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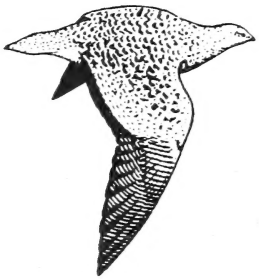
The **ORNITHOLOGICAL SOCIETY OF THE MIDDLE EAST** was formed in April 1978 and is a successor to the Ornithological Society of Turkey.

Aims:

1. To collect, collate and publish ornithological data on the birds of the Middle East.
2. To encourage an interest in and conservation of the birds of the Middle East.
3. To develop a mutually beneficial working relationship with all environmental and conservation bodies and natural history societies in and concerned with the Middle East.

Membership is open to all and spans over 40 countries.

Publications: Sandgrouse, an annual journal containing scientific papers on all aspects of ornithology of the Middle East. A bulletin is issued biannually to all members.



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FOREWORD

In the infancy and growth of any regional ornithological journal check-lists are likely to form the hard core of papers and in this respect *Sandgrouse* is no exception. Indeed, as the avifauna of the whole Middle East is still relatively unknown, country and area check-lists are likely to be an important feature of the journal for many years to come. As well as documenting the birds of the named area in an easily assimilable form one of their main functions is to act as a basis for future ornithological thinking; a springboard from which more detailed and often conservation-orientated work can launch itself.

Now that O.S.M.E. and *Sandgrouse* have become established, Council has felt it wise to form a research committee. One of its aims will be the identification of those areas of ornithological research which are of high priority for conservation and of those projects where action is needed. In undertaking this task the committee will doubtless be keeping a careful eye on published check-lists to help them mould their thoughts.

Some projects are likely to be long term, such as the proposed register of important ornithological sites in the Middle East. Others may dwell on species which are either endemic or for which the region has an international responsibility because of, say, a large wintering population. Certain habitats such as wetlands, primary forests and even deserts may be disappearing quickly and the documentation of changes is vital if sound conservation advice is to be given through,for example, the International Council for Bird Preservation, with whom O.S.M.E. is forging close links.

Once the priorities and project lists have become established (and, we hope, published in *Sandgrouse*) O.S.M.E. will be in a much stronger position to give guidance to observers who may wish to turn their visit, be it short or long, into one which will help write an important chapter in the study of birds in the Middle East.

Richard Porter
Chairman

EDITORIAL

It is a pleasure once more to be able to present a further volume of *Sandgrouse* containing as it does a wealth of new material, albeit but a speck in the ornithology of the area we aim to cover.

In this issue we attempt to put on the map that little known country, North Yemen and Lindon Cornwallis and Richard Porter comprehensively and ably summarise their own and other accumulated observations made in that country, including those of Roy Phillips who reports on his extensive journey made in 1979.

Derek Scott and Eric Carp present some vitally significant data on the wintering wildfowl of Iraq, highlighting the importance of that country's wetlands to wintering wildfowl of the Western Palearctic. We are grateful too to Ian Wallace for giving O.S.M.E. the opportunity of putting on record the very important work done in Jordan, particularly at Azraq, in the 1960s, which too long has lain hidden in various inaccessible places.

Raptors are again featured: Hadoram Shirihai casts light on the intriguing pattern of Autumn migration of the Steppe Eagle at Eilat and Michael Gallagher with M. R. Brown gives details of breeding Golden Eagles in Oman – the first such from the Arabian Peninsula since 1948. John Clarke gives encouraging news of the heavily persecuted Houbara from Jordan, sparking the hope that, following the hunting ban recently imposed in that country, there is a chance that this species may again prosper in the Jordanian deserts. Mike Jennings is to be congratulated on some slick detective work presenting us with yet another surprise concerning that majestic species, the Lappet-faced Vulture and finally in a similar vein, Michael Walters indicates the intriguing possibility of a 'new' species of ostrich that may once have thrived in the area.

I am happy to record my thanks to Mike Everett for help in re-drawing and clarifying the maps and once more to my wife, Joyce, and all members of the Editorial Committee for practical help and support in the preparation of this issue.

The flow of material for *Sandgrouse* has so far been adequate and of a high standard but the Editorial Committee is concerned that the momentum be maintained or increased, so in conclusion I appeal to all members once again for contributions to future issues.

Donald Parr

SPRING OBSERVATIONS ON THE BIRDS OF NORTH YEMEN

by

L. Cornwallis and R. F. Porter

INTRODUCTION

For a small country (approximately 500 km. N.S. by 400 km. E.W.) North Yemen has a very rich avifauna. Indeed, even though the birds are poorly studied, 275 species have been recorded compared with 413 in the vast, and better studied, area of Saudi Arabia (Jennings 1981). The reasons for this richness are several: First, due mainly to its high mountains and considerable rainfall, north Yemen, by Middle East standards, has a wide range of habitats each with characteristic birds. Second, the highlands of S.W. Arabia, of which North Yemen is an important component, are sufficiently isolated by deserts and seas for them to harbour 13 endemic species. Third, the country lies in the transition zone between three biogeographical regions (Ethiopian, Oriental and Palearctic) which has resulted in a mixture of species from all three. Thus, of the 119 species which breed or probably breed in North Yemen, about 47 (39 per cent) have affinities with the Ethiopian region; 18 (11 per cent) with both the Ethiopian and the Oriental regions; 24 (20 per cent) with the Palearctic region of which 14 (71 per cent) are confined to the arid parts; and 17 (14 per cent) have fairly widespread world distributions. Finally, 134 (49 per cent) species occur on migration and 93 (34 per cent) as winter visitors.

Knowledge about this very interesting avifauna is still scanty. Indeed, since Hartert (1917) and Sclater (1917) published their reports on the collection of about 400 skins made by Wyman Bury between Hodeidah and Sana'a in 1912-13, only a few brief reports based on short visits to the country have been made. The most important of these are listed below:—

1. Montfort (1965): August 1962-May 1963. Mainly worked at weekends in the Ta'izz area, but also made trips to the Tihama in September, January, February and April; and to Sana'a via Hodeidah in March and April.
2. Deetjen (1971): January-April 1970. Observations were made around Sana'a and along the route to Ta'izz – Al Mukha – Hodeidah – Sana'a.
3. Thiollay and Duhautois (1976): 24 December 1974-6 January 1975; 5-19 April 1975. During both these periods, ornithological journeys were made along the same route: Sana'a – Hodeidah – Hays – Al Mukha – Ta'izz – Sana'a – Sa'da – Ma'rib – Sana'a.
4. Ash (1976): 27 December 1975-2 January 1976. Observations made during a journey from Ta'izz – Sana'a – Hodeidah – Hays – Ta'izz.
5. Beaman and Madge (1980): 7-19 April 1980. Lists birds seen during an ornithological tour covering the following areas: Shibam, Kawkaban, Wadi Dahr, Sana'a, Dhamar, Yarim, Ibb, Ta'izz, Hays, Al Khawkhah, Hodeidah and Manakhah.
6. Phillips (1982): 2 September-29 November 1979. Extensive, full-time ornithological observations in both the highlands and on the Tihama.

The present paper describes the results of two ornithological expeditions to North Yemen in spring: The first by L. Cornwallis and R. F. Porter from 7-29 April 1979 covered the following ground: 8-10 Sana's area, including Wadi Dahr; 11th, Sana'a – Dhamar – Ibb – Ta'izz; 12th, Ta'izz – Hays – Al Khawkhah; 13-14 Al Khawkhah area; 15th, Al Khawkhah – Hays – Zabid – Hodeidah; 16th, Hodeidah – Az Zaydiyah – Al Mighlaf – experimental farm at Gerabi near Al Kadan; 17th Gerabi – Tihama foothills E. of Al Kadan – Bajil – Hodeidah; 18th, Hodeidah – Tihama foothills N.E. of Bajil – Hodeidah; 19th, Hodeidah – Wadi Rima – Bajil – Manakhah – Sana'a; 20-24, Sana'a area; 25th, Sana'a – Manakhah – Bajil; 26th, Bajil – Khamis Bani Sa'd – Al Mahwit; 27th, Al Mahwit – Khamis Bani Sa'd – Manakhah – Sana'a; 28th, Sana'a area.

The second expedition by S. Christensen and R. F. Porter from 5-19 March 1982 covered the following areas: 5-6, Sana'a area; 7-8, Kawkaban area; 9th, Kawkaban – Sana'a – Hodeidah; 10-12, Hodeidah – Bajil area; 13th, Bajil – Khamis Bani Sa'd; 14th, Sana'a – Dhamar – Ta'izz; 15th, Ta'izz area; 16th, Ta'izz – Ibb, then Ibb area; 17th, area 25 km. N. Ibb, then – Sana'a; 18th, Wadi Dahr.

Most of the places mentioned in the text are shown on the map *(Figure 1)*.

In these two expeditions, 207 species were seen, of which 26 were apparently new for North Yemen. Particular attention was paid to the status, distribution and habitats of the various species, and the results are assessed against the background of information available in the literature.

TOPOGRAPHY

The topography of North Yemen has roughly north-south configuration in which the coastal plain of the Red Sea (the Tihama) is separated from the low-lying desert interior of Arabia by a rugged highland massif, much of which is over 2,000 metres and which reaches 3,666 metres on Jabal an Nabi Shu'ayb, the highest mountain in Arabia *(Figure 2)*. This massif is a giant horst structure which consists of generally eastward-sloping high plains and plateaux bordered by fault-line escarpments which are precipitous on the seaward side, but more gentle on the landward flank. In the north of the country, the rocks are mainly ancient granites and schists of the Arabian shield, but south of latitude 16°N, these are overlain by limestones, sandstones and basalts. Lava-flows are found in the vicinity of Amran, Marib and Dhamar.

CLIMATE

In simple terms, the climate of North Yemen is a product of its topography and its position in relation to the global weather systems. The country lies in the desert belt dominated by the N.E. trade winds, but in North Yemen their dessicating effect is profoundly modified by the S.W. monsoon which brings considerable rainfall from July to September and, to a lesser extent, by cyclones from the Mediterranean which bring scanty winter rainfall and a minor peak in spring (March-May). Most of the rain is orographic and of western origin, and hence falls mainly on the steep western flanks of the highlands, leaving the low-lying Tihama with scanty, mainly winter rainfall and the central desert in a rain shadow with almost as little rain (see *Figure 2)*. Temperatures remain warm on the Tihama in winter, but are lower in the mountains where frost and snow occur regularly on the higher ground. In summer it is extremely hot on the Tihama, but cooler in the mountains due not only to the greater altitudes, but also to the effect of cloud-cover during the monsoon (see *Figure 2*).

HABITAT ZONES

Due mainly to the varied topography and climate, North Yemen has a wide range of habitats. These fall into seven main zones which are shown in *Figure 3* and are considered below:—

Sea-coast

The coast is low-lying, mainly sandy or gravelly and fringed by offshore coral reefs along much of its length. In places, such as between Salif and Al Luhayyah, there are lagoons and saltflats (sabkha) while mangroves are found particularly north of Al Luhayyah.

Tihama (*c.* 0-500 metres)

The Tihama, which means low-lying country, is the flat or gently undulating coastal plain of the Red Sea. It varies in width from about 30-60 km. and rises gently from sea level to about 500 metres where it meets the mountains. Much of the ground, particularly near the coast, is gravelly or sandy and over large areas is covered with small dunes, often anchored by low bushes (*Plate 1*). The climate is hot and arid (*Figure 2*) which means that settlement is sparse and largely confined to ports, fishing villages, often with date groves, and to wadi beds where water from the highlands makes agriculture possible. The main crops include sorghum, maize, cotton, forage crops and vegetables. The natural vegetation consists mainly of drought-resistant shrublets and grasses, often with scattered bushes and trees, particularly acacia, ziziphus and locally dum-palms (*Hyphaene*). The density of the vegetation varies from scanty in some of the sandy and gravelly areas near the coast, to quite dense swards of ground vegetation on some of the inland plains and in places, particularly in wadis, there are quite dense stands of acacia (*Plate 2*).

Tihama foothills (*c.* 500-1,000 metres)

The Tihama foothills rise steeply from the coastal plain (*Plate 3*) in a series of rugged, rocky ridges. These support only scanty vegetation as the zone is hot and arid, being too low to receive much orographic rainfall. However, the region is traversed by many wadis which bring abundant running water from the highlands and these hot, steamy valleys support exhuberant vegetation, including large wild fig, acacia, ziziphus and other trees as well as villages with associated crops, including sorghum, maize, indigo, papyas, dates and bananas (*Plate 4*).

Western ramparts (*c.* 1,000-2,500 metres)

Above the foothills, the western ramparts rise abruptly in a series of seaward-facing escarpments and jagged ranges separated by deep, steep-sided valleys and cut by precipitous gorges and wide wadis. The crest of these ramparts is mostly at around 2,500 metres, but in some sections such as on Jabal an Nabi Shu'ayb (3,666 metres), it is over 3,000 metres while in the south, near Ta'izz, the crest is lower and the mountains less steep. These mountains intercept orographic rainfall and this, combined with good soils, makes the zone very productive. Intensive cultivation is found wherever there is suitable ground, such as valley bottoms and particularly on countless stone-faced terraces which have been cut into the mountainsides, often over many hundreds of metres producing an incredible landscape (*Plate 5*). The main crops include sorghum (dhura), wheat, barley, maize, vegetables, fruit and qat, a tea-like shrub which is grown for the narcotic properties of its leaves. Coffee, once widely grown, is now restricted largely to damp slopes between about 1,200 and 1,600 metres in the Manakhah and Al Mahwit districts. The natural vegetation has been seriously degraded and the hillsides are predominantly bare and rocky (*Plate 6*). However, some were green with quite dense swards of herbaceous vegetation while others, particularly in drier places, supported scrub which included acacia, succulent cactus-like euphorbias, aloes and, in a few places, the candelabra-like tree euphorbia (*Euphorbia ammak*) (*Plate 7*). In addition, many of the valley-bottoms had better vegetation, often including trees.

Highland plateau (*c.* 2,000-2,750)

To the east, the western ramparts give way to broad plains and plateaux which are bordered by low ridges and ranges and incised by wadis (*Plate 8*). The zone is on average about 100 km. wide and mostly between about 2,000 and 2,750 metres, but the plains in the southern district of Ta'izz are lower, around 1,400 metres. In places there are isolated, mostly volcanic, mountain blocks which rise to over 3,000 metres. Rainfall over the plateau is sufficient to support rain-fed agriculture and much of the flatter ground is dry farmed, the main crops being sorghum (dhura), wheat, barley, lucerne, pulses, vegetables and fruit. In wadi-bottoms, where more water is available, richer irrigated agriculture is practised, as in Wadi Dahr near Sana'a where there are fine and extensive orchards. Due largely to deforestation and over-grazing, the natural vegetation is sadly degraded and consists mainly of poor steppe vegetation and scattered trees and bushes, mostly acacia. However, in places such as wadi-bottoms and on some hillsides there are patches of light acacia woodland.

Eastern flanks (*c.* 1,500-2,000 metres)

The plateau falls away on its eastern border also, but the desert-facing escarpments and ranges are, on the whole, less abrupt than the western ramparts. The zone is traversed in a number of places by wadis which descend into the arid interior where they disappear. Being in the rain-shadow of the highlands to the west, the eastern flanks receive less and less rain as they merge into the interior deserts with the result that cultivation and natural vegetation become progressively less and more concentrated in the wadis.

Interior deserts (*c.* 1,000-1,500 metres)

From the eastern flanks of the highlands, the ground slopes gently towards the sands in the extreme east of the country. Rainfall is sporadic, human settlement is confined to a few scattered oases and the scanty natural vegetation is concentrated in wadis and depressions.

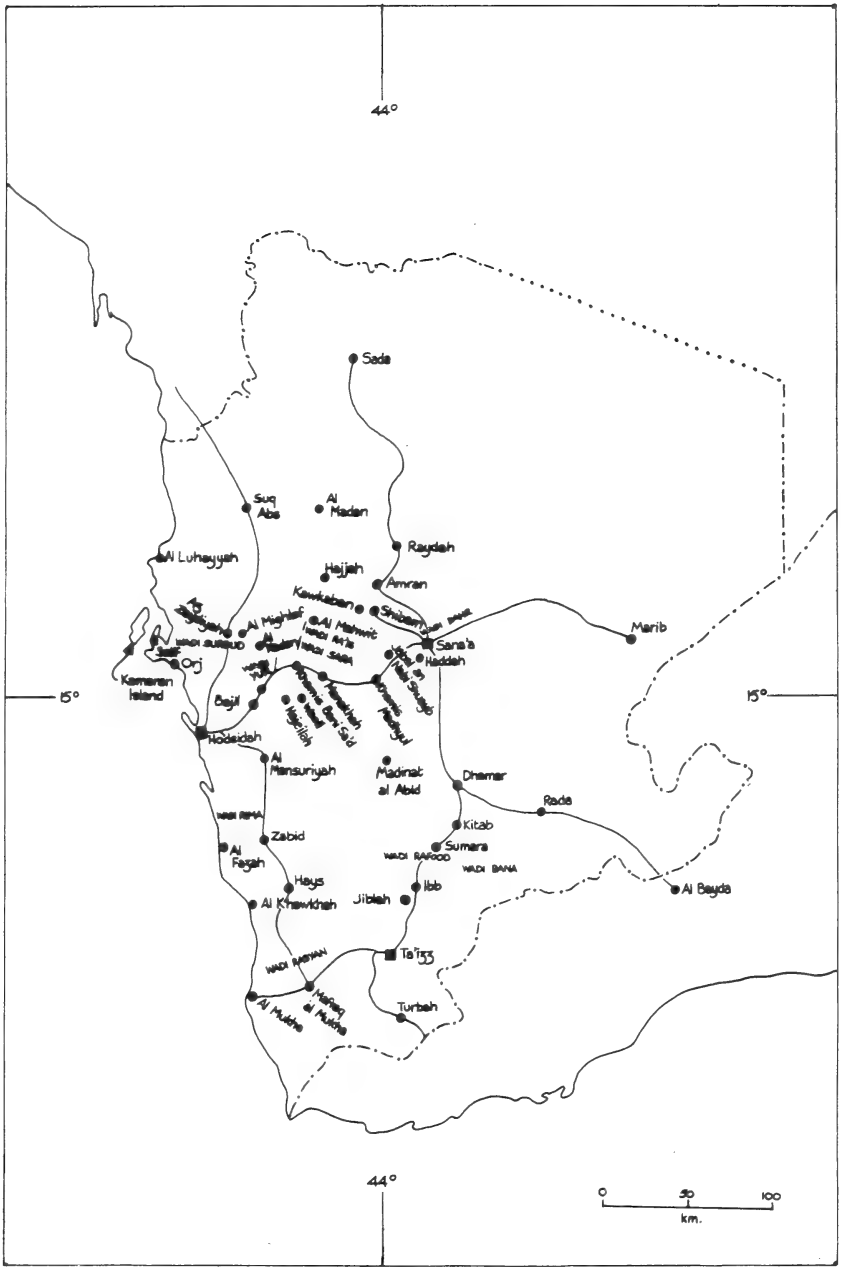


Figure 1. North Yemen showing main localities mentioned in the papers by Cornwallis and Porter (page 1) and Phillips (page 37). Scale 1:4,000,000.

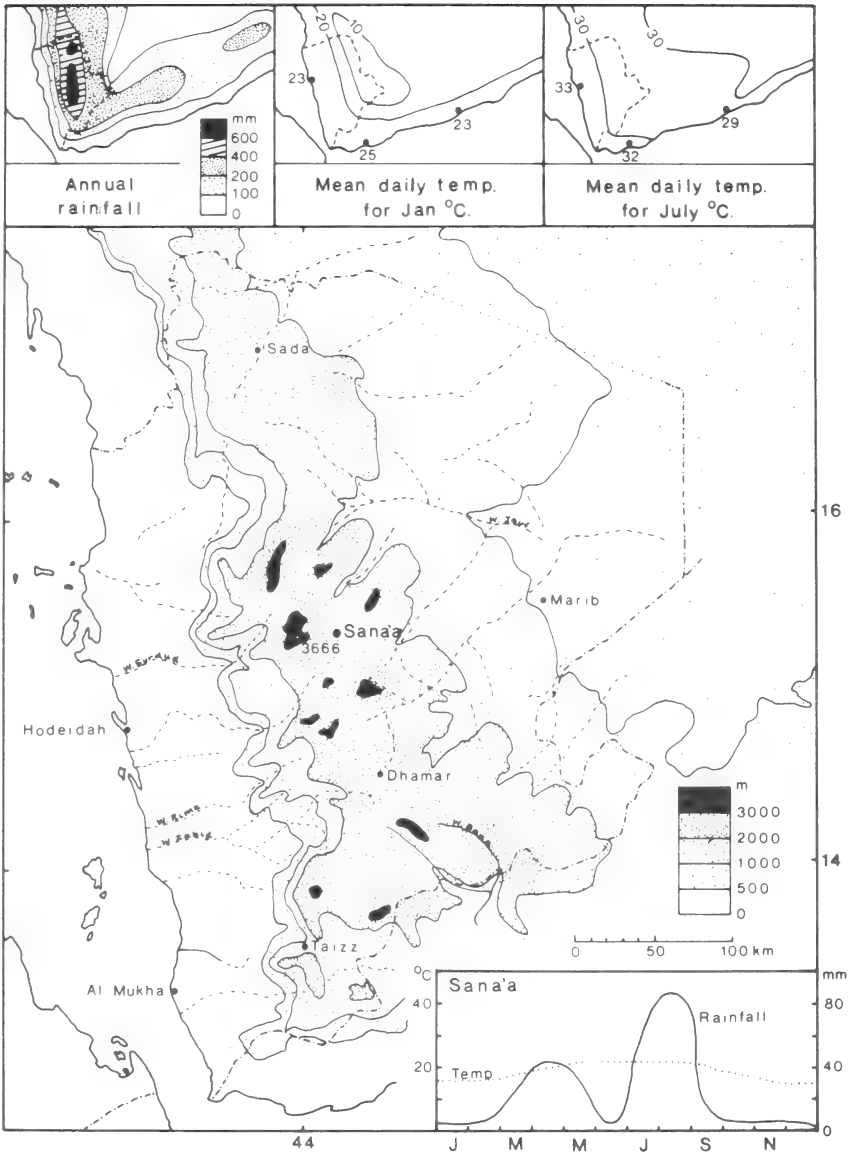


Figure 2. Topography and climate of North Yemen.
(Climatic data redrawn from: Beaumont et al. 1976, Fisher 1978 and UNESCO-FAO 1963).

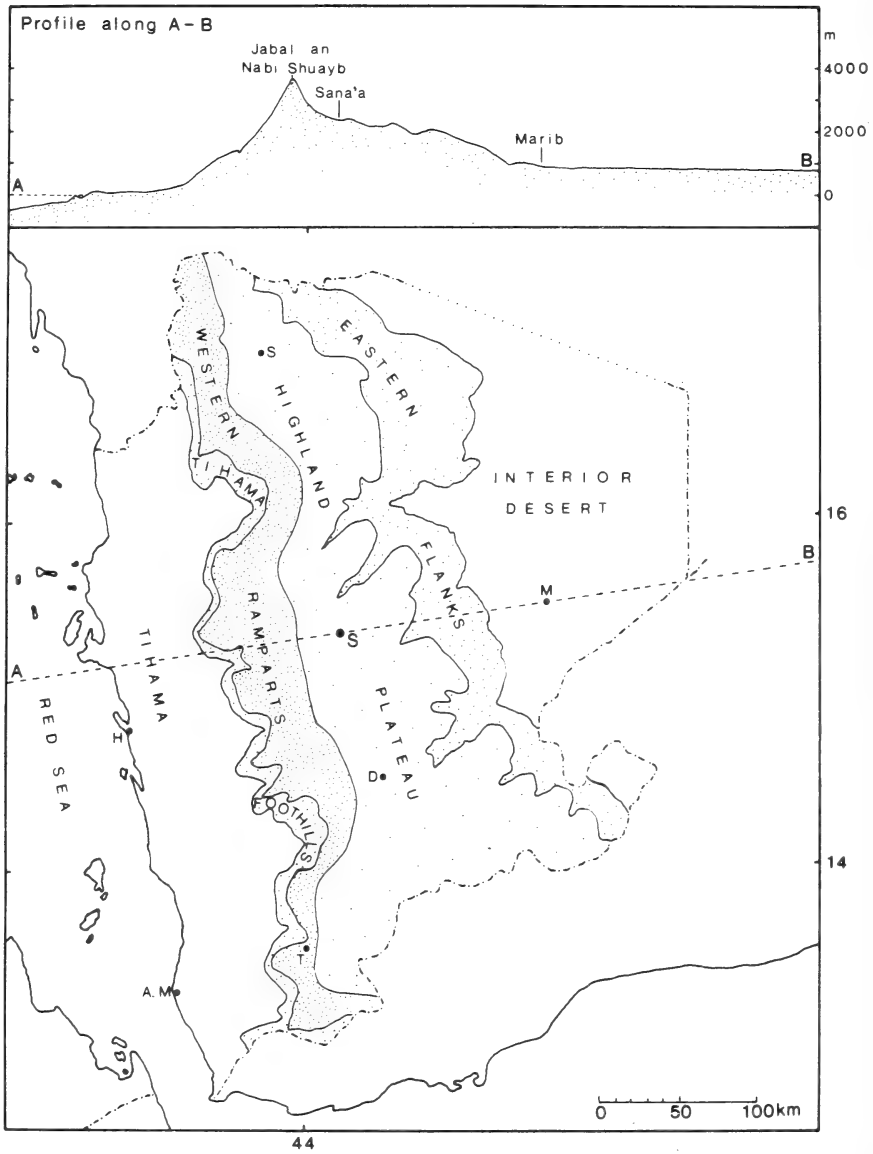


Figure 3. Main habitat zones of North Yemen.

Accounts are given of 207 species seen by us during April 1979 and March 1982. A further 68 species which have been recorded in North Yemen, but not observed by us, are listed at the end.

Puffinus lherminieri persicus **Persian Shearwater**

Up to 100 small shearwaters, about 2 km. offshore at Al Khawkhah on 14-15 April 1979, were almost certainly this form. Similar numbers were positively identified also off Al Khawkhah in April 1980 (Beaman & Madge 1980). Otherwise, apparently no records from North Yemen, although the species is known from the southern Red Sea (Tuck & Heinzel 1978).

Sula leucogaster **Brown Booby**

Up to three were recorded off Hodeidah on 10-11 March 1982 and up to 30 off Al Khawkhah 14-16 April 1979. Both adults and immatures were observed. Although first recorded off North Yemen only in April 1975 (Thiollay & Duhautois 1976) it is apparently not uncommon in Red Sea (Meinertzhagen 1954).

Pelecanus onocrotalus **White Pelican**

One flew north high over Bajil (1100 hrs.) on 12 March 1980. Apparently no other documented records, but Meinertzhagen (1954) reported it to be fairly common on both sides of Red Sea in winter.

Pelecanus rufescens **Pink-backed Pelican**

Up to 40 were recorded offshore at Hodeidah on 10-11 March 1982; and up to 90 were seen 30 km. to the north on 16 April 1979. Single birds were seen at Hodeidah and Al Khawkhah in mid April 1979. There is no evidence to suggest where these birds are breeding. Occurs regularly on Red Sea coast, but detailed status uncertain (eg Meinertzhagen 1954).

Butorides striatus **Green-backed Heron**

Two observed on the palm fringed coast at Al Khawkhah on 12 April 1979, one of which was apparently melanistic: slate grey with grey-brown wings, dark bill and yellowish-green legs and iris. Known to occur regularly on Red Sea coast (Meinertzhagen 1954) though, apparently, not previously documented for North Yemen.

Ardeola ralloides **Squacco Heron**

Single birds were recorded at Khamis Bani Sa'd in March 1982 and near Al Kadan in April 1979, both in the Tihama foothills. Known to occur regularly on passage in the Red Sea area (eg Meinertzhagen 1954).

Bulbulcus ibis **Cattle Egret**

Common and widespread throughout the Tihama in March 1982 and April 1979, with roosting flocks of up to 300 recorded. Less common in the foothills, but present near Khamis Bani Sa'd and on the outskirts of Ta'izz (1,500 m). Birds in breeding plumage seen in April. First recorded by Sclater (1917) and known to occur throughout the year in coastal areas of North Yemen (Meinertzhagen 1954).

Egretta gularis **Western Reef Heron**

A total of 17 (60 per cent white phase) was recorded on the coast at Hodeidah and Al Khawkhah in March 1982 and April 1979. Inland, one was seen in Wadi Rasyan in April (white phase) and two singles in Wadi Surdud near Khamis Bani Sa'd in March (dark phase). Resident on Red Sea coast (Meinertzhagen 1954) and recent observations, including our own, show that it also occurs in wadis inland.

Egretta garzetta **Little Egret**

A total of 29 recorded in wadis in the foothills up to about 600 m in March 1982 and April 1979, the largest concentration being 21 in Wadi Surdud near Khamis Bani Sa'd on 9 March 1982. First recorded in January 1970 by Deetjen (1971) and is probably a winter visitor and migrant in small numbers.

Ardea cinerea **Grey Heron**

On the coast, two were recorded at Hodeidah in March 1982 and one at Al Khawkhah in April 1979. Inland: recorded in ones and twos in the Tihama foothills near Al Kadan, in Wadi Sara and in Wadi Surdud (below 900 metres). No evidence of breeding. Not recorded until 1962/1963 (Montfort 1965), but its status in adjacent areas and recent observations within the country suggest that small numbers occur in coastal areas in winter and during migration.

Ardea goliath **Goliath Heron**

One recorded on the coast at Hodeidah on 16 April 1979. Not uncommon on the coast and probably breeds (eg Meinertzhagen 1954).

Scopus umbretta **Hammerkop**

A total of 39 was recorded in March 1982 and April 1979 in wadis in the Tihama foothills between 500-1,000 metres. The most observed in one place was 15 at Wadi Rasyan on 12 April 1979. Most birds appeared to be resident but the only nests found were three in large fig trees in Wadi Sara (*c.* 800 metres). Apparently fairly common in wet wadis mainly at lower altitudes (eg Meinertzhagen 1954), but observed up to 3,000 metres by Phillips (1982).

Ciconia abdimii **Abdim's Stork**

None recorded in March 1982. Five occupied nests on houses in Tihama village of Al Mighlaf on 16 April 1979 where the villagers said the birds had returned to breed about one month previously. A further 17 recorded in nearby areas of Al Kadan, Gerabi and Dayr Al Hujariyah. Further south, one in Wadi Rima on 19 April. Apparently breeds in scattered colonies on Tihama, also at Ta'izz where breeding first recorded by Montfort (1965). Probably a summer visitor.

Ciconia ciconia **White Stork**

A flock of about 200 were seen around a rubbish dump 12 km. west of Ta'izz on 15 March 1982. First recorded by Montfort (1965) but no details given. Apparently an uncommon migrant, but a few may winter.

Platalea leucorodia **Spoonbill**

Recorded only on the coast: two at Hodeidah 10-11 March 1982, 14 there on 16 April 1979 and 11 at Al Khawkhah on 14 April. First recorded by Montfort (1965) and since then seen in small numbers in winter and on migration (eg Ash 1976; Beaman & Madge 1980).

Phoenicopterus ruber **Greater Flamingo**

Four adults and one immature were observed on the coast at Al Khawkhah on 14 April 1979. First recorded by Montfort (1965) and since then seen in small numbers in winter and on migration.

Anas penelope **Wigeon**

Seen only at Al Khawkhah on the coast where one female was seen on 14 April and three males flew north on 15 April 1979. These are apparently the first documented records from North Yemen.

Milvus migrans **Black Kite**

Common and widespread often around towns. Higher numbers were seen in March 1982 than in April 1979, suggesting this to be the main migration period and, indeed, a number observed closely were the dark-billed migratory race *M.m. migrans*. Counts of probable migrants included: 25 (Sana'a, 6 March), 120 (Hodeidah, 11 March) and 100 (West of Ta'izz, 15 March). The resident yellow-billed race *M.m. aegyptius* was seen in small numbers especially in coastal localities with palm-fringed beaches. Thus, 26 were seen at Al Khawkhah and 45 near Orj. Previous literature shows this to be a common breeding resident, passage migrant and winter visitor.

Gypaetus barbatus **Lammergeyer**

Twelve recorded either singly or in pairs in March 1982 and April 1979. All except two were in the high mountain block west of Sana'a at Wadi Dahr, Khamis Madhyul, and Kawkaban (2,500-3,200

metres). The remaining two were at lower altitudes, one near Al Mahwit (2,000 metres) and the other in Wadi Sara (850 metres). All were adults except for an immature near Khamis Madhyul in April 1979. Apparently thinly distributed in the highlands, being recorded by most observers.

Neophron percnopterus **Egyptian Vulture**

A total of 12 was recorded in March 1982 and April 1979 of which 10 were adults and two immatures. All were in the Tihama and western foothills below 800 metres, except for one west of Ta'izz (1,500 metres). Impossible to determine whether migrants or residents, but four passing north over Bajil on 12 March 1982 were probably the former. Observed throughout the country in small numbers by most previous observers; evidence of Thiollay and Duhautois (1976) suggests it is resident in higher areas, but also a migrant/winter visitor.

Gyps fulvus **Griffon Vulture**

The commonest vulture. A total of 222 was recorded in March 1982 and April 1979 mainly in mountainous regions from 850-3,200 metres; but one was seen on the Tihama at Wadi Rima on 19 April 1979. Highest counts were: 35 (near Mahwit, April), 20 (south edge of Sana's, March), 22 (Ibb, March) and 10 (Kawkaban, March). In addition, two colonies comprising 20 nests were found on Jabal Mahwit (at 2,000 metres) on 24 April 1979; at least two nests had well-grown young. Previous observations suggest this species is widespread in the highlands.

Circaetus gallicus **Short-toed Eagle**

One seen near Khamis Bani Sa'd on 13 March and one near Ta'izz on 15 March 1982, may have been wintering or on passage. First recorded, without details, by Montfort (1965). Since then, small numbers reported wintering by Thiollay and Duhautois (1976) and on passage by Phillips (1982).

Terathopius ecaudatus **Bateleur**

Recorded only from the Tihama and adjacent foothills below 300 metres: five near Al Kadan and one near Gerabi on 17 April 1979; one near Bajil on 12 March and a pair in foothills near there on 13 March 1982. Recorded near Ta'izz by Meinertzhagen (1954) and subsequently at several widely separated localities from 0-2,000 metres. Probably a rare resident.

Circus aeruginosus **Marsh Harrier**

An immature/female flew north at Bajil on 12 March 1982 and an immature/female was seen near Al Kadan on 17 April 1979. Reported in small numbers by Thiollay and Duhautois (1976), Ash (1976) and Phillips (1982). It is probably an uncommon winter visitor and passage migrant.

Melierax metabates **Dark Chanting Goshawk**

A total of 98 sightings in March 1982 and April 1979 of which 92 were on the Tihama, especially in the Hodeidah-Bajil area where it appeared to prefer medium dense acacia scrub with open areas. Off the Tihama, four were recorded near Ta'izz (1,000-1,400 metres) in March and April, and two north of Ibb (1,700 metres) in March. Resident (Meinertzhagen 1954) and our observations and those of other workers show it to be a bird of the Tihama plain and other lower altitudes.

Micronisus gabar **Gabar Goshawk**

An immature was seen on the Tihama at Wadi Zabid on 15 April 1979. Apparently no previous records, though its presence was strongly suspected by Meinertzhagen (1954).

Accipiter nisus **Sparrowhawk**

One was seen near Al Kadan on the Tihama on 17 April 1979. Wintering suggested by Meinertzhagen (1954) and Montfort (1965); also recorded in April (Beaman & Madge 1980) and on autumn passage by Phillips (1982).

Accipiter badius **Shikra**

A male and female at Ibb (1,700 metres) on 16 March 1982. The only other records from North Yemen were also from the highlands: Two specimens of the East African race, *A.b. sphenurus,* were taken in December 1912 and April 1913 (Sclater 1917); and recently single birds were reported in winter by Thiollay and Duhautois (1976) and Ash (1976). Probably a rare winter visitor from Africa.

Accipiter sp

Eight unidentified Accipiters were seen during March 1982 and April 1979. Six, all in the highlands, were *A. nisus/brevipes/badius.* The other two (one at Kawkaban and one at Hodeidah in March 82) defied identification even to this degree.

Buteo buteo **Buzzard**

Nine were recorded in March 1982 in the Ta'izz-Ibb area (1,400-1,700 metres), of which one seen closely at Ibb on 16 March was from the Eastern race, *B.b. vulpinus.* In April 1979 three were seen, two at Wadi Dahr (2,400 metres) on 10th, one of which was *vulpinus* and one flew north over the Tihama section of Wadi Rima on 19th. Buzzards, mainly *B.b. vulpinus,* have been reported in North Yemen on passage in autumn (Phillips 1982), in winter (Thiollay & Duhautois 1976; Ash 1976) and in spring (Beaman & Madge 1980).

Buteo rufinus **Long-legged Buzzard**

Seventeen, including two dark morphs, were recorded during March 1982 and April 1979, of which three were on the Tihama and 14 in the highlands up to 3,200 metres. The status of this species in North Yemen is uncertain. It has been reported in small numbers by several authors (eg Meinertzhagen 1954 and Phillips 1982) in all months between September and April. It therefore winters, some may occur on passage, but so far there is no evidence of breeding, although in adjacent areas of Saudi Arabia it is reported as an uncommon breeding resident by Jennings (1981).

Buteo sp

Two recorded in March 1982 and two in April 1979 were too distant for specific identification.

Aquila clanga **Spotted Eagle**

One flew over Bajil (10.00 hrs.) on 12 March 1982, and ten (2nd or 3rd year birds) were seen 12 km. west of Ta'izz on 15 March 1982. The first record of this, apparently, very scarce migrant/winter visitor was in December 1974 (Thiollay & Duhautois, 1976).

Aquila rapax **Tawny Eagle**

Thirteen were recorded during March 1982 and April 1979, all except two of which were in the western foothills up to 850 metres or in neighbouring areas of the Tihama. These included a pair displaying near Al Kadan on 17 April 1979 and five (plus three probables) in the Bajil area on 12 March 1982. In addition, two were seen west of Ta'izz on 15 March 1982 at 1,450 metres. These birds appeared to be resident. Previous records suggest that this is a rare resident breeding species (Montfort 1965; Deetjen 1971; Thiollay & Duhautois 1976).

Aquila nipalensis **Steppe Eagle***

One at Bajil on the Tihama on 12 March and 150 on a rubbish tip about 12 km. west of Ta'izz on 15 March 1982. About 80 per cent were 2nd or 3rd year birds and no full adults were seen. It remains open to speculation whether these were passage migrants or birds that had wintered in Yemen. The species is known to be a common migrant and winter visitor in adjacent areas of Arabia (Meinertzhagen 1954; Jennings 1981), but in North Yemen it has been seen only in large numbers on autumn passage (Phillips 1982), relatively small numbers being reported in winter and spring.

Aquila heliaca **Imperial Eagle**

Twelve 2nd or 3rd year birds around a rubbish tip about 12 km. west of Ta'izz on 15 March, and two 2nd year birds at Ibb on 16 March 1982. In addition to our records, small numbers reported between September and April by Beaman and Madge (1980) and Phillips (1982). It is, therefore, apparently an uncommon winter visitor.

*Steppe Eagle is the name given to the migratory *nipalensis* group of sub-species of *Aquila rapax* (Cramp & Simmons 1980). In this, and other papers of this volume, it is treated as specifically distinct and classified as *Aquila nipalensis.* – Ed.

Aquila chrysaetos **Golden Eagle**

A pair was displaying over hills at western edge of Sana'a on 5 March 1982. Previously reported only by Thiollay and Duhautois (1976) who found it in six localities in December and one locality in April when display was noted.

Aquila verreauxii **Verreaux's Eagle**

Two pairs were seen in central Tihama foothills (at *c.* 500 metres) on 13 March 1982 one of which had a nest with a chick estimated to be three weeks old which was fed three times by the female during a two-hour period in the morning. Prior to the above observations reported only by Thiollay and Duhautois (1976), who recorded breeding in three highland localities in December 1974 and April 1975, and by Phillips (1982) who reported two birds in highland localities in September 1979.

Hieraaetus pennatus **Booted Eagle**

Seven light phase and three dark phase birds recorded, of which nine were in March 1982 and one in April 1979, suggesting March as the main month for migration. Recorded in all regions from 0-2,400 metres with a maximum of five that flew north over Bajil on 12 March 1982. First recorded in December 1948 by Meinertzhagen (1954) since when it has been reported in small numbers in autumn, winter and spring.

Hieraaetus fasciatus **Bonelli's Eagle**

Pairs and single adults recorded in five localities in the Mahwit-Kawkaban mountain block between 700 and 3,200 metres; in each case breeding was suspected and at two sites, immatures were also seen. Apart from one shot by Bury (Sclater 1917), the only other records are by Thiollay and Duhautois (1976) who suspected breeding in seven highland areas and Phillips (1982) who reported small numbers in several highland localities in autumn.

Pandion haliaetus **Osprey**

All records coastal, and probably referred to breeding birds: Two at Al Khawkhah (April), one at Orj (April) and one or two at Hodeidah (March). Common on the Red Sea coast where it breeds (eg Meinertzhagen 1954) and probably also occurs on passage and as a winter visitor.

Falco naumanni **Lesser Kestrel**

Five adult males recorded as follows: Bajil on 12 March 1982 and 26 April 1979, Wadi Dahr (2,400 metres) on 10 April and two near Mahwit (2,400 metres) on 27 April 1979. Recorded by Montfort (1965) and subsequent observers on spring and autumn passage, but due to difficulty of separation from *F. tinnunculus* true status remains uncertain.

Falco tinnunculus **Kestrel**

Fairly common and widespread (total of 48 recorded) in March 1982 and April 1979 from 0-3,200 metres. Display was noted on 6 and 19 March, and a pair was visiting a nest hole on 24 April near Sana'a. Resident at all altitudes and a winter visitor and passage migrant in large numbers (Meinertzhagen 1954; Thiollay & Duhautois 1976).

Falco naumanni/tinnunculus **Lesser Kestrel/Kestrel**

A total of 29 recorded in April 1979 from 0-2,400 metres.

Falco biarmicus **Lanner**

Five recorded in March 1982: single juveniles in moult at Sana'a on 6 and 14 March, and three at Bajil on the Tihama on 12 March of which one adult and one juvenile were of the local race *F.b. abyssinicus* and one juvenile of the Levant race *F.b. tanypterus.* The race *abyssinicus* has been reported from Aden and *tanypterus* from north east Africa as far north as Palestine and in Saudi Arabia (Meinertzhagen 1954; Cramp & Simmons 1980). First reported from North Yemen by Thiollay and Duhautois (1976). Since then, apart from our records, reported by Beaman and Madge (1980) in April and as common and widespread in autumn by Phillips (1982).

Falco cherrug **Saker**

A juvenile was seen near Bajil on 12 March 1982. The only previous documented record was of a bird also on the Tihama in December (Thiollay & Duhautois 1976).

Falco peregrinus **Peregrine**

One west of Sana'a on 24 April 1979. The first record of this very rare visitor to North Yemen was reported without substantiation by Montfort (1965) and may have even referred to *F. pelegrinoides* which at that time was regarded by some to be conspecific with *F. peregrinus*. Since then, recorded at three localities in October by Phillips (1982) and at two localities in April by Beaman and Madge (1980).

Falco pelegrinoides **Barbary Falcon**

Recorded in the following locations: a pair over Sana'a (2,400 metres) in April 1979; a pair at Kawkaban (3,200 metres) in March 1982; one male in Wadi Dahr (2,400 metres) in March 1982; one 25 km. north of Sana'a in April 1979; two at Bajil in March 1982, and one at Hodeidah in March 1982. Known to be resident in south west Arabia (Meinerzhagen 1954). Our observations, and those of others (eg Thiollay & Duhautois 1976), suggest that the species is widespread in very small numbers.

Alectoris philbyi **Philby's Rock Partridge**

Recorded in the Sana's region (2,300-2,500 metres) in April 1979 where 28 were seen on broken stony ground with scattered acacias on 21st, and 26 were seen on steep rocky slopes on the southern flank of Jabal an Nabi Shu'ayb on 24th. Strangely, no previous documented records from North Yemen, although Meinertzhagen (1954) suggested that it must occur. Recently reported from several highland localities by Beaman and Madge (1980) and Phillips (1982).

Alectoris melanocephala **Arabian Red-legged Partridge**

At least four in coffee groves on steep slopes at about 1,700 metres on Jabal Al Mahwit on 27 April 1979. Known to be resident in the Yemen highlands, but rarely above 1,300 metres (Meinertzhagen 1954).

Coturnix coturnix **Quail**

Recorded only on the Tihama: one on 12 March 1982 and four in April 1979 in the Bajil-Hodeidah-Wadi Rima area. Probably a migrant and winter visitor, but may also breed (see Meinertzhagen 1954).

