28 February 1976. P.L.B. recorded none in gallery forest near Garsen on 25-26 February 1977 though he saw and heard many there in August 1972. It is likely that some Tana birds are resident, though some may move south to Sokoke and other coastal areas in the rains, when the ground in gallery forests might be waterlogged or inundated in some years. However, the area of gallery forest along the lower Tana is only a small fraction of the area of Sokoke Forest, and is probably less than 1 per cent. of the area occupied by this species in coastal Kenya (see figures in Andrews, Groves & Horne 1975).

Thus the location of coastal Kenya birds in the dry months of December to April remains a mystery which is unlikely to be solved except by ringing recoveries. There is a dearth of records from any part of its range during these months, except for eastern Rhodesia, where *C.n.hylophona* is a breeding visitor at this season, wintering in the Mozambique lowlands (Britton 1971). The virtual lack of records from Mozambique north of 16°S. is unlikely to represent a real absence, as there has been very little collecting in this large tract of country (Hall & Moreau 1970, Map A). It is possible that coastal Kenya birds spend the period December- April further south in coastal Tanzania and Mozambique, where rain is plentiful at this season. It is noteworthy that coastal birds mimic the call of the Emerald Cuckoo *Chrysococcyx cupreus* which is not recorded from the Kenya coast or the lower Tana River, nor anywhere within 150 km of Sokoke Forest.

TURDUS FISCHERI FISCHERI

This small race of the Spotted Ground Thrush is endemic to Kenya coastal forests and Pangani in coastal Tanzania; between 1885 and 1964 it was only recorded twice (Keith & Twomey 1964). It was considered a very rare bird until G.B.R. found it to be seasonally numerous in the 44 ha forest reserve at Gedi, where it is probably the third most numerous bird on the forest floor (outnumbered by *Cossypha natalensis* and probably by the Eastern Bearded Scrub Robin *Cercotrichas quadrivirgata*. There is reason to believe that it occurs at a far greater density in the ruined city than in the neighbouring Sokoke Forest; 3-5 birds are routinely reported at Gedi on a morning walk (many observers) yet it is very rarely seen in Sokoke Forest which P.L.B. and others have worked thoroughly in recent years. At Gedi it is possible that the accumulated detritus from the prolonged occupation of the city over a period of about 300 years might have significantly improved the feeding opportunities for this species (and influenced the composition of the forest trees, Rathbun 1976). Equally well it might favour wetter areas occupied by lowland rain forest, with

a mean annual precipitation of over 1000 mm (Moomaw 1960), rather than the drier forest types which form the bulk of Sokoke Forest. Early records are from coastal localities with high rainfall at Lamu, Kipini, Mambrui and Pangani (Fischer 1879, Hellmayr 1901, Jackson 1938); and it was numerous in forest on coral rag at Jadini in August 1975 (J.Squire *in litt.*) and at Shimoni in early September 1976 (four seen, one netted, P.L.B.). Unlike the Sokoke Forest, Gedi Ruins are on coral rag, and it may in fact have a preference for the uneven ground characteristic of coral rag forests.

Gedi dates in Table 1 show that it is present during the same period as *Cossypha natalensis*, from April or May to November. Dated records for this race from throughout its range are summarized in Fig.1, using Burrell & Abel (1976), Fischer (1879), Hellmayr (1901), Irvine & Irvine (1977a,b) and Keith & Twomey (1968), as well as records supplied by G.C.Backhurst, L. Campbell, P.R.Colston, C.F.Mann, D.J.Pearson, H.Pelchen, J.Squire and D.A.Turner. Birds in thicket at Bamburi might have been on passage. All records fall in the period late March to late November (no precise date is available for the March bird at Sokoke).

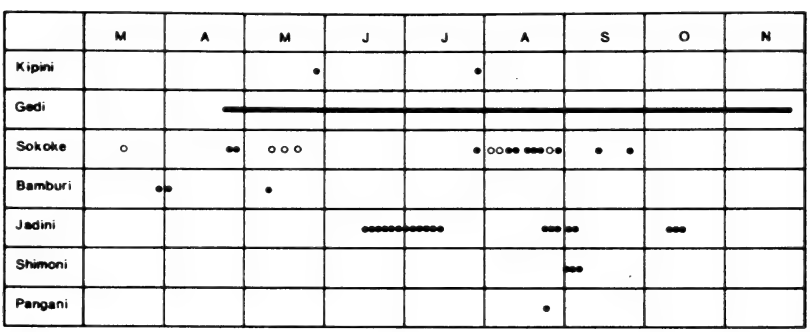

Fig.1 *All records of* Turdus fischeri fischeri*: filled circles (and the continuous line) represent dated records; open circles are records for which only the month is known*

Moreau (1966) described movements of southern African *T.f.natalicus* mostly in the Durban area, and Hall & Moreau (1970) note that South African birds are migratory, breeding south of 30° S. and moving north in winter. The evident movements of *T.f.fischeri* are nevertheless unexpected. It has never been recorded south of Pangani or north of Lamu, always below 60 m a.s.l., so that it is difficult to suggest where it might reside from December to April, a period for which there are only two records, both in March. Movements to the gallery forests along the Tana River seem unlikely as it is unrecorded there except at the mouth. The few birds handled for ringing were not moulting remiges, but there are no other data suggestive of breeding in coastal Kenya, and three out of four recorded sub-adults were in April-May, which suggests that breeding takes place elsewhere.

Data available indicate that this is exclusively a ground feeder, so that movements away from the Kenya coast in months when food is readily

available in the leaf litter are surprising; its diet includes millipedes *Prionopetalum* sp. and ants (A.D.Forbes-Watson pers.comm., Burrell & Abel 1976).

Wing-lengths of *T.f.fischeri* and *T.f.natalicus* given by Keith & Twomey (1968) did not overlap. More recent data, together with their data and those of Fischer and Hellmayr, give wing-lengths of 17 birds as 108-119 (mean 112.6 mm) which overlaps with the larger *natalicus*, though the mean for *natalicus* is 119.7 mm. Weights of four sub-adults were 51.6, 52, 53.5 and 55.5 g, while adult weights were 54, 54, 54, 56, 56, 58.1, 59, 59 and 65.4 g.

PITTA ANGOLENSIS LONGIPENNIS

Benson & Irwin (1964) have described the movements of this pitta in eastern Africa and have shown that it a long-distance migrant breeding south of 8°S. during the southern rains and migrating north to the vicinity of the equator (north to 4°N. in Zaïre) during April-September. Most information on this species comes from exhausted or perished migrating birds, and it was Sclater & Moreau (1933) who first suggested that it might be a migrant owing to the frequency with which it was attracted at night to lighted windows at Amani in northeastern Tanzania in May. All five Kenya records given by Benson & Irwin (1964) are of such birds, in the vicinity of Nairobi between late April and June; and there are three subsequent Nairobi records on 18 May 1964, 27 May 1976 and 7 August 1967, the last in a year of atypical weather (Brown 1970, National Museum collection).

The dates in Table 1 show that this pitta is present at Gedi over roughly the same period as the two species already discussed, except that it probably leaves earlier in November. Arrival and departure dates are less reliable than for these other species because of the low density of the pitta and the likelihood of overlooking it. Published records from the Kenya coast are of collected birds in Sokoke Forest on 19 and 25 July 1965 (Ripley & Bond 1971), an injured bird picked up on the road at Diani in October 1965 (Black 1970), and one seen in Sokoke Forest on 23 June 1970 (Horne 1971). In late August 1975, J.Squire (*in litt.*) recorded it twice in Jadini Forest, where G.B.R. saw one on 5 June 1976 and Irvine & Irvine (1977a) saw one on 10 October 1976; Squire also saw one at Gazi on 22 August 1975. One given a red ring by G.B.R. at Gedi on 24 September 1972 was seen regularly until 22 October, and was seen again in the same vicinity on 27 October 1973 and 17 - 21 June 1974 (for full details of home range see Rathbun 1978). G.B.R. and T.Huels saw one on at least 20 occasions at Gedi on 23 - 25 August 1975. The only subsequent Gedi dates are 11 October 1976 (D.Costiche *in litt.*) and 12 - 16 June 1977 (M.Heath *in litt.*); a bird seen by P.L.B. on 12 August 1977 is the only recent Sokoke Forest record. Despite the presence of two females with enlarged ovaries in July 1965 (Ripley & Bond 1971) it is highly unlikely that pittas breed in Kenya, especially as all 121 sightings at Gedi in Rathbun (1978) were of solitary, silent birds - breeding birds often reveal themselves by their loud calls (Harvey 1938).

It is interesting that this pitta should winter on the Kenya coast as far south as Jadini (4°19'S.) and Gazi (4°25'S.) when to the west it has been recorded on passage considerably further north, for example at Nairobi (1°17'S.). An interesting northern Tanzania record additional to the May records at Amani (5°06'S.) in Benson & Irwin (1964) is of a bird found dead at Ngorongoro Crater (3°10'S.) on 28 May 1970 (Gerhart 1970). Other Tanzania records are from further south: on southward passage

between 9 November and 1 December; coastal breeding birds at 9-10° S. between 16 November and 27 February, including eggs collected on 22 December; and an anomalous sighting in the Rukwa valley at 7°41'S. on 11 July 1958 (Benson & Irwin 1964, Burke 1969, Harvey 1938, Stjernstedt 1970). In Zambia it is a breeding visitor from late October or early November to March or April (Benson, Brooke, Dowsette& Irwin 1971). All but four of the 35 records from Rhodesia in Benson & Irwin (1964) and Benson, Brooke, Dowsett & Irwin (1970) are for the period 10 November - 24 December, when they were on southward passage; and there is a similar pattern of occurrence in Malawi (Benson & Irwin 1964, Harrison 1966).

Uganda is evidently a wintering area, with all seven dated records between 28 May and 31 July; west of Uganda there are records from north of the equator between 28 May and 21 September, and there is evidence of passage in eastern Zaïre in April and May (Benson & Irwin 1964). A bird collected near Addis Ababa at 9°03'N., 2440 m a.s.l., on 3 July 1970 was 900 km north of any previous record (Urban & Hakanson 1971). Birds residing in the more equable coastal lowlands of eastern Africa may well mi migrate only comparatively short distances from breeding areas in northern Mozambique or southern Tanzania to a wintering area in the forests of coastal Kenya. Birds nesting at higher elevations inland probably travel as much as 1500 - 2000 km from breeding area to wintering area.

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SHORT COMMUNICATIONS

WAHLBERG'S EAGLE NESTING IN ETHIOPIA On my arrival in Addis Ababa in mid June 1974, a pair of Wahlberg's Eagles *Aquila wahlbergi* was already in residence on the compound of the British Embassy, which comprises almost 33 ha of gardens, woods and paddocks on the hills to the northeast of the city at an altitude of about 2500 m a.s.l. The then Ambassador, Mr Willie Morris, told me that the birds had also been present the previous year.

In late June, the presumed male was, on several occasions, heard to utter a loud yelping laugh of 5 - 6 notes from a prominent perch in the compound. No aerial display was observed, but my visits to the site were irregular (once every two or three days on average) and these often coincided with the rainstorms which occur with increasing frequency from June to October. During July only one bird was in evidence, although individuals were seen at widely separated points in the city on four occasions. During August much of my time was spent outside Addis but single birds were seen on four occasions on the compound and once in the city.

The nest, which was a medium-sized structure in a fork about 15 m up in a large *Eucalyptus globulus*, was not located until September. The male was twice seen carrying sticks to the nest in mid-month. On each approach to the incubating female it uttered the diagnostic *'kip'* call, repeated up to four times. On 24 September, with the female sitting, the male circled overhead calling loudly and repeatedly - a single strident syllable. The chick was first seen on 2 October, when it was covered in a brownish down. By mid-October it was looking quite sturdy and was climbing about in the nest. Unfortunately I had to leave Addis at the end of October and was unable to follow the saga through. When I returned to the city in January 1975 there was no sign of an immature bird in the vicinity of the compound, but two adults were present on 5 February, when the yelping display call was again heard. The pair was still present in June, when I left Addis for good. On 7 March 1975 a pair was performing typical *Aquila* aerial evolutions over the Jimma road, at the western edge of the city, and in early June another pair at the same locality included a pale-phase bird.

The prey of the Embassy compound pair seemed to consist mainly of small/medium to medium-sized birds, many of which were caught within the compound itself. Although I never saw a kill myself there were eye-witness reports of 'pigeons' being taken (probably either Pink-breasted Doves *Streptopelia lugens* or the endemic White-collared Pigeons *Columba albitorques*, both of which were common on the compound). I did on one occasion see one of the pair stoop from near the nest at an Olive Thrush *Turdus abyssinicus* which was perched in the lower branches of a densely-foliaged tree. The eagle displayed remarkable agility in the ensuing pursuit through a stand of trees, but finally lost its quarry. The slower-flying Ground-scraper Thrushes *T. litsipsirupa*, which were regular visitors to the compound, would have provided easier prey. On 14 October 1974 the male brought a lizard of about 20 - 25 cm to the nest.

As the status of Wahlberg's Eagle is described as 'uncertain' by Urban & Brown 1971 (*A checklist of the birds of Ethiopia*, Addis Ababa: Haile Selassie I University Press) the following observations of adults outside the Addis Ababa area are also of interest:

2 over hill scrub on the edge of the rift valley escarpment between Kombolcha and Bati (east of Dessie) on 13 July 1974.
1 over the Menegesha Forest on 1 March 1975
1 in the Awash National Park on 28 March 1975.

A. Vittery, c/o The Foreign Office, London. Received 20 October 1977

WAHLBERG'S EAGLE IN NORTHEASTERN AFRICA AND THE FIRST RECORD FOR SOMALIA

Aquila wahlbergi has been generally considered a trans-equatorial migrant breeding mainly south of the equator and wintering in unknown localities, possibly in the south Sudan (Brown 1970, Steyn 1973). Recently, however, it has been recorded quite commonly from Ethiopia during the season (August to January) when it is breeding in Kenya and further south, and has been recorded breeding in Addis Ababa (Vittery 1978). In East Africa and southern Africa it is a bird of *Combretum* or *Acacia* savannas, but the nest described by Vittery was at over 2500 m a.s.l. in eucalyptus at the edge of a large town, a habitat entirely different from the normal East African one. Several other nests have been reported in Addis (Simkin, pers. comm.) and elsewhere in Ethiopia, but details have not been recorded.

Urban & Brown (1971) regarded the occurrence of Wahlberg's Eagle in Ethiopia as uncertain, though it had been recorded from the Awash Park. In 1975 I saw two in Tigrai Region, one in the Giba River Valley about 30 km west of Makelle, the other in farmland near Dugum. Both were in typical habitat of *Acacia-Combretum* savanna and both could have been breeding in the area in October - November. In 1975 the nest in the Embassy compound at Addis Ababa was unoccupied; it had reared a young bird successfully in 1974, and probably on other occasions, but there was no sign of activity in January 1976 (Vittery 1978, pers.obs.).

Addis Ababa is approximately 9°N. and the localities mentioned in Tigrai between 13° and 14°N., so that if, in fact, these eagles were breeding in the latter locality, they would be the furthest north breeding records for the species. There are other records, from Zaria, Nigeria (P. Ward, pers. comm.) in June, but there is the possibility that identity may have been confused in this case. However, it appears that Wahlberg's Eagle may be a not uncommon breeder north of the equator.

According to Archer & Godman (1937) Wahlberg's Eagle is not recorded from Somalia. Nevertheless, while in detention at Hargeisa during February 1977 I several times saw an undoubted example of this species soaring over the Hargeisa Club, which is situated in a strip of *Acacia tortilis* woodland bordering a dry river bed (a typical site for a breeding pair). There could be no reasonable doubt of its identity as, on more than one occasion, I could compare it in the air with Tawny Eagles *A. rapax*, and once with what was almost certainly a Lesser Spotted Eagle *A. pomarina*, which would also be a new record for Somalia.

Whether Wahlberg's Eagle has always been present in these localities but never noticed or collected, or whether it is changing its habits and becoming more common as a breeding bird in the northern tropics, is obscure. The case seems analagous to the recent re-discovery of the Booted Eagle *Hieraaetus pennatus* as a breeding bird in Cape Province, South Africa, after being overlooked for many years.

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L.H. Brown, Box 24916, Karen, Nairobi. Received 20 October 1977

WATTLED PLOVER IN CENTRAL TANZANIA The patchy distribution of the Wattled Plover *Vanellus senegallus* in Tanzania has recently been described by Reynolds (1977), Beesley (1977) and Dowsett (1977). I have two records of this bird on the Ilinde *mbuga* (5°57'S., 35°32'E.) which is 35 km north-west of Dodoma in central Tanzania. This *mbuga* is in a sparsely populated part of the central plateau where there is little human disturbance. As a result it holds a highly diverse avifauna especially during the rains, when about 100 species can regularly be seen in a single day. This *mbuga*, at an altitude of 975 m, is 8 km long and has a maximum width of 2 km. It is best approached from the Dodoma - Bahi road at Kilometre 35, along the track past the Msembeta *mbuga*.

The first sighting was of a solitary male (12.2.56) and the second was of two birds (27.1.57, sex not recorded). On both occasions large parts of the *mbuga* were under water and there were several Crowned Lapwings *V. coronatus* and a few Blacksmith Plovers *V. armatus* in the immediate vicinity. Several visits were made to this locality in the dry season when the black-cotton soil of the floor of the *mbuga* was dry and hard. No plovers of any species were seen on these occasions.

Both *coronatus* and *armatus* occur throughout the year in the Bahi swamp (40 km SW of Ilinde; 775 m) and in the Makutapora swamp (25 km E of Ilinde; 1100 m) and presumably breed. In neither place have I seen *senegallus* although it might well breed in such habitats where permanent water is present in most years. The Wattled Plover appears to require wet environments more than many other plovers, which perhaps accounts for the occasional use of mud in its nest (Mackworth-Praed & Grant 1957). Its occurrence in Ilinde and in the paddy fields around Tabora (Reynolds 1968), where it is a rainy-season migrant, are comparable.

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John Harpum, St.Paul's College, Cheltenham, England. Rec'd 23 Nov. 1977.

THE MADAGASCAR PRATINCOLE *GLAREOLA OCULARIS* IN SOMALIA Britton (1977) gives only two dated Somalia records for this species, namely two sub-adults collected on the lower Shebili River at 2°48'N. on 25 May and 3 June 1939. Berlioz & Roche (1963) give another record, an adult female collected at Kurtumuaro, on this same river (as Uebi Scebeli), 14 August 1959. This locality is shown on an accompanying map as at *c.* 1°34'N., 44°13'E. Berlioz & Roche add that the species had already been recorded from the coast of Somalia, at the same season as this specimen; they give no authority, but might have had in mind the May and June records quoted by Britton. The specimen from Kurtumuaro is still in existence in the Paris Museum (C. Erard, pers. comm.).

Moltoni & Ruscone (1944) quote five Somali localities for *G. ocularis*, all apparently on or near the Uebi Scebeli or lower Juba Rivers, but without any dates. Presumably the information was derived from specimens in the Milan Natural History Museum. No further part of Moltoni & Ruscone's work was published except for a fourth, undated, one consisting of coloured illustrations of various passerines, without any text. According to Dr C.Violani (pers. comm.) of the University of Pavia, and closely associated with Dr Moltoni, incompletion was due to the fact that all the eastern African birds in the Milan museum were destroyed in a fire caused by a bombing raid in 1943. In fact, all that survived was these plates which had already been made of the passerines.

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C.W.Benson, Department of Zoology, Downing Street, Cambridge CB2 3EJ, U.K.
Received 8 February 1978.

NOTES ON *TOCKUS* HORNBILLS BREEDING AT LAKE BARINGO, KENYA The Lake Baringo area, with habitat varying from rocky cliffs and wooded stream beds to open grassland with scattered acacia trees, offers a variety of nesting possibilities to the five species of *Tockus* found in the vicinity.

In May 1977 two visits were made to the area around Kampi ya Samaki on the western shore of the lake, one in the middle and one at the end of the month. They resulted in the location of nesting sites of three of the five resident species.

Tockus hemprichii Hemprich's Hornbill A nest containing three eggs was found in a rocky cliff face west of Kampi ya Samaki on 17 May. Although the nest of this species has been described (Urban, Brown, Buer & Plage 1970) the eggs were previously unknown. They were dull white, almost oval and very finely pitted all over. They were slightly soiled by the bird but showed no sign of incubation. They measured (mm): 40.0 x 27.5, 39.8 x 27.6 and 37.6 x 26.3. The nest was located some 15 m above the ground in a deep vertical crevice, with the entrance hole plastered over in typical hornbill fashion. On examination, the plaster was found to consist of dried mud and cattle dung in approximately equal proportions,

and mixed with this was a multitude of beetle and other insect fragments. The usual vertical feeding slit measured 14.5 cm in length and 2.5 cm at its widest point. Inside, the nesting chamber measured approximately 20 cm x 20 cm and over 40 cm in depth: the floor was lined with strips of dry, thin bark, some pieces over 30 cm long.

A second visit to this site on 31 May showed the hole to have been resealed, and this time, in the space of one hour, the male was seen to carry small fruits to the nest on four occasions. In each instance the male was extremely shy, and would not approach the nest unless the observer was well concealed and at least 75 m away.

Williams (1967) states that in East Africa *hemprichii* is nearly always associated with rocky, broken country and inland cliffs. In Ethiopia, the nest described by Urban *et al.* (1970), and four nesting sites recorded by Brown (1976), were all in cliffs. Brown (1976) suggests that in Tigrai, *hemprichii* breeds mainly or only in cliff sites, even when suitable trees are available. This is probably true of Kenya birds, as this habitual use of rock sites would enable them to avoid potential competition from other tree-nesting *Tockus* species.

Tockus jacksoni Jackson's Hornbill On 16 May two nests were found at Kampi ya Samaki, both in *Acacia tortilis* trees near the lake shore. The first was situated 3.5 m up in an old rot hole and had been plastered over in the usual way, leaving only a narrow vertical feeding slit 9 cm long by 1.5 cm at its widest point. The plaster consisted of dried mud, with a thin outer crust of cattle dung; the nest cavity was lined with strips of thin, dry bark. The nest contained two fresh eggs, probably an incomplete clutch. They were similar to those of *hemprichii* though smaller and rather more pointed at one end, white, rough-shelled and very finely pitted. They measured (mm): 34.3 x 23.9 and 35.0 x 22.4. The second nest was in an almost identical situation, also in a rot hole about 5 m above the ground. It was plastered in the same way and contained the female, plus three young of differing sizes, all starting to grow feathers.

The second visit to these sites on 30 May showed both nests to have been resealed, with the males in attendance. A third nest similar to the previous ones was also found, and it held two large young and a single unhatched egg which contained a decomposing embryo.

Tockus erythrorhynchus Red-billed Hornbill This is the commonest hornbill in the area. On 16 May three nests were found, all within 1.5 km of Kampi ya Samaki village: one in a hole in a small tree, and two inside empty bee barrels slung from the upper branches of *Acacia tortilis* trees. All the nests were cemented over entirely with cattle dung, presumably as there was no mud readily available. The nest in the small tree contained three large young, while of the two nests in bee barrels one contained a female which had not yet laid, and the other contained two fresh eggs, which were faintly pitted, white and almost oval, more pointed at one end.

When the nests were examined again on 30 May, the one in the small tree was still actively attended by the male. However, both the bee barrels containing nests had been opened and the eggs destroyed by the local bee-keeper, who claimed that recently several of his hives had been used by hornbills in this way.

The area around Kampi ya Samaki has, in recent years, witnessed an increase in human population and an alarming explosion in the number of livestock, resulting in the destruction of much of the surrounding

vegetation including many of the large trees - a situation which appears to have caused a shortage in the number of the potential hornbill nesting sites. It seems reasonable to suggest that the birds utilizing the vacated bee barrels did so because their usual sites had been taken over by other birds. The use of these bee hives cannot, ultimately, be advantageous to the birds nor to the local bee keepers, as the nesting period which starts at the onset of the rains corresponds with the annual migration of swarming bees coming down to lower altitudes from the south and west (J.M. (J.M. Nightingale, pers. comm.).

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Andrew A.E. Williams, Box 23, Njoro, Kenya. Received 17 January 1978.

RESPONSES OF LITTLE BEE-EATERS TO A BLACK-THROATED HONEYGUIDE ENTERING THEIR NEST HOLE At approximately 1300 hrs on 15 December 1976, I was some 20 km north of Same on the main Korogwe-Moshi road in northeastern Tanzania, when my attention was drawn to the agitated flight and calls of three adult Little Bee-Eaters *Merops pusillus* and the flash of white outer tail feathers of a female Black-throated Honeyguide *Indicator indicator*.

The honeyguide flew to a hole in a sandy bank at the side of the road but initially did not fully enter the tunnel. It remained close to the entrance with its tail feathers protruding for 3 - 4 minutes. During this time the bee-eaters took turns in alighting beside the hole and tugging at the intruder's tail feathers, changing over four or five times. The honeyguide did not take advantage when the bee-eaters were changing over, and progress further into the hole was not hindered by them. When it did finally enter the tunnel it was followed by a bee-eater which, judging from the vigorous movements of its tail and rump, was probably continuing its attack. After a further 3 - 4 minutes the honeyguide emerged head first (when I noted the pink bill), was pecked ferociously around the head by two bee-eaters at the entrance to the tunnel; then, pursued by all three bee-eaters, it flew away. I lost sight of the four birds when they were some 300 m distant.

C. Carter, Box 1793, Ndola, Zambia. Received 24 March 1977.

J.F. Reynolds comments: The typical behaviour of a female Black-throated Honeyguide is to wait unobtrusively near a selected nest, quickly slipping in to lay an egg when the owner leaves, either after laying an egg or to feed. Mr Carter's observations suggest that the bee-eaters' tunnel was only about 40 cm in length whereas completed tunnels are seldom much less than 1 m long. It seems not unlikely that his honeyguide was investigating an unfinished nest, possibly 'assessing' when it would be ready to parasitize.

VIOLET WOOD-HOOPOE RAIDING NEST OF SPECKLE-FRONTED WEAVER On 23 September 1977, two Violet Wood-Hoopoes *Phoeniculus granti* were seen along the road between Lake Baringo and Maragat, Kenya. The birds, an adult and an immature, were foraging in dry acacia about 10 m high, and were flying from nest to nest in a diffuse colony of Speckle-fronted Weavers *Sporopipes frontalis*. At one nest, the adult wood-hoopoe inserted its head into the nest and came out with an egg in its mouth, which it promptly swallowed. It extracted another egg and then moved on to another nest. The owners were perched 30 cm from their nest and made no effort to deter the wood-hoopoes.

In 5 minutes of observation the two birds visited four nests, but were only seen eating eggs from one. This is the first time, to our knowledge, that wood-hoopoes have been recorded eating eggs.

Peter & Jill Kaestner, Nyankunde, Zaire and *c/o Box 21171, Nairobi.*
Received 10 October 1977.

OLIVE-TREE WARBLER AT DODOMA, CENTRAL TANZANIA The elusive Olive-tree Warbler *Hippolais olivetorum* has so far been found in very few localities in Tanzania. Apart from a probable sighting by Meiklejohn at Mwanza, the other records are due to J.S.S. Beesley who reported the bird in the Rukwa area, in an Arusha garden and in the Arusha National Park (Backhurst, Britton & Mann 1973). Since its occurrence in Africa (and indeed throughout its range) is so imperfectly known, the following records are considered worth reporting.

All records (1956-58) refer to my Dodoma garden, which lay at an altitude of 1150 m on rising ground on the southwestern edge of the town some 1100 m southwest of the railway station (6°11'S., 35°45'E.). The garden had an area of nearly 0.5 ha and was bounded by a hedge of *minyara Euphorbia tirucalli* which, on the southwestern side of the garden, grew to a height of 2.5 m and was 1 m thick. Beyond the hedge at this point were two or three acacia trees (6 m high) growing out of thorn scrub. All contacts with the Olive-tree Warbler were confined to this part of the *minyara* hedge and the acacia scrub.

The warbler first attracted attention with its song on 18 February 1956 and finally disappeared on 31 March 1956 during which time aural or visual contacts were made on 34 days. In the following year contacts were made on 28 days between 24 February and 26 March. In 1958 daily records were not kept but an Olive-tree Warbler appeared in the same place in late February and left a month later. There were no contacts in 1955, 1959, 1960 or 1961, although daily checks were made, nor were any other Olive-tree Warblers found in the Dodoma area.

The bird itself was remarkably approachable although it did not seem to venture far out of the hedge or scrub. Its very large bill was its most characteristic visual feature. In the shade of the hedge the lighter-coloured lower mandible became almost invisible giving the bill a markedly decurved aspect. The song was somewhat acrocephaline but distinctly 'contralto' in pitch; as far as can be judged it was identical with the song recorded by E.D.H. Johnson (Palmer & Boswall 1975) on its breeding ground in Bulgaria. Close approach and numerous sightings allowed me to confirm that the bird in each year was not in moult.

These records are strongly suggestive of the return of the same bird to a very restricted winter territory - an example of *Ortstreue* (Moreau

1969) which possibly occurs in other *Hippolais* species (e.g. Pearson 1972: 52) and even in this species (Vernon 1970, Sinclair 1976). Tree (1972) has commented on the common association of *H. olivetorum* and the Red-backed Shrike *Lanius collurio* in acacia bush in Rhodesia. This shrike was also common in the acacia bush in and around Dodoma and one was invariably present in the same part of the garden as the warbler.

These Dodoma records of the Olive-tree Warbler seem to be the most complete so far for Tanzania. Their isolation from other occurrences, however, may point to the presence of an aberrant individual.

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John Harpum, St.Paul's College, Cheltenham, England. Rec'd 23 Nov. 1977.

FIRST RECORDED NEST SITE OF *ALETHE FUELLEBORNI* On 11 - 12 December 1976, whilst in montane forest north of Lushoto in the West Usambaras, north-eastern Tanzania, I twice disturbed a White-chested Alethe *Alethe fuelleborni* from a nest, and once watched it return and re-settle. The nest was situated some 4 - 5 m high in a tree on a steep incline 30 m inside the forest. Although it was in a fairly exposed position I was unable to examine the nest closely and merely noted 'something mossy on a stump close to the main trunk with two slender creepers as the only cover'. The site of this nest is higher than expected for a species which is generally considered to be a ground-feeder, living in the ground-stratum (Mackworth-Praed & Grant 1960). The eggs of this species remain unknown (P.L. and H.A. Britton *in litt.*).

C. Carter, Box 1793, Ndola, Zambia. Received 9 February 1978.

ACCIDENTAL PARASITIZATION OF AN EASTERN DOUBLE-COLLARED SUNBIRD BY A VARIABLE SUNBIRD The Eastern Double-collared Sunbird *Nectarinia mediocris mediocris* is a highland pecies found in central and western Kenya in areas over 1500 m, although most common in forests above 2000 m. The range of the Variable Sunbird *N. venusta falkensteini* overlaps that of *mediocris*, but *venusta* tends to be most plentiful at lower altitudes. The two species often come into contact between 2000 and 2500 m, especially in gardens

containing flowering shrubs and in forest edge situations.

On 22 October 1976 a female *mediocris* was seen building a nest at the edge of an overgrown conifer plantation, 8 km west of Njoro, Kenya at an altitude of 2100 m. The nest was attached to the end of a hanging conifer branch about 2 m above the ground. The bird had just completed the outer structure and was in the process of lining the nest with soft white seed down.

On a second visit to the site on 28 October 1976 the nest had been completed and the female *mediocris* was incubating, while the male sang persistently from a perch 8 m away. A male and female *venusta* were also observed in a nearby bushy tree some 15 m from the nest. The female *venusta* then moved from the bushy tree into the conifer close to the nest, but was immediately chased off by the male *mediocris* which then returned to its original perch. During the next 30 minutes the female *venusta* made several more attempts to approach the nest, but in each instance was chased away by the male *mediocris*. The male *venusta* sang intermittently from the bushy tree, but no interaction between this bird and the male *mediocris* was observed.

Upon examination the nest was found to contain two *mediocris* eggs measuring (mm): 16.5 x 12.0 and 17.5 x 12.0, and a single *venusta* egg 15.5 x 11.0, all fresh. The *mediocris* eggs were pale greenish white covered with finely fused greyish brown markings which almost obliterated the underlying ground colour, while the smaller *venusta* egg was pale greenish white, lightly marked with ashy grey.

Judging from the birds' behaviour, it is likely that the female *venusta* had lost its nest just prior to laying, and that the proximity of this alternative nest provided a 'satisfactory' depository for the eggs. The single *venusta* egg was probably laid between the first and second *mediocris* eggs, i.e. before the female *mediocris* had started to incubate and the male had taken up its defensive position.

Andrew A.E. Williams, Box 23, Njoro, Kenya. Received 17 January 1978.

THE APPEARANCE OF THE GOLDEN-BACKED WEAVER IN AMBOSELI The Golden-backed Weaver *Ploceus jacksoni* normally occurs in Kenya only in the west, and is most abundant as a breeding bird around Lake Victoria. Like many East African birds, this species is occasionally recorded well outside its normal range. For example, they sometimes appear in the central highlands, usually near water. Nevertheless, I was very surprised to observe a male *jacksoni* in breeding plumage in Amboseli National Park on 30 January 1977.

This observation proved to be the first sign of an invasion of the Amboseli area by this species. Repeated observations at close range removed any doubt about proper identification and, specifically, the possibility that some individuals were Yellow-backed Weavers *P. melanocephalus* was ruled out. Several more solitary males were seen, and then, in mid-February, I discovered a breeding colony just east of the Park. Five to seven males were present, displaying below newly-built nests in a small fever tree *Acacia xanthophloea* overhanging a spring. Females were visiting the nests, but neither eggs nor young were present, and no copulations were seen. By the time I was able to return to the colony site in early June, it had been abandoned.

My initial sightings of solitary *jacksoni* were in the fever tree woodland near Kitirua Hill in Amboseli Park. Since I was studying baboons in

this area, I was able to monitor the activities of weavers there on a daily basis. During May four colonies containing from two to five males each were discovered. One of these was built in a small fever tree overhanging a small permanent waterhole, another in a similar tree within a temporary rain-pool, and two in reed beds within small permanent waterholes. At least three of these colonies produced no young, although some nests were completed and visited by females in at least two colonies. By early June all four colonies had been abandoned.

One of the most interesting aspects of the appearance of *jacksoni* in Amboseli is its relationship with resident congeners. Two species, Taveta Golden Weaver *P. castaneiceps* and Masked Weavers *P. intermedius*, are resident in the woodlands near Kitirua Hill. Taveta Weavers nest near all the large waterholes and most of the small ones in the area, building in reeds during the rains. That *jacksoni* did not nest at the large waterholes was quite surprising; perhaps they were excluded from these potential breeding sites, either actively or passively, by *castaneiceps*. Thus, two of the five *jacksoni* colonies were in waterholes not utilized by *castaneiceps*, and at a third waterhole the former species built in a tree whereas the latter species built in reeds. However, the two species nested together in reeds at the remaining two waterholes. Interspecific aggression between *jacksoni* and *castaneiceps* was observed at all waterholes where both species nested.

Masked Weavers normally forage in mixed flocks with Taveta Weavers during the dry season, and nest in small colonies in fever trees during the rains. In September and October 1976, *intermedius* males in the Kitirua area assumed breeding plumage and, stimulated by the occasional brief showers preceding the onset of the rains, engaged in nest-building. Breeding never occurred, however, and sometime between November and January this species disappeared from the area. It is possible that a few in non-breeding plumage could have been overlooked, but certainly the population was at least greatly reduced, and no birds in breeding plumage were present.

I left Amboseli in late July 1977. At that time *jacksoni* and *castaneiceps* were foraging in mixed or monospecific flocks, and *intermedius* was still absent.

The appearance of *Ploceus jacksoni* in Amboseli may represent an eruption, a range extension, or even the displacement of one species of weaver by another. Perhaps it is no coincidence that this event occurred at a time and place where the rains were unusually good, although this species is not generally known to migrate in relation to rainfall. Clearly the situation in Amboseli bears watching.

Jeffrey Walters, Allee Laboratory of Animal Behavior, The University of Chicago, 5712 S. Ingleside, Chicago, Illinois 60637, U.S.A.
Received 14 November 1977.

CORRESPONDENCE

CARMINE BEE-EATERS NESTING IN FLAT GROUND

Sir, - Dr L.H. Brown thought that Dr Anne Spoerry's account of a Carmine Bee-eater *Merops nubicus* colony at Ileret (*EANHS Bulletin* 1976: 126) might be the first record of breeding in flat ground rather than in cliffs.

In fact, Dr Lilli Koenig described and portrayed two large flat-ground colonies which she found in 1954 about 15½° N. on the River Niger, 60 km downstream from Ansongo in Mali (*Journal für Ornithologie* 97: 384-402, 1956). It helps substantiate that Mackworth-Praed & Grant's mention of '10 000 excavating holes in an almost flat sand bank' at Timbuktu (where Brown suggested there was the possibility of confusion with the flat-ground nesting Rosy Bee-eater *M. malimbicus*), did in fact refer to Carmine Bee-eaters as recorded by them. Timbuktu is 17° N., and while Carmines would be expected there Rosies would not - I know of no record of Rosy Bee-eaters north of 11° N.

To my knowledge European Bee-eaters *M. apiaster* and the Large Green Bee-eaters of the *M. persicus/superciliosus/philippinus* complex use flat ground as well as cliffs, and so do several of the smaller African and extra-African species. The only habitual cliff-nesters are the White-fronted Bee-eater *M. bullockoides* and its close northwestern relative the Red-throated *M. bulocki*, and perhaps the Cinnamon-chested *M. layfresnayii*. The first two of these dig upward-sloping tunnels and so would be hard put to excavate their nests in flat ground. I would be most interested to hear details of unusual sites in these or any of the bee-eater species.

C.H. Fry, Department of Zoology, University of Aberdeen, Tillydrone Avenue, Aberdeen AB9 2TN, Scotland, U.K. Received 10 June 1977.

NOTICES

The Nigerian Ornithologists' Society is in the process of reconstituting itself as the West African Ornithological Society. Now in its 17th year of continuous publication, the Society's *Bulletin* is to be renamed *Malimbus*, and the first issue under the new name will be published in October 1977 or May 1978. No immediate major changes in format or policy are anticipated, other than acceptance of papers in French as well as in English. The contents of this journal have always been of a high standard and are of relevance to all African ornithologists. We need more members; your support is earnestly sought. Write to: C.H. Fry whose address is given at the foot of the letter above.

COLOUR-TAGGED WAHLBERG'S EAGLES

Wahlberg's Eagles are being marked with coloured, numbered Darvic wing-tags *[presumably in southern Africa, Ed.]*. Anyone seeing such a marked bird is asked to note the colour of the tag and on which wing it is fixed, the individual number engraved on the tag, and the date and locality of the sighting. Please send the information to A.J. Anthony, c/o 180 St. John's Road, Edinburgh, EH12 8BE, Scotland, U.K. All correspondence will be acknowledged.

Continued from inside front cover

'References'; the name(s) of the author(s) and date(s) of publication should be given in the text in the normal way. A list of the works concerned is given below.

Observers are asked to send in records of birds for inclusion in the annual East African bird report issue. Records which appear in the *National Museums of Kenya Department of Ornithology Newsletter* will be reviewed for the annual report but, in the case of rare birds or birds showing an extension of range, full details supporting the record should be submitted, whether the record is sent to the *Newsletter* or *Scopus* - this will save correspondence later on.

All contributions should be sent to Dr D.J. Pearson, Department of Biochemistry, University of Nairobi, Box 30197, Nairobi, Kenya.

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Continued inside back cover

SCOPUS

THE BORAN CISTICOLA *CISTICOLA BODESSA* IN KENYA, AND ITS POSSIBLE AFFINITIES

Françoise Dowsett-Lemaire & R.J. Dowsett

The status of the Boran Cisticola *Cisticola bodessa* as a good species has been demonstrated by Ash (1974) and Erard (1974), thus confirming the observations on the distinctive voice of this form made by C.W.Benson in Ethiopia as long ago as 1945 (Benson 1946: 199-203). The only published reference to *bodessa* in Kenya seems to be the text accompanying a gramophone record by the late Myles North (North & McChesney 1964). Here, North mentions that he found the Boran Cisticola at three places: on Marsabit Mountain, and on the Timau-Isiolo and Kapenguria-Kacheliba road escarpments. It is not clear if specimens were collected (North merely says the birds were 'located'), but the song of a Marsabit bird appears on the record. Dr C.Chappuis (in Erard 1974) considers this to be identical to the song of Ethiopian *bodessa*, and a sonogram of it appears in Erard's Figure 1.

Erard (*op. cit.*) refers to North & McChesney (1964) having collected and recorded Boran Cisticolas at Marsabit and Nanyuki. This latter locality is, of course, south of the area between Timau and Isiolo, and Erard makes no mention of observations between Kapenguria and Kacheliba. Possibly there are indeed specimens from these areas, as Hall & Moreau (1970: Map 197) show three localities in Kenya, although they appear to have displaced the Timau-Isiolo record to the west. To determine what further observations there might be of *bodessa* in Kenya, we placed a request for information in the *Newsletter* of the Department of Ornithology, National Museums of Kenya (January 1977). D.A. Turner (*in litt.*) tells us that the species occurs at Moyale, but we have received no other records. G.R. Cunningham-van Someren (*in litt.*) reports that there are no specimens in the National Museum of Kenya at Nairobi.

During a visit to Kenya we sought *bodessa* in the area from Timau northwards to Isiolo. On 6 and 8 December 1976 we found it common in the escarpment around the turnoff to Meru National Park, i.e. at about 0° 03'N. 37°27'E. This appeared to be the only suitable habitat along this road, and is probably where North found *bodessa*. This cisticola was extremely noisy, and F.D.-L. recognized the song immediately, as it is imitated by more than 90 per cent. of territorial Marsh Warblers *Acrocephalus palustris* in her study area in eastern Belgium (Dowsett-Lemaire in prep.). The Rattling Cisticola *C. chiniana* was also in song here, but appeared to be less numerous. Its song was similar to that we know well in Zambia. The habitat was rocky, sparsely grassed hillsides, with thorn scrub, and the altitude was about 2100 m. Both species were singing at the same time, and F.D.-L. was able to tape record both, using an Uher 4000 recorder.