Ardeotis arabs **Great Arabian Bustard**

At least seven were found in a loose party on the Tihama in April 1979. They were in an area of well-vegetated, sandy steppe with patches of cultivation which included plots of maize, sorghum and some cotton. Many small lizards, grasshoppers and rodent holes were in the area. For security reasons, more precise information has not been disclosed. First noted as a breeding species on the Tihama by Meinertzhagen (1954), since then it has only been reported by Montfort (1965) who, in 1962-1963, found that it was still locally common on the Tihama where, despite persecution, parties of 5-10 were not unusual.

Haematopus ostralegus **Oystercatcher**

Singles on the coast at Hodeidah on 10-11 March 1982 and one near there on 16 April 1979. Known to be quite common in winter on Arabian coasts (Meinertzhagen 1954), but not specifically recorded in North Yemen until 1975-1976 when it was reported by Ash (1976). However since then, several were seen in April by Beaman and Madge (1980) and Phillips (1982) found it to be widespread on the coast in autumn.

Dromas ardeola **Crab Plover**

An adult was seen on the coast at Hodeidah on 16 April 1979. Although given as a common resident of the southern Red Sea by Jennings (1981), our record appears to be the first for North Yemen. Since then, however, flocks of 80-100 have been reported by Beaman and Madge (1980) and Phillips (1982).

Cursorius cursor **Cream-coloured Courser**

Two were seen at Sana's airport (2,400 metres) on 5 March 1982. Although reported to be widely distributed throughout the desert regions of Arabia (Meinertzhagen 1954), the only other records from North Yemen appear to be a listing by Montfort (1965) and a report of a party of five in the highlands west of Dhamar by Phillips (1982).

Charadrius hiaticula **Ringed Plover**

Present on the coast at Hodeidah (25 in March 1982 and three in April 1979) and at Al Khawkhah (two in April 1979). Apparently a winter visitor and passage migrant in small numbers on the coast.

Charadrius alexandrinus **Kentish Plover**

Up to 40 at Hodeidah (on the coast) on 10-11 March 1982 and one at Al Khawkhah on 14 April 1979. A common breeding resident (eg Meinertzhagen 1954), but probably also occurs on passage and some may winter.

Charadrius mongolus **Lesser Sand Plover**

Two were seen at Hodeidah on 10-11 March 1982. Although known to winter and to occur on passage in the Red Sea (Meinertzhagen 1954), the only previous records from North Yemen are those of Phillips (1982) who found the species very common on the coast in October and November 1979.

Charadrius leschenaultii **Greater Sand Plover**

Up to four at Hodeidah on 10-11 March 1982 and one at Al Khawkhah on 14 April 1979. In addition, single *leschenaultii/mongolus* were seen at Hodeidah in March 1982 and Al Khawkhah in April 1979. Occurs throughout the year on the coast, but is mainly an abundant winter visitor and passage migrant (Meinertzhagen 1954).

Pluvialis squatarola **Grey Plover**

Three were seen at Hodeidah on 10-11 March 1982, one north of there on 16 April 1979; and three at Al Khawkhah on 14 April 1979. Apparently a common passage migrant and winter visitor on the coast (eg Meinertzhagen 1954; Ash 1976; Phillips 1982).

Hoplopterus spinosus **Spur-winged Plover**

Recorded in sandy areas in Hodeidah region in both March 1982 and April 1979. Up to 10 seen together and behaviour indicated breeding. First recorded by Deetjen (1971) who found a probable breeding pair on the Tihama near Zabid in March. Since then only recorded by ourselves and Beaman and Madge (1980) at two widely separated areas, both on the Tihama.

Calidris alba **Sanderling**

Up to 100 on the coast at Hodeidah on 10-11 March 1982; 20 near there on 16 April and 19 at Al Khawkhah on 14 April 1979. Apparently a common passage migrant and winter visitor on the coast where it occurs from early September to April (eg Meinertzhagen 1954).

Calidris minuta **Little Stint**

Up to seven at Hodeidah on 10-11 March 1982 and two there on 16 April 1979; 20 at Al Khawkhah on 14 April 1979. A common passage migrant and winter visitor to Arabia (Meinertzhagen 1954). Subsequent observations, including ours, confirm this status for North Yemen.

Calidris temminckii **Temminck's Stint**

One at Hodeidah on 11 March 1982. It occurs in small numbers in winter and on migration in Saudi Arabia (Jennings 1981), but previously reported in North Yemen only by Phillips (1982) who saw several birds on the coast and one in the highlands.

Calidris ferruginea **Curlew Sandpiper**

Four were seen at Hodeidah on 10-11 March 1982, two there on 16 April 1979 and two

at Al Khawkhah on 16 April 1979. First recorded by Montfort (1965), but no details given. Noted as common at Hodeidah in December (Ash 1976) and records by Beaman and Madge (1980) and Phillips (1982) suggest that it occurs on passage in small to moderate numbers on the coast.

Calidris alpina **Dunlin**

Five were seen at Hodeidah on 10-11 March and two at Al Khawkhah on 14 April 1979. Although described by Meinertzhagen (1954) as one of the commonest shore birds in the Red Sea from September to March, it has so far been reported only in small numbers from the North Yemen coast.

Limosa lapponica **Bar-tailed Godwit**

Eleven seen at Hodeidah on 10-11 March 1982, one of which flew high towards the north. In April 1979, two were seen at Al Khawkhah on 14th and two at Hodeidah on 16th. Apparently a common migrant and winter visitor on the coast (eg Meinertzhagen 1954; Ash 1976 and Phillips 1982).

Numenius phaeopus **Whimbrel**

Singles seen at Al Khawkhah on 12-14 April and one at Hodeidah on 16 April 1979. Given as a fairly common passage migrant and winter visitor to the coasts of Arabia by Meinertzhagen (1954) and this is supported by records from North Yemen.

Numenius arquata **Curlew**

Up to four at Hodeidah on 10-11 March 1982 and one at Al Khawkhah on 14 April 1979. Described by Meinertzhagen (1954) as a common winter visitor to the Red Sea from late July until mid-May. Records from North Yemen are consistent with this, but some birds are undoubtedly migrants.

Tringa totanus **Redshank**

Up to seven were seen on the shore and a party of nine flew north near Hodeidah on 10-11 March 1982: and several were seen on the coast at Hodeidah and Al Khawkhah from 14-16 April 1979. Although described as a common migrant and winter visitor to adjacent areas of Saudi Arabia by Jennings (1981), large numbers have been reported from North Yemen only by Phillips (1982) in autumn. Winter and spring records are only of small numbers.

Tringa stagnatilis **Marsh Sandpiper**

One at Al Khawkhah on 14 April and two at Hodeidah on 16 April 1979. Apparently the first records for North Yemen, although reported from nearby Jeddah and Aden by Meinertzhagen (1954).

Tringa nebularia **Greenshank**

Up to four at Hodeidah on 10-11 March 1982, one there on 16 April 1979 and four at Al Khawkhah on 14 April 1979. Described by Meinertzhagen (1954) as quite a common bird on the coasts of Arabia from September to April, and reports from North Yemen are consistent with this. Most are probably migrants, but the species was recorded by Ash (1976) in December/January suggesting that some overwinter.

Tringa ochropus **Green Sandpiper**

None recorded on the coast, but four were seen at inland localities between 500-3,200 metres in March 1982 and one in April 1979. Only one previous record (Sclater 1917), but Phillips (1982) found it to be widespread in small numbers in suitable habitat suggesting that the species has been overlooked.

Tringa glareola **Wood Sandpiper**

Two near Ta'izz (1,450 metres) on 15 March 1982. Given as common near freshwater throughout Arabia from August to April by Meinertzhagen (1954), but so far the species has been reported only in small numbers in North Yemen (Sclater 1917; Beaman & Madge 1980; Phillips 1982).

Xenus cinereus **Terek Sandpiper**

Two seen at Hodeidah on 10-11 March 1982, two more on 16 April 1979 and three at Al Khawkhah on 14 April 1979. Reported to be not uncommon on the Red Sea coast by Meinertzhagen (1954) and records from North Yemen corroborate this. Appears to be more common in autumn than spring.

Actitis hypoleucos **Common Sandpiper**

A total of 32 was recorded during March 1982 and April 1979 from 0-2,400 metres, the majority being on the coast, notably at Al Khawkhah on 12 April 1979. Common on passage and as a winter visitor throughout Arabia (Meinertzhagen 1954) and records from North Yemen support this.

Arenaria interpres **Turnstone**

Up to 15 at Hodeidah on 10-11 March 1982 and four there on 15 April 1979. According to Meinertzhagen (1954), fairly common on passage on the Red Sea coast from Suez to Aden (and, therefore, North Yemen). Subsequent observations support this and those of Ash (1976) suggest some may winter.

Stercorarius parasiticus **Arctic Skua**

A dark phase bird was seen at Hodeidah on 10 March 1982 and a light phase one at Al Khawkhah on 14 April 1979. Apparently the first records for North Yemen.

Larus hemprichii **Sooty Gull**

Up to 100 at Hodeidah on 10-11 March 1982 and 300 there on 16 April 1979 when a further 300 were seen 20 km. to the north. Up to 200, of all ages, at Al Khawkhah on 12-14 April 1979. Resident in the Red Sea from the Jedda area to the Gulf of Aden (Meinertzhagen 1954).

Larus leucophthalmus **White-eyed Gull**

Up to 100 at Hodeidah on 10-11 March 1982 and 40 in that area on 16 April 1979. Up to 100, of all ages, at Al Khawkhah on 12-14 April 1979. Resident throughout the Red Sea (Meinertzhagen 1954).

Larus ichthyaetus **Great Black-headed Gull**

Two adults and two immatures (2nd year) of which one was ringed, were seen at Hodeidah on 10-11 March 1982. Apparently the only previous records are of four from two coastal sites in April 1980 (Beaman & Madge 1980).

Larus ridibundus **Black-headed Gull**

Up to 30 at Hodeidah on 10-11 March 1982 (all first winter) and one there on 16 April 1979. Occurs in the Red Sea south to Aden in winter (Meinertzhagen 1954).

Larus genei **Slender-billed Gull**

Up to 50, including about five adults, were seen at Hodeidah on 10-11 March 1982, and 20 immatures there on 16 April 1979. Apparently the first records for North Yemen, but subsequently recorded in autumn by Phillips (1982) and one at Hodeidah in April by Beaman and Madge (1980).

Larus fuscus **Lesser Black-backed Gull**

Up to 50 were seen at Hodeidah on 10-11 March 1982, over 130 in that area on 16 April 1979 and up to four at Al Khawkhah on 13-14 April 1979. Meinertzhagen (1954) reported this species to be a winter visitor to the Red Sea, but it was first specifically recorded in North Yemen by Montfort (1965). Subsequent observations suggest that it is a winter visitor/passage migrant in small to moderate numbers.

Larus argentatus **Herring Gull**

A total of 30 was seen at Hodeidah on 10-11 March 1982. Recorded in small numbers in autumn (Phillips 1982), winter (Ash 1976) and spring (Beaman & Madge 1980).

Gelochelidon nilotica **Gull-billed Tern**

Ten were seen at Hodeidah on 10-11 March 1982, one there on 16 April 1979. Apparently quite common on the coast in winter and spring (Meinertzhagen 1954) and also autumn (Phillips 1982).

Sterna caspia **Caspian Tern**

Twenty at Hodeidah on 10-11 March 1982 (one with leg ring), up to seven there on 16 April 1979 and up to nine at Al Khawkhah on 12-15 April 1979. Apparently not uncommon on the coast in autumn (Phillips 1982), winter (Thiollay & Duhautois 1976 and Ash 1976) and spring (our records, and Beaman & Madge 1980).

Sterna bergii **Swift Tern**

Nine were seen at Hodeidah on 10-11 March 1982, over 20 in that area on 16 April 1979, and six at Al Khawkhah on 13-15 April 1979. Occurs on the coasts of Red Sea from Suez to Aden (Meinertzhagen 1954). Subsequent observations, including ours, suggest that it is present in small to moderate numbers on the coast and around offshore islands in autumn (Phillips 1982), winter (Ash 1976) and spring.

Sterna bengalensis **Lesser Crested Tern**

A total of 250 was seen at Hodeidah on 10-11 March 1982, 24 there on 16 April 1979 and two at Al Khawkhah on 14 April 1979. Breeds on many islands at southern end of Red Sea (Meinertzhagen 1954). Phillips (1982) found it common on the coast in autumn, but it was not seen by Deetjen (1971), Ash (1976) or Thiollay and Duhautois (1976), which suggests that it may not occur inshore in winter.

Sterna sandvicensis **Sandwich Tern**

About 100 were seen at Hodeidah on 10-11 March 1982, 25 there on 16th April 1979, and 30 at Al Khawkhah on 12-15 April. Two were seen at Hodeidah in December by Ash (1976) and our records, together with reports by Thiollay and Duhautois (1976) and Beaman and Madge (1980) show that it occurs on the coast in small to moderate numbers in spring.

Sterna hirundo **Common Tern**

None recorded in March, but 50 at Al Khawkhah on 13-15 April 1979 were presumably passage migrants from the South African wintering areas. Apparently no other records.

Sterna repressa **White-cheeked Tern**

Two seen at Al Khawkhah on 14-15 April and one at Hodeidah on 16 April 1979 were all in summer plumage. Known to breed in the Red Sea (Meinertzhagen 1954), but apparently not previously recorded in North Yemen although, subsequently, Phillips (1982) reported about 100 on the offshore island of Hataban in October, and Beaman and Madge (1980) saw small numbers on the coast in April.

Sterna anaethetus **Bridled Tern**

None was recorded in March 1982, but up to 100 were seen at Al Khawkhah on 13-15 April 1979, mostly feeding 1-2 km. offshore. One badly oiled bird was found. In addition, a number had small, pale, rusty smudges on their underparts, a feature also noted by RFP on several of the birds in the collection at British Museum of Natural History (Tring). We have not been able to establish the cause of this, but it would apear to be some form of organic staining. Breeds on islands in the Red Sea, but is absent in winter (Meinertzhagen 1954). Apparently not previously documented for North Yemen, but has recently been reported in small numbers on the coast in autumn (Phillips 1982) and spring (Beaman & Madge 1980).

Sterna saundersi **Saunder's Little Tern**

Although all birds observed closely were of this species, the possibility of *Sterna albifrons* (Little Tern) also being present cannot be ignored.

About 125 were seen at Hodeidah on 10-11 March 1982, five there on 16 April 1979, and up to 40 at Al Khawkhah on 12-15 April 1979. Breeds in the southern half of the Red Sea, but its

winter status is not known (Meinertzhagen 1954). Apparently, no previous records for North Yemen, but subsequently reported in small numbers on the coast in autumn by Phillips (1982) and quite commonly (up to 150 in a day) by Beaman and Madge (1980) in April.

Pterocles lichtensteinii **Lichtenstein's Sandgrouse**

Eight, including at least two males, in acacia scrub near Bajil on the Tihama on 12 March 1982. Reported to be resident in south west Arabia (Meinertzhagen 1954), but the only other recent record from North Yemen is by Phillips (1982) who saw several in autumn on the eastern edge of the highlands.

Pterocles exustus **Chestnut-bellied Sandgrouse**

Recorded only on the Tihama where a total of 147 was observed during March 1982 and April 1979, notably in the Al Khawkhah, Al Kadan and Bajil regions. The habitat was sandy and gravel-topped desert with medium density ground vegetation and low bushes. The largest number recorded was 81 at Bajil on 12 March 1982 flying in small groups towards the Tihama foothills, presumably to drink, (0715-0800 hours) after which they started to return. One nest found near Al Khawkhah on 13 April contained 2 eggs; it was in an area of bare sand with a 30 per cent ground cover of steppe vegetation. Known to occur up to about 1,000 metres in south west Arabia from Aden north to Mecca (Meinertzhagen 1954), but first reported in North Yemen by Montfort (1965) and his, and records by subsequent workers show that it is common locally, on the Tihama.

Columba livia **Rock Dove**

Present in both March and April from 0-3,200 metres. Rather local on the Tihama plain, more frequent in the foothills and common in the highlands. The largest concentration (200) were breeding on the rock faces at Kawkaban in March 1982. Breeding was also proved on the Tihama where a nest was found under a bridge on 19 April 1979. All birds examined closely had grey rumps and were, therefore, attributable to *C.l. gaddi/schimperi*. Apparently a widespread breeding resident recorded by most authors.

Streptopelia roseogrisea **African Collared Dove**

Recorded only on the Tihama plain where it was present in small numbers in March 1982 and April 1979, a total of 44 being seen. From behaviour, obviously breeding and inhabiting areas of mature trees, particularly palms and acacia. Reported from south west Arabia by Meinertzhagen (1954) who recorded breeding near Aden from the end of March to the beginning of May. Apparently no previous records for North Yemen, but subsequently our findings were corroborated by Beaman and Madge (1980) and Phillips (1982) who also found it nest-building in the highlands.

Streptopelia semitorquata **Red-eyed Dove**

A total of 64 was recorded in small numbers in March 1982 and April 1979 in the Tihama foothills and lower mountain slopes from about 500-1,700 metres, but mainly at lower altitudes around 700 metres. They were usually found in well vegetated areas with acacia trees and euphorbia scrub. Although reported to be resident but not common by Meinertzhagen (1954), there appears to be no previous documentation of its distribution in North Yemen. Subsequently, ones and twos have been reported from several highland localities by Phillips (1982) in autumn and by Beaman and Madge (1980) in spring.

Streptopelia turtur **Turtle Dove**

One was seen on the Tihama in Wadi Rima on 19 April 1979. Although reported as common in south west Arabia from September to May (Meinertzhagen 1954), it was first reported in North Yemen by Ash (1976) who saw two on the Tihama in January. Otherwise, apparently, recorded only by Phillips (1982) in October in the highlands.

Streptopelia lugens **Dusky Turtle Dove**

Of 71 observed in March 1982 and April 1979 all, except one in Wadi Rima on the Tihama on 19 April, were in the highlands (1,700-2,800 metres) in localities with trees, although these

were often sparse. The largest concentration recorded was 25 near Ibb (1,700 metres) on 16 March. Song was heard from 9 March and paired birds were observed in April.

Meinertzhagen (1954) reported the species to be an uncommon resident at high levels in central Yemen. Since then, its highland distribution has been corroborated, but it has been found to be more common and more widespread.

Streptopelia senegalensis **Palm Dove**

The commonest and most widespread dove, a total of 441 being recorded in March 1982 and April 1979 mostly in places with trees from 0-3,200 metres. A nest, containing one egg, was found two metres above ground in an acacia tree near Bajil on 26 April 1979. Its widespread presence in North Yemen was indicated by Meinertzhagen (1954). Clearly a common bird.

Oena capensis **Namaqua Dove**

A total of 29 was recorded during March 1982 and April 1979 on the Tihama where the species was widespread in small numbers, up to about 250 metres. Several birds were seen displaying in April. Reported by Meinertzhagen (1954) to be resident in south west Arabia, but only scarcely above 1,500 metres and absent from large areas of Yemen. Subsequent records have shown it to be largely confined to the Tihama (i.e. below 250 metres) the only records from the highlands being of a single bird near Ta'izz in October (Montfort 1965) and of two at the head of Wadi Bana in September (Phillips 1982).

Treron waalia **Yellow-bellied Green Pigeon**

Small numbers were seen in the foothills and highlands between c.700-2,400 metres, a total of 29 being recorded in March 1982 and April 1979. In addition, two were seen on the Tihama at Al Kadan on 17 April 1979. They were invariably found in tall trees. Reported by Meinertzhagen (1954) to occur in South West Arabia, including Yemen and to descend almost to sea level near Aden. Subsequent observations, including ours, show that in North Yemen the species is usually found in the highlands, but sometimes, also, on the Tihama.

Clamator jacobinus **Jacobin Cuckoo**

A pair was seen on 19 April 1979 at about 1000 metres in the Tihama foothills near Khamis Bani Sa'd. The birds were in a dry, steep-sided valley with scattered bushes and trees. Apparently no other records from North Yemen.

Cuculus canorus **Cuckoo**

One was seen at Sana'a on 10-11 April 1979. The only other records are of two in April (Sclater 1917), one in November (Phillips 1982) and the old remains of one found in December (Ash 1976). Apparently a rare passage migrant.

Centropus superciliosus **White-browed Coucal**

A total of six was found in well vegetated areas on the Tihama near Al Kadan and in the neighbouring foothills near Khamis Bani Sa'd and in Wadi Sara between about 150-700 metres on 17-27 April 1979. While reported to be resident at lower levels in the Yemen by Meinertzhagen (1954), apparently ours are the only records since two specimens were taken at about 600 metres in the western foothills near Hajeilah in April 1913 (Sclater 1917).

Athene noctua **Little Owl**

One was seen by a German agricultural adviser between Sana'a and Wadi Dahr (2,400 metres) in early April 1979. Reported to occur in Arabia by Meinertzhagen (1954), but this appears to be the first record from North Yemen. However, it has subsequently been reported from several highland localities in autumn (Phillips 1982) and spring (Beaman & Madge 1980).

Bubo africanus **Spotted Eagle Owl**

A fairly large owl was seen at dusk on the Tihama near Bajil on 25 April 1979. Little detail was discernible, but the most likely species was *Bubo africanus* which is known to occur in southern Arabia (Meinertzhagen 1954) and which has been identified once for North Yemen from a bird found dead near Ta'izz in December 1979 (J-O and J-U Heckel *pers. comm.).*

Caprimulgus sp **Nightjar *sp***

One flying around palm groves in a sandy area by the coast near Al Khawkhah at dusk on 14 April 1979 was probably a Nubian Nightjar *C. nubicus.* This species is resident on the Red Sea coast (Meinertzhagen 1954) and has been recorded on the Tihama in North Yemen by Ash (1976) in December and Beaman and Madge (1980) in April. However, European Nightjar *C. europaeus* and Egyptian Nightjar *C. aegyptius* cannot be ruled out as both occur on passage, and the latter also winters.

Apus melba **Alpine Swift**

Small numbers recorded in all areas visited from 0-3,200 metres during March 1982 (total 116) and April 1979 (total 235). Pairs display flighting at Ibb (1,700 metres) on 16 March 1982 were evidently breeding, but 50 moving north over the Tihama section of Wadi Rima on 19 April 1979 were probably on passage. Recorded in small numbers by most observers. Some are probably residents and others migrants.

Apus caffer **White-rumped Swift**

One was seen over the Tihama at Bajil on 12 March 1982. Apparently the first recorded for North Yemen and Arabia. It was with a loose group of Little Swifts *A. affinis* and Palm Swifts *Cypsiurus parvus* and was seen by both S. Christensen and RFP. The following details were noted: similar in size to Little Swift but had more pointed wings and forked tail with long outer streamers; all dark (blackish) plumage but with white rump patch which was noticeably narrower than that of Little Swift.

Apus affinis **Little Swift**

Recorded in small numbers during March 1982 (total 225) and April 1979 (total 206) in all areas visited up to about 2,400 metres. Numbers were similar to those of *A. melba,* but *A. affinis* was not seen at such high altitudes. They were mainly seen over towns, and selected counts include 50 over Bajil in March, 20 over Sana'a and 30 over Ta'izz in April. Most were probably resident, but 50 which flew north over Hodeidah on 11 March 1982 may have been migrants. Recorded in small numbers by most observers. Apparently a resident and passage migrant.

Cypsiurus parvus **Palm Swift**

Recorded only on the Tihama: three at Bajil on 12 March 1982, eight in the Al Mighlaf area on 16-17 April and four near Hodeidah on 18 April 1979. Known to breed on the Asir Tihama in south-western Saudi Arabia (Jennings 1981), but apparently no previous records from North Yemen. However, it has since been recorded in small numbers on the Tihama in autumn by Phillips (1982) and in April by Beaman and Madge (1980).

Halcyon leucocephala **Grey-headed Kingfisher**

A total of 34 was seen in April 1979 in well vegetated areas in the Tihama foothills from about 250-1,000 metres. However, in spite of visiting suitable areas in March 1982, none was seen. Our records are consistent with the report by Scalter (1917) that these birds appear at Hajeilah (600 metres, Tihama foothills) only after the rains set in (April) and suggests that the species is a summer visitor and not resident as stated by Meinertzhagen (1954). The birds apparently leave in about September, as the only other fully documented records that we can find are of a male at Sana'a on 3 September 1913 (Sclater 1917) and of an immature near Dhi Bin on 13 September 1979 (Phillips 1982).

Merops albicollis **White-throated Bee-eater**

A total of 88 was counted on the Tihama and in the neighbouring foothills up to about 1,450 metres from 12-27 April 1979. Most of these were obviously breeding, as many were paired, display was noted near Al Kadan on the Tihama on 17 April, and a bird was seen coming out of a nest-hole in Wadi Sara (850 metres) in the foothills on 26 April. In addition, several small flocks, totalling 69 birds, which flew north west along the line of the foothills near Al Kadan, on 17 April, were clearly on passage. The species is a breeding summer visitor to the Asir Tihama (Jennings 1981), but it may also winter farther south as Meinertzhagen (1954) reported large flocks in Aden in December. Apart from our records, the species has been recorded in North Yemen only by Sclater (1917) who reported an influx in the Tihama foothills in April, Balletto and Spano (1967) who saw two in August and Phillips (1982) who witnessed southerly passage over the Tihama in late October.

Merops orientalis **Little Green Bee-eater**

The commonest and most widespread bee-eater occurring at all altitudes up to 2,500 metres. Meinertzhagen (1954) reported the species to be resident in Arabia. However, we found it more common in April 1979 (134 recorded mostly in pairs or threes) than in March 1982 (20 recorded), suggesting that some may be migratory. Recorded by most observers.

Merops apiaster **Bee-eater**

The only definite record was of one near Ibb on 17 March 1982, but 60 flying north over Sana'a on 8 April and 20 over Wadi Dahr on 10 April were probably of this species. Reported quite commonly on passage in both spring (Meinertzhagen 1954; Beaman & Madge 1980) and autumn (Sclater 1917 and Phillips 1982).

Coracias garrulus **Roller**

Four were seen on the Tihama between Hodeidah and Al Kadan on 17 April 1979. Although reported on passage in many parts of Arabia, these are apparently the first records from North Yemen. Subsequently, however, reported in September-October by Phillips (1982) and in April by Beaman and Madge (1980).

Coracias abyssinicus **Abyssinian Roller**

A total of 80 was recorded during March 1982 and April 1979, mostly on the Tihama plain, but two were seen in the neighbouring foothills up to 850 metres. Many were in pairs, and display was seen. Meinertzhagen (1954) reported the species to be an uncommon resident in coastal Yemen and this distribution has largely been corroborated by subsequent observations, although nowadays the species appears to be fairly common.

Upupa epops **Hoopoe**

A total of 43 was recorded in March 1982 and April 1979. Of these, one was at Hodeidah and another at Bajil on the Tihama in March, while the rest were in the highlands from 1,450-3,200 metres. Some were undoubtedly breeding as song and display were noted, but others may have been on passage. Highest concentrations were ten at Ibb on 16 March and five in Wadi Dahr on 18 March. Reported by Meinertzhagen (1954) to be a fairly common resident and winter visitor in Arabia, it also undoubtedly occurs on passage. However, its status in North Yemen is still uncertain. Our records, and those of Beaman and Madge (1980) show that it is fairly common in spring, but Phillips (1982) found it scarce in autumn, and winter records are so far lacking.

Tockus nasutus **Grey Hornbill**

Fairly widespread on the edge of the Tihama and in the neighbouring foothills from 250-1,100 metres, a total of 49 being recorded in March 1982 and April 1979. The birds were usually found in areas with acacia trees and much calling and display suggested breeding. Reported by Meinertzhagen (1954) to be resident throughout North Yemen up to about 1,700 metres. Subsequent observations, including ours, are consistent with this, but show that it occurs up to 2,000 metres in the highlands between Sana'a and Sada (Thiollay & Duhautois 1976).

Jynx torquilla **Wryneck**

One was seen at Bajil on the Tihama on 12 March 1982. Although known on both passages in Arabia (Meinertzhagen 1954), the only previous record in North Yemen was of a bird near Ta'izz in March 1970 (Deetjen 1971).

Dendrocopos dorae **Arabian Woodpecker**

A male was seen near Gerfat (*c.*1,800 metres), about 30 km. south of Ibb, on 11 April and another bird at Al Mahwit (*c.*2,200 metres) on 26 April 1979. Both were associated with acacia trees. Endemic to South West Arabia where it occurs in wooded country from almost sea level to above 2,000 metres. (Meinertzhagen 1954; Jennings 1981). First recorded in North Yemen by Montfort (1965) near Ta'izz, since when it has been reported from eight or nine widely separated localities in the highlands between about 1,000 and 2,400 metres.

Mirafra cantillans **Singing Bush Lark**

Recorded only on the Tihama plain near Hodeidah, Wadi Rima, Al Kadan and Bajil where a total of 37 was counted in March 1982 and April 1979. They were invariably on cultivated ground, especially in patches of irrigated grass, cotton, sorghum and maize. Apparently no other recent records, and previously reported only by Sclater (1917), who listed four specimens obtained at Hajeilah (600 metres) in the Tihama foothills in March and April 1913, and Meinertzhagen (1954), who examined specimens from Hodeidah, Kunfuda and Ta'izz, and described the species as an uncommon resident in North Yemen.

Eremopterix nigriceps **Black-crowned Finch Lark**

Except for a single bird seen near Ta'izz (1,450 metres) on 15 March 1982, this species was found only on the Tihama plain where it was common and widespread during March 1982 and April 1979. In all, a total of 250 birds was counted mainly in dry, sparsely vegetated areas. Breeding was obviously in progress as most were in pairs, and the dawns were filled with the sound of their aerial song flights. The breeding season, therefore, must be fairly extended as Ash (1976) reported a nest with three eggs near Hodeidah on 1 January 1976.

On 12 March 1982, 40 were seen flying north near Bajil, and may have been on migration.

Reported by Meinertzhagen (1954) to be resident in North Yemen where it extends to high levels. Subsequent observations, including ours, suggest that the species is a common resident on the Tihama, but rather uncommon in other areas. Indeed, apart from our record from Ta'izz, the only report from the highlands is of a few birds near Raydah in September (Phillips 1982).

Ammomanes deserti **Desert Lark**

Seen only in the Sana's region where 18 were reported in April 1979 on bare stony hillsides and on lava fields. All were in pairs, and several were singing. Reported to be resident throughout Arabia (Meinertzhagen 1954), but apparently our records are the first for North Yemen since Sclater (1917) described four specimens taken near Sana'a in April 1913. Subsequently, Phillips (1982) found the species common near Raydah (*c.*2,450 metres) in September 1979 and Beaman and Madge reported six in April 1980 near Sana'a.

Alaemon alaudipes **Hoopoe Lark**

Recorded only in sparsely vegetated sandy areas near the Tihama coast at Al Khawkhah and Hodeidah, where a total of 12 was recorded in April 1979. All were in pairs and/or song flighting. Reported to occur on the Red Sea littoral by Meinertzhagen (1954) and this is corroborated by subsequent observations. It would appear to occur locally in small numbers.

Calandrella cinerea **Red-capped Lark**

Seen only in open fields in the Sana'a region (*c.*2,500 metres) during March 1982 and April 1979, a total of 77 being recorded. In April, several were singing and displaying, whilst in March, the only birds seen were in flocks. Reported by Meinertzhagen (1954) to occur in North Yemen, usually above

about 1,000 metres. However, subsequent observations, including ours, suggest that it is mainly a resident of the high plateaux above about 2,000 metres, and may well breed into September (Phillips 1982).

Calandrella brachydactyla **Short-toed Lark**

Two were seen flying north with *Eremopterix nigriceps* at Bajil on 12 March and one was near Ibb on 17 March 1982. Reported by Meinertzhagen (1954) to be a common winter visitor throughout Arabia. However, the only records for North Yemen, other than ours, are of a single bird on the Tihama in October (Sclater 1917) and a passage in early September (Phillips 1982).

Galerida cristata **Crested Lark**

The commonest and most widespread lark, 167 being recorded in all areas up to 3,200 metres in March 1982 and April 1979. Breeding was obviously in progress as most were in pairs, song was frequently heard, and nest-building was observed on 20 April 1979 near Sana'a. Reported by Meinertzhagen (1954) to occur at rather high elevations and to be of the dark local race, *G.c. imami.* However, most subsequent observers, including ourselves, have found Crested Larks common throughout the country, but Ash (1976) noted that the birds around Hodeidah were paler than those he had seen in the highlands and it seems likely that the dark local race is replaced by the paler race *G.c. altirostris* at lower altitudes.

Riparia riparia **Sand Martin**

Two were seen on the Tihama near Al Kadan on 17 April and one flew north over Sana'a on 23 April 1979. Although reported to be a common migrant throughout Saudi Arabia (Jennings 1981), it has so far been seen only in small numbers in spring and autumn in North Yemen (Sclater 1917; Beaman & Madge 1980; Phillips 1982).

Riparia cincta **Banded Martin**

One was seen over Bajil on the Tihama on 12 March 1982. Apparently the first record of this north-east African species in North Yemen and Arabia. It flew in a southerly direction and was seen by both S. Christensen (who has previous experience of the species in East Africa) and RFP. The following details were noted: Noticeably larger than Sand Martin *Riparia riparia* which it superficially resembled, indeed at times was also reminiscent of a short-winged Alpine Swift *Apus melba*; grey-brown above, all white below with prominent brown breast-band. Fast flight with occasional Crag Martin *Ptyonoprogne rupestris*-like soaring.

Ptyonoprogne fuligula **Pale Crag Martin**

During March 1982 and April 1979, crag martins were seen locally in small numbers in the highlands from about 850-3,200 metres, the largest concentration being of 40 in Wadi Dahr on 10 April 1979. Of a total of 97 recorded, all that were seen well were *P. fuligula.* However, the possibility that some were *P. rupestris,* which has been recorded once (Sclater 1917), cannot be ruled out. All were in areas with rocky crags which appeared to be suitable for nesting and, indeed, four were seen collecting mud in Wadi Surdud (850 metres) on 25 April 1979. Our observations are consistent with those of other workers and the breeding season appears to be fairly extended as Ash (1976) saw a pair at a nest at Al Qa'ider, near Ta'izz, on 28 December.

Hirundo rustica **Swallow**

Small numbers were seen on migration in all areas up to 2,400 metres in March 1982 (from 11th) and April 1979, the largest passage being of about 100 towards the north at Sana'a on 23 April 1979. Reported to be a common passage migrant, in both spring and autumn, throughout Arabia by Meinertzhagen (1954) who also suggested that a few may winter.

Hirundo daurica **Red-rumped Swallow**

During March 1982 and April 1979, it was the most widespread hirundine being seen everywhere up to 3,200 metres. Most were in suitable breeding habitat and birds were seen entering

nests as early as 8 March at Kawkaban (2,550 metres). The reports of Montfort (1965), Deetjen (1971), Thiollay and Duhautois (1976) and Phillips (1982) collectively suggest that the species is a common passage migrant in both spring (late February-early April) and autumn (late August-mid September). It has apparently not been recorded in winter.

Delichon urbica **House Martin**

Six were seen over Wadi Dahr (2,400 metres) on 10 April 1979. Apparently the first record for North Yemen, but was also seen in small numbers in September by Phillips (1982).

Anthus novaeseelandiae **Richard's Pipit**

A pair was seen in a wadi about 30 km. south west of Sana'a at about 2,500 metres on 24 April 1979. Reported by Meinertzhagen (1954) to be an uncommon, local resident in the hilly country of North Yemen and on the border with South Yemen. However, apart from ours, the only actual records from North Yemen are of seven specimens, listed by Sclater (1917), which were taken on the western flanks of the highlands between about 650 and 2,500 metres in March, August and September 1913.

Anthus campestris **Tawny Pipit**

One was seen at Sana'a (2,300 metres) on 6 March, seven singly and in twos near Bajil on 12 March 1982 and another at Sana'a on 10 April 1979. Reported by Meinertzhagen (1954) to be a common winter visitor to Arabia, but in North Yemen, it has so far been recorded only in small numbers in February, March, April, September and October. (Sclater 1917; Deetjen 1971; Beaman & Madge 1980 and Phillips 1982).

Anthus similis **Long-billed Pipit**

A total of 40 was recorded, mostly in pairs, in highland regions (1,400-3,200 metres) in the Sana'a, Kawkaban, Al Mahwit, Ibb and Ta'izz regions. In several instances, birds were singing and a pair was displaying at Ta'izz on 15 March 1982. It was mainly found on stony slopes with scattered ground vegetation and bushes; but also on bare agricultural terraces. Reported by Meinertzhagen (1954) to occur at fairly high elevations throughout North Yemen, and this has been corroborated by other workers. It is apparently resident and fairly common.

Anthus trivialis **Tree Pipit**

Six were recorded in the Ta'izz-Ibb area on 15-17 March 1982. Occurs regularly in small numbers on spring and autumn passage (eg Meinertzhagen 1954) and five seen by Ash (1976) on 2 January near Ta'izz, suggest that a few also overwinter.

Anthus cervinus **Red-throated Pipit**

Three were recorded on the Tihama on 17-19 April, and seven at Sana'a from 20-25 April 1979. Although described as a common migrant through Arabia by Meinertzhagen (1954), it has so far been reported only in small numbers in North Yemen.

Motacilla flava **Yellow Wagtail**

A total of 40 was recorded in March 1982 and April 1979, the most being 20 near Al Kadan on the Tihama on 16 April 1979. Common on spring and autumn passage in Arabia (Meinertzhagen 1954), including North Yemen (eg Beaman & Madge 1980; Phillips 1982). In addition, single birds have been recorded in December (Ash 1976) and January (Deetjen 1971), suggesting that a few may winter.

Motacilla cinerea **Grey Wagtail**

Single birds were recorded during March 1982 and April 1979 in the highlands at Wadi Dahr, Kawkaban and Ta'izz (1,500-2,400 metres); and in the Tihama foothills near Bajil (*c.*300 metres). Reported to be a common migrant and winter visitor in Arabia where it occurs from September to early May (Meinertzhagen 1954; Jennings 1981). Records from North Yemen are consistent with this, but involve only small numbers.

Motacilla alba **White Wagtail**

Recorded in all regions visited from 5-17 March 1982, a total of 62 being counted, including flocks of 25 at Sana'a on 6th and 25 at Ta'izz on 15th. The only April 1979 record was of one at Sana'a on the 10th. Described by Meinertzhagen (1954) as one of the commonest winter visitors to Arabia, and Deetjen (1971) reported it to be common in winter throughout North Yemen. However, others, including ourselves, have recorded only fairly small numbers (eg Phillips 1982).

Pycnonotus xanthopygos **Black-capped (Yellow-vented) Bulbul**

Common and widespread in all areas with trees, in March 1982 and April 1979, a total of 434 being recorded at all altitudes between 0-3,200 metres. Birds were seen carrying nesting material between 15 March and 26 April. These observations agree with those of other workers.

Prunella fagani **Arabian Accentor**

Three males, which were singing, together with a female, were located on a steep rock face with scattered scrub at about 2,800 metres near Kawkaban on 9 March 1982. This species is endemic to south west Arabia where it is resident and known only from the Yemeni hills, above about 1,850 metres from Manakhah south to Ta'izz, straggling to lower elevations in winter (Meinertzhagen 1954). Apart from ours, the only other recent records are from Manakhah and the head of Wadi Bana (Beaman & Madge 1980; Phillips 1982).

Cercotrichas galactotes **Rufous Bush Chat**

None were seen in March 1982, but from 16-26 April 1979, a total of 13 was recorded in six localities on the Tihama and in the neighbouring foothills from 10-500 metres. All were in areas with scattered bushes and/or acacia trees. These records, together with those of other observers (eg Sclater 1917; Montfort 1965 and Beaman & Madge 1980), suggest that the species occurs in small numbers on both spring and autumn migration.

Cercotrichas podobe **Black Bush Robin**

In March 1982 and April 1979, a total of 37 was counted on the Tihama and in the highlands up to about 1,500 metres where they were found in bushy areas often also with scattered trees. Breeding was obviously in progress during both March and April as many were paired, song was frequently heard and a pair was seen carrying nesting material near Ta'izz on 15 March 1982. The species is known to be resident mainly on the Tihama and in the neighbouring mountains up to about 1,400 metres (eg Meinertzhagen 1954), but has been recorded higher, up to 2,500 metres (Deetjen 1971; Thiollay & Duhautois 1976).

Irania gutturalis **White-throated Robin**

Two, of which one was a male, were seen on 18 April 1979 in a patch of acacia trees on the Tihama between Bajil and Hodeidah. Occurs as an uncommon passage migrant in Arabia (Meinertzhagen 1954), including North Yemen (Sclater 1917; Beaman & Madge 1980: Phillips 1982).

Phoenicurus ochruros **Black Redstart**

None were identified in April 1979, although several unidentified female redstarts were seen. However, in March 1982, a total of 31 was seen in five localities in the highlands from 450-2,550 metres. Three of these only were males of the orange-bellied form *Ph.o. phoenicuroides*. Small numbers of Black Redstarts, mainly of that form, occur in winter and on passage in Arabia, including North Yemen (Meinertzhagen 1954; Phillips 1982).

Phoenicurus phoenicurus **Redstart**

One seen on the Tihama and 18 in the mountains from 450-2,500 metres in March 1982 and April 1979. Of these, three were of the nominate race, and six of the south west Asian race *Ph.ph. samamisicus*. Redstarts are common on passage throughout most of Arabia (Meinertzhagen 1954; Jennings 1981), but appear to occur in small numbers in North Yemen where some also winter (Sclater 1917; Deetjen 1971; Ash 1976).

Cercomela melanura **Blackstart**

Common in March 1982 and April 1979, a total of 104 being recorded, mainly in the Tihama foothills and neighbouring mountains from 500-1,500 metres, but one was seen on the Tihama near Hodeidah and two were found as high as 1,800 metres near Manakhah. Except for the bird seen near Hodeidah, which was in a flat, sandy, bushy area, all were on or near rocky, stony hillsides or valley-sides, with scattered bushes, and were characteristically seen perched on a bush or a boulder near the base of such a slope. Breeding was clearly in progress as song was heard in March and April, pairs were observed in April, and a pair was seen carrying nesting material near Ta'izz on 12 April 1979. This is consistent with the report by Meinertzhagen (1954) of breeding between mid-March and the end of June. However, Ash (1976) found a nest with young near Ta'izz on 2 January 1976. Known to be resident in south western Arabia, including North Yemen (Meinertzhagen 1954).

Saxicola rubetra **Whinchat**

Seen only in April 1979: one on 15th near Al Khawkhah on the coast and another on 17th in the Tihama foothills near Al Kadan. Although reported on passage in small numbers in other parts of Arabia (Meinertzhagen 1954; Jennings 1981), these appear to be the first records from North Yemen.

Saxicola torquata **Stonechat**

A total of 24 was recorded in seven highland localities from 1,450-2,500 metres during March 1982 and April 1979. Some of these may have been migrants or winter visitors, but most were probably local residents, as several males were heard singing, one male was very agitated as if breeding, and four pairs were observed, including one which was feeding a fledgling near Sana'a on 24 April 1979. The species is apparently fairly common in North Yemen: the south west Arabian race, *S.t. felix,* breeding in the highlands, usually from 2,000-2,500 metres and Palearctic birds occurring on passage and as winter visitors (eg Meinertzhagen 1954).

Oenanthe isabellina **Isabelline Wheatear**

Four were seen near Sana'a on 6 March 1982, four near Bajil on the Tihama on 12 March 1982 and one near Sana'a on 20 April 1979. Although reported by Meinertzhagen (1954) to be one of the commonest wintering and migrant chats throughout Arabia, records from North Yemen, including ours, suggest that it occurs only in small numbers from September to April (eg Deetjen 1971; Ash 1976; Phillips 1982).

Oenanthe bottae **Red-breasted Wheatear**

A total of 121 was recorded in March 1982 and April 1979 when the species was common and widespread in the highlands mainly from 2,300-2,800 metres, but seen up to 3,200 metres and down to 1,800 metres. The birds were invariably on flat ground with sparse vegetation mostly on plains, but a few were on terraces. Breeding was clearly beginning as many were paired, song and courtship display were noted, and one bird was seen collecting nesting material near Sana'a (2,300 metres) on 11 April. These observations support reports by other workers which suggest that the race *O.b. bottae* is a common resident in the highlands above about 1,800 metres (Meinertzhagen 1954).

Oenanthe oenanthe **Wheatear**

None was recorded in March 1982, but eight were seen in April 1979, of which four were on the Tihama and four near Sana'a. Known to be an uncommon migrant throughout Arabia, including North Yemen (Meinertzhagen 1954).

Oenanthe pleschanka **Pied Wheatear**

Eight males and five females, the latter being either this species or *O. hispanica,* were seen in March 1982 and April 1979. Of these, two males and two females were near Sana'a and the rest were on the coast. Occurs in small numbers from September to April. Some probably winter while others are undoubtedly on passage (eg Deetjen 1971; Ash 1976; Phillips 1982).