A playback of the song of *bodessa* to a singing *chiniana* produced no response, but playback of *bodessa*'s own song produced a positive reaction. We found the brown cap and less streaked back of *bodessa* (mentioned by Erard 1974: 31) to be good field distinctions from *chiniana*, and thought it also had a heavier flight (although Erard's data suggest no difference in weight). Ash (1974 and *in litt.*) and Erard (1974) also found these two species alongside each other at some places in Ethiopia, although Erard suggests there may usually be altitudinal and ecological segregation, an aspect that would repay further study in Kenya.

The sonograms in Fig.1 illustrate the songs of *bodessa*, *chiniana* and the Ashy Cisticola *C. cinereola*. A and B show two typical song types of *chiniana:* 2 or 3 introductory notes, followed by a harsh rattle. The songs of *bodessa* and *cinereola* (C and D respectively) have a quite different pattern, both consisting of a fast succession of similarly shaped notes in a descending pitch. The wide frequency variation of each note is sharper in *bodessa*, which results in the song being more explosive, less melodious and musical than that of *cinereola*. In addition, *cinereola* sometimes produces a phrase in an ascending pitch, symmetrical to the one shown, but apparently not *bodessa*.

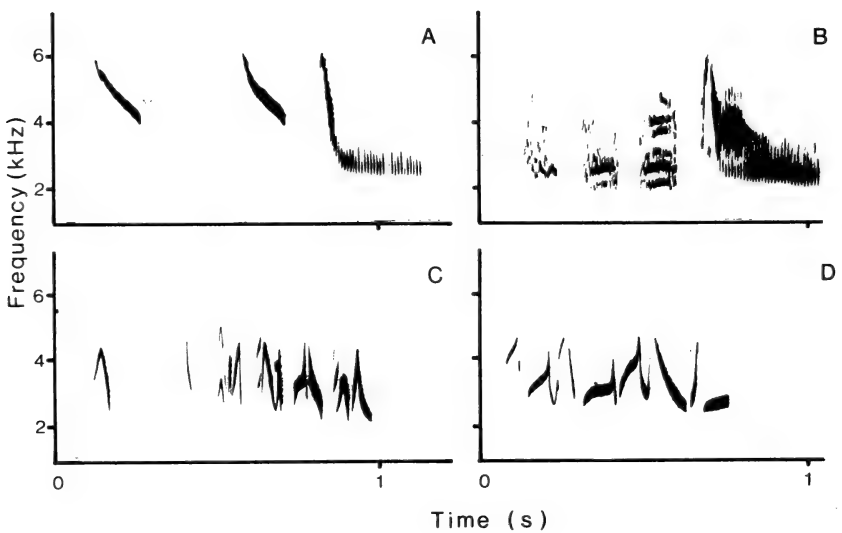

Fig.1 *Songs of some related* Cisticola *warblers in Kenya. A & B:* chiniana, *two song types of the same individual (Timau-Isiolo area). C:* bodessa *(Timau-Isiolo area). D:* cinereola *(Voi, from North & McChesney 1964)*

Chappuis (1974: 472) has already pointed out that the construction of the song of *bodessa* is similar to that of the Whistling Cisticola *C. lateralis* and the Red-pate Cisticola *C. ruficeps*, as well as to *cinereola*. In relating *cinereola* to *ruficeps* (Chappuis 1974: 481-2) he points out that, although their songs do show the same type of ascending and descending phrases, in *cinereola* the notes are somewhat deeper and the rhythm slower. In fact, sonograms (not illustrated) show that *ruficeps* sings 1000 Hz higher than *cinereola*, although the shape of the individual notes shows a closer approach to *cinereola* than do those of *bodessa*. We assume that the similarities in song between such morphologically and ecologically distinctive species have no important taxonomic significance: possibly they are the result of convergence.

Accepting this, we can establish the relationships of *bodessa* in one of two possible ways. It may be that *bodessa* and *chiniana* are indeed sibling species (as other authors appear to have assumed), at an early stage of speciation, and that the differences in song act to prevent interbreeding (which morphological similarities suggest might otherwise be possible). A well known parallel case involves the Marsh Warbler and the Reed Warbler *Acrocephalus scirpaceus* (Lemaire 1977), and there are perhaps others in this morphologically rather uniform genus. It is possible that the situation between the Short-tailed and Long-tailed Neddicky Cisticolas (*C. fulvicapilla* and *C. angusticauda*) in Zambia, described by Irwin & Benson (1967), is not strictly comparable. These two forms are rather similar to look at, though have somewhat different voices: but it seems likely that wherever they come into contact there is a hybrid zone, and normally they do not seem to differ in ecology. Perhaps, in the state of our present knowledge, *fulvicapilla* and *angusticauda* are best considered conspecific. They do show, however, that vocal differences may not always preserve specific integrity, and further field investigation is necessary to determine if hybridization can occur between *bodessa* and *chiniana*.

On the other hand, these two species may be less closely related to each other than either is to some other species, for example *cinereola*. Although *bodessa* looks less like *cinereola* than like *chiniana* (*cinereola* being much greyer and more streaked), they do appear to be ecologically segregated and might be considered semi-species. Both Lynes (1930) and Hall & Moreau (1970) have stressed the morphological similarities between *cinereola* and *chiniana* (including *bodessa*), although the latter do place them in separate superspecies (Maps 196-7). In Fig.2 we map the known distribution of *cinereola* and *bodessa*, from which it is clear they are basically allopatric. *C. bodessa* is likely to occur at higher altitudes than *cinereola*, even in areas where they are geographically sympatric. In our map we have utilized 30' squares for convenience. Our major sources for localities have been Ash (1974 and *in litt.*), Erard (1974), Jackson (1938), Lynes (1930) and our own observations. Erard (*loc. cit.*) could not trace the locality Muji, north of Lake Turkana, whence there is a specimen of *bodessa*, but this is surely Maji at 6°12'N., 35°32'E. We cannot claim to have included all records of *cinereola*, but the map does give a good indication of the relative distribution of the two species. We consider that field investigation is now required into the actual or potential sympatry of *bodessa* and *cinereola*, with the use of tape play-back experiments to determine which mechanisms isolate the two.

On balance, we consider it likely that *bodessa* and *chiniana* are more closely related to each other than either is to a third species. But clearly not all questions regarding their relationships have been

answered, and we hope that ornithologists resident in Kenya can investigate further.

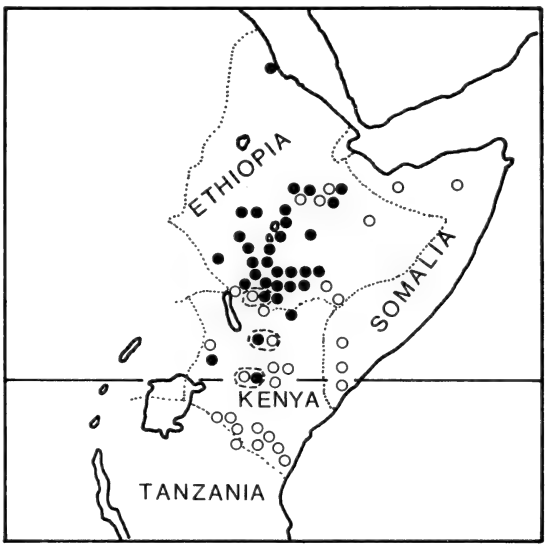

Fig.2 *Sketch map of eastern Africa, showing distribution by 30' squares of:* ● Cisticola bodessa; O Cisticola cinereola. *The plots enclosed in dashed lines indicate squares from which both species are recorded*

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(Received 13 March 1978)

SUBSTANTIAL WINTERING POPULATIONS OF THE BASRA REED WARBLER *ACROCEPHALUS GRISELDIS* IN EASTERN KENYA

D.J. Pearson, H.A. Britton & P.L. Britton

The Basra Reed Warbler *Acrocephalus griseldis* breeds in marshes along the Euphrates and Tigris rivers in Iraq (Vaurie 1959) and winters in eastern Africa. Up to 1970, however, it was known south of the Sahara from a mere fifteen records, involving one to two individuals each, from Eritrea south to Malawi, and west to Uganda (Urban & Brown 1971, Pearson 1972, Backhurst, Britton & Mann 1973, Benson & Benson 1977). Ash (1978) has since recorded the species regularly from late August to early December in Ethiopia. Recent records have also provided evidence of significant wintering areas in the southern tropics. Thus, since 1971, the species has been encountered regularly on southward passage at Ngulia Safari Lodge, Kenya, where 250 grounded birds had been ringed up to 1977 on dates from 27 October to 13 January, many of them carrying substantial fat reserves (Pearson & Backhurst 1976, Backhurst & Pearson 1977). In southern Malawi, D.B. Hanmer (1976 and *in litt.*) has recently netted the species regularly between mid November and early April, while nearby at Chire, Mozambique (16°42'S.) Ash (1978) has reported the recovery of an Ethiopian ringed individual; further south, at Mopeia (*c.*18°S.) Clancey (1975) reports on two specimens collected in December and January.

Apart from Ngulia records the sum total of published East African occurrences of the Basra Reed Warbler comprises those listed by Backhurst *et al.* (1973) and Pearson (1972), together with a further seven, all from south-eastern Kenya between 1971-76, listed by the EANHS Ornithological Sub-Committee (1977). To these can be added recent unpublished records from Bamburi, near Mombasa in November-December (4) and April (1), all ringed by H.A.B. and P.L.B., and another December 1976 Voi bird (P.C. Lack and D.J.P.). Thus, there were only 23 dated records away from Ngulia Lodge, involving 25 individuals, known to us to the end of 1977. Thirteen of these, dated November to early January, and another three in April, probably refer to passage birds. This leaves only seven East African records likely to involve wintering, all from Kenya (Naivasha, Mtito Andei and Kilifi) and eastern Tanzania (Tanga and Kilosa).

Early in 1978 we recorded Basra Reed Warblers from four localities in eastern Kenya, and discovered two wintering populations, one of which appeared to consist of hundreds of birds. An individual netted by H.A.B. in coastal scrub at Bamburi on 2 January may have been on passage, but another, caught at this site on 1 February, and completing wing moult, was almost certainly wintering. On 4 March we obtained good views of a

bird skulking low in bushes on the edge of swamp at Lake Shakababo in the Tana delta. Late the same day, several more were found in an area of 1-2 m high *Suaeda monoica* bushes over brackish water and recently dried mud at Karawa, on the southern edge of the Tana delta, virtually on the coast.

On the morning of 5 March it became apparent that the Basra Reed Warbler was the most abundant Palaearctic species in the Karawa *Suaeda*, throughout which it was present at an estimated density of 10-20 birds per ha. A few Sedge Warblers *Acrocephalus schoenobaenus* and unidentified *Luscinia*, and a single singing Marsh Warbler *A. palustris*, were the only other migrants found in the same habitat. Most Basra Reed Warblers seen were glimpsed only briefly as they dived across paths and round bushes, but with such views the cold olive-brown upperparts, and rather long dark tail were usually conspicuous. Several good views were obtained, however, of birds perched in the open. The long fine bill, very white underparts with unstreaked throat, prominent whitish eyestripe and dark grey legs were then the most noticeable features which together distinguished this from other unstreaked migrant *Acrocephalus* species. In size, the bird gave the impression of a large Reed Warbler *A. scirpaceus* rather than a small Great Reed Warbler *A. arundinaceus*, and lacked the heavy appearance of the latter. Birds were quite vocal. The call note was a harsh *'chaaar'*, stronger than, but similar to that of a Reed Warbler. Song was heard quite frequently during both morning and afternoon. This consisted of a rather subdued rhythmic sequence of low notes, which lacked the strident quality of Reed Warbler song, and recalled greenbul notes in tone. It was altogether less powerful than the song of a Great Reed Warbler, and lacked the guttural grating and croaking notes characteristic of that species.

More Basra Reed Warblers were found by D.J.P. on 19 March at Garissa. Birds were heard calling and singing, and two were seen, in dense bushes over flooded mud on the Tana floodplain. At least 20 birds were present in an area of a few hectares, and it was noticeable that these were confined to wet patches.

The Karawa site was revisited by P.L.B. on 1 April. The birds were still present and singing, although numbers were judged to be rather less than in early March. Two were caught and ringed; these were found to be very fat, and weighed 24.2 and 29.3 g respectively. At Ngulia in November-December the weights of lean birds are mostly in the range 15-17 g, and the fattest caught there have weighed 21-23.5 g. In Malawi, winter weights have ranged 15-21 g (D.B. Hanmer *in litt.*), whilst four Kenyan late January - February weights ranged 17.5-19.6 g. The April Karawa birds, caught shortly before spring departure, probably had at least 7 g and 12 g respectively of expendable fat reserves. Using Nisbet, Drury & Keith's (1963) results, it can be estimated that the heavier bird at least should have been capable of a direct flight to Iraq.

Clearly the Basra Reed Warbler winters in Kenya more abundantly than pre-1978 records had indicated. Numbers at Karawa must have run into several hundreds. The seasonally flooded *Suaeda* habitat they occupied covers at least 50 ha here, and probably exists in other littoral parts of the Tana delta. Further up the Tana, Garissa is presumably just one of the suitable localities where the species occurs. Other major undiscovered wintering areas might well be associated with the Kenya coast northeast of the Tana, and the rivers of southern Somalia.

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THE EFFECTS OF LATITUDE AND ALTITUDE ON BIRD WEIGHTS

Dale B. Hanmer

This paper compares bird weights from Mopeia, Zambezi delta, Mozambique (17°56'S., 35°37'E.), altitude 12 m and Nchalo, Lower Shire Valley, Malawi (16°16'S., 34°55'E.), altitude 60 m, with those discussed by Britton (1977) from western and coastal Kenya. The climate of Nchalo and Mopeia are similar although Nchalo has a lower rainfall, lower humidity and a slightly higher mean annual temperature. No specimens have been collected but it is likely that the same subspecies occur in both areas, except that in *Tchagra senegala*[1], *Camaroptera brachyura* and *Lonchura cucullata*, authorities differ on the amount of subspeciation, if any, shown by birds from the two localities (Benson & Benson 1977, Clancey 1971, SAOS List Committee 1969).

[1] English names are given in Table 1.

TABLE 1

Weights of birds from Nchalo, Malawi (N) and Mopeia, Mozambique (M). Sexes are given as (m) and (f) where applicable. The first figure is the number of birds in the sample followed by the range of weights (g) and, in brackets, the mean and standard deviation

Colius striatus Speckled Mousebird
N: 247, 41-60 (50.6 ± 4.1). M: 15, 48-62 (52.7 ± 4.4).
Tchagra australis Brown-headed Bush Shrike
N: 18, 27-36 (31.0 ± 3.2). M: 28, 29-39 (33.7 ± 2.3) $P < 0.005$.
Tchagra senegala Black-headed Bush Shrike
N: 1, 55. M: 6, 48-53 (51.2 ± 1.7).
Laniarius ferrugineus Tropical Boubou
N: 17, 42-53 (48.0 ± 3.5). M: 32, 40-55 (47.8 ± 3.8).
Cossypha heuglini White-browed Robin Chat
N: 19, 29-41 (36.5 ± 3.5). M: 9, 30-40 (36.1 ± 2.9).
Prinia subflava Tawny-flanked Prinia
N: 34, 7.0-9.2 (8.14 ± 0.63).
Camaroptera brachyura Grey/Green-backed Camaroptera
N: 51, 8.0-11.5 (10.19 ± 0.82). M: 11, 10.1-13.1 (11.23 ± 1.13) $P < 0.01$.
Anthreptes collaris Collared Sunbird
N (m): 7, 6.0-7.1 (6.71 ± 0.35). M (m): 4, 7.0-8.5 (7.80 ± 0.68) $P < 0.02$.
N (f): 3, 6.0-6.8 (6.33 ± 0.42). M (f): 1, 7.5.
Nectarinia bifasciata Little Purple-banded Sunbird
N (m): 12, 6.6-8.1 (7.18 ± 0.50). M (m): 3, 7.1-8.2 (7.77 ± 0.59).
N (f): 9, 6.0-7.4 (6.62 ± 0.43). M (f): 1, 7.5.
Ploceus ocularis Spectacled Weaver
N (m): 12, 23-26 (24.5 ± 1.2). M (m): 5, 26-30 (27.2 ± 1.8) $P < 0.01$.
N (f): 16, 21-30 (23.7 ± 2.5). M (f): 12, 22-28 (24.4 ± 2.0).
Ploceus cucullatus Black-headed Weaver
N (m): 402, 33-46 (37.5 ± 2.3). M (m): 18, 33-43 (37.2 ± 2.4).
N (f): 223, 26-37 (31.7 ± 2.0). M (f): 24, 26-37 (31.3 ± 3.2).
Euplectes axillaris Fan-tailed Widowbird
N (m): 12, 22-28 (25.2 ± 2.0). M (m): 4, 22-27 (25.0 ± 2.2).
N (f): 21, 17-23 (18.7 ± 1.5).
Euplectes hordeaceus Black-winged Bishop
N (m): 11, 23-28 (25.1 ± 1.6). M (m): 3, 26-28 (27.0 ± 1.0).
N (f): 7, 18-21 (19.6 ± 1.1).
Lagonosticta senegala Red-billed Firefinch
N (m): 31, 6.6-8.4 (7.54 ± 0.46). M (m): 17, 6.8-9.7 (8.31 ± 0.88) $P < 0.005$.
N (f): 35, 6.0-9.8 (7.69 ± 0.80). M (f): 18, 6.0-9.1 (7.82 ± 0.80).
Lonchura cucullata Bronze Mannikin
N: 49, 7.0-10.3 (8.62 ± 1.28). M: 41, 7.0-11.0 (9.15 ± 0.96) $P < 0.02$.

All species discussed by Britton (1977) were caught at Nchalo or Mopeia except *Nectarinia olivacea* and *Estrilda bengala; Prinia subflava* was caught only at Nchalo and only males of *Euplectes axillaris* and *hordeaceus* at Mopeia. All weights were taken on Pesola spring balances, to 1 g in larger birds and to 0.1 g in smaller species. Known immatures are excluded but recaptures of the same individual are used except when made on the same day. The time of capture was not recorded at Mopeia nor in the early days at Nchalo; however, as trapping hours, net sites and pro-

portions of birds caught morning and afternoon are similar, it is possible to compare weights from the two localities. My data may not be properly comparable with Britton's but they should still form a basis for discussion.

As would be expected, weights from Nchalo and Mopeia are mostly very similar, however, in four species (*Tchagra australis, Camaroptera brachyura, Ploceus ocularis* and *Lagonosticta senegala*) weights from Nchalo are significantly lighter. Where a level of significance is given in Table 1 it is derived from the *t*-test. Mean weights for all four localities are given in Table 2 and compared using the *t*-test; where differences are significant they are marked <.

TABLE 2

Mean weights of birds from four localities, showing where differences are significant (P< 0.01). C = Coastal Kenya, K = Nyanza, Kenya, N = Nchalo, Malawi, and M = Mopeia, Mozambique. Weights in brackets indicate a single weight only. '<' indicates a significant difference in weight between the localities on either side of this sign

Colius striatus		C 46.3	<	N 50.6	<	K 52.4	M 52.7		
Tchagra australis		N 31.0		C 32.2		M 33.7	<	K 37.0	(N< M)
Tchagra senegala		C 48.3		K 49.6		M 51.2		N (55)	
Laniarius ferrugineus		C 46.8		M 47.8		N 48.0	<	K 57.6	
Cossypha heuglini		C 27.7	<	M 36.1		N 36.5	<	K 41.7	
Prinia subflava		C 8.08		N 8.14	<	K 9.07			
Camaroptera brachyura		C 9.29	<	N 10.19	<	M 11.23		K 11.45	
Anthreptes collaris	m:	N 6.71		C 6.84	<	M 7.88		K 8.30	
	f:	N 6.33		C 6.73		M (7.5)		K (8.0)	
Nectarinia bifasciata	m:	C 6.97		K 7.13		N 7.18		M 7.77	
	f:	C 6.23		K 6.28		N 6.62		M (7.5)	
Ploceus ocularis	m:	C 23.1		N 24.5	<	K 26.1		M 27.2	
	f:	C 22.9		N 23.7		K 24.0		M 24.4	
Ploceus cucullatus	m:	C 36.7		M 37.2		N 37.5	<	K 45.2	
	f:	C 28.6	<	M 31.3		N 31.7	<	K 36.6	
Euplectes axillaris	m:	M 25.0		N 25.2		K 26.5	<	C 29.1	
	f:			N 18.7	<	K 20.9	<	C 22.4	
Euplectes hordeaceus	m:	K 20.4	<	C 24.1		N 25.1		M 27.0	
	f:	K 18.4		C 18.5		N 19.6			
Lagonosticta senegala	m:	C 7.19		N 7.54	<	K 8.27		M 8.31	
	f:	C 7.46		N 7.69		M 7.82	<	K 8.39	
Lonchura cucullata		C 8.07		N 8.62		M 9.15		K 9.16	(C<M) (N<K)

DISCUSSION

Britton (1977) showed that 14 out of the 17 species examined averaged heavier in western Kenya localities near the equator at elevations between 1160 and 1550 m, than birds from sea-level at the coast 3-4°S. As would be expected from Bergmann's Rule and Britton's data, most Nchalo and Mopeia birds were on average heavier than samples from the Kenya coast (Table 2). It is evident that 12-14° of latitude are enough to account for significant differences in weight when virtually no altitudinal difference is involved. Most Nchalo and Mopeia birds are on average lighter than the samples from highland Kenya near the equator, so that the altitudinal effect of 1160-1550 m is greater than the latitudinal difference involved (16-17°) on weight. Nevertheless, there is a considerable variation in pattern as can be seen in Table 2 and two species, *Tchagra senegala* and *Nectarinia bifasciata*, show no significant difference between the four localities (neither do females of *Ploceus ocularis* and *Euplectes hordeaceus*, but this may be due to different proportions of gravid females).

Table 1 shows the weights of birds from Nchalo and Mopeia: since the localities are only 200 km apart and Mopeia is 1°40' further south and 48 m lower than Nchalo, one would not expect any differences of size to result from these small altitudinal and latitudinal differences, however, there were significant weight differences in four species while two, *Anthreptes collaris* and *Lonchura cucullata*, show slight differences. Many factors could influence weight and size but it is difficult to point to any one as the cause. There is a possibility of subspecific difference in *Camaroptera brachyura* and *Lonchura cucullata* but not in the other four species, although there could be geographic separation of two nearly resident populations leading to the formation of different races. Climate may also have some effect on nearly resident populations. The mean annual temperature at Mopeia is 24.9°C (Hanmer 1976) and that of Nchalo 25.6°C. The annual average rainfall of Mopeia is 960 mm (Hanmer 1976) while that of Nchalo is 660 mm, i.e. Nchalo is both hotter and drier than Mopeia. Of the six species involved, three are insect-eaters and three seed-eaters so that differences in vegetation are unlikely to be a major cause of weight differences.

Further studies on the effects of altitude, latitude, climate and geographical location would be of considerable interest to determine which factors are of most importance in weight and size variations in different localities.

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OBSERVATIONS ON THE NESTING OF THE THREE-BANDED PLOVER *CHARADRIUS TRICOLLARIS*

Stephanie Tyler

While I was being detained by guerillas between June 1976 and early January 1977, observations were made of a pair of Three-banded Plovers which occurred on an 800 m stretch of a small, shallow river in north-east Eritrea. The river flowed in part of a sandy wadi, at one point passing through a narrow gorge; here there were several small waterfalls and two deeper pools. Between the falls was a series of tiny tributaries from hot springs at one edge of the wadi. Down-river from the lower pool the wadi widened and, after *c.* 300 m, the river disappeared into the sand. Occasional flash floods temporarily filled the whole width of the wadi with water. Nomads with their camels and goat herds frequently visited the wadi for water and, in the early mornings and evenings, a stream of guerillas, sometimes numbering well over a hundred individuals, passed up and down the wadi.

The pair of plovers was first seen on 8 June and daily thereafter, usually feeding by the river below the second pool or up in the springs area. When disturbed, the birds were reluctant to fly but ran quickly along the edge of the river, bobbing up and down whenever they paused. A small scrape cleared of large pebbles and lined with small ones was found between the river and a cliff on 17 June. One egg was laid during 24 June and a plover was incubating on 25 June. The nest was not disturbed until 29 June when the incubating bird was flushed to establish the clutch size, which was one. Mackworth-Praed & Grant (1957) give the clutch size for most small African *Charadrius* species as two or rarely three, but Harrison (1975) noted that in Kittlitz's Sand Plover *C. pecuarius* the clutch, although usually two, is occasionally one.

My movements were very restricted by the guerillas and visits to the river were only allowed in the evenings. Observations were therefore usually made during half to one hour periods each evening between 15.00 and 18.00 hrs local time (dusk was *c.* 19.15 hrs in June), occasionally earlier. Probably because observations were made at a relatively cool time of the day I did not see adults crouching during incubation, feather-raising or belly-soaking - patterns of behaviour associated with heat loss from adults during incubation (Reynolds 1977). No change-over of the adults at the nest was seen either. In other *Charadrius* species it is known that both sexes share incubation and it is probable that the Three-banded Plover is no exception. The incubating bird was very tame, sometimes allowing an approach to within 3 m before slipping off the nest and running quickly to the edge of the river, soon returning to the egg when danger had passed. When disturbed from its nest, the Three-banded Plover never kicked or scuffled sand or stones over the egg to cover it, as does the Kittlitz's Sand Plover and sometimes the White-fronted Sand Plover

C. marginatus (Hall 1960, Martin 1971). If an intruder came near the nest, elaborate distraction displays were performed: the bird approached the intruder to within a metre and called excitedly; it then shuffled away down-river, crouching as it moved, with its head jerking up and down and tail raised, and sometimes holding out its wings; then it paused but, if followed, it again moved away, so leading the intruder 30-40 m from the nest. Then it flew back beyond the nest, sometimes 200-300 m upriver. When an adult returned to the nest it flew back to the river edge but walked the last few metres to the nest. Martin (1971) found that Three-banded Plovers in South Africa left their nest when an intruder was a long way off, first running a few paces and then flying up to half a mile (800 m) away. The Eritrean birds apparently behaved more like Martin's White-fronted Sand Plovers which allowed a closer approach by an intruder and then rose from the nest and sneaked off unobserved. However, the birds in Eritrea were accustomed to people walking daily along the wadi.

Incubation continued for 17 d until 11 July when a passing herd of goats broke the egg. Both adults were seen daily after the egg had been destroyed and still performed distraction displays when intruders were in the vicinity of the old nest, but searches for a new nest were fruitless. Between 22 July and 10 September there were a number of flash floods which would have destroyed any possible nests. On 23 September a plover attempted to drive away a Wood Sandpiper *Tringa glareola* from a raised pebble bank by the lower pool, about 20 m from the first nest. A scrape was found but it remained empty for at least four days. On 15 October a plover vigorously attacked a Squacco Heron *Ardeola ralloides* which was feeding by the pool; the plover rushed at the Squacco and flew up at it. On 16 October a check revealed two eggs in the scrape. On 24 October at 17.30 hrs a dry chick was moving about close to the nest on which an adult still sat. The second egg had hatched by 07.00 hrs the following day when an adult was leading the two chicks on to mud between the nest and pool, which was silting up. If it is assumed the first egg was laid on 28 September at the earliest, and the second after an interval of two days, the incubation period was 26 d or less.

Both chicks survived despite more floods and much disturbance by passing people. The adult plovers both tended the chicks but usually only one adult guarded them at a time. The off-duty bird fed up by the springs or where the river disappeared into the sand, and where aquatic invertebrates and tadpoles were often stranded. The off-duty bird, even when several hundred metres from the chicks, would shuffle along calling in an agitated way a few metres in front of an intruder. The duty bird also performed distraction displays to humans near the pool but was now more tolerant of birds such as Squaccos and sandpipers. The change-over of adults with the chicks was seen on four occasions. The off-duty bird returned to the edge of the pool and fed there until its mate walked or ran from the chicks to join it; it then walked up to the chicks and the relieved bird soon flew away.

Either adult brooded the chicks, especially after some cause of alarm or during rain. Brooding of the chicks was last noted on 18 November when they were 24 d old. When the duty bird was disturbed by approaching people it called to the chicks which then ran to the shelter of a small cave in rocks behind the nest site, and hid there until the danger had passed. On only three out of more than 40 observed disturbances did a chick 'freeze' in the open rather than run to the cave. On these occasions the

chick was more than 10 m from the cave when the adult called to it and the human was already very near. The chick then crouched motionless and did not stir even when touched.

On 23 November, when the chicks were 30 d old, one was seen flying across the river to join a parent; it then flew a short distance down-river with the adult. The second chick did not fly but called repeatedly to the adult and its sibling and ran on to a sloping rock face and hid in a crevice. The following day both juveniles were in the nest area and ran to their old cave when disturbed but, on 25 November, both flew to the cave when I approached; a second time they ran.

Both adults and juveniles were seen together for the next two days, often away from the nest area.Then one juvenile disappeared together with an adult. The second juvenile was last seen on 7 December. Thus, the young birds first flew 30-32 d after hatching but remained with their parents for up to ten days more. This compares with *C. pecuarius* which is independent in about 30 d (Harrison 1975). It is remarkable that during the 30 d prior to flying, the chicks mostly remained in a limited area of about 15 m^2 in the vicinity of the nest. This area was bounded by cliffs and water but the chicks could wade across the river and did occasionally do so, although never venturing far from the river. No doubt the continual human disturbance in the wadi and the safety of the small cave, plus the abundance of aquatic food enabled the chicks to survive in such a restricted area. In fact, it was the only place along the stretch of river where the the chicks could have avoided being trampled.

An adult plover, presumably of the same pair watched since June, was behaving suspiciously at its old breeding area on 13 December and, on 15 December another nest containing two eggs was found close to the site of the previous one. Incubation continued until 20 December when one egg was broken by guerillas; the nest was then deserted. This pair of Three-banded Plovers clearly laid three clutches within six months, the second of these being a repeat clutch. This is the first evidence that Three-banded Plovers are multiple-brooded.

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SOUTHWARD MIGRATION AT NGULIA, TSAVO, KENYA 1977/78

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The Ngulia migration phenomenon needs little introduction. Previous accounts have been given of the attraction of southward bound Palaearctic night migrants to the lights of the Safari Lodge between November and January (Pearson & Backhurst 1976, Backhurst & Pearson 1977). The purpose of this note is to review ringing activity during the 1977/78 southward movements, and to draw attention to observations and records of particular interest.

ACCOUNT OF THE SEASON

Except for periods when half to full moon was a potential interference during the second half of the night, the Lodge was manned by one to five ringers on most days from 22 October 1977 to 7 January 1978. Once again, over 4000 Palaearctic birds were ringed. This was due, however, to efficent catching at night, and concerted ringing effort on a few occasions when large numbers of birds were grounded, for weather conditions were less favourable than in any of the five previous years. Although the rains were heavy and prolonged, there was little rain at night, or even persistent mist, until mid December. The peak passage time at the end of November and the beginning of December (see Pearson & Backhurst 1976) was in fact completely unproductive due to a full moon period followed by a week of fine nights. Low cloud at Lodge level persisted over the second part of the night on only eleven of the 37 dates manned, with accompanying showers on only five occasions. Thus, although birds were often seen moving near the lights at night in temporary patchy mist, numbers grounded at dawn were usually small, and falls of thousands of birds were encountered on only five occasions, all in mid December.

On the clear mornings of 22 and 23 October there was no sign of arrival; the only Palaearctic migrants seen near the Lodge were single Garden and Olivaceous Warblers, Wheatear and Isabelline Wheatear, a Spotted Flycatcher and a party of Willow Warblers[1]. However, the first visit after the late October full moon, on 4-7 November, proved to be the most interesting of the year. It coincided, unusually early in the season, with a period of low night mists, so that it was possible, for the first time in six years of extensive study at Ngulia, to sample migration and draw conclusions about overhead movements at the beginning of November. Birds appeared around the lights each night, but numbers were rather small compared with those regularly encountered with similar weather conditions during late November - early December (see Pearson & Backhurst 1976, Backhurst & Pearson 1977). Very few birds were grounded at dawn on 5th, and a few hundreds only on 6th and 7th. Due mainly to netting at night, over 470 birds were ringed over the three days; the species composition of this catch was rather unusual. Whitethroats predominated on 5th and 6th, while Sprossers were well represented on 5th and predominated on 7th. Of greater interest, Rufous Bush Chats were second only to Whitethroats in abundance on 5th and 6th, and the total of 53 ringed during the three days in fact exceeded any previous Ngulia *annual* total for the species. Nightingales (23 ringed, 18 of these on 7th) and Spotted Flycatchers (28 ringed) were also especially well represented, while European Nightjars were caught each night, and up to 20 seen together beneath the lights on

[1] Scientific names of all species mentioned in the text are in Table 1.

6th. Yellow Wagtails and Tree Pipits were heard in some numbers at night in the mist on 5th and 6th, as were hirundines, and the first Sand Martin to be ringed at the Lodge was netted at night on 5th. Four Olive-tree Warblers were noteworthy, as was an Icterine Warbler, apparently the first recorded in eastern Kenya, netted on 7th. There was a marked lack of some species in these early movements. Thus, only 16 Marsh Warblers and three River Warblers were caught in all, and the Basra Reed Warbler was unrecorded.

The Lodge was manned continuously from 12 November until the next full moon intervened on 22nd. Unfortunately, most nights were clear and although showers were sometimes heavy, these occurred during afternoon and evening. There were small falls in light mist during the last hour of darkness on 18th and 19th, which involved mainly Sprossers, and produced seven Olive-tree Warblers. A more notable catch of over 300 birds was made on 21st when thick mist remained at Lodge level from 02.30 hrs till dawn.

Coverage was again continuous from 4-21 December. The period 4th-9th, potentially the best of the season, was totally unproductive as a result of a succession of clear dry nights. On 10th, thick low mist persisted from midnight onwards, but there were no showers, and numbers of grounded migrants next morning were small. However, birds were numerous around the buildings at night, and 470 were ringed in all, the majority of these being Marsh Warblers. On 12th, low mist from 00.30 hrs, this time with a few light showers, produced a much larger fall at dawn. Migrants were caught steadily throughout the night and in good numbers in the bushes near the Lodge next morning. The overall total of 849 Palaearctic birds was the highest ever ringed at Ngulia in a day (actually this total was caught and ringed in a twelve hour period). Again, Marsh Warbler (499 ringed) was the dominant species; a total of 50 Willow Warblers was by far the highest ever daily catch but, apart from seven Basra Reed Warblers and a late Olive-tree Warbler, there were no other outstanding features. More misty nights with light showers resulted in further large falls on 15th, 17th, 18th and 19th. Marsh Warblers and Whitethroats were the dominant species, but Sprossers (95 ringed on 18th) were still well represented, and Willow Warblers continued to appear in unusually high numbers. In all, 3024 birds, some 70 per cent. of the season's total, were ringed from 10 to 21 December.

Rain, with frequent night cloud and mist, continued over the Christmas full moon and into early January. As in early 1977, a profusion of rank grass, green leaf and fruiting bushes now surrounded the Lodge, but there was no sign up to early January that this cover was being exploited as was the case during January 1977 (Backhurst & Pearson 1977). The only January ringing visit was made between 5th and 7th. The presence of migrants near the Lodge still seemed to depend on their attraction to the lights at night. During persistent mist, with occasional showers, small numbers of birds were seen and caught during the early hours of 6th, and a few hundred were present next morning. On 7th, mist appeared at 00.30 hrs but lifted after half an hour, and cleared well before dawn; very few migrants were caught. The catch of 170 for the two days consisted mainly of Marsh Warblers and Whitethroats, and involved only six other Palaearctic species. An Upcher's Warbler, four Barred Warblers, two River Warblers and a Basra Reed Warbler were included, but not a single *Luscinia* was recorded.

October - February ringing totals for 1977/78 and for 1969/78 are given in Table 1. It can be seen that, apart from the species caught in unusual

TABLE 1

Numbers of Palaearctic night migrants ringed at Ngulia Lodge between October and February in the years 1969-1978

Species	1977/78	%*	1969/78
Spotted Crake *Porzana porzana*	0	-	1
Cuckoo *Cuculus canorus*	0	-	1
Lesser Cuckoo *C. poliocephalus*	0	-	1
Nightjar *Caprimulgus europaeus*	14	333	35
Red-backed Shrike *Lanius collurio*	33	69	280
Red-tailed Shrike *L. isabellinus*	8	16	265
Hybrid *L. collurio/isabellinus*	0	-	2
Tree Pipit *Anthus trivialis*	3	-	11
Yellow Wagtail *Motacilla flava*	0	-	2
Golden Oriole *Oriolus oriolus*	1	-	6
Spotted Flycatcher *Muscicapa striata.*	38	463	79
Great Reed Warbler *Acrocephalus arundinaceus*	4	-	13
Basra Reed Warbler *A. griseldis*	15	35	233
Marsh Warbler *A. palustris*	1626	138	7649
Sedge Warbler *A. schoenobaenus*	3	-	29
Reed Warbler *A. scirpaceus*	2	-	37
Icterine Warbler *Hippolais icterina*	1	-	1
Upcher's Warbler *H. languida*	9	32	152
Olive-tree Warbler *H. olivetorum*	15	84	107
Olivaceous Warbler *H. pallida*	10	36	153
River Warbler *Locustella fluviatilis*	94	50	1063
Savi's Warbler *L. luscinioides*	0	-	1
Willow Warbler *Phylloscopus trochilus*	190	503	384
Wood Warbler *P. sibilatrix*	0	-	1
Blackcap *Sylvia atricapilla*	6	-	24
Garden Warbler *S. borin*	24	50	269
Whitethroat *S. communis*	1322	115	7181
Barred Warbler *S. nisoria*	21	40	291
Rufous Bush Chat *Cercotrichas galactotes*	61	229	221
Irania *Irania gutturalis*	72	75	565
Sprosser *Luscinia luscinia*	629	99	3905
Nightingale *L. megarhynchos*	41	145	183
Rock Thrush *Monticola saxatillis*	4	-	22
Isabelline Wheatear *Oenanthe isabellina*	2	-	8
Wheatear *O. oenanthe*	8	-	15
Pied Wheatear *O. pleschanka*	2	-	4
Redstart *Phoenicurus phoenicurus*	0	-	1
Swallow *Hirundo rustica* (at night)	16	-	24
Sand Martin *Riparia riparia* (at night)	1	-	1
Number of species	31	(82%)	38
Total ringed	4275	(113%)	23 220

*The 1977/78 total expressed as a percentage of the 1972/77 mean for each species.

numbers in early November, only the Willow Warbler gave a notably high 1977/78 total, almost three times the highest in any previous year. Several species were, in fact, rather scarce; thus totals of shrikes, Basra Reed Warblers, *Hippolais* warblers and Barred Warblers were well below average and, for the first year since 1971/72, fewer than 100 River Warblers were ringed.

Weights have provided some of the most intriguing data collected at Ngulia in past years, but in 1977/78 there were no occasions when weights were exceptionally high, or when the apparent association between high weights and heavy rainfall could be tested (see Backhurst & Pearson 1977). In early November most birds were lean, the only exception being a few moderately fat Whitethroats, and average weights were rather low for all species. This was not surprising since few migrants would be expected to be bound much farther south at this early date. From mid November onwards, a considerable proportion (20-30 per cent.) of the Marsh Warblers, Whitethroats and River Warblers were rather fat; December weights in general were higher than in most years.

TIMING OF SOUTHWARD MOVEMENTS

From the third week of November to the second week of December, misty weather at night, with no moon, has invariably produced large concentrations of migrants at the lights. The volume of migration then decreases considerably, for, with the same conditions, much lower numbers have tended to appear in late December, and only the odd bird or two seems to be still on the move in mid January. Information on the build up of movement has been rather limited, for this seems to occur late in October or early in November, at a time when visits to the Lodge have usually been frustrated by clear, dry nights. Thick mists were encountered during the second week of November in both 1974 and 1975, and many birds were caught in these years, showing that movements were already well established. On the other hand, low cloud with some showers on 27 October 1974 revealed practically no migrants, despite an absence of moon from 02.30 hrs. On 3 November 1975, another moonless night, cloud was at times down to 30 m, low enough to bring birds into view moving south above the lights although not low enough to ground them. Numbers though were far less than are typically seen in identical conditions later in November. Ideal conditions for falls of birds in early November were encountered in 1977 for the first time. This occasion served to confirm the already existing impression that movement is just beginning to build up at this time. Thus, falls were small, and numbers of migrants moving near the lights were similar to those typically to be seen in late December rather than in late November.

SEASONAL CHANGES IN CATCH COMPOSITION

The overall species composition of the catch has varied little at Ngulia from one year to another; marked changes are always noted, however, during the course of individual seasons. As a result of several years' trapping, differences have been established from one species to another in patterns of seasonal occurrence. Amongst the main species, for example, Sprossers are particularly prominent during November, and relatively scarce by late December, while the contributions of Marsh Warbler and River Warbler are highest in catches from the end of November to early January. The evidence up to 1976 indicated that certain species crossed Ngulia mainly during November, with a few stragglers at most later in the season; these species were Nightjar, Red-backed Shrike, Spotted Flycatcher, Olive-tree Warbler,

Rufous Bush Chat and Nightingale. Four of these made unprecedented contributions to catches in early November 1977, suggesting even more strongly that most of their movement precedes the main migration, and is normally undetected because of the lack of suitable conditions to bring birds to ground.