Oenanthe deserti **Desert Wheatear**

A single female was seen near Sana'a on 5 March 1982. Although known to be a common migrant and winter visitor in other parts of Arabia, it has been reported only in small numbers in North Yemen (Meinertzhagen 1954; Jennings 1981; Phillips 1982).

Oenanthe lugens **Mourning Wheatear**

A single male of one of the northern races, probably *O.l. persica,* which winters in Arabia (Meinertzhagen 1954), was seen near Kawkaban on 8 March 1982 and is apparently the first record of a northern bird in North Yemen.

The local race, *O.l. lugentoides,* however, was common and widespread in the highlands from 1,200-2,550 metres during March 1982 and April 1979, when a total of 119 was recorded. Breeding was in progress as song and song-flighting were often noted, many were paired and occupying territories and females carrying food were seen near Khamis Madhyul (*c.*2,400 metres) on 25 April and near Al Mahwit (*c.*2,200 metres) on 27 April. This race is known only from North Yemen and adjacent areas of Saudi Arabia and South Yemen where it is resident. Meinertzhagen (1954) reported that it was always found at around 1,200 metres in the breeding season, but our observations and those of others show that it goes much higher.

Particular interest was taken in the habitat utilization of the local race. The birds were invariably on or near rocky hillsides with sparse and/or short ground vegetation and often scattered bushes and/or trees on which they frequently perched. Study of the terrain in the vicinity of 86 individuals or pairs showed that 22 per cent were high up on steep, rocky hillsides, while the remaining 78 per cent were either on terraced hillsides (57 per cent) or at the base of a hillside (21 per cent) where their territories undoubtedly included both steep, rocky ground and barer, flat or gently sloping areas. In a similar study of the habitat, of *O.l. persica* in south west Iran, Cornwallis (1975) suggested that the best territories were those which included both bare, flat ground where food was relatively abundant and easily caught and some steep, stony ground which provided song posts, cover, nest sites and shade. However, in south west Iran, of 59 territories studied, only 34 per cent included the supposed favoured combination of characteristics and this was attributed to competition from the similar and socially dominant *Oenanthe finschii* which invariably occupied foothill territories. In support of this hypothesis, it was shown that where both species occurred together, only 11 per cent of a sample of nine territories of *O. lugens* occupied favoured foothill terrain, whereas, in localities where *O. lugens* alone was present, this figure rose to 42 per cent (sample size 50). The figure of 79 per cent found in North Yemen where *O. finschii* is totally absent is consistent with the hypothesis and adds circumstantial support to it.

To try and help to explain the pattern of habitat selection by *O.l. lugentoides* in North Yemen, habitat utilization was studied during a nine-hour dawn to dusk watch in April 1979 on a pair holding a territory near Sana'a, which included both steep, rocky valley-sides and gently sloping valley-bottom. Ground vegetation was sparse and concentrated mainly in the valley-bottom where there were also scattered acacia and fig trees. The results showed that the male which was under continuous observation for 155 minutes spent only 34 per cent of this on the valley bottom where he was very conspicuous, but that during this short time he carried out 96 per cent of 56 feeding sallies. The rest of the time was spent on the valley-side, mainly perched, preening and singing (69 per cent of 246 song phrases) in places where he was probably relatively safe from predators as the rocky slopes provided numerous hiding places and a background against which, when still, his black and white plumage rendered him very difficult to see. He also took advantage of the readily available shade. The female, which was probably incubating, was watched for a total of only 33 minutes, during which time she carried out 92 per cent of 13 feeding sallies on the valley-bottom, but spent 75 per cent of the time on the valley-side. These observations suggest factors which may be important in the selection of territories by these birds.

Monticola rufocinerea **Little Rock Thrush**

A total of 52 was recorded during March 1982 and April 1979 in the highlands from 1,700-2,500 metres. They were found in a variety of habitats, including orchards, valley-bottoms and steep, rocky hillsides, usually in or near trees and/or bushes. Many were paired and song was heard. The species is known to be resident in the highlands of south west Arabia (eg Meinertzhagen 1954) and in

North Yemen has been reported as low as 1,200 metres in February (Sclater 1917) and up to 3,000 metres in April (Thiollay & Duhautois 1976).

Monticola saxitalis **Rock Thrush**

None in March 1872, but nine in April 1979, of which two were near Sana'a and the rest on the coast. Although reported by Meinertzhagen (1954) to be fairly common on passage throughout Arabia, ours are apparently the first records from North Yemen. Subsequently, however, single birds have been reported in April (Beaman & Madge 1980), September and October (Phillips 1982).

Monticola solitarius **Blue Rock Thrush**

One only, was seen on the outskirts of Sana'a on 7 March 1982. An uncommon winter visitor and passage migrant throughout Arabia (Meinertzhagen 1954, Jennings 1981) the species has been recorded in small numbers in the highlands of North Yemen in all months from September to March (Sclater 1917; Deetjen 1971; Phillips 1982).

Turdus menachensis **Yemen Thrush**

A total of 18 was seen during March 1982 and April 79 in seven highland localities from 1,700-2,800 metres in the vicinity of Kawaban, Sana'a, Al Mahwit and Ibb. They were found on steep, rocky, often terraced hillsides and in valley-bottoms usually with good stands of bushes and trees, although in some cases, birds were found in quite small patches of such vegetation. One bird feeding on the ground was observed tossing leaves in the manner of the Blackbird *Turdus merula* in Europe. Song was not heard until 24 April, after which it was heard in three localities. The species is known to be endemic in the mountains of south west Arabia, including North Yemen where it is locally quite common and probably resident (Meinertzhagen 1954; Beaman & Madge 1980; Phillips 1982).

Parisoma buryi **Arabian Tit Warbler**

A total of 13 was recorded in March 1982 and April 1979 in the Al Mahwit, Kawaban and Ibb areas between 1,700-2,400 metres. Most were in acacia trees where feeding activity was concentrated in the central areas where branches radiated from the trunk. Evidence suggesting breeding was noted in several localities: singing at Kawkaban on 9 March and Ibb on 16 March where nesting material was being collected, and a pair involved in mutual preening was seen at Al Mahwit on 26 April. Apart from our records this resident endemic to south west Arabia has been reported only from Jebel Suda in the Asir Mountains of Saudi Arabia (Jennings 1981) and Manakhah in North Yemen (Sclater 1917; Beaman & Madge 1980).

Cisticola juncidis **Fan-tailed Warbler**

Only on the Tihama where about 15 were seen in a field of long grass and herbs near Al Kadan on 16 April 1979. Although quite common in the low-lying croplands of South Yemen (Meinertzhagen 1954), in North Yemen it has so far been recorded in small numbers at Hajeilah in the Tihama foothills (Sclater 1917) and, in addition to our record, at two localities on the Tihama (Beaman & Madge 1980; Phillips 1982). Probably a breeding resident.

Prinia gracilis **Graceful Warbler**

Widespread in March 1982 and April 1979 when 125 were recorded from 0-3,200 metres, the largest numbers being seen near Kawkaban (12) and in the Ibb area (45). Most were in well vegetated habitat and song was frequently heard during both months. Reported by Meinertzhagen (1954) to be resident in North Yemen up to 1,850 metres, but our observations, together with those of Montfort (1965) and Beaman and Madge (1980), show that it goes considerably higher and is more widespread.

Scotocerca inquieta **Scrub Warbler**

Thirteen were recorded in April 1979 on dry, rocky hillsides with scattered vegetation from 2,000-2,500 metres in the Sana'a-Manakhah region. Most were in pairs and three were singing. Reported by Meinertzhagen (1954) to be resident in North Yemen. However, it has so far been recorded only in small numbers from the highlands (Sclater 1917; Beaman & Madge 1980; Phillips 1982).

Acrocephalus stentoreus/arundinaceus **Clamorous/Great Reed Warbler**

One in rank vegetation in Wadi Rasyan on 12 April 1979. No previous records in North Yemen of either of these species, but *A. arundinaceus* occurs on passage in Arabia and would seem more likely.

Hippolais pallida **Olivaceous Warbler**

Six were recorded on the Tihama and in the adjacent foothills in March 1982 and April 1979. Although reported to be a common passage migrant in Arabia (eg Meinertzhagen 1954), it has so far been recorded only in small numbers in North Yemen.

Hippolais languida **Upcher's Warbler**

Two in Wadi Sara in the Tihama foothills on 26 April 1979. Occurs on migration and in winter in Arabia (Meinertzhagen 1954), but in North Yemen it has so far been recorded only in small numbers in April and September.

Sylvia leucomelaena **Arabian Warbler**

Nine recorded, including several singing, in the mountains from 500-1,700 metres in the vicinity of: Al Had Alura, Wadi Yur, Khamis Bani Sa'd, Ta'izz and Ibb, where they were invariably found in acacias. Reported to be a resident endemic in south west Arabia (Meinertzhagen 1954), it has been recorded only in small numbers in North Yemen.

Sylvia nisoria **Barred Warbler**

Fourteen recorded from 0-2,400 metres between 8-20 April 1979. Although reported to be a spring and autumn migrant in south west Arabia (Meinertzhagen 1954), in North Yemen it has so far been recorded only in small numbers in April.

Sylvia curruca **Lesser Whitethroat**

Three recorded between 12-15 March 1982: two near Bajil and one near Ta'izz. Probably a passage migrant and winter visitor in small numbers (see Meinertzhagen 1954; Deetjen 1971; Ash 1976; Phillips 1982).

Sylvia communis **Whitethroat**

Fifteen recorded between 11 and 25 April, of which two were at Hodeidah and 13 at Sana'a. Although common on passage in other parts of Arabia, it has so far been reported only in small numbers in North Yemen (Beaman & Madge 1980; Jennings 1981; Phillips 1982).

Sylvia atricapilla **Blackcap**

A total of 40 recorded during March 1982 and April 1979 on the Tihama and in the highlands. The most together was 10 at Ta'izz on 15 March. Apparently a fairly common migrant in spring and autumn (see also Thiollay & Duhautois 1976; Beaman & Madge 1980: Phillips 1982).

Phylloscopus umbrovirens **Brown Woodland Warbler**

A total of 35 recorded in the highland regions of Kawkaban, Ibb and Al Mahwit (2,000-2,400 metres) in March 1982 and April 1979. All were in acacias, most were in pairs and singing was heard from 9 March. Apparently a fairly widespread resident in small numbers in highland Yemen above 1,200 metres (see also Sclater 1917; Ash 1976; Beaman & Madge 1980; Phillips 1982).

Phylloscopus collybita **Chiffchaff**

A total of 14, including four of the Siberian race *P.c. tristis,* was seen mostly in the highlands in March 1982. None was seen in April 1979. These, and records by other observers, suggest that the species occurs in small numbers in North Yemen mainly as a winter visitor from mid-November to mid-April, but some are undoubtedly on passage (eg Beaman & Madge 1980; Phillips 1982).

Phylloscopus trochilus **Willow Warbler**

Recorded only in April 1979 (cf *P. collybita*) when a total of 39 was seen from most regions visited. Known to occur on migration from late March to early May, and late August to mid/late September (Meinertzhagen 1954).

Muscicapa striata **Spotted Flycatcher**

Three recorded in the Bajil-Wadi Rima area of the Tihama 17-19 April 1979. Occurs in small numbers on passage in spring and autumn (eg Meinertzhagen 1954).

Muscicapa gambagae **Gambage Dusky Flycatcher**

Recorded only in April 1979 when a total of 12 was seen in the highlands from 850-2,500 metres near Ibb, Sana'a and in Wadi Sara. Most were in acacias and pairs were noted from 21 April. Reported by Meinertzhagen (1954) to be resident in small numbers above 900 metres in south west Arabia, including North Yemen. However, in North Yemen, it has so far been recorded only in April and September (see also Sclater 1917; Beaman & Madge 1980), and so its status there remains uncertain.

Terpsiphone viridis **African Paradise Flycatcher**

Two, probably a pair, in coffee groves near Al Mahwit (1,800 metres) on 27 April 1979. Reported by Meinertzhagen (1954) to be resident in south west Arabia, including North Yemen where it is still locally quite common at mid-altitudes in suitable habitat such as coffee groves and wadis with thick trees and bushes (see also Sclater 1917, Montfort 1965, Beaman & Madge 1980, Phillips 1982).

Turdoides squamiceps **Arabian Babbler**

A total of 85 was recorded during March 1982 and April 1979 from 0-2,500 metres. Mostly seen in parties of five to seven in areas with trees and bushes, particularly acacia. Apparently a common and widespread resident in suitable bush and scrub country (eg Meinertzhagen 1954).

Anthreptes metallicus **Nile Valley Sunbird**

A total of 73 recorded in March 1982 and April 1979 in well vegetated areas mainly at the edge of the Tihama and in the adjacent foothills up to about 700 metres, but also one at 1,450 metres near Ta'izz. Breeding was in progress. Many were singing; a recently fledged bird was seen in Wadi Yur on 13 March and a female was collecting nesting material near Mafraq al Mukha on 12 April. According to Meinertzhagen (1954), this sunbird occurs from sea level up to about 1,850 metres, but our observations and those of Beaman and Madge (1980), suggest that it is mainly found at lower altitudes at least in spring and to the west of the watershed. However, Phillips (1982) found it up to about 2,500 metres on the eastern flanks of the mountain in autumn.

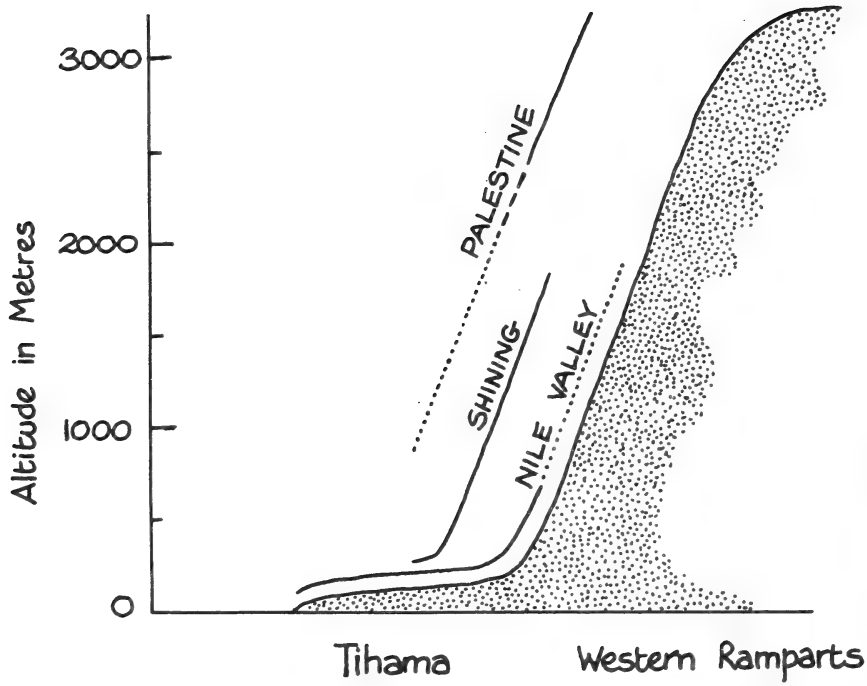
Nectarinia habessinica **Shining Sunbird**

Nineteen recorded in March 1982 and April 1979 in well vegetated areas on the edge of the Tihama plain (c.250 metres) and in the adjacent foothills up to 1,700 metres in the regions of Bajil, Khamis Bani Sa'd, Wadi Sara, Ta'izz and Ibb. Birds were heard singing between 15-16 March. Reported by Meinertzhagen (1954) to occur in south west Arabia, including North Yemen, from sea level to about 1,500 metres. However, in North Yemen it was described as plentiful near Manakhah at 1,800 metres (Sclater 1917), and Phillips (1982) found it common near Dhamar at nearly 2,500 metres.

Nectarinia osea **Palestine Sunbird**

A total of 147 was recorded in March 1982 and April 1979 in highland regions from 850-3,200 metres, but mostly above 2,000 metres. Found in a wide range of well vegetated areas, even in towns, and was particularly common from 2,400-3,200 metres near Kawkaban where 35 were seen on 8 March. Although reported by Meinertzhagen (1954) to occur throughout North Yemen, our observations, together with those of other writers (eg Deetjen 1971, Beaman & Madge 1980 and Phillips 1982) suggest that it is largely a high country species.

The altitudinal distribution of the three species of sunbird in western areas of North Yemen in spring is summarised in the following diagram:—



Although there was overlap in the altitudinal ranges of the three species, they were rarely seen together. Indeed, more than one species was recorded only in three localities in March 1982: All three were seen together in the same habitat at Ta'izz (1,450 metres); Nile Valley and Shining shared the same riverine scrub in Wadi Sara (700 metres); and Shining and Palestine occurred in the same acacia groves near Ibb (1,700 metres).

Zosterops abyssinica **White-breasted White-eye**

A total of 72 recorded in March 1982 and April 1979 in well vegetated areas, even in towns, in the highland regions (1,900-3,000 metres) of Kawkaban, Sana'a, Ibb and Al Mahwit. Although reported by Meinertzhagen (1954) to occur from 450-1,500 metres, subsequent observations, including ours, suggest that the species is usually found above 1,500 metres (eg Beaman & Madge 1980).

Tchagra senegala **Black-headed Bush Shrike**

Six in scrub and euphorbias near Ta'izz (1,450 metres) on 15 March 1982, two of which were singing. One near there on 12 April 1979. Reported by Meinertzhagen (1954) to be resident in North Yemen usually between 1,200 metres and 2,100 metres, but subsequently it has been recorded only in three localities: Ta'izz, Medimat al Abid and Al Khawkhah (Thiollay & Duhautois 1976; Beaman & Madge 1980; Phillips 1982).

Lanius isabellinus **Isabelline Shrike**

Seen widely in small numbers: ten in March 1982, including six near Bajil on 12th, and nine in April 1979. Apparently fairly common during spring (see also Beaman & Madge 1980) and autumn passage (Phillips 1982), particularly on the Tihama where several were also found, presumably wintering, on 1 January by Ash (1976).

Lanius collurio **Red-backed Shrike**

None recorded in March 1982, but 16 were seen in April 1979, mainly on the Tihama. Although a common migrant through Arabia, particularly in spring (Meinertzhagen 1954; Jennings 1981),

in North Yemen it has been reported only in small numbers in spring and on two occasions in autumn (Sclater 1917; Beaman & Madge 1980).

Lanius minor **Lesser Grey Shrike**

Seen on the Tihama: one at Al Khawkhah on 14 April and one at Al Mighlaf on 16 April 1979. Although an uncommon migrant in neighbouring areas of Saudi Arabia, the only previous report from North Yemen is from Sana'a where three specimens were taken in September 1913 (Sclater 1917).

Lanius excubitor **Great Grey Shrike**

A total of 16 was recorded during March 1982 and April 1979 from 200-2,400 metres but mainly in the Tihama foothills between 500 and 1,000 metres. A fairly common and widespread species in North Yemen where most are probably local residents, but a few may be migrants or winter visitors (eg Meinertzhagen 1954).

Lanius nubicus **Masked Shrike**

Fifteen in March 1982, of which six were near Bajil on 13th, and three near Sana'a in April 1979. Occurs widely in small numbers during both migrations, but is more numerous in spring, and a few overwinter (eg Meinertzhagen 1954; Ash 1976; Phillips 1982).

Corvus ruficollis **Brown-necked Raven**

Common and widespread, approximately 350 being recorded during March 1982 and April 1979 from the coast up to 3,200 metres. Singles, pairs, small parties and flocks were seen, including 15 at Kawkaban (March 1982), 40 roosting in acacia trees near Sana'a (April 1979) and about 100 on rubbish outside Ta'izz (March 1982). Reported by Meinertzhagen (1954) to be common in all desert regions throughout Arabia, but never entering non-desert areas. However, our observations, and those of other recent observers (eg Montfort 1965), show that in North Yemen it is less restricted in habitat.

Corvus rhipidurus **Fan-tailed Raven**

Common and widespread in most areas visited in March 1982 and April 1979, though very few on the Tihama plain. A total of 1,299 was recorded mostly in the highland region between 1,000-3,200 metres. Large flocks were often seen, especially around rubbish tips, but others were breeding, and birds were seen carrying nesting material at Kawkaban on 7 March. Known to be common throughout North Yemen, but mainly in the mountains (eg Montfort 1965).

Onychognathus tristramii **Tristram's Grackle**

Widespread in small numbers in the highlands from 500-3,200 metres, a total of 201 being recorded during March 1982 and April 1979. Highest counts included ten near Kawkaban (3,200 metres), 12 near Khamis Bani Sa'd (500 metres), 20 on Jabal Al Mahwit (2,000 metres) and 40 near Ibb (1,700 metres). All were in rocky country with cliffs which appeared to be suitable breeding habitat. Known to occur throughout the mountains of North Yemen (eg Meinertzhagen 1954).

Cinnyricinclus leucogaster **Amethyst Starling**

A total of 31 recorded on the Tihama and in the neighbouring mountains up to 1,500 metres in March 1982 and April 1979. Two pairs were seen collecting nesting material in Wadi Sara (500 metres) on 26 April 1979. These observations, together with those of several other workers (eg Thiollay & Duhautois 1976; Beaman & Madge 1980), show that the species is locally quite common on the Tihama and in the highlands in spring. However, it was not seen by Phillips (1982) in the autumn or Ash (1976) in winter, which suggests that the species may be migratory.

Passer domesticus **House Sparrow**

The most widespread passerine during March 1982 and April 1979, when about 820 were recorded, especially near habitation, in all regions visited from 0-3,200 metres, though far commoner at higher altitudes. A bird was seen collecting nesting material at Ta'izz on 12 April and copulation was noted at Sana'a on 20th. These observations are consistent with the known status of the species in

North Yemen. However, Phillips (1982) found it uncommon in villages, especially at higher altitudes in autumn, and Ash (1979) reported large flocks roosting communally in Hodeidah in December, which suggests that there may be altitudinal movements.

Passer euchlorus **Arabian Golden Sparrow**

A total of 37 was recorded on the Tihama in the Hodeidah-Wadi Rima area on 18-19 April 1979. Most were on cultivated patches of sorghum and maize. Display was noted. Previously reported only from Hodeidah (Meinertzhagen 1954) and from 36 km. south of Hodeidah where Ash (1976) saw several large flocks in January. Subsequently, flocks totalling 150 were seen by Beaman and Madge (1980) near Hays in April.

Petronia dentata **Lesser Rock Sparrow**

Seen in March 1982: one near Ta'izz at 1,450 metres on 15th and six near Ibb at 1,700 metres on 17th, all in dry agricultural areas with scattered trees. In Arabia, known only from the extreme south west, including North Yemen, where five specimens were collected in March-April 1913 near Hajeilah (650 metres) in the Tihama foothills (Scalter 1917); and where more recently it has been found locally fairly common in shrubby wadis in the highlands (Montfort 1965; Phillips 1982).

Ploceus glabula **Rüppell's Weaver**

Abundant on the Tihama, becoming gradually less common in the highlands up to 2,000 metres. Approximately 2,250 were recorded in March 1982 and April 1979, including a flock of about 1,000 roosting in Typha near Ta'izz on 15 March. Singing was noted from 12 March, nest-building on 26 April and many nests were found in colonies up to 60 in Ziziphus, Acacia and Tamarix trees, as well as hanging from telegraph wires. Breeding has also been reported in February near Hodeidah (Deetjen 1971), at the end of August near Ta'izz (Montfort 1965) and in late September near Dhamar (Phillips 1982). The species is known to be a common breeding resident throughout south west Arabia, except at high altitudes, and our observations support this.

Estrilda rufibarba **Arabian Waxbill**

Approximately 340 were seen during March 1982 and April 1979 between 700 and 1,700 metres in and around Wadi Ra'is, Wadi Sara, Ta'izz and Ibb. They frequented cultivated areas where most were in flocks feeding in maize. In addition, many hundreds were seen roosting in Typha near Ta'izz on 15 March. The species is endemic to south west Arabia, where it occurs in the lowlands of the Asir Tihama (Jennings 1981), but in North Yemen it has so far been reported only from the highlands (700-2,400 metres) (see also Deetjen 1971; Beaman & Madge 1980; Phillips 1982).

Amandava subflava **Zebra Waxbill**

Seen only on 15 March 1982 near Ta'izz where about 150 were feeding in maize with 60 *Estrilda rufibarba* and several hundred were seen going to roost in Typha. Previously reported in Arabia only by Montfort (1965), who saw several small parties near Ta'izz in December 1962 and Phillips (1982), who saw several near Dhamar in September 1979.

Euodice cantans **African Silverbill**

About 180 recorded in March 1982 and April 1979 on the Tihama and in the hills up to about 1,450 metres in Wadi Sara and the Ta'izz region. Most were in small parties, but a flock of about 70 was seen feeding on spilt grain near Bajil on 12 March. According to Meinertzhagen (1954), widely distributed and apparently resident in areas with palm groves. Recent observations, including ours, suggest that it is not dependent on palms, though it is clearly a bird of lower elevations. Has been recorded up to about 1,800 metres by Phillips (1982).

Serinus rothschildi **Yellow-rumped Serin**

A total of 35 recorded in March 1982 and April 1979 in the highlands from 1,000-2,400 metres in the regions of Khamis Bani Sa'd, Sana'a, Al Mahwit, Kawkaban and Ibb. Found mainly on dry, rocky, often terraced slopes with scattered trees, especially acacia. Evidence of breeding was observed

from 16 March, including song, paired birds and birds collecting nesting materials/food. Endemic to the highlands of south west Arabia from about 1,000-2,400 metres (Meinertzhagen 1954), but previously recorded in North Yemen only by Sclater (1917) who listed two specimens from Wasil (1,200 metres) and five from Manakhah (2,300 metres). However, subsequently this serin has been reported in small numbers from several other highland localities (Beaman & Madge 1980; Phillips 1982).

Serinus menachensis **Yemen Serin**

Fairly common in the highlands from 2,000-3,200 metres, approximately 330 being recorded during March 1982 and April 1979. Often seen in flocks of up to 30 and almost always near human habitation, including cities such as Sana'a. Evidence of breeding was noted as follows: A pair collecting nesting material at Sana'a on 6 March; birds entering hole in rock face at Kawkaban on 9 March; birds visiting hole in wall of house at Ibb on 16 March; a pair entering hole in wall 3 metres above ground in Sana'a on 20 April; and seven pairs in a steep-sided wadi near Sana'a of which two birds were singing and one went into a rock crevice carrying nesting material. Otherwise recorded breeding only by Deetjen (1970) in Sana'a in March (nest with eggs on 19th) and Phillips (1982) near Kawkaban in September. The species is known to be endemic to the highlands of south west Arabia (eg Meinertzhagen 1954) and our records, together with those of others, show that it is fairly abundant in the mountains of North Yemen.

Rhynchostruthus socotranus **Golden-winged Grosbeak**

One only was seen on Jabal Al Mahwit at about 2,000 metres on 26 April 1979. The species is reported to be resident in the highlands of south west Arabia (Meinertzhagen 1954; Jennings 1981), but in North Yemen the only records, apart from ours, are of three specimens taken at Wasil (*c.* 1,200 metres) in February and March 1913 (Sclater 1917) and three near Ta'izz in April 1975 (Thiollay & Duhautois 1976), although it was listed by Montfort (1965) without comment.

Carduelis yemenensis **Yemen Linnet**

Common during March 1982 and April 1979 in highland areas of Kawkaban, Al Mahwit, Sana'a, Sumara and Ibb, where approximately 440 were recorded between 1,700 metres and 3,200 metres with most around 2,400 metres in places with trees. Although flocks of up to 60 were seen, for example on patches of cultivation near Sana'a on 11 April, most were in pairs and song was heard from 8 March, but no other evidence of breeding was noted. Known to be a common endemic resident in the highlands of south west Arabia from about 1,700-3,500 metres.

Emberiza striolata **House Bunting**

One in Tihama foothills at 500 metres near Bajil on 13 March and a pair (male singing) near Ta'izz (1,450 metres) on 15 March 1982. Otherwise reported from North Yemen only by Sclater (1917) who recorded a single specimen of a male taken near Manakhah in January 1913; by Montfort (1965) who lists it without comment and by Phillips (1982) who found it common near Raydah and a few near Ta'izz in September 1979.

Emberiza tahapisi **African Rock Bunting**

A total of 41 recorded during March 1982 and April 1979 in the foothill and highland areas of Al Mahwit, Wadi Sara, Khamis Bani Sa'd, Sana'a, Ibb and Ta'izz between 700 and 2,400 metres. They were usually found on rocky slopes with scattered scrub, often mainly of succulent euphorbias, and frequently in the vicinity of farmland. Most were in pairs with many males singing, but no other evidence of breeding was noted. The breeding season of this species may be extended as Ash (1976) found a nest with eggs near Hays in January 1976 and Phillips (1982) suspected breeding in September and November 1979. Apparently a fairly common resident in rocky country throughout south west Arabia, including North Yemen (eg Meinertzhagen 1954).

Emberiza hortulana **Ortolan Bunting**

A male near Al Khawkhah on 13 April and a pair north of Sana'a (2,500 metres) on 23 April 1979. Apparently a passage migrant and winter visitor in small numbers (eg Meinertzhagen 1954).

SPECIES OBSERVED IN NORTH YEMEN, BUT NOT SEEN DURING OUR VISITS OF APRIL 1979 AND MARCH 1982 WITH BRIEF DETAILS OF KNOWN STATUS AND REFERENCE FOR THE FIRST RECORDED OCCURRENCE

KEY: **PM** – Passage Migrant. **SU** – Status Uncertain.
WV – Winter Visitor. **PR** – Probably Resident

Phaethon aethereus	**Red-billed Tropicbird**	**SU**, rare. Beaman & Madge 1980
Sula dactylatra	**Masked Boody**	**SU**, rare. Beaman & Madge 1980
Nycticorax nycticorax	**Night Heron**	**PM**, rare, Phillips 1982
Egretta alba	**Great White Egret**	**PM**, rare. Montfort 1965
Plegadis falcinellus	**Glossy Ibis**	**PM** and **WV**, rare. Ash 1976.
Anas crecca	**Teal**	**PM** and **WV**. Montfort 1965
Anas acuta	**Pintail**	**PM** and **WV**. Montfort 1965
Anas querquedula	**Garganey**	**PM** Phillips 1982
Elanus caeruleus	**Black-shouldered Kite**	**SU**, rare. Thiollay & Duhautois 1976
Gyps rueppelli	**Rüppell's Vulture**	**SU**, rare. Ash 1976
Torgos tracheliotus	**Lappet-faced Vulture**	**SU**, rare. Thiollay & Duhautois 1976
Aegypius monachus	**Black Vulture**	**SU**, rare. Sclater 1917
Circus cyaneus	**Hen Harrier**	**WV**, rare. Beaman & Madge 1980
Circus macrourus	**Pallid Harrier**	**PM** and **WV**, rare. Phillips 1982
Circus pygargus	**Montagu's Harrier**	**PM**, rare. Thiollay & Duhautois 1976
Accipiter brevipes	**Levant Sparrowhawk**	**PM**, rare. Sclater 1917
Aquila pomarina	**Lesser Spotted Eagle**	**PM**, rare. Thiollay & Duhautois 1976
Falco subbuteo	**Hobby**	**PM**, rare. Montfort 1965
Falco concolor	**Sooty Falcon**	**SU**, rare. Phillips 1982
Ammoperdix heyi	**Sand Partridge**	**Resident**, rare. Meinertzhagen 1954
Numida meleagris	**Helmeted Guineafowl**	**Resident**, rare. Sclater 1917
Rallus aquaticus	**Water Rail**	**WV**, rare. Phillips 1982
Porzana porzana	**Spotted Crake**	**PM**, rare. Phillips 1982
Gallinula chloropus	**Moorhen**	**SU**, rare. Phillips 1982
Fulica atra	**Coot**	**WV**, rare. Montfort 1965
Himantopus himantopus	**Black-winged Stilt**	**PM** and **WV**, rare. Phillips 1982
Recurvirostra avosetta	**Avocet**	**PM** and **WV**, rare. Beaman & Madge 1982
Burhinus oedicnemus	**Stone Curlew**	**PM** and **WV**. Montfort 1965
Burhinus capensis	**Spotted Thick-knee**	**PR**. Meinertzhagen 1954
Glareola pratincola	**Collared Pratincole**	**PM**. Sclater 1917
Charadrius dubius	**Little Ringed Plover**	**WV** and **PM**. Meinertzhagen 1954
Charadrius asiaticus	**Caspian Plover**	**PM**, rare. Phillips 1982
Pluvialis dominica	**Lesser Golden Plover**	**WV**, rare. Ash 1976
Calidris subminuta	**Long-toed Stint**	**PM**, rare. Phillips 1982
Limicola falcinellus	**Broad-billed Sandpiper**	**PM** and **WV**, rare. Phillips 1982
Philomachus pugnax	**Ruff**	**PM** and **WV**. Phillips 1982
Gallinago gallinago	**Common Snipe**	**PM** and **WV**. Montfort 1965
Gallinago media	**Great Snipe**	**PM**, rare. Sclater 1917
Limosa limosa	**Black-tailed Godwit**	**PM**, rare. Phillips 1982
Tringa erythropus	**Spotted Redshank**	**PM**, rare. Thiollay & Duhautois 1976
Phalaropus lobatus	**Red-necked Phalarope**	**PM**, rare. Sclater 1917
Chlidonias hybrida	**Whiskered Tern**	**PM**, rare. Phillips 1982
Chlidonias leucopterus	**White-winged Black Tern**	**PM**, rare. Phillips 1982
Rhynchops flavirostris	**African Skimmer**	**SU**, rare. Phillips 1982
Caprimulgus nubicus	**Nubian Nightjar**	**Resident**, rare. Ash 1976
Caprimulgus europaeus	**European Nightjar**	**PM**, rare. Beaman & Madge 1980
Caprimulgus aegyptius	**Egyptian Nightjar**	**PM** and **WV**, rare. Ash 1976

Apus apus	**Swift**	**PM.** Montfort 1965
Merops superciliosus	**Blue-cheeked Bee-eater**	**PM,** Ash 1976
Ptyonoprogne rupestris	**Crag Martin**	**PR** but **SU.** Sclater 1917
Luscinia luscinia	**Thrush Nightingale**	**PM,** rare. Sclater 1917
Luscinia megarhynchos	**Nightingale**	**PM,** rare. Sclater 1917
Luscinia svecica	**Bluethroat**	**PM,** rare. Montfort 1965
Oenanthe hispanica	**Black-eared Wheatear**	**PM,** rare. Phillips 1982
Oenanthe xanthoprymna	**Red-tailed Wheatear**	**SU,** rare. Griffiths 1975
Oenanthe monacha	**Hooded Wheatear**	**SU,** rare. Sclater 1917
Oenanthe leucopyga	**White-crowned Black Wheatear**	**SU,** rare. Ash 1976
Turdus ruficollis	**Black-throated Thrush**	**WV,** rare. Sclater 1917
Turdus philomelos	**Song Thrush**	**WV,** rare. Phillips 1982
Acrocephalus schoenobaenus	**Sedge Warbler**	**PM,** rare. Phillips 1982
Acrocephalus palustris	**Marsh Warbler**	**PM,** rare. Sclater 1917
Sylvia mystacea	**Ménétries' Warbler**	**PM** and **WV.** Meinertzhagen 1954
Sylvia hortensis	**Orphean Warbler**	**PM,** rare. Phillips 1982
Oriolus oriolus	**Golden Oriole**	**PM,** rare. Phillips 1982
Lanius senator	**Woodchat Shrike**	**PM,** Sclater 1917
Corvus splendens	**Indian House Crow**	**SU,** rare. Ash 1976
Bucanetes githagineus	**Trumpeter Finch**	**PR,** rare. Thiollay & Duhautois 1976
Emberiza cineracea	**Cinereous Bunting**	**SU.** Sclater 1917

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SUMMARY

This paper describes the results of two ornithological expeditions to North Yemen, in April 1979 and March 1982, during which 207 species were recorded, including 26 which were apparently new for the country. The status, distributions and habitats of the various species are assessed against the background of information available in the literature.

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OBSERVATIONS ON THE BIRDS OF NORTH YEMEN IN 1979

by

N. R. Phillips

INTRODUCTION

In 1979 I was awarded a Winston Churchill Travelling Fellowship to visit the Yemen Arab Republic. The object of the visit was to find the migration route of the Steppe Eagle *Aquila nipalensis*. I travelled extensively throughout the country, and was able to make notes on additional species and areas of ornithological interest.

PHYSICAL FEATURES

Yemen is little know to ornithologists. Unlike most of the Arabian Peninsula it receives considerable rainfall, with certain areas, such as Ibb, at the top of the western escarpment, recording as much as some places in north west Europe. Most of this rain falls in two inconsistent wet seasons, in spring and autumn, but owing to the mountainous nature of the country it runs off very rapidly to drain into the sands of the Tihama. In times of heavy flood it occasionally reaches the Red Sea coast.

The coast is bordered by the hot dunes and salt-flats (Sabkah) of the Tihama, with many areas of lagoons and shallow, brackish water inside the fringing coral reefs. The shallows are covered in places by extensive mangrove swamps. East of the dunes lies the Tihama proper: a narrow strip of dry but fertile country with a natural vegetation of low scrub and acacia. Much of this is now irrigated and devoted to the growing of crops, such as millet. The rainfall here is irregular; at times there are torrential downpours, but there can be long periods of drought, particularly in the north.

Inland from the Tihama, at the base of the escarpment, are the foothills. Some of these rise steeply to the mountains, others form low chains of hills rising gradually to the interior. This is the least fertile area and, apart from the deserts to the East, the least populated, as most of it is unsuitable for irrigation, and the rainfall is low and irregular. The vegetation is a mixture of acacia, low grasses, and annuals.

The highlands, over 1,500 metres, receive considerable precipitation in the form of heavy rain and much mist caused by the moisture-laden onshore winds meeting the escarpment. Much of this zone is under intense cultivation, terraced fields rising up the mountain-sides.

The mountain-tops are bare, windswept plateaux (practically devoid of vegetation as a result of over-grazing by goats) with rocky, stratified outcrops of limestone. After the rains they are thinly carpeted with dwarf annuals and herbs.

To the east of the watershed are the dry wadis leading to the Empty Quarter. Some rain falls in these regions but it is intermittent. Vegetation is mainly concentrated in the wadi bottoms.

Much of the substrata is limestone, but there are granite outcrops and, mainly in the north, large volcanic tracts with black symmetrical cones and solidified flows from past eruptions spilling down the mountain-sides.

The birds in all these areas are essentially Palearctic, the African element of the avifauna being more or less confined to a restricted habitat which does not fit into any of the above categories, but is contained and influenced by them. These areas are in the mid-sections of the major wadis, between the foothills, or in the deep-cut sections of the higher wadis where there are springs or seepages to ensure a continual water-flow or high water-table throughout the year. It is in these wet wadis that bananas and coffee are grown and where most of the surviving large trees may still be found. Compared to the rest of Yemen the vegetation is lush and the atmosphere humid.

Breeding species, apparently confined to these areas, include: Hammerkop, Grey Hornbill, Brown Woodland Warbler, Gambage Dusky Flycatcher, Lesser Rock Sparrow, Rüppell's Weaver, Arabian Waxbill, Zebra Waxbill, and African Silverbill. (For scientific names see systematic list).

During my travels in Yemen I saw no areas of natural climax vegetation apart from some low scrub on a few inaccessible boulder-screes. The only junipers I saw were to the north of Jebel Sharharrah and then only a few scraggy, dust-covered specimens struggling to exist by the side of a mountain track. Almost all land not under intense cultivation is grazed by animals or the vegetation is cut by hand. The trees remaining are being heavily cut for firewood and because of erosion

of the hillsides re-afforestation is probably impossible in the short term unless undertaken on the terraces.

There seems little doubt that the wildlife of Yemen is extremely vulnerable. The mammalian fauna is already considerably depleted; the herds of gazelle and oryx are no more and the remaining baboons are persecuted relentlessly as thieves of the millet. There are many guns in Yemen.

Birds are not persecuted as far as I could see, but I heard of egg-taking on islands in the Red Sea and shooting of migrants at the cisterns. Most species are quite tame but the endemics are dependent on the survival of their habitat, which is in great danger.

ITINERARY

For various reasons travel in the remote areas presents problems, and my itinerary was, of necessity, opportunistic, but I was able to keep roughly to a predetermined plan. My itinerary was as follows (names are taken from the D.O.S. 1:500,000 map *Yemen Arab Republic* obtainable from E. Stanford Ltd., London) (see also *Figure 1* page 4.):

2 September	arrived Sana'a.
4 September	short trip to a village c. 10 km. north of Sana'a on the Amran road.
5 September	to camp site in the lava plain c. 5 km. NE of Raydah, visiting surrounding areas and mountain tops within a 50 km. radius until 19 September.
19 September	to Sana'a.
21 September	to Kawkaban, a village perched on the clifftop overlooking the town of Shibam and the escarpment at the head of Wadi Surdud.
22 September	to Taiz. Stayed Taiz area until 27 September visiting the top of Jebel Sabir on the 23rd.
27 September	to Dhamar in the central Highlands, stopping at cattle station on the montane plain of Al Qa al Haql, near Ribat al Qal'ah and the village of Kitab (not marked on the 1:500,000 map). At the headwaters of Wadi Bana.
28 September	to Wadi Har, c. 20 km. SW of Dhamar. A deep wadi approached by an unmarked track. At the time of my visit there was running water.
29 September	to Sana'a.
30 September	to Kawkaban.
1 October	visit Haddah, a village c. 7 km. SW of Sana'a where there are tall walnut trees.
2 October	Sana'a.
3-10 October	camping on Al Qa al Haql at the head of Wadi Bana, visiting the villages of Mankath and Dhafar (not marked on 1;500,000 map).
3 October	to Medinat Al Abid, in Wadi Rima, c. 45 km. west of Dhamar. A deep and wide wadi with flowing water reached by a rough but motorable track down the escarpment from near Dhamar, and passing through Hammam Ali. Trees and thick scrub at the bottom of the wadi for most of the way, with agriculture where there is sufficient level ground.
11 October	Medinat al Abid to Sana'a.
12 October	to Al Luhayyah on the coast, 30 km. north of Kamaran Island. Formerly a port of some importance but now a fishing village. Access is uncertain in the rainy season as the track over the mud-flats (Sabkah) becomes flooded. Vast areas of dry Sabkah and tidal mudflats with extensive mangrove on both sides of the village. Camped here until 23 October with the night of 17 October on Hataban and the night of 18th on Kutama, two islands in the Red Sea, some 25 km. and 45 km. offshore respectively.
23 October	to Hudaydah. Extensive tidal flats both sides of town, but access to Ra's Kitab prohibited.
24 October	Hudaydah, and Bajil and Manssuriyah, two villages c. 40 km. inland from Hudaydah in the agricultural region of the Tihama.
25 October	to Taiz.
26 October	to Mafraq al Mukha and return Taiz. This is the most southerly part of the Tihama I visited. Here the foothills gave way to the coastal plain and the Tihama is at its narrowest; I was in the hills, between Mafraq al Mukha and the village shown as Al Khadiyah, about 1 km. or less from the main road.

27 October	Taiz rubbish dump and small marsh some 10 km. west of the city after the turn off to Turbah.
28 October	to Mafraq al Mukha, camped in the hills.
29 October	Mafraq al Mukha and to Zabid in evening. Camped near al Mija'ar.
30 October	to Al Fazah. Near the village there is a line of palms between the sand dunes and a lagoon which is separated from the sea by c. 100 metres of Sabkah. The lagoon is c. 200 metres by 50 metres and is about 1 metre deep in the centre, but probably varies with rainfall. Camped here until 3 November.
3 November	to Taiz.
5 November	to Turbah. Here is one of the highest cliffs in Yemen and with a south easterly aspect commands a view of any migration which might be moving down the Hadramaut. Approached by a good tarmac road. I checked the cliffs to the south and east of the town, but a better vantage point would probably be at trig. point 2300 10 km. E.N.E. of the town. Stayed until 8 November.
8 November	to Taiz.
9 November	to Sana'a.
11 November	to Dhamar.
13 November	to wadi c. 20 km. east of Dhamar on road to Radah.
14 November	to Kitab cattle station and Wadi Rafood (not marked on 1:500,000 map) a tributary of Wadi Zabid c. 5 km. north of Al Makhadir, south of the Sumarah Pass (Naqil Sumarah). A broad, deep wadi with tall trees and some flowing water.
15 November	in Dhamar.
16 November	Wadi Rafood.
17 November	to Sana'a. In Sana'a until 22 November.
22 November	to Wadi Sharras, between Amran and Hajjah. Camped.
23 November	to Suq Abs on the Northern Tihama. Camped.
24 November	to Qaflah north east of Al Madan. Camped.
25 November	to Sana'a.
27 November	to Kawkaban.
28 November	Sana'a and Haddah.
29 November	in Sana'a.

SYSTEMATIC LIST

Phaethon aethereus **Red-billed Tropic Bird**

c. 25 displaying, Kutamah Island, 18 October.

Sula leucogaster **Brown Booby**

Common on and around offshore islands of Kutamah and Haddaban, 17 to 19 October; 1 seen from shore 3 November, Al Fazah; may breed Kutamah, (seen resting on ledges of cliffs).

Pelecanus onocrotalus **White Pelican**

12 October, Al Luhayyah, at least 3 but numbers uncertain, as many pelican *sp.* far off; 1 on 13th, 2 on 19th.

Pelecanus rufescens **Pink-backed Pelican**

c. 100 in the mangrove swamps near Al Luhayyah, 12-23 October, but probably many more. 4 on Kutamah Island, 18 October, 1 at Al Fazah on 3 November. All birds seen apparently adult. Said to be common on much of the coast.

Nycticorax nycticorax **Night Heron**

1 immature at the head of Wadi Bana, 6-10 October.

Butoroides striatus **Green-backed Heron**

1 on Hataban Island, 18 October.

Ardeola ralloides **Squacco Heron**

1 on the Qa Al Haql, c. 10 km. south of Yarim, 8 October.

Bubulcus ibis **Cattle Egret**

Widespread on the Tihama; seen in flocks up to 15 birds. Very tame and evidently unmolested by man.

Egretta gularis **Western Reef Heron**

Al Luhayyah, 12-23 October up to 10 daily; Hudaydah, 23 October, 4 south of town; Al Fazah, 30 October-4 November, 1 or 2 daily. White phase outnumber dark about 2 to 1; 1 intermediate, Al Luhayyah. Two methods of feeding – 1 by rapid dashing about in shallow water, the other by standing with wings half open and making sudden jabs. Seen to take fish about 200 mm. long. Some very tame and seen to snatch offal from fisherman sorting catch.

Egretta garzetta **Little Egret**

Seen various dates from 11 October to 24 November in the major wadis. Maximum together 15 at Medinat Al Abid (Wadi Rima). 11 October. Not seen on the coast.

Ardea cinerea **Grey Heron**

Qa al Haql, 4-10 October, 1 or 2 daily; Medinat al Abid, 10 and 11 October, 6; Al Luhayyah, 12-23 October, seen daily in the mangrove swamp – c. 10 near the village; Al Fazah, 30 October-3 November, 1 or 2 daily at the edge of the lagoon.

Ardea goliath **Goliath Heron**

Al Luhayyah, 12-23 October, seen daily, no more than 3 together; all adults.

Ardea purpurea **Purple Heron**

Al Luhayyah, 12-23 October, singles only. Al Fazah, 30 October-4 November, up to 2 daily.

Scopus umbretta **Hammerkop**

Seen in all wet wadis visited, from the Tihama and the foothills of the western escarpment, to some of the highest areas (as at Kawkaban, c. 3,000 metres) where they feed in the rainwater cisterns. A rough estimate of 2 per km. of wet wadi. Nests seen in several wadis, all in trees except for 1 in Wadi Surdud which was on a rock pinnacle on cliff face. Cliff nesting is probably quite usual as suitable trees in higher wadis are uncommon or absent. Breeding season probably after the autumn rains, as most nests seen were new, half constructed or recently repaired and a bird was flushed from one of eight nests along Wadi Ajab near Medinat al Abid on 10 September.

Communal display, involving seven individuals seen Qa al Haql, 8 October, the birds wheeling in a tight flock up to about 35 metres then returning to the ground in groups of two or three. J. Crilly of the British Veterinary Team, reported 25 in a flock and other smaller parties in Wadi Sabab 60 km. north of Radah, 31 October.

Ciconia nigra **Black Stork**

Mafraq al Mukha, 28 October, 1 and 29 October 3 soaring with raptors and moving south. *C. abdimii* was not seen and is clearly absent from montane plains in autumn.

Ciconia ciconia **White Stork**

1 Qa al Haql, 27 September to 11 October, with 2 on 7 October Dhamar, 3 October, flock of 10 on flooded alfafa field. These stayed for some weeks (J. Crilly) – 5 present on 12 November; Taiz, 27 October, 26 on rubbish dump 5 km. west of city. Most were very dirty and may have been

there for some time. Mafraq al Mukha, 28 October; 6 riding the thermals and moving south with raptors. Sumarrah Pass, 14 November, 2 soaring with Griffons.

Plegadis falcinellus **Glossy Ibis**

Taiz, 27 October, 1 adult in a small marsh; Al Fazah, 31 October, two (immature and adult) stayed very briefly before moving off south down the coast.

Platalea leucorodia **Spoonbill**

Present on the coast at Al Luyayyah 12 to 23 October, maximum 20. Al Hudaydah on 24 October, 10, and Al Fazah, 1 and 2 November, 2. Note: Probably common all along the coast in suitable areas, but much of the shore inaccessible.

Phoenicopterus ruber **Greater Flamingo**

Al Luhayyah, 20 October, 15 on sandspit c. 6 km. south of town; Hudaydah, 23 October, 3 south of city, plus c. 20 along shore between Luhayyah and Hudaydah; Al Fazah, 30 October-3 November, 3 to 6 daily.

Anas crecca **Teal**

Qa al Haql, 1, 27 October; Al Fazah, 3, 30 October-3 November; Suq Abs, 23 November, 2.

Anas platyrhynchos **Mallard**

Al Luhayyah, 12 October, a flock of 15.

Anas acuta **Pintail**

Al Fazah, 31 October, 50; 1 November, c. 100; 2 November, c. 50, all flying down the coast in the mornings apart from 3 on the lagoon, 1 November. Suq Abs, 24 November, 5.

Anas querquedula **Garganey**

Qa al Haql, 9 October, 1.

Anas clypeata **Shoveler**

Al Fazah, 30 October to 3 November, 4.

Pernis apivorus **Honey Buzzard**

Not positively identified until 7 November, at Al Turbah, when two dark-phase birds were seen at the cliff top. Other unidentified dark-phase buzzards seen previously could well have been this species. Sumarrah Pass, 14 November, 2, also dark-phase.

Milvus migrans **Black Kite**

A few seen daily over Sana'a at the beginning of September, but none between Sana'a and Raydah on 5 September, and only 2 during extensive travels in the Raydah area until 19 October, when some 20 were seen between Raydah and Sana'a. Increasingly common thereafter, being seen over almost every village and town during October, increasing toward the end of the month, ie. 200 over Bajil 12th, 100 there and 200 over Al Mansuriyah, 26th c. 50 were seen moving south at Mafraq al Mukha. Also common in Sana'a and Taiz during October. Fewer in November and, in late November, no more than 5 in Sana'a and very few in Kawaban and Shibam. Birds seen carrying nesting material Wadi Rafood, near Sumarrah Pass on 14 November and Sana'a, 17th. On 21 October I was struck on the head from behind by a Black Kite at Al Luhayyah. It turned as if to strike again a number of times, before flying off.

Gypaetus barbatus **Lammergeyer**

Four separate sightings, all to the north and west of Sana'a.

Neophron percnopterus **Egyptian Vulture**

Eight sightings of presumed migrants 11 October-23 November, maximum 10 near Salif 23 October. Mainly adults and some southerly movement noted. None was seen in the central mountainous areas where they might be expected to breed.

Gyps fulvus **Griffon Vulture**

Very common. Breeding sites at Wadi Jaddr al Had, east of Raydah, Wadi Shamin, west of Raydah, Jebel Shaharrah, Jebel an Nabi Shu'ayb (near Shibam), Sumarrah Pass (162 km. on main road), Manakah, At Turbah, near Jebel Masna'ah (Dhamar), etc. One of 4 nests at the Sumarrah Pass had half grown young on 27 September. Over 100 by the village of Na'it (Raydah) 15 September and c. 100 Sumarrah Pass 14 November. Smaller groups of 5-20 seen regularly in all mountainous areas. Birds seen breaking small leafy twigs from shrubs and small trees growing on cliff face, and taking them to nearby nest sites, at Turbah, 5 to 7 November.

Gyps rueppellii **Ruppell's Vulture**

1 'possible' Wadi Shamin, near Jebel Iyal Yazid, 8 September.

Aegypius monachus **Black Vulture**

1 over Wadi Har (near Dhamar) 28 September.

Circaetus gallicus **Short-toed Eagle**

1 over Taiz, 27 September, moving west. Between 20 October and 4 November seen on six days, mainly single but possibles high overhead with other migrating raptors, Mafraq al Mukha, and two there on 28 October. Singles moving down Wadi Rafood (near Rihab) towarda Wadi Zebid on 16 and 17 November. 1 seen carrying snake at Tur, west of Hijjah, 23 November.

Circus aeruginosus **Marsh Harrier**

Seen on the Tihama and the montane plains, up to 3 together, between 11 September and 4 November. 1 on Kutamah Island, 18 October.

Circus macrourus **Pallid Harrier**

Seen regularly on the Tihama and montane plains; 2 Kutamah Island, 19 October; 2 moving south with other raptors, Mafraq al Mukha, 29 October.

Circus pygargus **Montagu's Harrier**

9 September, 2 Wadi Jadr al Had (near Dhi Bin Raydah); 28 September, 3 near Yarim; 25 September, 1 Taiz; 6 October, 1 near Yarim; 24 November, 3 males near Suq Abs on the Tihama.

Melierax metabates **Dark Chanting Goshawk**

Common on the Tihama. Seen from Mafraq al Mukha in the south to Suq Abs in the north, usually on telegraph poles along the roadside.

Micronisus gabar **Gabar Goshawk**

13 November, near Radah, (south east of Dhamar) 1 male and probably 1 female.

Accipiter nisus **Sparrowhawk**

27 September, Sumarrah Pass, 1. 28 September, Dhamar, 1. 14 November, Wadi Rafood, 1.

Accipiter brevipes **Levant Sparrowhawk**

26, 28 and 29 October. Many small raptors spiralling in tight circles at a high altitude were probably mainly *A. brevipes*, but both *nisus* and *brevipes* were identified among the few (c. 15) which came down to ground level.

Buteo buteo **Buzzard**

From 3 October a few were seen moving south west over the Qa al Haql, making for the

Sumarrah Pass but, apart from these, very few were seen in the mountains during my three months stay.

On the Tihama, they were seen migrating at various places from 21 October and were probably moving before this date, when I was in the mountains. Concentrated passage observed at Mafraq al Mukha 26, 28 and 29 October, and 3 November (see under Steppe Eagle). A few stragglers at Wadi Rafood. At Turbah and Al Qa al Haql until 17 November.

Most of these were 'Steppe' Buzzards, *B.b. vulpinus,* but birds resembling nominate *buteo* race were also present in smaller numbers.

Buteo rufinus **Long-legged Buzzard**

Singles 8 September, Wadi Shiman; 11 September, Al Quasr; 18 September, As Sudah; 21 September Kawkaban (all in the north); 27 September, Taiz; 28 September and 5 October, Qa al Haql; 24 October, Bajil; 26 October, Mafraq al Mukha, where there were 2 on 29 November; 16 November, Wadi Rafood.

Aquila clanga **Spotted Eagle**

See under Steppe Eagle.

Aquila pomarina **Lesser Spotted Eagle**

5 November, road from Taiz to At Turbah, 1 with Black Kites.

Aquila nipalensis **Steppe Eagle**

I assumed that there would be a migration of Steppe Eagles over the Bab al Mandab and that they would be moving down the mountain chains of the Asir and Yemen, with another stream down the Hadraumat after crossing the straights of Hormuz. The only Steppe Eagle I saw before late October was 1 immature at Kawkaban on 30 September. On 20 October, at Luhayyah on the coast, I saw two parties of soaring eagles, each of about 100 birds. They were almost beyond binocular vision but, from the very broad wings and short tails, I assumed them to be Spotted Eagles. Unidentified raptors including some *Aquila spp.* were seen there on 21st and 22nd. On 24 October, I saw columns of soaring buzzards, kites and eagles over the villages of Bajil and Mansouriyah, near Hudaydah.

I arrived at Mafraq al Mukha on 26 October. There was a continual stream of raptors overhead with numbers increasing during the day. By 17.30 hrs. there were two streams: 1 over the plains and another a little way inland, over the foothills. A minimum of five thousand raptors was involved, including Steppe, Imperial, Short-toed and Booted Eagles, Black Kites, Sparrowhawks and Kestrels.

28 and 29 October were spent at Mafraq al Mukha and the movement was continuous during the hours of daylight. Most of the large eagles were Steppe, the majority adult or near adult, but with plenty of juveniles to compare size and shape. The peak passage was again in the late afternoon when there was an unbroken line of eagles gliding south under the edge of the clouds which form inland over the foothills. The movement was still taking place when I returned on the evening of 3 November, with some 50 Steppe Eagles in view at once. 6 and 7 November were spent at At Turbah to check the movement down the Hadraumat. 30 Steppe Eagles moved south west on 6th and 10 on 7th. Otherwise Steppe Eagles were seen only at Taiz: on 27 October c. 50 west of the city, with a steady trickle passing west overhead (c. 25 in one hour) and a single immature over the city on 4 November.

Aquila heliaca **Imperial Eagle**

A few over the city of Taiz and the slopes of Jebel Sabir on several dates from 23 September to 27 October. Maximum 12 on 24 September moving north west! Elsewhere, 5 October, Qa al Haql, 1; 11 October, 2 over Medinat al Abil; 24 October, Bajil, 3 and Al Mansouriyah, 2 (these 5 all moving south); 26 October, Mafraq al Mukha, at least a few with other raptors; 6 November, At Turbah, 1 moving south west; 16 November, Wadi Rafood, 1 moving west; 23 November, Wadi Sharas, 1. All these were 1st or 2nd year birds; no definite adults were seen.

Aquila verreauxii **Verreaux's Eagle**

2 near Raydah, Wadi Attaf (Wadi Jahr al Hadd) 13 September and 2 near As Sudah, west of Raydah, 14 September.

Hieraaetus pennatus **Booted Eagle**

Singles 5 October, Qa al Haql; 29 October, Mafraq al Mukha; 5 November, near Taiz. Two 14 November, Sumarrah Pass, with 1 near there on 16 November.

Hieraaetus fasciatus **Bonelli's Eagle**

21 September, pair, Kawkaban (not seen here on subsequent visits); 25 September, Taiz, 1; 26 October, Mafraq al Mukha, 2; 27 October, Taiz, 1: with 3 on 28 October; 29 October, Mafraq al Mukha, 1; 6 November, At Turbah, 3 (1 immature); 14 November, Qa al Haql, 1.

Pandion haliaetus **Osprey**

Common on the coast. One large stick nest on building, Luhayyah, probably of this species, and two ground nests found on Hataban Island where four birds present 17 October.

Falco naumanni **Lesser Kestrel**

3 to 10 October, Qa al Haql, at least 50 daily; 20 October, Al Luhayyah, 1 moving south (on the 21st, passage of small raptors high up, may have included this species); 25 October, common along the Tihama (20 on telegraph poles); 26 October, Mafraq al Mukha, 30-40 positively identified, with many probables at high altitude; 28 October, Mafraq al Mukha, many – mostly very high with fewer on 29th; 30 October-3 November, Al Fazah, 1 or 2 daily; 1 November, 2 seen to fly low over the sea in the direction of Jebel Zuqat Island; 6 November, Turbah, 6 moving south west; 7 November, 2; 14 and 16 November c. 50 along main road and a few scattered over the plain at Qa al Haql. Apart from birds listed above, many other unidentified kestrels were probably *naumanni*.

Falco tinnunculus **Kestrel**

Evidently widespread as a winter visitor and seen singly in most areas from the Tihama to the high mountains. Some 20-30 seen regularly over Qa al Haql were probably migrants. See also under Lesser Kestrel.

Falco concolor **Sooty Falcon**

Pair and immature, Kutaman Island, 18 October.

Falco biarmicus **Lanner**

Common and widespread. Seen from the coast to over 3,000 metres. Usually around steep cliffs, but also seen hunting over the montane plains and the Sabkah. Also seen over Sana'a (5 together on 3 September) and regularly over Taiz.

Falco peregrinus **Peregrine Falcon**

10 October, Qa al Haql, 1 immature; 14-20 October, Luhayyah, 1 immature, 30 October-3 November, Al Fazah, 1 immature daily (seen to take tern, probably Whiskered, on 1 November).

Falco pelegrinoides **Barbary Falcon**

6 September, 1 on the eastern side of the watershed in Wadi Attaf, near Dhi Bin (Raydah).

Alectoris philbyi **Philby's Rock Partridge**

Coveys of c. 15 near Raydah, Sumarah Pass and Dhafar.

Alectoris melanocephala **Arabian Red-legged Partridge**

Coveys seen Wadi Attaf and Jebel Sabir. Others reported Wadi Har near Raydah, by Jasper Crilly.

Ammoperdix heyi **Sand Partridge**

Seen only near Dhi Bin (Raydah). One covey, c. 10 birds, in dry limestone wadi with boulder scree and scant vegetation on slopes.

Coturnix coturnix **Quail**

1, 6 November, Turbah.

Rallus aquaticus **Water Rail**

3-10 October, Qa al Haql, daily.

Porzana porzana **Spotted Crake**

8 October, Qa al Haql, one.

Gallinula chloropus **Moorhen**

30 October-3 November, Al Fazah, daily, max. 4 (1 immature).

Gallinule sp.

8 October, Qa al Haql, a small, black, moorhen-like bird with a conspicuous bright red bill was flushed from a small pool into thick rushes. Voice: "Creek Cruck" or "Creek Crik".

Fulica atra **Coot**

23 November, c. 6 in gravel pit near Suq Abs.

Haematopus ostralegus **Oystercatcher**

Widespread on the coast, but no large parties seen. Also present in small numbers on offshore islands of Kutamah and Hataban.

Himantopus himantopus **Black-winged Stilt**

23 November, 5 in sand-pit near Suq Abs.

Recurvirostra avosetta **Avocet**

30 October-3 November, Al Fazah, up to 6 daily.

Dromas ardeola **Crab Plover**

12-23 October, Al Luhayyah, common (c. 100 near the village including 2 full grown juveniles); 23 October, Hudaydah, c. 10 seen but many were probably present on extensive mud-flats. Also seen on offshore islands in small numbers (none at Al Fazah). Call of adult like conversational croak of Jackdaw. Begging call of young a wavering whistle, similar to begging call of young Herring Gull, but ending more abruptly.

Cursorius cursor **Cream-coloured Courser**

10 October, 5 west of Dhamar.

Glareola pratincola **Collared Pratincole**

27 September, Qa al Haql, one; 21 October, one in small marsh west of Taiz.

Charadrius hiaticula **Ringed Plover**

Al Luhayyah, 12-23 October, less than 50 on an 8 km. stretch of coast; 3 or 4 on the offshore islands; 23 October, Hudaydah, a few.

Charadrius alexandrinus **Kentish Plover**

Hundreds at Luhayyah, Hudaydah and Al Fazah, with a few on two offshore islands. Hundreds near Luhayyah, and at Hudaydah. Little feeding seen at Al Fazah where the birds appeared to be resting; several flocks flew south east, inland!

Charadrius mongolus **Lesser Sand Plover**

12-23 October, Luhayyah, over 1,000 on some 8 km. of shore. Also common at Hudaydah. At Al Fazah, 30 October-3 November c. 200 present when I arrived, but numbers diminished during my stay, and only about 25 on 3 November.

Charadrius leschenaultii **Greater Sand Plover**

Al Luhayyah, 13-23 October, hundreds all along the shore (total count limited only by distance covered). Also seen at Hudaydah and Al Fazah. The following differences between the two Sand Plovers were noted:

	Greater	*Lesser*
Leg colour	More yellow.	More greyish, but some quite yellowish.
Breast bands	Obvious. Broad. Appearing to meet on some birds.	Indistinct. Not much more obvious than Kentish.
Forehead	Whitish area not conspicuous.	Very white and obvious in most.
In flight	The size difference was more obvious than when settled, perhaps due to a longer wing ratio in Greater, and the feet of Greater extended more obviously beyond the tail.	

Charadrius asiaticus **Caspian Plover**

Al Fazah, 1 November, 1.

Pluvialis dominica **Lesser Golden Plover**

Dhamar, 17 November, 1 in a flooded area in the town was probably this species, judging from the long legs and prominent eye stripe.

Pluvialis squatarola **Grey Plover**

Common on all coasts visited. Several migrating flocks seen moving down the coast and out to sea at the end of October.

Calidris alba **Sanderling**

Al Luhayyah, 12-23 October, c. 100; 20 on Hataban Island, 12 October; Al Fazah, 30 October-3 November, c. 10 seen daily.

Calidris minuta **Little Stint**

Al Luhayyah, 12-23 October, hundreds of stints on the beach, only two of which I could say were definitely *minuta*; Hudaydah, 23 October, 5.

Calidris subminuta **Long-toed Stint**

Al Luhayyah, 12 October, 5; Al Fazah, 30 October, c. 25.

Calidris temminckii **Temminck's Stint**

11 October, 1 in the wadi at Medinat al Abid; 24 October, Hudaydah, 1 on the shore; 30 October to 3 November, Al Fazah, up to 3 seen daily.

Calidris alpina **Dunlin**

Al Luhayyah, 12-23 October, maximum 5; 24 October, Hudaydah, 5; 30 October-3 November, Al Fazah, up to 3 daily.

Limicola falcinellus **Broad-billed Sandiper**

Al Luhayyah, 12 October, hundreds in flocks of up to 50 or so. Numbers diminished daily and on 19 October I could find none.

Philomachus pugnax **Ruff**

8 September, 1 on small rain puddle at Raydah; 10 October, c. 25 in cistern by the village of Mankath, near Yarim; 23 October, Hudaydah, flock of c. 120 which flew out to sea at sunset. (Other flocks of waders were doing the same.)

Gallinago gallinago **Common Snipe**

14 September, near Khasmir, one by a small rain puddle. 3-10 October, Qa al Haql, near Yarim, up to 3 daily.

Gallinago media **Great Snipe**

10 October, Qa al Haql, one flushed from cistern near Mankath.

Limosa limosa **Black-tailed Godwit**

9 October, party of 8 on small cistern on the Qa al Haql; 2 November, Al Fazah, one with Avocets.

Limosa lapponica **Bar-tailed Godwit**

12-23 October, Al Luhayyah. c. 100 near village; 23 October, Hudaydah, c. 50.

Numenius phaeopus **Whimbrel**

Al Luhayyah, 12-23 October, some 20 seen and evidently widespread on the mudflats; 23 October, Hudaydah, common.

Numenius arquata **Curlew**

Al Luhayyah, 12-23 October, hundreds; 23 October, Hudaydah, common.

Tringa erythropus **Spotted Redshank**

10 October, Qa al Haql, 15 near Mankath; 24 November, Wadi Manur, near Al Madan, 3.

Tringa totanus **Redshank**

10 October, Qa al Haql, 10 near Mankath; 12 October, Al Luhayyah, many; 23 October, Hudaydah, c. 200 on the small stretch of the shore I visited; 17 November, Dhamar, one.

Tringa nebularia **Greenshank**

10 October, Qa al Haql, c. 50 near Mankath; 12 October, Luhayyah, 25; 23 October, Hudaydah, present, not counted; 30 October-3 November, Al Fazah, 1 or 2 daily.

Tringa ochropus **Green Sandpiper**

No large numbers seen, but present in parties of up to 5 birds in suitable habitat, eg. flooded gravel-beds in wadis, and cisterns at higher altitudes, throughout stay.

Tringa glareola **Wood Sandpiper**

10 October, Qa al Haql, 10 near Mankath; 23 October, Luhayyah, one; 27 October, 4 west of Taiz; 30 October, Al Fazah, one.

Xenus cinereus **Terek Sandpiper**

Common on the coast. At Luhayyah, 12-23 October at least 200 present and probably many more; Hudayudah, 23 October, c. 50. Most of these birds had bright orange/red legs. Feeds by dashing through shallow water with bill held horizontally, presumably picking insects from surface, and by probing in mud. Voice: trill like Wood Sandpiper's "chiff chiff" but with more Redshank-like quality.

Actitis hypoleucos **Common Sandpiper**

Small numbers (up to 10) between 3 October and 23 October in the Qa al Haql, Medinat al Abib, Al Luhayyah and Hudaydah areas.

Arenaria interpres **Turnstone**

Luhayyah, common, including c. 25 in the village, foraging among rubbish on the shore line; Hudaydah, common; Al Fazah, up to 10 daily, 30 October-3 November seen turning sheep droppings on a number of occasions; Hataban Island, 50; Kutamah Island, 20.

Larus hemprichii **Sooty Gull**

Common on the coast in all areas visited. Also some 300 on Hataban Island.

Larus leucophthalmus **White-eyed Gull**

Seen at all coastal areas visited but much less common than Sooty Gull. Only c. 10 at Luhayyah and on Hataban Island, but c. 200 on Kutamah Island.

Larus genei **Slender-billed Gull**

Apparently a movement down the coast of the Red Sea, with a few passing at Luhayyah, Hudaydah and Al Fazah daily during my presence there. All birds seen were adult, averaging c. 10 per day, although I spent little time 'sea watching'.

Larus fuscus **Lesser Black-backed Gull**

12-23 October, Al Luhayyah and Hudaydah, a few adults or sub-adults seen passing: c. 15 on Hataban Island; 30 October-3 November, Al Fazah, 20-30 passing south daily, mostly adults or sub-adults and very dark, with mantle as dark as primaries. Some, with paler mantles and yellow legs could have been pale *fuscus* or dark *argentatus*.

Larus argentatus **Herring Gull**

Less common than *fuscus* but a few at Hudaydah and Al Fazah and on offshore islands, some with yellow legs and others with pink.

Gelochelidon nilotica **Gull-billed Tern**

12-23 October, Luhayyah, c. 20 daily; 23 October, Hudaydah, c. 10; 30 October-3 November, Al Fazah, 1 or 2 daily. All these birds moving south.

Sterna caspia **Caspian Tern**

Seen in all coastal areas visited and on offshore islands in small numbers, maximum c. 20 on Hataban Island.

Sterna bergii **Swift Tern**

17-19 October, 100+ on Hataban Island; 1 and 2 November, Al Fazah, total of 7, moving south along the coast.

Sterna bengalensis **Lesser Crested Tern**

17-19 October over 1,000 on Hataban Island; 30 October-3 November, Al Fazah, several parties of 20 to 50, moving south each day.

Sterna repressa **White-cheeked Tern**

17-19 October, c. 100 on Hataban Island.

Sterna anaethetus **Bridled Tern**

18 October, off Luhayyah, one.

Sterna saundersi **Saunder's Little Tern**

Present in small numbers in all coastal areas visited. One freshly dead adult found Luhayyah, 14 October.

Chlidonias hybridus **Whiskered Tern**

3-10 October, Qa al Haql, 2 daily, feeding over the rush bed at the headwaters of Wadi Bana; 20 October, Luhayyah, one.

Chlidonias leucopterus **White-winged Black Tern**

24 November, near Suq Abs, one.

Rynchops flavirostris **African Skimmer**

1 November, Al Fazah, one.

Pterocles lichstensteinii **Lichtenstein's Sandgrouse**

13 September, Wadi Attaf (or Wadi Jadr al Hadd) near Dhi bin, several adults and one half grown juvenile.

Pterocles exustus **Chestnut-bellied Sandgrouse**

20 October, Luhayyah, 50 to 60 came in from the sea in small flocks early in the morning; 10 there on 21st and 22nd, including 3 in from the sea; 30 October, near Al Fazah, 2; 3 November, near Zebid, flock of c. 20 flying towards the coast; 24 November, near Suq Abs, c. 20 flying south-east.

Columbia livia **Rock Dove**

Very common in practically all areas visited except the coast, but a few in and around Luhayyah and Hudaydah. Flocks of 200 or so are quite common. The birds are of the grey rumped 'Sinai type'.

Streptopelia roseogrisea **Pink-headed Turtle Dove**

Found in the thorn scrub and thicker vegetation of the wetter wadis, but nowhere very common. A pair building nest in lower branches of large fig trees, Wadi Rafood, south of Sumarah Pass, 16 November.

Streptopelia semitorquata **Red-eyed Dove**

10 and 12 September, near Raydah, one; 28 September, Wadi Har, 2.

Streptopelia lugens **Dusky Turtle Dove**

Fairly common in the high wadis, as at Kawkaban and Wadi Bana. These are relatively well vegetated wadis with acacia, low scrub and a few low trees. At Kawkaban, 30 September, courtship feeding observed followed by copulation. Another pair in sexual chase.

Streptopelia turtur **Turtle Dove**

8 October, Qa al Haql, 2 at dusk flew on without alighting.

Streptopelia senegalensis **Palm Dove**

Common and widespread. Found from the Tihama to villages in the high mountains and from desert to lush green wadis. Several pairs seen building nests early September; sitting on eggs, Taiz, 25 September.

Oena capensis **Namaqua Dove**

13 September, Wadi Attaf (Wadi Jadr al Hadd), 2; 23-24 November, common on the Tihama near Suq Abs; c. 50 seen, including one flock of c. 30 in low trees. They were in all plumages from juvenile to full breeding adult.

Treron waalia **Yellow-bellied Green Pigeon**

3 September, Sana'a, one in eucalyptus trees in the city centre was the only one seen despite searches in other suitable areas.

Cuculus canorus **Cuckoo**

6 November, At Turbah, near Taiz, one.

Athene noctua **Little Owl**

5-9 September, near Raydah, one; 3-10 September, Qa al Haql, one.

Apus apus **Swift**

Common passage migrant, seen in many places from the mountains to the coast until 14 November. 3-10 October, Qa al Haql, south of Yarim (a montane plain at the southern end of a great coll between Jebel Nabi Shu'ayb and Jebel Sumarah) when the migration of Swifts across this plain for the first four days was the most spectacular I have ever seen. They were moving in thousands all day and could be seen passing the face of the full moon as it rose after dark. Numbers increased during the daylight hours with peak passage, at least at ground level, just before dusk. Numbers could only be guessed at but daily totals must have been in excess of 10,000. On 6 October many birds rose in spiralling clouds at dusk, calling as they went. Next day there were very few until c. 14.00 hrs. and then only c. 500 during the rest of the day with no evening rush. Passage continued until mid-November; the birds evidently making for the Sumarah Pass, where a few stragglers were seen on 14 November.

Apus melba **Alpine Swift**

Seen in the highlands on only three occasions: 3 September, Sana'a, 3; 23 September, Taiz, 2 or 3; 7 October, Qa al Haql, one. On the Tihama: 20 October, Luhayyah up to 2,000 gathering together in tight and noisy flocks and rising on the thermals before flying off south; 30 October-2 November, Al Fazah, a few each morning; 29 October, Mafraq al Mukha, c. 15 flew south.

Apus affinis **Little Swift**

8 September, west of Raydah, one; 13 September, Wadi Attaf (Dhi Bin), 2; 20 October, Luhayyah, following the passage of Alpine Swifts, c. 500 passed south calling loudly, high overhead, with c. 100 next day; 3 November, Al Fazah, 5 flew south.

Cypsiurus parvus **Palm Swift**

Seen only at Al Fazah, 30 October-3 November. c. 10 seen just after sunrise each day. They seemed to be part of the small daily movement of hirundines and as they were not seen during the day, or in the evenings, it seems likely that they were migrants.

Halycon leucocephala **Grey-headed Kingfisher**

An immature, Wadi Attaf (or Jadr al Hadd), near Dhi Bin on 13 September was the only one seen despite the many suitable areas visited.

Merops albicollis **White-throated Bee-eater**

Seen only at Mafraq al Mukha, 28 and 29 October, c. 50 each day. These were part of a movement of *Merops spp.* which was too high to see, but they could be heard calling occasionally.

Merops orientalis **Little Green Bee-eater**

Widespread. Found in all suitable habitat from sea level (Al Fazah) to high mountains (Kawkaban), and from dry desert with acacia to wet wadi beds and tall trees. Many birds paired, but I saw no indication of breeding.

Merops superciliosus **Blue-cheeked Bee-eater**

The only definite Blue-cheeked were at Wadi Attaf (Jadr al Hadd) Dhi Bin, 7 September, when 2 came low enough to be identified. *Merops spp.* were heard migrating frequently, but most were too high to be seen.

Merops apiaster **Bee-eater**

Common passage migrant over the central plains and down the Tihama. Seen in most places visited until 3 November (Al Fazah). Many migrants heard overhead during day and occasionally at night. 50-60 seen at Mafraq al Mukha, 26-29 October; the largest flock was of c. 100 moving west over Dhamar at 0630 hrs. on 28 September.

Coracias garrulus **Roller**

22 September, near Ibb, 2; 3 October, near Dhamar, one.

Coracias abyssinicus **Abyssinian Roller**

Common on the Tihama.

Upupa epops **Hoopoe**

Surprisingly scarce. I saw only 6 in widely scattered areas from 4 September-13 November.

Tockus nasutus **Grey Hornbill**

10-11 October, Medinat al Abid, 15; 16 November, Wadi Rafood, south of Sumarah Pass, 10; 22 November, Wadi Sharras, near Hajjah, common; 24 November, Quflah, north east of Jebel Shaharah, one.

Although I saw them only on these occasions, it seems likely that they are common wherever suitable habitat occurs, ie. where there are tall trees for nesting and low shrubs for feeding and cover. I saw them eating coffee beans and a small fig, both of which were common in wadis where they occurred. The exception was the bird at Quflah, which was in dry acacia scrub, but it was not far from the headwaters of Wadi Maur.

Dendrocopos dorae **Arabian Woodpecker**

Seen only in Wadi Rafood, (south of Sumarah) on 16 November. Nest holes in dead tree, c. 15 metres from ground.

Eremopterix nigriceps **Black-crowned Finch Lark**

A few on the lava plains near Raydah, in early September. After this only seen on the Tihama, where very common around villages on the Sabkah, and in the sand dunes towards the coast. Most were adult males, but c. 25 per cent female or immature.

Ammomanes deserti **Desert Lark**

Seen only near Raydah, where they were common in early September on steep rocky scree in dry wadi beds.

Alaemon alaudipes **Hoopoe Lark**

Widespread on the Tihama. Seen in ones and twos on the Sabkah and dunes, and in and around villages.

Calandrella cinerea **Red-capped Lark**

4 September, 2 in steep dry rocky wadi, c. 10 km. north of Sana'a. One carrying dry grass and behaving as if breeding. Small, pale with close streaking on upperparts and most of breast. Crown pale rufous on one but not on the other, which was streaked.

Calendrella brachydactyla **Short-toed Lark**

Many unidentified parties of small larks seen on the montane plains, and on the Tihama during my stay. Definite *brachydactyla* were seen migrating through the plains near Raydah in early September. They came through just after dawn, flying a little above ground level in small parties totalling c. 50 per day. Other parties were seen at the roadsides.

Galerida cristata **Crested Lark**

Common and widespread. Seen all areas except mountain tops and the bare Sabkah.

Riparia riparia **Sand Martin**

Very few and none during September. On the Qa al Haql, a few passed through daily from 3-10 October, maximum 20 on 8 October. At Al Fazah, 30 October-4 November, small numbers moved south each morning just after sunrise. Singles near Radah on 13 November and at the Sumarah Pass on 14 November.

Ptyonoprogne sp. **Crag Martins**

Crag Martins were seen on the cliffs of most high mountains and wadis, but most were difficult to identify. Dark mantled and dark under-winged martins considered to be *rupestris* were seen over Sana'a on 3 September, and at various cliffs (eg. Kawkaban, Turbah, Jebel Sabir (Taiz) and Jebel Sumarah) during my stay. Paler individuals with grey rather than brown mantles, and generally paler below, were seen at Dhi Bin on 11 September, near Jebel Shaharrah on 14 and 18 September, Kawkaban on 30 September and Turbah on 7 November and may well have been *fuligula*.

Hirundo rustica **Swallow**

Common passage migrant over the central highlands, and through the passes, as at Sumarah, until 17 November. I saw no large numbers here but was informed that many passed over the Qa al Haql in September. On the Tihama, passage was seen on various dates, and appeared to be continuous during October and November. On 29 October, c. 2,000 were circling in front of a violent sand storm. Over 1,000 along the Tihama road from Zebid to Mafraq al Mukha on 3 November.

Hirundo daurica **Red-rumped Swallow**

5-19 September, top of Wadi Attaf (Jadr al Hadd) Raydah, a few passed south-west each morning just after sunrise; 3-10 October, Qa al Haql (south of Yarim), 10-15 hawking about the clifftops in Wadi Bana daily; 30 October-3 November, Al Fazah, a few south along the coast each morning.

Delichon urbica **House Martin**

18 September, Sudah, west of Raydah, c. 30; 23-27 September, Taiz, a few small flocks over Jebel Sabir each day; Qa al Haql, 3-8 October, up to 10.

Anthus campestris **Tawny Pipit**

Singles near Raydah on 5, 6, 7, 9 and 13 September with 2 on 18 September; singles, Qa al Haql, on 3, 4 and 8 October.

Anthus similis **Long-billed Pipit**

Taiz, 26 and 27 September, one; Kawkaban, 30 September and 27 November, one; Qa al Haql, 3-10 October, at least one pair on territory; Wadi Rafood, south of Sumarah, 16 November, one.

Anthus trivialis **Tree Pipit**

6 November, Turbah, 2 heard.

Anthus cervinus **Red-throated Pipit**

Qa al Haql, 5 and 6 October, one or 2 heard in the early morning; 8 October, 5 came to roost with Yellow Wagtails in small rush bed.

Motacilla flava **Yellow Wagtail**

Common passage migrant. Seen migrating through Wadi Attaf (Jadr al Hadd) in early September, over the Qa al Haql in early October, and on the Tihama in late October.

Some 2,000 came to roost in a small rush bed on the Qa al Haql on 8 October. Three races present: *feldegg, thunbergi* and *flava*. Still c. 30 on the Qa al Haql on 14 November.

Motacilla cinerea **Grey Wagtail**

Widespread as passage migrant/winter visitor. Seen from the coast to high mountains (Kawkaban, Turbah), usually in wadi beds where there is flowing water, but also around the cisterns in the highlands.

Motacilla alba **White Wagtail**

Surprisingly uncommon. 9 September, one near Raydah; 12 November, c. 10 near Dhamar; 13 November, 6 near Radah.

Pycnonotus xanthopygos **Black-capped Bulbul**

Common and widespread from the coast to high mountains, usually in cover of some kind, but also seen in the bare mountain villages feeding on fruit of prickly pear.

Prunella fagani **Arabian Accentor**

Seen only at the head of Wadi Bana, where the stream from Qa al Haql flows through thick vegetation between steep cliffs. Seen daily 3-10 October; maximum of 3 but very secretive at times.

Cercotrichas podobe **Black Bush Chat**

Seen only on the Tihama. 12 October, one near Hudaydah; 23 and 24 November, near Suq Abs, one male in song.

Irania gutturalis **White-throated Robin**

2 November, Haddah, near Sana'a, one feeding on insects in prickly pear.

Phoenicurus ochruros **Black Redstart**

28 September, Wadi Har, one. Widespread in November on the central highlands, and also gardens in Sana'a and Taiz.

Phoenicurus phoenicurus **Redstart**

Singles Jebel Sabir, 23 September, and Medinat al Abid, 11 October.

Cercomela melanura **Blackstart**

Common in suitable areas. Prefers dry wadi beds with thin cover of acacia and often, but not invariably, rocks and boulders. Therefore absent from the mountains and scarce on the montane plains and wet wadis. Found chiefly in the dry upper wadis and western foothills below the rain belt, and in the wadis draining to the east of the watershed.

Saxicola torquata **Stonechat**

One male, Jebel Sabir, 24 September and one immature, Kawkaban, 30 September; c. 10 daily in Wadi Bana (Qa al Haql, near Yarim) 3-10 October and 3 on the plain; one on the Sumarah Pass, 14 and 16 November.

Oenanthe isabellina **Isabelline Wheatear**

8 September, several on the Raydah Plain; 13 September, a few in Wadi Attaf near Dhi Bin; 7 October, Qa al Haql, 2; 7 October, Luhayyah, one; 14 November, Qa al Haql, one; 16 November, Sumarah Pass, one.

Oenanthe bottae **Red-breasted Wheatear**

Common on the montane plains. I found them all over the central highlands but not on the mountain tops. Prefers flat country, often cultivated, with scattered rocks or gentle slopes at the base of mountain tops. They were found on limestone and black lava plains; sometimes the only common species in an otherwise birdless area.

Oenanthe oenanthe **Wheatear**

Many unidentified Wheatears seen! Birds thought to be *O. oenanthe* were seen at Al Luhayyah on 12-23 October, on the offshore islands and at Qa al Haql on 6 October.

Oenanthe pleschanka **Pied Wheatear**

Scattered over the montane plains in early September and on the Tihama at Luhayyah in October. Also a few on offshore islands.

Oenanthe hispanica **Black-eared Wheatear**

7 September, Wadi Jahr at Hadd (Dhi Bin), 3. Other unidentified Wheatears may have been of this species, but they certainly were not common.

Oenanthe deserti **Desert Wheatear**

9 seen between 7 September and 13 November in the highlands; 3 at Luhayyah, 20 October.

Oenanthe moesta **Red-rumped Wheatear**

Two immatures/females with rufous rumps, near Raydah, 15 September, were thought to be this species. Too large and robust for *O. xanthoprymna*.

Oenanthe lugens **Mourning Wheatear**

Common in all highland areas visited. Male displaying and signing near Raydah, 7 September. Juvenile with two adults seen here 10 September.

Monticola rufocinerea **Little Rock Thrush**

Found in high altitude wadis, as at Kawkaban and Wadi Bana. The former is a steep cleft in a high cliff with thin vegetation of acacia and low alpine shrubs and perennials; the latter, a deep wadi draining the Qa al Haql south of Yarim with permanent water and mixed vegetation from close cropped grass to trees some 10 metres in height. c. 5 pairs at Kawkaban and c. 10 in Wadi Bana. Juvenile, Kawkaban, 30 September. Head, neck and mantle streaked like immature Stonechat, throat and upper breast similarly streaked. Tail and rump as adult. Sexual chase involving four birds in rapid flight through foliage of trees and over open ground seen in Wadi Bana, 8 September. The sexes appeared to be similarly plumaged. None were to be found at Kawkaban in late November and they may move to lower ground in winter.

Monticola saxatilis **Rock Thrush**

18 September, near Raydah, one; 10 October, near Dhaffar, Qa al Haql (south of Yarim), one.

Monticola solitarius **Blue Rock Thrush**

Total of 7 in various places in the highlands and mountains between 21 September and late November; one among houses in Turbah village 5 November.

Turdus menachensis **Yemen Thrush**

Seen only at Kawkaban (one on 30 September) and in Wadi Bana, where c. 7, 3-10 October. Description: like small, finely built, female Blackbird *T. merula*. Greyish/brown, with throat heavily streaked almost black and white, but streaking very close. Breast and underparts less distinctly streaked. Under tail coverts barred black and white. Under wing coverts orange/buff, often very conspicuous in flight. Bill and legs of some yellow; others dark brownish. Call: a thin "sip" like Song Thrush. Usually keeps to cover, but at times seen feeding on short grass in the open. Seen to take snails and 'anvils' similar to those of Song Thrush found, but no Song Thrushes seen in these two locations.

Turdus philomelos **Song Thrush**

Wadi Rafood, south of Sumarah, 14 and 16 November, one very well marked bird with whitish breast and belly and very black spots.

Cisticola juncidis **Fan-tailed Warbler**

2 in reeds, Al Fazah, 30 October-3 November.

Prinia gracilis **Graceful Warbler**

Seen only at the head of Wadi Bana, Qa al Haql, where c. 5, 3-10 October.

Scotocerca inquieta **Scrub Warbler**

Resident, but apparently scarce in the highlands. Seen at Kawkaban, in the Raydah plain, Qa al Haql, Taiz and Wadi Har, west of Dhamar. Copulation seen at Raydah, 10 September.

Acrocephalus schoenobaenus **Sedge Warbler**

Qa al Haql, 3-10 October, only one seen but several others heard.

Hippolais pallida **Olivaceous Warbler**

18 September, one seen well in village of Sudah, west of Raydah. Many others probably this species in thorn scrub along the Tihama October/November.

Hippolais languida **Upcher's Warbler**

13 September, Wadi Attaf (Jadr al Hadd), Dhi Bin, 2 in dry wadi with scattered thorn trees.

Sylvia leucomelaena **Arabian Warbler**

3 in Wadi Attaf (or Jaddr al Hadd, near Dhi Bin) on 13 September.

Sylvia hortensis **Orphean Warbler**

29 October, Mafraq al Mukha, one.

Sylvia curruca **Lesser Whitethroat**

8 October, head of Wadi Bana, 2 with blackish lores and ear coverts. 13 November, c. 10 in acacia trees in dry wadis near Raydah were thought to be of the form *minula* (Desert Lesser Whitethroat).

Sylvia communis **Common Whitethroat**

5 in the highlands, 18-28 September. In Wadi Bana, up to five seen daily 3-10 October.