TABLE 2

An analysis of the 18 main species of Palaearctic night migrants ringed at Ngulia Safari Lodge between 1 November and 16 January, shown as percentages of the total half-month catch for the years 1972-1978

Species	Nov I	Nov II	Dec I	Dec II	Jan I
Nightjar	1.1	0.2	*	0	0.1
Red-backed Shrike	4.6	2.0	0.4	0.1	0.7
Red-tailed Shrike	1.6	1.5	0.6	1.1	1.2
Spotted Flycatcher	2.6	0.4	*	*	0
Basra Reed Warbler	0.3	1.2	1.2	0.6	1.3
Marsh Warbler	11.7	26.4	40.4	38.0	38.9
Upcher's Warbler	0.4	0.5	0.6	0.9	1.4
Olive-tree Warbler	1.6	0.8	0.2	0	0
Olivaceous Warbler	2.2	0.8	0.4	0.5	0.5
River Warbler	2.0	4.7	5.8	3.4	3.4
Willow Warbler	0.9	0.9	2.1	2.4	1.1
Garden Warbler	0.1	0.5	1.1	1.8	4.8
Whitethroat	25.6	30.5	29.3	36.5	32.9
Barred Warbler	1.6	1.1	0.8	1.1	3.8
Rufous Bush Chat	5.7	1.0	0.4	0.2	0
Irania	4.0	1.9	2.0	3.3	2.3
Sprosser	29.2	24.0	13.5	8.2	6.2
Nightingale	2.8	1.2	0.4	0.3	0.1
Birds/half-month	1670	7354	8491	4178	853

Percentages are rounded to the nearest 0.1 per cent., those less than 0.05 per cent. are shown by an asterisk (*).

Table 2 shows contributions of the various main species to catches at different stages of the migration period, based on combined ringing figures for six seasons. In addition to the species mentioned above, the Olivaceous Warbler stands out as an earlier migrant, while Garden and Upcher's Warblers feature mainly in December and early January catches, and the Basra Reed Warbler is particularly scarce before late November.

The early stages of southward movement at Ngulia, although apparently the most interesting in terms of species diversity, remain the least well documented. It is to be hoped that future late October and early November visits will coincide more frequently with productive weather conditions so that larger samples can be made of these early migrants.

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SHORT COMMUNICATIONS

THE HERONRY AT LAKE JIPE Lack (1977) referred to two visits to this heronry on 31 July and 26 December 1976 when approximately 50 or less pairs of six species were observed nesting. Following reports that breeding was again in progress, I visited the heronry on 28 March 1978, and it was soon clear that many more birds were breeding than during Lack's visits in 1976.

The heronry, just inside Tanzania, was situated at one end of a large swampy reed island about 150 m^2, and was almost certainly the same one visited and discussed by Lack. (Lake Jipe is actually shared by Kenya and Tanzania.) The Tsavo National Park boatman who accompanied me told me that the site had been occupied since late December 1977.

The island itself was virtually impossible to penetrate and, as such, was free from disturbance by local fishermen and visitors. At a few points it was possible to beach the boat into the reeds, and from a vantage point on top of the boat estimates of the nesting activity could then be made. Due to the denseness of the reeds it was impossible to make any counts of nests other than those where large young were visible. The composition of the heronry on 28 March 1978 can be summarized as follows:

Phalacrocorax africanus Long-tailed Cormorant One of the commonest species with at least 50 pairs nesting, the majority of which appeared to be tending young at all stages.
Ardea alba Great White Heron About 20-25 pairs nesting. As many birds were sitting tight it was impossible to determine the contents of any nests.
Ardea melanocephala Black-headed Heron Approximately 10 pairs nesting, most of which were sitting tight either on eggs or with small young.
Ardea purpurea Purple Heron Probably the most abundant heron present with at least 50 pairs nesting, most of which appeared to have large and almost fully fledged young.
Ardeola ibis Cattle Egret At least 50 pairs nesting, the majority of which appeared to be feeding young at all stages.
Ardeola ralloides Squacco Heron At least five pairs nesting, all with large and fully fledged young, some of which were making their first attempts to fly.
Threskiornis aethiopica Sacred Ibis About 10-12 pairs nesting, though the contents of all nests were either totally or partially hidden from view. Some probably contained young.

Platalea alba African Spoonbill About 10-12 pairs nesting, some of which were sitting tight, presumably on eggs, while others tended small young.

The following two species were also present at the heronry but breeding, although probable, was not positively established:

Egretta ardesiaca Black Heron Although this is normally quite plentiful at Lake Jipe, only one was seen at the heronry. It circled the island for a short time before dropping into the densest area of reeds. Nothing at the time or later could positively confirm whether or not it was breeding.

Egretta garzetta Little Egret One bird was seen perched amongst a group of nesting Cattle Egrets, and later dropped out of sight, possibly to a nearby nest.

The only other resident heron which occurs at Lake Jipe (although not seen at the heronry on this occasion) is the Night Heron *Nycticorax nycticorax*. It is quite possible that there may have been some hidden in the densest parts of the island.

It would appear that the Lake Jipe heronry, unique in that there are no trees on the island, provides a secure breeding ground for most Ardeidae and Threskiornithidae occurring in the area. Certainly, those species which are normally tree-nesters appear to have readily adapted to breeding amongst dense reeds where their nests, in many cases, were 3-4 m above water level.

It is hoped that more accurate and regular data can be obtained from future visits to this heronry, for comparison with the heronries at Garsen and Kisumu.

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D.A. Turner, Box 48019, Nairobi. Received 10 April 1978

A ROOST OF BLACK-CHESTED SNAKE EAGLES IN THE SERENGETI, TANZANIA Between the first week of September and the first week of October 1976, as many as ten Black-chested Snake Eagles *Circaetus pectoralis* were seen roosting together in a pair of tall acacia trees on the south-eastern Serengeti Plains 4 km west of Lake Ndutu. The two trees were very close together on open short grass plains about 2 km from the edge of the *Acacia tortilis* woodlands that surround Lake Ndutu.

The birds were seen on about eight occasions by various observers. All sightings were around dawn and, after first light, two or three of the birds were usually seen on the ground but within 50 m of the trees. Later in the day, eagles of the same species were seen quite commonly in the air over the surrounding plains. The roost was not seen at any other time between June 1976 and November 1977. It may be significant that the roost was seen at the end of a particularly severe dry season.

J.R. Malcolm, Museum of Comparative Zoology, Agassiz Museum, Harvard University, Cambridge, Mass 02138, U.S.A. Received 24 February 1978

LARGE NUMBERS OF *FALCO AMURENSIS* IN TANZANIA On 13 January 1956 more than a thousand Eastern Red-footed Falcons *Falco amurensis* were seen from about 18.00 hrs until dusk, flying over Dodoma. A storm had passed earlier

and the sky was misty. The large flock was flying fast on a course of 205° (i.e. 25°W of S) in a stream, nearly a mile (=1.5 km) wide, and at a height of about 300 m above ground level (altitude 1150 m). The white under-wing coverts were clearly visible in flight. During this impressive passage the birds made absolutely no sound, nor did any of them deviate from their direct flight. The passage was still in progress when dusk fell, and counting had to stop. No local roosts of this bird were known to me in the Dodoma area.

John Harpum, St. Paul's College, Cheltenham, Gloucestershire, England.
Received 23 November 1977

ELEONORA'S FALCON WINTERING IN SOUTHERN TANZANIA Eleonora's Falcon *Falco eleonorae* has for many years been thought to winter exclusively in Madagascar, travelling from its Mediterranean breeding grounds via the Red Sea, Suez and Somalia (Brown & Amadon 1968). I am therefore most grateful to John Savidge, formerly Senior Warden in Ruaha National Park, southern Tanzania, for the following information on Eleonora's Falcon in Ruaha from 1964 to 1969, which prompted my own visit to the Park in December 1970.

Savidge (*in litt.*) reported that Eleonora's Falcon arrived in Ruaha during early December immediately after the first heavy rainfall of the rainy season, and was then present in the Park throughout the rains until late March and early April. He found them more numerous and more concentrated early in the rainy season than later, and noted that they often occurred in considerable numbers, e.g. "over 80 in one straggling flock, and 300 in an afternoon, all flying over a given point". Savidge thought that numbers appeared to be directly related to the amount of rainfall and the availability of winged termites, which were normally prolific in Ruaha immediately after the onset of the rains and, as such, attracted large numbers of insect-eating birds - particularly migratory falcons. The Eleonora's Falcons were normally accompanied by small numbers of European Hobbies *F. subbuteo* and occasionally Eastern Red-footed Falcons *F. amurensis* and, as can be seen from Table 1, the arrival of the first Eleonora's coincided closely with the onset of the rainy season and the subsequent emergence of termites.

TABLE 1

Year	Rains started	First *F. eleonorae*
1964	19 December	20 December
1965	1 December	7 December
1966	6 December	20 December
1967	1 December	11 December
1968	5 December	8 December
1969	13 December	19 December

John Savidge, himself a keen and active falconer, having had a tame Eleonora's Falcon for some years earlier in Ugnada (purchased, incidentally, on the street in Kampala), was therefore understandably keen and interested in these, and other migratory falcons while he was in Ruaha.

My own visit to Ruaha National Park (4-8 December 1970) was intended to

coincide with both the onset of the rains and, hopefully, the influx of migratory falcons. The rains had already started, although the first large arrival was in the early morning of 6 December after a night of continuous heavy rain. A large mixed flock of European Hobbies, Eastern Red-footed Falcons and Lesser Kestrels *F. neumanni* was observed in the vicinity of the Park Headquarters, while nearby, along the Ruaha River, an adult Eleonora's Falcon fed on flying termites for most of that day. John Savidge was away at the time, and returned on 19 December (11 days after my visit) when he also noticed a single Eleonora's. However, he reported later, that due to the generally poor rains that season (1970-1971) he had noticed only a relatively small number of falcons in the Park.

Although the world population of Eleonora's Falcon is considered to be only about 4000 birds (Brown 1970), previously thought to winter exclusively in Madagascar, my own experience of them there is that they are greatly outnumbered by the Sooty Falcon *F. concolor*. The two species have frequently been confused. In general, however, Eleonora's is a rather uncommon winter visitor, mainly confined to the high central plateau with extreme dates of 20 November and 14 April.

Whereas it would appear that some Eleonora's arrive in Madagascar almost a month before the first arrivals in southern Tanzania (although Madagascar lies much further south than Tanzania), it may be that the Tanzania wintering birds originate from a different population from those which winter in Madagascar. Also, one might expect Tanzania wintering birds to occur on passage in Kenya, yet Backhurst, Britton & Mann (1973) comment that "the bulk of the population of this falcon must pass to the east of our area on their way to and from their known wintering grounds in Madagascar but a few may pass along the rift valley in Kenya and Tanzania". Two birds near Embu on 10 November 1974 (EANHS Ornithological Sub-Committee 1977) may well have been *en route* to southern Tanzania, and constitute only the second positive record of this species in Kenya.

The paucity of records from northern and eastern Africa is perhaps an indication that the greater part of the journey from the Mediterranean to winter quarters is made in a long,and almost non-stop flight. Certainly their late departure from Europe in October, with first arrivals in Madagascar in November, and in southern Tanzania in early December, lends weight to this theory.

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D.A. Turner, Box 48019, Nairobi. Received 12 April 1978

THE VOICE OF THE SCARCE SWIFT *SCHOUTEDENAPUS MYOPTILUS* Mackworth-Praed & Grant (1962: 593) described the call of the Scarce Swift *Schoutedenapus (Apus) myoptilus* as "said to make a deliberate clicking noise". However, Williams (1967: 265) says "usually silent; call unrecorded", and McLachlan & Liversidge (1970: 263-4) do not mention any call. Brooke (1971) reviews geographical variation and distribution in the Scarce Swift, but makes no mention of vocalizations.

In fact this swift is frequently vocal and has a voice distinctly different from any other swift known to us, which is a great help in locating birds at a considerable distance, when their distinctive shape, size and colour may not be clear. Mackworth-Praed & Grant's comment is obviously based on Masterson & Child (1959) from eastern Rhodesia, and theirs is a good description. An even better one, but apparently overlooked, is by Dillingham (1958) from northern Tanzania. He describes the call as a metallic "*tik*" uttered three or four times, followed by a few short trills, some of which he considered to bear a resemblance to those of the Cardinal Woodpecker *Dendropicos fuscescens*.

R.J.D. first became acquainted with this call in 1969 on the Nyika Plateau in north-eastern Zambia (Dowsett 1970), and he has subsequently heard it there often - usually from birds flying in pairs over the forest canopy. On the Nyika in December 1977 we frequently observed pairs chasing and calling, even when they were part of a larger group of Scarce Swifts. Incidentally, the species belies its English name, and is very much more common in north-eastern Zambia and adjacent Malawi than Benson *et al.* (1971) and Benson & Benson (1977) infer. Whereas there were previously no records between northern Tanzania (Kilimanjaro and Oldeani) and southern Malawi (Mlanji), according to White (1965: 212), in addition to records for most months from the Nyika it is now known from the Mafinga Mountains (Dowsett & Stjernstedt 1973). Doubtless it also occurs in highland areas in southern Tanzania, but has been overlooked.

During a visit to Kenya in December 1976 we saw and heard Scarce Swifts on Mt Kenya and at nearby Naro Moru. Over the Mt Kenya forests they were in small mono-specific groups, but near Naro Moru they formed part of a large concourse of swifts of several species feeding low over open grassland - a habit also described for Scarce Swifts in Tanzania (Dillingham 1958), eastern Zaïre (Prigogine 1966) and elsewhere.

On 5 December 1976 F.D.-L. made a tape-recording of a pair of Scarce Swifts on Mt Kenya, and this is reproduced as a sonogram in Fig.1. This shows clearly a fast trill, followed by a harmonic nasal chittering. This sequence was followed by a few typical "*tiks*" (which may either precede or follow the trills) which are not reproduced in the sonogram.

It might be thought that the apparently unique voice of this montane swift provides further evidence of its generic distinctness from the *Apus* swifts. However, there is quite a wide variation in the vocalizations within that large genus. The voice of the Little Swift *A. affinis*, for example, is very distinct from that of the European Swift *A. apus*, and so we would not suggest at this stage of our knowledge that the voice of the Scarce Swift has any special taxonomic significance.

ACKNOWLEDGEMENTS

We would like to thank Professor J.-C. Ruwet of the Laboratoire d'Ethologie et de Psychologie animale, University of Liège, for the use of sonograph facilities.

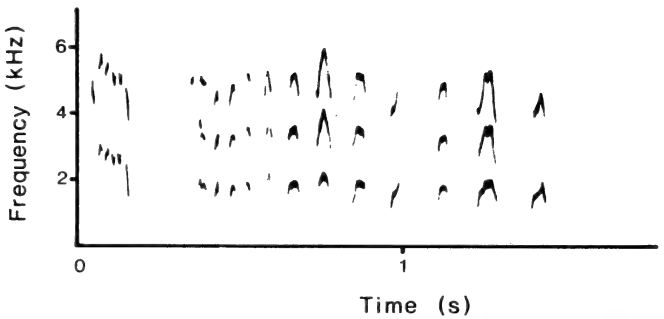

Fig. 1 *Calls of Scarce Swift* Schoutedenapus myoptilus: *a short trill, followed by a nasal chittering (harmonics) and a high-pitched* "tik"

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R.J. Dowsett and *Françoise Dowsett-Lemaire, Livingstone Museum, Box 498, Livingstone, Zambia.*

Received 13 March 1978

Continued from inside front cover

'References'; the name(s) of the author(s) and date(s) of publication should be given in the text in the normal way. A list of the works concerned is given below.

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All contributions should be sent to Dr D.J. Pearson, Department of Biochemistry, University of Nairobi, Box 30197, Nairobi, Kenya.

WORKS WHICH SHOULD NOT BE LISTED UNDER REFERENCES

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SCOPUS

NECTAR-FEEDING OF SOME PLOCEINE WEAVERS

Lester L. Short & Jennifer F.M. Horne

INTRODUCTION

While studying woodpeckers and barbets in Kenya during July and August 1977, we observed closely several species of ploceines that persistently foraged for nectar in flowers. We have made an attempt to survey the literature of African ploceine weavers for previous observations of this phenomenon, and we provide a list of species for which such feeding has been reported. Included is mention of JFMH's and others' observations of nectar-feeding by fodies *Foudia* spp. of some Indian Ocean islands.

Weavers generally are held to be seed-eaters that feed on insects to some extent. Most insectivorous birds subject their prey to relatively little manipulation once it has been caught. We submit that the seed-eating habit, because it requires manipulation of seeds by the tongue and bill of the bird, actually favours diverse feeding adaptations in seed-eaters and their derivatives. Thus, in a sense, seed-eating 'pre-adapts' birds to a variety of feeding habits including nectar-feeding. For example, the Hawaiian honeycreepers and Australasian nectar-feeding parrots seem to have evolved from seed-eating ancestors. Hence it is not surprising to find weavers feeding on nectar.

Our 1977 observations in Kenya partly are the outcome of abnormally heavy rains from March to late August and thereafter. Following on the relatively dry period of the previous several years, the 1977 rains resulted in luxuriant growth and leafing of plants, and a burgeoning of diverse flowers throughout central and central southern Kenya.

OBSERVATIONS

Ploceus baglafecht Reichenow's Weaver and *P. xanthops* Holub's Golden Weaver: These species were reported to feed on nectar of sisal flowers by Cunningham-van Someren (1974), although the mode of obtaining nectar was not mentioned. At Karen, Nairobi on 2 and 3 July 1977 we observed many birds feeding at the flowers of a 20-m tall tree of the genus *Prunus*. The following species were represented: *Nectarinia venusta* (five or six birds), *N. mediocris* (two), *N. kilimensis* (five or six), *N. amethystina* (two), *N. senegalensis* (one), *Pycnonotus barbatus* (three), *Ploceus baglafecht* (three) and *P. xanthops* (eight to ten). Over the two days we spent about two hours observing the weavers at different times.

The Reichenow's Weavers usually were found in or near the flowering tree at any time we searched for them. They rapidly moved together from flower cluster to flower cluster. From a perch among the flowers a weaver would dip its bill into first one flower, then another, and so on, before moving to another cluster. Occasionally we noticed the fluid on the bill glistening in the sunlight.

Twice on 2 July, and once on 3 July, we watched a loose flock of eight to ten Holub's Golden Weavers for a total of 45 min feeding at this same tree. The birds systematically visited the flower clusters, more slowly dipping the bill into each flower than did the thinner billed Reichenow's Weavers, then climbed or flew to a nearby cluster and repeated the feeding. Sometimes they hung upside-down, tit-like, within a cluster. Several times we detected liquid glistening on, and even dripping from their bills as they lifted them from the flowers. There was no sign of insect foraging, or mandibulating; rather the weavers thrust the bill deep within the flower, momentarily held it there with no movement of the bill but with a distinct pumping movement of the throat, then lifted the bill and went to another flower. Occasionally we could see swallowing movements of the throat after the head was lifted. The birds did not wipe the bill after foraging in a flower, nor did they open and close the bill as if mandibulating insects. We carefully examined flowers from ten clusters on six different low branches. The flowers were lightly fragrant but full of nectar to the extent that the mere touch of the hand to a branch overhead caused nectar to drip over one. The nectar was moderately sweet. A few small insects including at least some dipterans were seen flying about the flowers, but close examination of the clusters disclosed no insects within the flowers we looked at.

We noted no interactions between the two species of weavers, although they sometimes were but three or four metres apart. Nor were there interactions with other birds in the tree. However, none of the many active sunbirds approached flower clusters at which weavers were feeding.

At 07:45 hrs on 8 July we observed an adult pair and an immature *P. baglafecht* 4 m from us foraging in the red flowers of *Ruttya fruticosa* (Acanthaceae). All three individuals went from flower to flower, pausing at each flower to dip the bill then pull the head back, swallow and proceed to another flower. Drinking-pumping movements of the gular area and throat were clearly visible, as was nectar all over the distal half of the bill. There was no sign of insects or indication of insect-feeding by the birds, which foraged in the manner described for about 6 min before flying off in a group. This species, but not Holub's Golden Weaver, is prominent at feeding stations in the Nairobi area, eating seeds of various sorts, and fruits including banana, mango and papaya.

G.R. Cunningham-van Someren (pers. comm.) has noted both these weavers taking nectar from flowers of *Grevillia robusta* and *Acrocarpus fraxinifolius*, and also *Leonotis nepetifolia*. He comments that many plants from which nectar is taken by Kenya birds are exotic, and hence experience with native plants such as *Leonotis* must have formed the basis for birds, including these weavers, shifting to exotic flowering plants.

Ploceus (velatus) vitellinus Vitelline Masked Weaver: Rowan (1971) listed the South African form (*velatus* group, these are merged in *Ploceus velatus* by Moreau 1962, White 1963, and Morony, Bock & Farrand 1975) of *P. velatus* as feeding on nectar, with no mention of its mode of feeding. On 24 July at Olorgesailie Prehistoric Site of the National Museums of Kenya, about 55 km south of Nairobi, we encountered a female Vitelline Masked Weaver in a mass of orange *Leonotis nepetifolia* flowers. This bird moved up one after another flower stalk foraging for nectar by biting at the base of each flower, pulling it out, and mandibulating the flower base, thus destroying the flower. We watched the systematic nectar-feeding endeavours of this female for over 5 min. During this period no other bird visited the small clump of these flowers. There were few flowers of

any kind in the vicinity of Olorgesailie, which had had less rain than Nairobi, so the plants were late in flowering. Since these flowers are important to at least *Anthreptes collaris* and *Nectarinia pulchella* - common sunbirds in the area - the destruction of the flowers by the weavers, if at all commonplace, might be a restrictive factor in the feeding regime of those sunbirds.

Quelea cardinalis Cardinal Quelea: at 15:00 hrs on 6 August outside Tangul Bei northeast of Lake Baringo we saw much bird movement in a patch of flowering *Leonotis nepetifolia* of about 1 ha in area. Together with numbers of the sunbirds *Nectarinia senegalensis* and *Anthreptes collaris* in the flower mass, were two fully adult male Cardinal Queleas, well spaced apart. We watched the queleas forage by dipping their bills into the flowers, going from flower to flower on each stalk, and moving systematically from one flower stalk to another. The queleas showed nectar on their bills, although we could not detect throat-pumping movements. Each male interacted aggressively with at least one individual of both species of sunbird noted above. In all the 11 or 12 encounters the quelea attacked and supplanted the sunbird. From our observations over a 15-min period we concluded that the queleas were eating nectar and were dominant to the sunbirds.

Foudia spp. fodies: some of the observations of nectar-feeding in fodies are being prepared for publication as part of the report of the British Ornithologists' Union Mascarene Island project, and hence we only summarize them here. Frequently on Réunion, and on several occasions in Madagascar, JFMH observed *Foudia madagascariensis* eating nectar in the manner of *Ploceus velatus*, i.e., by pulling out floral parts and mandibulating their bases. She also saw *Foudia rubra* on Mauritius and *F. flavicans* on Rodriguez frequently 'drinking' nectar from flowers of various species, not destroying them. These two fodies, both having a brush-tipped tongue, may indeed be greatly dependent on nectar. According to A.W. Diamond, the Seychelles' *Foudia sechellarum* regularly eats nectar in the manner of *Ploceus velatus*, and he comments (*in litt.*) that although *F. madagascariensis* less frequently feeds in this way, it "seems to be adopting this method more often, apparently learning it from *sechellarum*." *Foudia eminentissima* of Aldabra has been noted feeding "on flowers" by Gaymer (1967), referred to by Benson & Penny (1971).

DISCUSSION

The modest literature from southern Africa on nectar-feeding by ploceine weavers shows some controversy over whether the birds feed on nectar at flowers, or take pollen, or both. Rowan (1974) and Skead (1975) reported *Ploceus capensis* and *P. cucullatus* feeding on pollen of the common southern African *Strelitzia reginae*, and this habit seems sufficiently common to make it likely that these weavers are major pollinators of this plant, for which no other natural pollinating agents are known. The nectar of *Strelitzia* seems not to attract weaverbirds; although its nectar may be ample and conspicuous, it is, at one stage, unpleasant in smell and taste to man - perhaps explaining why birds seem not to utilize it. McLachlan & Liversidge (1957: 428) reported that *Ploceus intermedius* feeds on the flowers of aloes, "pollen from which often gives the birds orange faces," and that *P. capensis* often has its forehead discoloured with pollen from its flower-feeding activities. Whether pollen, nectar, or both are taken is in question.

Oatley (1964) published on 43 species of birds of 21 families that

probed into the flowers of *Aloe marlothii*. Included are *Ploceus ocularis*, *P. subaureus*, *P. velatus*, *P. cucullatus* and *P. bicolor*, all of which, except the last, are 'addicted' to probing into the flowers. Skead (1964: 227) noted that *Ploceus capensis*, *P. subaureus*, *P. velatus* and *P. cucullatus* are "influenced by flowering plants and trees," and that the "tall, brightly flowered *Erythrina caffra* trees attract them in large numbers." He continued, "the presumption is strong that the nectar in the blossoms is the attraction."

Nectar-feeding by *Ploceus cucullatus* was discussed by Collias & Collias (1971) who found that these weavers feed at blossoms of various trees, and (p.3) "The Tree Fuchsia *Schotia brachypetala* was especially popular for nectar." The birds also fed on flowers of some plants, such as *Cassia abbreviata*. Even in the breeding season adults of this weaver take nectar, for example of the buffalo thorn *Zizyphus mucronota* (Collias & Collias 1971: 11).

Rowan (1971: 347, Table 4) reported nectar-feeding in seven South African species of *Ploceus*, as we indicate in Table 1. All seven also feed to some extent on insects, all but *P. bicolor* eat seeds as well, all but *P. intermedius* and *P. ocularis* sometimes take fruits, and the four species other than *P. subaureus*, *P. intermedius* and *P. bicolor* have also been noted eating flower parts (possibly for nectar).

TABLE 1

Nectar-feeding Ploceinae

Species	Location	Authority
Ploceus baglafecht	Kenya	Cunningham-van Someren (1974) and this study
Ploceus ocularis	South Africa	Rowan (1971)
Ploceus capensis	South Africa	Rowan (1971)
Ploceus subaureus	South Africa	Rowan (1971)
Ploceus xanthops	Kenya	Cunningham-van Someren (1974) and this study
Ploceus intermedius	South Africa	Rowan (1971)
Ploceus (velatus) vitellinus	Kenya	this study
Ploceus (velatus) velatus	South Africa	Rowan (1971)
Ploceus cucullatus	South Africa	Rowan (1971)
Ploceus bicolor	South Africa	Rowan (1971)
Quelea cardinalis	Kenya	this study
Foudia madagascariensis	Réunion, Seychelles	this study (*)
Foudia rubra	Mauritius	this study
Foudia sechellarum	Seychelles	(*)
Foudia flavicans	Rodriguez	this study
Euplectes albonotatus	South Africa	Oatley & Skead (1972)
Euplectes ardens	South Africa	Oatley & Skead (1972)

(*) denotes a personal communication by A.W. Diamond reported in this paper

Oatley & Skead (1972) listed 73 species of birds feeding on 14 aloes and eight other flowering plants. They discussed various problems relating to nectar-feeding, in particular, is nectar used for food or drink? They concluded that many of the nectar-feeders also drink water actively,

and, if anything, nectar-feeding causes more drinking because of the high sugar content of the nectar. Also noted by these authors is the adaptability of weavers and other birds in securing nectar, for when nectar is less accessible because of the structure or location of a flower, some weavers may simply tear out the entire flower and mandibulate it to obtain the nectar, in the manner described above for *Ploceus (velatus) vitellinus*. This method may also be used to obtain nectar from immature flowers. Oatley & Skead (1972: 72) list eight weavers (see our Table 1) as feeding on nectar. Two of the eight species, *Ploceus capensis* and *P. velatus* fall into their category of birds (numbering ten of the 73 species) that feed more than casually on nectar.

Of the eight ploceine birds Oatley & Skead report as using nectar, the two species of *Euplectes* were seen feeding on nectar only at aloes. *Ploceus bicolor* fed at flowers of *Erythrina caffra*, a tree. The other five species, all of the genus *Ploceus*, used aloes and other plants as well, with two aloes and two other plants listed for *Ploceus ocularis*, four aloes, an agave, and a tree for *P. capensis*, an aloe and a tree for *P. subaureus*, three aloes and two trees for *P. velatus*, and three aloes and one tree for *P. cucullatus*. These authors also noted nectar-feeding in three species of *Passer* and in *Petronia superciliosus* of the Passerinae, but Morony, Bock & Farrand (1975) suggest that the Passerinae are not related to the Ploceinae, and we do not treat the Passerinae further in this paper.

Skead (1975) reported *Ploceus cucullatus* pulling out the flower tubes of the Cape Honeysuckle *Tecomaria capensis* to obtain the nectar from their bases, as in *Ploceus (velatus) vitellinus*.

Thus, 16 species (or 17 if *Ploceus (velatus) vitellinus* be considered a full species) of ploceine weavers, including nine species of *Ploceus*, one of *Quelea*, four of *Foudia*, and two of *Euplectes* (see Table 1) have been reported eating nectar. A number of the species noted feeding on nectar in South Africa also occur in Kenya, and observers in Kenya should seek data on their foraging habits. Careful observation is needed to determine whether nectar or pollen is being taken by birds at flowers, and, if nectar is being taken, the methods of obtaining it need to be documented. We wonder if the destruction of flowers by ripping them out and mandibulating, or eating them (as by *Colius* spp.) could significantly reduce the numbers of flowers available for nectar-feeders in some places at certain times. For example, might such actions have a detrimental effect on some birds that regularly visit the same flowers to secure their necessary nectar? The frequency and importance of nectar-feeding by ploceines are matters that demand investigation, but it appears that some, or even many, ploceine weavers obtain nectar with regularity, and some of them (*Foudia* spp.) may depend upon it to a great extent.

The documentation of nectar-feeding by ploceines, and of other feeding habits of birds which are opportunistic, or do not fit the usually cited habits or foods, is necessary before an assessment can be made of the ecological significance of such habits. Not only those interested in the ecology and life history of the birds, but also those concerned with the evolution of adaptation and those studying the anatomy of a 'seed-eater's' bill and skull structure ought to be aware of divergent foraging modes that are used by these birds.

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NOTES ON BREEDING OF THE RED-CHESTED CUCKOO IN NAIROBI

N.J. Skinner

INTRODUCTION

The Red-chested Cuckoo *Cuculus solitarius* is a known brood parasite of small thrushes and, in southern Africa, it has been shown by Payne & Payne (1967) and by Jensen & Jensen (1969) from nest record cards that the Robin Chat *Cossypha caffra* is the prime host species. Belcher (1941) and Wiley (1948) have noted that this species is also one of the hosts for the Red-chested Cuckoo in the Nairobi area. Other reported hosts in East Africa are given in Table 1 which has been compiled mainly from EANHS nest record cards.

TABLE 1

Hosts of Cuculus solitarius *in East Africa (other than* Cossypha caffra*)*

Host species	Nests	Localities
African Pied Wagtail *Motacilla aguimp*	1	Entebbe
Mountain Wagtail *Motacilla clara*	2	Kiambu, Limuru
Well's Wagtail *Motacilla capensis*	1	Kabete
Dark-capped Bulbul *Pycnonotus barbatus*	3	W. Kenya, Uganda
Rufous Chatterer *Turdoides rubiginosus*	1	N. Tanzania
Red-backed Scrub Robin *Cercotrichas leucophrys*	2	Olorgesailie, Lorugumu
White-browed Robin Chat *Cossypha heuglini*	5	Karen, W. Kenya, Iringa, Entebbe
Rüppell's Robin Chat *Cossypha semirufa*	12	Ngong
Bush shrike *Tchagra* sp.	1	Baragoi

The Red-chested Cuckoo has been heard calling regularly in my garden in Nairobi each year between early November and July. The garden, of about ½ ha, is well covered with a variety of reasonably tall trees and flowering shrubs, and has thick cypress and bougainvillea boundary hedges. For the past five years a pair of Robin Chats has bred regularly in the garden. In the period April 1974 to January 1977 they raised at least five broods of one or two chicks, using the hedges and, on one occasion, the dead fronds of a palm, as nesting sites. During this period there was no case of nest parasitism by the Red-chested Cuckoo. However, during the 11 months April 1977 - March 1978 the Robin Chats attempted to breed on four further occasions and each time the nest was parasitised by the Red-chested Cuckoo. Three cuckoos were raised and only one attempt was unsuccessful. Table 2 shows a chronology for these breeding records which enables fairly accurate estimates to be made of incubation time, fledging time and of the post-fledging period, during which the young cuckoo was dependent upon the host species for food.

The first breeding attempt was particularly well documented: nest building began on 13 April 1977 in a bougainvillea hedge near the house, and on 19th a Robin Chat egg, pale fawn flecked with chocolate brown, 23.0x 16.5 mm, was found in the nest. At 0700 hrs on 20th a Red-chested Cuckoo was seen to leave the hedge near the nest and a plain greenish egg, 24.5 x18.0 mm, was subsequently found in the nest. This egg hatched on 4 May, after an incubation period of 14 d. On 5 May the Robin Chat egg was found on the rim of the nest and, on examination on 6th, was found to be punctured and to contain an almost fully developed embryo. The cuckoo left the

TABLE 2

Chronology of breeding attempts discussed in this paper

Nest No.	Nest building started	Eggs laid	Cuckoo egg hatched	Cuckoo fledged	Host stopped feeding	Cuckoo left garden
1	13.4.77	19.4[1] 20.4[2]	4.5	25.5	18-19.6	20.6
2	7.6.77	19.6[2]	(nest abandoned, egg found punctured 21.6)			
3	?	?	*c.*15.7.77	4.8	*	*
4	?	?	?	*c.*11.2.78	2.3	3.3

[1] Robin Chat egg laid, [2] Red-chested Cuckoo egg laid, * unknown: author away on leave

nest after 21 d and remained in the garden with the Robin Chats for a further 25 d, and finally left on 20 June. During the post-fledging period the young cuckoo made no attempt to feed itself and begged for food continuously. During the latter half of this period one of the Robin Chats continued to feed the cuckoo whilst the other built a new nest in a strangely exposed position on the trunk of a palm tree and, on 19 June, a pale marble green cuckoo egg, 24.5 × 18.1 mm, was found in this nest. By 24 June it was apparent that this nest had been abandoned, and the egg, which was found to have been punctured in two places, was removed from the nest and given to the Department of Ornithology of the National Museum, Nairobi.

The third nest, in a cypress hedge, must have been built before the end of June because, on 19 July when the nest was first discovered, it contained one Robin Chat egg and a nestling cuckoo which was estimated to be 4 ± 1 d old. This cuckoo left the nest on 4 August and was still in the garden when I went on overseas leave on 8 August.

I saw no further breeding activity by the Robin Chats until early February 1978, when they were seen collecting food and flying away. On 11 February, a young cuckoo was seen being fed in the boundary hedge, and its begging call was heard regularly until it left on 3 March.

DISCUSSION

The eggs The Red-chested Cuckoo is known to lay eggs with considerable variability in colour. In southern Africa, Oatley (1970) reports that they are mainly chocolate or olive-brown, of mean dimensions 23.2 × 18.1 mm. However, he also mentions cases of olive green, pale green, blue-green and pale blue eggs, sometimes with pinkish-brown freckling and blotching. In East Africa, Friedmann (1948) considered brown eggs to be more common than "pure unmarked blue" and all the eggs seen by van Someren (1956) in 12 cases at Ngong, were of the olive-brown type. Hughes (1949) reported a plain olive-green egg, apparently similar to those found in my garden, and Pitman (1964) reports a case at Baragoi of a light blue egg densely freckled with brown. The blue-green eggs do not mimic the colouring of those of the Robin Chat which, in my experience, have been greyish white to pale fawn with chocolate-brown flecking. However, these may not be typical, as Mackworth-Praed & Grant (1960) record Robin Chat eggs as blueish or greenish, densely speckled with dull brown.

Incubation time For the first nest the incubation time was 14 d. As might be expected, this is generally shorter than the incubation time for Robin Chat eggs, which is stated by McLachlan & Liversidge (1958) to be in the range 13-19 d. In the only case of normal breeding by the Robin Chat in the garden, for which I have precise dates, the incubation time was 17 d.

Ejection behaviour by the young cuckoo In nest No.1 the Robin Chat egg was punctured and ejected within one day. Ejection behaviour has also been reported by Reed (1969) and Liversidge (1955) who found that if the egg was replaced, ejection was repeated, but that the desire to do this apparently faded after 3-4 d. Hughes (1949) reports the ejection in less than 1 d of a Robin Chat chick which had hatched simultaneously with the cuckoo chick. However, ejection is not always practised as was the case in nest No.3, where the Robin Chat egg remained until the cuckoo was at least 7 d old. Van Someren (1916) has also reported that he twice found nests of the Dark-capped Bulbul *Pycnonotus barbatus* containing one Red-chested Cuckoo chick and two young bulbuls.

The fledging period This was measured as 21 d for the first nest and estimated at 20 ± 1 d for the third, assuming that the chick was 4 ± 1 d old when the nest was found. Jensen & Jensen (1969) give 17-20 d based on Liversidge (1955), Reed (1969) and South African nest record cards, and in the nest recorded by Hughes (1949) the chick was taken by a predator on the 20th day. For comparison, the normal fledging period for Robin Chat chicks has been in the range 14-18 d for three cases in my garden. I did not make detailed observations of the plumage changes and rate of growth of the cuckoo chicks because I wished to avoid too much disturbance to the nest. Liversidge (1955) has given very detailed descriptions, including many photographs, of the development of a Red-chested Cuckoo chick in the nest, and Friedmann (1959) has summarized the available information in his review paper.

The post-fledging period For nest No.1 this lasted 25 d and for nest No.4 at least 20 d. In each case the Robin Chats stopped feeding the cuckoo at this stage although it remained in the garden begging for food for about one further day before disappearing. Reed (1969) has given periods of 28-32 d and 25-26 d in two cases observed in southern Africa.

On leaving the nest, the cuckoo initially went up into the highest canopy of trees in the garden, about 15 m above ground level, and the Robin Chats were thus obliged to take food up to a level to which they rarely venture normally. During the next few days they were able to entice the cuckoo down to about 3-4 m above ground level and to within a few metres of the house where food is regularly put out for song-birds The begging call was a continuously repeated *cheep-cheep-cheep* which speeded up on the approach of a Robin Chat with food. The cuckoo did not attempt to solicit food from other species, nor did it make any attempt to feed itself, although food was available, until the Robin Chats finally gave up feeding it.

Unresolved points It has been reported by Reed (1969) that the female Red-chested Cuckoo removes one of the host's eggs at the time of laying her egg. I have no direct evidence on this but my observations do tend to support Reed's statement. In nests Nos.1 and 3 only one Robin Chat egg was found with the cuckoo egg, although the normal clutch for the Robin Chat is two eggs. Furthermore, in the case of nest No.2, where no Robin Chat egg was found, it seems unlikely that the cuckoo would have laid

her egg into a completely empty nest. Both these points suggest therefore that the cuckoo did remove one Robin Chat egg at the time of laying her egg.

A more speculative suggestion, for which there is no proof whatsoever, is that the same cuckoo might have been responsible for all four cases of parasitism reported here. This suggestion is based only on the observed pattern of events whereby a period of at least four undisturbed breeding years for the Robin Chats has been followed by four consecutive attempts to breed within one year, all of which were parasitized. It would be interesting, in this connexion, to know what proportion of nesting attempts are parasitized in East Africa. In southern Africa it has been found that in the case of *Cossypha caffra* the proportion is as high as about 16 per cent. (Payne & Payne 1967, Oatley 1970).

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THE GENUS *SYLVIA* IN KENYA AND UGANDA

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INTRODUCTION

This is the first of a series of short accounts in which it is intended to review the status, distribution and wintering of the Palaearctic warblers (Syviidae) in Kenya and Uganda. Our knowledge of Palaearctic passerines in these countries has benefitted greatly from ringing activity and increased observation over the past 15 years. Migration patterns and habitat preferences are now better understood, and more information is available on moult and other activities in winter quarters.

Distributions, as currently established, are mapped on a 1° square grid. For 57 of the 70 mapping squares involved (Fig.1), it has been possible to obtain recent information, based on observation by a reliable observer during the period January to March. For the remaining squares, information has been limited to records in the literature and specimens to be found at the British Museum (Nat. Hist.) and the National Museum Nairobi.

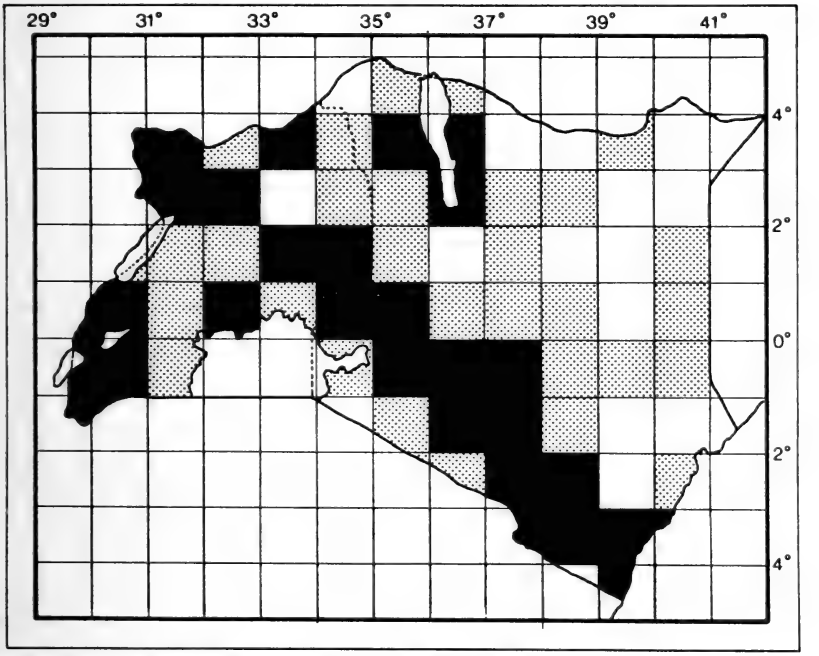


Fig. 1 *January-March coverage of 1°-squares for Palaearctic passerines during the period 1964-1978 in Kenya and Uganda*
Black: 6 or more mornings' observation by the author and/or one or more of the observers listed under Acknowledgements
Stippled: 1-5 mornings' observations (as defined above)
White: no recent observations (as defined above)

Scopus 2: 63-71, September 1978

Each species occurring within a square is shown as being either a) scarce, highly localized or known from only a few records, or b) reasonably widespread and not uncommon. An attempt has also been made to distinguish between wintering (perhaps best defined as sojourn in the southernmost African non-breeding area) and passage. The latter category here includes not only transient visitors *en route* to, from or between African non-breeding areas, but also birds sedentary for days or weeks in intermediate African areas north of the ultimate wintering grounds. Wintering in East Africa may be indicated by the presence of steady numbers throughout or towards the end of the period November to March. It is also indicated in some species by moult, and is characterized, in the warblers and nightingales for example, by sedentary behaviour involving territoriality and song. Passerine migrants enter East Africa mainly between October and December, and the majority of birds present to mid-December are probably on passage. In eastern Kenya, heavy movement continues throughout December (Pearson & Backhurst 1976, Backhurst & Pearson 1977) and many passage migrants are present to mid-January. In spring, few species show a passage influx before late March, and territorial singing birds tend to dominate populations to the end of the month. The assumption of wintering has generally been based, therefore, on records from the period 26 December to 20 March (Uganda and western Kenya) or 26 January to 20 March (eastern Kenya).