Sylvia atricapilla **Blackcap**

25 September, Taiz, two; 30 September, Kawkaban, three; 3-10 October, Wadi Bana, several daily.

Phylloscopus umbrovirens **Brown Woodland Warbler**

Common in Wadi Bana, 3-10 October. A small *phylloscopus* type warbler, at distance most likely to be confused with White-breasted White-eye, with which it was often seen. Upperparts: grey/brown, with fairly prominent eye stripe. Underparts: warm rufous/buff with whitish ventral area. Primaries and secondaries: edged bright greenish yellow, this edging the most striking I have seen in *phylloscopus* warblers and very obvious even at long range in the bright light of Yemen. Bill and legs black. Voice: loud, grating "tseeo". In small flocks of c. 5 birds in tops of trees. Feeding like *Regulus sp*, picking food from leaves and smaller branches. Not seen to hover.

Phylloscopus collybita **Chiffchaff**

Not seen until mid-November, when it appeared in gardens in Sana'a, Taiz and Dhamar.

Phylloscopus neglectus **Plain Leaf Warbler**

23 September, Taiz. A very small *Phylloscopus* seen from about 1 metre in thick cover on lower slopes of Jebel Sabir. Short tail, small fine bill, brownish olive upperparts, paler underparts, no wing bars or bright feather edging. Pale, but not prominent eyestripe. I consider it to have been *P. neglectus*, a species I knew well in Afghanistan in 1970.

Muscicapa striata **Spotted Flycatcher**

25-27 September, Taiz, one; 2 October, Sana'a, one; 3-10 October, Wadi Bana, 2 daily.

Muscicapa gambagae **Gambage Dusky Flycatcher**

Flycatchers seen at Medat al Abid, 11 October and Wadi Sharas, 22 November were thought to be this species as they seemed smaller and less streaked than *striata*, but there was some streaking on the head and breast. Their behaviour was different in that they chose less conspicuous perches and made very short sallies after prey. Silent.

Terpsiphone viridis **African Paradise Flycatcher**

Found at Medinat al Abid, 10-11 October, Wadi Rafood (south of Sumarah) 14 and 16 November and Wadi Sharras, on road to Hajjah, 22 November by which time the long tails of the males were almost full grown.

Turdoides squamiceps **Arabian Babbler**

Common in the dry wadi beds, east of the watershed. 5 in Wadi Har, 28 September. Small parties among acacias along the dry area of the foothills bordering the Tihama.

Anthreptes metallicus **Nice Valley Sunbird**

13 September, Wadi Attaf, near Dhi Bin, one female; 29 October, Mafraq al Mukha, 4 or 5; 13 November, near Raydah, common in dry wadi beds (males showing some gloss but with undeveloped tails); 23-24 November, common on the Tihama near Suq Abs (males attaining breeding plumage and developing long tails). Voice: "cheeit cheeit" repeated. Habitat: acacia trees in dry wadis with scant vegetation. They were seen taking nectar from the flowers of a parasitic creeper growing on the acacia, as well as insects from the leaves.

Nectarinia habessinica **Shining Sunbird**

Common at Medinat al Abid; Raydah (5 males in c. 200 metres of wadi) and Wadi Sharras. Habitat: seems to prefer wetter wadis, with thick vegetation, not seen in the highlands or the Tihama. May be confined to the warm rain-belt of the middle altitudes. Seen feeding on the nectar of a parastic creeper and also took insects on the wing, in manner of flycatchers.

Nectarinia osea **Palestine Sunbird**

Common in the highlands and mountains; seen at Kawkaban, Jebel Sabir, Qa al Haql, Turbah, Jebel Ghurban, etc. Habitat: high altitude wadis with acacias, Yucca and scrub. Appeared to be in the breeding cycle in September. Several sexual chases and squabbling between males seen. Males were predominant and I suspected females were sitting on 30 September, Kawkaban. Song: high pitched "sooweet sooweet sooweet", and trill like beginning of Wren song. Call: a sharp "chick", or "cheek". Seen feeding on the nectar of Yucca *sp.* and insects taken from leaves.

Zosterops abyssinica **White-breasted White-eye**

Common in the highlands and upper wadis where there is sufficient vegetation. Not seen in the high mountains which tend to be barren and devoid of vegetation due to over-grazing by goats. Pair feeding free flying young in garden, Sana'a, 20 September. Call: a plaintive and drawn out "chee-it". Call of young a thin "seeoo seeoo".

Oriolus oriolus **Golden Oriole**

9 and 13 September, single migrants over the plain near Raydah, with singles at Qa al Haql on 4-5 October and Medinat al Abid on 11 October.

Tchagra senegala **Black-headed Bush Shrike**

10 October, near Medinat al Abid (Hammam Ali) 2 in area of low scrub and succulents above the riverine vegetation of tall trees and shrubs.

Lanius isabellinus **Isabelline Shrike**

13 September, Wadi Attaf, Dhi Bin, 2; 28 September, Wadi Har, one; common along the Tihama, October and November.

Lanius excubitor **Great Grey Shrike**

13 September, Wadi Attaf, one; 12 October, several along Tihama; 23 October, near Hudaydah, one; 13 November, near Raydah, one; 16 November, near Sumarah Pass, one; 23-24 November, several near Suq Abs on the Tihama.

Lanius senator **Woodchat Shrike**

13 September, Wadi Attaf (Jadr al Hadd), 2; 18 September, near Raydah, one.

Lanius nubicus **Masked Shrike**

27 October, near Taiz, 2; 14 and 16 November, Wadi Rafood, one; 22 November, near Suq Abs, 2.

Plate 1. Landscape characteristic of coastal areas of the Tihama, North Yemen, with small dunes anchored by low bushes.
Photograph: L. Cornwallis

Plate 2. Acacia on the Tihama, North Yemen. In places, particularly in wadi beds, stands of acacia can be quite dense.
Photograph: L. Cornwallis

Plate 3.

Plate 4.

Plate 3. The rocky Tihama foothill
North Yemen. Photograph

Plate 4. Exhuberant sub-tropical ve
the Tihama foothills, Nort

Plate 5. Spectacular terracing allow
of the western ramparts, N

Plate 6. Rocky mountain crests wit
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site for a village. Photogra

Plate 7. Candelabra-like trees euph
amidst cloud on the weste
Photograph: R. F. Porter

Plate 8. The broad plains of the hi
North Yemen, Sana'a, is s

Plate 5.

Plate 3.

Plate 6.

Plate 4.

Plate 3. The rocky Tihama foothills rise steeply from the coastal plain, North Yemen. Photograph: L. Cornwallis

Plate 4. Exhuberant sub-tropical vegetation and crops in a valley-bottom in the Tihama foothills, North Yemen. Photograph: L. Cornwallis

Plate 5. Spectacular terracing allows agriculture on the steep mountain-sides of the western ramparts, North Yemen. Photograph: R. F. Porter

Plate 6. Rocky mountain crests with scant vegetation are a feature of the western ramparts, North Yemen. Often, as here, they provide the site for a village. Photograph: R. F. Porter

Plate 7. Candelabra-like trees euphorbia *Euphorbia ammak* and acacia amidst cloud on the western ramparts, North Yemen. Photograph: R. F. Porter

Plate 8. The broad plains of the highland plateau on which the capital of North Yemen, Sana'a, is situated. Photograph: L. Cornwallis

Plate 7

Plate 5.

Plate 8.

Plate 9. The site of Nest A, Oman, 8 February, 1981.
Photograph: M. R. Gallagher

Plate 10. A general view near Nest B, January, 1981.
Photograph: M. R. Brown

Corvus ruficollis **Brown-necked Raven**

Widespread throughout the country, except on the coastal dunes and Sabkah. Often in parties of 20 and occasionally up to 50 where food abundant, as on rubbish tips, and where they exploit thermals, as at the Sumarah Pass. A gregarious species outside the breeding season and not often seen in pairs.

Corvus rhipidurus **Fan-tailed Raven**

Common and widespread in the highlands and mountains. There was a build up of numbers coming to roost in Sana'a from c. 25 on 3 September to well over 1,000 at the end of November. Two flocks of c. 150 were seen rising on thermals and moving south with raptors at Mafraq al Mukha on 26 October. On 27 October, large flocks were seen rising on thermals near Taiz and moving west, c. 1,000 in all. Seen in and around the mountain villages in flocks up to 200 (Sumarah Pass, 14 November) often with *C. ruficollis*.

Onychognathus tristramii **Tristram's Grackle**

Common and widespread in the highlands where there is some cover. Not seen on the barren mountain tops, but they visit villages at high altitudes to feed on the fruit of the prickly pear. There may be a movement to lower altitudes in winter as I found them reduced in numbers at Kawkaban in November and there was a flock of over 100 at the bottom of Wadi Sharas on 22 November.

Passer domesticus **House Sparrow**

Common in the cities and larger towns, but surprisingly uncommon in the villages, especially at higher altitudes.

Petronia dentata **Lesser Rock Sparrow**

Seen at Medinat al Abid, 11 October; Wadi Rafood, 16 November and Wadi Sharas, 23-24 November. These wadis are similar in that they have running water trickling through for much of the year and a spate during the rains; tall trees, low scrub and acacias intermixed with crops such as banana, coffee and sorghum (millet), and they are all at about 900 metres above sea level. A smallish sparrow, grey/brown above, grey below, with indistinct wing bar and streaks on mantle. The dark crown and nape outline a paler grey/buff eyestripe and cheek patch, separated by a darker grey/brown stripe from the bill, through the eye to join with a dark nape. Secondaries edged richer buff, tertials tipped buff. Wings and tail quite dark, almost black. Legs and bill look black in the field. Males in song and pair seen visiting hole in tree in Wadi Rafood. Song: a repeated double note "creet creeut, creet creeut", also rendered as "cheeip cheeup". Yellow spot on breast not seen in field. May be quite common as easily overlooked.

Ploceus galbula **Rüppell's Weaver**

Common on the Tihama and in the wet wadis; not seen in the highlands. Many nests seen in areas where there were no weavers, and birds seen in areas away from nests. Nests under construction in Wadi Har (west of Dhamar) 28 September. East of the watershed, only seen in dry wadi near Raydah on 13 November. Most nests in acacia trees but along Wadi Surdud, near Khamis Bani Sa'ad, there were hundreds hanging from telegraph wires.

Note: Few of these birds were full plumaged males and I cannot be sure that some were not the Arabian Golden Sparrow *Passer euchlorus*.

Estrilda rufibarba **Arabian Waxbill**

13 September, common in Wadi Attaf (near Dhi Bin); 28 September, 3 or 4 in Wadi Har (west of Dhamar); 14 and 16 November, small party in Wadi Rafood (south of Jebel Sumarah).

Amandava subflava **Zebra Waxbill**

Three or more in Wadi Har, west of Dhamar, on 28 September. Voice: "zeet zeet".

Euodice cantans **African Silverbill**

Small parties seen Taiz, 25 September, Wadi Har, 28 September and Wadi Rafood 14 and 16 November. Several on the Tihama near Suq Abs, 23-24 November. Copulation seen Taiz, 26 September. Preliminary display by male a peculiar bobbing of the whole body on flexed tarsus. Pair building weaver-type nest in acacia, Suq Abs, 24 November. Apart from these (all in the wadis and lowlands), 4 seen in large fig tree in village, 20 km. west of Khamis, 18 September.

Serinus rothschildi **Yellow-rumped Serin**

The only definite record was in Wadi Har, west of Dhamar, on 28 September when I saw 2 in a small tree at an altitude lower than usual for *S. menachensis*. Smaller than that species, less streaked above, greyer on head and mantle (olive seen on rump); underparts darker, more buff, less white; streaking below larger and sparser, flanks streaked to tail. Voice: possibly full song, "seeoo tee-teacher, seeoo teete-teacher, seeoo tee tee seeoo" etc, with linnet-like quality. Habitat: narrow wet wadi with small trees, thick cover in places and millet.

Serinus menachensis **Yemen Serin**

Common. Seen in the central highlands and mountain slopes throughout the country. A small plain serin, with no wing bars, rump marks or eye stripes. Grey/brown above, head greyer, finely streaked. Breast pale, whitish streaked to belly. Primaries edged slightly paler. Legs and bill: dark. A nondescript little bird but distinctive in Yemen by reason of its abundance in the hills and penetrating call notes rendered as "crrrreeeet creeet" and a softer "churrt" or "churrut churrut seer". Song: canary-like, but shorter and harsher. Pair visiting nest in cleft in cliff, Kawkaban, 30 September. Nests suspected Wadi Bana as birds seen visiting cliff sites. A pair with nest in small 'Ghat' bush, Taiz, 23 September probably this species but possibility of *S. rothschildi* could not be ruled out.

Carduelis yemenensis **Yemen Linnet**

Common in highlands. Nearly all in pairs in September and breeding suspected. In small flocks in November with high proportion of immatures. Call: a musical "tirrrilit". Song: a sustained twittering warble. Habitat: high altitude hill slopes with low vegetation and scattered rocks and scree. Not seen on the open cultivated plains.

Emberiza striolata **House Bunting**

Common in small flocks in the highlands and montane plains in the north around Raydah. Seen only in September. A few on Jebel Sabir (Taiz) on 23 September were the only ones seen in the south and on the wetter side of the mountains. Call: an abrupt lark-like "chirrup".

Emberiza tahapisi **African Rock Bunting**

Common and widespread in the highlands and montane plains from Turbah in the south to Khamir in the north. Most in pairs in September with many males in song. 6 males Turbah, 5-7 November, some in song, no females seen. Song: like jangle of *Miliaria calandra*, or beginning of Chaffinch *Fringilla coelebs* or Cirl Bunting *E. cirlus*. Also a shorter version, like coarse Dunnock *Prunella modularis* "pityme pityme pityme pit". Feeds on seeding grasses by holding down stems with feet and picking out seed with bill.

Note: tahapisi and *striolata* seen together only on the lava plains near Raydah. *E. striolata* would seem to prefer a drier habitat, whereas *tahapisi* occurred in low riverine wadis and wet wadis at high altitude as at the head of Wadi Bana (Qa al Haql), where it is common. There would also seem to be a difference in the breeding season, *striolata* probably breeding after the spring rains and *tahapisi* after the autumn rains, but this needs verification.

Emberiza cineracea **Cinereous Bunting**

Qa al Haql (south of Yarim), 8 October, 3 in millet field. Similar to washed out *E. hortulana*, but very grey with no buff in plumage. Head grey with trace of cheek marks. Call: a loud "ticking" reminiscent of crake *Porzana sp.*

Emberiza hortulana **Ortolan Bunting**

12 September near Raydah, 2; 28 September, Wadi Har, 6; 3-10 October, Qa al Haql, c. 10 daily at the head of Wadi Bana.

DISCUSSION

The absence or scarcity of certain conspicuous species, such as the Grey-headed Kingfisher *Halcyon leucocephala*, listed by previous workers as "resident" suggests that many may in fact be summer visitors which had departed before my arrival. Some of the smaller migrants, particularly warblers, also appeared to be absent or rare, although I spent little time in the scrub zones of the Tihama and foothills and was concentrating on the sky rather than the bushes.

As far as the main object of my visit is concerned, it was obvious, in retrospect, that the Tihama is an ideal route for migrating raptors, for the thermals provide unlimited lift for species with a high wing-loading and the sky is clear, whereas in the mountains the onshore winds condense to form thick cloud, and often rain, at this time of the year. The most puzzling feature of the migration was the presence of numbers of raptors of species seen only rarely in Saudi Arabia, and the question arises as to whether these birds are a continuation of the migration from the Bosphorus and Eilat, or whether they concentrate on the Tihama after passing in a broad front over the Arabian Peninsula. The latter seems unlikely, for one would have thought they would be seen in Saudi Arabia, and that I would have seen them during my search in the mountains of Yemen during September and early October.

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A MIDWINTER SURVEY OF WETLANDS IN MESOPOTAMIA, IRAQ: 1979

by

Derek A. Scott and Erik Carp

INTRODUCTION

The wetlands of Mesopotamia have long been known to constitute one of the most important wintering areas for waterfowl in south west Asia. Over the past twenty years, a considerable amount of work has been conducted in the other main wintering areas in this region, namely the south Caspian region of the USSR, Iran and Turkey. However, the wetlands of lower Iraq have remained difficult of access and poorly known. Several short surveys have been conducted: by C. D. W. Savage in 1966, 1967 and 1968; P. V. George Kainady and J. Vielliard in 1967/68; J. Vielliard and H. Kowalski in 1968/69; F. J. Koning and L. J. Dijksen in 1972; and E. Carp in 1975 (George & Savage 1970; George & Vielliard 1970; Koning & Dijksen 1973; and Carp 1975). These surveys have amply demonstrated the great importance of the Iraqi wetlands for wintering waterfowl. However, the vastness of the marsh and lake complexes, problems of access, and shortage of time have prevented visiting researchers from seeing more than a tiny fraction of the wetlands or the waterfowl. Thus surveys to date have given only a very vague impression of the total numbers of waterfowl which might winter in Iraq. Koning and Dijksen (1973), for example, noted that although they observed 153,000 wildfowl of seventeen species, they were unable to say whether this represented 1 per cent or 10 per cent of the total wildfowl present in Iraq at the time.

Recognizing the importance of the wetlands of Iraq for migratory waterfowl, and anxious to see appropriate conservation measures adopted, the International Waterfowl Research Bureau (IWRB) has actively supported field work in Iraq, and striven to improve its contacts with conservation and research organizations in the country. In December 1977, IWRB contacted the University of Basrah, in southern Iraq, and offered its help in the pursuance of further investigations on the wetlands and waterfowl. It was eventually agreed that there should be a joint expedition to the wetlands of Iraq in January 1979, involving personnel from IWRB (the authors) and personnel from the Natural History Museum of the University of Basrah (P. V. George Kainady and Tariq Raeis Atti). Preparations went smoothly, and the expedition took place as planned between 10 January and 3 February 1979. The University of Basrah kindly provided transport for the expedition (four-wheel drive vehicles), and hired boats as required.

It had been agreed that the expedition would involve an aerial survey of the wetlands, but shortly after the arrival of the IWRB participants in Iraq, it became evident that this would not be possible because of the mounting political tension in the Gulf Area caused by the disturbances in neighbouring Iran. All previous surveys of wetlands in Iraq had stressed the need for aerial surveying work, and this soon became apparent during the present survey. Few of the wetlands can be reached by vehicle, and then the accessible areas are usually the ones most heavily disturbed. Boats can be used to a certain extent, but progress is slow, and censusing from a moving boat is extremely difficult. Also, in many areas the height of the aquatic vegetation seriously hampers visibility.

Although the expedition of 1979 was thus confined to conventional ground surveying work, participants were able to get to a number of localities not previously visited by ornithologists in winter, and to conduct a more thorough survey of wetlands in the south of Iraq than had previously been possible. The 1979 survey thereby complemented earlier surveys which had obtained better coverage of wetlands in central and northern Iraq.

A detailed report on the wetlands and waterfowl of Iraq, with proposals for the creation of reserves in wetlands of international importance, has been prepared for IWRB and the Iraqi authorities (Carp & Scott, 1979). The present paper incorporates a condensed version of this report, and in addition, summarizes observations of land-birds.

ITINERARY

After preliminary discussions with personnel of Basrah University and the Natural History Museum on 11 and 12 January, the expedition visited wetland areas in the desert near Basrah on the

13th, 14th and 15th (Fao road south east of Basrah; Al Barreqa wetlands near Qalat Salih, north north west of Barsah; and the Braspetro areas 20 kms. north of Basrah). Then, from 17th to 20th, surveys were made in the extensive marshes south west and east of Amara (Amara-Maymund-Salam road and marshes south of Salam; and Amara-Misharah road); on the plains on the west bank of the River Tigris south of Ali Gharbi; along the east shore of Haur As Sa'adiyah; and at small impoundments in the desert north west of Amara. The vast open marshes of Haur Aluwez in the south east portion of Haur Al Hammar were surveyed on 22nd and 23rd, then from 25th to 27th, marshes north of Haur Al Hammar (Al Quarna-Hammar-Fuhud-Nasiriya road), Haur Uwainah near Dawayah, and part of the south-west shore of Haur Al Hammar were visited. On 28th, the Shatt al Arab between Basrah and the extreme east end of Haur Al Hammar was investigated by boat. On 29th, the expedition left Basrah for Baghdad, visiting the extreme west end of Haur Al Hammar near Nasiriya, and Haur Ash Shuwaija near Kut, on the way, and arriving in Baghdad on 29th. After discussions with personnel at the Baghdad Natural History Museum, the party visited Lake Razazah and Lake Usathe near Kerbala on 31 January and 1 February, and marshes on Attariya plains east of Baghdad on 2nd.

WEATHER

Until shortly before the start of the expedition, the winter had been mild and dry. The first rains fell at the end of the first week of January, and by 10th, numerous rain-water pools and larger areas of temporary inundation offered attractive habitat for a variety of waterfowl, particularly waders. The weather was fair until 15th, but more rain fell on 16th, 17th and 19th. Good weather set in on 20th and persisted into early February. Maximum temperatures were normally around 15 degrees centigrade, but reached the low 20s on some days. The nights and early mornings were cool.

REGIONAL ACCOUNT OF THE WETLANDS VISITED

General avifaunal observations and detailed waterfowl counts were made at fifty-five localities in lower Iraq. These have been grouped into seven major regions as described below.

(1) **Basrah Area**

A number of small rain-water pools and areas of temporary inundation in the desert around Basrah held good numbers of waders and gulls. Many such areas exist throughout southern Iraq after the winter rains, and although each may hold only a few dozens or hundreds of birds, in total they clearly constitute a very important wintering habitat for a wide range of species. The most conspicuous species were Black-winged Stilt *Himantopus himantopis*, Ringed Plover *Charadrius hiaticula*, Kentish Plover *C. alexandrinus*, White-tailed Plover *Chettusia leucura*, Little Stint *Calidris minuta*, Dunlin *C. alpina*, Redshank *Tringa totanus*, Marsh Sandpiper *T. stagnatilis*, Black-headed Gull *Larus ridibundus* and Herring Gull *L. argentatus*. Large numbers of the two species of gulls were observed at the rubbish tip to the south of the town, along with over 100 White Storks *Ciconia ciconia* and 300 Black Kites *Milvus migrans*.

(2) **Haur Al Hammar and adjacent areas**

The Haur Al Hammar, its surrounding marshes, and neighbouring haurs (a haur is a large lake/lagoon or wetland often reed covered) and areas of temporary inundation, provide over 7,000 square km. of almost contiguous wetland habitat. Together with the vast Haur Hawizeh to the north east (not visited during the present survey), they constitute one of the largest and finest wetland areas in the world. Access to most of this area is impossible by vehicle, and very time-consuming by boat. However, the present expedition was able to visit the marsh complex at a sufficient number of points to determine the general character of the area. In general, the large open areas of water were too deep for most species of waterfowl other than Coot *Fulica atra,* diving ducks, pelicans, gulls and terns. The vast and almost unbroken reed-beds of *Typha* and *Phragmites* were likewise unsuitable for most duck species, although some other waterfowl such as Purple Gallinule *Porphyrio porphyrio,* Moorhen *Gallinula chloropus,* Pygmy Cormorant *Phalacrocorax pygmeus* and Purple Heron *Ardea*

purpurea, were rather common. The broad mud shoreline along the southern edge of the main Haur Al Hammar provided excellent habitat for waders, while sedge marshes and marsh-edge habitat to the east and west of the haur were particularly suitable for dabbling ducks, herons, egrets, Spoonbills *Platalea leucorodia,* Glossy Ibis *Plegadis falcinellus* and some waders. Finally, moist arable land, irrigation ponds and rain-water pools on the surrounding plains provided excellent feeding areas for geese, dabbling ducks, Common Cranes *Grus grus* and many other species.

The most impressive concentrations of waterfowl were found in the following localities:

(a) *Fuhud and Hammar areas*

Although seen throughout the Haur Al Hammar area, pelicans were particularly common in the open *Typha* marshes around Fuhud and Hammar, despite the fact that this is one of the most densely populated areas of the marshes. Over 1,500 White Pelicans *Pelecanus onocrotalus* and 48 Dalmatian Pelicans *P. crispus* were counted. A day roost of Night Herons *Nycticorax nycticorax* in date gardens at Hammar harboured approximately 1,000 birds. A series of shallow lagoons along the edge of the marshes west of Fuhud was excellent for dabbling ducks, with 15,000 Teal *Anas crecca,* 5,250 Gadwall *A. strepera,* 4,500 Pintail *A. acuta* and 2,000 Shoveler *A. clypeata.*

(b) Haur Aluwez (south east part of Haur Al Hammar)

The construction of a network of embankments and roads along the south east shore of Haur Al Hammar to facilitate oil extraction has greatly improved access to the area, although it has at the same time eliminated much of the marsh edge habitat. Conditions remain ideal for diving ducks and Coot (39,000 Tufted Ducks *Aythya fuligula* and 73,000 Coot), and over 5,000 Gadwall were observed.

(c) *South west shore of Haur Al Hammar*

The transition between desert, flooded steppe margin and open waters of the Haur Al Hammar provides a narrow zone of excellent wader habitat stretching for over 50 km. along the southern edge of the Haur. Although only a few kilometres of this zone were surveyed, over 8,000 waders, mainly Kentish Plover (6,000), Little Stint (1,000) and Dunlin (1,000) were observed. A small number of Greater Sand Plovers *Charadrius leschenaultii* were present along with a single Lesser Sand Plover *C. mongolus* and a party of six Slender-billed Curlews *Numenius tenuirostris* (see below).

(d) *Eastern end of the Haur Al Hammar at its outlet.*

The extreme eastern end of the open waters of the Haur Al Hammar were viewed from the mouth of the outlet river. Concentrations of Coot and possibly diving ducks could be seen stretching away into the distance and out of sight. Identification was almost impossible, and the recorded count of 15,000 Coot and 15,000 ducks/coots must represent only a tiny portion of the birds on the eastern end of the Haur.

(e) *Marshes between Maymund and Salam, and to the south of Salam*

These marshes constitute the extreme northern end of the vast marsh complex to the east of the main Haur Al Hammar. Between Maymund and Salam, a complex of shallow lagoons, small reed beds and wet arable land held good numbers of pelicans, a flock of 36 Sacred Ibises *Threskiornis aethiopicus,* and a wide assortment of waders. A boat journey down the river from Salam took the observers through an area of excellent sedge marsh with large numbers of Cattle Egret *Bubulcus ibis,* Little Egret *E. garzetta,* Great White Egret *Egretta alba,* Grey Heron *Ardea cinerea* and Glossy Ibis, into a complex of deep lagoons and large reed-beds with scattered Marsh Arab villages. This latter area was however poor for waterfowl, with little other than 3,500 Coot.

(f) *Artificial ponds on agricultural land to the west of Qalat Salih, and between Amara and Ali Gharbi*

A large number of small impoundments of between 5 and 15 hectares in extent are maintained in parts of Mesopotamia both for irrigation and for duck netting. Conditions are ideal for dabbling ducks and waders, and concentrations can be spectacular. Shortage of time permitted proper investigations of only three such ponds which together held over 100 pelicans, 500 Greater Flamingos *Phoenicopterus ruber,* and 20,000 ducks (chiefly Teal, Gadwall, Wigeon *Anas penelope,* Pintail and Shoveler). The cumulative importance of several dozen such ponds is clearly very great, and now that duck hunting has been banned in Iraq, every encouragement should be given to land-owners to

ensure that these ponds are maintained. Several of the best would undoubtedly make very fine wildfowl refuges or nature reserves.

(3) **Haur As Sa'adiyah area**

Haur As Sa'adiyah constitutes the largest in a chain of haurs stretching for 120 kilometres from near Ali Gharbi in the north to Haur Al Hammar in the south. These wetlands are particularly difficult of access, and during the present survey, it was only possible to visit the Sa'adiyah, and then only at one point on the eastern shore, near the village of Al Egreme. At that point, the lake was rather shallow and had little emergent vegetation. Few ducks were observed, but over 1,000 Grey Lag Geese *Anser anser,* 900 Greater Flamingos, 62 Common Cranes and 17 pelicans were seen roosting on islands in the lake. The surrounding fertile plains clearly provide excellent feeding habitat for geese and cranes, and there can be no doubt that this large wetland is of great importance for waterfowl. An aerial survey would however be essential for proper coverage.

(4) **Haur Uwainah**

The Haur Uwainah is one of several rather isolated small haurs to the west of the main Haur Al Hammar complex. The Uwainah has been somewhat reduced in size with the construction of embankments round the northern perimeter, but excellent meres and reed-beds still exist, and over 10,000 waterfowl, mainly Coot, were observed despite very poor coverage. The surrounding wet meadows and rain-water pools on the adjacent dusty plains held a good selection of waders in small numbers.

(5) **Haur Ash Shuwaija**

The Haur Ash Shuwaija is a large isolated haur on arid steppic plains north of Kut. The lake is apparently rather shallow and somewhat brackish. Although the lake itself was largely devoid of birds, the flooded steppe along the south and west shores, and the arable land to the south west, held large numbers of ducks and geese. These included over 300 Grey Lag Geese, 325 White-fronted Geese *Anser albifrons,* 1,280 Ruddy Shelducks *Tadorna ferruginea,* and 1,000 Mallard *Anas platyrhynchos.* Coverage was possible only at the south east corner of the lake and at the west end, so it is clear that this area could be extremely important for wintering geese and Ruddy Shelducks. Although no cranes were observed, local farmers reported that this species wintered in considerable numbers in the area.

(6) **Lake Usathe and Lake Razazah**

Lake Usathe is a small lake of about 100 hectares, a few kilometres to the east of the south east corner of Lake Razazah. Rather shallow, fresh, and with little emergent vegetation, the lake provides ideal conditions for many species of waterfowl. Amongst the numerous birds observed were 1,100 Greater Flamingos, 500 Shelducks *Tadorna tadorna,* 7,500 Teal, 3,000 Gadwall, 1,500 Wigeon, 5,000 Shoveler, 7,500 Coot and 300 Avocets *Recurvirostra avosetta.* The area was obviously much disturbed, and two hunters were present at the time of the survey, but secure roosting areas are available close by on Lake Razazah.

Lake Razazah is a very large, deep, brackish lake surrounded by desert, and in many areas with a low cliff shoreline. The lake was surveyed from the extreme south east corner and, 50 kilometres away, at the north west corner. At the south east corner of the lake there were spectacular concentrations of Coot (60,000+), grebes (1,100 Black-necked Grebes *Podiceps nigricollis* and 300 Great Crested Grebes *P. cristatus*), and Pochard *Aythya ferina* (1,500), but very little else. At the north west end of the lake, there was a particularly fine assemblage of birds, but unfortunately shortage of time prevented anything like proper coverage. In just one hour of observations, the following were recorded: 300+ Great Crested Grebes, 600+ White Pelicans, 3,000+Cormorants *Phalacrocorax carbo,* 50 Great White Egrets, 200 Spoonbills, 130 Greater Flamingos, 1,500 Tufted Ducks, 1,000+ Smew *Mergus albellus,* 5 Common Cranes, 35,000 Coots and 200+ Slender-billed Gulls *Larus genei.*

(7) **Attariya plains and marshes east of Baghdad**

The Attariya plains lying to the east of Baghdad comprise an area of several hundred square kilometres of desertic plains, arable land, areas of temporary inundation, and small permanent

marshes. The area is known to be of importance for wintering geese, Ruddy Shelducks and cranes, but would require aerial surveys for anything like complete coverage. During the present survey, the area was visited briefly and under unfavourable weather conditions, but nevertheless over 400 Ruddy Shelducks and 50 Grey Lag Geese were located, and a flock of 2,500 Black-tailed Godwits *Limosa limosa* was found on flooded arable land. One of the main marsh areas was still almost completely dry, and few ducks were observed, but these did include 13 Ferruginous Ducks *Aythya nyroca,* the only individuals of this species observed during the expedition.

THE WATERFOWL COUNTS

Over 475,000 waterfowl of 81 species were observed during the survey. These included almost 4,000 pelicans, over 3,000 Greater Flamingos, 2,400 geese, 140,000 ducks, 230,000 Coots, 20,000 waders, and 15,000 gulls and terns. It must, however, be stressed that the expedition was able to visit only a tiny fraction of the total area of wetland habitat in Iraq. While many of the areas that were not visited might hold relatively few birds, it is equally likely that vast concentrations of birds were completely overlooked. Thus it would be misleading to present the above figures as 'minimum figures' for the number of waterfowl wintering in Iraq, since it is obvious that the true number of birds present exceeds the counts many fold. Certainly there are several million waterfowl wintering in Iraq, but until extensive aerial surveys have been conducted, it will not be possible to be more precise.

The waterfowl counts in each of the seven regions are given in TABLE 1. The total figures are given in TABLE 11 along with the total obtained in the surveys of 1967/68, 1972 and 1975. While the surveys conducted in Iraq to date are still far from giving us any overall estimate for the number of waterfowl wintering in the country, they do give us a reasonable indication of the relative abundance of the species involved. It should be noted, however, that in all surveys, emphasis has been given to the pelicans, flamingos, ducks, geese and coots, so that the counts of other waterfowl and particularly the waders, gulls and terns, are generally too low. Further, certain inconspicuous species, such as the gallinules and rails (Rallidae), snipes *Gallinago sp,* and *Limnocryptes,* and some of the Ardeidae are invariably overlooked to a very large extent.

While the waterfowl counts of the present survey agree well with those of previous surveys in so far as species composition is concerned, several observations are worthy of special mention.

(i) **Wildfowl:** a surprising feature of the duck counts in January 1979 was the exceptionally high number of Tufted Ducks. Indeed, this was the most abundant duck (almost 41,000 counted), while in two of the earlier surveys, less than 100 were recorded. The Tufted Duck is normally a bird of more northern distribution, and it seems likely that very severe weather conditions in eastern Turkey and/or northern Iran had driven large numbers of birds south of their normal wintering range. Other observations which suggest an unusual invasion of more northerly species include over 1,000 Smew at the north west corner of Lake Razazah on 1 February; 3 Mute Swans *Cygnus olor* at Lake Usathe on 1 February; one Bewick's Swan *C. columbianus bewickii* along the south west shore of Haur Al Hammar on 27 January; and two Scaup *Aythya marila* with Tufted Ducks on Haur Aluwez on 23 January. Both swans have been recorded only as rare stragglers to Iraq.

The main wintering areas for geese in Iraq would appear to be on the vast marshy plains to the east of Baghdad, to the north of the Baghdad-Kut road, and around Haur Ash Shuwaija. Unfortunately, little time could be spent in these areas, and a rather small number of geese were observed. White-fronted Geese were seen only in one area, and no Lesser White-fronted Geese *Anser erythropus* or Red-breasted Geese *Branta ruficollis* were found. While it is possible that both the latter still winter regularly in Iraq, it seems very unlikely that they do so in any significant numbers.

(ii) **Pelicans** *Pelecanus sp.*: the present survey has emphasised the extreme importance of the wetlands of Iraq for wintering White Pelicans. Over 3,600 were observed, and the total number present may have exceeded that figure several fold. Many birds doubtless originate from the large breeding colony at Lake Rezaiyeh in north western Iran, where there were up to 1,600 pairs in the early 1970s (personal observation). One bird, ringed as a pullus at the Lake Rezaiyeh colony was recovered

only two weeks later near Baghdad (Argyle 1976). Some White Pelicans may breed in Iraq, but it would seem very likely that a large number of the wintering birds come from south eastern Europe.

Dalmatian Pelicans were present in much smaller numbers (247 counted), but as the total world population has recently been estimated at only 530 to 1,380 breeding pairs (A. Crivelli *pers. comm.*), and as the total number in Iraq in mid-winter might easily be as many as 1,000 individuals, the extreme importance of the Iraqi wetlands for this species is evident. Every effort should now be made to determine to what extent the two species of pelicans breed in Iraq.

(iii) **Night Heron** *Nycticorax nycticorax:* the discovery of two large day roosts (1,000 birds at Hammar and 800 at Misharah) certainly suggests that Mesopotamia is a very important wintering area for this species.

(iv) **Sacred Ibis** *Threskiornis aethiopicus:* a total of 40 was observed in the marshes to the east of the main Haur Al Hammar. The isolated population of this African species in Mesopotamia is still very poorly known. Small parties have been seen in southern Iraq on a number of occasions in the past (Ticehurst *et al* 1922), and up to 200 have been reported in recent winters in south western Iran (personal observation), but there seems to be little information on breeding (Cramp *et al* 1977). The location of the main breeding areas of this population should be given high priority in future breeding season surveys.

(v) **Marbled Teal** *Anas angustiorstris:* Quite surprisingly, none were observed during the present survey, and in fact the species was recorded in only one of the three previous surveys. Marbled Teal are known to breed widely in Iraq (Ticehurst *et al* 1922, Moore & Boswell 1956), and in the early 1970s, up to 20,000 were observed in winter in south west Iran, only a few kilometres from the Iraqi border (Scott & Carp 1972; personal observation). Thus it seems that the bulk of the Iraqi population undertakes a short migration to winter in Iran, although why this should be so is unclear, as there appears to be ample suitable habitat for the species in Iraq.

(vi) **Common Crane** *Grus grus:* Although only 126 were observed, local reports indicated that this species winters in large numbers in several areas.

(vii) **Waders:** It was not possible during the present survey to visit the extensive areas of intertidal mudflats around Fao or in the Haur Zubair, probably the most important wintering areas for waders in Iraq (see George & Vielliard 1970). Large concentrations of Kentish Plovers, Little Stints and Dunlin were seen on the muddy south shore of the Haur Al Hammar but, on the whole, waders were widely scattered and in small numbers. Small roadside ponds and temporary rain-water pools in the desert were particularly attractive to waders. Of special interest were observations of a single Lesser Sand Plover (the first record for Iraq) and a party of six Slender-billed Curlews on the south west shore of Haur Al Hammar on 27 January. The Lesser Sand Plover winters commonly in the Gulf north to Khuzestan, Iran (Scott *et al* 1975) and Kuwait (Jennings 1981) and has presumably been overlooked in Iraq in the past. The Slender-billed Curlew is now one of the rarest and most endangered of all wader species in the West Palearctic. Its main wintering areas are thought to be in north west Africa, but very few individuals have been seen in recent years, and no areas have been identified as regular haunts of the species (Scott & Prater *in litt.*). It was reported to winter in Iraq in the early part of this century, but none had been seen since 1917 (Ticehurst *et al* 1922). The presence of this small party in January 1979 suggests that a small wintering population has survived in Iraq, and every effort should now be made to learn more of this population and afford it every protection.

Both Black-winged Stilts and Avocets were seen in larger numbers than during previous surveys (counts of 666 and 1,126, respectively), and it is clear that important populations of both species winter in Iraq. Many, if not most, probably originate from the large breeding colonies at Lake Rezaiyeh in north western Iran.

OTHER INTERESTING AVIFAUNAL RECORDS

Although emphasis was given to the waterfowl, detailed records were kept of all other ornithological observations. In general, the findings of the present survey agreed closely with those

of other recent workers (Moore & Boswell 1956 & 1957; George & Vielliard 1970), and thus only the more interesting observations are listed here.

Raptors

The lowlands of Mesopotamia are clearly of great importance for wintering birds of prey. Over one thousand individuals of fifteen species were observed (TABLE III). Many of these are largely dependent on the rich wetland fauna for their prey and would suffer as badly from a deterioration in the wetlands as would the waterfowl. Observations of wintering Booted Eagle *Hieraaetus pennatus* (two over Basrah city on several dates) and Montagu's Harrier *Circus pygargus* (adult male in arable land 43 kms. north west of Amara on 19 January) were unusual; while the absence of White-tailed Eagle *Haliaeetus albicilla* was rather surprising.

Sandgrouse

Spotted Sandgrouse *Pterocles senegallus* were observed in three desert areas, and a small group of Pin-tailed Sandgrouse *P. alchata* was found on wet arable land between Amara and Ali Gharbi on 18 January. A total of 142 Black-bellied Sandgrouse *P. orientalis* were observed in small parties in the desert 20 kms. north of Basrah near the Iranian border on 15 January. This seems to be a rare winter visitor to southern Iraq, although it occurs regularly in winter on the plains of Khuzestan in south west Iran (personal observation).

Otus brucei **Striated Scops Owl**

One flushed by day in an orchard on the University Campus of Baghdad on 2 February.

Apus pallidus **Pallid Swift**

Common over Basrah city and nearby Az-Zubair, and also over Baghdad, but very scarce elsewhere.

Riparia riparia **Sand Martin**

One with Swallows near Fuhud on 25 January; presumably an early migrant.

Hirundo rustica **Swallow**

A few birds were present in the Basrah area from early January, and presumably wintering; but a marked increase occurred on 25 January, and over 50 birds were observed in areas in southern Iraq on 25-27 January.

Anthus campestris **Tawny Pipit**

One on the east side of Haur As Sa'adiyah on 18 January.

A. cervinus **Red-throated Pipit**

One in marshes on the Amara-Misharah road on 18 January; one at Haur As Sa'adiyah on 18 January; and two at Haur Aluwez on 22 January.

Motacilla flava feldegg **Black-headed Wagtail**

One male at Az-Zubair near Basrah on 22 January. This race is known to winter in very small numbers in the marshes of south west Iran (personal observation).

M. citreola **Citrine Wagtail**

Two in marshes at Haur Aluwez on 23 January. This species, which winters quite commonly at wetlands in Iran south west to Khuzestan on the Iraqi border (personal observation), had not previously been recorded in southern Iraq. The only previous record from Iraq was of a male seen in spring near Mosul, in the north (Moore & Boswell 1957).

M. cinerea **Grey Wagtail**

One at Ali Gharbi on 19 January.

Prunella modularis **Dunnock**

Three at the University Campus of Baghdad on 2 February.

Luscinia svecica **Bluethroat**

One in marshes at Haur Aluwez on 22 January.

Oenanthe isabellina **Isabelline Wheatear**

A total of 13, mainly on arable land, in the Basrah, Haur Al Hammar and Lake Razazah areas, between 18 January and 1 February.

O. deserti **Desert Wheatear**

A total of five at scattered localities in southern Iraq between 15 and 26 January.

O. finschii **Finsch's Wheatear**

Two in desert north of Basrah on 15 January.

Acrocephalus melanopogon **Moustached Warbler**

Two at Haur Aluwez on 22 January; four at the east end of Haur Al Hammar on 28 January.

A. stentoreus **Clamorous Reed Warbler**

One in marshes at Haur Aluwez on 22 January. This common resident in marshes in southern Iran had only recently been recorded in Iraq, apparently as a scarce winter visitor to marshes in the Basrah area (P. V. George Kainady, *pers. comm.*).

Sylvia nana **Desert Warbler**

One in desert north of Basrah on 15 January.

Phylloscopus inornatus **Yellow-browed Warbler**

One of the race *humei* in a hotel garden in Basrah on 12 and 13 January; and one, also *humei,* in gardens on the University Campus of Baghdad on 2 February. These constitute the first records for Iraq. *P. i. humei* winters commonly in south east Iran, but has not been recorded in winter west of the Bandar Abbas region 56°E (personal observation).

Turdoides altirostris **Iraq Babbler**

Common in marshes and date gardens in the Basrah area and around Haur Al Hammar; scarce in the Baghdad area.

T. caudatus **Common Babbler**

Observed only in the Baghdad area, where it apparently outnumbers *T. altirostris.*

Remiz pendulinus **Penduline Tit**

One at Ali Gharbi on 19 January.

Carduelis chloris **Greenfinch**

Four on the University Campus of Baghdad on 2 February.

The following species, known to be common in southern Iraq in winter, were also observed: *Francolinus francolinus; Columba livia; Columba palumbus; Streptopelia decaocto; Halcyon smyrnensis; Alcedo atthis; Ceryle rudis; Coracias benghalensis; Alaemon alaudipes; Melanocorypha calandra; Calandrella rufescens; Galerida cristata; Alauda arvensis; Anthus pratensis; Anthus spinoletta; Motacilla alba; Pycnonotus leucogenys leucotis; Erithacus rubecula; Phoenicurus ochruros; Saxicola torquata; Turdus merula; Turdus philomelos; Cisticola juncidis; Prinia gracilis; Phylloscopus collybita; Lanius isabellinus; Lanius excubitor; Pica pica; Corvus frugilegus; Corvus corone; Corvus corax; Sturnus vulgaris; Passer domesticus; Passer hispaniolensis; Passer moabiticus; Fringilla coelebs; Carduelis carduelis; Carduelis cannabina; Emberiza schoeniclus; and Miliaria calandra.*

WATERFOWL HUNTING

The exploitation of wintering wildfowl populations by hunters does not seem to have occurred to any great extent in Iraq. Locally, duck netting in the marshes and at specially maintained ponds may have taken a heavy toll and at some of the smaller and more readily accessible wetlands, particularly near Baghdad, shooting pressure may be severe. However, the sheer vastness of the marshes has undoubtedly prevented exploitation from reaching excessive levels.

During the present survey, the Vice-President of Basrah University informed the participants of the expedition that the Government had issued new regulations banning all hunting in Iraq in order to conserve wildlife, particularly terrestrial game which had been heavily persecuted in the past. No doubt some illegal duck netting will continue, at least until an effective body of game-guards or wardens has been established to enforce the regulations. However, it is evident that hunting pressure does not at the moment pose any serious threat to waterfowl populations in Iraq.

WETLANDS OF INTERNATIONAL IMPORTANCE IN IRAQ

TABLE IV lists the wetlands of Iraq as described by George and Savage (1970), and surveyed in 1967/68, 1972, 1975 and 1979 (see also *Figure 1*). The maximum count of Anatidae (ducks and geese) plus Coots obtained during the four surveys is given as an indication of the importance of the wetlands for wintering wildfowl. However, in the grading of wetlands in TABLE IV, consideration has also been given to other waterfowl species and to the quality of the habitat.

We can immediately identify a number of large wetlands of great international significance for wintering waterfowl. These are Lake Razazah and Lake Usathe, Haur Ash Shuwaija, Haur As Sa'adiyah, Haur Al Hammar and its marshes, and Haur Hawizeh. Clearly, every effort should be made to afford as great a part of these wetlands as possible full protection through the establishment of national parks and other specially protected areas.

A number of other wetlands (generally much smaller in size) are known to have held internationally significant concentrations of wintering waterfowl in recent years. These include wetlands in the Baquba area, the Samarra Barrage, Lake Tharthar, wetlands in the Kerbala area, the Attariya plains, irrigation ponds between Kumait and Ali Gharbi and at Qalat Salih, and Haur Uwainah and adjacent haurs. Further studies are required to determine whether or not these wetlands are regularly of importance for waterfowl. It seems likely, however, that several would constitute ideal sites for waterfowl refuges and nature reserves.

Several other wetlands which may be of international importance remain poorly known and further investigation is essential. These include the plains of Haur Ash Shubaicha, Haur Ibn Najim, Haur Lafta, Haur Sanniya, Haur Chubaisah and Haur Sanaf, Haur Auda and Haur Zubair.

CONCLUSIONS

In spite of the cancellation of the planned aerial survey, the IWRB/Basrah University Expedition of January 1979 obtained a great deal of information on the wetlands of Iraq, and on the composition and distribution of waterfowl populations wintering there. The great international importance of the Haur Al Hammar and Lake Razazah has been confirmed and, on the suggestion of the Vice-President of the University of Basrah, proposals for the creation of protected areas have been made. The limited observations made on the shores of Haur As Sa'adiyah, around Haur Ash Shuwaija, and on the Attariya plains indicate that these areas continue to be of great importance for geese , Ruddy Shelducks and Common Cranes, but further surveys are required to enable the selection of suitable sites for reserves.

Because of a lack of time, no visits could be made to Haur Hawizeh east of the Basrah-Amara road, the big storage lakes of Habbaniya and Tharthar, the Haur Ash Shubaicha plains north west of Kut, the valley of the Euphrates between Kerbala and Nasiriya, or the chain of wetlands between haur As Sa'adiyah and Haur Al Hammar. The need for airplanes in proper surveying work was

apparent, and indeed the top priority now is for a complete aerial survey of the main wetland areas.

Work to date has concentrated on the wetlands in winter. However, it is clear that there are vast areas ideally suited for breeding waterfowl of a wide variety of species, and it is therefore desirable that surveys be conducted during the breeding season (April to June) as soon as possible. Here again, an airplane would be essential.

We would like to express our gratitude to the authorities in Iraq, and to the staff of the University of Basrah and the Basrah Natural History Museum who were helpful in one way or another in making the expedition a success.

SUMMARY

The wetlands of Mesopotamia in lower Iraq constitute one of the most important wintering areas for waterfowl in south west Asia. Surveys conducted in the late 1960s and in 1972 and 1975 had demonstrated the importance of the wetlands, but large areas remained poorly known. Between 10 January and 3 February 1979, a joint International Waterfowl Research Bureau/Basrah Natural History Museum expedition conducted wetland surveys and waterfowl censuses in southern Iraq, concentrating on the Haur Al Hammar area, and thereby largely complementing earlier surveys. Over 475,000 waterfowl of 81 species were observed. Large concentrations of Tufted Duck *Aythya fuligula,* over 1,000 Smew *Mergus albellus,* and small numbers of Mute Swan *Cygnus olor,* Bewick's Swan *C. columbianus* and Scaup *Aythya marila,* suggested that an unusual invasion of northern species had occurred, presumably as a result of severe weather further north. Other interesting waterfowl included over 3,600 White Pelicans *Pelecanus onocrotalus,* 247 Dalmatian Pelicans *P. crispus,* 40 Sacred Ibis *Threskiornis aethiopicus,* a Lesser Sand Plover *Charadrius mongolus* (first for Iraq), and 6 Slender-billed Curlew *Numenius tenuirostris* (first since 1917).

The importance of the Mesopotamian wetlands for wintering raptors was apparent; over 1,000 individuals of 15 species were observed. Other interesting observations of land-birds are described. These included the second record for Iraq of Citrine Wagtail *Motacilla citreola,* and the first and second records of Yellow-browed Warbler *Phylloscopus inornatus humei.*

Hunting seems not to have posed a serious threat to waterfowl populations in Iraq, and in 1979, the hunting of wildlife was prohibited throughout the country. The relative importance of the wetlands for wintering waterfowl is reviewed, and key wetlands of international importance are identified.

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TABLE 1. TOTAL WATERFOWL OBSERVED DURING I.W.R.B./BASRAH UNIVERSITY EXPEDITION TO THE WETLANDS OF IRAQ: 11 JANUARY TO 2 FEBRUARY 1979

Areas:

(1) Basrah area
(2) Haur Al Hammar and adjacent areas (Qurna, Amara, Misharah, Maymund, Fuhud and Nasiriya)
(3) Haur As Sa'adiyah and Ali Gharbi areas
(4) Haur Uwainah and Nasiriya-Kut road
(5) Haur Ash Shuwaija area
(6) Lake Razazah and Kerbala areas
(7) Baghdad and Attariya plains

Species	*Total counts*						
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
Tachybaptus ruficollis		28		4		23	
Podiceps cristatus		14				600	
Podiceps nigricollis		3				1,100	
Phalacrocorax carbo		35			1	3,001	1
Phalacrocorax pygmeus		48					
Pelecanus onocrotalus		2,864		140		601	
Pelecanus crispus	1	243				3	
Pelecanus sp.		57	17				
Botaurus stellaris		1					
Ixobrychus minutus			1				
Nycticorax nycticorax		1,820					
Ardeola ralloides		20					
Bubulcus ibis		50					
Egretta garzetta	9	154	1	6		23	
Egretta alba		56				51	
Ardea cinerea	13	473	4	2	1	12	
Ardea purpurea		35					
Ciconia ciconia	105	236	3	1	1	2	
Plegadis falcinellus		150					
Threskiornis aethiopicus		40					
Platalea leucorodia		53		6		200	
Phoenicopterus ruber		610	917		330	1,230	
Cygnus olor						3	
Cygnus columbianus bewickii		1					
Anser albifrons					325		
Anser anser		150	1,026	7	319		51
Anser sp.			372		144		
Tadorna ferruginea			65		1,280		412
Tadorna tadorna		431	188	108	248	730	13
Anas penelope		1,182	775	90	137	1,502	
Anas strepera		11,007	1,310	322	435	3,000	
Anas crecca		27.078	3,226	822	64	7,522	135
Anas platyrhynchos		440	159	17	1,007	203	170
Anas acuta		5.724	1,270	121	219	656	
Anas querquedula		3					
Anas clypeata		4,136	763	1,161	40	5,372	2
Netta rufina		5		2			
Aythya ferina		1,952	3			1,521	

Species	Total counts						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Aythya nyroca							13
Aythya fuligula		39,292				1,600	
Aythya marila		2					
Mergus albellus		3	1			1,000	
unidentified ducks		1,607	600	2,920	190	5,000	
Rallus aquaticus		1					
Porzana pusilla		1					
Gallinula chloropus	3	151		1		2	
Porphyrio porphyrio		14					
Fulica atra	10	118,723	210	9,023		102,522	6
ducks/coots		45,000				8,000	
Grus grus		22	94			5	5
Himantopus himantopus	47	360	30	187	7	35	
Recurvirostra avosetta	17	388	20	380	1	300	20
Charadrius hiaticula	65	40	1				2
Charadrius alexandrinus	216	6,387	2	63	275	45	40
Charadrius mongolus		1					
Charadrius leschenaultii		15					
Pluvialis squatarola		6					
Hoplopterus indicus	5	36	12	15	11	9	16
Chettusia leucura	50	292	78	111	37	26	1
Vanellus vanellus		70	43	46		6	2
Calidris minuta	400	1,993	31	182	1	5	
Calidris temminckii	1	22	2	1		2	
Calidris ferruginea	10						
Calidris alpina	130	2,191	190	260	4	20	15
Philomachus pugnax	1	14			1		1
Lymnocryptes minimus		1					
Gallinago gallinago	15	101	2	4			
Limosa limosa	2	376	151	350	1		2,500
Numenius tenuirostris		6					
Numenius arquata		1					
Tringa erythropus		107	3	3	1		1
Tringa totanus	101	348	20	34	11	8	8
Tringa stagnatilis	53	84	2	5			
Tringa nebularia	4	58	3	5		2	2
Tringa ochropus	4	5	2	4			1
Tringa glareola	4	5					
Actitis hypoleucos		2					
Larus ichthyaetus	1	44	4	1			
Larus ridibundus	4,000	4,685	90	726	24	200	1,000
Larus genei		464				201	
Larus canus		2	1				
Larus argentatus	90	1,709	118	136	645	82	160
Gelochelidon nilotica		49	4	6	6		
Sterna caspia		108	1				
Chlidonias hybrida	24	458	7	11			

TABLE II. WATERFOWL OBSERVED IN FOUR MIDWINTER SURVEYS IN IRAQ

Surveys
(1) J. Vielliard and P. V. George Kainady; 21.12.1967 to 18.01.1968.
(2) F. J. Koning and L. J. Dijksen; 19.12.1972 to 29.12.1972.
(3) E. Carp; 08.01.1975 to 02.02.1975.
(4) T. R. Atti, E. Carp, P. V. George Kainady and D. A. Scott; 10.01.1979 to 03.02.1979.

Species	*Total counts*			
	Survey 1	*Survey 2*	*Survey 3*	*Survey 4*
Tachybaptus ruficollis	90	14	66	55
Podiceps cristatus		8	8	614
Podiceps nigricollis		58	40	1,103
Phalacrocorax carbo	23	38	1,528	3,038
Phalacrocorax pygmeus		6	102	48
Pelecanus onocrotalus	508	873	34	3,605
Pelecanus crispus	119	53	1	247
Pelecanus sp.		426	1,642	73
Botaurus stellaris	1		2	1
Ixobrychus minutus				1
Nycticorax nycticorax	201	25	11	1,820
Ardeola ralloides	7		10	20
Bubulcus ibis				50
Egretta gularis	78			
Egretta garzetta	145	32	27	193
Egretta alba	40	17	99	107
Ardea cinerea	181	564	77	505
Ardea purpurea		6	6	35
Ciconia ciconia	1,289	13	246	348
Plegadis falcinellus	225		19	150
Threskiornis aethiopicus	1			40
Platalea leucorodia	22	175	40	259
Phoenicopterus ruber	735	889	3,500	3,087
Cygnus olor				3
Cygnus columbianus bewickii				1
Anser albifrons	345	12		325
Anser erythropus	126	70		
Anser anser	1,712	991	18	1,553
Anser sp.		150	25	516
Tadorna ferruginea	126	38	12	1,757
Tadorna tadorna	41	37	5	1,718
Anas penelope	4,474	4,770	6,060	3,686
Anas strepera	28	116	3	16,074
Anas crecca	37,256	64,772	11,135	38,847
Anas platyrhynchos	5,264	15,544	4,075	1,996
Anas acuta	7,591	14,070	5,251	7,990
Anas querquedula				3
Anas clypeata	20,239	3,667	370	11,474
Marmaronetta angustirostris	180			
Netta rufina		7		7
Aythya ferina	1,640	237	2,052	3,476
Aythya nyroca	31			13
Aythya fuligula	4	6,800	50	40,892

Species	Total counts			
	Survey 1	Survey 2	Survey 3	Survey 4
Aythya marila				2
Mergus albellus		68		1,004
Oxyura leucocephala		1		
Rallus aquaticus	1		12	1
Porzana pusilla				1
Gallinula chloropus	6	2	3	157
Porphyrio porphyrio	1			14
Fulica atra	15,362	16,620	129,622	230,494
Grus grus		27	12	126
Haematopus ostralegus	60			
Himantopus himantopus	566	130	58	666
Recurvirostra avosetta	721	460	35	1,126
Charadrius dubius			12	
Charadrius hiaticula	10			108
Charadrius alexandrinus	7,682	1,414	80	7,028
Charadrius mongolus				1
Charadrius leschenaultii	14			15
Charadrius asiaticus	30			
Charadrius morinellus		49		
Pluvialis squatarola	13			6
Hoplopterus indicus	131	16	2	104
Chettusia leucura	145	12	95	595
Vanellus vanellus	208	37	1	167
Calidris minuta	5,414	59	50	2,617
Calidris temminckii	19	2		28
Calidris ferruginea				10
Calidris alpina	10,464	204	1,120	2,810
Limicola falcinellus	16			
Philomachus pugnax	2,278		1	17
Lymnocryptes minimus	2		1	1
Gallinago gallinago	57	3	72	122
Scolopax rusticola	1			
Limosa limosa	484	280	132	3,380
Limosa lapponica	110			
Numenius tenuirostris				6
Numenius arquata	520			1
Tringa erythropus	272	189	22	115
Tringa totanus	182	21	57	530
Tringa stagnatilis	211	5	1	144
Tringa nebularia	33	10		74
Tringa ochropus	85	5	1	16
Tringa glareola	8	1	1	9
Xenus cinereus	100	1		
Actitis hypoleucos	5	1		2
Arenaria interpres	4			
Larus ichthyaetus				50
Larus minutus	2			
Larus ridibundus	795	1,560	240	10,725
Larus genei	1,109	4	16	665
Larus canus				3
Larus fuscus	20		1	
Larus argentatus	1,417	585	335	2,940
Gelochelidon nilotica	235	95	4	65
Sterna caspia	59	22	2	109
Chlidonias hybrida	108	157	50	500

Note: Survey 1 was the only survey to include a visit to tidal mud-flats at the head of the Gulf near Fao.

TABLE III. OBSERVATIONS OF RAPTORS IN IRAQ:
11 JANUARY TO 2 FEBRUARY 1979

Areas:

(1) Basrah area
(2) Haur Al Hammar and adjacent areas (Qurna, Amara, Misharah, Maymund, Fuhud and Nasiriya)
(3) Haur As Sa'adiyah and Ali Gharbi areas
(4) Haur Uwainah and Nasiriya-Kut road
(5) Haur Ash Shuwaija area
(6) Lake Razazah and Kerbala areas
(7) Baghdad and Attariya plains

Species	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*Total*
Milvus migrans	305	119	2		3			429
Circus aeruginosus		273		13		7		293
Circus cyaneus		1				1		2
Circus macrourus		13	4	1				18
Circus pygargus			1					1
Accipiter nisus		3		1				4
Buteo rufinus		25	7	6	3			41
Buteo sp.	1	10						11
Aquila clanga		24						24
Aquila nipalensis		2						2
Aquila heliaca		16	9	6	3	2		36
Aquila sp.		18	11	17	4			50
Hieraaetus pennatus	2							2
large raptors unidentified		14	14	8	3	1		40
Pandion haliaetus		12						12
Falco tinnunculus	1	37	8	5	2	1	1	55
Falco columbarius	1	4	1	1		1		8
Falco peregrinus		4	1	1				6

TABLE IV: THE WETLANDS OF IRAQ

Map	*Wetland*	*Coordinates*	*Area sq. km.*	*No. of visits*	*Grade**	*Maximum count***
1	Tigris River	—	—	3	D	1,350
2	Euphrates River	—	—	0	?	—
3	Wetlands near Baquba	33°55′N 44°50′E	20	2	B	38,500
4	Shari Lake	34°24′N 44°06′E	60	0	?	—
5	Samarra Barrage	34°15′N 43°52′E	3	1	B	5,800
6	Tharthar Lake	33°55′N 43°16′E	2,300	2	B	3,000
7	Habbaniya Lake	33°16′N 43°30′E	200	2	D	200
8	Razazah Lake	32°40′N 43°40′E	1,500	2	A	107,000
9	Usathe Lake	32°37′N 43°55′E	1	1	A	30,500
10	Baghdad – Kerbala area	32°55′N 44°18′E	?	2	B	26,000
11	Attariya plains	33°25′N 44°55′E	400	2	B	8,800
12	Haur Ash Shubaicha	33°15′N 45°18′E	750	0	C	—
13	Haur Ash Shuwaija	32°42′N 45°55′E	500	3	A	11,000
14	Haur Al Abiya/Umm Al Baram	32°30′N 46°05′E	100	0	?	—
15	Haur Delmaj	32°30′N 45°30′E	1,000	0	?	—
16	Haur Ibn Najim	32°08′N 44°35′E	100	0	C	—
17	Haur Lafta	31°21′N 45°31′E	200	0	C	—
18	Wetlands in Hai area	32°10′N 46°02′E	80	1	D	50
19	Haur As Sa'adiyah/Umm Roij	32°12′N 46°35′E	900	2	A	3,500
20	Haur Sanniya	31°55′N 46°48′E	400	0	C	—
21	Ponds Kumait-Ali Gharbi	32°13′N 46°47′E	2	2	B	8,300
22	Haur Chubaisah/Sanaf	31°53′N 47°18′E	275	2	C	1,200
23	Ponds near Qalat Salih	31°30′N 47°14′E	1	1	B	13,500
24	Marshes Maymund/Salam area	31°40′N 47°01′E	150	2	D	600
25	Haur Umm Osbah/Al Rayan	31°25′N 47°05′E	250	2	D	4,000
26	Haur Auda	31°33′N 46°51′E	75	0	C	—
27	Haur Uwainah/Chamuqa	31°22′N 46°25′E	325	2	B	13,000
28	Haur Al Hammar and marshes	30°45′N 47°10′E	6,500	3	A	200,000
29	Haur Hawizeh	31°20′N 47°35′E	2,200	1	A	2,700
30	Shatt Al Arab/Basrah area	30°34′N 47°46′E	—	2	D	15
31	Haur Zubair	30°12′N 47°54′E	200	0	C	—
32	Fao area	29°55′N 48°32′E	—	1	D	2,050

*A—large wetland of great international importance.
B—wetland with large concentrations of wildfowl, possibly of international importance.
C—importance unknown, but possibly great.
D—apparently not very important.
?—unknown.

**maximum count of Anatidae and *Fulica atra*.

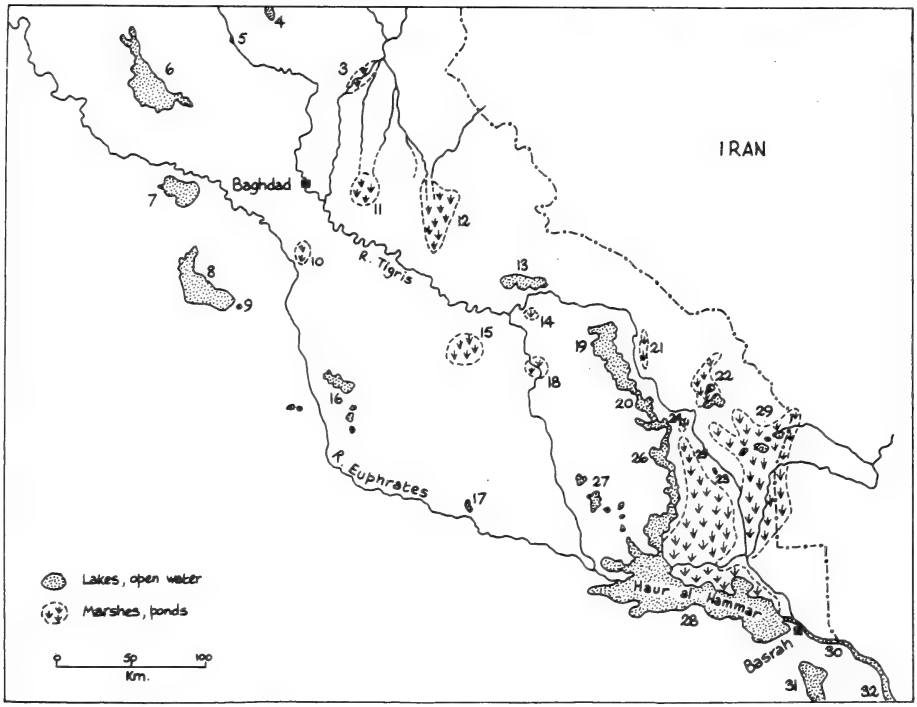

Figure 1. The Wetlands of Iraq (see TABLE IV *for place names).*

OBSERVATIONS ON MIGRANT BIRDS AT AZRAQ AND NORTH-EAST JORDAN, UP TO APRIL 1967

by

D. I. M. Wallace

INTRODUCTION

In 1963, 1965, 1966 and 1967, eleven British ornithologists spent a total of 54 spring days at the Azraq oasis in eastern Jordan. Their visits spanned the period of 14 April to 12 May and were associated with an attempt to sketch in the natural history and ecology of an area chosen as the site of an International Biological Station and a future National Park. The explorations were begun by Guy Mountfort and were sustained by Max Nicholson and the (then) Nature Conservancy.

Narrative descriptions of Azraq and its birds have been published by Mountfort (1966) and Nelson (1973).* A draft management plan and detailed report on the final reconnaissance were prepared respectively by J. H. Hemsley and Dr. M. George (1966) and Dr. J. Morton Boyd (1967) and published under the International Biological Programme. All these discussed the ornithology of the Azraq oasis and its desert surround but none expressed the wealth of disciplined information amassed on breeding and migrant birds. I am grateful to O.S.M.E. for a late chance to reduce some of the guilt arising from the non-appearance of 'the Azraq papers'. This paper takes as its main subject the spring migration in 1963, 1965 and 1966 but it also includes brief notes on all migrants or visitors in other seasons for 1922, 1947, 1955, 1963, 1964, 1965 and 1967. It does, however, exclude Nelson's records and the systematic lists that follow are therefore a register of all observations prior to his.

GENERAL CHARACTER OF THE STUDY AREA

The oasis of Azraq is created by permanent aquifers which upwell as springs and support dense reedbeds, swamps, grass marshes and cultivation. Dependent on the amount of seasonal rain, a large or small saline lake borders the spring outfalls and fills a shallow basin below basalt flows (to the north) and limestone ridges (to the east and, less obviously, to the west). To the south of the oasis, a chert plain with many shallow wadis (often densely carpeted with shrublets and still supporting patches of taller vegetation) yields abruptly into the heavily eroded defile of the Wadi Sirhan and the sandier desert and inselbergs of southern Jordan.

GENERAL CHARACTER OF LOCAL CLIMATE IN THE SPRINGS OF 1963, 1965 AND 1966

Atmospheric pressure in April and May varied through no more than 20mm., of which 7mm. appeared to be normal diurnal variation. The highest shade temperature recorded during daylight was 35°C, with midnight and dawn readings varying between 13.0° and 25.5° and 11.5° and 21° respectively. The sky was usually clear at dawn but on one day in six, three to six-eighths cloud or haze cover was present, usually to the east. This cleared in the morning but occasionally it persisted. Cloud forms were generally of cirrus or cirrostratus forms. The wind was usually W.N.W. 1-2, Beaufort-scale, at dawn, W. or S.W. 3-4 by noon and back to N.W. or W. 2-3 by dusk. Occasionally it went completely about for several hours. Two 30 knot blows brought unpleasant dust storms. A few drops of rain fell on one day. Azraq lies south of the frost line but mean winter temperatures fall to 2°. Following heavy rains early in 1965, the area bloomed with flowers and even wild wheat.

*See also: CLARKE, J. E. 1980. The avifauna of Shaumari Wildlife Reserve. *Sandgrouse* 1: 50-67 and CONDER, P. 1981. Birds of the Azraq Wetland Reserve, Jordan: January and February 1979. *Sandgrouse* 2: 22-32. *Ed.*

THE NATURE OF THE SPRING MIGRATION

In general, the observations on spring migrants at or near Azraq indicated that most of them come from wintering grounds in East Africa, and that they approach the oasis directly from the south and on a broad front. Trapped passerines showed arrival weights generally above those of identical species in the north west Sahara (R. Spencer and J. S. Ash, *in litt.*) and this fact suggested that their incoming flights were of less distance or duration than those normal over north west Africa. Even so, extrapolation of radar studies in Cyprus (Adams 1962) allowed the possibility of direct arrivals from Sudan and Eritrea and such non-stop flights would seem sensible. Any interim staging in Arabia proper would involve much poorer chances of recuperation. Extremely arid deserts and uplands exist only 200 km. to the south and east of the Azraq basin. Recuperation of night migrants at the oasis was rapid, with the average off-passage period for insectivorous species estimated at 1.6 days (or their departure made on the second night after arrival).

In addition to the birds moving from the south, others may have been approaching from the south west and some were undoubtedly appearing from the east or south east. The latter would derive advantage from maintaining a heading into the prevailing north westerly winds of the Arabian spring. Diurnal migrants clearly did. Generally the local weather at Azraq had no obvious effect on falls of nocturnal migrants. In the usually fine overnight weather, the oasis is clearly its own attraction. Its water surfaces must be visible at a great distance and the descent to them and their vegetation by birds is likely to be purposeful. On a few occasions, however, the numbers of grounded birds increased in response to stronger northerly winds.

Up to and including the observations of 1963, the numbers of raptors seen at Azraq suggested only a thin passage. In 1965 and 1966, however, records of raptors mounted rapidly and the overall total of about 1,320 birds (on 54 days lacking any purposeful investigation of overhead passage) points to a regular and sizeable overspill from the mass movements to the west (*contra* Safriel 1968). A list of the important additions to the migrant ornithology of the Middle East follows the systematic list.

A MEASURE OF THE SPRING MIGRATION

During our visits, migration through the oasis was virtually continuous. Furthermore, it is certain that substantial passage occurs earlier than mid-April (F. Wazani *pers. comm.*) and we never left the oasis empty of migrants. Assessing the overall volume of passage was difficult but the peak populations of each main group of migrants between 14 April and 12 May were estimated as follows:

Ardeidae, Ciconiidae	260	
Anatidae	500	
Falconiformes	240	
Charadriiformes*	12,000	
Columbidae	500	
Other non-passeriformes	220	(13,720)
Hirundinidae*	20,500	
Motacillidae*	2.500	
Turdinae	350	
Sylviidae*	2,000	
Laniidae	250	
Other passeriformes	250	(25,850)

It is likely that the 120 square km. of the oasis and immediate desert surround can temporarily support up to 50,000 birds and the total spring passage may thus be numbered in several hundred thousands. In the case of the groups marked with an asterisk, the volume of passage far exceeds that seen at Eilat, Israel (Safriel 1968) and Habbaniya, Iraq (Chapman & McGeoch 1956).

RINGING RECOVERIES FROM AZRAQ

In September 1963 and in April and May 1965 and 1966, a total of 2,793 birds were mist-netted

in the marginal cultivation and drier marsh areas of the oasis. Local retraps in spring totalled 101 (3.6%) but recoveries numbered only 13 (0.5%). The former included a Reed Warbler *Acrocephalus scirpaceus* retracing its flight a year and 12 days after first capture; the latter featured four Swallows *Hirundo rupestris*, two Sand Martins *Riparia riparia* and singles of Snipe *Gallinago gallinago*, Turtle Dove *Streptopelia turtur*, Wryneck *Jynx torquilla*, Yellow and White Wagtails *Motacilla flava/alba*, Lesser Whitethroat *Sylvia curruca* and Chiffchaff *Phylloscopus collybita*. The recoveries were made within 16 days and 3½ years of ringing or retrap date and dated almost equally between spring and autumn. Geographically they fell into two groups, with all non-passerines and hirundines reported from Poland to west Russia and the other passerines all shot or limed between Cyprus and Syria. The low return from the Azraq ringing effort was disappointing. The widest angle between recoveries exceeds 70° and this, together with several racial identifications, points to a remarkably wide fan of migration in the latitudes north of Azraq. The most dramatic recovery has already been discussed (Ferguson-Lees 1966).

KEY TO TREATMENT IN SYSTEMATIC LIST OF MIGRANT SPECIES

To allow proper interpretation of the much condensed analyses, some explanation of them is necessary.

Localities:

Thirty areas and places are mentioned and of these 22 can be located in *Figure 1*, of which the central feature is Qa El Azraq. The remaining eight are further explained as follows:

Oasis: entire areas of oasis, containing the maximum area of the saline lake (Qa El Azraq), both outfall and marsh areas, perimeter vegetation, artefact surrounds and villages at Shishan and Druz.

Oasis and desert surround: as Oasis but including a mile wide surround of steppe, limestone desert and basalt flow.

Shishan: outfall and marsh, Nitraria wilderness between village and saline lake border, including village and springs.

Druz: outfall, marsh and failed cultivation between village and saline lake border, including village and spring.

Desert: all areas of limestone or basalt desert, in no way exhibiting an obvious connection with vegetation or permanent water systems of the oasis.

Shaumari: agricultural research station with irrigated plots, tree cover and cane breaks.

H4, a major pumping station, and *Burku* lie about 120 km. east north east of *H5*.

Scale of migration

No note is usually made of single birds (the date of such records standing alone). Bracketing (*upwards:* e.g. 5-50, in the case of increasing or little varying passage: *downwards:* e.g. 12-1, in the case of decreasing passage) is employed whenever long series of counts are involved. Several brackets are employed when noticeable patterns would not otherwise be disclosed. In the case of oasis counts of passerine migrants, calculation not exceeding 5% of observed figures has been allowed to cover erratically timed observations.

Frequency of occurrence

Where a species was noted daily (or was probably present daily), no comment has been made. Otherwise the number of days yielding records in the three years within the period of migration (or part of same) are noted, e.g. 19 days, 19 April to 11 May. No attempt is made to sub-divide frequency by year of observations and thus where dates overlap, the *total* number of 53 possible recording days (over the first three years) should be used as a base on which to judge occurrence frequency.

Dating

Where records within a period covered in three or two years are condensed, the years are omitted. Otherwise the year is usually given and this is also the case when notable records, e.g. unusual desert concentrations, are fully detailed. Where no clear first date of appearance was obtained, the first is shown in brackets.

Total size of migrant populations

Where possible, this is indicated either in actual bird numbers or, more usually, in totals of bird/days. Thus a table of comparative abundance in the total period arises, though due to the necessarily erratic observation of certain groups, it is not constant for all 192 species in spring.

Direction and timing of passage

Where available, the general directions of diurnal passage and arrivals or departures in the oasis are given.

Other comment

Racial identifications and other interpretative notes are made where practical.

Records at other seasons and in other years

Where a species was recorded in spring and has also occurred in another season, brief details of the latter records are given.

General migrant status and abundance rating

A brief term classifying each bird's abundance as a spring migrant is given after its name viz:

Very rare:	Less than five records, occurring in only one or two years.
Rare:	Few records but occurring annually or at dates not fully covered (some deductions made).
Scarce:	Usually less than 25 birds in total on any one day, occurring or probably occurring annually.
Common:	25 to 250 birds in total on any one day, occurring annually.
Adundant:	Over 250 birds in total on any one day, substantial passage occurring annually.
Very abundant:	Over 5,000 birds in total on any one day, substantial passage occurring annually.

Periods of observation and main observers

1963 14 to 20 April (7 days)	I. J. Ferguson-Lees, P. A. D. Hollom, E. Hosking, G. R. Mountfort, E. M. Nicholson, G. R. Shannon, D. I. M. Wallace, J. Wightman.
1965 15 April to 5 May (21 days)	I.J.F.L., E.H., G.R.M., G.R.S., D.I.M.W., E.H., G.R.S.
6 to 8 May (3 days)	E.H., G.R.S., E.H., G.R.S.
1966 21 to 30 April (10 days)	J. S. Ash, I.J.F.L., R. Spencer, D.I.M.W.
1 to 12 May (12 days)	As above but with S. Cramp replacing D.I.M.W.
1967 25 April (1 day)	E.M.N.
1922, 1947, 1955, 1963-65, 1967	Various observers.

SYSTEMATIC LIST

Species occurring at Azraq in the Springs of 1963, 1965 and 1966

Phalacrocorax carbo **Cormorant** Very rare

Shishan, 16 to 30 April 1965.

Ixobrychus minutus **Little Bittern** Scarce

Oasis, 1-3, 9 days, 19 April to 10 May; desert, 2 May 1965 and 24 April 1966. Of 11 sexed, 8 were cocks. While it is certain that the desert records and probably most others concern migrants, the possibility of breeding exists. July 1965, September 1963.

Nycticorax nycticorax **Night Heron** Rare

Oasis, up to 10, most days (14) to 25 April; 1-3, 5 days, to 11 May; desert, 1 May 1965. One diurnal departure; 3 to west, 3 May 1965. September 1963 and 1965, November 1964.

Ardeola ralloides **Squacco Heron** Common

Oasis, up to 80, most days, (14) April to 3 May; 30-12, to 8 May 1966. September 1963 and 1965, July 1965.

Bulbulcus ibis **Cattle Egret** Very rare

Oasis, 1-2, 21 to 25 April, 2 and 3 May 1966; desert, H4, 2 arriving from south, 29 April 1965.

Egretta garzetta **Little Egret** Common

Oasis, 30-40, 16 to 19 April, 10-3, to 7 May. September 1963 and 1965, November 1964.

Egretta alba **Great White Egret** Very rare

Oasis, 2, 16 April 1963. February 1967, March 1947, September 1965, November 1964.

Ardea cinerea **Grey Heron** Scarce

Oasis. 3-12, (14) to 29 April, 3-1, to 3 May. Singly or in parties of up to six. February 1967, September 1963, October 1922.

Ardea purpurea **Purple Heron** Common

Oasis, up to 40 (14) to 3 May, later records confused due to breeding population; desert, Jebel Uweinid, 12 arrived from south landing on eastern bluff at 0945 hours, 20 April 1965. Two diurnal departures: 22 to north on 15 and three to north on 16 April 1965. The only species of heron undoubtedly migrating through Azraq in numbers. September 1963 and 1965, October 1922.

Ciconia nigra **Black Stork** Rare

Oasis, 1-2, 15 April 1963, 30 April 1965, 7 May 1966; desert, Jebel el Fuluk, flying north, 28 April 1966. September 1963 and 1965.

Ciconia ciconia **White Stork** Common

Oasis and desert surround, feeding; 15-50, (14) to 28 April, 15-1, to 10 May, soaring: 51 on 18 April 1963 and 50 on 2 May 1965; desert, Qa Khanna, 4-13, 5 days, 14 to 20 April 1963, 1 May 1965, 25 April 1966; elsewhere, 20 April 1963 and 9 May 1966. Clearly regular on passage though its main migration route is 120 km. to the west. Observed feeding in steppe areas in hammada. 'Vast flock', March 1947, July 1965, 'many' August 1922, September 1963 and 1965, November 1964.

Tadorna tadorna **Shelduck** Rare

Oasis, 2, on 16, 10, 17 April 1963, 5, 17 April 1965. February 1967.

Anas penelope **Wigeon** Very rare

Oasis, 1-2, 29 April, 7 and 10 May 1966. February 1967.

Anas crecca **Teal** Common

Oasis, 4-50, 16 to 18 April; desert, Qa Khanna, 5, 15 April 1965. Hundreds, February 1967, common, March 1947, September 1963, November 1965.

Anas acuta **Pintail** Scarce

Oasis, up to 9, 7 days (14) April to 10 May; desert, Umari, 26 April 1966. Hundreds, February 1967, March 1947, common, September 1963 and 1965, October 1922, November 1964.

Anas querquedula **Garganey** Abundant

Oasis, 80-295, (14) April to 1 May, c.50, to 10 May 1966; desert, Qa Khanna, 27 on 15, 3 on 28 April 1965. Clearly the commonest duck, outnumbering all others. Display fighting by pairs and groups

noted and like the last species, breeding is not unlikely. November 1964.

Anas clypeata **Shoveler** Scarce

Oasis, 3-10, 16 to 22 April, 3, 7 May 1966; desert, Qa Khanna, 3, 15 April 1965. February 1967, November 1964.

Aythya ferina **Pochard** Very rare

Oasis, 6 on 7, 4 on 10 May 1966.

Pernis apivorus **Honey Buzzard** Common

Oasis and desert surround, 1-19, 10 days, 16 April to 8 May, passage of 200, 12 May 1966; desert, Jebel el Fuluk, 8, 19 April 1963. 278 birds in total, all in sustained flight (observed direction always north).

Milvus migrans **Black Kite** Scarce

Oasis, 1-3, 28 days, 15 April tro 12 May, also 5 parties of up to 20, 17 to 27 April; desert, 1-2, 5 days, 16 April to 2 May. 76 bird/days in total, odd birds temporarily off-passage but clearly passage (to north) regular in second half of April. No yellow-billed birds seen. March 1947, September 1963, October 1922.

Neophron percnopterus **Egyptian Vulture** Scarce

Oasis and desert surround, 1-2, 8 days, 17 April to 8 May; desert, 1-6, 6 days, 28 April to 11 May (none in 1963). Most birds immature and their status difficult to assess. In 1965 two were resident at the oasis for two weeks but generally occurrences were very erratic, possibly of birds ranging east of Central Highlands or south from Jebel Druz. September 1963.

Gyps fulvus **Griffon Vulture** Rare

Desert, 1-3, 16 April 1963, 29 April 1965, 28 April 1966. Five seen in direct flight were headed north west or north towards higher desert areas. March 1947, November 1964.

Torgos tracheliotos **Lappet-faced Vulture** Very rare

Wadi Aseimir, roosting with 2 *Gyps fulvus,* then flying away north west, 16 April 1963. The most north easterly occurrence on record for the species.

Circaetus gallicus **Short-toed Eagle** Scarce

Oasis, 1-2, 13 days, 17 April to 8 May; desert, Wadi Es Shaumari, up to 4 (waiting on large rodent colony), 26 and 27 April 1966; elsewhere, 1-2, 5 days, 24 April to 5 May. 36 bird/days in total, fourth commonest large raptor. September 1965.

Circus aeruginosus **Marsh Harrier** Rare

Oasis, 24 and (at great height) 25 April 1965; desert, Qa Khanna, 5 resting, then flying north, 28 April 1965; elsewhere, 19 April 1963 and 30 April 1965. It is quite possible that several other migrants passed through the oasis but no other records can be admitted due to the presence of a small breeding population. Clearly an unusual movement occurred in the last week of April 1965. Also March 1947, September 1963 and 1965, November 1965.

Circus cyaneus **Hen Harrier** Very rare

Shishan, 3 May 1965. November 1965.

Circus macrourus **Pallid Harrier** Rare

Oasis, 1-2, 11 days, 17 April to 3 May; desert, Qasr Hamman Es Sarkh, 1 May 1965. At least 12 individuals, all but 3 females. September 1963 and 1965, November 1964.

Circus pygargus **Montagu's Harrier** Rare

Oasis, 10 days, 15 April to 28 April. Single birds in each case, all but 3 were males. September 1963 and 1965.

Circus spp. (not *aeruginosus*) **Harriers (not Marsh)**

Oasis and desert, another 8 bird/days, last half April. March 1947.

Accipiter gentilis **Goshawk** Very rare

Shishan, 23 April 1965; Wadi Aseimir, 16 April 1963.

Accipiter nisus **Sparrowhawk** Scarce

Oasis, 1-2, 16 days, (14) April to 12 May; desert, Wadi Aseimir, 1-2, 16 to 19 April 1963, H4. 5-2, 29 and 30 April 1965. 27 bird/days in total, migratory behaviour as *brevipes*. October 1922.

Accipiter brevipes **Levant Sparrowhawk** Scarce

Oasis, 1-10, 15 to 24 April, 1-2, 29 April to 4 May; desert, Wadi Aseimir, 16 April 1963, H4, 30 April 1965. 36 bird/days in total, odd birds off-passage for up to two days. Probably mainly a nocturnal migrant to the oasis, most records being of birds flushed at dawn from roosts and none being seen on diurnal passage. Of 31 sexed in Shishan, 11 were adult males.

Accipiter brevipes/nisus **Sparrowhawk** *spp.*

Oasis 1-3, 6 days, 17 to 30 April.

Buteo buteo **Buzzard** Common

Oasis and desert surround, 1-10, 40 days, 15 April to 11 May, also flocks of 15, 40 and 56 and one passage of 167, the latter from south to north between 0850 and 0905 hours, 17 April 1965; desert, H4, up to 3, 29 and 30 April 1965; elsewhere, 10 days, 18 April to 6 May. 387 bird/days in total, odd birds temporarily off-passage (one for six days). All closely examined showed characters of *vulpinus* group. September 1963.

Buteo rufinus **Long-legged Buzzard** Very rare

Shishan, flying north (identified from photographs of large *buteo* passage by E.H.), 17 April 1965. February 1967, September 1963.

Buteo lagopus **Rough-legged Buzzard** Very rare

Druz, flying north, 16 April 1965. The most southerly occurrence on record for the longitude. September 1963.

Aquila pomarina/clanga **Spotted Eagle** *spp.* Very rare

Oasis, 4 May 1965, 22 and 26 April 1966. September 1965, probably *clanga,* October, 1922.

Aquila nipalensis **Steppe Eagle** Rare

Oasis, 6 days, (14) to 27 April; desert, between Wadi Rajil E and Burku, 5, 29 and 30 April 1965. 9 birds in total.

Aquila heliaca **Imperial Eagle** Very rare

Shishan, flying north, 15 April 1965.

Aquila chrysaetos **Golden Eagle** Very rare

Oasis, disputing a dead *Nycticorax* with Jackal *Canis aureus,* 17 April 1963, 19 April 1965; desert, Qa Rajil, 19 April 1963. September 1963.

Hieraaetus pennatus **Booted Eagle** Rare

Oasis, 5 days, 27 April to 8 May; desert, H4, 1-2, 29 and 30 April 1965; elsewhere, 1-3. 24 and 28 April. 13 birds in total, 9 27-30 April and all light phase.

Pandion haliaetus **Osprey** Rare

Oasis, at least 10 individuals, 15 April to 3 May; desert, Qa Khanna, 20 April 1963. September 1963.

Falco naumanni **Lesser Kestrel** Common

Oasis, 1-29, 6 days, 15 to 19 April, 24 April 1965; desert, H4 and Burku, 2, 29 and 30 April 1965. 64 bird/days in total. A tame or tired flock of 29 at dawn on 18 April 1963 had apparently arrived overnight but most other observations indicated diurnal passage and arrival. None certainly identified in 1966.

Falco tinnunculus **Kestrel** Common

Oasis, 1-37, 16 days, (14) to 24 April, 4-1, 5 days, 25 April to 6 May; desert, 1-7, 9 days, (14) to 30 April. c.255 bird/days in total. Most observations were of birds or flocks coming in to roost, observed arrivals being from south. Few adult males. This species also breeds. November 1964.

Falco vespertinus **Red-footed Falcon** Scarce

Oasis, 1-9, 6 days, 15 to 21 April; desert, Wadi Aseimir, 19 April 1963. 18 in total but none in 1966 (when observations did not begin until 21 April).

Falco spp. **Kestrels or Red-footed Falcon**

Oasis, 1-12, 5 days, 17 April to 11 May.

Falco subbuteo **Hobby** Rare

Oasis, 1-2, 4 days, 21 to 23 April; desert, Wadi Aseimir, 16 April 1963, H4, 2, 29 April 1965. 8 in total, all but one seen at dusk roosts, indicating high level diurnal passage. September, November 1965.

Falco biarmicus **Lanner** Very rare

Shishan, 19 April 1963. September 1963 and 1965.

Falco cherrug **Saker** Very rare

Oasis and desert surround, a falconer's bird, 15 April 1963, other probable sightings, 16 April 1965 and 23 April 1966; desert, Qa Khanna attempting to take first chick *Charadruis leschenaultii* and then *Turtur turtur,* 20 April 1963.

Falco peregrinoides **Barbary Falcon** Very rare

Wadi Aseimir/Shishan, 27 and 28 April 1965.

Coturnix coturnix **Quail** Scarce

Oasis, 1-10, 25 days, (14) April to 11 May; desert, Wadi Butum, 1-3, 6 days, 16 April to 9 May; elsewhere, 1-2, 5 days, 22 to 26 April. Peak movement apparently 23 to 26 April. September 1963.

Porzana porzana **Spotted Crake** Rare

Oasis, 17 and 19 April 1963, 30 April to 2 May 1966; desert, Tell Qorma, 2, 6 May 1966.

Porzana parva **Little Crake** Very rare

Shishan, 29 April 1966.