Four species of *Sylvia*, all Palaearctic visitors, occur commonly in East Africa. These present interesting comparisons. Two, the Blackcap *Sylvia atricapilla* and the Garden Warbler *S. borin*, are birds of the moister woodland and forest habitats, and range to high altitudes; the other two, the Whitethroat *S. communis* and the Barred Warbler *S. nisoria*, are birds of drier bush and woodland at lower altitudes confined largely to eastern areas. The members of each pair of species themselves exhibit slightly different distributions and habitat preferences. The Garden Warbler and the Whitethroat winter to a great extent south of the equator, and occur in Kenya and Uganda largely as passage migrants; these two species moult completely in East African winter quarters. The Blackcap and the Barred Warbler, on the other hand, reach southern Africa in small numbers only; they occur in our area mainly as wintering birds, and undergo only a partial moult.

The individual species are discussed below. Statements unsupported by references are based on Jackson (1938), Pearson (1972), Rolfe & Pearson (1973), Fry, Britton & Horne (1974), Hopson & Hopson (1975), Pearson & Backhurst (1976b) and Mann (1976); on the unpublished observations of the author and the observers listed under Acknowledgements, and on dated British Museum and National Museum Nairobi skins.

BLACKCAP *SYLVIA ATRICAPILLA*

The Blackcap breeds throughout Europe (to about 67° N.) and northwest Africa, thence east through Russia (to about 63° N.) to western Siberia and southeast to Asia Minor, the Caucasus and Iran (Voous 1960). It winters mainly in Africa north of the equator, but ranges in small numbers south to eastern Zaire, Tanzania and Malawi (Moreau 1972). In East Africa it is mainly a wintering bird, confined to higher altitudes. In Uganda (Fig.2a) it is locally common on Elgon and Ruwenzori at 1800-3000 m and is recorded from the Impenetrable Forest. It is scarce at lower altitudes but has occurred in moist bush or woodland at Kampala, Mokono, Teso,

Kabalega National Park and West Nile. In Kenya it winters widely through the west and central highlands, east to the Chyulus and north to Marsabit, mainly between 1600 and 3000 m, but as high as 3600 m on Mt Kenya. It frequents gardens, woodland, forest edge and even continuous forest, occurring from herbaceous undergrowth to the tops of tall trees.

Arrival is noted mainly at the end of October and early in November. November concentrations sometimes suggest passage, and birds of high weight, presumably bound farther south, have been caught at Nairobi during November and early December. Regular November occurrences at Ngulia (920 m), and November records from Nyanza and Lake Bisina (1000 m) probably involve passage birds. Many birds seem to spend the winter foraging in small parties, usually together with other forest species, and berries certainly form a major part of the diet. Local fluctuations in numbers during winter, and from one year to the next, are presumably related to fruit distribution. Later in winter, however, some individuals do become territorial and establish regular song posts. Song is usually first heard during January or early February, and continues to mid-March, becoming progressively stronger. Spring departure occurs rather abruptly in late March. Birds are rarely recorded after 5 April (latest Nairobi date, 15th), and there is little evidence of passage of birds from farther south. Moult in Africa is partial (Williamson 1964); in Kenya and Uganda the body and head feathers and most of the wing coverts are renewed during January and early February.

Southeastern populations of the Blackcap breeding from the Caucasus to southern Caspian districts, have been recognized as a distinct race *dammholzi*. These birds are paler and greyer above and whiter below than *S. a. atricapilla* from Europe and western Siberia. Kenya highland winterers include both the nominate race and *dammholzi*. The latter has also been reported from Ruwenzori (Vaurie 1959). In view of the European *Zugscheide*, with eastern European and some Scandinavian birds migrating south via the Middle East (see Williamson 1964, Zink 1973), it is possible that nominate birds wintering in East Africa include European as well as Russian breeders.

GARDEN WARBLER *SYLVIA BORIN*

The Garden Warbler, like the Blackcap, breeds from the Atlantic to western Siberia, but ranges farther north in Europe and is absent from the Mediterranean, Asia Minor and Iran (Voous 1960). It winters in Africa from about 8° N. in the west and 3° N. in the east, south to Natal and Damaraland (Moreau 1972). Although it avoids the driest areas, and is practically absent from the coastal strip, it is common and widespread in East Africa on passage, ranging to well over 2000 m. It winters in moist woodland and tall secondary bush in southern Uganda and Nyanza, where it is common near Lake Victoria (Fig.2b). It also winters from 800 to 1800 m in southern Kenya, from the eastern edge of the highlands at Murang'a and Nairobi east to Kibwezi and Ngulia. Here it tends to utilize drier habitats than in Uganda, but again frequents leafy sites with plenty of thicket and undergrowth. The Garden Warbler and the Blackcap are almost completely separated altitudinally other than at times of passage. They meet in winter only at about 1600 to 1800 m as, for example, on the edge of the central Kenya highlands. In this situation the Blackcap tends to be the bird of higher cover.

The earliest Garden Warblers reach Uganda and Nyanza during late September (once at Entebbe on 5th). Small numbers are then present throughout

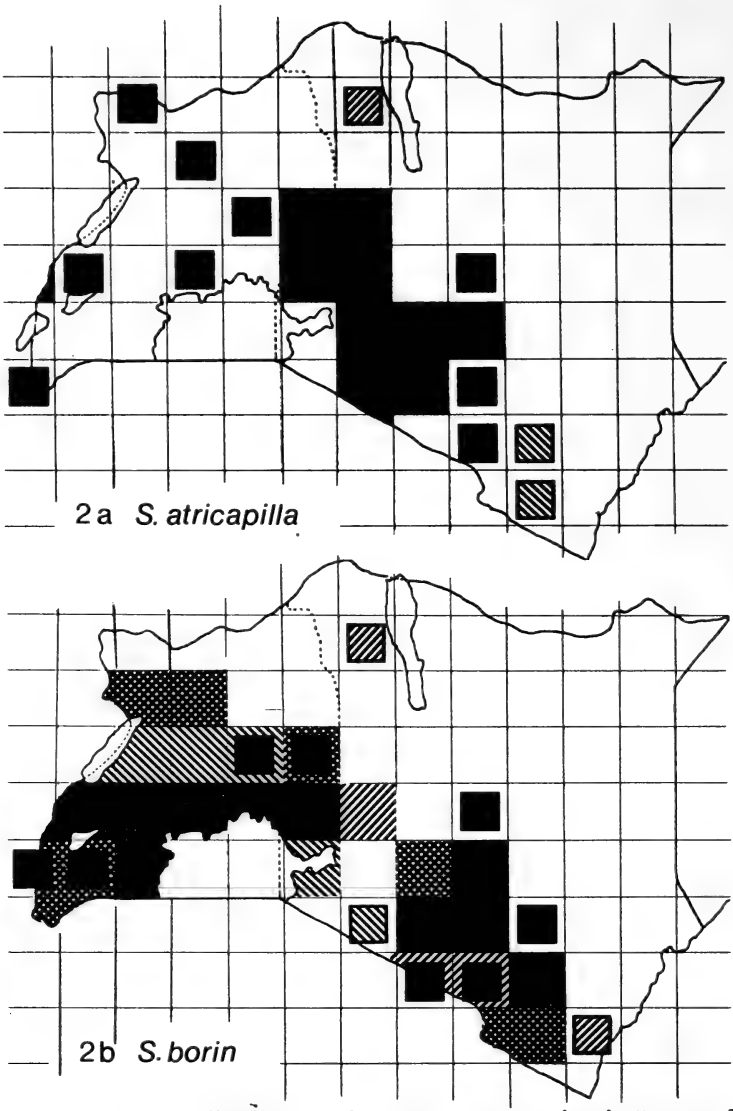
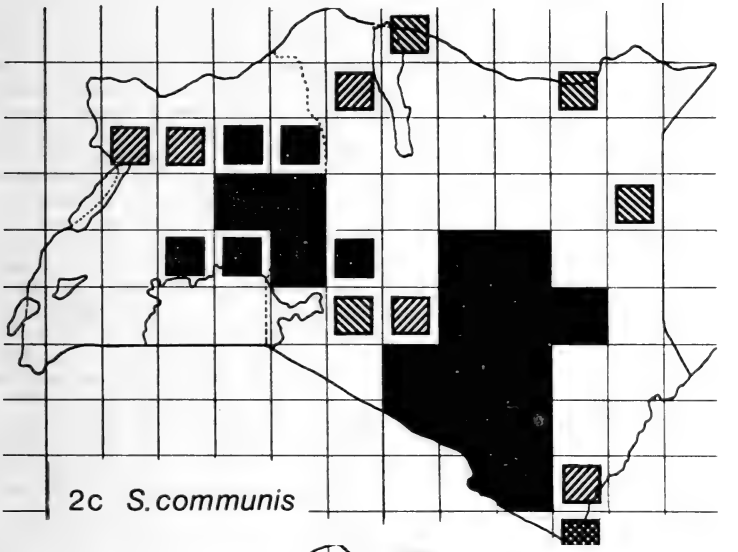


Fig. 2 *Recorded distributions of the four* Sylvia *species in Kenya and Uganda. Large squares: reasonably widespread and not uncommon Small squares: scarce, highly localized or known from less than five records*



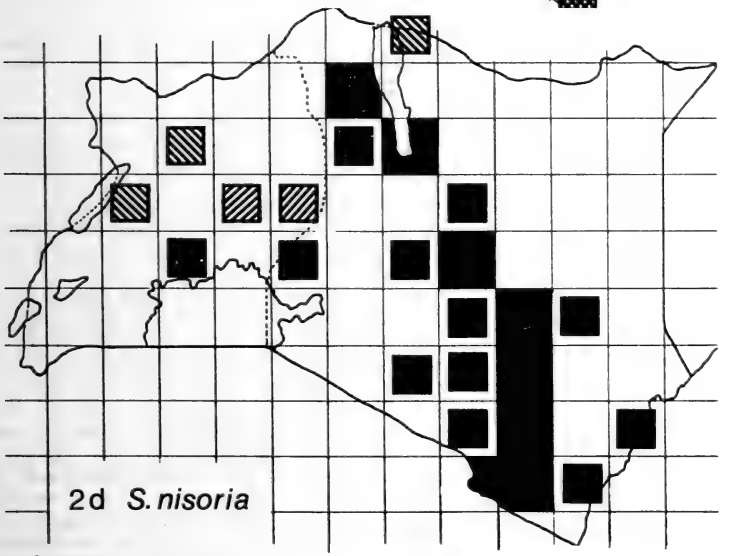


Fig. 2 Key

wintering

southward passage only

northward passage only

both passages (i.e. not wintering)

October, but the main influx is not until late October/mid-November. Maximum numbers are maintained during November/mid-December, after which passage birds have moved on. Ringing at Kampala (Pearson 1972) and Lake Amin (formerly Lake Edward) (M.P.L. Fogden pers. comm.) showed that some passage birds remained sedentary for weeks at a time. Heavy birds caught in early December (Pearson 1971, Moreau 1972, Fogden pers. comm.) were presumably about to embark on flights to southern Africa. A thin passage seems to occur through central Kenya during October to early December; however, further east, movement across Tsavo is later - during November to early January, and at Ngulia presumed passage birds are attracted to fruiting bushes after the rains as late as mid-January (Backhurst & Pearson 1977).

Wintering birds moult completely, starting during mid-December to mid-January and finishing during late February to late March (Pearson 1973). At this time birds show less tendency to flock together than during autumn, and in Uganda the diet contains less fruit. Song is heard increasingly from mid-February to the beginning of April, probably from birds which have completed moult. Increased flocking is often noted at the end of March, and wintering birds appear to be replaced by passage migrants early in April. The spring movement lasts throughout April, and birds are occasionally encountered at the beginning of May (latest 2nd). There is a record of a summering bird at Eldama on 2 July. The northward movement is less marked than the southward one in Uganda and Nyanza; on the other hand the spring movement is the more noticeable in central Kenya, and only in April are birds at all common in the Kenyan Rift Valley.

Most East African wintering and passage Garden Warblers are larger and greyer than European birds. There is reason to believe that practically all are derived from Russian *woodwardi* populations (see Pearson 1972).

WHITETHROAT *SYLVIA COMMUNIS*

The Whitethroat breeds in Europe (to 65° N.) and northwest Africa; Asia Minor and the eastern Mediterranean, and Asia north to western Siberia, east to northern Mongolia and south to the Caucasus, northern Iran and northern Afghanistan (Voous 1960). It winters in the northern tropics of Africa, and also south through eastern Africa to Rhodesia and South Africa (Moreau 1972). It winters in East Africa, but is more prominent in many areas as a passage migrant. It avoids the more humid areas and its distribution is somewhat patchy (Fig.2c).

In Uganda, the Whitethroat is practically limited to scrub and dry woodland in the east from Moroto south through Teso and Bukedi, ranging into western Kenya at Kongelai, Bungoma and Nyanza. Small numbers winter at Kampala/Entebbe and there are records from Lango (February) and the Kabalega Falls National Park (March-April). There is no evidence of appreciable passage through the Nile/Lake Victoria basin. In Kenya, the species winters commonly in dry bush and woodland at 700 to 1200 m, east of the central highlands, from Meru National Park south to the Nguni/Kakunike area (Garissa road), Kitui, Mutomo, Kibwezi, Tsavo West and Teita-Taveta. It frequents thicket and scrub, preferring localities with an abundance of undergrowth and creepers, and with green leaf remaining after the December rains. It ranges more locally west to Isiolo, Thika, Nairobi and Namanga, and east to Tsavo East and Garissa. The status of this species in northeastern Kenya remains to be clarified. There seem to be no winter records at present north of Garissa and Archer's Post. In dry northwestern Kenya, as in northernmost Uganda, it appears to be

absent in winter also. Passage is particularly marked in eastern Kenya, where a heavy autumn movement occurs through Tsavo, the Voi-Teita area and Kibwezi. In spring, passage occurs regularly around Nairobi, but despite evidence of large scale overflying (Britton & Britton 1977) relatively few birds are seen in the southeast. A few passage birds occur in both seasons at Lake Turkana, but apart from the occasional April record the species seems to be absent from southern parts of the Rift Valley.

The first Whitethroats usually reach Kenya during mid- to late October. Passage through Nairobi is restricted mainly to November, but the main movement across Tsavo continues heavily through December and, on a lesser scale, through January (Pearson & Backhurst 1976a,b, Backhurst & Pearson 1977). Large numbers of birds often remain in the eastern bush country until late in January; most of these subsequently move on. It is not clear whether such birds move far south, or whether they merely move locally into less arid areas as the bush dries and loses its leaf. Larger numbers certainly seem to remain in these open habitats in years with prolonged December/January rains than in dry winters. Many of the birds present during February and March are sedentary. Song may be heard at the end of December, but becomes more common during February and March. Birds depart from wintering sites at the end of March or the beginning of April. The Kenyan northward passage lasts mainly from the second to the fourth week of April, and birds are occasionally recorded early in May (latest 9th).

Vaurie (1959) recognized three races of the Whitethroat: the nominate race breeding from the Atlantic to the Black Sea, *volgensis* (larger and paler) east to western Siberia, and *icterops* (larger and greyer) south of the foregoing from the East Mediterranean to Mongolia. Stresemann & Stresemann (1966) pointed out that whereas *S. c. communis* undergoes wing moult on its European breeding grounds, the two eastern races moult in Africa. Most Kenyan and Ugandan winterers moult completely, typically between late January and late March; Kenyan autumn passage birds are mainly in worn plumage, and spring migrants very fresh. These birds are clearly of Asian origin. A few of the adults handled at Ngulia during November and January, grey individuals, are very freshly moulted; these are assumed to be *icterops* which have renewed their plumage whilst in transit in Ethiopia. Two adults with fresh primaries caught at Kampala in December were judged to have moulted on the breeding grounds; less grey than typical *icterops*, these were perhaps birds from eastern Europe or Asia Minor. Despite the statements by Williamson (1964) and the Stresemanns (*op. cit.*) there seems to be no other evidence that the nominate race reaches East Africa. The relative proportions of *icterops* and *volgensis* in wintering and passage populations remain to be clarified.

BARRED WARBLER *SYLVIA NISORIA*

From central and eastern Europe, the Barred Warbler ranges as a breeding bird through Russia (to about 55° N.) to western Siberia, and south to the Caucasus and the Tien Shan (Voous 1960). Its winter quarters seem to be restricted to northeast Africa south to Kenya, although Moreau (1972) speculated that it might extend west to Chad, presumably based on the single mid-October record of Dowsett (1969). The species is scarce in Uganda (Fig.2d) where wintering has been recorded at Kampala/Entebbe; otherwise, November-December Kampala records, November records from Bukedi, Teso and Lake Mobutu (formerly Lake Albert), and late March

records from Bukedi and Teso perhaps all refer to passage birds.

In Kenya, the Barred Warbler is encountered quite widely on passage, and more locally as a wintering bird. Its distribution and habitat preferences are similar to, but by no means identical with those of the Whitethroat. East of the highlands it is locally common throughout winter in dry bush and woodland, typically at 600 to 1000 m, from the neighbourhood of Nguni and Kakunike (Garissa road), south to Kitui, Kibwezi, Tsavo West, Voi and Teita-Taveta, ranging inland in small numbers to Machakos, Nairobi and Thika. In this part of Kenya it ranges rather further east than the Whitethroat into hotter, lower areas, but is the less common species nearer the highlands. It prefers sites with an abundance of thicket and undergrowth, but usually frequents higher cover than the Whitethroat. In northern Kenya it has been found wintering at Baringo, and commonly at Isiolo, along the Turkwell River to above Lodwar, near Ferguson's Gulf and at South Horr. In these areas it occurs in hot, arid and mainly leafless bush and woodland, typically along dry river beds, often inhabiting dense evergreen thickets. There appear to be no wintering records to date from northeastern Kenya, where it may occupy similar situations. Elsewhere, birds have been found wintering in Nyanza and on the Tana delta. Southward passage is noted mainly from the Tsavo and Voi areas, whilst spring movements have been most evident at Nairobi and Athi River.

Barred Warblers usually appear at the end of October or early in November. Migrants, presumably southward bound, are attracted to the Ngulia lights from late October to mid-January. Numbers inhabiting the bushland in Tsavo and around Voi are usually highest from late December to mid-January, when parties are attracted to crops of berries immediately after the rains. Like the Blackcap, the Barred Warbler undergoes only partial moult in Africa (Williamson 1964), but this involves not only the body feathers and wing coverts, but also the tail and, in some first year birds, the outer primaries. This moult is completed in Kenya between late December and February. Wintering birds are frequently heard in song in February and March, but most seem to depart by the first week of April. Passage influxes at Nairobi have occurred mainly during the first half of April, but there are records from later in the month, up to 28th.

ACKNOWLEDGEMENTS

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SHORT COMMUNICATIONS

THE LESSER GOLDEN PLOVER IN KENYA The Siberian race *fulva* of the Lesser Golden Plover *Pluvialis dominica* breeds in the arctic circle from eastern Siberia to Alaska, and winters mainly from Hawaii and Japan south to Indo-China, Malaya, eastern India, Ceylon, Australia and the west coast of New Zealand (Vaurie 1965). It is a great wanderer however, which has reached Europe, Greenland and northeast U.S.A. (Vaurie 1965). In Africa, it occurs in small numbers, but probably regularly, in the northeast, on the Sudan coast and in Eritrea (Moreau 1972, Smith 1972). It is rare in inland Ethiopia (Urban & Brown 1971) and only twice recorded in Somalia (Archer & Godman 1937). South of Kenya it has occurred as a vagrant, mainly between October and January, in Tanzania (two records), Zambia (four records), and South Africa (four records), while Feare & High (1977) recorded it from the Seychelles.

Backhurst, Britton & Mann (1973) gave only two records for Kenya, both from the coast: single birds near Mombasa at the end of 1961 and at Malindi from late December to early January, 1969/70. There have since been six more published occurrences:

1 Lake Nakuru, 15 October 1972 (EANHS OS-C 1977)
2 Aruba, Tsavo East, 5 January 1976 (EANHS OS-C 1977)
1 Malindi Golf Course, 26 September - 20 October 1976 (EA Bird Report 1977)
1 Surgoit Dam, Eldoret, 9 October 1976 (EA Bird Report 1977)
1 Ferguson's Gulf, Lake Turkana, 25 December 1976 (EA Bird Report 1977)
1 between Malindi and the Sabaki River mouth, 16-18 April 1977 (EA Bird Report 1977)

In addition, a 'probable' was reported by O. Ashford (*in litt.*) from north of Malindi, 16 April 1975. Thus, recently, occurrences have become almost annual, divided about equally between the coast (especially the Malindi area) and inland. Since this is clearly a species to be looked out for, a brief review of field characters seems appropriate.

Most bird guides give the impression that *dominica* would be difficult to distinguish from the Golden Plover *P. apricaria*, the principal difference being the colour of the axillaries, grey in *dominica*, white in *apricaria*. This feature is, in fact, readily visible, provided a lateral or overhead view is obtained of the bird in flight. However, *dominica* is much more distinctive than this, being smaller and lighter in build and altogether darker than *apricaria*. Various observers, for example Harvey (1973), have commented on a superficial resemblance to a Ruff *Philomachus pugnax*, probably the result of a combination of rather long neck, small head and slender bill. The spring 1977 Malindi bird had a conspicuous creamy supercilium, a narrow white tip to the tail and a pale wing-bar formed by greyish primary bases, features not normally stressed with respect to *apricaria*. The call of *dominica*, a distinctive whistle, usually given as *tu-ee* or *su-eet*, with a questioning rise on the second syllable, is quite different from the liquid piping *tlui* of *apricaria*. Pearson (*in* EANHS OS-C 1977) refers also to the strong wing-beats of *dominica* as compared with *apricaria*.

In Kenya, an example of *P. dominica* seen on the shore can easily be distinguished from the smaller sand plovers *Charadrius* spp., none of which is mottled with black above. It is unlikely to be mistaken for the

larger Grey Plover *Pluvialis squatarola* which has a white wing-bar and rump, black axillaries and a quite different call. Inland, confusion may be possible with the Caspian Plover *Charadrius asiaticus*, however, the Caspian normally occurs in parties in plains country, and has uniform brown upperparts, a brownish wash across the breast, with some vague mottling but no streaking, and a narrow white wing-bar. In breeding plumage, *dominica* has a black face and underparts, and black and gold spangled upperparts, quite different from any plover species occurring in East Africa.

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A SECOND RECORD OF DICKINSON'S KESTREL IN SOUTHERN KENYA *Falco dickinsoni* was first recorded in Kenya by Horwitz & Anderson (1976) who photographed an individual at Amboseli on 30 June 1975. On the afternoon of 23 June 1978, at Salt Lick Lodge near the Taita Hills, one of my companions, Dr Christopher Parrish, reported seeing a small grey kestrel with pale head and rump. I did not locate the bird that day, but shortly after sunrise on the following morning I discovered an adult-plumaged Dickinson's Kestrel perched conspicuously in a dead tree about 65 m from my vantage point at the lodge. Viewing the bird through a 20X spotting 'scope at intervals for about 5 min, Dr Parrish, Marian Zimmerman and I noted the prominent pale head, grey or black bill with bright yellow cere, very conspicuous yellow orbital ring (almost connecting with the cere), light grey underparts (somewhat darker posteriorly), and seven or eight narrow dark bands on the underside of the grey tail - the more distal bands somewhat wider than the basal ones. In flight, observed through 10X binoculars, the bird's rump and upper tail-coverts were noticeably pale, appearing almost white in contrast with the very dark grey mantle and upper tail surface. The falcon's small size was evident as several Superb

Starlings *Spreo superbus* were perched in the same tree and within the same binocular field.

Nowhere in the East African bird literature, nor in Brown & Amadon (1968) do I find reference to a yellow eye-ring in Dickinson's Kestrel. Nor does the plate in Mackworth-Praed & Grant (1957) depict one. However, these authors' West African handbook (1970) states "ring round eye yellow". Lighton's plate in McLachlan & Liversidge (1957) shows some yellow, and the colour photograph following p. 160 in Grossman & Hamlet (1964) clearly displays a bare, yellow orbital ring, very broad anterior to the eye as in the individual we observed.

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MASCARENE MARTINS IN KENYA At 10:30 hrs on the misty, overcast morning of 24 June 1978, I observed a flock of 16 Mascarene Martins *Phedina borbonica* at Lake Jipe in southeastern Kenya on the Tanzania border. Other observers included Marian Zimmerman (who, together with me had previously seen this species in Madagascar), John Minot, Christopher Parrish and Eugene Kenaga. Upon our arrival at the lake edge the birds were perched atop the small boathouse. As we walked to within 6 or 7 m, some of them took wing, only to fly about very near us; others merely shifted position slightly on the roof. A few fluttered under the low metal roof of a shelter attached to the building where they perched beside four Wire-tailed Swallows *Hirundo smithii* already sheltering there from the intermittent light rain.

The martins were not shy, and seemed reluctant to take wing. However, they were not present upon our return to the site about three hours later. Our observations spanned a 10-min period during which we studied the birds at various angles through 10X and 8X binoculars. I exposed two frames of 35 mm Ektachrome colour film on one martin, but lighting conditions were poor. Nevertheless, the bird is identifiable in the resulting transparency which has been lodged in the Department of Ornithology of the National Museums of Kenya in Nairobi. *[Black and white prints sent with the MS of this note show little detail owing to the bird being nearly silhouetted against the bright grey sky. They are not suitable for reproduction here and have been deposited in the National Museums' Department of Ornithology together with the transparency, Ed.]*

The martins appeared to be dusky brown above, darker on the wings and tail. The whitish underparts were boldly streaked throughout with dark brown, and the flanks were somewhat dusky. In the air, their languid flight set them apart from most other East African hirundines at first glance.

This appears to be the first observation of *Phedina borbonica* in Kenya, and the first inland record anywhere in East Africa. Mackworth-Praed & Grant (1960) attribute the species to Pemba Island, presumably based on Moreau & Pakenham (1941), between November and March and in August and September. Interestingly, in Malawi, Benson & Benson (1977) also recorded Mascarene Martins at an inland lake during late June: "Collected, and plentiful, over Lake Chilwa, 28 June 1944 (Benson)." The Bensons also cite Long's record of eight birds of this species seen in flight near Chididi, Malawi on 6 April 1959. I am aware of no other mainland reports of this readily identified species.

My thanks to G.R. Cunningham-van Someren and D.A. Turner for information concerning the Malawi records.

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SURVIVAL AND INTERCOLONY MOVEMENT OF WHITE-BROWED SPARROW WEAVERS *PLOCEPASSER MAHALI* OVER A TWO-YEAR PERIOD Ringing of individuals with distinctive combinations of coloured rings makes information on their survival and movements readily available, and is a feasible procedure where numbers of individuals to be observed are not too great. In 1976, from 17 March to 17 June, we ringed 45 adult or independent young White-browed Sparrow Weavers in the Samburu-Buffalo Springs Game Reserve in Kenya; 26 of them in the Samburu Game Lodge area and 19 around the Buffalo Springs bandas. A map showing the location of 13 nesting colonies in 1976 at the Samburu site in separate acacia trees has been published (Collias & Collias 1978). Since the same colour combination of two rings was used on each leg, it was necessary to see only one leg to identify any ringed individual. On some birds a numbered EANHS aluminium ring was used on one leg and a white ring in the corresponding position on the other.

The birds reside at their nesting trees the year round and, during 6-12 April 1978, when we returned to the study sites we found 21, or 47 per cent., of the colour-ringed birds still present. We believe that the rest had suffered mortality (rather than having dispersed widely) because almost all colonies nearby were checked and found to consist of unringed individuals. All the 21 ringed birds still had all four rings, except for two at Buffalo Springs which had lost one ring each and one bird which had lost three of its original four rings. None of the 13 surviving birds at Samburu had lost any rings.

Of 20 colour-ringed survivors, 9 were still in their original colonies; 11 had moved either to the adjoining territory (7 birds) or to a colony at most two territories removed (4 birds) from the home of the bird when it was ringed. The most dominant bird in 1976 in each of two colonies continued to reside and be dominant in the same colony in 1978. One of the birds which changed colonies was discovered to circulate daily amongst three different colonies and we assigned it to the colony in which it slept. Another ringed bird, a female, was observed incubating in one colony and, within the hour, was seen to feed a nestling at a nest in another colony. She slept with her eggs. In general birds confined their activities to one colony.

Usually, territorial boundaries remained essentially the same during the two-year period, but one colony became extinct and a new one was established on the Samburu study site. Both changes caused some corresponding shifts in territorial boundaries of adjacent colonies.

Each nesting colony of White-browed Sparrow Weavers rigorously defends a territory averaging some 50 m in diameter about its colony tree, presumably so exerting some stabilizing effect on population density. The year 1976 was rather dry while 1978 was much wetter with more frequent rainfall over a more prolonged period. At the Samburu site in April 1976 we counted 88 birds in 18 colonies, while in April 1978 there were 110 birds in 18 colonies, a 25 per cent. increase. The average number of birds per colony at Samburu rose from 4.9 to 6.1 in the two years. These colonies had 205 nests (11.3 per colony) in April 1976 and 239 (13.4 per colony) in April 1978, a 17 per cent. increase.

To conclude, associated with great differences in weather in the two years, there was some increase in numbers of White-browed Sparrow Weavers. About half the 45 colour-ringed birds were lost and a little over half the ringed survivors moved either to an adjacent colony or to one no more than two territories from their home colony of two years earlier. No evidence of any long-distance dispersal was found .

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Continued from inside front cover

'References'; the name(s) of the author(s) and date(s) of publication should be given in the text in the normal way. A list of the works concerned is given below.

Observers are asked to send in records of birds for inclusion in the annual East African bird report issue. Records which appear in the *National Museums of Kenya Department of Ornithology Newsletter* will be reviewed for the annual report but, in the case of rare birds or birds showing an extension of range, full details supporting the record should be submitted, whether the record is sent to the *Newsletter* or *Scopus* - this will save correspondence later on.

All contributions should be sent to Dr D.J. Pearson, Department of Biochemistry, University of Nairobi, Box 30197, Nairobi, Kenya.

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Continued inside back cover

SCOPUS

THE ANDERSEN COLLECTION FROM TANZANIA

P.L. Britton

The thousands of specimens amassed by Thorkild Andersen during his 20 or more years' residence on sisal estates in eastern Tanzania up to 1967 represent one of the most comprehensive collections of bird skins from East Africa. Williams (1950) described *Cinnyris regia anderseni* from Mahari Mountain, and Friedmann & Stager (1964) listed specimens collected by Andersen in and around the Uluguru mountains, however, the majority of the specimens in this extraordinary collection have never been documented. I have traced 8532 skins, in Copenhagen (3949), Leiden (1749), Bonn (1578), Stuttgart (971), Basel (280) and New York (5).

In July 1978 I personally examined the 5698 specimens of 688 species in Copenhagen and Leiden, and I have since received lists of the specimens in Stuttgart, Basel and New York. In Copenhagen there are valuable collections from West Lake (north of the Kagera River), Kigoma (especially Mahari Mountain), the Njombe highlands and Ruvuma (Songea), as well as comprehensive collections from the eastern areas where Andersen lived, especially the Uluguru and Pare mountains, Mikindani, Soga, Kidugallo and Lembeni. Each of the smaller collections has a particular geographical bias: Leiden specimens are mainly from Mikindani, though Morogoro and Rovuma regions are well represented too; Stuttgart specimens are mainly from the Kilimanjaro region while 221 of the Basel specimens are from Soga.

The early production of this report is necessitated by the anticipated completion of a definitive work on the status, habitat and distribution of East African birds by the members of the Ornithological Sub-Committee of the EANHS early next year. The following systematic list details selected specimens in Leiden, Stuttgart, Basel and New York. At the request of N.-E. Franzmann (*in litt.*) I have excluded specimens in Copenhagen as these will be reported on eventually elsewhere by him. Andersen collected 21 species and 5 subspecies previously unrecorded in Tanzania, most of which are in Copenhagen (from West Lake); additions to the avifauna of Tanzania contained in this Copenhagen part of the collection and excluded from the systematic list below are: Afep Pigeon *Columba unicincta*, Great Blue Turaco *Corythaeola cristata*, Black-billed Turaco *Tauraco schuetti*, European Scops Owl *Otus scops scops* (in the North Pare mountains), Yellow-spotted Barbet *Buccanodon duchaillui*, Hairy-breasted Barbet *Lybius hirsutus*, White-headed Barbet *L. leucocephalus leucocephalus* (other races recorded), Brown-eared Woodpecker *Campethera caroli*, Buff-spotted Woodpecker *C. nivosa*, White-throated Swallow *Hirundo albigularis* (at Lake Jipe), Pale-breasted Illadopsis *Trichastoma rufipennis rufipennis* (race *distans* recorded), Little Greenbul *Andropadus virens holochlorus* (other races recorded), Bristlebill *Bleda syndactyla*, Nicator *Nicator chloris*

chloris (race *gularis* recorded), Rufous Thrush *Stizorhina fraseri*, Masked Apalis *Apalis binotata binotata*, Buff-throated Apalis *A. rufogularis nigrescens*, Jameson's Wattle-eye *Platysteira blissetti*, Chestnut Wattle-eye *P. castanea*, Dusky Crested Flycatcher *Trochocercus nigromitratus*, Grey-throated Flycatcher *Myioparus griseigularis*, Grey-headed Sunbird *Anthreptes fraseri axillaris* and Superb Sunbird *Nectarinia superba*.

SYSTEMATIC LIST

The 102 species selected include only three additions to the avifauna of Tanzania (marked *). Many of Andersen's extensions of range within the country are of greater interest than his additions to the avifauna, most of which are predictable on zoogeographic grounds. A thorough evaluation of the majority of the records listed is not possible in the limited space available. With the exception of species more properly documented elsewhere, the suitablity of an entry has been decided on the basis of 'gaps' in the distribution maps in Hall & Moreau (1970) and Snow (1978). The virtual absence of plots at Mikindani in Snow (1978) suggests that few Andersen specimens were included in this work, though some were evidently available to Hall & Moreau (1970). Entries other than distributional records include dates for selected intra-African and Malagasy migrants. The following collecting localities are mentioned:

Bagilo, 1800 m, Uluguru mountains, Morogoro, 7°00'S., 37°42'E.
Bahi, 900 m, Dodoma, 5°59'S., 35°19'E.
Jipe, Lake, 700 m, Kilimanjaro, 3°35'S., 37°45'E.
Kidugallo, 300 m, Morogoro, 6°47'S., 38°12'E.
Kilimarondo, 600 m, Lindi, 10°33'S., 38°00'E.
Kitangari, west of, 700 m, Mtwara, 10°39'S., 39°18'E.
Lembeni, 900 m, Kilimanjaro, 3°47'S., 37°37'E.
Mahari Mountain, 1500 m, Kigoma, 6°12'S., 29°50'E.
Mikindani, near sea level, Mtwara, 10°17'S., 40°07'E.
Minziro, 1200 m, West Lake, 1°03'S., 31°32'E.
Misasa, 300 m, Coast, 6°32'S., 38°11'E.
Namabengo, 1100 m, Ruvuma, 10°33'S., 35°51'E.
Nandembo, 600 m, Mtwara, 10°57'S., 38°06'E.
Nguhi, 150 m, Coast, 6°43'S., 38°40'E.
North Pare mountains, mainly 800-1000 m, Kilimanjaro, *c.*3°45'S., 37°40'E.
Ruaha, 600 m, on the Ruaha River, 7°26'S., 36°31'E.
Soga, 150 m, Coast, 6°50'S., 38°52'E.
South Pare mountains, mainly 800-1000 m, Kilimanjaro, *c.*4°15'S., 37°52'E.
Tegetero, 900 m, eastern slopes of the Uluguru mountains, Morogoro, 6°56'S., 37°43'E.
Uluguru mountains, mainly 800-1000 m, Morogoro, *c.*7°10'S., 37°40'E.

ARDEOLA IDAE Madagascar Squacco Heron
3 males and 2 females at Mikindani, 8 to 20 May.

IXOBRYCHUS STURMII Dwarf Bittern
Male at Mikindani, 19 Feb 1965, female at North Pare Mt, 19 Apr 1958.

ANAS SPARSA LEUCOSTIGMA Black Duck
Male at Bagilo, 22 Jan 1961.

NETTA ERYTHROPHTHALMA African Pochard
Male and female at Mikindani, 26 Apr 1965; also Lembeni and Lake Jipe.

NETTAPUS AURITUS Pygmy Goose
Soga, Mikindani and South Pare mountains.

DENDROCYGNA BICOLOR Fulvous Tree Duck
Male and female at South Pare mountains, 28 Apr 1957.

ACCIPITER BADIUS POLYZONOIDES Shikra
3 at Kitangari, 4 at Mikindani.

ACCIPITER MELANOLEUCUS Great Sparrow Hawk
Male at Kidugallo, 29 Jly 1965.

AQUILA WAHLBERGI Wahlberg's Eagle
Male at Soga, 21 Oct 1960; male at Mikindani, 15 Feb 1966; male at Kitangari, 30 Jan 1966.

AVICEDA CUCULOIDES Cuckoo Falcon
Female at Mikindani, 12 Nov 1965.

CIRCAETUS FASCIOLATUS Southern Banded Snake Eagle
Female at Kitangari, 26 Jan 1966.

MELIERAX GABAR Gabar Goshawk
Soga, Kidugallo, 4 at North Pare mountains, 3 at Mikindani.

PERNIS APIVORUS Honey Buzzard
Mikindani, females on 15 Feb 1966 and 1 Apr 1966, male on 18 Apr 1966; female at Kitangari on 14 Jan 1966. Backhurst, Britton & Mann (1973) give few records.

FALCO AMURENSIS Eastern Red-footed Falcon
Females at Mikindani, 17 and 26 Mar 1965.

FALCO CHICQUERA Red-necked Falcon
Male and female at Mikindani.

FALCO CUVIERI African Hobby
Male and female at Mikindani.

FRANCOLINUS AFER Red-necked Spurfowl
Mikindani and Kilimarondo.

FRANCOLINUS COQUI Coqui Francolin
Male at Kilimarondo, 11 Oct 1964.

FRANCOLINUS SHELLEYI ULUENSIS Shelley's Francolin
Female from 3 in North Pare mountains, 17 May 1958.

CREX CREX Corncrake
Female at Mikindani, 17 Mar 1965.

CREX EGREGIA African Crake
Male at Mikindani, 10 Jun 1965.

FULICA CRISTATA Red-knobbed Coot
Female at Kidugallo, 1 Apr 1955.

LIMNOCORAX FLAVIROSTRA Black Crake
3 males and 5 females at Mikindani.

CHARADRIUS DUBIUS Little Ringed Plover
Male from 8 at Kidugallo, 23 Jan 1954; female at North Pare mountains, 29 Nov 1957. Two previous records (Backhurst *et al.* 1973).

PLUVIALIS DOMINICA FULVA Lesser Golden Plover
Adult female in partial breeding dress on fallow land in sisal at Mikindani, 15 Nov 1965, moulting primaries; immature males, moulting body plumage, on open sandy patches in sisal at Soga on 31 Dec 1961 and 5 Jan 1962. The few East African records are reviewed by Plumb (1978).

PLUVIALIS SQUATAROLA Grey Plover
Female in partial breeding plumage at a small lake north of the Ulugurus, 16 Sep 1953; uncommon inland in East Africa.

VANELLUS ARMATUS Blacksmith Plover
Two females and a male at Kidugallo, 8-10 Aug 1965.

GALLINAGO MEDIA Great Snipe
Male at Lake Jipe, 15 Dec 1957.

CHLIDONIAS HYBRIDUS DELALANDII Whiskered Tern
Female at Mikindani, 17 Oct 1965.

OENA CAPENSIS Namaqua Dove
Seven males and two females at Mikindani, 19 Apr to 7 Jly.

TURTUR AFER Blue-spotted Wood Dove
Male in the Ulugurus, 29 Sep 1958.

CERCOCOCCYX MONTANUS Barred Long-tailed Cuckoo
Males in thick bush at Mikindani on 20 Jan 1965 and Soga on 5 Jan 1962.

CHRYSOCOCCYX CUPREUS Emerald Cuckoo
Soga, Kidugallo and Mikindani.

CLAMATOR GLANDARIUS Great Spotted Cuckoo
Mikindani in Mar, Oct (2) and Dec.

CLAMATOR JACOBINUS PICA Black and White Cuckoo
Four at Mikindani, 20 Feb to 28 Mar 1965; Kitangari, 31 Jan 1966.

CLAMATOR LEVAILLANTII Levaillant's Cuckoo
Five at Mikindani, 19 Nov to 15 Apr.