Porzana pusilla **Baillon's Crake** Migrant status unknown

Shishan, migrants possibly present in April 1963 but position masked by presence of breeding population.

Crex crex **Corncrake** Rare

Oasis, 1-2 (and one 'kill'), 5 days, 17 April to 2 May; desert, H4, 30 April 1965, Wadi Mudeisisat, 9 May 1966.

Fulica atra **Coot** Migrant status unknown

Oasis, a flock of 20, 17 April 1963. On saline lake, either migrants or remnants of wintering population. Hundreds, February 1967, October 1922, 120, November 1965.

Haematopus ostralegus **Oystercatcher** Very rare

Druz, 17 April 1963.

Himantopus himantopus **Black-winged Stilt** Common

Oasis, 45-160, (14) to 18 April, 75-3, to 8 May; desert, Qa Khanna, 2-3, 15, 20 April, Burku, 5, 30 April 1965. Records summarised here mainly of obvious migrant flocks, less obvious passage probable but obscured by presence of breeding population. September 1963, common, October 1922.

Burhinus oedicnemus **Stone Curlew** Very rare

Druz, flying north north west, 16 April 1965. Also breeds. Flock of 20, 19 March 1947.

Glareola pratincola **Pratincole** Abundant

Oasis, 60-300, 9 days, 15 to 23 April, 100-20, 13 days, to 8 May; desert, Qa Khanna, 15 April 1965, H4 and Burku, 8, 29 and 30 April 1965. Presence of birds settling to breed heavily obscured the migration of this species. In 1965, the birds present were very restless from 19 to 24 April but this may have been due to other than migratory factors. No *Glareola nordmanni* were identified in spite of every effort. September 1963 and 1965.

Charadrius dubius **Little Ringed Plover** Scarce

Oasis, 1-3, 11 days, 21 April to 7 May; desert, Qa Khanna, 1-3, 15 and 28 April 1965.

Charadrius hiaticula **Ringed Plover** Scarce

Oasis, 1-5, once 23, 9 days, 17 April to 7 May; desert, Burku, 30 April 1965. February 1967, September 1963 and 1965, November 1964.

Charadrius alexandrinus **Kentish Plover** Common

Oasis, up to 200, 6 days, 16 April to 2 May, 40-3, to 8 May. Enflocked and quite separate from breeding population. November 1964. February 1967.

Charadrius leschenaultii **Greater Sand Plover** Common

Oasis, up to 100, 7 days, 22 April to 7 May; desert, Qa Khanna, a flock of 38, 14 April 1963. Birds mixed with 'failed' or 'completed' breeding birds.

Calidris canutus **Knot** Very rare

Desert qa, 25 April 1967.

Calidris minuta **Little Stint** Abundant

Oasis, 750, 27 April 1966, 650, 2 May 1965, 60-2, 3 days, 4 to 8 May; desert, Qa Khanna, 2, 4 May 1965. July 1965, September 1963, common, October 1922, February 1967.

Calidris temminckii **Temminck's Stint** Abundant

Oasis, 330-1, 580, 7 days, 15 to 27 April, 75-5, to 8 May: desert, Qa Khanna, 1-3, 4 days, 15 April to 4 May, Burku, 5, 30 April 1965 and Umari, exhausted, 26 April 1965. Less intolerant than *minuta* of outfall marshes and thus more regularly present, records spanning 23 days as against 12. September 1963.

Calidris ferruginea **Curlew Sandpiper** Rare

Druz, 15 April 1963; desert, Qa Khanna, 3, 4 and 6 May 1965, Burku, dead, 30 April 1965. September 1963.

Calidris alpina **Dunlin** Common

Oasis, 285, 16-18 April 1965, 145-200, 22-27 April 1966, 60-20, 5 days, 1-4 May; desert, Qa Khanna, 4-5, 4 days, 15 April-4 May 1965. Only 1 in 3 of earlier birds in breeding plumage but in May, majority had completed moult. February 1967, September 1963, October 1922, November 1964.

Limicola falcinellus **Broad-billed Sandpiper** Very rare

Druz, 2 May 1965.

Philomachus pugnax **Ruff** Very abundant

Oasis, 3,050-5,400, (15) to 24 April 1963 and 1965, 1,000, 1-3 May 1965, 300-55, to 8 May 1966; desert, Qa Khanna, 10-90, 5 days, (14) to 29 April, H4 and Burku, 9, 29 and 30 April 1965. Clearly the commonest wader using the oasis and long off-passage stays may be normal there. Flocks apparently migrating north noted on 26 April 1965, two days after highest count above. February 1967, September 1963, July 1965.

Lymnocryptes minimus **Jack Snipe** Very rare

Shishan, 2, 17 April 1963. February 1967, common, March 1947, common, October 1922.

Gallinago gallinago **Snipe** Common

Oasis, 20-85, (14) to 25 April, 55-1, to 8 May. No *Capella media* identified or even suspected. February 1967, common, March 1947, September 1963, common, October 1922, November 1965.

Limosa limosa **Black-tailed Godwit** Common

Oasis , 210, 16-18 April 1965, 2-1, 5 days, 22 April-7 May. None seen in 1963 but saline lake less explored in that year. February 1967.

Numenius phaeopus **Whimbrel** Very rare

Shishan, 23 April 1966. September 1965.

Numenius tenuirostris **Slender-billed Curlew** Very rare

Druz, 4 May 1965.

Numenius arquata **Curlew** Rare

Oasis, two parties of 5 and 1, 16, 17, 18 April. March 1947, September 1965, October 1922.

Tringa erythropus **Spotted Redshank** Common

Oasis, 10-40, 19 days, (15) April-10 May; desert, Qa Khanna, 25 April 1966, Burku, 30 April 1965. Most obvious in 1966 with peak passage in first week of May. February 1967, March 1947, July 1965, September 1963.

Tringa totanus **Redshank** Rare

Oasis 1-5, 15 days, (15) April-8 May; desert, Qa Khanna, 28 April 1965. No real pattern of movement discernible. February 1967, March 1947, July 1965, September 1963 and 1965, October 1922, November 1965.

Tringa stagnatilis **Marsh Sandpiper** Scarce

Oasis, 1-20, 9 days, 16-30 April, 6-2, 7 days, to 10 May; desert, Qa Khanna, 2-4, 3 days, 15-28 April.

Tringa nebularia **Greenshank** Common

Oasis, 17-100, 12 days, 16-24 April, 20-2, 9 days, to 8 May; desert, Qa Khanna, 1-15 (once 40) 6 days, (14) to 29 April, Burku, 30 April 1965. September 1963.

Tringa ochropus **Green Sandpiper** Common

Oasis, 68-35, 21 days, (14) to 28 April, 3-1, 6 days, to 10 May; desert, Wadi Rajil, 22 April 1965. February 1967, July 1965, September 1963, November 1965.

Tringa glareola **Wood Sandpiper** Abundant

Oasis, 75-850, (14) April-2 May, 200-2, to 10 May; desert, H4 and Burku, 9, 29 and 30 April 1965; elsewhere, 1-2, 24, 26 April, 6 May. Not only the commonest *Tringa* but the only wader migrating diurnally: 45 departing on 15, 15 flying off north west on 16 April 1963, 12 flying off north west on 24 April 1966. July 1965, September 1963.

Actitis hypoleucos **Common Sandpiper** Scarce

Oasis, 1-2, 6 days, 17-22 April, up to 15, 19 days, to 2 May, 5-2, 5 days, to 10 May; desert, Burku, 8, 30 April 1965; elsewhere, 15, 24 April, 6 May. September 1963.

Phalaropus lobatus **Red-necked Phalarope** Rare

Oasis, 17 April 1965, 3, 23 April, 17, 7 May 1966. September 1963.

Larus ridibundus **Black-headed Gull** Common

Oasis, 7-40, 3 days, 16-18 April, 11-1, 4 days, to 2 May; desert, Qa Khanna, 28 April 1965. Mainly birds in first summer plumage. Diurnal movement: 5 to north, 17 April 1963. February 1967.

Larus genei **Slender-billed Gull** Rare

Oasis, 3, 16th and 7, 17 April 1963, 4, 16 April 1965. Birds in 1963 all in second summer plumage.

Larus fuscus **Lesser Black-backed Gull** Very rare

Oasis, 15th, 17 April 1963, 18 April 1965. Adults of nominate race. September 1963.

Chlidonias niger **Black Tern** Very rare

Oasis, 3 moving north, 16 April 1963, 6 May 1966. September 1965.

Chlidonias leucopterus **White-winged Black Tern** Common

Oasis, 30 April 1966, 3-35, 7 days, 1-10 May; desert, Burku, 30 April 1965. 83 bird/days in total, observed movement to north west, all adults. October 1922.

Chlidonias hybridus **Whiskered Tern** Rare

Oasis, 1-11, 3 days, 17-19 April, 6-2, 4-7 May. This or *leucopterus*, September 1963.

Gelochelidon nilotica **Gull-billed Tern** Scarce

Oasis, up to 8, 7 days, 16 April-4 May, 1965 and 1966; desert, Qa Khanna, 29 April, 4, 6 May, Burku, 30 April 1965. All adults.

Sterna sandvicensis **Sandwich Tern** Very rare

Shishan, 3 May 1965.

Sterna hirundo **Common Tern** Rare

Oasis, 1-2, 6 days, 17 April-3 May.

Sterna albifrons **Little Tern** Very rare

Shishan, 8 May 1966, Qa Khanna, flying west, 15 April 1965.

Columba palumbus **Woodpigeon** Very rare

Shishan, 27 April 1966.

Streptopelia turtur **Turtle Dove** Abundant

Shishan, 3-23, (14) to 18 April, 6-90, to 26th, 18-446, to 4 May, 18-50, to 12 May, oasis, up to 102, most days; desert, Wadi Aseimir, up to 37, 5 days, Umari, 40, 26 April 1965, Wadis El Fuluk and Aseikhim, 70, 2 May 1965, Shishan/Qa Khanna, 52, 28 April 1965, H4 and Burku, 115 on 30 April 1965; elsewhere, 1-25, 15 days (14) April-11 May. 2,765 bird/days in total, the species being one of the most obvious migrants sharing with a few passerines a wide distribution in desert areas. Apparently moving mainly at night but diurnal movement also obvious, birds arriving from south (particularly at dawn), passing without stopping (over desert) and departing (once 248 at dawn) usually to north west or west. Exhausted birds and groups frequent and at H4 on 29 April 1965, deaths were witnessed. The origin of many remarkable blue morphs seen in 1965 remains an intriguing question. September 1963, many, October 1922.

Cena capensis **Namaqua Dove** Very rare

Shishan, female, flying north, 23 April 1966. The most northerly occurrence on record.

Clamator glandarius **Great Spotted Cuckoo** Very rare

Shishan, 19 April 1963, 26 April 1965. February 1967, March 1947.

Cuculus canorus **Cuckoo** Rare

Oasis, 1-2 (one dead), 10 days, (14) April-2 May; desert, 1-3, 5 days, 16-30 April. September 1963.

Tyto alba **Barn Owl** Very rare

Shishan, heard, late April 1965, seen, 24 April 1966. Latter showed characters of race *erlangeri*.

Otus brucei **Striated Scops Owl** Very rare

Shishan, 18 April 1963, Wadi Aseimir, 2, 18 April 1963.

Otus scops **Scops Owl** Very rare

Shishan, 18 April, dead, 25th, 1965, 24 April 1966; desert, 34 km. east of Mafraq, dead, 29 April 1965.

Asio flammeus **Short-eared Owl** Very rare

Shishan, long-dead, 21 April, alive, 3 May 1966.

Caprimulgus nubicus **Nubian Nightjar** Very rare

Shishan, 4, 19 April 1963.

Caprimulgus europaeus **Nightjar** Rare

Shishan and Druz, 1-7, 4 days, 27 April-11 May; desert, singly, 2, 6, 9 May. September 1965.

Apus apus **Swift** Common

Oasis, up to 95, 17 days, (15) April-3 May; desert, H4, 30, 29 April 1965; elsewhere, up to 26, 13 days, 16 April-6 May. 453 bird/days in total, observed directions of passage essentially into wind, to north north west or north west. February 1967, March 1947.

Apus pallidus **Pallid Swift** Scarce

Oasis, 1-4, 10 days, 15 April-10 May; desert, Wadi Aseimir/Jebel Uweinid, 13 +, 5 May 1966, Jebel el Fuluk, 7, 6 May 1966. Passage (to north west) pronounced only in 1966. 35 bird/days in total. November 1964.

Apus apus/pallidus **Swift** *sp.*

Oasis and desert, 25 bird/days additional to specific records.

Apus melba **Alpine Swift** Rare

Shishan, 1-3, moving north west or west north west, 17, 20, 21 April; desert, H4, 2, 29 April 1965.

Apus affinis **Little Swift** Very rare

Oasis, amidst hirundine flock, 24 April 1965.

Alcedo atthis **Kingfisher** Rare

Shishan, 2, 18 April 1963, 3, 19 April 1965. February 1967, Spetember 1963 and 1965, November 1964.

Merops superciliosus **Blue-cheeked Bee-eater** Scarce

Oasis, 1-7, 14 days, 16 April-6 May; desert, H4, 3, 29 April 1965. Presence of small breeding population partly obscured migration. Direction of moving birds mainly north. Common, September 1963.

Merops apiaster **Bee-eater** Common

Oasis, up to 35, 10 days, (14) to 20 April, up to 75, 19 days, to 4 May, up to 29, 7 days, to 11 May 1966; desert, H4, 250, 29 April, 40, 30th, 1965; elsewhere, up to 20, 13 days, 17 April-11 May. Hearing is not always seeing this species and above summary must understate strength of passage. Estimated bird/day total 1,940, observed passage usually to west north west, north west or north, rarely feeding. The large flock at H4 came down from great height at dusk. Common, August 1922, September 1963 and 1965.

Coracias garrulus **Roller** Scarce

Oasis, 1-6, 8 days, (15) to 27 April, 2-15, 8 days, to 8 May; desert, Wadi Aseimir, 1-12, 4 days, 16-27 April; elsewhere (particularly to east of oasis), 1-7, 16 days, 19 April-2 May. c. 120 bird/days in total. Usually in flocks, often moving diurnally, notably 25 to west north west on 28 April and 3 May 1965. September 1963 and 1965.

Upupa epops **Hoopoe** Scarce

Oasis, 1-8, 9 days, (14) to 21 April, 1-2, 18 days, to 12 May; desert, Wadis Aseimir and Butum, 1-11, 7 days, 16 April-11 May; elsewhere, 11 days, 16 April-11 May. 92 bird/days in total, apparently migrating at night (and, in desert, sheltering by day). September 1963.

Jynx torquilla **Wryneck** Scarce

Oasis, up to 10, 18 days, 16 April-5 May; desert, H4, 2-3, 29 and 30 April 1965, Wadi Aseimir/Jebel Uweinid, 2, 24 April 1966. 55 bird/days in total. September 1963.

Melanocorypha calandra **Calandra Lark** Very rare

Near Oasr Hamman Es Sarkh, 15 April 1965. November 1964.

Melanocorypha bimaculata **Bimaculated Lark** Very rare

Desert, Jebel el Fuluk, 2, 19 April 1963, Wadis Es Shaumari and Butum, 9, 20 April 1965. All apparently of the race *rufescens*. October 1922.

Calandrella brachydactyla **Short-toed Lark** Scarce

Druz, 27 April 1966; desert, near Shishan, 20, 25 April 1965, Wadi Butum, showing the characters of the race *artemisiana*, 24 April 1966. Flocks of 50 and 30 small larks seen east of oasis on 17 and 19 April 1963 probably of this species. Also breeds.

Riparia riparia **Sand Martin** Very abundant

Oasis, 'tens of thousands', 14 April 1963, concentrations of up to 1,000 and passages of up to hundreds per hour, 15 April-2 May; desert, up to 150, most days, (14) April-11 May. Although the great flock over the Shishan swamp constituted the largest single migrant population of any species in any year, a more dramatic occurrence took place on 2 May 1965: following a persistent northerly blow, a passage of birds was halted by sheer exhaustion. Birds picked up were extremely light and could not sustain flight for more than a few yards. Movements essentially north west into wind. September 1963, October 1922, November 1964.

Ptyonoprogne fuligula **Pale Crag Martin** Very rare

Near Shishan, 3 flying north west, 16 and 17 April 1963.

Ptyonoprogne rupestris **Crag Martin** Very rare

Shishan, 20 April 1965, 22 April 1966.

Hirundo rustica **Swallow** Very abundant

Oasis, "thousands", 14 April 1963, concentrations of up to 1,050 and passages of up to 100 per hour, 15 April-5 May, concentrations of up to 100 and thin passage, to 12 May; desert, up to 240, most days, (14) April-11 May. Although the most ubiquitous migrant encountered, it did not in total outnumber *Riparia riparia* over the three years' observations except in the second week of May 1966. Less vulnerable to fatigue than *Riparia riparia*, movements similarly headed. February 1967, March 1947, July 1965, September 1963, October 1922, November 1965.

Hirundo daurica **Red-rumped Swallow** Common

Oasis, 25-80, 7 days (14) to 19 April, up to 15, 11 days, to 29 April, singly, 1, 3 and 5 May. Ground-roosting observed twice, movements to north west (into wind). November 1965.

Delichon urbica **House Martin** Common

Oasis, up to 100, 23 days ,(14) April-4 May but only 25 in total 1966; desert, H4 and Burku, 100, 29th and 7, 30 April 1965, elsewhere, 1-3, 4 days, 18-28 April. Departures from oasis apparently before dawn on several dates. September 1963, February 1967.

Anthus novaeseelandiae **Richard's Pipit** Very rare

Shaumari, 25 April 1965.

Anthus trivialis **Tree Pipit** Common

Oasis, up to 116, (14) to 27 April, 15-1, 21 days to 12 May; desert, 1-13, 11 days, 17 April-11 May. 540 bird/days in total, rarely observed in sustained passage during daylight, movement directed from SSE to NNW. September 1963, October 1922.

Anthus cervinus **Red-throated Pipit** Abundant

Oasis, 50-500, (14) to 29 April, up to 115, to 8 May, none later 1966; desert, 1-3, 8 days, 17 April-30 April. 2,822 bird/days in total and clearly the commonest pipit, arrival and departure directions SSE and NNW respectively, diurnal passage or arrivals often sustained, once all day. October 1922, November 1965.

Anthus spinoletta **Water Pipit** Very rare

Druz, 2, 15 April 1963; desert, Qa Khanna, 15 April 1965. February 1967.

Motacilla flava **Yellow Wagtail Group** Abundant

Oasis, 50-500, (14) to 24 April, up to 125, to 30 April, 60-20, to 12 May; desert, Shaumari, 100, 24 April 1965, Wadis Aseimir and Butum, 24, 24 April 1966, H4 and Burku, 25, 29th and 30 April 1965; elsewhere, 1-10, 6 days, 19-28 April, 2,848 bird/days in total, not seen in sustained migration flight, arrivals and departures apparently at night. At least five members of the species group (*feldegg*, *dombrowskii*, *thunbergi*, *flava* and *lutea*) migrate through Azraq. In 1963 *feldegg* was dominant but in 1965 and 1966 grey-headed birds were the more common. The same races in remarkably similar proportion pass through Habbaniya in Iraq (Chapman & McGeoch 1956). September 1963 and 1965.

Motacilla citreola **Citrine Wagtail** Very rare

Shishan, 2 and 3 May, Druz, 2, 6 May 1966.

Motacilla cinerea **Grey Wagtail** Very rare

Oasis, 17th and 2, 19 April; desert, H4, 29 April, all 1965. September 1963, November 1964.

Motacilla alba **White Wagtail** Common

Oasis, 5-55, (14) to 26 April, 30-1, most days, to 11 May; desert, 1-5, 4 days, 16-29 April, 416 bird/days in total, all birds closely examined apparently of typical race. February 1967, March 1947, September 1965, common, October 1922, November 1964 and 1965.

Cercotrichas galactotes **Rufous Bush Chat** Migrant status unknown

Oasis, small through passage likely but obscured by presence or arrival of breeding population; desert, 1-3, 8 days, 16 April-9 May. Most birds clearly of the races *galactotes* or *syriacus*. Common, August 1922.

Erithacus rubecula **Robin** Very rare

Shishan, 19 April 1965. November 1964.

Luscinia luscinia **Thrush Nightingale** Common

Oasis, singly, 3 days, 17-20 April, up to 26, most days 25 April-4 May, 8 May 1966; desert, H4, 4, 29th, striking arrival of 20, 30 April 1965; elsewhere, singly, 8 days, 26 April-11 May. *c.* 145 bird/days in total. Apparently more tolerant of desert than next species. September 1963.

Luscinia megarhynchos **Nightingale** Scarce

Oasis, 1-13, (15) to 27 April, singly, 8 days, to 5 May; desert, 1-4, 5 days 16-26 April. 93 bird/days in total. September 1963.

Luscinia svecica **Bluethroat** Scarce

Oasis, up to 12, 9 days, (14) to 24 April 23 in total, only 4 adult males of which 1 was of nominate race. October 1922, common, November 1964 and 1965.

Irania gutturalis **White-throated Robin** Very rare

Shishan, 2, 17 and 27 April 1965; desert, H4, 29 April 1965.

Phoenicurus ochuros **Black Redstart** Very rare

Shishan, 15 April 1965; desert, Tell Qorma, 6 May 1966. February 1967, March 1947.

Phoenicurus phoenicurus **Redstart** Common

Oasis, 5-35, once 80, (14) to 30 April, 25-5, to 12 May; desert, Wadi Aseimir, 2-20, once 52, 5 days, 16 April-5 May, Shaumari, 2-19, 3 days, 24-26 April, H4 and Burku, 30, 29 and 30 April 1965; elsewhere (11 localities), 1-4, 12 days, 16 April-6 May. 812 bird/days in total, only the fourth commonest night migrant at oasis but the second in desert regions. Main passage last week of April. Males outnumbered females by 11 to 8 in April. No race but the nominate identified. March 1947, September 1963, October 1922, November 1964.

Saxicola rubetra **Whinchat** Scarce

Oasis, 5-20, (14) to 19 April 1963, 1-5, 7 days, 22 April-11 May; desert, 1-5, 6 days, 17-30 April, 30 bird/days in total, scarce in 1965 and 1966. Adult males showed very drab, grey plumage compared to West European birds. September 1963.

Saxicola torquata **Stonechat** Very rare

Shishan, 18 April 1965. Frequent, February 1967, October 1922, November 1965.

Oenanthe isabellina **Isabelline Wheatear** Scarce

Shishan/Druz, 1-3, 15 and 18 April 1963, desert, 1-6, 15 days, (14) to 30 April, tailless, 9 May. 32 bird/days in total. February 1967, September 1963, November 1965.

Oenanthe oenanthe **Wheatear** Scarce

Oasis, 1-11, 16 days (15) to 29 April; desert (19 scattered localities), 1-7, 19 days, 16 April to 4 May. *c.* 100 bird/days in total, records showing no marked pattern. March 1947, September 1963 and common, that month 1965, October 1922, November 1964.

Oenanthe hispanica **Black-eared Wheatear** Rare

Shishan/Druz, male and female, 17 April 1965, 25 April 1966; desert, Wadi Butum and Aseimir, single males, once male and female, 4 days, 16-20 April, near Mafraq, 29 April 1965. 22 bird/days in total. September 1963, November 1964.

Oenanthe pleschanka **Pied Wheatear** Very rare

Shishan, single males, 18 April 1965, 25 and 26 April 1966.

Monticola saxatilis **Rock Thrush** Rare

Shishan, 15 April 1963, 1 May 1966; desert; Wadi Butum, 16 April 1963, Shaumari, 2, 26 April 1966.

Monticola solitarius **Blue Rock Thrush** Very rare

Wadi Aseimir, 2 males and female, 16 April 1963. March 1947.

Turdus merula **Blackbird** Very rare

Shishan, male (15) to 21, female, 16 and 17 April 1965. February 1967, November 1964.

Turdus philomelos **Song Thrush** Rare

Shishan, 1-3, 5 days, 16-21 April. November 1964.

Cettia cetti **Cetti's Warbler** Very rare

Druz, 16 April 1965.

Locustella fluviatilis **River Warbler** Rare

Oasis, 24 and 27 April 1966; desert, H4 and Burku, 2, 30 April 1965.

Acrocephalus melanopogon **Moustached Warbler** Very rare

Shishan, showing characters of nominate race, 20 April 1963. The race *mimica* breeds. October 1922.

Acrocephalus paludicola **Aquatic Warbler** Very rare

Shishan, 3 May 1965.

Acrocephalus schoenobaneus **Sedge Warbler** Common

Oasis, 30-160, (18) to 28 April, 15-60, to 4 May, none later, desert, 1-3, 5 days, 24 April-6 May. *c.* 700 bird/days in total.

Acrocephalus palustris **Marsh Warbler** Rare

Shishan, 11 May, and 4, 12 May 1966. In beanfields, not marsh.

Acrocephalus scirpaceus **Reed Warbler** Scarce

Oasis, 1-4, 5 days, 22-30 April, 3-20, to 8 May 1966: all other records masked by presence of large breeding population; desert, Umari, 26 April 1966, Tell Qorma, 2, 6 May 1966. September 1963.

Acrocephalus arundinaceus **Great Reed Warbler** Scarce

Oasis, 1-3, 7 days, 17-26 April, up to 5, 11 days, to 8 May. *c.* 32 bird/days in total, but passage masked by presence of probable breeding population of *A. stentoreus* and possibly also this species. Most presumed to be of the race *zarudnyi*, but two trapped birds were referred to the nominate race. September 1963.

Hippolais pallida **Olivaceous Warbler** Scarce

Oasis, 1-3, 15 days, (15) to 30 April, up to 15, 11 days, to 12 May; desert, Wadis Aseimir and Butum, 7 and 5 May 1966, Tell Qorma, 6 on 6 May 1966; elsewhere, 1-2, 7 days, 16 April-11 May. *c.* 105 bird/days in total, pronounced passage in early May 1966. Much variation in size and plumage colour noted and confusion with next species occurred. August 1922, September 1963, November 1964.

Hippolais caligata **Booted Warbler** Very rare

Shishan, 2, 15 April 1963, 3 May 1965, 12 May 1966.

Hippolais languida **Upcher's Warbler** Very rare

Shishan, 18 April 1963; desert, Shaumari, 24 April 1965, El Hamda, 28 April 1966.

Hippolais icterina **Icterine Warbler** Very rare

Shishan, 14 and 18 April 1963, 28 April 1966.

Sylvia mystacea **Ménétries' Warbler** Very rare

Shaumari, male and female, 24 April 1965.

Sylvia melanocephala **Sardinian Warbler** Rare

Shishan, up to 5, 15 and 17 April 1963, at least 2, 17 and 18 April 1965. November 1964.

Sylvia nana **Desert Warbler** Very rare

Shishan, 18 April 1965, 24 and 25 April 1966.

Sylvia hortensis **Orphean Warbler** Rare

Shishan, singly, 5 days, 17-21 April; desert, Ain El Beida, 25 April 1965.

Sylvia nisoria **Barred Warbler** Scarce

Oasis, 1-10, 15 days, 17-30 April, 5-20, to 4 May, 6-1, 7 days, to 12 May; desert, 1-6, 11 days, 24 April-6 May. 106 bird/days in total, mainly males.

Sylvia curruca **Lesser Whitethroat** Abundant

Oasis, 25-290, (14) to 22 April, 25-160, to 1 May, 65-10, to 12 May; desert, Wadi Aseimir, up to 53, 7 days, 16 April to 5 May, H4, 25, 30 April 1965; elsewhere, 1-8, 19 days, 16 April-11 May. 2,300 bird/days in total, the commonest night migrant at oasis and in desert regions. September 1963, November 1964.

Sylvia communis **Whitethroat** Scarce

Oasis, 1-12, 19 days, 17 April-4 May, 3-15, 10-12 May 1966; desert, 1-3, 10 days, 16 April-6 May. 149 bird/days in total. All apparently of the race *icterops*. March 1947, September 1963.

Sylvia borin **Garden Warbler** Common

Shishan, 1-4, 10 days, 18-30 April, up to 100, 14 days, to 12 May, none in 1963; desert, H4, 2 on 29, and 15, 30 April 1965; elsewhere, 1-2, 3 days, 5 to 11 May 1966. 312 bird/days in total, clearly no substantial passage before May. September 1963, November 1964.

Sylvia atricapilla **Blackcap** Common

Oasis, 5-20, (14) to 26 April, up to 170, to 12 May; desert, Jebel El Fuluk (W. edge), 50, 6 May 1966, (N. end), 20, 2 May 1965; elsewhere, 1-24, 12 days, 18 April-9 May. *c.* 1,400 bird/days in total, the second commonest night migrant at oasis but only the fourth in desert regions, males outnumbered females by 3 to 1. September 1963, November 1964.

Phylloscopus bonelli **Bonelli's Warbler** Rare

Shishan/Druz, 1-4, 12 days, 18-29 April. 23 bird/days in total. All noticeably pale, apparently of the race *orientalis*. For the latitude, the most easterly occurrences of this species on record.

Phylloscopus sibilatrix **Wood Warbler** Rare

Oasis, 1-3, 9 days, (15) to 22 April, 1-3, 3 days, 5-8 May; desert, 1-2, 20 and 21 April, 6 May. 24 bird/days in total. November 1964.

Phylloscopus neglectus **Plain Leaf Warbler** Very rare

Shishan, 18 April 1963. Tiny, calling like *Regulus regulus*.

Phylloscopus collybita **Chiffchaff** Common

Oasis, up to 150, (14) to 23 April, 30-5, to 7 May, none later; desert, H4 and Burku, 35, 30 April 1965; elsewhere (7 localities), 1-15, 19 days, 16 April-2 May. *c.* 800 bird/days in total. The race *fulvescens* or *tristis* identified on plumage and call on 21 April 1965. February 1967, March 1947, September 1963, November 1964. This or next, November 1965.

Phylloscopus trochilus **Willow Warbler** Common

Oasis, up to 200 (14) to 27 April, 7-4, to 4 May, 5-30, to 12 May; desert (12 localities), 1-25, 15 days, 16 April-11 May. *c.* 1,000 bird/days in total. Races identified included *yakutensis* (trapped) and *acredula*. September 1963, common, October 1922, November 1964.

Muscicapa striata **Spotted Flycatcher** Common

Oasis, up to 11, (14) to 20 April 1963, 2-15, most days, 21-30 April, 5-22, to 12 May; desert, Wadi Aseimir, 1-25, 4 days, 16-27 April, Wadi Muheilan 37, 11 May 1966, Shaumari, 20, 24 April 1965, H4 and Burku, 20, 29 and 30 April 1965; elsewhere, 1-10, 10 days, 21 April-11 May. *c.* 420 bird/days in total, thus outnumbering all *Ficedula*, birds closely observed apparently of the race *neumanni*. One diurnal arrival noted. September 1963.

Ficedula albicollis **Collared Flycatcher** Scarce

Oasis, 1-4, 11 days, (14) to 23 April; desert, 1-4, 6 days, 16-26 April, 5 and 6 May. 34 bird/days in total.

Ficedula semitorquata **Semi-collared Flycatcher** Scarce

Oasis, 1-2, 4 days, 16, 19 April, 2, 3 May, 1963 and 1965.

Ficedula semitorquata **Semi-collared Flycatcher** Rare

Oasis, up to 10, 13 days, (14) to 21 April, 25 and 30 April; desert, Wadi Aseimir, 1-2, 16 and 18 April 1963. 42 bird/days in total. Males closely examined showed dusty grey plumage of the race *sibirica*.

Oriolus oriolus **Golden Oriole** Scarce

Oasis, 1-4, 18 days, 21 April-12 May (most, 1-4 May); desert, H4, 2, 29th, and 13, 30 April 1965; elsewhere, 1-7, 7 days, 24 April-11 May. 70 bird/days in total; all but two seen up to 30 April males, but most on and after that date females. September 1963.

Lanius isabellinus **Isabelline Shrike** Rare

Desert, mainly E. of oasis, singly, 6 days, 24 April-6 May. Showing the characters of the race *phoenicuroides*.

Lanius collurio **Red-backed Shrike** Common

Oasis, 1-13, 23 days, 17 April-3 May, 1-15, 8-12 May 1966; desert, between Mafraq and H4, 54, 29 April, between H4 and Druz, 75, 30 April 1965, elsewhere, 17-35 in a day, 24-30

April, 12-1 in a day, to 11 May. 411 bird/days in total, more than twice the number for any other *Lanius*. Peak passage in last week of April. Much more prominent in open limestone and basalt desert than at oasis. September 1963, October 1963.

Lanius minor **Lesser Grey Shrike** Common

Oasis, 1-5, 4 days, 25 April-3 May; desert, between Mafraq and H4, 46, 29 April, between H4 and Druz, 68, 30 April 1965; elsewhere, 1-11 in a day, 6 days, 24 April-11 May. 148 bird/days in total, virtually ignored oasis but the second commonest *Lanius* away from there. February 1967, September 1965, November 1964.

Lanius senator **Woodchat Shrike** Scarce

Oasis, 1-5, 12 days, (15) April-1 May; desert, between H4 and Druz, 9, 30 April 1965, elsewhere, 1-2, 6 days, 20-30 April. 31 bird/days in total, the rarest migrant *Lanius* (excepting *L. isabellinus*). September 1963 and 1965.

Lanius nubicus **Masked Shrike** Scarce

Oasis, 1-6, 37 days, (15) April-11 May, no pattern of movement discernible; desert, Wadis Aseimir and Butum, 3-14, 3 days, 16 April-5 May, H4, 11-7, 29 and 30 April 1965, elsewhere, up to 10 in a day, 9 days, 17 April-11 May. 193 bird/days in total, 55 per cent at oasis (a much higher proportion than for other *Lanius*). Pronounced passage in 1966 a week later than in 1965. September 1963 and 1965.

Sturnus vulgaris **Starling** Very rare

Shishan, 2, 14 and 17 April 1963. February 1967, flocks, October 1922, November 1964 and 1965.

Sturnus roseus **Rose-coloured Starling** Very rare

Shishan, 11 and 12 May 1966. Mid-May appears to be the peak passage period for this species in Iraq (Chapman & McGeoch 1956) and thus sizeable passage may occur in late May.

Passer hispaniolensis **Spanish Sparrow** Rare

Shishan, 1-3, 3 days, 18-30 April; desert, Burku, 30 April 1965.

Petronia brachydactyla **Pale Rock Sparrow** Common

Oasis, 1-13, 3 days, 28 April-3 May; desert, mainly basalt edges north of east of oasis, eight parties totalling 175, 25 April-2 May 1965; elsewhere, 6-15, 4 days, 20-30 April. 237 bird/days in total, most observations of diurnal passage, mainly to east. July 1965.

Carduelis chloris **Greenfinch** Very rare

Shishan, 22 April 1966.

Emberiza cineracea **Cinereous Bunting** Very rare

Desert, Jebel Uweinid, 3, 21 April 1965.

Emberiza hortulana **Ortolan Bunting** Common

Oasis, up to 50, (14) April-12 May, no peak period apparent; desert, Wadi Aseimir/ Shaumari, up to 50, 8 days, 20 April-11 May, Jebel El Fuluk, up to 40, 4 days, 22 April-6 May, H4 and Burku, 32, 30 April 1965. 737 bird/days in total, commonest fringilline migrant, preferred habitat basalt edge (many seeding plants). A few departures observed, to north west. September 1963.

Emberiza caesia **Cretzschmar's Bunting** Rare

Shishan, 23 April 1965 and 21 April 1966; desert, Jebel Uweinid, 3, 21 April 1965, 2, 24 April 1966, Tell Qorma, 8, 23 April 1965. 15 in total, all within 4 day period travelling with *hortulana*. September 1963.

Emberiza melanocephala **Black-headed Bunting** Scarce

Shishan/Druz, 1-17, once 31, 27 days, (15) April-12 May, no peak period apparent; desert, Jebel El Fuluk, up to 9, 3 days, 22 April-6 May, H4 and Burku, 10, 29 and 30 April 1965, Wadi Aseimir, 24 April 1966. 179 bird/days in total, not observed in diurnal passage. Much more attracted by oasis than other buntings. Males outnumbered females by nearly 2 to 1 in April but ratio reversed in May 1966.

SPECIES OCCURRING AT AZRAQ IN OTHER YEARS

Brief details follow of those species not recorded at Azraq during the spring visits of 1963-66 but which other observers have found there during early winter, spring, late summer and autumn.

Podiceps cristatus	Great Crested Grebe	February 1967
Pelecanus sp	pelican	October 1922
Plegadis falcinellus	Glossy Ibis	April 1955
Phoenicopturus ruber	Greater Flamingo	October 1922, January 1967
Anser anser	Greylag Goose	"in winter"
Tadorna ferruginea	Ruddy Shelduck	April 1955
Anas strepera	Gadwall	March 1947
Aythya nyroca	Ferruginous Duck	"commonest duck", October 1922
Aythya fuligula	Tufted Duck	March 1947
Falco columbarius	Merlin	November 1964
Falco peregrinus	Peregrine	September 1963, October 1922
Vanellus vanellus	Lapwing	October 1922, November 1964 and 1965, February 1967
Calidris alba	Sanderling	November 1964
Gallinago media	Great Snipe	February 1967
Arenaria interpres	Turnstone	September 1963
Halcyon smyrensis	Smyrna Kingfisher	August 1922
Ceryle rudis	Pied Kingfisher	November 1964
Alauda arvensis	Skylark	November 1964 and 1965, February 1967
Anthus pratensis	Meadow Pipit	November 1964, February 1967
Oenanthe finschii	Finsch's Wheatear	October 1922
Turdus viscivorus	Mistle Thrush	February 1967
Hippolais olivetorum	Olive-tree Warbler	September 1963
Fringilla coelebs	Chaffinch	October 1922, November 1965
Carpodacus erythrinus	Scarlet Grosbeak	September 1963
Emberiza striolata	House Bunting	September 1963

These records are culled from Cameron and Cornwallis (1966), Meinertzhagen (1954) and Hollom (1959) and from correspondence with D. G. Andrew (March 1947), Dr. J. M. Boyd (November 1964), K. W. Sutton (July 1965), Dr. M. George and J. H. Hemsley (September 1965), P. A. D. Hollom (November 1965) and R. S. R. Fitter (February 1967).

IMPORTANT ADDITIONS TO THE MIGRANT ORNITHOLOGY OF THE MIDDLE EAST

Meinertzhagen (1954) included records from Azraq in his classic review of the birds of Arabia. One may question the validity of this zoogeographical manoeuvre. Nevertheless since the general habitat at Azraq is almost as inhospitable as that of the interior of Arabia proper and the dreadful basalt of the Syrian Desert stretches away to the north, I choose to follow Meinertzhagen's lead and regard the Azraq observations as having been made in north west Arabia. This attitude allows their comparison to the specific texts in his book which form the only historical references and the highlighting of the following **more significant** records.

First records for interior north west Arabia

Phalacrocorax carbo	Cormorant
Bulbulus ibis	Cattle Egret
Egretta alba	Great White Egret
Ciconia nigra	Black Stork
Tadorna tadorna	Shelduck
Anas penelope	Wigeon
**Pernis apivorus*	Honey Buzzard
Accipiter gentilis	Goshawk
Buteo lagopus	Rough-legged Buzzard
Aquila pomarina/clanga	spotted eagle *spp.*
Aquila heliaca	Imperial Eagle
Aquila chrysaetos	Golden Eagle
Torgos tracheliotos	Lappet-faced Vulture
Porzana porzana	Spotted Crake
**Haematopus ostralegus*	Oyster Catcher
**Himantopus himantopus*	Black-winged Stilt
**Glareola pratincola*	Collared Pratincole
**Calidris ferruginea*	Curlew Sandpiper
**Calidris alpina*	Dunlin
Limicola falcinellus	Broad-billed Sandpiper
Limnocryptes minimus	Jack Snipe
**Limnosa limnosa*	Black-tailed Godwit
Numenius phaeopus	Whimbrel
Numenius tenuirostris	Slender-billed Curlew
Numenius arquata	Curlew
Tringa erythropus	Spotted Redshank
Tringa stagnatilis	Marsh Sandpiper
**Tringa ochropus*	Green Sandpiper
Phalaropus lobatus	Red-necked Phalarope
**Larus ridibundus*	Black-headed Gull
Larus genei	Slender-billed Gull
Larus fuscus	Lesser Black-backed Gull
Chlidonias niger	Black Tern
**Chlidonias hybridus*	Whiskered Tern
Sterna sandvicensis	Sandwich Tern
Sterna albifrons	Little Tern
Columba palumbus	Woodpigeon
Oena capensis	Namaqua Dove
Caprimulgus nubicus	Nubian Nightjar
Pytonoprogne fuligula	Pale Crag Martin
Anthus novaeseelandiae	Richard's Pipit
Motacilla citreola	Citrine Wagtail
Erithacus rubecula	Robin
Acrocephalus paludicola	Aquatic Warbler
Acrocephalus palustris	Marsh Warbler
**Hippolais caligata*	Booted Warbler
Phylloscopus neglectus	Plain Leaf Warbler
Ficedula semitorquata	Semi-collared Flycatcher
Carduelis chloris	Greenfinch

No or few previous spring records for interior north west Arabia

**Hieraaetus pennatus*	Booted Eagle
Circus cyaneus	Hen Harrier
**Falco vespertinus*	Red-footed Falcon
Porzana parva	Little Crake
Otus scops	Scops Owl
Asio flammeus	Short-eared Owl
**Coracia garrulus*	Roller
Locustella fluviatilis	River Warbler
**Ficedula albicollis*	Collared Flycatcher
Passer hispaniolensis	Spanish Sparrow

First evidence of regular/substantial passage across north west Arabia

The 15 species marked with an asterisk above and the following species:—

Nycticorax nycticorax	Night Heron
Ardea purpurea	Purple Heron
Ciconia alba	White Stork
Accipitriformes (part)	Large raptors
Rallidae	Crakes and Rails
Charadriiformes (part)	Waders
Merops apiaster	Bee-eater
Delichon urbica	House Martin
Motacillidae	Pipits and Wagtails
Turdinae (part)	Warblers and Flycatchers
Luscinia spp.	Nightingales and Bluethroat
Emberizidae	Buntings

SUMMARY

The records of 217 species known to have occurred as migrants at the Azraq oasis, Jordan between October 1922 and April 1967 are listed. Thousands of birds occur daily in spring and appear to be mainly moving north or north west. The recovery rate of nearly 2,800 trapped birds was low at 0.5 per cent. Forty-seven species were recorded for the first time in north west Arabia and the observations on another 22 species or groups of species established their status in that area more fully.

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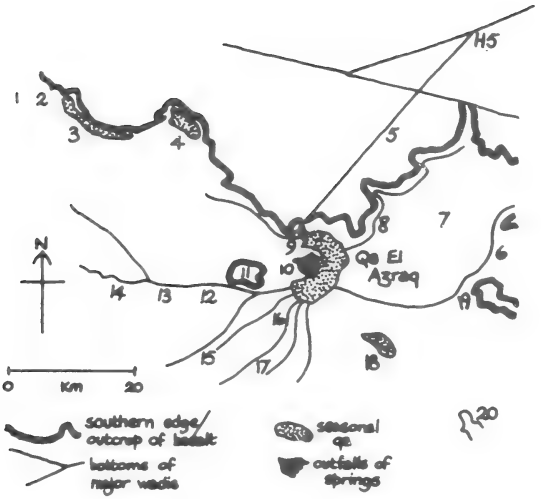

Figure 1 The Azraq oasis and its desert surround.

Qa El Azraq and H5, a pumping station, are named.

Other areas and localities are numbered, as follows:

1 Qasr El Hallabat	*11 Jebel Uweinid*
2 Qasr Hamman Es Sarkh	*12 Wadi Butum*
3 Qa Khanna W.	*13 Qasr Amra*
4 Qa Khanna E.	*14 Wadi Aseimir*
5 Druz pipeline	*15 Wadi Mudeisisat*
6 Wadi Rajil	*16 Shaumari*
7 Jebel El Fulak	*17 Wadi Es Shaumari*
8 Wadi Aseikhini	*18 Qa El Umari*
9 Azraq Druz	*19 Tell Qorma*
10 Azraq Shishan	*20 Faidhat edh Dhahikiya*

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THE GOLDEN EAGLE BREEDING IN OMAN, EASTERN ARABIA

by

M. D. Gallagher and M. R. Brown

INTRODUCTION

The Golden Eagle *Aquila chrysaetos* breeds in North America southwards to Mexico, and in Eurasia southwards to northern and north western Africa, Sinai, western Arabia (Hejaz), Iran, and from Afghanistan and northern India eastwards to Japan; though chiefly sedentary, there is some dispersal, mainly of young birds after breeding (Meinertzhagen 1930, 1954; Bates 1940; Vaurie 1965; Dement'ev *et al.* 1966; Brown & Amadon 1968; Ali & Ripley 1968; Scott, Hamadani & Mirhosseyni 1975; Cramp & Simmons 1980). The most recent report of birds near the Arabian Peninsula is of about 15 breeding pairs in Israel in 1981 (Y. Leshem *in litt.*).