CUCULUS CANORUS European Cuckoo
Males at Mikindani 2 Mar 1965 and 6 Jun 1965; female at Soga, 3 Apr 1961; female at Namabengo, 16 Mar 1966.

CUCULUS CLAMOSUS Black Cuckoo
Four males and two females at Mikindani and a male and female at Kitangari between 16 Nov and 20 Jan.

CUCULUS POLIOCEPHALUS Lesser Cuckoo
Nominate male at Mikindani, 5 Mar 1965, wing-length 154 mm; hepatic females at Mikindani, 4 Mar 1965 and at 1800 m in the Ulugurus, 1 Mar 1962.

CUCULUS SOLITARIUS Red-chested Cuckoo
Males at Mikindani, 18 Nov 1965 and 19 Jan 1965; female there on 30 Mar 1966.

GLAUCIDIUM PERLATUM Pearl-spotted Owlet
Males at Mikindani, 17 Mar 1965 and 3 Jly 1966.

CYPSIURUS PARVUS Palm Swift
Male at Mikindani, 1 Feb 1965.

APALODERMA NARINA Narina's Trogon
Male at Mikindani, 12 Nov 1965.

CERYLE MAXIMA Giant Kingfisher
Females at Mikindani, 17 Oct 1964 and 2 Nov 1964; female at Kidugallo, 4 Sep 1958.

HALCYON LEUCOCEPHALA Chestnut-bellied Kingfisher
Male at Mikindani, 25 Feb 1965; male and female at Kitangari, Jan 1966.

ISPIDINA PICTA NATALENSIS Pygmy Kingfisher
Mikindani in Jan, Mar and Jun (2); Namabengo in Nov; Kitangari in Jan (2).

EURYSTOMUS GLAUCURUS SUAHELICUS Broad-billed Roller
Five at Mikindani, 22 Oct to 22 Feb; 3 at Kitangari, Jan 1966.

PHOENICULUS MINOR Abyssinian Scimitarbill
Female at Ruaha, 17 Jan 1952.

BYCANISTES BREVIS Silvery-cheeked Hornbill
Male and female at South Pare mountains.

BYCANISTES BUCINATOR Trumpter Hornbill
Male at Mikindani, 1 Jun 1965; also in North Pare mountains.

**LYBIUS FRONTATUS* Miombo Pied Barbet
A female in miombo woodland at Namabengo on 21 May 1964 is the first record for East Africa. It no doubt occurs in parts of Mbeya as it is widely distributed in the adjacent Karonga District of northern Malawi (Benson & Benson 1949). There is no previous record of this miombo endemic east of Lake Malawi (Benson & Irwin 1966, Snow 1978).

PRODOTISCUS REGULUS Wahlberg's Honeyguide
Males at Mikindani on 8 and 21 Jly 1966.

CAMPETHERA ABINGONI Golden-tailed Woodpecker
Three females at Mikindani.

DENDROPICOS FUSCESCENS Cardinal Woodpecker
Four males and five females at Mikindani.

SMITHORNIS CAPENSIS CAPENSIS African Broadbill
Namabengo.

PITTA ANGOLENSIS African Pitta
Three males and one female at Mikindani, 25 Nov to 28 Jan; male at Lembeni, 3 Apr 1960; these were not included by Britton & Rathbun (1978).

MIRAFRA AFRICANA TRANSVAALENSIS Rufous-naped Lark
Male at Soga.

EREMOPTERIX LEUCOTIS Chestnut-backed Sparrow Lark
Ten males and a female at Mikindani are probably referable to the race *madaraszi*. These soil-stained specimens were not examined critically.

DICRURUS LUDWIGII Square-tailed Drongo
In thick bush at Mikindani and Kidugallo and in thick forest at Bagilo.

ORIOLUS AURATUS NOTATUS African Golden Oriole
Two males and one female at Namabengo, 17 Nov 1964; female at Kidugallo, 26 Jly 1964; male at Kitangari, 6 Jan 1966; female at Mikindani, 2 Mar 1965; male at Misasa, 28 Jun 1953.

CORACINA PECTORALIS White-breasted Cuckoo-shrike
Female at Mikindani.

THAMNOLAEA ARNOTI White-headed Black Chat
Male and female at Kilimarondo.
According to White (1962b) it ranges north to Tabora and east to Morogoro, and W.G. Harvey (pers. comm.) has recorded it north to West Lake, yet the map of Tanzania is blank in Hall & Moreau (1970). This error, involving the transposal of *arnoti* and *nigra* plots on maps 130 and 131, was not corrected by Snow (1978:384).

ACROCEPHALUS BAETICATUS African Reed Warbler
Mikindani in Jan, Jly (4) and Dec.

ACROCEPHALUS GRISELDIS Basra Reed Warbler
Females at Mikindani in 1965 on 23 Jan, 24 Mar and 6 Dec; male at Soga, 30 Nov 1960; all were associated with swamp. Its status in East Africa has been reviewed by Pearson, Britton & Britton (1978); these four Andersen specimens extend the known range in Tanzania south from Tanga and Kilosa to just over 10°S.

**BATHMOCERCUS RUFUS* Black-faced Rufous Warbler
A male at Minziro on 27 Dec 1953 is the first record for Tanzania; a male now in Copenhagen was collected on the same day.

BRADYPTERUS BABOECALA Little Rush Warbler
Tow males and one female at Mikindani and a male at Soga.

CISTICOLA BRACHYPTERA ISABELLINA Siffling Cisticola
Male at Mikindani.

CISTICOLA ERYTHROPS NYASA Red-faced Cisticola
Four males and eight females at Mikindani.

CISTICOLA JUNCIDUS TERRESTRIS Zitting Cisticola
Male and female at Mikindani.

CISTICOLA NATALENSIS NATALENSIS Croaking Cisticola
Five males and two females at Mikindani.

HELIOLAIS ERYTHROPTERA Red-wing Warbler
Two males and two females in patches of grass in open woodland at Mikindani.

HYLIOTA FLAVIGASTER BARBOZAE Yellow-bellied Hyliota
Mahari Mt, 1500 m, forest with bamboo, 8 Nov 1949.

BIAS MUSICUS Black and White Flycatcher
Three males and five females at Mikindani.

MALACONOTUS ALIUS Uluguru Bush Shrike (Black-cap Bush Shrike)
Andersen collected at least seven specimens of this very rare bird in the Ulugurus between 22 May 1952 and 25 Mar 1961; these are in Copenhagen (4), New York (2) and Los Angeles (Friedmann & Stager 1964). Six are labelled Bagilo, which is the type locality.

LANIUS CABANISI Long-tailed Fiscal
Collected at various localities south to Kidugallo; given as south to Morogoro by White (1962b), though there are no plots south of 5°S. in Hall & Moreau (1970).

TMETOTHYLACUS TENELLUS Golden Pipit
Male at Mikindani, 9 Mar 1963.

CINNYRICINCLUS LEUCOGASTER Violet-backed Starling
Mikindani in June (3), Jul (2), Oct, Dec (2).

CREATOPHORA CINEREA Wattled Starling
Mikindani in May (2), June (2) and Jly (4).

**POEOPTERA STUHLMANNI* Stuhlmann's Starling
A female from six on Mahari Mt, 18 Oct 1949 is the first record for Tanzania. A male in Copenhagen is from the same party.

ANTHREPTES NEGLECTUS Uluguru Violet-backed Sunbird
In open woodland and bush country at Mikindani (four males and five females), Soga (female) and Nguhi (male); in forest in the Ulugurus (male and two females).

This is typically a bird of forest or forest edge, whereas the very similar *A. longuemarei* and *A. orientalis* occupy woodland habitats. All three occur in eastern Tanzania, including Andersen specimens of *longuemarei* at Namabengo and Nandembo, and *orientalis* at Bahi and the North Pare mountains. According to Mackworth-Praed & Grant (1960) and White (1963), *longuemarei* occurs in eastern Tanzania north to Dar es Salaam, and there are plots at Mikindani and Dar es Salaam in Hall & Moreau (1970). Since the majority of Andersen's specimens of *neglectus* were labelled *longuemarei*, and since sympatry of *longuemarei* and *neglectus* in non-forest habitats at Mikindani is unlikely, this Hall & Moreau plot is probably an error for *neglectus*. In their list of birds occurring in the Dar es Salaam area, Harvey & Howell (in prep.) include *neglectus* for the Pugu Hills but make no mention of *longuemarei*. In view of the occurrence of *neglectus* in woodland at Soga, only 50 km west of Dar es Salaam, there is reason to doubt this early record of *longuemarei* at Dar es Salaam, perhaps due to an error in labelling or to confusion arising out of repeated changes in nomenclature and the comparatively late recognition of *neglectus* (described in 1922). According to Benson & Irwin (1966), *longuemarei* is confined to miombo woodland within the miombo belt, and in Tanzania it probably is confined to miombo. The coastal strip and eastern mountains are occupied by *neglectus*, discontinuously north to the lower Tana River in Kenya (Keith 1968), and including the Shimba Hills whence a male, collected by J.M. Ithia on 27 Apr 1977, was supplied to Leiden as part of a recent consignment of skins from Kenya.

ANTHREPTES RUBRITORQUES Banded Green Sunbird
Two males from the Ulugurus on 2 and 3 Jly 1955; a Tanzanian endemic previously recorded in the Ngurus and Usambaras (White 1963).

NECTARINIA AMETHYSTINA Amethyst Sunbird
Three males at Mikindani; male and female at Kidugallo: male north of the Ulugurus.

NECTARINIA OLIVACEA Olive Sunbird
Seven males and two females at Mikindani, race *changamwensis;* male at Minziro, 28 Dec 1953, race *ragazzii.*

NECTARINIA TALATALA White-bellied Sunbird
Males in open bush country at Mikindani on 5 Jly and 3 Aug 1966

ANOMALOSPIZA IMBERBIS Parasitic Weaver
Two males at Soga.

MALIMBUS RUBRICEPS RUBRICEPS Red-headed Weaver
Two males and a female at Mikindani.

PLOCEUS INTERMEDIUS CABANISI Masked Weaver
Seven males and five females at Mikindani.

PLOCEUS SUPERCILIOSUS Compact Weaver
Male at Minziro, 1 Mar 1954.
Though previously collected at Bukoba (Friedmann & Loveridge 1937), and listed for northwestern Tanzania by White (1963), it is not given for Tanzania by Mackworth-Praed & Grant (1960) or Hall & Moreau (1970).

PLOCEUS SUBAUREUS AUREOFLAVUS Golden Weaver
Seven males and one female at Mikindani.

PETRONIA SUPERCILIARIS Yellow-spotted Petronia
Three males and five females at Mikindani; a male and two females at Soga.

VIDUA PARADISAEA Long-tailed Paradise Whydah
Eight males at Mikindani.

AMANDAVA SUBFLAVA Zebra Waxbill
Male and four females at Mikindani; a male at Soga.

ESTRILDA PERREINI Lavender Waxbill
Male and female in miombo woodland at Namabengo, 18 Nov 1964.

LONCHURA BICOLOR NIGRICEPS Rufous-backed Mannikin
Four males and three females at Mikindani.

LONCHURA FRINGILLOIDES Magpie Mannikin
Three males and three females at Mikindani.

LONCHURA GRISEICAPILLA Grey-headed Silverbill
Three males and two females from the North Pare mountains.

PYRENESTES MINOR Lesser Seedcracker
Namabengo, low bush by stream, female on 21 Aug 1964 and a male on 25 Nov 1964; female in cultivation bordered by forest at Tegetero, 2 Feb 1955; one in the Ulugurus, 15 May 1952.

PYTILIA AFRA Orange-winged Pytilia
Two males and two females at Namabengo; two females at Mikindani; male and female at Kitangari.

URAEGINTHUS ANGOLENSIS Cordon-bleu
Four males and three females at Mikindani.

SERINUS SULPHURATUS Brimstone Canary
Five males and five females at Mikindani.

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DIETARY NOTES ON SOME KENYAN BIRDS

P.C. Lack & D.L.J. Quicke

INTRODUCTION

Between late 1974 and the end of 1976 a number of dead birds was found near Voi township, southeastern Kenya, often within Tsavo National Park (East). Most of these were road casualties. Their stomach contents were preserved and later analysed and this paper reports on these findings supplemented by some behavioural observations on the birds by PCL.

Thirty-eight individuals of 28 species are involved, eleven of five species being nightjars for which otherwise no observations were made.

Scientific names of birds follow Forbes-Watson (1971) and are given in the Appendix; English names are from Mackworth-Praed & Grant (1957, 1960).

RESULTS

The complete analyses are given in the Appendix and only some of the more interesting points are commented on below. Frequently only parts of a particular prey item were found, such as the wing-cases or thorax of a beetle, and it has been assumed that in these the whole of the item had been taken by the bird and that we simply did not find the missing parts; this did not apply to ants (see below). The size of the prey is therefore given as an estimated total length unless otherwise stated.

DISCUSSION

Almost all bird species considered here are known to be primarily insectivorous, and it is not surprising therefore that insects and other arthropods form the vast majority of the items found. Of these, four groups appear especially important and so are considered first.

Termites Termites are almost ubiquitous in Tsavo, though they are not necessarily immediately obvious to an avian predator as they do much of their foraging concealed in sand tunnels, which they build as humidity regulating structures. Also, as a general rule, they are most active at night. However, they are one of the most important food sources for birds in Tsavo, and for many they form a substantial part of the diet. This is particularly true of ground-feeding species. How much protection is afforded by the sand tunnels is not known; birds certainly have no trouble breaking into them but only a few of the tunnels will be in use at any one time.

Termites are also an important secondary source of food for species which are primarily granivorous and form a valuable source of protein. In this sample the Green-winged Pytilia is an example; it is known to feed mainly on seeds taken from the ground, yet the bird reported here contained 93 termites. The termites occur in exactly the same places as the seeds this species eats.

Termite alates, though not recorded here, are eaten by many species including some not generally associated with insect-eating. In Tsavo alates are reatively scarce except during very short periods immediately after rain storms and are thus unimportant as more than a very temporary food source (cf. Thiollay 1970).

Ants These too are nearly ubiquitous in Tsavo. They are most common on the ground but may also occur in foliage where they can become important to frugivores as well as to the granivores on the ground, cf. termites

above. The Speckled Mousebird in the sample had taken one.

Some ants are capable of giving a more or less unpleasant sting. It is possible that some birds have developed a de-stinging behaviour (see Birkhead 1974 for a review). Ants missing the ends of their abdomens were noted in several species, but only in the Golden-breasted Starling and one of the Gabon Nightjars were the ants' abdomens damaged in a way which might have indicated such behaviour, but in neither of these cases had they been taken in quantity.

Alate ants form a temporary source of food comparable to termite alates for the limited period they are flying.

Beetles A large number of beetles occurs throughout the sample. Indeed only four individuals, apart from the primarily frugivorous Speckled Mousebird and granivorous Green-winged Pytilia, had not taken any. Even the near-exclusively granivorous Laughing Dove had taken one. The other four, Grey-headed Kingfisher, Red and Yellow Barbet, Slate-coloured Boubou and Three-streaked Bush Shrike, are mainly insectivores, and the lack of beetles is no doubt due simply to chance.

To do more than superficially summarize the familial distribution would be treading on dangerous ground, but two families seem especially well represented, Scarabaeidae and Curculionidae. At least 22 birds had taken at least one of either and the largest number of one family were the 43 Scarabaeidae taken by the Red-billed Hornbill. Perhaps surprisingly, the European Swallows had taken quite large numbers of both. Not all the Scarabaeidae were from coprophagous sub-families but the majority were which shows the importance of mammalian dung to insectivorous bird species. Many species, including all three hornbills, in this sample have been seen feeding from dung-piles. The larger species were no doubt seeking the beetles, but termites, the other major dung remover in Tsavo (Coe 1976), are obviously an important secondary attraction and probably the main one for the smaller species, including the starlings.

Ladybird beetles (Coccinellidae) are normally considered distasteful to most birds yet the von der Decken's Hornbill had taken one.

Grasshoppers These had been taken by ten birds, six of them nightjars. They are a very important, if not the main, food source for species which normally sit on an elevated perch and pounce on to the ground or into the grass (pers. obs.). There are four such species in this sample (five individuals), European Roller, Grey-headed Kingfisher, Red-tailed Shrike and White-crowned Shrike and three of these had taken some.

One of the Dusky Nightjars had taken 13 grasshoppers with red hind-wings which are probably designed as flash-warning colouration. The night-jar is, of course, nocturnal and so would perhaps not see this colour, but these particular grasshoppers were possibly not distasteful, perhaps the colouration was used for mimicry.

Other Arthropods The White-browed Coucal seems to have a preference for giant ground crickets; all three specimens had eaten them though no other bird in this sample had. However, the Red-billed Hornbill and the Grey Hornbill have both been seen to eat some at other times. These insects can be quite unpleasant when handled by man; besides struggling forcibly they produce large quantities of a brown liquid from their mouths and, upon further provocation, a clearer liquid can be produced from the body as well. In addition, they can also inflict painful bites.

Scorpions too might be thought equally unpleasant, yet both a White-

browed Coucal and a Grey-headed Kingfisher had eaten one although the sting was only found in the kingfisher. Similarly, spiders were eaten by both species and a shieldbug (Pentatomidae) by the coucal. Cuckoos in general are well known to eat hairy caterpillars and so perhaps the White-browed Coucal, although belonging to a separate sub-family, may have similar adaptations to deal with distasteful prey, but we can find no reference to this.

Another unusual type of food item found was mantis egg capsules. These are often stated as having a protective covering yet the Yellow-billed Hornbill and Three-streaked Bush Shrike had both eaten clusters whole, the only damage being perfectly consistent with that required to remove them from their substrate.

Other foods Several species were recorded as having taken seeds and other vegetable matter and in no case is this inconsistent with what is known of their feeding habits from observations.

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APPENDIX

For each individual a list is given of all the items found in the stomach and/or crop. Where size seems important it is given as an estimate of the total length, unless otherwise stated; (w.s. = wingspan)

Vanellus coronatus Crowned Lapwing
Voi Sisal Estate 4 February 1976
7 beetle larvae (Cerambycidae), head capsule width 1.5 - 5 mm; beetle, 10 mm; ant; termite.

Cursorius cinctus Heuglin's Courser
On main road about 10 km north of Voi 10 August 1976; male
Beetle (Scarabaeidae), 9 mm; beetle larva; ant; 109 worker and 5 soldier termites.

Streptopelia senegalensis Laughing Dove
Aruba 18 December 1976
Beetle, 7 mm; *c.*250 black seeds 2 mm in diameter (?*Chloris* sp.).

Turtur chalcospilos Emerald-spotted Wood Dove
Near Voi Gate 29 October 1975, female
*c.*45 various seeds, 2.5 mm in diameter.

Centropus superciliosus White-browed Coucal
1. Near Park Headquarters 21 June 1975
2 ground crickets (Hetrodinae, *Enyaliopsis*); 4 grasshoppers; beetle (Curculionidae), 7 mm; beetle (?Tenebrionidae), 14 mm; beetle, 11 mm; hymenopteran (?Chrysididae); 2 shield bugs, cryptic grey; cockroach, 11 mm; spider (Lycosidae or Pisauridae).

2. Near Voi Gate 2 April 1976, male
5 ground crickets (Hetrodinae; *Enyaliopsis*), mandibles only; 4 grasshoppers; beetle (Curculionidae), 15 mm; 2 ants; 3 cockroaches, 18 mm; scorpion, 50 mm; spider (Mygalomorph), 70 mm body length; possible remains of a spider, 7 mm.

3. Near Voi 11 April 1976, female
6 ground crickets (Hetrodinae; *Enyaliopsis*), mandibles only; 3 beetles (Curculionidae), 15 - 18 mm.

Caprimulgus donaldsoni Donaldson-Smith's Nightjar
1. On main road about 3 km north of Voi 2 March 1976, male
5 beetles of various families, 5 - 15 mm, the largest a Staphylinid; ant alate.

2. Junction of the Tsavo and Athi Rivers 15 August 1976, juvenile
Beetle (Scarabaeidae), 12 mm; beetle (Curculionidae), 6 mm; beetle, 3.5 mm.

3. Half way between Voi and Lugard's Falls 30 October 1976
4 beetles (Scarabaeidae), 13 mm; beetle (Cerambycidae), 13 mm; beetle, 8 mm; caterpillar (Lepidoptera), 20 mm; 21 moths, w.s. 8 - 35 mm.

Caprimulgus inornatus Plain Nightjar
1. Taita Hills Lodge 27 March 1975
Grasshopper; orthopteroid; 15 beetles, 22 mm and 2, 6 mm, all Scarabaeidae; 3 beetles (Carabidae); 2 beetles (Elateridae), 8 mm; beetle (?Anthicidae), 10 mm; 4 ants; 36 termite alates.

2. Near Voi Gate 18 December 1975
2 grasshoppers; 2 beetles (Scarabaeidae) 12 mm; beetle (?Cerambycidae), 15 mm; 13 moths, w.s. 25 - 40 mm; 3 antlion adults (Myrmecolionidae), w.s. 55 mm.

Caprimulgus fossii Gabon Nightjar
1. Near Aruba 26 January 1975
3 beetles (3 spp. of Scarabaeidae), 11 - 21 mm; beetle (Elateridae), 21 mm; 2 moths, w.s. 30 mm.

2. Near Voi Gate 1 February 1975
28 grasshoppers, 90% adults; 2 beetles (Scarabaeidae), 12 mm; 2 ant alates (missing the apex of gasters); bug (Heteroptera), 5 mm.

3. Near Voi Safari Lodge 1 February 1975
27 grasshoppers; 2 beetles (Scarabaeidae), 10 mm; 2 moths, w.s. 30 mm; 2 unidentified objects, diameter 3 mm, possibly seeds.

Caprimulgus europaeus European Nightjar
Half way between Voi and Lugard's Falls 30 October 1976
Beetle (Scarabaeidae), 10 mm; beetle, 15 mm; moth (Sphingidae), w.s. 100 mm; 7 moths, w.s. 20 mm; ant, alate of *Dorylus* sp., 25 mm.

Caprimulgus fraenatus Dusky Nightjar
1. Near Voi 7 December 1976
13 grasshoppers with red hindwings, 1 60 mm, 12, 30 mm; 2 beetles of 2 species, 13 mm.

2. Near Voi 31 December 1976
5 grasshoppers, 35 - 55 mm; 8 beetles (Scarabaeidae, 2 spp.), 6, 20 mm, 2, 10 mm; beetle (Cerambycidae), 20 mm; 5 beetles (various), 8 mm; moth, w.s. 30 mm.

Colius striatus Speckled Mousebird
Ndololo 19 April 1976, male
Ant; green soft fruity material.

Halcyon leucocephala Grey-headed Kingfisher
Voi River near Sagala 4 February 1976
Grasshopper; 2 cockroaches, 12 and 25 mm; caterpillar (Sphingidae), 18 mm; spider (Lycosidae), 13 mm; 2 scorpions, 25 mm and 50 mm (sting present).

Coracias garrulus European Roller
1. Voi Sisal Estate 4 February 1976, male
12 beetles (Curculionidae), 13 - 25 mm; 2 beetles (sand-mimicking Tenebrionidae), 15 - 18 mm.

2. Tsavo River 16 November 1976
2 beetles (Carabidae), 15 mm; beetle (Cicindelidae), 18 mm; beetle (Gyrinidae), 15 mm; 4 caterpillars, 20 - 30 mm.

Upupa epops African Hoopoe
Voi River near Sagala 4 February 1976
Beetle (Scarabaeidae), 17 mm; 3 cockroaches, 15 - 30 mm.

Tockus erythrorhynchus Red-billed Hornbill
Half way between Voi and Aruba 20 March 1976, male
43 beetles (Scarabaeidae), 18 mm, 11 mm and 41 at 7 mm (?Aphodinae); 2 ants; bug (Heteroptera); antlion larva; 90 seeds, diameter 3 mm; plant stalk, 6 mm.

Tockus deckeni von der Decken's Hornbill
On main road about 20 km north of Voi 17 December 1974
Orthopteran; 3 beetles (Curculionidae), 2 at 16 mm and 1 at 8 mm; beetle (Coccinellidae), 8 mm; beetle (Chrysomelidae, Halticinae), 2 mm; 15 ant alates; 6 seeds (*Commiphora* sp.); 32 seeds; seed (?grass).

Tockus flavirostris Yellow-billed Hornbill
Near main road about 5 km north of Voi 2 February 1976
2 beetles (Cerambycidae), 13 mm; 17 ants (aff. *Campanotus*); 2 termites; mantis; mantis egg cluster, intact; 19 intact fly pupari; spider (Lycosidae), 17 mm; 13 seeds and stalks of *Commiphora* sp.; 4 seeds of 2 sorts, up to 13 mm; leaf material in quantity.

Trachyphonus erythrocephalus Red and Yellow Barbet
Park Headquarters 18 June 1975
Beetle (Scarabaeidae), 9 mm; 3 termite workers: 7 berries of 2 species, diameter 5 - 6 mm.

Hirundo rustica European Swallow
1. Near Park Headquarters 19 December 1975
Beetle (Scarabaeidae), 5 mm; 13 beetles (Curculionidae), 6 - 10 mm.

2. Half way between Voi and Aruba 20 December 1975
6 beetles (Scarabaeidae, 3 species), 4.5 mm; 9 beetles of 6 species including 1 Curculionidae (Apioninae); 13 ant alates (Myrmecinae); 9 ant alates; typhid wasp; 2 braconid wasps, 2 mm; ichneumonid wasp, 6 mm; 9 flies including Sepsidae and Tachinidae; bug (Heteroptera), 11 mm; wing scales of Lepidoptera.

Eurocephalus rueppellii White-crowned Shrike
Voi Gate 18 December 1976
Beetle (Scarabaeidae), 25 mm; beetle (Cerambycidae), 25 mm; beetle, 7 mm.

Tchagra jamesi Three-streaked Bush Shrike
Park Headquarters 19 December 1974
Cockroach; mantis egg cluster with most of protective coating present; moth, w.s. 30 mm.

Laniarius funebris Slate-coloured Boubou
Near Voi Gate 2 April 1976
4 termites (3 workers and 1 alate); ant; bee; wasp (?Vespidae); butterfly w.s. 30 mm; tick (male *Amblyomma variegatum*).

Lanius collurio (isabellinus) Red-tailed Shrike
On main road about 25 km south of Voi 22 January 1976
Locust adult; beetle (?Carabidae), 25 mm; caterpillar (Lepidoptera), 25 mm; thin legs of a spider (?Pholcidae); seed, diameter 1 mm.

Luscinia luscinia Sprosser
Park Headquarters 15 November 1975
Beetle (?Carabidae), 8 mm; 2 ants; 3 ants (eyeless); possible remains of a smaller beetle.

Cisticola chiniana Rattling Cisticola
Near Voi Gate 2 April 1976, female
Beetle, 3 mm; moth, w.s. 30 mm.

Pytelia melba Green-winged Pytilia
Half way between Voi and Aruba 17 April 1975, male
93 termites (86 workers and 7 soldiers); 26 seeds, diameter 2 mm.

Bubalornis niger Red-billed Buffalo Weaver
Near Voi Gate 17 December 1976
Beetle, 10 mm; 14 assorted caterpillars, 20 mm; fly, 8 mm; snail, 4 mm.

Cosmopsarus regius Golden-breasted Starling
Voi Sisal Estate 4 February 1976, male
Beetle (Scarabaeidae), 10 mm; 130 termites; 2 ants (without abdomens); seed (*Commiphora* sp.); seed, diameter 2 mm; plant material; sand grains.

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COUNTS OF MARABOU STORKS *LEPTOPTILOS CRUMENIFERUS* IN RELATION TO THEIR MOVEMENTS IN EASTERN AFRICA

D.E. Pomeroy

INTRODUCTION

During the early years of the twentieth century the Marabou Stork was rare in eastern Africa, occurring in small numbers at well-scattered localities (Pomeroy 1977a). Today Marabous are more numerous and are sometimes seen in large flocks. These assemblages are not usually associated with nesting colonies and often occur outside the breeding season. Regular counts have been made at several feeding sites in eastern Africa and, in addition, there are a number of isolated records of concentrations of Marabous within the area. Both types of record contribute to an understanding of the movements of the species, which are probably quite extensive (Pomeroy 1978).

For convenience, the records are divided into those relating firstly, to short-term sources of food, and secondly to regular feeding sites, where birds are present for lengthy periods, sometimes throughout the year.

COUNTS OF MARABOUS

Short-term assemblages of Marabous The natural food of the Marabou consists largely of carrion. This is often widely-dispersed. Only rarely does an abundance of natural food occur at one place but when it does, large numbers of Marabous may be attracted, usually accompanied by other scavengers. Sometimes the food source results from a catastrophe, as when some 3000 wildebeest *Connochaetes taurinus* calves were drowned or lost at Lake Ndutu, Serengeti National Park*, in 1973 (D.A. Kreulen pers. comm.). Numerous scavengers were attracted, amongst which were well over 100 Marabous. In 1906, Meinertzhagen (1957) counted more than 350 Marabous near Muhoroni in western Kenya, where many cattle were dying. More often, however, the food source is insects. For example, K. Modha (pers. comm.) reported several hundred Marabous at Ishasha, Rwenzori National Park, on 22 March 1971, feeding on the army-worm caterpillar *Spodoptera exempta*. The Marabous were accompanied by 100 - 200 Abdim's Storks *Sphenorhynchus abdimii* and some Black Kites *Milvus migrans*. Three days later the birds had left. Army-worm were also the prey of 300 - 400 Marabous at Kimottoro in northern Tanzania on 17 February 1977 (D.D. Peterson, pers. comm.). R. Wooff (pers. comm.) reported very large numbers of Marabous feeding on grasshoppers in northern Karamoja during January 1970. De-alate termites, especially the larger members of the genera *Macrotermes* and *Hodotermes*, attract many species of birds, and I have twice seen parties of up to 100 Marabous feeding on these insects.

Marabous at long-term food sources Some large lakes, such as Abiata in Ethiopia and Nakuru in Kenya, support Marabous for most of the year (although for Nakuru there are no actual counts). These birds probably derive some food from natural sources, especially when lake levels are falling. Occasionally, large locust swarms occur and may provide a long-term source of natural food, as happened at Lake Rukwa, Tanzania, in 1959

* see Appendix 2 for details of localities.

Scopus 2: 92-96, December 1978

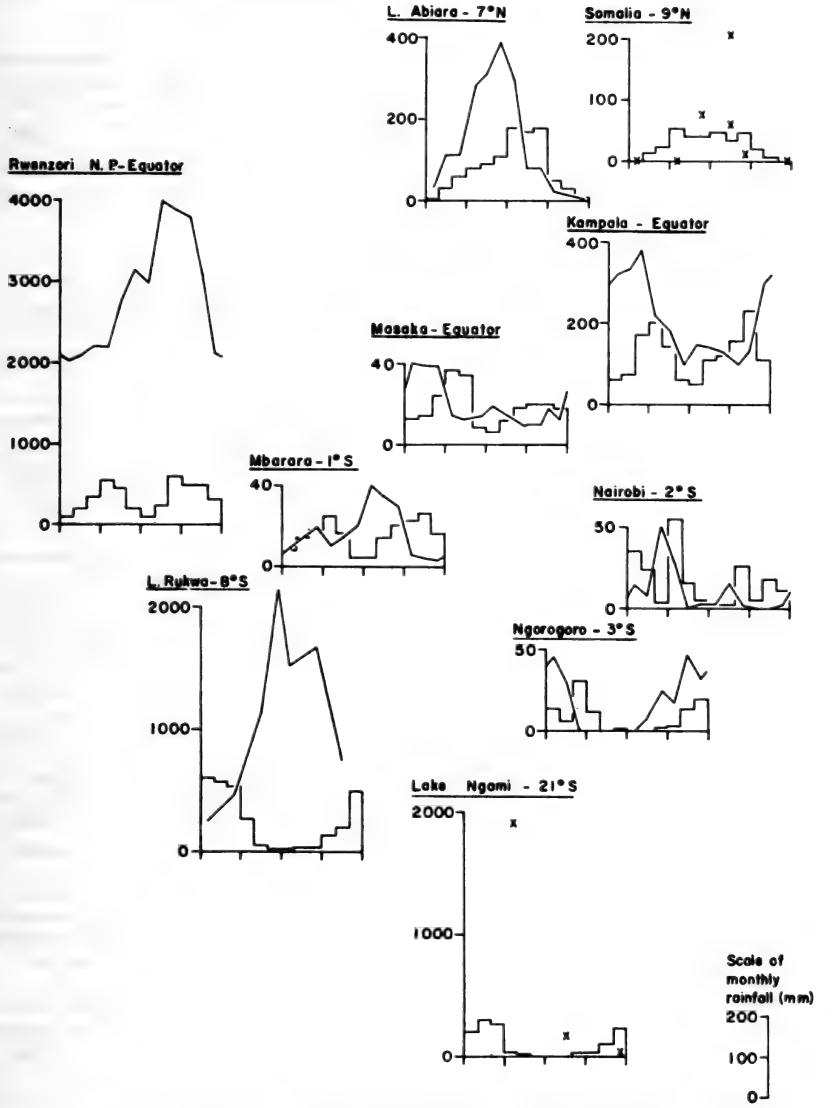

Fig. 1 *Numbers of Marabous at various sites in eastern Africa, arranged geographically. Solid lines and crosses: numbers of birds, scale on vertical axes (note differing scales). Months, beginning with January, are on the horizontal axes. The histograms show rainfall. Appendix 1 gives the sources of the data*

(Dean 1964). However, most long-term sources of food are such places as abattoirs, refuse tips and fish-processing factories, where the food supply results from human activities. In Uganda, there were some 15 to 20 such sites (Pomeroy 1973), although the numbers of Marabous were small in all but four of them. Figure 1 shows the results of regular counts at these four sites, together with six other sites in eastern Africa, four of them having counts which continued for about a year. The figure also shows rainfall. The sources of the data appear in Appendix 1.

DISCUSSION

With the exception of Somalia and the four Ugandan sites, all counts refer to one particular year (see Appendix 1) and in other years the patterns may have been different. Nevertheless, the Ugandan counts showed rather little year-to-year variation (Pomeroy 1977a), suggesting a regularity which probably applied to all sites except Lake Rukwa.

Numbers changed seasonally at all localities, and the changes were proportionately large, clearly implying seasonal movements. Often, the increases and decreases persisted for several consecutive months. From this, and from occasional direct observations, it appears that Marabous migrate as individuals or in small parties, rather than in large flocks. This is probably because they have to feed whilst migrating, and most sources of food are small and widely scattered.

In wetter areas, Marabous were most numerous during or towards the end of a dry season. Often they departed as rainfall increased. At the extreme north and south of their range - Somalia and Botswana - rainfall is lower, and Marabous were present during the wet season. Under these circumstances rain tends to increase the food supply, the reverse of the situation in the wetter areas (Pomeroy 1978).

The numbers of birds at various sites can also be related to nesting seasons. Thus, birds in Rwenzori National Park, at Mbarara and Lake Abiata, and at the Somali localities, probably came from nesting colonies north of the equator where nesting is mainly from November to April (Pomeroy 1978). Those at most other localities are likely to be birds from more southerly colonies, where nesting is mainly between June and November. The birds at Lake Rukwa may also have belonged to the northern population; it seems likely that many of them were sub-adults, as were many of the birds in Rwenzori National Park (Pomeroy 1977a).

The breeding population of Marabous in Uganda apparently doubled between 1967 and 1976 (Pomeroy 1977b). A large proportion of the Marabous in Uganda is found at food sources associated with man (Pomeroy 1973) and these are mostly more accessible than the nesting colonies. Counts at long-term feeding sites thus provide a useful way of monitoring the population as a whole. Elsewhere in eastern Africa, natural foods are relatively more important, but numbers of birds at places with a regular food supply are still likely to reflect the general level of the local population.

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APPENDICES

1. *Sources of data used in Figure 1*

Locality	Main food of Marabous	Period of observation	Author	Source of rainfall data
Somalia	Refuse	1955-6, 68	G. Clarke[1]	Jackson (1961)
L. Abiata	Fish	Oct 1964-June 1966	E.K. Urban[1]	Jackson (1961)
Rwenzori N.P.	Fish factories and villages	1970-72	Pomeroy[2]	*Atlas of Uganda*
Mbarara	Refuse	1970-72	Pomeroy[3]	*Atlas of Uganda*
Masaka	Abattoir	1970-72	Pomeroy[3]	*Atlas of Uganda*
Kampala	Refuse and abattoir	1970-72	Pomeroy[2]	*Atlas of Uganda*
Nairobi	Abattoir	Feb-Nov 1973	R. Newson[1]	E.A. Met. Dept.*
Ngorongoro	Carrion	June 1973-March 1974	G. Frame[1]	E.A. Met. Dept.*
L. Rukwa	Locusts	Jan-Nov 1959	Dean (1964)	E.A. Met. Dept.*
L. Ngami	Various	Dec 1970-Aug 1971	R.D. Jacka[1]	Jackson (1961)

[1] = pers. comm.; [2] = Pomeroy (1977a); [3] = Pomeroy (unpublished); * = rainfall figures refer to the period of observation, in all others long-term averages were used.

2. *Exact localities of places mentioned in the text and Appendix 1*

Somalia	Hargeisa (9°33'N., 44°04'E.) and several smaller towns within a 100-km radius	
Ethiopia	Lake Abiata	7°30'N., 38°20'E.
Uganda	Rwenzori National Park	0°20'S., 29°50'E.
	Ishasha	0°30'S., 29°40'E.
	Mbarara	0°40'S., 30°40'E.
	Masaka	0°25'S., 31°45'E.
	Kampala	0°20'N., 32°35'E.
	Karamoja	3°40'N., 44°E.
Kenya	Muhoroni	1°20'S., 36°40'E.
	Nairobi (Ngong)	1°20'S., 36°40'E.
Tanzania	Lake Ndutu (Lagaja)	3°S., 35°E.
	Lake Rukwa	8°S., 32°E.
	Kimottoro	4°28'S., 36°20'E.
	Ngorongoro	3°30'S., 36°00'E.
Botswana	Lake Ngami	20°40'S., 22°30'E.

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SHORT COMMUNICATIONS

ON THE WINTERING OF THE WIGEON *ANAS PENELOPE* IN THE KENYA HIGHLANDS Backhurst, Britton & Mann (1973) listed only ten records of the Wigeon in Kenya although better coverage of several highland lakes in central Kenya in more recent years clearly indicates that the species is an annual visitor. Lake Naivasha at 1888 m a.s.l., for example, has been visited by this species during the past three northern winters, albeit in very small numbers (<10). During my November 1978 duck count on the lake a total of 133 Wigeon was seen (in two flocks of 110 and 23); this is quite an unprecedented number for a locality south of the equator. Some information on feeding behaviour was also obtained and this suggests that Wigeon on the lake may be relying on a single species of macrophyte for food.

In January 1978 I watched a male Wigeon on Lake Naivasha feeding in association with Red-knobbed Coots *Fulica cristata* which were bringing up pieces of *Ceratophyllum demersum* to the surface. All the ducks observed on 30 November 1978 were feeding together in compact flocks in shallow water (approximately 2 m deep) in the open part of the lake immediately south of the papyrus swamp at the entrance of the main influent (River Malawa). In this zone extensive beds of *C. demersum* were growing and many plants almost reached the surface, as the water of the lake (which has relatively low algal productivity) is low in turbidity during most of the year. The Wigeon were grazing on the weed under the water by immersing head and neck. There were no other Palaearctic duck species with the Wigeon. However, about ½ km away from this concentration of over 100 Wigeon were *c.* 1000 Red-knobbed Coots, but there was no feeding association being established on this occasion. Interestingly, *Ceratophyllum* is not listed as a food item by Cramp & Simmons (1977) nor by Bauer & Glutz von Blotzheim (1968).

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BAUER, K.M. & **GLUTZ** von **BLOTZHEIM**, U.N. 1968. *Handbuch der Vögel Mitteleuropas*. Vol. 2 (1). Frankfurt am Main: Akademische Verlagsgesellschaft.

CRAMP, S. & **SIMMONS**, K.E.L. (eds) 1977. *The birds of the Western Palearctic*. Vol. 1. Oxford: Oxford University Press.

B.S. Meadows, Box 30521, Nairobi Received 15 December 1978.

TWO RECORDS OF KNOT *CALIDRIS CANUTUS* FROM THE KENYAN COAST Backhurst, Britton & Mann (1973) consider that the Knot is a very rare vagrant to the East African coast, and give only two recent records, those of Fogden (1963) and Harvey (1971). Two additional records are detailed below.

In September 1977 I spent some time observing the shorebirds on the Kenyan coast in the Malindi area. In the early afternoon of 21 September I found a single Knot in winter plumage alongside Curlew Sandpipers *Calidris ferruginea* at the edge of a pool near the mouth of the Sabaki River. The bird was noticeably larger than the Curlew Sandpipers but somewhat smaller than a nearby Grey Plover *Pluvialis squatarola*, and was

rather stocky in build, with a short neck and fairly short legs. The upperside was grey, with slightly darker centres and paler edges to the feathers of the back. The sides of the face were grey, paler than the back, and a rather diffuse, pale superciliary stripe was present. Below, the bird was white with a grey suffusion on the breast. The bill was black, straight and rather short, being not quite the length of the head. The eye was dark and the legs were rather dull greenish-grey. Having noted all features of the bird at rest I approached in order to put it to flight and, as it flew off, I noted that the rump and upper tail coverts were greyish-white with some darker mottling and that there was a poorly defined pale wing bar. The bird did not call, and flew with other waders behind a group of sand dunes. It could not be relocated. Observations were made in excellent light conditions with x10 binoculars for a period of 5 min at a range of from 15 to 25 m. My wife also saw the bird and confirms my description. I am familiar with Knot in Britain, having seen it on many occasions, and, although prior to this sighting I had not seen the species since late 1974, I am confident that my identification is correct.

P.L. Britton (*in litt.*) has drawn my attention to a further record of this species from Kenya and the observer concerned, P.K. Kinnear, has kindly placed the details of his sighting at my disposal; his notes give the following information:

On 2 April 1973 he saw an orange-plumaged wader amongst a flock of 200 Greater and Mongolian Sandplovers *Charadrius leschenaultii* and *C. mongolus* on the shore at Shelley Beach, just south of Mombasa. The bird was plump and was conspicuously larger than the Mongolian Sandplovers but of similar size and proportions to the Greater Sandplovers. The upperparts were an admixture of orange and dark brown, with the flight feathers more uniform dark. The sides of the face and underparts were a uniform pale orange, not as bright as most breeding plumage birds that he had seen on passage in Britain. The bill was black, straight and slightly shorter than the head length. Leg colour was neither particularly dark nor pale. In flight the bird had a pale rump and pale wing bar. The only other sandpipers seen near the bird were Little Stint *Calidris minuta* although other species were present further along the shore. Observations were made with x8 binoculars and a x25 telescope at distances down to about 15 m.

These are only the third and fourth records of the Knot for East Africa and the April 1973 bird is the only spring record and the only one in breeding plumage.

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P.B. Taylor, Box 415, Ndola, Zambia Received 24 October 1978.

MISIDENTIFICATION OF A MARSH WARBLER *ACROCEPHALUS PALUSTRIS* IN MALAWI Benson & Benson (1977: 255) report a specimen of an Olivaceous Warbler *Hippolais pallida* handled at Zomba on 11 December 1974. At the request of R.J. Dowsett, who was concerned by claims for the occurrence of both this species and Upcher's Warbler *H. languida* in Zambia, the description and photograph, which are on file in the University Museum of Zoology, Cambridge, have been re-studied by Dr D.J. Pearson. As a result, he (pers. comm., 14 March 1978) has concluded that the bird is not a *Hippolais* at all, but a Marsh Warbler *Acrocephalus palustris*, already well known in Malawi. A copy of Dr Pearson's commentary has been deposited in the University Museum with the description and photograph. The salient points, indicating *A. palustris* rather than any *Hippolais*, are:

> Description: brownish olive upperparts, yellowish underparts (ruling out any *Hippolais* except perhaps Icterine Warbler *H. icterina*, but fitting well with autumn *A. palustris*); dark greenish brown iris; dark flesh coloured tarsi; wing 64 mm (ruling out any *Hippolais* except *pallida*, but fitting also a small *palustris*), tail 48 mm (fitting *palustris* better than *pallida*).
> Photograph: relatively large feet, typical of *Acrocephalus* not *Hippolais*; second primary tip equalling the fourth or perhaps exceeding it, fitting *palustris* but never *pallida*, with inner web notch falling between pp. 7 and 8, much too high for *pallida* but normal for *palustris*; tip of second primary pointed as in *palustris*, not rounded as in *H. pallida* or *languida*. Dr Pearson also showed the description and photograph to G.C. Backhurst, who independently concluded that the bird was an *Acrocephalus palustris*.

Thus, so far there is no evidence for the occurrence of *Hippolais pallida* in Malawi (nor do I know of any published record from Zambia). Moreau (1972: 97) quotes the occurrence of *pallida* in the Rukwa Valley, south-estern Tanzania, so that it may occur at least occasionally in Malawi as well as Zambia.

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C.W. Benson, Department of Zoology, Downing Street, Cambridge CB2 3EJ, U.K.

Scopus 2: 99, December 1978 Received 3 November 1978.

SPECIES-PAIR ASSOCIATION OF STONECHAT AND BLACK-LORED CISTICOLA IN SOUTH-WEST TANZANIA Mixed-species flocking in birds has been the subject of a considerable body of literature. Less attention has been directed, however, at the regular consorting of a pair of species in twos or small groups rather than in true flocks. One of the most familiar of such associations in the Palaearctic region is that between the Goldcrest *Regulus regulus* and the Coal Tit *Parus ater*. In English mixed woodlands these two birds are not only members of foraging flocks with other species in the winter but also frequently occur close together in small numbers during the breeding season.

Two Palaearctic migrants, the Red-backed Shrike *Lanius collurio* and the Olive-tree Warbler *Hippolais olivetorum*, apparently associate in this way in Africa (Tree 1972, Harpum 1978) although there is no inform-

ation about such behaviour where their breeding ranges overlap. Among African birds I have noticed regular associations between von der Decken's Hornbill *Tockus deckeni* and the White-bellied Go-away-bird *Corythaixoides leucogaster*, between the Spotted Morning Warbler *Chichladusa guttata* and the Red-backed Scrub Robin *Cercotrichas leucophrys*, between the Purple Grenadier *Uraeginthus ianthinogaster* and Firefinches *Lagonosticta* spp. as well as between Fischer's Sparrow-lark *Eremopterix leucopareia* and the Grey-headed Silverbill *Lonchura griseicapilla*. All these were observed in the Dodoma area of central Tanzania.

Perhaps the most striking example of this phenomenon to come to my attention is that between the Stonechat *Saxicola torquata* and the Black-lored Cisticola *Cisticola nigrilores* (or *C. chubbi nigrilores* if the useage of Hall & Moreau 1970 is accepted). These two birds inhabit the high grasslands of southwestern Tanzania where I encountered them in the mountains of Ubena, Ukinga and Upangwa between Njombe and Lake Malawi, up to altitudes of 2500 m. Regular visits were made to this area between 1948 and 1959 during which time it was possible to make observations covering every month of the year except April. The two species were encountered on all my visits.

The Stonechat was a quiet but visually conspicuous bird, tame and easily approached as it perched on small scattered bushes to drop down out of sight only at the last minute. The cisticolas were always more difficult to see or flush but were common in these high grasslands. In October they would begin their conspicuous duet which sounds like a rusty iron gate swung back and forth on its hinges. Whenever this song was heard a Stonechat was invariably visible on a conspicuous bush or post in the immediate vicinity. It was always more difficult to locate the duetting pair of warblers performing nearby. So consistent was the appearance of the Stonechat with the duetting that a tyro might be forgiven for assuming that it was the Stonechat doing the singing. In fact, the song of the Stonechat was relatively quiet and readily lost on the wind - not so noticeable as the Dunnock-like *[Prunella modularis]* song of the European races. The close connexion between these two birds was most pronounced in the months from October to January when they were breeding. At other times it was no more marked than is to be expected from any two birds occupying closely similar habitats.

The species-pair associations described above are clearly ecological but the relationship between the two species is perhaps far more subtle than this generalization would suggest. Presumably it has some adaptive advantage for one or both species, although what this advantage might be is often obscure. Common features between two members of a pair seem to be similarity of diet and approximate equality in size, although these factors in themselves would simply serve to accentuate potential mutual competition. There may be sufficient niche overlap to provide interspecific advantage in mutual foraging. Another solution may apply in the case of the Stonechats and cisticolas. The far-carrying sound of the warblers' duet may serve the Stonechat as part of its own territorial advertisement on the wind-swept grassy uplands. Clearly the matter requires further investigation, one which might well be carried out in Kenya where the Stonechat occurs alongside two duetting grass warblers, *Cisticola hunteri* and *C. chubbi*.

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John Harpum, St. Paul's College, Cheltenham, U.K.

Received 14 October 1978.

BUILDING OF ONE NEST BY TWO MALE REICHENOW'S WEAVERS In the late afternoon of 22 April 1978 in the gardens of the New Ainsworth Hotel, Nairobi, I watched two male Reichenow's Weavers *Ploceus baglafect reichenowi* starting a nest in a *Grevillea* tree. Both males were seen sitting together at the same time in the nest start, then a crescent or inverted arch. Repeatedly, one bird would build while the other sat nearby. Several times one male would begin to build immediately after the other male stopped building. Within two hours the brood chamber was begun by weaving out from the initial crescent before any top or roof had been added. While the males were building, the female visited only a completed nest in an adjacent tree about 2 m below the new nest the males were constructing. She repeatedly entered and left this nest, remaining inside for 2 to 10 min at a time. She was not seen to take part in the construction of the new nest.

Early next morning both males worked steadily on the new nest, now nearing completion as viewed from the outside. One male was nearly always inside the nest, often while the second male waited nearby with a strip of grass leaf in its bill. The males would weave with grass leaves that were usually split part way. Occasionally, the males carried *Grevillea* leaves inside the nest. By 18:00 hrs on 24 April the nest walls were now much thickened and the nest had been built, essentially to completion, within two days. Meanwhile, as during the two preceding days, the female came and went from her brood nest nearby, and was not seen to weave any of the new nest. The female may add lining material, since at another nest a female was seen to enter with a bit of plant down in her beak.

Communal nest-building, involving more than one male, has been described for certain species of *Malimbus* (Brosset 1974) which have large and elaborate nests,but seems not to have been described before for other species of the true weaverbirds (sub-family Ploceinae). The role of co-operative building of the same nest by more than one male is conjectural. Presumably it speeds up the rate of building and makes more nests available sooner for a breeding group.

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N.E. Collias, University of California, Los Angeles, Ca 90024, U.S.A. and Los Angeles County Museum of Natural History, Exposition Park, Los Angeles, Ca 90007, U.S.A.

Received 22 August 1978.

NOTES ON THE AMANI SUNBIRD *ANTHREPTES PALLIDIGASTER* INCLUDING A DESCRIPTION OF THE NEST AND EGGS Stuart & Hutton (1977) have given the most complete account of the habits of the Amani Sunbird, especially at Amani in northeastern Tanzania where it occurs in evergreen forest (mainly secondary) up to 900 m a.s.l. It is a very distinctive East African endemic which is known from only the *Brachystegia* woodlands of Sokoke Forest in coastal Kenya and the East Usambaras in the vicinity of Amani. Suitable habitat occupies only 70 km² of the 360 km² Sokoke Forest (Britton 1975) so that the total range of this monotypic species is probably as little as 150 km². Flocking at flowering trees, described by Moreau & Moreau (1937), and quoted as typical behaviour by Mackworth-Praed & Grant (1960) and Hall & Moreau (1970), is evidently unusual; it is mainly seen singly or in pairs in the canopy, sometimes in mixed parties (Turner 1977, Stuart & Hutton 1977). Other information given by Mackworth-Praed & Grant (1960) includes its diet of small spiders and insect larvae and its 'minute jingling sibilant song, hardly audible'. A breeding record at Sokoke Forest in May is included in their addenda (p.1103) without details, and correspondence with W.P. Langridge, I.S.C. Parker and J.G. Williams has failed to reveal the source of this record. The nest and eggs remained undescribed.

OBSERVATIONS

Regular visits to diverse areas of *Brachystegia* woodland in Sokoke Forest since 1973 have shown that this is one of the characteristic species of this habitat, with an estimated 2900-4700 pairs (1 pair per 1.5 to 2.4 ha), derived from 24 line transects of 1 to 3 km at four sites using the methods of Emlen (1977). This restless species usually forages at 5 - 15 m, often hanging upside down in the manner of a tit *Parus* sp. Fewer than 20% of observations involve mixed bird parties, especially Collared Sunbird *A. collaris*, monarchine flycatchers and Black-headed Apalis *Apalis melanocephala*, rather than larger species. Its loud *seer-seer* call note, followed by a twittering flight note as it flies from one tree top to another, enables it to be readily located. The jingling song is barely audible and seldom heard; Keith & Gunn (1971) include an excellent recording of this 'typical sunbird song, bubbly and bustling'.

Nests with incubating females were found in *Brachystegia spiciformis* trees at 14 m and 7 m above the ground on 10 September and 15 October 1977. Each nest was about 40 cm long, including its shroud of *Usnea* lichen, though the nests themselves were like typical nests of *Anthreptes collaris*, and made from very fine grass-like fibres and small amounts of plant down, with a thin 'shell' and sizable porch made from *Usnea*. An abundance of hanging *Usnea* is a feature of these trees so that nests are not easily seen. A similar nest was found by J.D. Gerhart (*in litt.*) in a thin *B. spiciformis* tree on 26 March 1978; both male and female were entering the nest, though it could not be established whether they were feeding young or simply working on the nest.

A clutch of three slightly incubated eggs was collected for the National Museum on 15 October 1977. They measure 16.0 × 11.1, 15.7 × 11.0 and 15.4 × 10.9 mm, and all weighed 1.0 g (to the nearest 0.1 g). They are beige, heavily marked with brown, especially at the rounded end. There are numerous loosely scattered very dark brown (virtually black) spots, and some chocolate brown markings up to 2 mm long, but no streaks.

On 30 June 1977 M. Robbins and D.A. Zimmerman (*in litt.*) watched a male and female feeding three or more flying young, and we watched a

female feeding a young bird on 28 May 1978. In East Africa it is extremely unusual for sunbirds to lay as many as three eggs, though present evidence suggests that this might be normal for this species.

ACKNOWLEDGEMENT
We are grateful to the East African Wildlife Society for a grant towards transport expenses for the study of this and other endangered species.

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Peter L. Britton & Hazel A. Britton, Box 90163, Mombasa

Received 13 November 1978.

NOTICES

EAST AFRICAN BIRD REPORT 1978

The East African Bird Report 1977 has recently been published (*Scopus* 1(5): 113-154), rather later than had originally been intended and containing fewer records than had been anticipated. The shortage of records was due in part, no doubt, to observers being unsure of the type of information required. Now that one report is published, the selection of records for submission for future reports should be made more easily.

It will be a great help to the compilers if records for 1978 are sent in as early in 1979 as possible - which will allow the report to be published more quickly. A fairly comprehensive outline of the requirements was given in *Scopus* 1: 111-112, to which readers are referred. In that outline mention was made of a forthcoming 'checklist' of East African birds being produced by members of the Ornithological Sub-committee; this work, in an advanced stage of preparation, will be called *The Birds of East Africa* and will be published during 1979: it will serve as a base for evaluating future records but, in the meantime, please send your 1978 records (and any unpublished records for earlier years) to the two compilers:

For Palaearctic species: B.S. Meadows, Box 30521, Nairobi.
For all other species: D.A. Turner, Box 48019, Nairobi.

1979 SUBSCRIPTION RENEWALS

The subscription charge for 1979 remains the same as it was for 1977 and 1978. If you have not yet renewed, please do so as soon as possible. Full details of all rates are printed inside the front cover. Cheques, drafts and transfers should be sent to the Treasurer, D.A. Turner Scopus a/c, Box 48019, Nairobi, Kenya.

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MATERIAL FOR *SCOPUS*

The Editor welcomes material for publication in *Scopus*. Notes for contributors will be found inside the covers of this issue: authors are asked to read and follow these simple instructions, particularly with regard to wide margins, double spacing, insertion of Tables in the text (not grouped together at the end) and the giving of journal names in full. The Editor would like to thank those authors who have meticulously followed these instructions (even typing in 'Received . . . . 1978') - this has made his job of producing the final copy a pleasure.

In the first instance, contributions should be sent in duplicate to Dr D.J. Pearson, Department of Biochemistry, University of Nairobi, Box 30197, Nairobi, Kenya. Authors living outside East Africa are kindly asked to use first class airmail and NOT air parcel post.

Continued from inside front cover

'References'; the name(s) of the author(s) and date(s) of publication should be given in the text in the normal way. A list of the works concerned is given below.

Observers are asked to send in records of birds for inclusion in the annual East African bird report issue. Records which appear in the *National Museums of Kenya Department of Ornithology Newsletter* will be reviewed for the annual report but, in the case of rare birds or birds showing an extension of range, full details supporting the record should be submitted, whether the record is sent to the *Newsletter* or *Scopus* - this will save correspondence later on.

All contributions should be sent to Dr D.J. Pearson, Department of Biochemistry, University of Nairobi, Box 30197, Nairobi, Kenya.

WORKS WHICH SHOULD NOT BE LISTED UNDER REFERENCES

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Other members of the Sub-Committee are: G.C. Backhurst (Editor of *Scopus* and Ringing Organizer - Nairobi), P.L. Britton (Mombasa), Mrs Hazel A. Britton (Nest Record Scheme Organizer - Mombasa), Dr Margaret Carswell (Kampala), Dr A.W. Diamond (Nairobi), A.D. Forbes-Watson (Oxford), Dr J.D. Gerhart (Nairobi), Dr K.M. Howell (Dar es Salaam), C.F. Mann (London), B.S. Meadows (Nairobi), J.F. Reynolds (Nairobi) and D.K. Richards (Dodoma).

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Contributions should be typed in double spacing on one side of the paper only, with wide margins all round, and they should be submitted in duplicate. Exceptionally, clear hand-written MSS will be considered but these too should be sent in duplicate. Both English and scientific names of birds should be given when the species is first mentioned, thereafter only one should be used. Normally, authorities for taxa should not be given.

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Tables, which should also be numbered, *should appear in the typescript*. Metric units should be used. If non-metric units were used in the original observation or experiment, the approximate metric equivalent should be given in brackets.

Any references cited should be listed at the end of the contribution following the form used in this issue. *Names of periodicals should be given in full.* A number of works, which are cited frequently, should not be listed under

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SCOPUS

GENERAL REVIEW

The year 1978 was one of considerable ornithological interest and activity. High rainfall once again ensured areas of seasonal wetland and a proliferation of grasses and leaf cover in semi-arid areas, while wet conditions at the end of the year were responsible for the appearance of unusual numbers and variety of birds of prey in Kenya and unprecedented catches of Palaearctic migrants at Ngulia Lodge.

In Kenya, most of the southeastern bush country experienced unusual January-February rain and remained green throughout the early months. As in 1977, the main rains were heavy and began early, with storms north and east of Mt Kenya during mid-March, and heavy downpours and flooding in central and southern parts of the country during the last week of March and early April. June to September were generally dry, but rain was already again widespread by the end of October. The Nairobi area experienced frequent heavy downpours from the last few days of October to mid-December, while in Tsavo heavy rain was recorded from the first week of November to the end of the year. The levels of the Rift Valley lakes continued to rise, and by December Lake Nakuru had reached a height not seen since the early 1960s. On the other hand, some of the temporary floodlakes formed in central Kenya after the exceptional Long Rains of 1977 subsided during 1978, and flooding in some northern areas was less extensive at the end of the year than after the heavy rain of late 1977.

There were no additions to the East African avifauna during 1978, but two species, both Ethiopian, were new to Kenya, Chestnut-breasted Negro-finch *Nigrita bicolor*, recorded from Kakamega Forest in February, and Mascarene Martin *Phedina borbonica*, a party of which occurred at Lake Jipe in June. Also noteworthy were the first White-backed Night Herons *Nycticorax leuconotus* recorded for some years, the second Red-footed Booby *Sula sula* for Kenya and the African mainland, the second Kenyan record of Dickinson's Kestrel *Falco dickinsoni* and a Bare-eyed Thrush *Turdus tephronotus* well south of the previously known range. Among the Ethiopian birds which occurred at night at Ngulia during November-December were an example of the African race of the Little Bittern *Ixobrychus minutus payesii*, single East African Short-toed and Friedmann's Bush Larks (*Calandrella somalica* and *Mirafra pulpa*) and two Gambaga Flycatchers *Muscicapa gambagae*. The proliferation of grasses produced some large concentrations of seedeating species, but particularly interesting was an influx of starlings to coastal and other eastern Kenyan localities during October-November, which involved flocks of Magpie Starlings *Speculipastor bicolor* and a scattering of Shelley's *Spreo shelleyi* as far south as Mombasa.

As regards Palaearctic species, the second East African sighting of a Mediterranean Gull *Larus melanocephalus* was notable, as were record numbers of wintering Herring Gulls *L. argentatus* at Malindi. The end of the year produced an assortment of unusual birds of prey, including an Imperial Eagle *Aquila*

heliaca, several Lesser Spotted Eagles *A. pomerina*, up to twelve Sooty Falcons *Falco concolor* and three Eleonora's Falcons *F. eleonorae*. Flooded lake-edges and grassland accomodated high numbers of marsh waders in some localities, especially Ruffs *Philomachus pugnax* and Wood Sandpipers *Tringa glareola*, but open shore waders such as Little Stints *Calidris minuta* were more dispersed inland than usual, and perhaps in reduced numbers. Palaearctic ducks were more abundant at the end of the year than during January-March, numbering hundreds at some sites, and a gathering of over 130 Wigeon *Anas penelope* at Lake Naivasha in November was especially noteworthy.

Observations in eastern Kenya during February-March provided further indication of the locally common wintering status of passerine species formerly regarded as scarce migrants. Thus, Iranias *Irania gutturalis*, Rufous Bush Chats *Cercotrichas galactotes* and Upcher's Warblers *Hippolais languida* were found common north of Mt Kenya and near Garissa, while Basra Reed Warblers *Acrocephalus griseldis* were discovered in numbers at two sites on the Lower Tana. Few passerine migrants were found on the coast or elsewhere in eastern Kenya during April, and passage was modest at Nairobi, with numbers declining rapidly after the second week of the month. In autumn, evidence of movement was again negligible in the Nairobi and Thika areas. However, large numbers of passerines were present in the Kibwezi/Tsavo/Voi areas from early in November until the end of the year, with Red-tailed Shrikes *Lanius isabellinus*, Sprossers *Luscinia luscinia* and wheatears *Oenanthe* spp. particularly prominent early on, but Marsh Warblers *Acrocephalus palustris* predominating during December. Nearly 8000 migrants were ringed during operations at Ngulia Lodge over this period.

It is pleasing to note that Report contributions were received from more observers this year than last, and that, despite an inevitable Kenyan bias, material for Tanzania was received from several sources. However, many contributors were again overseas visitors, and we would welcome more records from local observers. We hear indirectly of many interesting reports for which we receive no details. We attempt to follow up as many as we can, but it is up to observers themselves to communicate with the recorders (D.A. Turner and B.S. Meadows) direct. It should be noted in particular that records sent to the *National Museums of Kenya Division of Natural Sciences Section of Ornithology Newslatter* are not automatically available to us. Records should be submitted direct to the Bird Report recorders with supporting details where appropriate.

For reasons of space, our annual summary of records has to be confined to species of special interest, and records which extend or substantiate existing knowledge. In view of the large number of species occurring within East Africa, we have had to select drastically from material received to keep the Report within bounds. However, we have attempted to apply logical and consistent criteria to the selection process, and we have indicated as far as possible the basis for inclusion of the records which appear. For Palaearctic birds inclusion of records has been based on the guidelines set out in *Scopus* 1: 54-55. For Ethiopian and Oceanic species, records have been included under at least one of six categories as defined at the beginning of the Species Report opposite.

For the guidance of contributors to the 1979 Report we shall publish in *Scopus* 3 (4) full lists of scarce (S) and requested (R) species. The sub-committee's publication *Birds of East Africa*, due to appear next year, should provide a further basis for deciding which records to submit under other categories.

D.J. Pearson, Chairman, E.A.N.H.S. Ornithological Sub-committee

SPECIES REPORT

The records are for the year 1978 and for convenience are divided into two sections, Ethiopian region birds and oceanics, and Palaearctic species. As mentioned above, birds in the first section are accompanied by a code letter which, it is hoped, will make the reason for the inclusion of each record clear. The explanation of the letters used is as follows:

S: SCARCE species for which all records are required and, if satisfactory, are published.
R: species of special interest which we do not regard as scarce but for which we REQUEST all records. Records in this category may sometimes be published in a summarized form.
E: records showing an EXTENSION of range or from areas where the species is scarce.
N: records published for their NUMERICAL interest - either especially large numbers or accurate counts.
D: records of migrants where the DATES given are of interest.
M: records of MISCELLANEOUS interest; the reason for their inclusion will be evident from the text.

A list of Scarce and Requested special interest species will be published in a future issue of *Scopus*.

ETHIOPIAN REGION BIRDS AND OCEANICS

PODICIPEDIDAE: Grebes

Podiceps cristatus Great Crested Grebe N: large numbers at Lake Nakuru throughout the year, max 350+ counted on 13 Feb (JVJ *et al.*).

Podiceps nigricollis Black-necked Grebe S: 1 still present at the swamp behind the Ngong Hills 22 Jan (DKR). Another on a small waterhole near Chyulu Gate, Tsavo (West), 23 Nov (GCB).

PROCELLARIIDAE: Petrels and shearwaters

[Puffinus pacificus Wedge-tailed Shearwater S: a medium sized all-brown petrel seen at 60 m from a fishing boat 12 km off Kilifi 26 Dec was thought to have been this species (DAT, PLB, HAB, DJP).*]*

HYDROBATIDAE: Storm-petrels

Oceanites sp. S: good views were obtained of a small white-rumped storm-petrel outside the reef off Watamu, 23 Apr. The tail was slightly forked, and it may have been a Leach's Petrel *O. leucorhoa* (PLB).

PHAETHONTIDAE: Tropicbirds

Phaethon lepturus White-tailed Tropicbird S: 1 about 8 km offshore from Shanzu, 14 Oct (RG).

SULIDAE: Boobies

Sula dactylatra Masked Booby S: an adult and an immature 10-12 km off Kilifi, 26 Dec (DAT, PLB, HAB, DJP).

Sula sula Red-footed Booby S: 1 found dead on Shanzu beach, 20 Mar constitutes only the second African record (HAB, PLB).

PELECANIDAE: Pelicans

Pelecanus onocrotalus White Pelican N: large numbers at Lake Nakuru throughout the year, with 5000+ counted 13 Feb (JVJ *et al.*).

ARDEIDAE: Herons, egrets and bitterns

Ixobrychus minutus Little Bittern R: 2 Mzima Springs, Tsavo (West) 21 Feb (JVJ *et al.*). A few records from the Thika area during Jun (WJP), a single *payesii* Smart's Swamp, Limuru 30 Sep (BSM) and a female *payesii* picked up during rain at night at Ngulia Lodge, 27 Nov (GCB, DJP).

Ixobrychus sturmii Dwarf Bittern S: 1 Garissa 19 Mar (DJP); 1 Ngong Rift Valley Swamp 12 Apr (JFR); 1 at pool in Sokoke Forest 24 and 26 Mar, and 11 and 19 Apr, and one flushed along Jilore track (Sokoke Forest) 23 Apr (HAB, PLB); 1 Lake Baringo Lodge 20 and 21 Oct (JDG); 1 beside pool in Meru NP 26 Oct (DAT).

Ardeola idae Madagascar Squacco Heron S: 1 Amboseli swamp 4 Jun (JDG), 1 Mida Creek 15 Aug (DAT), a few Mafia Is. Aug-Oct (DKR).

Egretta ardesiaca Black Heron R: occasional at Mida Creek with 14 there on 23 Dec (HAB, PLB, DJP), small numbers at Lake Jipe throughout the year (DAT), 1 Lake Manyara 4 Mar (ZB).

Egretta gularis Reef Heron S: singles at Mida Creek 4 Jan, 13 Apr (dark) and 23 Dec (dark) (JM, HAB, PLB, DJP); 1 Lake Baringo 7 Nov onwards (TS).

Nycticorax leuconotus White-backed Night Heron S: 3 near Govenor's Camp, Mara Reserve 11-12 Jly (DAZ) was the first record for many years.

CICONIIDAE: Storks

Anastomus lamelligerus Open-billed Stork E: records away from the Lake Victoria basin : 100+ Habaswein 14 Jan (JMs), 16 Sabaki mouth 22 Jan (HAB, PLB), 25+ Shimoni 17 Feb (DAT), 25 Malindi-Mida area 23 Feb (JVJ *et al.*), *c.*100 over Sokoke Forest 7 Apr (PLB, HAB), 100+ near Karawa 17 Aug (DAT), 5 in Nairobi NP 16 Nov (BSM), and 5 Sabaki mouth 17 Dec (HAB, PLB).

Ciconia abdimii Abdim's Stork D: latest dates were 1 Apr Baringo (TS) and an injured bird along the Magadi road 1 May (CEN). First arrivals reached Dodoma 18 Dec with 150+ there on 22nd (DKR).

Ciconia episcopus Wooly-necked Stork E: records away from Tsavo and the coast: 2 reported from Nairobi NP 6 Aug (SW) and 1 there on 22 Oct (NJS).

THRESKIORNITHIDAE: Ibises and spoonbills

Bostrychia olivacea Green Ibis E: rediscovered at Amani, East Usambaras, with 1 seen 27 Jly and up to 5 the following day at 1075 m. These are the first records since 1946.

PHOENICOPTERIDAE: Flamingos

Phoenicopterus ruber Greater Flamingo N: 2000+ were counted on Momella Lakes, Arusha NP 6 Mar (ZB).
E: at the coast, 1 Mida late Feb (DAT, JVJ *et al.*), and 6 adults and 1 immature Bagamoyo salt pans 27 Dec (BT).

ANATIDAE: Ducks and geese

Dendrocygna bicolor Fulvous Whistling Duck R: dated records: present at Ngong Rift Valley swamp Jan-jun, max *c.*50 during Jan (JFR); *c.*100 Amboseli early Jan (JFR); *c.*100 Lake Jipe 2 Feb (DAT); many flocks Mwea 27 May (DAT).

Netta erythrophthalma African Pochard N: large numbers reported from the Nairobi area and Lake Naivasha Jan-Feb with 900 counted at Naivasha on 30 Jan (BSM) and 1200+ there on 12 Feb (JVJ *et al.*). Concentrations reported from Thika and Arusha during Mar, and from Limuru and Lake Baringo in Oct. Large numbers again at Naivasha during Nov with 850 counted there on 30th (BSM).

Oxyura punctata Maccoa Duck E: records away from the rift valley lakes: 1 Lake Paradise, Marsabit 4 Feb (DAT) and a pair Lake Lygarja, Serengeti Mar (ZB).

Thalassornis leuconotus White-backed Duck R: groups of up to 50+ during Jan-Feb at Lake Naivasha (BSM), Thika (WJP), and Nairobi, but with sudden dispersal shortly afterwards from Thika and Nairobi. Up to 20 near Shombole during Jan (JFR, JM); present throughout the year at Lake Jipe (DAT); 3 on a dam near Mombasa 20 and 26 Dec (HAB, PLB).

ACCIPITRIDAE: Birds of prey

Accipiter ovampensis Ovampo Sparrowhawk S: melanistic pair near main gate of Nairobi NP 8 Oct (JDG). Recorded on occasions near Dodoma (DKR).

Butastur rufipennis Grasshopper Buzzard DR: 8 near Habaswein 14 Jan (JMs) and a few in the Tsavo (West)-Voi-Mariakani area 21-25 Feb (JVJ *et al.*). A few south of Moyale 20 Oct (JMs); a few Maktau 8 Nov (DAT), 1 near Sultan Hamud 11 Nov and several (up to 5 together) Tsavo (West) 11-25 Nov (DJP, GCB); 2 Dandora, Nairobi 27 Nov (BSM); up to 7 together around Voi and Tsavo (East) 9-11 Dec (DJP, GJJ) and at Voi-Bachuma late Dec (DAT, BSM).

Buteo tachardus Mountain Buzzard E: reported from the Ukaguru and Nguru Mts, eastern Tanzania during Aug-Sep (SNS, TvdW), an extension of known range.

Aviceda cuculoides Cuckoo Falcon R: a few records from the Nairobi area May-Jun (AWD); 1 near Malindi 11 Nov (DAT).

Chelictinia riocourii Swallow-tailed Kite R: a pair nesting Eliye Springs late Mar (DKR); 2 near Turbi 8 Aug (DAT) and 5 Meru NP 25 Oct (DAT).

FALCONIDAE: Falcons

Falco alopex Fox Kestrel S: 1 Baringo 28 Jan (DJP), 1 Eliye Springs 29 Mar (DKR) and again there in early Sep (NBM); 1 southeastern corner of Lake Turkana on 30 Dec (JM).

Falco ardosiaceus Grey Kestrel E: recorded in the Dodoma Region, Nov (DKR).

Falco dickinsoni Dickinson's Kestrel E: 1 seen at Salt Lick Lodge, Tsavo (West) on 23 Jun (DAZ) and 14 Aug (DAT).

PHASIANIDAE: Francolins and quails

Francolinus afer Red-necked Spurfowl E: reported as fairly common in the Lambwe Valley in Jan (RG).

NUMIDIDAE: Guineafowl

Guttera pucherani Kenya Crested Guineafowl E: feathers of this species found in the Pugu Hills near Dar es Salaam and at Amani, East Usambaras (770 m) confirm its continued presence in these two areas (SNS).

TURNICIDAE: Button Quails

Turnix sylvatica Button Quail M: 10 birds ringed and several others seen at Ngulia Lodge 26 Nov to 5 Dec indicated considerable movement in the area

at that time (GCB, DJP, HAB, PLB).

RALLIDAE: Rails and crakes
Porzana marginalis Striped Crake S: single birds recorded at Amboseli 6 Aug (JFR), Shombole Swamp 23 Sep (JFR) and Lake Naivasha mid-Aug (FBG) and 19 Nov (JDG).

Rallus caerulescens African Water Rail S: singles at Lake Jipe 12 Feb (DAT), Amboseli 6 Aug (JFR), Kimana swamp 8 Jly (DAZ) and Lake Naivasha 19 Nov (JDG).

Sarothrura rufa White-spotted Crake S: heard at a dam near Mombasa 20 Dec (HAB, PLB).

HELIORNITHIDAE: Finfoots
Podica senegalensis Finfoot R: reported from the Hippo Pool area of Nairobi NP during Jan (DM).

ROSTRATULIDAE: Painted Snipe
Rostratula benghalensis Painted Snipe R: dated records were: 1 Kilaguni Lodge 21 Feb (JVJ *et al.*), 2 females Meru NP 26 Oct (DAT), 3 Mwea Rice Scheme 27 May (JDG, WJP, DAT) and 1 on floodpool at Garissa 19 Mar (DJP).

CHARADRIIDAE: Plovers
Charadrius pallidus Chestnut-banded Sandplover E: numerous on a soda lake near Dodoma, 1-4 Nov (DKR) - the most southerly known Tanzanian record.

DROMADIDAE: Crab Plover
Dromas ardeola Crab Plover N: concentrations up to 440+ at Mida Creek (DJP) and 75+ at Dar es Salaam (ZB) Mar-Oct; 1 adult and a juvenile just able to fly at the mouth of Mtwapa Creek 9 Oct (HAB, PLB).

BURHINIDAE: Thicknees
Burhinus senegalensis Senegal Thicknee S: 1 Lake Baringo 7 Feb (DAT) and 4 there 5-6 Jly (DAZ).

GLAREOLIDAE: Coursers and pratincoles
Cursorius chalcopterus Violet-tipped Courser R: 1 Bamburi 6 Apr (HAB, PLB) and 1 dead on road, Langata 8 Jly (GCB).

Cursorius cinctus Heuglin's Courser N: large numbers reported from many parts of Tsavo (East and West) Mar-Apr by many observers; scores in bushland Voi-Bachuma 3 and 6 Mar (DJP).

Glareola ocularis Madagascar Pratincole N: present at Sabaki mouth Apr-Sep with an unprecedented max of 9-10 000 on 17 Aug; a marked southerly movement over Shimo-la-Tewa in late Sep (HAB, PLB, DAT).

LARIDAE: Gulls and terns
Anous stolidus Common Noddy S: few off Watamu 23 Apr (PLB).

Larus cirrocephalus Grey-headed Gull N: large numbers at Lake Nakuru throughout the year with *c.*8000 counted on 13 Feb (JVJ *et al.*).

Sterna albifrons Little Tern N: large numbers in Malindi area early in the year with max of 2000+ on 18 Mar (HAB, PLB).

Sterna anaethetus Bridled Tern S: a few off Watamu on 23 Apr (PLB).

Sterna bengalensis Lesser Crested Tern N: *c.*2000 Malindi area 23-24 Feb (JVJ).

Sterna dougallii Roseate Tern M: small breeding colony on Mafia Is. Aug (DKR).

PSITTACIDAE: Parrots and lovebirds
Agapornis pullaria Red-headed Lovebird E: reported from Malakisi near Bungoma in late July (NBM).

MUSOPHAGIDAE: Turacos
Corythaixoides leucogaster White-bellied Go-away-bird } M: seen displaying
Corythaixoides personata Bare-faced Go-away-bird } alongside each other in the same tree at Dodoma in Oct (DKR).

CUCULIDAE: Cuckoos and coucals
Cercococcyx montanus Barred Long-tailed Cuckoo E: recorded from the West Usambaras, Ukagurus and Nguru Mts, NE Tanzania Aug-Sep and at Amani, East Usambaras in mid-Ded (SNS, TvdW).

Clamator jacobinus Black-and-White Cuckoo R: numerous records from Baringo, Samburu, Meru, Tsavo and Amboseli during Feb-Apr, with stragglers recorded in May; recorded again in the Kibwezi-Tsavo-Voi area from 10 Nov, with considerable passage noted at Ngulia during Nov-Dec. Records from the coast at Malindi during Mar, Apr and Aug (HAB, PLB, DAT).

Clamator levaillantii Levaillant's Cuckoo M: the all black coastal morph recorded during Jan, Jun and Sep-Nov in coastal Kenya (HAB, PLB).

Cuculus gularis African Cuckoo R: reported from Malakisi (Jly), Sagana (May-Jun), Selengei (Feb), Namanga (Mar - 2 calling), north of Embu (Nov - several, some calling) and at Mtito Andei (Nov - several) (NBM, DAT, DJP).

Cuculus poliocephalus Lesser Cuckoo S: 1 Sokoke Forest 27 Aug, which to judge from the date, was likely to have been of the Malagasy race *rochii* (ER).

Ceuthmochares aereus Yellowbill E: recorded from eastern areas at Sokoke Forest (Feb, Aug, Nov) and the Pugu Hills (Oct); a bird of the race *australis* caught at Ngulia on 29 Nov, together with large numbers of grounded passerine migrants (DJP, GCB).

TYTONIDAE: Barn Owls
Tyto capensis Grass Owl S: 1 killed on Athi-Namanga road during Mar was taken to the National Museum (*Museum Newsletter*).

STRIGIDAE: Owls
Bubo africanus Spotted Eagle Owl R: reported from Malakisi (near Bungoma), Baringo, Mogotio, Nakuru, Naivasha, Kabete and the Magadi road.

Otus leucotis White-faced Scops Owl R: pair resident at Lake Baringo Lodge throughout the year (TS).

Scotopelia peli Fishing Owl S: 1 Rojeweru River, Meru NP 24 Jan (PD).

CAPRIMULGIDAE: Nightjars
Caprimulgus fraenatus Dusky Nightjar R: 3 ringed at Ngulia Lodge Nov-Dec (GCB, DJP).

Caprimulgus inornatus Plain Nightjar R: 7 ringed at Ngulia Lodge Nov-Dec (GCB, DJP).

Caprimulgus natalensis White-tailed Nightjar ER: a few in the Lake Baringo area, Oct (DAT, TS) - an extension of known range.

APODIDAE: Swifts

Apus berliozi Forbes-Watson's Swift S: about 30 in the Tiwi Beach area 22 Feb (JVJ *et al.*) and a party of 12 in the Shimba Hills NP on 27 Dec (DAZ).

Apus myoptilus Scarce Swift R: numerous records throughout the year from the Mt Kenya area where it is commonly seen at dusk and dawn at a number of localities from Mountain Lodge (2215 m) up to the Met. Station (3000 m). Other records from Kakamega Forest, Lake Bogoria, the Nairobi area, Thika, Embu and the Matthews range.

Neafrapus boehmi Boehm's Spinetail R: reported from Bushwackers, Sokoke Forest and Mafia Is. A group seen at Mazumbai, West Usambaras during Aug (SNS) represents an extension of known range.

Rhapidura sabini Sabine's Spinetail S: 1 over Kakamega Forest 2 Nov (DAT).

COLIIDAE: Mousebirds

Colius leucocephalus White-headed Mousebird E: reported from Selengai on 15 Jly (DEP).

ALCEDINIDAE: Kingfishers

Alcedo cristata Malachite Kingfisher M: 1 caught inside Ngulia Lodge at 02:30 on 30 Nov (GCB, DJP).

Ispidina picta Pygmy Kingfisher E: reported away from southern Uganda and Kenya west of the rift: Shinyanga (Feb), Nguruman (Jly), Olorgesaillie (Jun), Kitovu Forest, Taveta (Feb and Aug) and the Mombasa area (Sep).

MEROPIDAE: Bee-eaters

Merops boehmi Boehm's Bee-eater E: not uncommon at edge of the Pugu Hills Forest Reserve during Sep (SNS, TvdW).

Merops hirundineus Swallow-tailed Bee-eater E: a few near Mikumi Lodge, Mikumi NP on 22 Jan (ZB) - probably the most northerly limit of range of the nominate race, apart from odd wanderers.

Merops nubicus Carmine Bee-eater DE: extreme dates from Lamu were 2 Apr and 1 Aug. At Lake Baringo 2 were seen on 4 Nov (TS).

Merops revoilii Somali Bee-eater E: seen at Lugard's Falls, Tsavo (East) on 3 Apr (DAT), and in Tsavo (West) during Jun (DAZ).

Merops superciliosus Madagascar Bee-eater R: numerous records from Lamu south to Mtwara, with breeding reported at Lamu and Mafia Is. Marked influxes to Lake Baringo area mid May-Jun (TS) and to Mafia Is. in mid-Aug (DKR).

CORACIIDAE: Rollers

Coracias abyssinicus Abyssinian Roller E: singles Baringo Nov and 24 Dec (TS).

Eurystomus glaucurus Broad-billed Roller D: noticeable influx, Mafia Is. during mid Aug (DKR).

BUCEROTIDAE: Hornbills

Bycanistes brevis Silvery-cheeked Hornbill E: reported from Marang Forest, Mbulu 20 Dec (RS) - an extension of known range in northern Tanzania.

Tockus hemprichii Hemprich's Hornbill E: a pair on the Kongolai escarpment 10 Mar (DAT) and 1 daily for a short while in Nakuru town in Sep (LS).

INDICATORIDAE: Honeyguides
Indicator meliphilus Pallid Honeyguide R: reported from Kitovu Forest, Taveta 13 Aug (DAT) and from the Pugu Hills Sep (SNS, TvdW).

EURYLAIMIDAE: Broadbills
Smithornis capensis African Broadbill R: reported from the Kakamega Forest (Feb, Mar, May), North Nandi Forest (Nov-Dec), Marang Forest, Mbulu (Dec), and the Nguru Mts (Sep).

PITTIDAE: Pittas
Pitta angolensis African Pitta R: reported as very abundant in thicket near Itigi, central Tanzania on 12 Dec (RS).

ALAUDIDAE: Larks
Calandrella somalica East African Short-toed Lark E: 2 Samburu GR on 6 Mar (DAT) and 1 netted at night at Ngulia Lodge on 1 Dec (GCB); both records extend the range of the species.

Eremopterix signata Chestnut-headed Sparrow Lark E: small numbers reported from Sabaki River mouth 8 and 10 Jan, while *c.*40 there on 22 Jan and 25+ on 21 Feb (HAB, PLB, DAT) - an extension of known range.

Mirafra pulpa Friedmann's Bush Lark S: 1 netted at night at Ngulia Lodge on 29 Nov (GCB, DJP).

Mirafra williamsi Williams' Bush Lark R: 1 25 km east of Isiolo 27 Aug (JDG, JMs).

HIRUNDINIDAE: Swallows
Phedina borbonica Mascarene Martin S: a flock of 16 at Lake Jipe on 24 Jun (DAZ) - first record for Kenya (*Scopus* 2: 74-75).

ORIOLIDAE: Orioles
Oriolus auratus African Golden Oriole R: reported from Meru NP (Feb), Kenya coast (Feb-Apr, Sep and Nov), Amani (Oct), and Itigi, central Tanzania (Dec) by numerous observers.

CORVIDAE: Crows
Corvus capensis Cape Rook E: 1 at Dagoretti Market 16 Sep (GCB).

Corvus splendens Indian House Crow E: records from Watamu and Malindi during Jly confirm its continued spread northwards from Mombasa.

REMIZIDAE: Penduline Tits
Anthoscopus caroli African Penduline Tit E: reported from Kakamega Forest on 16 Feb (JVJ *et al.*) and 10 Jly.

TIMALIIDAE: Babblers
Turdoides aylmeri Scaly Chatterer R: reported from Meru NP (Oct), Nguni, Garissa road (Aug), Tsavo (East) (Apr), Amboseli-Chyulu gate, Tsavo (West) (Feb) and the Dodoma area (Jly) by numerous observers.

PYCNONOTIDAE: Greenbuls
Andropadus tephrolaemus Mountain Greenbul E: the race *usambarae* reported from the Taita Hills on 14 Aug (DAT) - first record of this race from Kenya.

Phyllastrephus cerviniventris Grey Olive Greenbul E: 5-6 Kitovu Forest, Taveta 13 Aug (DAT).

TURDIDAE: Thrushes

Alethe poliocephala Brown-chested Alethe E: recorded from Ngai Forest north of Meru at 1230 m (AWD).

Cercomela scotocerca Brown-tailed Rock Thrush E: recorded from Baringo during Jan (DJP), Jly (DAZ) and Oct (DAT).

Cossypha natalensis Red-capped Robin Chat R: recorded from Kitovu Forest (Aug), Kenya coast (May-Nov), Amani (Dec), Dar es Salaam and the Pugu Hills (Sep-Oct) and Itigi, central Tanzania (Dec).

Dryocichloides anomalus Olive-flanked Ground Robin E: 2 at Mandege in the Ukaguru Mts on 26 Aug recorded by the 1978 Cambridge University Expedition represented an extension of known range (SNS, TvdW). Recorded from Nou Forest, Mbulu district on 22 Dec by RS who reports that the song is quite different from the Tanganyika-Nyasa montane birds.

Dryocichloides montanus Usambara Ground Robin S: 1 netted in deep shaded forest at Mazumbai, West Usambaras (1600 m) on 18 Aug (SNS, TvdW).

Dryocichloides polioptera Grey-winged Ground Robin S: reported from Kakamega Forest, 15-16 Feb (JVJ *et al.*).

Modulatrix orostruthus Dappled Mountain Spot-throat S: the 1978 Cambridge University Expedition netted 4 in ten days at Amani during Aug; 2 were retraps from 1977. SNS comments that the relatively long tarsus may suggest that this bird spends most of its time on the ground, and birds netted this year were 2-4 feet (0.6 - 1.2 m) off the ground. It is clear that this species is only present at Amani in very small numbers. The world population is known from only 18 individuals (10 collected, 8 released), all but one from Amani.

Oenanthe pileata Capped Wheatear DM: 1 netted at night at Ngulia Lodge on 29 Dec was the first to be recorded outside the period Apr-Aug (GCB, DJP).

Sheppardia gunningi East Coast Akalat R: recorded from the Pugu Hills during Sep; 4 netted there in three days indicated a healthy population (SNS, TvdW).

Turdus fischeri Spotted Ground Thrush R: 1 Gede Forest 21 Jun (DAZ) and a few in Sokoke Forest in mid-Aug (DAT).

Turdus tephronotus Bare-eyed Thrush E: 1 Selous GR on 25 May (KMH).

SYLVIIDAE: Warblers

Apalis porphyrolaema Chestnut-throated Apalis E: reported as common at forest edge in the Ukagurus by the 1978 Cambridge University Expedition.

Apalis thoracica Bar-throated Apalis E: reported as common in the West Usambaras and Ukagurus by the 1978 Cambridge University Expedition.

Bathmocercus winifredae Mrs Moreau's Warbler R: reported as common in the Ukagurus by the 1978 Cambridge University Expedition, occurring down to 1525 m in Aug.

Bradypterus barratti Evergreen Forest Warbler R: fairly common in the Taita Hills forest during Aug (DAT) and reported as common in the East and West Usambaras and the Ukaguru Mts by the Cambridge Expedition.

Cisticola bodessa Boran Cisticola S: again reported from the Isiolo-Meru road junction 6 Feb (DJP) and 27 Aug (JDG).

Eremomela scotops Green-capped Eremomela R: in *Brachystegia* woodland in Sokoke

Forest 11 Apr (HAB, PLB); 2 at base of Ol Donyo Sabuk, near Thika 27 May (DAT, JDG).

Heliolais erythroptera Red-winged Warbler R: 3 pairs seen in burnt-over grassland near the Agricultural campus, Morogoro 21 Sep (JDG).

Hyliota australis Southern Hyliota S: seen in Kakamega Forest in Jly (DAZ).

Hyliota flavigaster Yellow-bellied Hyliota S: 2 south of Sotik 11 Jly (DAZ).

Macrosphenus kretschmeri Kretschmer's Longbill S: 1 Amani 30 Dec (BT); heard Pugu Hills on 19 Sep (SNS, TvdW).

MUSCICAPIDAE: Flycatchers

Batis orientalis Grey-headed Batis S: 1 Samburu GR 7 Aug (DAT).

Bias musicus Black-and-White Flycatcher E: a pair at 925 m in the Nguru Mts Sep (SNS) and a few at Amani in Dec (BT).

Erannornis albicauda White-tailed Blue Flycatcher S: 1 Marang Forest, Mbulu district on 20 Dec (RS).

Muscicapa gambagae Gambaga Flycatcher S: 2 juveniles netted at night (01:00) at Ngulia Lodge 8 Nov (GCB) - a considerable southerly extension of range.

Platysteira peltata Black-throated Wattle-eye E: reported from Kitovu Forest, Taveta (Feb and Aug), Marang Forest, Mbulu district (Dec) and in Oct on Mbudya Is. off Dar es Salaam (various observers).

MOTACILLIDAE: Wagtails and pipits

Anthus caffer Little Tawny Pipit E: 1 Ngong Rift Valley Swamp 14 May (JFR).

Tmetothylacus tenellus Golden Pipit E: 1 Lake Baringo during Nov (TS). DR: all dated records welcome in future.

MALACONOTIDAE: Bush Shrikes

Laniarius ruficeps Rufous-naped Bush Shrike S: single birds recorded 50 km west of Garissa and near Nguni, Garissa road, on 20 Mar (DJP).

Malaconotus multicolor Many-coloured Bush Shrike E: the race *nigrifrons* was reported as common in the East and West Usambaras, Ukagurus and Nguru Mts by the 1978 Cambridge University Expedition.

LANIIDAE: Shrikes

Lanius somalicus Somali Fiscal E: reported from Lake Baringo 4-12 Dec (TS) - a marked southerly extension of known range.

STURNIDAE: Starlings

Cinnyricinclus femoralis Abbott's Starling R: about 20 at Naro Moru Gate to Mt Kenya NP on 10 Aug (JFR).

Creatophora cinerea Wattled Starling DM: marked influx to coastal areas during Oct-Nov: 60+ Bamburi 30 Sep, 300+ Vipingo 1 Oct and thousands flying SE from Kilifi Creek in the early morning of 12 Nov (HAB, PLB). 1 netted at night at Ngulia Lodge on 25 Nov (GCB, DJP). *[See also under Magpie Starling and Shelley's Starling.]*

Onychognathus tenuirostris Slender-billed Chestnut-winged Starling E: 1 record from Mazumbai, West Usambaras (1800 m) Aug - the first known record from the Usambaras (1978 Cambridge University Expedition).

Speculipastor bicolor Magpie Starling E: marked influx into coastal areas during late Sep and Oct with 120+ at Bamburi 30 Sep and seen on subsequent dates at Malindi, Watamu, Kilifi, Vipingo, Shimo-la-Tewa, Bamburi and Tiwi in flocks of up to 100 to 28 Oct (HAB, PLB). Other records were from Baringo (Feb and Jly), Archer's Post (Mar and Jun), Samburu GR (Aug), Madogashe (Jan), Meru NP (Oct), Tsavo (East) and the Voi area (late Sep-Oct) and Tsavo (West) in Feb-Mar (numerous observers).

Spreo shelleyi Shelley's Starling S: 1 Voi area 25 Feb (JVJ *et al.*); 3 at Bamburi 30 Sep in a mixed flock with Magpie Starlings (HAB, PLB); 9-10 at Maktau on 8 Nov (DAT).

NECTARINIIDAE: Sunbirds

Nectarinia pembae Violet-breasted Sunbird E: 1 Sokoke Forest 18 Apr (HAB, PLB, DJP) and 1 Kilifi on 20 Dec (DAZ) were unusually far south.

Nectarinia verticalis Green-headed Sunbird E: reported from Limuru on 4 Mar (DAT) - infrequently seen in the Nairobi area.

PLOCEIDAE: Weavers

Anomalospiza imberbis Parasitic Weaver R: records from the Thika area (Mar), Kenyatta College (May) and 1 ringed at Olorgesaillie on 1 Jly.

Euplectes afer Yellow-crowned Bishop E: a few Mwea Rice Scheme 27 May and a large influx to Lake Baringo in the first week of Nov (TS).

Euplectes diadematus Fire-fronted Bishop M: abundant in Tsavo (East) between Voi and Bachuma early Apr following unusually heavy rains (DAT). Appeared at Ngulia at the end of the year on 28 Dec (GCB, DJP).

Ploceus golandi Clarke's Weaver S: about 25 in Sokoke Forest 3 Apr (HAB, PLB). Large flocks of mostly immatures re-appeared in Sokoke from 16 Aug (DAT, JDG) remaining through Sep and Oct; last seen were 3 on 10 Nov (DAT).

Ploceus taeniopterus Northern Masked Weaver S: still present in large numbers at Lake Baringo Lodge, though absent a few kilometres away (TS, DAT).

Passer castanopterus Somali Sparrow S: 2 males and 2 females among large quelea flocks at a waterhole 100 km N of Marsabit on 8 Aug (DAT) - the first record of this species for many years.

Hypochera purpurascens Jameson's Fire-finch Indigobird E: male at Lake Baringo on 5 Jly (DAZ).

ESTRILDIDAE: Waxbills

Amandava subflava Zebra Waxbill R: many at Mwea Rice Scheme 27 May (JDG, DAT).

Nigrita bicolor Chestnut-breasted Negro-finch S: 3 in Kakamega Forest in company with other *Nigrita* species.(JDG, SW). First confirmed record for Kenya though reported from the same locality in 1973 by JMs. Subsequently seen on 24 Feb.

PALAEARCTIC SPECIES

Ciconia nigra Black Stork: Nanyuki, 1 on 7 Feb (JVJ). Naivasha, 2 on 12 Feb (JVJ). Nairobi NP, singles on 20 Jan and 5 Mar (DAT), 3 on 4 Feb (NJS), 1 on 22 Oct (NJS), 23 Oct (DAT), 29 Oct (DAT), 26 Nov (WJP) and 15 Dec (DJP). Marsabit, 1 from 2-4 Feb (DAT). Rift Valley Swamp, Ngong, singles on 28 Jan and 10-11 Feb (JFR). Nakuru, 1 on 25 Mar (DKR). Maralal, 1 on 27 Dec (JM). Gof Dakara, 3 on 2 Jan (*per* GRCvS).

Anas crecca Teal: South Ewaso Nyiro Swamp, 1 on 3 Dec (DJP). Lake Nakuru, 1 on 16 Dec (DJP).

Anas penelope Wigeon: Lake Naivasha, male on 30 Jan (BSM), 4 birds on 12 Feb (JVJ), 133 on 30 Nov (BSM) - see *Scopus* 2: 97 - and 37 on 28 Dec (BSM).

Aythya fuligula Tufted Duck: Lewa Downs Dam, Eldoret, 1 on 22 Jan (*per* GRCvS).
The status of this species as a scarce winter visitor does not appear to have altered significantly since the beginning of the century.

Aquila heliaca Imperial Eagle: Longonot, 1 in transitional to full adult plumage seen perched on a pylon with 4 Steppe Eagles *A. nipalensis* on 18 Nov (JDG, JM, SW).
The tenth record for Kenya and East Africa; all have been since 1962.

Aquila pomarina Lesser Spotted Eagle: 1 between South Horr and Lake Turkana on 11 Oct (KB). Lake Baringo, 1 on 30 Oct (DAT). Maktau Gate, Tsavo West, 1 on 18 Nov (DAT). Arusha, 2 with Steppe Eagles following the plough on 27 Dec (DKR). Singles killed on the Arusha-Moshi road on 31 Dec and at Dodoma Airport on 21 Oct (DKR). Magadi, 3 on 15 Jan (DJP). 30 km W of Narok, 1 on 20 Oct (DJP). Ngulia, 1 on 30 Oct and 1 at Mtito Andei on 11 Nov (DJP). Lake Nakuru, 7 on 16 Dec (DJP).
A paper on the 1978/79 influx by DJP & BSM has already appeared in Scopus *3: 48-53 and this also reviews the status of the species in East Africa.*

Aquila nipalensis Steppe Eagle: RECORD OF EXCEPTIONAL NUMBERS: Tsavo East NP near Voi, flock of 500 over 1 km² on 25 Feb (JVJ).

Buteo buteo vulpinus Steppe Buzzard: RECORDS OF MIGRATING FLOCKS: over Nairobi, 13 on 22 Oct and 6 on 23 Oct (DJP).

Buteo rufinus Long-legged Buzzard: Tigoni, 1 on 18 and 19 Nov (JDG) and on 28 Nov (BSM). Independent field descriptions received clearly indicate that the same individual was involved on all three dates.

Circus macrourus Pallid Harrier: EARLY RECORD: a male near Govenor's Camp, Mara GR on 13 Jly (DAZ).

Hieraaetus pennatus Booted Eagle: Nguni, Garissa Road, 1 on 18 Mar (DJP). Athi River, 1 pale phase on 19 Mar (JDG). Buffalo Springs, 1 pale on 19 Oct (KB). Tsavo Gate, 1 pale on 27 Dec (DJP).

Pernis apivorus Honey Buzzard: Kakamega, 1 on 3 Jan (WJP). Ol Donyo Sabuk, 1 on 7 Jan (BSM, DJW). Dodoma, 1 on 4 Nov (DKR). Nairobi NP, 1 at Hippo Pools on 12 Nov (JDG). Shimo-la-Tewa, 1 on 20 Nov (PLB, HAB).
Five in one year is about the average.

Falco amurensis Eastern Red-footed Falcon: Tunduma, male on 9 Jan (PBT). Lukenya, male on 26 Jan (RDM). Kariobangi, female on 30 Mar (DJP)
Such mid-winter records are unusual in East Africa.

Falco cherrug Saker Falcon: Shombole Swamp, 1 on 5 Mar (DKR).
Passage records in the Kenya Rift suggest wintering further south.

Falco concolor Sooty Falcon: Meru NP, 1 on 25 Oct (DAT). Lake Baringo, adult on 29 Oct, 6 (adult and immatures) on 30 Oct, 2 on 31 Oct and an immature on 2 Nov - all moving south (TS, DAT). Kariobangi, 1 on 31 Oct (DAT). *The species appears in Madagascar in mid November and these Kenya records clearly refer to passage birds.*

Falco eleonorae Eleonora's Falcon: Lower Kabete, 2 on 30 Oct (DJP). Ngulia Lodge, Tsavo West NP, 1 found drenched on ground just before dawn on 5 Nov had evidently hit the roof during the night. After being ringed and photgraphed it flew off strongly to the south (GCB, AMF-W).

Crex crex Corncrake: Ngulia Lodge, 4 ringed on 27 Nov and another ringed on 18 Dec were new for the Ngulia ringing list although there have been previous sightings there (GCB, DJP, AMF-W). *These records fit into the pattern of other occurrences in Kenya and indicate that the Corncrake is only a passage migrant to its final winter quarters in southern Africa.*

Phalaropus sp. Phalarope: Mombasa area, small numbers of phalaropes outside the reef on 15 and 22 Oct were probably *P. lobatus* (RG). Moyale, 1 on 29 Oct (JMs).

Charadrius dubius Little Ringed Plover: Lake Turkana, 1 at Ferguson's Gulf on 2 Jan (BSM, JKW) and 1 on 31 Dec (JM). Meru NP, 8 on 9 Feb (JVJ). Garissa, Tana River, 9 on 19 Mar (DJP). Kariobangi, 4 on 9 Feb and 1 on 2 Dec (DJP). Lake Nakuru, 1 on 13 Feb (JVJ). Sabaki River mouth, 2 on 23 Feb (JVJ). Mzima Springs, 2 on 21 Feb (JVJ). South Nwaso Nyiro swamp, 1 on 1 Sep (VD). Amboseli, 1 on 29 Oct (NB-M). Lake Baringo, 1 on 17-18 Nov (TS).

Charadrius mongolus Mongolian Sandplover: INLAND RECORD: Lake Baringo, 1 on 17 Nov (TS).

Pluvialis dominica Lesser Golden Plover: Malindi Harbour, 3 on 11 Nov (DAT).

Pluvialis squatarola Grey Plover: INLAND RECORD: Lake Baringo, 1 on 29 Dec (TS).

Haematopus ostralegus Oystercatcher: Mida Creek, 1 on 25 Nov (AM) and 2 on 11 Dec (DJP).

Arenaria interpres Turnstone: INLAND RECORDS: Lake Magadi, 1 on 1 Sep (VD). Lake Nakuru, 2 on 22 Sep (IS). Lake Manyara, 1 on 24 Oct (WKR). Lake Baringo, 1 on 2 Nov (TS).

Calidris temminckii Temminck's Stint: Thika, 1 on 2 Mar (WJP). Lake Naivasha, 3 on 12 Feb (JVJ). Kilaguni, Tsavo West NP, 1 on 21 Feb (JVJ). Amboseli, 1 on 5 Jan (JFR) and 1 on 29 Oct (NB-M), 2 on 25 Nov (JDG). Solai, 7 on 6 Oct (IM). Lake Nakuru, 6 on 22 Sep, 1 on 15 Oct (IS, LS) and 1 on 16 Dec. Rift Valley Swamp, Ngong, 1 on 22 Jan (DKR, WKR, GRCvS, PR).

Gallinago media Great Snipe: Aberdares NP, 1 on 15 Oct (JDG).

Lymnocryptes minima Jack Snipe: Nairobi NP, 1 on 8 Oct (VD).

Limicola falcinellus Broad-billed Sandpiper: Lake Turkana, 1 at Ferguson's Gulf on 30 Mar (DKR). Sabaki River mouth: present from the beginning of the year to 18 Mar, max 10 on 22 Jan and again from October, maxima 18 on 7 Oct and 14 on 10 Dec (HAB, PLB,DJP). Tiwi Creek, 2 on 23 Aug (RDM).

Limosa lapponica Bar-tailed Godwit: Mida Creek, 1 on 24 Feb (DAT), 1 on 7 Apr (ADL, JH), 1 on 24 Sep (HAB, PLB), 1 on 11 Dec and 23 Dec (DJP, HAB, PLB). Tiwi Creek, 2 on 22 Feb (JVJ) and 1 on 20 Aug (RDM).

Limosa limosa Black-tailed Godwit: Lake Turkana, 1 at Ferguson's Gulf on 31 Mar (DKR). Lake Nakuru, 1 on 12-13 Feb (RDM, JVJ), 1 on 18 Jun (NB-M), 4 on 3 Jly (DAZ), 5 on 15 Oct (IS, LS), 25 on 30 Oct (DAT). Nakuru oxidation ponds, 1 on 13 Feb (JVJ). Lake Bogoria, 1 on 30 Jly (RDM).

Numenius arquata Curlew: INLAND RECORDS: Lake Nakuru, 1 on 13 Feb (JVJ). Lake Magadi, singles on 15 and 24 Sep (ADL, RDM).

Tringa erythropus Spotted Redshank: Thika, Gethumbwini Dam, 6 on 10 Mar, 4 on 11 Mar, 1 on 29 Mar and 1 on 23 Apr (WJP). El Dere, 1 on flooded road 31 Dec (JFR). Amboseli, 1 on 4 Jan (JFR) and *c.*5 on 29 Oct (NB-M). Ol Puwata, 2 on 22 Mar (*per* GRCvS). Rift Valley Swamp, Ngong, 1 on 10-12 Jan (JFR), 1 on 22 Jan (DKR), 7 on 28 Jan, 22 on 10 Mar but only 1 on 11 and 12 Mar (JFR). Ngorongoro Crater, 2 on 5 Jan (PBT). Lake Magadi, 11 on 14 Jan (DJP). Kariobangi, 1 on 2 Dec (DJP). Lake Baringo, 1 on 29 Mar, 1 between 16-18 Nov and 1 on 25 Dec (all TS). Lake Naivasha, 1 on 21 Feb (RDM). South Ewaso Nyiro Swamp, 1 on 1 Sep (VD). Lake Nakuru, 2 on 22-23 Apr (RDM) and 3-4 from 22 Oct to 28 Nov (NB-M). Sabaki River mouth, 1 on 24 Feb (JVJ).

Tringa totanus Redshank: Lake Turkana, 1 at Ferguson's Gulf on 31 Mar (DKR). South Ewaso Nyiro Swamp, 1 on 1 Sep (VD). Mida Creek, 5 from 18-24 Feb (DAT) and present from 24 Sep to 23 Dec with a maximum of 18 on 11 Dec (PLB, HAB, DJP).

Xenus cinereus Terek Sandpiper: INLAND RECORD: Lake Baringo, 2 in Aug (TS).

Burhinus oedicnemus Stone Curlew: Amboseli, 3 on 18,19 and 20 Jan (GPR).

Glareola nordmanni Black-winged Pratincole: 30 km north of Marsabit, 1 on 25 Mar (RDM, DRW).
The third record for Kenya and the first one in spring, although April flocks of several hundreds probably occur annually in western Uganda.

Larus argentatus Herring Gull: Malindi Fish Market and Sabaki River mouth, present from 1 Jan to 15 Mar, maximum 24 at Malindi on 5 Feb; again from 7 Oct to end of year with maximum of 31 at Sabaki on 17 Dec (PLB, HAB, DJP, DAT). Nyali, 20 on 31 Jan and 1 on 22 Nov (PLB, HAB). Kilifi, 1 on 25 Nov (PLB, HAB).

Larus fuscus Lesser Black-backed Gull: LARGE CONCENTRATIONS: maximum numbers again at Ferguson's Gulf (250 on 1 Jan). At the coast maxima were 41 on 17 Dec in the Sabaki-Malindi area and 30 on 31 Jan at Nyali.

Larus genei Slender-billed Gull: Lake Turkana, an adult at Ferguson's Gulf on 2 Jan (BSM, JKW, DJW).
There are four previous accepted individuals from East Africa, all from Lake Turkana.

Larus melanocephalus Mediterranean Gull: Lamu, an adult on 17 Aug (SJ, RDM).
The second record for Kenya and East Africa.

Larus ridibundus Black-headed Gull: Nairobi NP, 1 on 4 Feb. Lake Magadi, 2 on 19 Feb and 10 on 30 Mar. Lake Naivasha, 1 on 30 Jan, 2 on 12 Feb, 2 on 17 Aug, 1 on 30 Aug and 2 on 22 Dec. Lake Nakuru, 50 on 22 Sep. Lake Turkana, *c.*600 at Ferguson's Gulf on 1-2 Jan. Malindi, 1 on 18 Jan, 50 on 5 Feb, 8 on 18 Mar and 1 on 22 Dec. Sabaki River mouth, 75 on 8 Jan, 30 on 22 Jan, 14 on 17 Dec and 2 on 22 Dec. Kilifi, 2 on 14 Jan, 1 on 3 Mar and 1 on 31 Dec. Mombasa, 20 on 13 Jan and 1 on 25 Sep (numerous observers).

Sterna caspia Caspian Tern: INLAND RECORD: Lake Baringo, 1 on 27-28 Nov (TS).

[Sterna hirundo Common Tern: Lake Baringo, a 'commic' tern present from 7 to 16 Nov was probably this species (TS). No definitive records from the coast but about 200 'commic' terns offshore from Malindi in Feb were likely to have been *S. hirundo.]*

Sterna sandvicensis Sandwich Tern: Dar es Salaam, 2 on 9 Nov (KMH). *The second record for Tanzania.*

Stercorarius pomarinus Pomarine Skua: Lake Turkana, the bird reported in Dec 1977 (*Scopus* 1: 128) was seen again on 1 Jan (BSM, JKW, DJW).

Cuculus poliocephalus Lesser Cuckoo: Sokoke Forest, a small passage between 24 Mar and 18 Apr (PLB, HAB).

Jynx torquilla Wryneck: 1 caught and ringed on the Kenya/Sudan border NW of Lokichokio on 17 Dec (GN).

Delichon urbica House Martin: JUNE RECORD: Samburu Lodge, 4 on 29 Jun (DAZ).

Cercotrichas galactotes Rufous Bush Chat: 1 between Kapenguria and Sigor on 3 Jan (BSM, JKW). Voi, 1 on 9 Jan and 2 on 11 Jan (BSM, DJW, JKW), several on 7 Mar and 10 Dec (DJP) and 1 on 29 Dec (DB, EEG). Aruba Lodge, 1 on 10 Jan and 3 between 11-13 Jan (BSM, DJW, JKW) and 2 on 18 Dec (BSM). Tana delta, 1-2 at Karawa on 5 Mar (DJP). Manyani Gate, Tsavo East, 1 on 25 Feb (JVJ). Ngulia, unprecedented numbers ringed (99) attributed to good cover and mist early in the season; caught between 30 Oct and 6 Dec (GCB, DJP, DEGB, AMF-W). Mtito Andei, 1-3 on 9 and 12 Dec (DJP).

Irania gutturalis Irania: Isiolo, several singing in dry Acacia woodland on 6 Feb and again on 11 Mar (DJP). Voi, a male singing on 7 Mar and 1 on 12 Dec (DJP). Aruba Dam, 1 on 11 Jan (BSM, DJW). 80 km W of Garissa and Nguni, several on 20 Mar (DJP). Ulukenya, 1 on 26 Jan (RDM). Ngulia, 108 ringed between 6 Nov and 29 Dec (GCB, DJP, AMF-W).

Luscinia luscinia Sprosser: NEW WINTERING LOCALITY: Gedi Forest, 1 on 24 Feb (JVJ).

Phoenicurus phoenicurus Redstart: the only record received was of one ringed on the Kenya/Sudan border NW of Lokichokio on 16 Dec (GN).

Saxicola rubetra Whinchat: NOTE - ALL RECORDS RECEIVED ARE PUBLISHED: Ngulia, 1 on 7 Nov and another on 27 Nov (both caught at night) were new for the locality (GCB, DJP, AMF-W). Lake Baringo, 1 on 22 Mar (TS, DAT), 1 on 1 Apr (TS) and 1-2 during Oct (TS). Nairobi NP, 1 on 26 Jan and 2 on 5 Feb (JVJ), 1 on 17 Feb (RDM), 2 on 4 Mar (WJP) and 1 on 5 Nov (RDM). Thika, 1 on 10 Mar (WJP). Near Uplands, 1 on 22 Mar (*per* GRCvS).

Acrocephalus griseldis Basra Reed Warbler: Ngulia, 1 ringed on 5 Jan and 25 ringed between 22 Nov and 10 Dec (GCB,DJP, AMF-W). Tana River delta, Lake Shakabolo, 1 on 4 Mar (HAB, PLB, DJP). Tana River, delta, Karawa, many (100s) in salt bush in subdued song on 4-5 Mar (HAB, PLB, DJP) and again on 1 Apr (PLB). Garissa, 20+ on 19 Mar (DJP). Mtito Andei, 1 on 12 Dec (DJP). Bamburi, 1 on 2 Jan and another on 1 Feb, the latter almost certainly wintering (HAB).

Hippolais icterina Icterine Warbler: Tiwi, 1 seen on 8 Apr (RDM).

Hippolais languida Upcher's Warbler: Meru NP, 1 on 5 Feb, several between Archer's Post and Ololokul, 11 Mar, from 50 km W of Garissa east to near the Somali border, 18-20 Mar, and it was the commonest warbler 20 km E of Garissa (> 1/ha) when several were in song (DJP, JMs). Namanga, 1 10 km N

of the township on 26 Mar (DJP). Mtito Andei, 1 on 9 Dec (GJJ). Voi, 1 on 17-18 Dec (BSM). Ngulia, 1 ringed on 5 Jan and only 9 ringed between 6 Nov and 8 Dec (GCB, DJP).

Hippolais olivetorum Olive-tree Warbler: Lake Baringo, 1 on 3 Oct (TS). Ngulia, 21 ringed between 6 Nov and 3 Dec (GCB, DJP).

Locustella fluviatilis River Warbler: 2 ringed on 6 Jan and 179 ringed between 5 Nov and 31 Dec, maximum 29 on 29 Nov; 2-3 singing there on 28-29 Dec (GCB, DJP). Mtito Andei, about 10 on 9 Dec (GJJ) and 4, including 3 singing, on 12 Dec (DJP). Voi, 2 in *Commiphora* woodland on 12 Dec (DJP). Kiboko, 2 on 21 Dec (DJP). Lake Naivasha, 1 on 6 Dec (GJJ). Lukosi River, Mtandika area, 1 in sub-song on 8 Jan (PBT). Ngulia, 1 ringed on 9 Apr (DJP).

Phylloscopus collybita Chiffchaff: Mt Kenya, 1 at 3325 m on 1 Feb (DAT).

Phylloscopus trochilus Willow Warbler: JULY RECORD: Kianyaga, 1 on 1 Jly (WJP).

Sylvia nisoria Barred Warbler: TANZANIA RECORD: several at Dodoma on 3 Dec (DKR). At Ngulia 4 were ringed on 6 Jan and in the autumn 18 were ringed between 5 Nov and 31 Dec (GCB, DJP).

ADDITIONS FOR PREVIOUS YEARS

ETHIOPIAN REGION BIRDS AND OCEANICS

Chelictinia riocourii Swallow-tailed Kite RE: Tsavo East NP, 1 on 23 Dec 1976 (PCL, DS).

Rhynchops flavirostris Skimmer R: Amboseli, 1 on 3 Dec 1976 (RJD, FL). Lake Jipe, recorded on 26 December 1976 (PCL, DS).

Turaco leucolopha White-crested Turaco E: Baringo, 1 breeding pair Jly 1977 (TS).

Merops revoilii Somali Bee-eater E: reported south of the Voi River, Tsavo East NP on 6 Sep 1976 and 5 km west of Tsavo West NP on 1 Mar 1976 (PCL, DJP).

Turdoides aylmeri Scaly Chatterer R: recorded during 1975-76 as an uncommon resident throughout the Voi *Commiphora* woodland (PCL).

Turdus pelios African Thrush E: Baringo, 1 in Jly 1977 (TS).

Speculipastor bicolor Magpie Starling E: recorded in Tsavo East, late Sep 1976 (PCL).

Spreo shelleyi Shelley's Starling S: Tsavo East NP, 2 near the Galana River on 30 Nov 1976 (RJD, FL).

Anthreptes platura Pigmy Sunbird E: singles at Baringo during Nov 1976 and Nov 1977 (TS).

PALAEARCTIC SPECIES

Ciconia nigra Black Stork: Machakos, 1 on 10 Nov 1974 (DJP). Nairobi NP, 8 on 16 Oct 1976 (WJP) and 1 there on 7 Aug 1977 (JMs, JDG) and 1-2 between 3 and 23 Oct 1977 (JDG, NS). Tsavo East NP, 2 on 30 Nov 1976 (RJD, FL).

Hieraaetus pennatus Booted Eagle: singles Nairobi NP, 20 Nov 1976, Kilima Mboza on 12 Feb 1977 and Thika on 16 Mar 1977 (all WJP). Nairobi, 1 on 2 Oct 1977 (DKR).

Crex crex Corncrake: 1 seen Ngulia Lodge, on 15 Nov 1974 (DJP).

Gallinago media Great Snipe: 1 seen Lake Naivasha on 4 Nov 1976 (RJD, FL).

Xenus cinereus Terek Sandpiper: INLAND RECORD: Naivasha, 1 between 3 and 4 Nov 1976 (RJD, FL).

Calidris temminckii Temminck's Stint: Naivasha, 4 between 3 and 4 Nov 1976 and 1 on 15 Nov 1976; Lake Nakuru, 1 on 4 Nov 1976 (all RJD, FL).

Phalaropus lobatus Red-necked Phalarope: Aruba Dam, Tsavo East NP, 1 on 4 Oct 1976 (PCL).

Caprimulgus europaeus Eurasian Nightjar: 1 found dead between Voi and Lugard's Falls, Tsavo East NP, 30 Oct 1976 (PCL, see *Scopus* 2: 89 for gut contents).

Irania gutturalis Irania: reported as common in thicket habitat in Tsavo East NP between Dec 1976 and Jan 1977 (PCL). Samburu GR, 2 on 6 Dec 1976 (RJD, FL).

Cercotrichas galactotes Rufous Bush Chat: common in Tsavo East NP, Nov to Dec 1976 and early in 1977 (PCL).

Acrocephalus palustris Marsh Warbler: WESTERN RECORD: Lake Naivasha, 1 on 3 Nov 1976 (RJD, FL).

Hippolais languida Upcher's Warbler: Amboseli, 1 on 12 Dec 1976 (RJD, FL). Tsavo East NP and the Voi area, fairly common early in 1977 (PCL).

Hippolais olivetorum Olive-tree Warbler: Galana Ranch (bordering Tsavo East NP), 1 on 13 Nov 1976 (PCL).

Locustella fluviatilis River Warbler: Voi, 1 between 25 and 29 Dec 1976 (PCL, DS). Thika, 1 on 2 Dec 1976 (WJP).

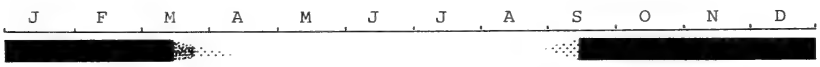
'FIRST' AND 'LAST' DATES OF PALAEARCTIC MIGRANTS

We present this section with some trepidation: we have not asked observers to specifically supply these data and the list below has been extracted mainly, but not entirely, from the records of sub-committee members. The list is restricted to passerines and 'near-passerines' and, by force, to Kenya. Should the idea be popular it will be necessary in future years to list dates for different parts of East Africa separately because certain species have different migratory regimes in different areas.

The giving of 'first' and 'last' dates is often regarded as spurious but the information does have some value, especially when accompanied by extra data on the timing of the bulk of the species' migration. An ideal account from an observer might run as follows:

> 'Ngong Hills: present from 1 Jan (25 along 5 km of road) and in similar numbers until the last week of March, when there was a sharp decline; only odd singles thereafter, the last seen being a female on 15 April. The first autumn bird was a male on 1 September but the main arrival took place about the 14th when 20 were counted along 5 km of road. A density of this order was maintained until the end of the year.'

This information could then be shown graphically by a bar chart as below:



Observers are asked to send in their records, especially of the more common migrants, for individual localities in a narrative form similar to the example given above. Isolated records for other areas are, of course, welcome.

Species	Last date	First date
Cuculus canorus	24 Apr Machakos	27 Nov Ngulia
C. poliocephalus	18 Apr Sokoke	-
Caprimulgus europaeus	-	5 Nov Ngulia
Apus apus	16 Apr Langata	9 Oct Kabete
Merops apiaster	-	9 Sep Kabete
Coracias garrulus	8 Apr Kiboko	7 Nov Ngulia
Delichon urbica	-	8 Oct Kiningop
Hirundo rustica	-	-
Riparia riparia	-	-
Oriolus oriolus	10 Apr Mtito Andei	17 Oct Nairobi
Cercotrichas galactotes	20 Mar Garissa	30 Oct Ngulia
Irania gutturalis	20 Mar Garissa	6 Nov Ngulia
Luscinia luscinia	5 Apr Nairobi	5 Nov Ngulia
L. megarhynchos	26 Mar Namanga	5 Nov Ngulia
Monticola saxatilis	2 Apr Nairobi	25 Oct Meru
Oenanthe isabellina	-	14 Oct Nairobi
O. oenanthe	-	16 Sep Ngong
O. pleschanka	-	20 Oct Nairobi
Saxicola rubetra	1 Apr Baringo	- Oct Baringo
Acrocephalus arundinaceus	30 Apr Nairobi	27 Nov Ngulia
A. griseldis	1 Apr Karawa	22 Nov Ngulia
A. palustris	2 May Nairobi	5 Nov Ngulia
A. schoenobaenus	2 May Nairobi	11 Nov Naivasha
A. scirpaceus	2 May Nairobi	29 Oct Ngulia
Hippolais languida	26 Mar Namanga	6 Nov Ngulia
H. pallida	10 Apr Mtito Andei	6 Nov Naivasha
Locustella fluviatilis	9 Apr Ngulia	5 Nov Ngulia
Phylloscopus trochilus	5 May Nairobi	21 Oct Mara GR
Sylvia atricapilla	7 Apr Nairobi	28 Oct Kabete
S. borin	2 May Nairobi	15 Oct Nairobi
S. communis	16 Apr Ngulia	29 Oct Ngulia
S. nisoria	-	5 Nov Ngulia
Muscicapa striata	10 Apr Mtito Andei	25 Oct Meru
Anthus cervinus	-	15 Oct Nairobi
A. trivialis	12 April Nairobi	12 Oct Kabete
Motacilla alba	9 Feb Nairobi	2 Dec Nairobi
M. cinerea	-	20 Oct Kericho
M. flava	24 Apr Nairobi	15 Sep Nairobi
Lanius collurio	2 May Nairobi	23 Oct Nairobi
L. isabellinus	-	25 Oct Meru
L. minor	24 Apr Tsavo	-

English names of species not mentioned in the Species Report: *Cuculus canorus* Eurasian Cuckoo, *Apus apus* Eurasian Swift, *Merops apiaster* Eurasian Bee-eater, *Coracias garrulus* Eurasian Roller, *Hirundo rustica* Eurasian Swallow, *Riparia riparia* Sand Martin, *Oriolus oriolus* Golden Oriole, *Luscinia megarhynchos* Nightingale, *Monticola saxatilis* Rock Thrush, *Acrocephalus arundinaceus* Great Reed Warbler, *A. schoenobaenus* Sedge Warbler, *A. scirpaceus* Reed Warbler, *Hippolais pallida* Olivaceous Warbler, *Sylvia atricapilla* Blackcap, *S. borin* Garden Warbler, *S. communis* Whitethroat, *Muscicapa striata* Spotted Flycatcher, *Anthus cervinus* Red-throated Pipit, *A. trivialis* Tree Pipit, *Motacilla alba* White Wagtail, *M. cinerea* Grey Wagtail, *M. flava* Yellow Wagtail, *Lanius collurio* Red-backed Shrike, *L. isabellinus* Red-tailed Shrike, *L. minor* Lesser Grey Shrike.

CONFUSION BETWEEN SIMILAR SPECIES

The Ornithological Sub-Committee acts as the clearing-house for records of scarce Palaearctic species in East Africa and, before publication in the Bird Report, supporting details supplied by the observer(s) - including Sub-Committee members - are required prior to acceptance and, hopefully, standards equal to those achieved by rarities panels overseas are being maintained.

Save in a few cases, most observers seem to be aware of problems of confusion between similar Eurasian species but many visitors, especially those from western Europe, are unaware of identification pitfalls between certain Palaearctic and Ethiopian birds. The following list is published in order to highlight some of the examples which have come to the Sub-Committee's notice in recent years, but the list is by no means exhaustive.

European Spoonbill *Platalea leucorodia* and immature African Spoonbill *P. alba*

Imperial Eagle *Aquila heliaca* and Tawny Eagle *A. rapax*

Steppe Eagle *A. nipalensis* and Tawny Eagle *A. rapax*

Short-toed Eagle *Circaetus gallicus* and Beaudouin's Harrier Eagle *C. beaudouni*

Booted Eagle *Hieraaetus pennatus* and dark phase Wahlberg's Eagle *Aquila wahlbergi*

Sooty Falcon *Falco concolor* and Grey Kestrel *F. ardosiaceus*

Spotted Crake *Porzana porzana* and immature African Crake *Crex egregia*

Kentish Plover *Charadrius alexandrinus* and immature Chestnut-banded Sandplover *C. pallidus*

Great Snipe *Gallinago media* and African Snipe *G. nigripennis*

Herring Gull *Larus argentatus* sspp. and Southern Black-backed Gull *L. dominicanus*

Little Tern *Sterna albifrons albifrons* and Saunder's Tern *S.a. saundersi*

Common Tern *S. hirundo* and Roseate Tern *S. dougallii*

Common Tern and White-cheeked Tern *S. repressa*

Short-eared Owl *Asio flammeus* and African Marsh Owl *A. capensis*

Eurasian Swift *Apus apus* and Black Swift *A. barbatus*

Pallid Swift *A. pallidus* and Nyanza Swift *A. nianzae*

Short-toed Lark *Calandrella brachydactyla* and Rufous Short-toed Lark *C. somalica*

Great Reed Warbler *Acrocephalus arundinaceus* and the swamp warblers *A. gracilirostris* and *A. rufescens*

Basra Reed Warbler *A. griseldis* and the two swamp warblers

Marsh Warbler *A. palustris* and African Reed Warbler *A. baeticatus* (and Willow Warbler *Phylloscopus trochilus*)

Lesser Grey Shrike *Lanius minor* and Grey-backed Fiscal *L. excubitorius*

Tawny Pipit *Anthus campestris* and Sandy Plain-backed Pipit *A. leucophrys*

The list of observers who kindly supplied the records in the Species Report is given below. The Ethiopian section was compiled by D.A. Turner, P.L. Britton and D.J. Pearson, the Oceanics by P.L. & H.A. Britton and the Palaearctics by B.S. Meadows. The 'first' and 'last' dates section by D.J. Pearson, B.S. Meadows and the Editor.

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* including the following 24 other visiting Danish ornithologists:

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E.A.N.H.S. NEST RECORD SCHEME: 1978

Hazel A. Britton

Thanks to the efforts of over 50 contributors, the Nest Record Scheme continued to flourish during 1978, providing approximately the same amount of data as in each previous year. Unfortunately, communication problems have further reduced our contact with ornithologists resident in Tanzania and Uganda, and the few records included here were supplied by visitors. However, a supply of cards has been sent recently to Tanzania and I hope that breeding data will result during 1979.

In addition to the records listed below, Dr Lloyd Kiff has provided photocopies of all East African egg set data cards in the collection of the Western Foundation of Vertebrate Zoology, California. The majority of these cards refer to the egg collection of the late Dr V.G.L. van Someren. Eventually I will compare these with the incomplete van Someren data already incorporated in the Nest Record Scheme. Any extra data, together with details of eggs collected by Dr M.P.L. Fogden in Uganda, will be published in my next report.

The format here is the same as in the 1977 Bird Report. Some records for 1977 (and even 1976) which arrived too late to be incorporated last year are included. Details given are minimal, and no attempt has been made to provide clutch-size, nest-site or success-rate data in this report. Months given refer to actual egg-laying or to computed egg-laying dates from dependent young in or out of the nest. In situations where it has proved impossible to reliably compute months of egg-laying, dates are given more fully along with the observations themselves.

This report has been compiled from records provided by the following contributors, from cards received before 10 June 1979: H. Aden, P.M. Allen, A.L. Archer, O. Ashford, D.E.G. Backhurst, H.A. & P.L. Britton, L.H. Brown, F.N., M. & W.F. Bruce-Miller, J.F. Calder, L. & T. Campbell, J.A.D. Cape, J. Carberry, R.P. Chapman-Purchas, E. & N. Collias, G.R. Cunningham-van Someren, R.S. Daniell, P. Davey, L. Dempster, A.V. & P.S. Donnelly, J.D. Gerhart, M. Heath, M. Hemphill, P.J.S. Hewett, J. Howard, G.C. & D. Irvine, M. Keating, G.L. Low, J. Malloy, N.J.C. Mathews, F.J. McCartney, B.S. Meadows, J. Miskell, C. Muringo, F. Ng'weno, C.E. Norris, M. Palmer, H. Pelchen, D.E. Pomeroy, J.F. Reynolds, K. Richmond, M. Robbins, A. & J. Root, J. Rudnai, W.J.F. Rutherford, D. Schmidl, L.T. Schwab, N.J. Skinner, N. Stubbs, D.A. Turner, T. Young and D.A. Zimmerman.

Struthio camelus Ostrich: *massaicus:* Nairobi NP Aug, Sep, 19 Mar (35 young one third grown), 31 Dec (6 young over ½ grown). Tsavo West NP Sep. *somalicus:* Meru NP Feb, Sep, 14 Feb (25 young about ½ grown). Samburu GR 3 Jan (½ grown), Feb. Galana Ranch Jly, Aug. Kaisut Desert May.

Podiceps cristatus Great Crested Grebe: Lake Nakuru Oct.

Tachybaptus ruficollis Little Grebe: near Nairobi Feb - Mar (4). Tsavo West NP late Mar/early Apr. West of Ngong Hills Apr-May. Arusha Dec.

Phalacrocorax africanus Long-tailed Cormorant: Lake Jipe Feb (probably Jan-Mar).

Phalacrocorax carbo White-necked Cormorant: Lake Naivasha Dec-Feb, Lake Nakuru Dec-Jan.

Ardea cinerea Grey Heron: Mombasa Sep, Oct, Dec.

Ardea goliath Goliath Heron: Lake Baringo Dec.

Ardea melanocephala Black-headed Heron: Lake Jipe Feb. Aruba, Tsavo East NP Apr. Arusha Oct-Dec. Njoro Nov.

Ardea purpurea Purple Heron: Lake Jipe Jan-Feb.

Ardeola ralloides Squacco Heron: Lake Jipe Jan-Feb.

Bubulcus ibis Cattle Egret: Lake Jipe Jan-Feb.

Egretta alba Great White Egret: Lake Jipe Jan-Feb.
Egretta garzetta Little Egret: Lake Turkana Mar-Apr. Kisite Is. Jan-Feb.
Ephippiorhynchus senegalensis: Saddle-billed Stork: Mara GR 19 Sep (2 downy young out of nest).
Leptoptilos crumeniferus Marabou Stork: near Hunter's Lodge, Kiboko 27 Oct 1977 (2 young partially fledged); 12 Aug (16 occupied nests with young of various sizes and 1 nest with incubating adult) see Archer *EANHS Bulletin* 1978: 106.
Threskiornis aethiopica Sacred Ibis: Lake Turkana Apr, last active nest, evidence of earlier laying. Lake Jipe Jan-Feb.
Platalea alba African Spoonbill: Lake Jipe Jan-Feb, still a bird on nest in Jun so there must have been some later laying.
Phoenicopterus ruber Greater Flamingo: Lake Bogoria Mar-May, later washed out.
Alopochen aegyptiacus Egyptian Goose: Tsavo region Jan, Sep (2), Nov (2). Nairobi/Athi area Feb (2), Oct (2). Mara GR Jly, Aug, Dec, Jan. Lake Bogoria May. Habaswein late Oct/early Nov.
Anas hottentota Hottentot Teal: West of Ngong Hills Jan.
Anas undulata Yellow-billed Duck: Timboroa late Mar/ early Apr. Kiambu May.
Dendrocygna viduata White-faced Whistling Duck: Kiambu Apr.
Sagittarius serpentarius Secretarybird: Naivasha May. Near Elmenteita Aug. Nairobi NP Jun 1977, apparently incubating 7 Sep 1977, Nov. West of Ngong Hills incubating 24 Apr. Tsavo West NP young in nest being brooded 15 Nov.
Gyps africanus White-backed Vulture: Ngong Forest 14 Jun (1 downy young being fed in nest).
Gyps rueppellii Rüppell's Griffon Vulture: Njorowa Gorge, Naivasha Apr.
Neophron percnopterus Egyptian Vulture: West of Ngong Hills 4 Jun (occupied hole, apparently young being fed). Athi River 17 Sep (nearly fledged young being fed on ledge of cave).
Torgos tracheliotus Lappet-faced Vulture: Mara GR May. Nairobi NP 6 Dec (adult brooding).
Trigonoceps occipitalis White-headed Vulture: Mara GR 28 Jly (incubating).
Gypaetus barbatus Lammergeier: Njorowa Gorge, Naivasha Apr.
Circaetus gallicus pectoralis Black-chested Snake Eagle: Mara GR 3 Sep (large downy young with wing quills), 11 Oct (brooding? small young).
Terathopius ecaudatus Bateleur: Samburu GR young from egg laid late Sep/early Oct. Meru NP incubating, Mar. Mara GR young from egg laid May or Jun.
Accipiter minullus Little Sparrowhawk: Nairobi Oct (?feeding young).
Accipiter tachiro African Goshawk: Diani Forest young from eggs laid probably in Feb.
Aquila rapax Tawny Eagle: North of Ndoto Mts, feeding small young in early Mar (2).
Aquila verreauxi Verreaux's Eagle: Lake Nakuru NP Apr. Lukenya 27 Oct 1977 (½ grown young in nest) and, possibly in the same site, a fully feathered juvenile on 15 Sep.
Aquila wahlbergi Wahlberg's Eagle: near Makungu Sep.
Buteo rufofuscus Augur Buzzard: Mt Kenya 4200 m, 2 eggs in abandoned nest in Jly 1977.
Hieraaetus dubius Ayres' Hawk Eagle: Eagle Hill (Embu) Jun.
Hieraaetus spilogaster African Hawk Eagle: Tsavo West NP building Apr, incubating on 12 Jly.
Lophaetus occipitalis Long-crested Eagle: Meru NP building and possibly incubating Feb, adults feeding small young in another nest 17 Aug. Lake Nakuru NP eggs or small young 8 Dec.
Stephanoaetus coronatus Crowned Eagle: Karen Dec.
Haliaeetus vocifer Fish Eagle: Lake Nakuru NP apparently incubating 5 Nov 1977.

Lake Naivasha, late Apr/early May and incubating 24 Aug.
Milvus migrans Black Kite: Molo, incubating 8 Dec. Nairobi young first flew 1 Aug.
Elanus caeruleus Black-shouldered Kite: Nairobi, Jun 1977 and 2 young almost full grown 2 Jly.
Falco biarmicus Lanner Falcon: Embu District Jly. Njorowa Gorge Jun. Lukenya nearly fledged young being fed on cliff face 17 Sep only 80 m from nest of next species containing young.
Falco peregrinus Peregrine Falcon: Embu District, Sep 1977, Oct. Lukenya, nearly fledged young being fed at entrance of cave 17 Sep.
Falco rupicoloides White-eyed Kestrel: Narok Road (Kedong Valley, near satalite tracking station), feeding large fluffy chicks 20 May.
Falco tinnunculus Kestrel: Lukenya fledged young from eggs laid probably late Jun/early Jly.
Polihierax semitorquatus Pygmy Falcon: near Habaswain adults feeding young in nest 25 Dec.
Francolinus afer Red-necked Spurfowl: Shimba Hills NP Jan.
Francolinus coqui Coqui Francolin: Sokoke Forest Dec.
Francolinus leucoscepus Yellow-necked Spurfowl: Tsavo West NP young from eggs laid Feb-Mar (12+). Kibwezi Mar. Meru NP young ½ grown in Aug. Samburu GR young from eggs laid late Dec and late Mar.
Francolinus sephaena Crested Francolin: West of Ngong Hills May.
Acryllium vulturinum Vulturine Guineafowl: Meru NP Dec. Samburu GR young from eggs laid Feb-Mar.
Guttera edouardi Crested Guineafowl: North Nandi Forest 11 Dec, ¼ grown young.
Guttera pucherani Kenya Crested Guineafowl: Sokoke Forest young from eggs laid probably Aug.
Numida meleagris Helmeted Guineafowl: Simba Springs Jan. Matthews Range Mar.
Balearica pavonina Crowned Crane: Nairobi NP 26 Dec 1977 2 young nearly fledged, 4 Feb young about 10 d old and 5 Mar young a few days old. West of Ngong Hills Jan, Feb. Lake Nakuru NP May. Lake Bogoria incubating Oct. Kericho Nov. Samburu GR Dec.
Gallinula chloropus Moorhen: West of Ngong Hills Apr.
Limnocorax flavirostra Black Crake: Amboseli Jly (3). Ewaso Nyiro Swamp Apr-May. Nairobi area Mar, Sep, Dec.
Fulica cristata Red-knobbed Coot: Nairobi area Apr (2), May, Dec (2). Ewaso Nyiro Swamp Jan. Lake Naivasha Nov.
Neotis heuglini Heuglin's Bustard: Marsabit 2 ½ grown young with female 12 May.
Otis kori Kori Bustard: West of Ngong Hills ½ grown young with adult 24 Apr.
Actophilornis africana Jacana: Lake Naivasha 30 Dec young about 10 d old.
Microparra capensis Lesser Jacana: Lake Jipe Feb-Mar (2).
Charadrius pecuarius Kittlitz's Sandplover: Amboseli late Nov, Dec.
Charadrius tricollaris Three-banded Plover: Nairobi NP Nov 1977.
Vanellus armatus Blacksmith Plover: Lake Nakuru NP May 1977, Apr (6), May (2). Amboseli Dec, Jan. Lake Magadi Mar-Apr (2). Nairobi NP Aug.
Vanellus coronatus Crowned Plover: Mara GR Sep, Dec (2). Nairobi Sep. Tsavo West NP Dec.
Vanellus crassirostris Long-toed Plover: Amboseli Jly, Aug.
Vanellus spinosus Spur-winged Plover: El Dere Dec. Amboseli Jan.
Himantopus himantopus Black-winged Stilt: Lake Magadi late Mar/early Apr.
Burhinus vermiculatus Water Thicknee: Mara GR Aug.
Cursorius temminckii Temminck's Courser: Mara GR Sep, Nov.
Rhinoptilus africanus Two-banded Courser: Lake Jipe Feb.
Larus cirrocephalus Grey-headed Gull: Lake Turkana Mar-May (about 100).
Pterocles decoratus Black-faced Sandgrouse: Samburu GR Jan. Tsavo East NP Feb.
Columba guinea Speckled Pigeon: Lake Magadi Jan, Apr. Lake Naivasha Jan. Molo Dec.

Streptopelia capicola Ring-necked Dove: Malindi Jly.
Streptopelia semitorquata Red-eyed Dove: Nairobi Jan, Jly, Aug.
Streptopelia senegalensis Laughing Dove: Nairobi Mar.
Treron australis Green Pigeon: Nairobi area Jan, Feb (2). Naro Moru Mar.
Agapornis fischeri Fischer's Lovebird: Lake Naivasha active nests in holes 24 Sep 1977.
Turaco hartlaubi Hartlaub's Turaco: Nairobi building 6 Jan and 1 Apr.
Cuculus solitarius Red-chested Cuckoo: Nairobi young out of nest being fed by *Cossypha caffra* 23 Nov 1977, Jan (host *C. caffra*).
Centropus superciliosus White-browed Coucal: Shimoni Nov 1977. Malindi Apr. Nakuru May.
Tyto alba Barn Owl: Gedi Jan (2). Nairobi Jan, Oct. Solai Sep.
Bubo lacteus Verreaux's Eagle Owl: Lake Naivasha incubating or brooding May. Samburu GR 2 Mar downy-headed, fledged but dependent young.
Glaucidium perlatum Pearl-spotted Owlet: Meru/Embu road Jan.
Caprimulgus clarus Slender-tailed Nightjar: near Mombasa Feb, Jun.
Caprimulgus poliocephalus Montane Nightjar: Nairobi Sep.
Apus affinis Little Swift: Watamu Nov (2). Near Mombasa late Apr/early May (2). Nairobi Jly.
Apus caffer White-rumped Swift: Nairobi Nov (2).
Apus horus Horus Swift: West of Ngong Hills 19 Feb (active colony of about 75 nests, probably eggs).
Apus nianzae Nyanza Swift: Nakuru May, Sep 1977 see *Scopus* 3: 26-27.
Cypsiurus parvus Palm Swift: Shimoni Aug 1977.
Colius striatus Speckled Mousebird: Kenya coast Mar (2), Jun. Mara GR Jun. Near Kisumu Dec 1977 (2).
Apaloderma narina Narina's Trogon: Lake Bogoria young from egg laid late Dec/early Jan.
Alcedo cristata Malachite Kingfisher: Nairobi NP feeding young in holes 11 Mar, 15 Apr and young out of nest 19 Aug. Near Nairobi feeding young in hole 3-14 May. Lake Jipe Apr.
Halcyon leucocephala Chestnut-bellied Kingfisher: near Magadi occupied hole 1 May.
Merops bullockoides White-fronted Bee-eater: Longonot feeding young 23 Jan 1976 (15-18 occupied holes). Arusha NP feeding young 2 Nov.
Merops oreobates Cinnamon-breasted Bee-eater: Nairobi Nov 1977, feeding young in hole Dec, feeding fledged young 14 Jan.
Merops pusillus Little Bee-eater: Kakamega Forest feeding young in hole 23 Feb. Lumbwa feeding young in hole 24 Feb.
Merops superciliosus Madagascar Bee-eater: Momela Crater Lake feeding fledged young 1 Nov.
Coracias caudata Lilac-breasted Roller: Meru NP feeding young 13 Feb. Diani Forest feeding young Nov (nearly flying by 15 Nov).
Coracias naevia Rufous-crowned Roller: Magadi Road young in hole almost fledged 9 Dec.
Phoeniculus purpureus Green Wood Hoopoe: Lake Nakuru NP fledged young being fed 5 Nov 1977. Diani Forest young left hole 14 Nov.
Upupa epops Hoopoe: Nairobi Feb, Sep, Nov. Arusha young in hole 28 Oct.
Bucorvus leadbeateri Ground Hornbill: Tsavo West NP female inside hollow 10 Nov.
Tockus alboterminatus Crowned Hornbill: Diani Forest feeding young in hole 4-19 Nov.
Tockus deckeni Von der Decken's Hornbill: Kibwezi 3 young emerged from hole late Dec, fourth still in hole on 1 Jan. Meru NP occupied hole 27 Feb. Samburu GR feeding young 24 Jun.
Tockus erythrorhynchus Red-billed Hornbill: Ulu Nov 1977. Meru NP Mar (eggs) and 3 downy young 28 Mar. Tsavo West NP feeding young 18 Apr.

Tockus flavirostris Yellow-billed Hornbill: Meru NP Feb.
Tockus nasutus Grey Hornbill: Lake Nakuru NP young partially fledged 15 May 1977. Lake Bogoria Aug. Lake Magadi occupied hole 5 Feb.
Buccanodon olivaceum Green Barbet: Sokoke Forest apparently incubating 9 Apr.
Gymnobucco bonapartei Grey-throated Barbet: Nandi Escarpment feeding young in hole 24 Feb.
Lybius bidentatus Double-toothed Barbet: Nandi Escarpment feeding young in hole 24 Feb.
Lybius diadematus Red-fronted Barbet: Athi River incubating 16 Apr (2)
Lybius leucocephalus White-headed Barbet: Nairobi incubating 10 Oct 1976.
Lybius melanocephalus Brown-throated Barbet: Magadi occupied hole 1 May.
Pogoniulus bilineatus Golden-rumped Tinkerbird: Nairobi feeding young in hole 25 Mar.
Trachyphonus darnaudi d'Arnaud's Barbet: Kibwezi feeding young in hole 30 Dec and 7 Jan.
Trachyphonus erythrocephalus Red-and-Yellow Barbet: Lake Magadi incubating 5 Feb. Selengai feeding young in hole 18 Feb.
Indicator indicator Black-throated Honeyguide: Lake Naivasha bird being handled laid egg 15 Oct.
Prodotiscus zambesiae Eastern Honeybird: Nairobi *Zosterops poliogastra* feeding naked young in nest 1 Oct and fledged young on 27 Nov and 25 Nov-13 Dec.
Campethera abingoni Golden-tailed Woodpecker: Sokoke Forest occupied hole 7 Apr.
Campethera nubica Nubian Woodpecker: Samburu feeding young in hole 20 Oct 1977.
Mesopicos goertae Grey Woodpecker: Maralal feeding young in hole (at least ½ grown) 29 Dec.
Eremopteryx leucopareia Fischer's Sparrow Lark: Samburu GR Dec.
Galerida malabarica Short-crested Lark: Marsabit NR Dec.
Mirafra cantillans Singing Bush Lark: Lake Magadi Apr.
Hirundo abyssinica Striped Swallow: Nairobi area Jun-Jly (2). Busia Mar.
Hirundo aethiopica Ethiopian Swallow: near Mombasa end Mar/early Apr.
Hirundo angolensis Angola Swallow: Nandi area feeding young Oct. Lake Nakuru NP May-Jun (2).
Hirundo daurica Red-rumped Swallow: Nairobi Nov.
Hirundo fuligula African Rock Martin: Momella Crater Lake Sep.
Hirundo senegalensis Mosque Swallow: Lake Nakuru NP Apr 1977. Busia Mar.
Hirundo smithii Wire-tailed Swallow: Bungoma May, Dec. Athi River Mar. Shimoni Mar, May.
Psalidoprocne pristoptera Black Roughwing: Nairobi Dec.
Dicrurus adsimilis Drongo: Shimoni Jan. Sokoke Forest Mar (2), Apr. Lake Naivasha Jan.
Oriolus larvatus Black-heade Oriole: Kibwezi young from egg laid probably Nov. Mara GR incubating 2 Feb. Nairobi Jun.
Corvus albicollis White-necked Raven: Nairobi-Mombasa Road incubating 27 Oct 1977. Kedong Valley incubating or brooding small young 27 Dec.
Corvus splendens Indian House Crow: Mombasa area Oct-Nov (15+).
Andropadus virens Little Greenbul: Bungoma building Dec.
Phyllastrephus debilis Slender Greenbul: Sokoke Forest building Mar.
Phyllastrephus placidus Placid Greenbul: Nairobi feeding fledged young 13 May.
Pynonotus barbatus Common Bulbul: Nairobi area Jan (2), Apr, Nov. Mt Kenya May. Galana Ranch Dec. El Dere Dec (also egg of cuckoo). Bamburi May.
Cercotrichas leucophrys Red-backed Scrub Robin: West of Ngong Hills Feb.
Cichladusa guttata Spotted Morning Thrush: Lake Magadi Mar. Malindi Mar.
Cossypha caffra Robin Chat: Nairobi Jan (parasitized by *Cuculus solitarius*), Apr, Aug.
Neocossyphus rufus Red-tailed Ant Thrush: Sokoke Forest building 3 Apr.

Turdus abyssinicus Northern Olive Thrush: Nairobi Sep 1977, Jan, Mar, Aug (2), Sep (2).
Turdus tephronotus Bare-eyed Thrush: Kibwezi late Oct/early Nov.
Acrocephalus baeticatus African Reed Warbler: Kiambu Dec.
Camaroptera simplex Grey Wren Warbler: Lake Magadi building 1-3 Apr.
Cisticola cantans Singing Cisticola: Nairobi area Apr, May.
Cisticola erythrops Red-faced Cisticola: Nairobi area Feb.
Cisticola galactotes Winding Cisticola: near Mombasa Jly 1977. Tsavo West NP Mar.
Cisticola natalensis Croaking Cisticola: Shimba Hills NP May.
Eremomela flavicrissalis Yellow-vented Eremomela: Olorgesaillie building 16 Apr.
Eremomela icteropygialis Yellow-bellied Eremomela: Lokichar (Turkana) Jly
Phylloscopus umbrovirens Brown Woodland Warbler: Naro Moru Feb.
Prinia subflava Tawny-flanked Prinia: Nairobi Apr, Dec.
Schoenicola platyura Fan-tailed Warbler: Nairobi May.
Sylvietta whytii Red-faced Crombec: Nairobi Nov. North Nandi Forest Dec.
Bradornis microrhynchus Grey Flycatcher: West of Ngong Hills Feb.
Bradornis pallidus Pale Flycatcher: Kilifi late Jan/early Feb.
Melaeornis chocolatina White-eyed Slaty Flycatcher: Lake Nakuru NP May 1977, Feb. Nairobi Nov and Dec 1977.
Muscicapa adusta Dusky Flycatcher: Nairobi area Jan, May. Naro Moru Feb.
Muscicapa aquatica Swamp Flycatcher: Rwenzori NP Dec 1977.
Batis minor Black-headed Batis: near Mombasa Feb.
Batis mixta Forest Batis: Sokoke Forest Apr.
Batis molitor Chin-spot Batis: Nairobi Sep. Kibwezi Nov. Bungoma building 18 Dec.
Batis soror East Coast Batis: Sokoke Forest building 24 Mar.
Platysteira peltata Black-throated Wattle-eye: Malindi Jly. Near Thika Nov.
Erythrocercus holochlorus Little Yellow Flycatcher: Sokoke Forest Mar.
Terpsiphone viridis Paradise Flycatcher: Nairobi area Jan (2), Feb, Mar, Apr, late Apr/early May, Nov.
Motacilla aguimp African Pied Wagtail: Nairobi late Apr/early May. Kisumu Nov 1977. Kiboko Sep 1977. Shimoni Jun. Watamu Jan, Mar, Apr, May, Jun, Aug, Sep, Nov - 25 eggs laid by probably the same pair; this is the same site as used in 1977, see my report for that year (*Scopus* 1: 137).
Dryoscopus cubla Black-backed Puffback: Nairobi Mar, Sep (2).
Laniarius funebris Slate-coloured Boubou: Tsavo West NP building 5 Mar.
Rhodophoneus cruentus Rosy-patched Shrike: near Habaswain Dec. Tsavo West NP Mar.
Tchagra australis Brown-headed Tchagra: Nairobi Jan, Feb.
Lanius cabanisi Long-tailed Fiscal: Nairobi NP Nov 1977, Feb.
Lanius collaris Fiscal Shrike: Meru District Jun 1977. Nairobi Sep 1977, Apr, Jun. Nakuru Feb.
Prionops scopifrons Chestnut-fronted Helmet Shrike: Sokoke Forest Feb (2), Mar, Apr (2).
Creatophora cinerea Wattled Starling: Tsavo West NP building and displaying Mar.
Onycognathus morio Red-winged Starling: near Nairobi Dec 1977. Tsavo West NP breeding under eaves of Lodge Mar.
Onycognathus tenuirostris Slender-billed Chestnut-winged Starling: Mt Kenya, 4100 m Jun 1977.
Spreo hildebrandti Hildebrandt's Starling: West of Ngong Hills Jan and feeding young in hole 24 Apr.
Spreo superbus Superb Starling: West of Ngong Hills Jan. Kibwezi late Nov/early Dec. Matthews Range Apr.
Buphagus erythrorhynchus Red-billed Oxpecker: Mara GR fully-fledged young in hole 16 Aug and feeding young in hole 27 Nov. Kibwezi occupied hole 18 Nov.

Anthreptes collaris Collared Sunbird: Nairobi area May. Kenya coast May, Jun, Oct, Nov (3).
Anthreptes orientalis Violet-backed Sunbird: Kora, Tana River Jan, Mar.
Anthreptes pallidigaster Amani Sunbird: Sokoke Forest feeding fledged young 30 Jun 1977, Apr and building Mar.
Nectarinia bifasciata Little Purple-banded Sunbird: near Mombasa Jun, Dec.
Nectarinia erythroceria Red-chested Sunbird: Rwenzori NP Nov (3) and building Dec 1977.
Nectarinia hunteri Hunter's Sunbird: Galana Ranch Dec.
Nectarinia johnstoni Scarlet-tufted Malachite Sunbird: Mt Kenya 4100 m May 1977.
Nectarinia kilimensis Bronze Sunbird: Nairobi area Jan, Feb, Mar, Jun, Sep, Oct.
Nectarinia nectarinoides Smaller Black-bellied Sunbird: Kibwezi Nov.
Nectarinia preussi Northern Double Collared Sunbird: North Nandi Forest, building Dec.
Nectarinia senegalensis Scarlet-chested Sunbird: near Nairobi Mar.
Nectarinia venusta Variable Sunbird: Nyandarua Jun. Nairobi area Nov 1977, Apr, Sep, Nov.
Nectarinia veroxii Mouse-coloured Sunbird: Watamu Apr.
Nectarinia verticalis Green-headed Sunbird: North Nandi Forest building Nov.
Zosterops poliogastra Montane White-eye: Nairobi Apr, Oct, feeding young *Prodotiscus zambesiae* out of nest 24 Nov and 25 Nov - 13 Dec.
Zosterops senegalensis Yellow White-eye: Nairobi Nov.
Amblyospiza albifrons Grosbeak Weaver: Nairobi area Jun.
Euplectes afer Yellow-crowned Bishop: West of Ngong Hills building 24 Apr.
Euplectes ardens Red-naped Widowbird: Nairobi area Jan.
Ploceus baglafecht Baglafecht Weaver: Nairobi area Sep 1977, Apr, Nov-Dec.
Ploceus bojeri Golden Palm Weaver: near Mombasa May.
Ploceus cucullatus Black-headed Weaver: near Mombasa Apr. South Kenya coast Oct. Nairobi area Dec.
Ploceus jacksoni Golden-backed Weaver: near Kisumu eggs and young 22 Feb.
Ploceus luteolus Little Weaver: Baringo Sep.
Ploceus subaureus Golden Weaver: near Mombasa Jan.
Ploceus velatus Vitelline Masked Weaver: Lake Magadi Mar.
Quelea cardinalis Cardinal Quelea: West of Ngong Hills May (3+).
Dinemellia dinemelli White-headed Buffalo Weaver: Kora, Tana River Apr.
Plocepasser mahali White-browed Sparrow Weaver: Samburu/Buffalo Springs active nest 8-12 Apr, fledged young being fed 20 May. Active colonies at Lake Nakuru NP 2 Feb, Olekemonge Plain 16 Apr and Lake Baringo 19 Feb.
Pseudonigrita arnaudi Grey-headed Social Weaver: Olorgesaillie Mar, May, Jun.
Passer griseus Grey-headed Sparrow: Nairobi Jan, late Feb/early Mar.
Passer motitensis Rufous Sparrow: Nairobi area Nov - Dec (3). West of Ngong Hills active nests with eggs and young Apr. Ol'Kalou Jun.
Estrilda nonnula Black-crowned Waxbill: North Nandi Forest Nov.
Lagonosticta senegala Red-billed Firefinch: Nairobi area Jan, Apr, Sep, Dec.
Amadina fasciata Cut-throat: West of Ngong Hills apparently feeding young 24 Apr.
Lonchura bicolor Black and White Mannikin: Sokoke Forest Apr and occupied nest Jan. Kakamega Forest Feb.
Lonchura cucullata Bronze Mannikin: Malakisi Dec 1977. Nairobi Dec. Near Mombasa Apr. Malindi occupied nest 6 Apr.
Serinus citrinelloides African Citril: Nairobi Feb.
Serinus dorsostriatus White-bellied Canary: Athi River Dec.
Serinus striolatus Streaky Seed-eater: Mt Kenya 4200 m Jun 1977. Nairobi Nov 1977, Jun, Nov (2), Dec.

BIRD RINGING 1978

G.C. Backhurst

As I mentioned in the 1977 Bird Report (*Scopus* 1: 141), East African Ringing Reports are published in the Society's *Journal*, and the July 1977 to June 1978 MS will be given to the Editor soon.

Ringing continued much as in 1977; small amounts were done in Uganda, Tanzania, and in the southern Sudan while the bulk was carried out in Kenya. The Ngulia late autumn passage was particularly well covered (almost 8000 Palaearctics ringed, see *Scopus* 3: 19-25) while wader ringing on the Kenya coast and at Lake Magadi progressed satisfactorily.

Reports of recoveries continued to trickle in. There have now been 15 long distance recoveries of Palaearctic birds from Ngulia for instance, while the comparatively small amount of ringing in the southern Sudan has already resulted in the control of a Little Ringed Plover *Charadrius dubius* from the German Democratic Republic and a Grey Wagtail *Motacilla cinerea* from the Caucasus as well as a Ruff *Philomachus pugnax* to northern Algeria. In addition, a Common Sandpiper *Actitis hypoleucos* ringed in Natal, South Africa was killed (probably by a child) in the same part of the Sudan where our ringer works.

Ringing of mainly Ethiopian species continued in various forests, notably Sokoke, Kakamega and the Usambaras. Ringing was also employed in the continuing Cornell University White-fronted Bee-eater *Merops bullockoides* study in Lake Nakuru National Park, and by various post graduate projects supervised by the Department of Zoology of the University of Nairobi.

WASTED RECOVERIES

It seems appropriate to raise this subject here with the hope that readers may be able to help in the future. Sometimes a recovery is reported - often in the newspaper - and a ring number given. Frequently the report will be in more than one newspaper, and often the ring number quoted will vary from paper to paper. Efforts to actually obtain the ring itself are usually, but not always, unsuccessful. Anybody hearing of a recovery within East Africa is urged to try to obtain the ring from the finder and forward it to me (Box 24702 Nairobi) together with the date, place and manner of recovery. Should the finder be unwilling to part with the ring, every effort should be made to take down the *correct* number (and prefix letters, if any) and address. Unworn rings especially are often difficult to read but the number can be easily deciphered if the ring is 'painted' with a felt-tipped pen (or even mud) and then rubbed clean between the fingers, leaving pigment in the depressions which form the number. It usually helps to flatten the ring and this may have a bonus of revealing a terminal digit previously hidden by an incorrect overlap.

Over the last few years several recoveries of birds ringed in Europe have been 'lost' because the reported number had been incorrectly read. When one considers that perhaps 10 000 birds had had to be ringed to produce that one 'recovery', the need to obtain the correct ring number will be apparent.

EAST AFRICAN ORNITHOLOGICAL LITERATURE

Following the notice which appeared in the East African Bird Report 1977, the *Coded Bibliography of African Ornithology 1975-1978* is now available. East African subscribers may obtain copies direct from D.A. Turner, Box 48019, Nairobi at a cost of KShs.25/- (including postage within East Africa). All oth others are requested to write direct to the compiler, Dr C.H. Fry, Department of Zoology, University of Aberdeen, Tillydrone Avenue, Aberdeen AB9 2TN, U.K. Cost to non-members of the West African Ornithological Society is £1.60.

EAST AFRICAN ORNITHOLOGICAL STUDIES IN 1978

The following studies on birds, being undertaken in 1978, were made known to the Ornithological Sub-committee. The studies are listed in no particular order. The information was compiled by D.A. Turner.

Barbets and woodpeckers. Dr L.L. Short and J.F.M. Horne, American Museum of Natural History, New York. Studies of these two families, with emphasis on behaviour, vocalizations and geographic variation. Noteworth findings during 1978 resulted in an extension of the investigations to include honeyguides, who were stimulated to call and sing following playback of barbet vocalizations; as a result, much new information was obtained. The studies continue.

Co-operative breeding in White-fronted Bee-eaters. Dr S.T. Emlen, N.J. Demong and R.E. Hegner, Cornell University. This study, begun in 1977, continues to monitor relevant behaviour, ecology, and demography. Many important interactions among individual birds within the co-operative society are being studied in detail. Ringing, and the fitting of wing-flags, continues, permitting observations of recognizable individuals within Lake Nakuru NP.

Feeding ecology of Wood Hoopoes. Dr J.D. Ligon and S.H. Ligon, University of New Mexico. Preliminary results suggest that food availability in the form of lepidopteran larvae varies greatly from territory to territory, and may account in part for the interflock differences in reproductive success. In addition, studies on the roles of nest helpers of known background and territoriality were continued.

Comparative studies on the ecology and behaviour of kingfishers. Dr H.-U. Reyer, Max-Planck-Institut, Seewiesen, BRD. Dr Reyer continued the field studies from May to July 1978, this time focussing on the time/energy budgets and breeding success of Pied Kingfishers at Lake Victoria. The aim was to reach a better understanding of the adaptive significance of co-operative breeding in this species. In addition to ringing and observations, radio-tracking was successfully tested. At Seewiesen, with the help of D. Schmidl, the hand-reared kingfishers were studied with regard to communication within pairs and groups.

A comparison of the bird densities of tropical woods and forests. Prof H.Oelke, Göttingen University, BRD. Compared with coniferous stands in the temperate zone (North America, Europe, Asia), the studied Kakamega pine and *Cupressus* plantations have hardwood-like bird densities in those plots with an abundant indigenous vegetation, i.e. high bird densities. The Kakamega stands with poorly developed understorey and herbaceous layers are even poorer in their bird fauna than similar physiognomic stands in Scandinavia or Canada. This is mainly due to the lack in the highly specialized tropical bird species to adapt their choice of habitat selection to rather uniform forest stands.

Behaviour of the Grey-capped Social Weaver. Prof N.E. and Mrs E.C. Collias, Department of Biology, University of California, Los Angeles. Following extensive observations on colour marked individuals in Kenya during breeding and non-breeding periods, the following information was obtained: all birds and family groups slept in their nests the year round; nests were generally not defended against members of other family groups in the same colony, but birds from other colonies were usually attacked when they landed in the colony-tree. Birds forage on the ground in non-defended, communal feeding areas and are organized into dominance hierarchies. Aggression was rare or absent between members of a family, and less frequent between members

of the colony than between birds from different colonies. Immature birds from previous broods may help adults build nests and feed nestlings, while both members of a pair incubate the eggs. Comparisons were also made between the study-species and the related *Plocepasser mahali*, with regard to behaviour patterns.

Biology of honeyguides. Dr A.W. Diamond, Department of Zoology, University of Nairobi. Particular emphasis on feeding preferences, metabolism of wax digestion and development of guiding behaviour. The study continues.

Ecology and distribution of forest birds in Kenya. Dr A.W. Diamond, as above. The studies continue.

Territorial behaviour of Fiscal Shrikes on Chiromo campus. M. Munano, University of Nairobi, supervised by Dr A.W. Diamond.

Distribution of forest birds in Kenya. M. Muchoki, University of Nairobi, supervised by Dr A.W. Diamond.

Bird pests of crops in semi-arid areas of Kenya. N.N. Gichuki, University of Nairobi, jointly supervised by Dr A.W. Diamond and Prof D.E. Pomeroy. Joint project of the University and the Ministry of Agriculture.

Breeding biology and behaviour of Fish Eagles in Rwenzori NP. S.J.A. Sumba, University of Nairobi, supervised by Dr A.W. Diamond (continuing).

Breeding biology and behaviour of the Ostrich in Nairobi NP. L. Hurxthal, University of Nairobi, supervised by Dr A.W. Diamond (continuing).

Environmental factors affecting the distribution of Malachite and Pied Kingfishers in Lake Nakuru National Park. Elizabeth W.K. Migongo, University of Nairobi, supervised by Dr A.W. Diamond and Dr H.-U. Reyer (completed 1978).

Birds of semi-arid areas. Prof D.E. Pomeroy, Kenyatta University College. Composition of the bird faunas of selected sites with respect to vegetation and changing land-use. (continuing)

Ecology of the Black-headed Weaver near Kampala. P. Kasoma, Department of Zoology, Makerere University, Kampala, supervised by Prof D.E. Pomeroy.

The avifauna of the Arabuko-Sokoke Forest. P.L. & H.A. Britton, Mombasa. Emphasis on four endangered species, but all species of the forest are studied, using ringing and observation. Seasonality, including moult and breeding, is particularly important.

The status and distribution of coastal shorebirds. P.L. & H.A. Britton and Dr D.J. Pearson. In addition to regular counts of waders and larids, once-monthly wader ringing sessions take place to collect moult and weight data.

January range and abundance of Palaearctic waterfowl. B.S. Meadows, Nairobi. In co-operation with the International Waterfowl Research Bureau, the aim is to compile a series of winter distribution maps for East Africa which will attempt to define, in addition to providing information on numbers, the winter range and areas in which Palaearctic waterfowl are recorded. Preliminary results for the 1977/78 and 1978/79 seasons have been published.

Cambridge ecological expedition to Tanzania 1978. S.N. Stuart (leader), Cambridge; other ornithologists: Miss T.A. van der Willigen (Oxford) and H.R.C. Holland (Cambridge). A comparative study of the forest avifaunas of the East Usambaras, West Usambaras, Ngurus, Ukagurus and the Pugu Hills, with particular emphasis on rare endemic species. Report published.

Wetlands working group. C.E. Norris (Chairman), Nairobi. Census to list all wetlands favourable to Palaearctic migrants and Ethiopian birds. The study continues. A report for 1977/78 has been prepared.

The behaviour and ecology of nesting Ostriches in Tsavo NP. Dr B. Bertram, Cambridge. The study continues but no details are available.

The status, seasonality and distribution of Palaearctic migrants in southern and eastern Kenya. Dr D.J. Pearson, Nairobi. The study continues.

The Ngulia ringing scheme. G.C. Backhurst and Dr D.J. Pearson, Nairobi and P.L. & H.A. Britton, Mombasa. The study continues and results continue to be published.

E.A.N.H.S. Nest Record Scheme. Hazel A. Britton, Organizer, Mombasa. Collects and collates data supplied by observers throughout East Africa which have been entered on the Scheme's Nest Record Cards. In addition, museum and literature sources are incorporated into the Scheme's data bank. Breeding information extracted on request. (Report pp 126-132.)

E.A.N.H.S. Bird Ringing Scheme. G.C. Backhurst, Organizer, Nairobi. Administers ringing in Kenya, Tanzania, Uganda and the southern Sudan. Will supply rings (from 2.0 mm to 16.0 mm) to *bona fide* ringers. The scheme provides ringing schedules and retrap forms as well as servicing recoveries. Reports published in the *Journal of the East Africa Natural History Society & National Museum*.

In addition to the studies and schemes outlined above, the National Museums of Kenya, Division of Natural Sciences, Section of Ornithology (Head, G.R. Cunningham-van Someren) continues to assist both visiting and local ornithologists in numerous ways, including the production and distribution of a monthly *Newsletter*.

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Only *Scopus* 2, numbers 1 to 4 are indexed, references to birds in the East African Bird Report 1978 are not included as they are to be found in systematic/alphabetical order within the Report.

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'References'; the name(s) of the author(s) and date(s) of publication should be given in the text in the normal way. A list of the works concerned is given below.

Observers are asked to send in records of birds for inclusion in the annual East African bird report issue. Records which appear in the *National Museums of Kenya Department of Ornithology Newsletter* will be reviewed for the annual report but, in the case of rare birds or birds showing an extension of range, full details supporting the record should be submitted, whether the record is sent to the *Newsletter* or *Scopus* - this will save correspondence later on.

All contributions should be sent to Dr D.J. Pearson, Department of Biochemistry, University of Nairobi, Box 30197, Nairobi, Kenya.

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