Reports of sightings at Aden by Barnes (1893) and Yerbury (1896) were uncertain (Kinnear 1934), and its occurrence in the Arabian Peninsula was known from only a few published reports (*e.g.* Meinertzhagen 1949, 1954; Thiollay & Duhautois 1976; Gallagher & Woodcock 1980; Bundy & Warr 1980; Jennings 1981; Walker 1981). However, there have been several unconfirmed reports in Oman in recent years.

Breeding in Arabia was known only from a young bird and an egg taken from a nest north east of Jeddah, Saudi Arabia, on 6 February 1948. The bird was kept until about ready to fly, when it died, but it was not preserved (Meinertzhagen 1949, 1954). G. B. Popov *in litt.* gives an interesting contemporary account of this, which is reproduced at the *Appendix* with his kind permission. R. F. Porter also feels satisfied that Popov's photograph, taken on 12 March 1948, is of a Golden Eagle about six weeks old (which would suggest hatching in late January). The egg, originally retained by Meinertzhagen, is not with the rest of his collection in the British Museum (Natural History) at Tring (Mrs. F. E. Warr *in litt.*).

There are, however, two eagle's eggs in the Tring collection, taken by Bertram Thomas in mid-January 1931 (Thomas 1931, 1932) from "a gigantic nest" on a small solitary tree in the Hadh Mazariq (Mazairiq or Mazayriq) sands of the Rub' al Khali, Saudi Arabia (at approximately 20° 44′N, 51° 30′E), and which were thought "probably to belong to the Abyssinian Tawny Eagle *Aquila rapax raptor*" (Kinnear 1931: 698; 1932: 336); Thomas did not see the bird. M. P. Walters, of the British Museum (Natural History) at Tring, has measured and commented to MDG on the lesser damaged of the two eggs as follows: "At 77.4 x 55.9 mm. it is too big for *A. rapax* and exceptionally big for Bonelli's Eagle *Hieraaetus fasciatus*; it could only be of Imperial Eagle *A. heliaca* or Golden Eagle, and as the former can be excluded on account of its more northerly breeding range, it is almost certainly that of Golden Eagle." This conclusion is supported by the fact that George Popov's Golden Eagle egg of 1948 measured 75 x 60 mm. (Meinertzhagen 1949, 1954).

In the Hejaz and Northern Hejaz, Saudi Arabia, Jennings (1981) considers the Golden Eagle to be a rare breeding resident. In Yemen (North Yemen or Yemen Arab Republic), pairs have been seen displaying in December and April and breeding is suspected (Thiollay & Duhautois 1976); R. F. Porter (*in litt.*) saw none in suitable habitat in April 1979, but in March 1982 saw a pair displaying near Sana'a at about 2,400 metres above sea level.

NESTING IN OMAN

Two nests in Oman (described below as Nest A and Nest B) were found to be occupied by Golden Eagles in 1981. Both were in small trees in the central desert, and were about 110 km. apart. We subsequently visited the area of the nests as frequently as possible, but these visits were irregular and of short duration Nest. B was also visited by P. Harris and Dr. D. Harvey.

Nest A

On 3 April 1980, MRB, whilst surveying a route for a pipeline, saw two large, dark brown eagles perched on a small lone tree, about 5 metres high, on level ground between mobile dunes

in the region of Zauliyah or Zawliyah (see Map), and photographed one of them. The original colour transparencies show the bird to be a juvenile Golden Eagle. When the birds flew off, MRB discovered a large nest in the tree, littered with the remains of hares *Lepus capensis* and one Brown-necked Raven *Corvus ruficollis*. On 30 May 1980 he saw no eagles and the nest appeared not to have been used since his first visit. As there was no proof that the eagles had been raised in this nest, breeding of the species in Oman was omitted by Gallagher and Woodcock (1980). Pellets taken from below the nest in April were kindly examined by Dr. David L. Harrison, who found that they were composed of the fur and some bones from two hares.

In 1981, the nest was visited by MDG on 8 February, and he found on it a single, large, downy Golden Eagle chick, with the dark primaries just beginning to show. At 0900 hrs.on 28 February MRB photographed an adult Golden Eagle that flew from the nest, perched on a low sand-dune nearby and then flew over him to perch on a rock outcrop 1 km. away. The chick was then alive, with many blackish feathers showing through the remaining white down. We were unable to visit this nest again that year.

Plate 9 shows the nesting tree of Nest A.

Nest B

On 17 and 18 January 1981, MRB, while surveying the route of another pipeline, saw an adult Golden Eagle perched on one of several of a loose group of trees in a shallow drainage line at 90 metres altitude on the desert plateau in the region of Qarn Alam. On 21 January he discovered a nest in the tree containing two large chicks in white down. On the evening of 22 January we could see no adults in any of the trees, but before sunrise next day an adult Golden Eagle was perched above the nest. For the next two hours, at a range of 300 metres, we observed and photographed this eagle.

The bird had its back to the rising sun and to us. It appeared very large, the upper-parts dark brown except for a pale golden nape which emphasised the dark chin and throat, and a broad pale golden-brown band across the wing-coverts which appeared to meet above the dark secondaries; the tail had a pale base, faint dark bars, and a broad, dark tip; the feet and cere were pale yellow, the culmen pale or bluish, and the bill-tip was dark.

At 0845 hrs. it began to preen, and later it flew to another tree, from which it soared low over our heads, gaining height to about 300 metres. When level with some hills, it suddenly swung towards them and made three dives at another large, dark eagle, presumably its mate. The first bird then soared to a great height and was lost to view. We kept the nest tree in view from our vehicle, and at 1155 hrs. one of the parent birds flew below tree-top height to the nest, its crop distended, and carrying the hind half of a hare, which it deposited and left almost immediately. There followed a continuous, loud, querulous squealing from the chicks.

We then examined the nest. The two chicks had blackish feathers beginning to show through the down on the back and wings, and the black eye-mask was just forming; they were therefore two to three weeks old, and some three weeks ahead of the chick in Nest A. Both chicks remained motionless except for movements of the nictitating membrane of the eye; one hung its head submissively over the edge of the nest and away from its sibling and the food. The nest was in the main fork of the tree, and was 0.75 to 1 metre in its irregular diameter, and 0.8 metres deep; the platform of the nest was 3.75 metres above the ground. It was littered with the hind feet of hares, and on the ground below, one piece of a very large egg-shell lay amongst old pellets which contained remnants of hares.

On 28 January MRB found the two chicks still live and well, and at about 1200 hrs. an adult arrived carrying prey. On 29 January P. Harris saw one chick at the edge of the nest cowering from its sibling, and the next day he found the weaker bird dead, which he did not preserve.

On 6 and 7 February MDG found the single chick prospering; it had a noticeable black eye-mask, and the down of the body, but not of the head, had been replaced by blackish feathers. There were no fresh remains of food on the nest on 6 February, but at 1210 hrs. on 7 February an adult visited it momentarily to deposit the hind half of a hare; when approached,

the chick stood over the food in an aggressive manner, the bill open and one wing lowered to shield the food. On 22 February MRB found an adult standing on the nest at 1400 hrs. and on 26 February MDG noted that the young bird was almost fully feathered except for wisps of down on the crown; the 'trousers' were noticeably white.

On 1 March MRB found an adult perched in a tree near the nest at midday. At sunrise on 4 March he saw both adults perched on different trees near the nest; he photographed the juvenile and saw it leave the nest and fly about 400 metres. The juvenile would then have been between eight and nine weeks old.

Taking 4 March as the date of fledging, R. F. Porter (*in litt.*) suggests that a backward projection would show the approximate breeding cycle at this nest to be:—

Late September-early November:	Courtship and nest-building
Very approximately 18 November:	First egg laid and incubation starts
Very approximately 1 January:	First chick hatches
23 January:	Chick about three weeks old
4 March:	Chick about nine weeks old, fledged

The cycle at Nest A would have been about three weeks later.

These dates are early when compared with the nest in Sinai from which a chick was removed on 4 March 1927 (Meinertzhagen 1930), the Saudi Arabian 1948 nest (hatching in late January), the eggs found in mid-January (Thomas 1931, 1932), and in North Africa and Spain laying beginning in January (Cramp & Simmons 1980). In Israel, north of the Arabian Peninsula, at one nest first hatching was on 9-10 February 1979 (Leshem 1979); in 1980 laying was 5-6 January, and in 1981 laying was 6-7 January and hatching 17-22 February (Ilani 1981).

Plate 10 shows the nesting tree and the surrounding terrain near Nest B.

Other nests

In addition to the two occupied nests, old nests which we believe to have been of Golden Eagle by their size have been found by MDG in central Oman. Two were exposed in large trees, now dead, in a forest in sandy Wadi Ghubra (north), where an adult Golden Eagle was seen flying on 15 February 1981. Two more nests were in single, live trees on the stony plateau of the Jiddat al Harasis, south and south-west of Yalooni. All were too large to have been constructed by Long-legged Buzzard *Buteo rufinus* or Brown-necked Raven *Corvus ruficollis*, two other desert-nesting species in Oman.

It is worth noting reports of other very large nests in trees in the desert of Oman. In 1962-63 H. E. Ennion (*in litt.* and in Stanford 1973) found a vulture standing on a large nest on a tree south of Ibri, which contained two dead young of about "large chicken size". Ennion's photographs show the bird to be a Lappet-faced Vulture *Torgos tracheliotus* (*nubicus*?) (which is believed to nest in trees in the mountains of Oman, but which lays only one egg in a clutch). The situation and the fact that there were two chicks suggests that the nest could have been of a Golden Eagle. Smith (1969) reported a huge empty nest in a tree in the Huraymah area in February 1966, but the species concerned is not known.

On 3 April 1981 MDG was shown two eagles, which had been brought in separately to Al Ain Zoo (Abu Dhabi, United Arab Emirates), adjacent to Buraimi, Oman. He identified them as juvenile Golden Eagles and very similar to the juvenile on Nest B in March. Their origins were unknown, but they could have come from nests in either Oman or UAE.

Other sightings

There are occasional reports of single Golden Eagles seen between February and April on the plateau of the Jiddat al Harasis, in central Oman. In March 1981 MRB saw three together, possibly a family, near Dhahir, and one juvenile 50 km. east of that sighting.

We have no reports of Golden Eagles in the desert in summer, so it is not known if the adults disperse after nesting, and if so how far. On 8 October 1981 a pair of Golden Eagles were present in the hills near Nest B, but not on the three subsequent days. One was seen near Yalooni, on the Jidda, on 29 October 1981. Additional birds probably reach Oman in autumn

and may confuse population counts. Walker (1981: 63) reported three single birds, one each in November, December and February of different years in the southern province.

All the eagles which we have seen in flight have had the distinctive outline of Golden Eagle, with long, dark-tipped tail, long wings and fairly long neck. When gliding, the wings were held almost horizontally, with the tips curled upwards, but when soaring the wings were held slightly upwards and forwards; in powered flight the secondaries bulged noticeably. Most of the birds seen have been dark, but they appear less dark in close views, due at least in part to being lit from below by the reflected glare from bare desert ground. Photographs of the bird in flight from Nest B on 23 January 1981 show well the pallor of the nape, upper wing coverts, rump and proximal half of the tail; the body is very dark, but the under-wing appears mottled with black or dark brown (especially at the wing-tips, carpal joint and across the coverts), and pale brown (particularly at the base of the inner primaries). In another bird (on 23 February) the under-parts appeared to be paler brown, and only the outer primaries were blackish.

Ecology

The nests which were occupied by Golden Eagles, and those which we found disused and presumed to be of the species, were in trees of *Prosopis cineraria* (L.) (Leguminosae), Arabic *Ghaf*. These trees occur in the desert, on coastal plains and some other situations, usually in poor but deep sandy soil. When in contact with ground water, such as in some pans or drainage lines, the trees can become large, with a rounded and densely-foliaged crown, and in a few places they then grow in extensive stands. The nest found by Thomas was on top of a "solitary leafless *abala*" (Thomas 1932: 237); this is one of the Arab names for *Calligonum* spp. (Polygonaceae), which is often found on dunes; Thomas' photograph shows the top of the nest to be below shoulder-height. No nests have yet been found or suspected on rocks in Oman, as in Sinai and near Jeddah (mentioned above).

Nests A and B were constructed of small branches, twigs and other coarse fragments from the surrounding vegetation. They had been built on stout boughs, well concealed by the dense foliage of the crown, but with sufficient room for the eagle to stand upright on the nest. The base was at least 3 metres from the ground, and these and other nests seen were accessible to humans able to climb the tree or stand upon a camel or vehicle.

Much of the central desert plateau on which Nest B was found consists of limestone rock, or of coarse stony fragments or finer gravel or sand. In places, the region looks flat or slightly undulating, monotonous and uninteresting, but closer acquaintance reveals a wider variety of ground forms. Important among these are the depressions and gulleys, worn by the very irregular and occasional rains, even floods, which occur here and drain the desert in dendritic patterns. Some of the depressions are shallow and broad; silt and aeolian sand collects in them, and, unless the ground is very saline, grasses and other short herbs, shrubs and small trees grow, and hummocks of sand usually form at their base. Most of this vegetation consists of xerophytic perennials, but ephemerals germinate after heavy rain.

In some places there are isolated hills, and these have a well marked drainage system. In others, such as near Nest A, there are mobile dune systems, interspersed with pans. The presence of vegetation in the drainage lines and on some dunes in this otherwise inhospitable region enables animal prey for the eagle to subsist. However, the disjunct nature of these potential hunting grounds means that the eagle would require a very large total range in order to include sufficient hunting grounds for its needs. There is little evidence of the size of range required for a pair of Golden Eagle in Oman, but Cramp and Simmons (1980) quote cases from North America and Europe in which ranges are known between 44 and 625 km.^{2}, and Leshem (1979) cites one example of 60 km.^{2}.

The most common prey item is the small desert hare *Lepus capensis omanensis* (Lagomorpha), which is a widespread and fairly common resident in and near desert vegetation. It is mainly crepuscular, lying by day in a shallow form under shrubs or trees, or in burrows in sand hummocks, in open ground or under rocks; these burrows are either self-made or enlarged from the burrows of large lizards such as *Oromastyx microlepsis* and *U. thomasi* (Squamata,

Sauria: Agamidae) or the diggings of foxes *Vulpes vulpes* or *V. rüppelli* (Carnivora). In the Jiddat al Harasis large sand hummocks, such as accumulate under *Acacia ehrenbergiana* Hayne (Leguminosae), are sometimes found to be honeycombed by large burrows, so that there are alternative exits and a hare should be safe from an eagle. However, when frightened, the hare sometimes bolts into the open, where it may be chased and seized.

The only other prey items found at a nest have been the agamid *U. microlepsis*, and one Brown-necked Raven *Corvus ruficollis*; the latter is a widespread desert species which roosts in hills and trees, and nests in similar situations in spring, ranging widely for food and water. Leshem (1979) reports a diet of 54.1 per cent birds, 13.9 per cent mammals and 32 per cent reptiles at one nest in 1979, and 125 tails of *Uromastyx aegyptius* at one roost (Leshem 1980); the diet of Golden Eagles in Oman is likely to be varied and to reflect the relative abundance of prey within the home range.

Threats and conservation

Although no tribesman (Harsusi, plural Harasis) of the Jiddat al Harasis was met who admitted to knowing of the nesting of the Golden Eagle on the Jidda, many knew of the bird, calling it *al haddāh*. One man, who accompanied MDG in February, readily identified the Golden Eagles seen in flight as *al haddāh*. Those who knew *al haddāh* accused it of diving down and taking lambs and kids, as reported by Meinertzhagen (1930) in Sinai, and by Meinertzhagen (1954) in south eastern Arabia. One youth described an attack upon a lamb which he had witnessed. It is probable that only the Golden Eagle could give rise to such reports, and that it is a natural enemy of the badu's flocks, although it may occasionally be blamed falsely for killing animals at which it is found feeding upon as carrion.

The nests in use were surprisingly well hidden within the canopy of the trees, and were it not for the presence of birds perched on the tree, Nests A and B may not have been discovered. However, the nests may be discovered in other ways. One way is when the leafy stems of *Prosopis* trees are lopped for feeding domestic stock. One tree 95 metres from Nest B had been freshly lopped on 26 January, and the remains of leafy branches and the tracks of a camel indicated how close a badu had come to discovering the nest.

Another threat of discovery is by parties resting or camping in the shade below *Prosopis* trees. The nests found on 13 February and 3 May were both in trees under which travellers had rested, and the part remains of a young Golden Eagle below the latter tree, and two dead Long-legged Buzzard chicks lying below a tree nest in Wadi Qitbit on 17 March 1978, provide examples of the reality of this threat. Leshem (1979) relates a similar chance discovery of a nest. The threat of discovery is heightened by the increased activities of the oil industry in the desert, and the increased mobility of badu families, who now regularly use vehicles. Not all birds discovered on a nest face destruction, as some people may retain the belief that a live bird of prey collected from a nest may have some pecuniary value. It is interesting to note in Thomas (1932: 237) that his Arab companions regarded the eagle's eggs as unlawful for food. R. H. Daly (*in litt.*) also points out that environmental education, being introduced into the curricula of schools and colleges, will help the protection of wildlife in Oman.

CONCLUSIONS

The population of the Golden Eagle in Oman, based on nests found, adults seen, and the very large hunting range that would be required in the desert, is probably very small. Though there are no reliable reports during the very hot desert summer, the adult eagles are probably resident within Oman.

The eagles are particularly vulnerable during the months spent at the nest, and the threat of discovery of the nests may increase. However, the wide dispersion of the eagles and of suitable nest sites, and the fact that the nests are usually so well hidden, may continue to provide them with sufficient natural protection for survival.

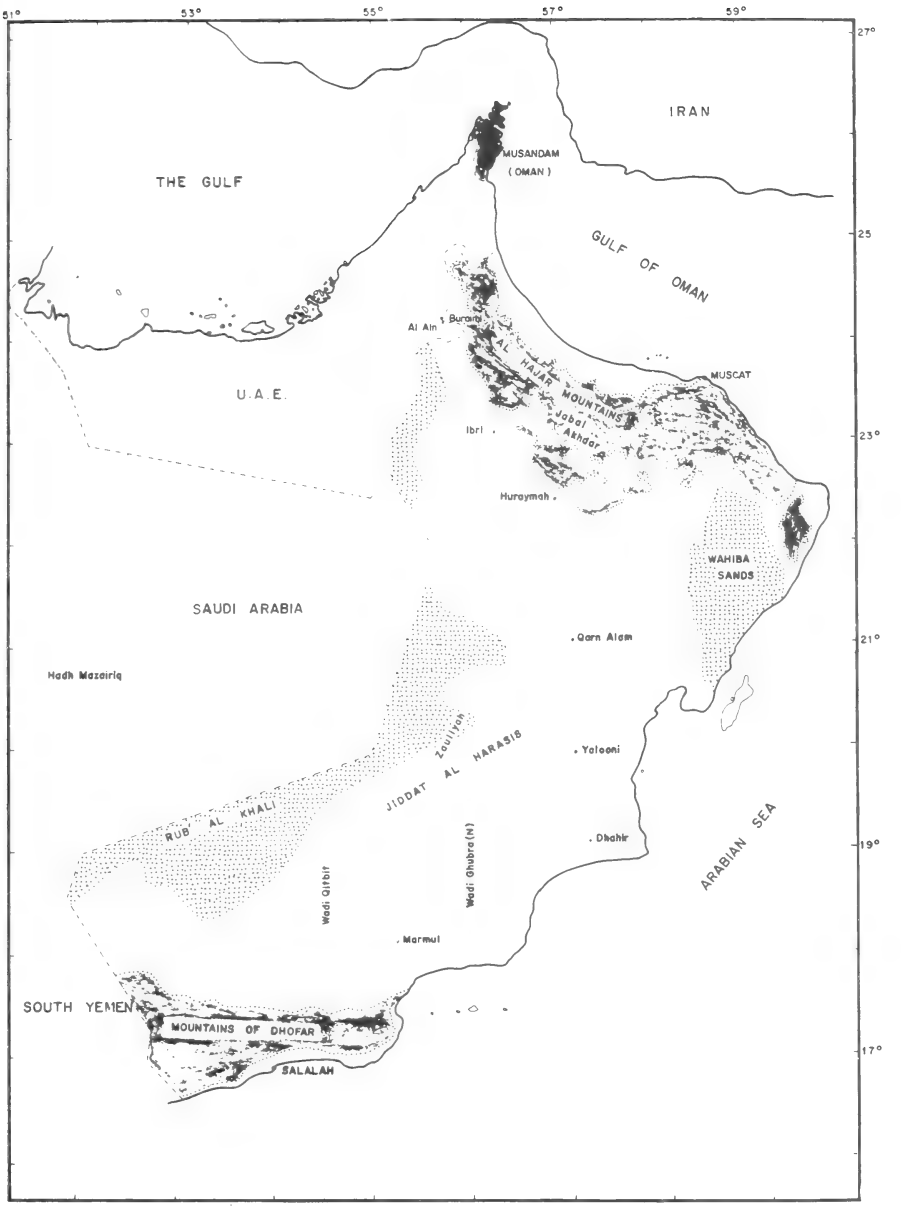

Figure 1. Map of the Sultanate of Oman, eastern Arabia, showing localities mentioned in the text (*Drawn by S. Purdie*)

POSTSCRIPT

On 8 January 1982 MDG visited Nest A and found it recently used but empty. On 7 January he visited Nest B and found it refurbished but unused; the drilling and blasting of pipe-line laying 1 km. distant had probably been the cause of disturbance.

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We are grateful to the Government of Oman for facilities to make this study, and to the people of Oman, particularly Mohamed Suhayl Ahmed al Harsusi and other members of the Harasis, for help and hospitality. We also wish to thank all others who helped in many ways, particularly those named below and in the text. H. E. Ennion, Dr. D. Harvey and P. Harris gave details of their observations. J. Reynen and D. Tweed provided hospitality to MDG and transport to negotiate some difficult dunes. Dr. David L. Harrison examined the contents of eagles' pellets. O. J. Bulart and Dr. Ghassan Ramadan-Jaradi showed MDG the captive eagles in Al Ain Zoo. M. C. Jennings provided the results of his researches into the Saudi Arabian Golden Eagles in advance of publication. G. B. Popov MBE gave a contemporary account of the first report of nesting Golden Eagle in Saudi Arabia. M. P. Walters commented on some eggs in the British Museum (Natural History) collection, and D. Goodwin and G. S. Cowles commented on the remains of one eagle. Mrs. F. E. Warr searched for a missing egg and gave details of observers' reports, then in her care, of Golden Eagles in Oman; we are grateful to her and to these observers. R. F. Porter and Y. Leshem provided details of breeding in other parts of the Middle East. R. F. Porter and M. C. Jennings made constructive comments on an early draft in this contribution. S. Purdie drew the map.

SUMMARY

The discovery in 1981 of two occupied nests of Golden Eagle *Aquila chrysaetos* in the Sultanate of Oman, eastern Arabia, is reported, the first such record from Oman and the first from the Arabian Peninsula since 1948. Details of these and of other nests and sightings are given, with notes on the ecology. The species is probably resident in Oman in small numbers, but the threat of discovery while nesting may increase.

Appendix

A NOTE ON THE DISCOVERY OF THE FIRST NEST OF GOLDEN EAGLE *Aquila chrysaetos* IN ARABIA

by

G. B. Popov, MBE

On the morning of 6 February 1948 I was driving down the 'Mine Road' from Madraqa (21° 57′N, 39° 59′E), when at a point about 60 miles (97 km.) from Jeddah, I saw a couple of bedu with a curious looking bird in their hands. It turned out to be a fluffy chick of what looked like an eagle, which the bedu had just removed from its nest. Indeed, what I took to be the parent bird was still hovering up above the hills. It was very large, dark, without any obvious light marks that I could see—clearly an eagle, not a vulture. I was hoping that the bird might come back, but it soon disappeared from view.

I persuaded the bedu to part from the chick for a small reward, then climbed up to the nest, on a ledge in a cliff, high up above the valley—not a particularly difficult feat, and it struck me then, how accessible the nest really was. It was something like a yard, or perhaps a little less across, made rather crudely of sticks. There were the fragments of shell of the hatched egg, a whole unhatched one, which I removed and later gave to Meinertzhagen. His description of it (in *Ibis* 1949 and in *Birds of Arabia* 1954) seems quite accurate.

The chick did well at Buraiman camp, where it lived for about two months. We fed it on raw meat and whole birds which we shot for it. It grew rapidly and when I last saw it, it was about half-grown and already flapping its wings, although not yet attempting to fly. It was also the time when Meinertzhagen saw it. I took a photo of it then. Soon after my departure, on a survey trip down the coast as I remember, the eaglet, trying its wings, broke one of them and was put out of its misery by one of my colleagues. Unfortunately, no one thought of making a skin, or even keeping a few feathers, so all we have are my recollections, the photo, the egg? and Meinertzhagen's diagnosis. Frankly I have no cause to doubt this identification. I remember discussing it with him at the time and feeling, as he did, that the bird simply could not have been anything else.

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THE AUTUMN MIGRATION OF STEPPE EAGLES AT EILAT, ISRAEL, 1980

by
Hadoram Shirihai

INTRODUCTION AND METHODS

The Steppe Eagle *Aquila nipalensis* is the dominant raptor in the autumn migration at Eilat, Israel and the only one where numbers are comparable to those in the spring (Christensen *et al.* 1981). The three commonest raptors in the spring: Steppe Buzzard *Buteo buteo vulpinus*, Honey Buzzard *Pernis apivorus* and Black Kite *Milvus migrans* pass through only in small numbers in the autumn.

On 55 days during the period 24 September-29 November 1980 I recorded the migration of the Steppe Eagle over Eilat. Observation times varied depending on the occurrence of passage and the numbers passing. Although it was not possible to identify every bird specifically as a Steppe Eagle, all that came close enough (the majority) were of that species and no other *Aquila* were observed in the migrating flocks. The observation area extended from the northern beach of the Gulf of Eilat to a line approximately 8 km. north of the beach and westwards to the mountains close to Eilat between Kibbutz Elot and the town of Eilat (*Figure 1*).

NUMBERS

During the study period 24,246 Steppe Eagles were counted. The peak of the migration occurred during 16-26 October when 19,636 eagles were counted and the highest daily total was 7,295 on 23 October. This is the largest number of Steppe Eagles seen in Israel in one day, the previous highest being 5,147 on 6 March 1979 (E. Buchwald *pers. comm.*).

TIMING AND ROUTE TAKEN

The migration usually started between 0830 and 0900 hours and most passage occurred between 0930 and 1100 hours. The movement usually stopped between 1200 and 1300 hours although occasionally it had ceased by 1100 hours. During days of large migration, passage started at 0800 hours and stopped between 1430 and 1530 hours.

What was remarkable was the route taken by the migrating eagles. They appeared over the observation area from the direction of the Edom mountains, east of the town of Aqaba, flying from an E.S.E. direction and continuing on a N.N.W. course. Large spirals of soaring eagles were seen over the mountains near Aqaba in the east. The eagles glided north to about 6 or 7 km. north of the North Beach and then turned west or north west. Some passed over the fields and palm groves of Kibbutz Elot and continued in a N.W. direction. Others came from the south east over the sea and turned north or north west over the Eilat mountains (see *Figure 1*).

The fact that the eagles were moving in a north or north westerly direction was probably due to the particular local topography and prevailing wind conditions. Eagles moving south across Syria/Iraq would congregate in the area bordering the Gulf of Eilat and to the east of Aqaba where they face the sea or the wide Arava plain. They would then turn into the prevailing winds to gain height and glide across the Gulf of Eilat and the Wadi Arava and then over the mountains north west of Eilat. Presumably after crossing the mountains the migrating eagles would take a flight direction to the south. In the Moon Valley, 15 km. to the west of the observation area, eagles were observed moving south and also west on several days.

AGE COMPOSITION

Figure 2 shows the total number of eagles counted in weekly intervals over the observation period together with the estimated percentage of immatures. Immatures were defined as juveniles through to the fifth year plumage, the remainder being either full adults or sub-adults showing remnants of immature plumage on the underwing.

The methods used for estimating the percentage of juveniles and immature were as follows: in groups composed of less than 100 gliding individuals (a state facilitating counting and identification) juveniles and immatures were counted and their percentage of the flock computed. In this way a number of small flocks were checked each day. The other (less accurate) method related to flocks passing high overhead. In this case the percentage of juveniles and immatures was estimated from a rough count.

It will be seen from *Figure 2* that more adults than immatures were recorded. The number of adults and sub-adults passing during the autumn of 1980 was about 15,700 (approximately 65 per cent of the total); immatures numbered 8,546 (approximately 35 per cent). In the first weeks of the passage most of the eagles recorded were immatures but the percentage declined and in the peak week (22-28 October) when 16,000 were counted, only 28 per cent were immature. On the peak day (23 October) 50 per cent were immature. Thereafter, the percentage of immatures passing dropped markedly.

Since I was the only observer during the survey, I was not able to classify the eagles into yearly age groups. The general impression that I gained however was that when the main wave of immatures in first to third year plumages decreased, the number in fourth and fifth year plumages increased. At the same time the percentage of adults increased as well.

ACKNOWLEDGEMENTS

I would like to thank: Kibbutz Elot for kindly accommodating me during the months of observation, the Society for the Protection of Nature in Israel, the Israel Raptor Information Centre which financed my stay during the autumn migration season, Yossi Leshem for help and guidance throughout the survey and Richard Porter for help and encouragement in writing this paper.

SUMMARY

The migration of Steppe Eagles over Eilat in the autumn of 1980 (24 September-29 November) is described. A total of 24,246 birds was counted. The flight direction (northerly) is described and discussed.

An analysis of the age composition was attempted, showing that most juveniles and immatures pass before the adults and that adults comprised about 65 per cent of the total passing.

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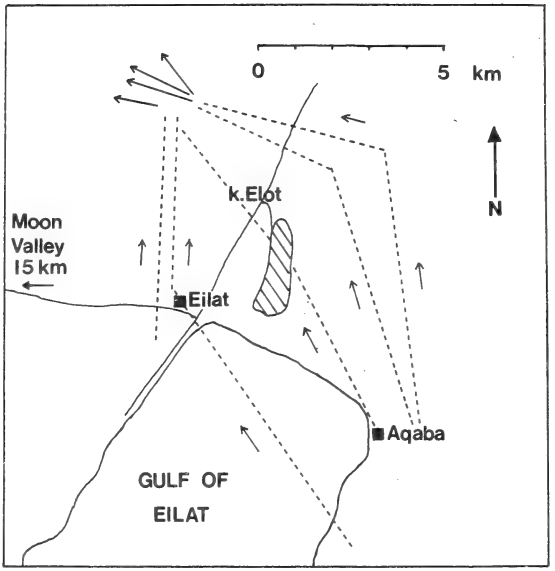

Figure 1. Map of Eilat showing flight directions of migrating Steppe Eagles Aquila nipalensis, Autumn, 1980.

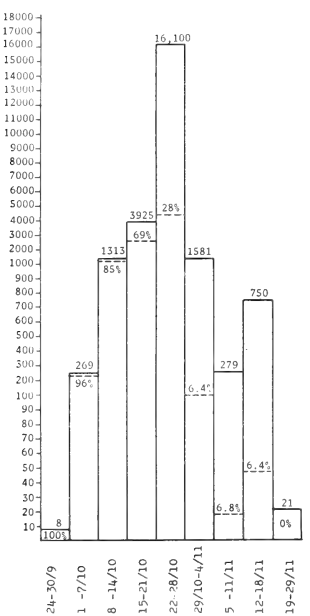

Figure 2. Weekly totals of migrating Steppe Eagles Aquila nipalensis showing percentage of juvenile and immature birds. Eilat, Autumn, 1980.

THE HOUBARA BUSTARD IN JORDAN

by
J. E. Clarke

Meinertzhagen (1924) observed "considerable numbers" of Houbara Bustard (*Chlamydotis undulata*) on a journey between Amman and Azraq Oasis; but, in recent times, there has been a dearth of documented evidence for this bird's survival in Jordan. Hollom (1959) recorded one near Amra (about 22 km. west of Azarq Oasis), and Nelson (1973) was shown a shot specimen taken in the same locality. But the latter author, although he lived for some 18 months in Jordan (most at Azraq), failed to find a single living specimen. He did, however, receive verbal reports from local residents of several sightings in the Azraq area, and of the species still being numerous in the "more fertile, rolling country south of Amman".

Writers describing the present-day wildlife of Jordan (e.g. Mountfort 1966 and Nelson 1973) appear to agree that the status of the Houbara Bustard has declined markedly as a direct result of shooting and falconry.

I spent a total of 40 months in Jordan spanning the year 1975-79. For 31 of these months I stayed near Azraq Oasis, at the Shaumari Wildlife Reserve. For the remaining nine I lived in Amman. My work during 1975-77 lay largely in the Azraq area, although I made several journeys to other parts of Jordan. From 1977-79, my responsibilities were nationwide, and I travelled away from Azraq more frequently. These journeys extended into every part of the country, including the remote desert areas along the borders with Iraq and Saudi Arabia. On all journeys I recorded all bird observations.

I made twenty-one sightings of Houbara Bustard (48 birds). Sixteen sightings (26 birds) were in Shaumari Wildlife Reserve; most of them have already been reported in an account of that reserve's avifauna (Clarke 1980).

A list of all the sightings is given in TABLE 1. Five localities are involved, and their geographical positions are centred as follows:—

(a)	Shaumari Wildlife Reserve	31° 45′N, 36° 47′E
(b)	Qasr Uweinid	31° 47′N, 36° 44′E
(c)	El Mafarish	31° 47′N, 36° 41′E
(d)	Gwa'iye (Km. 967 on the Trans-Arabian Pipeline)	32° 36′N, 37° 08′E
(e)	Wadi Qatafi	31° 48′N, 37° 27′E

These five positions are located on *Figure 1*.

All localities at which Houbara Bustards were seen lie in the Azraq area, although (d) is on its northern boundary. The first three are situated very closely together, within a radius of about 8 km. In spite of the extensive, nationwide travel already mentioned, no sightings were ever made outside the Azraq area. This travel included numerous journeys through the country south of Amman which had been reported to Nelson (1973) as good Houbara Bustard habitat.

The majority of sightings were made in summer (May-October). Only three birds were seen outside this period—one in January 1976 and two in February 1977. Local verbal reports spoke of a spring "migration" into Jordan from the east, and a subsequent return in autumn.

Most sightings were of single birds (nine occasions) or of pairs (six). The largest flock was of nine, loosely grouped over about five hectares. There was no direct evidence of local breeding, but several birds seen during summer were in breeding plumage.

My impression of the Houbara Bustard's status in Jordan is that it is fairly rare but still occurs in the Azraq area (at least) during summer. I could find no evidence for its occurrence anywhere else although, admittedly, more time was spent in the Azraq area than in any other region.

It is interesting to note that the area in which sightings appeared to be concentrated (localities (a), (b) and (c)) happen to occur in a region of relatively intense nature conservation. About 22 km.^{2} is already managed as a wildlife reserve (Shaumari), and there are plans to encompass the remainder in an extended reserve of about 330 km.^{2} (Clarke 1979). The resultant protection of what may be summer breeding habitat for Houbara Bustard, coupled

with the 1979 Government ban on hunting (Anon. 1979), may help to improve the present status of this species.

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TABLE 1. A LIST OF HOUBARA BUSTARD SIGHTINGS MADE IN JORDAN

Number of sighting	*Date*	*Number of birds*	*Locality*
1	23 January 1976	1	Shaumari Wildlife Reserve
2	11 June 1976	2	Shaumari Wildlife Reserve
3	10 July 1976	1	Shaumari Wildlife Reserve
4	30 July 1976	3	Shaumari Wildlife Reserve
5	22 August 1976	3	Wadi Qatafi
6	27 August 1976	2	Shaumari Wildlife Reserve
7	5 September 1976	5	El Mafarish
8	10 September 1976	1	Shaumari Wildlife Reserve
9	11 September 1976	1	Shaumari Wildlife Reserve
10	20 September 1976	2	Shaumari Wildlife Reserve
11	29 October 1976	1	Shaumari Wildlife Reserve
12	22 February 1977	2	Shaumari Wildlife Reserve
13	6 May 1977	2	Shaumari Wildlife Reserve
14	29 May 1977	3	Shaumari Wildlife Reserve
15	11 June 1977	1	Shaumari Wildlife Reserve
16	18 June 1977	2	Shaumari Wildlife Reserve
17	21 June 1977	1	Shaumari Wildlife Reserve
18	7 June 1978	1	Shaumari Wildlife Reserve
19	19 September 1978	1	Qasr Uweinid
20	19 September 1978	9	El Mafarish
21	11 July 1979	4	Gwa'iye

Coordinates for each of the five localities are given in the text.

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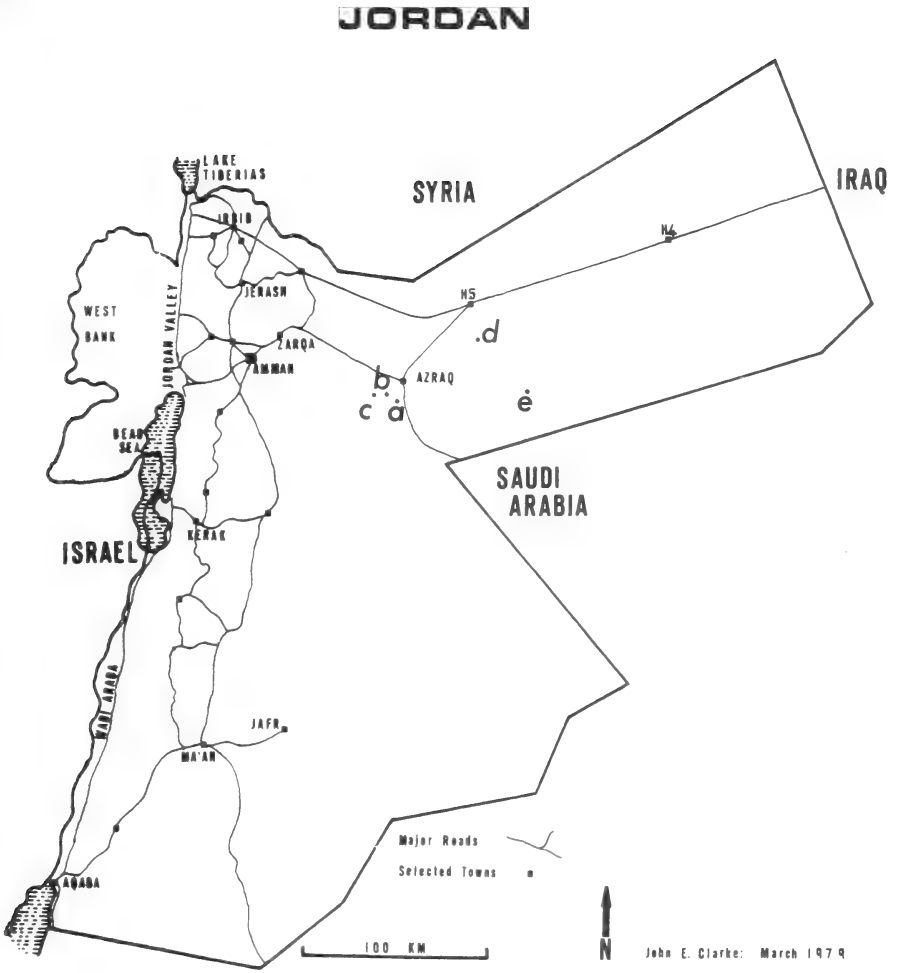

Figure 1. Map of Jordan showing the positions of five localities in which Houbara Bustard was sighted.

a Shaumari Wildlife Reserve
b Qasr Uweinid
c El Mafarish
d Gwa'iye (Km. 967 on the Trans-Arabian Pipeline)
e Wadi Qatafi

A BREEDING RECORD OF THE LAPPET-FACED VULTURE FROM ARABIA

by

Michael C. Jennings

The status of the Lappet-faced Vulture *Torgos tracheliotus* in the Middle East was summarised by Bruun (1981), who drew attention to the decline of the breeding population of this species in Israel, since it was discovered there as a breeding species in 1946. As Bruun (*loc. cit.*) did not record any confirmed breeding for the Arabian Peninsula it is noteworthy that an older breeding occurrence of this species in central Arabia has recently come to light. This Arabian breeding record dates from 1947, which is almost contemporary with the discovery of the Israeli breeding colony.

John Gasperetti, a long time resident in Arabia has informed me (*in litt.*) that early in 1947 he collected two vultures and obtained two eggs from tree nests in central Saudi Arabia at approximately 23°N, 47° 30′E (some 125 km. south east of Riyadh). H.St J. B. Philby told Gasperetti at the time that the birds' skulls (which were all that was retained) and eggs must belong to the Griffon Vulture *Gyps fulvus*. The skulls and eggs were deposited in the museum of the California Academy of Sciences, San Francisco, U.S.A., being accessioned on 21 April 1949, along with other specimens presented by Gasperetti. The specimens were determined by the California Academy of Sciences as belonging to *G. fulvus*, no doubt because that museum had no comparative material and that species was, at the time, the only large vulture thought likely to breed in central Arabia.

In 1981 I checked the identity of the specimens held by the California Academy of Sciences. Photographs of the skulls were compared with skulls known to belong to both *G. fulvus* and *T. tracheliotus* held in the anatomical collection of the British Museum (Natural History), Sub-Department of Ornithology, Tring, England. Both skulls in California were quite unlike *G. fulvus* but clearly agreed with *T. tracheliotus*. Identification was confirmed without doubt when Gasperetti was able to find an old photograph taken of one of the specimens just after it had been shot. The photo clearly shows a Lappet-faced Vulture. According to Bruun (*in litt.*) the bird in the photograph appeared to belong to the race *T.t. nubicus*, judging by the relative lightness of the thighs. The two eggs were, confusingly, quite unlike each other. One was chalky white with a few dark blotches, and measured 84.5 mm. x 63 mm. The other was white with much brown spotting and mottling and measured 89.5 mm. x 68.5 mm. The second egg agreed with the Lappet-faced Vulture egg illustrated in colour at *Plate 87* in Cramp and Simmons (1979). It is likely that the two eggs came from different nests as the species generally lays only one egg (Cramp & Simmons 1980).

Gasperetti recalled that the birds and eggs were taken from a "loose colony" of nests spread among isolated acacia trees. Nest trees were about three or four metres high (about half a kilometre apart) and the nests were placed in the top of them. This description of the nest site and spacing of nests appears to be typical for the species (Cramp & Simmons 1979).

Jennings (1980) suggested that the Lappet-faced Vulture might have been breeding in central Arabia in the mid 1970s. The discovery of a breeding occurrence some three decades earlier therefore comes as no great surprise, especially when it is considered that the environment was quite undisturbed in 1947. There is a good possibility that the species breeds to this day in central Arabia. A number of records have come in recent years from the north western part of the central desert of Saudi Arabia, that is the triangle formed by Medina, Tabuk and Buraydah. It is particularly interesting to note here the report from this region of R. N. Fryer (*in litt.*) that in October 1981 he found, within an area of about a square mile, four very large raptor nests on the tops of acacia trees (4-5 metres off the ground), at 25° 45′N, 40° 45′E (about 150 km. north east of Medina). It seems highly likely that these nests belonged to Lappet-faced Vultures.

ACKNOWLEDGEMENTS

I would like to thank John Gasperetti for his enthusiastic co-operation in enabling the specimens he collected in 1947 to be correctly determined. Also for many comments and suggestions on an earlier draft of this note. I am greatly indebted to Jacqueline Schonewald of the California Academy of Sciences for providing measurements and photographs of the skulls and eggs collected by Mr. Gasperetti, and to the staff and trustees of the British Museum (Natural History) Sub-Department of Ornithology, Tring, for enabling me to examine anatomical material in their collection. I appreciate the help of the several observers who have provided me with details of their unpublished observations and for the helpful advice of Bertel Bruun and M. D. Gallagher.

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A SMALL OSTRICH EGG FROM EGYPT

by
Michael Walters

In 1979, Mr. R. J. L. Cunliffe found a small ostrich egg in the Quatara depression, approximately 180 km. south west of Alamein (lat. 29° 34′ 56″N; long. 27° 45′E). The egg had been buried in sand for some considerable time, the shell was unpunctured and the dried-up contents still inside, thus disposing of any possibility that it had been transported there from some other part of the country by Arabs as a food or water container, as frequently happens with ostrich eggs. It is currently in the possession of Mr. Cunliffe but was brought to the Museum for examination. It was not possible to determine the age of the egg, except that it was not fresh, the outer porcellaneous creamy layer had been completed eroded away, resulting in the pitting typical of eroded ostrich eggs, and had subsequently been polished (presumably by sand abrasion) to a very high gloss. The egg could easily have been a century old and possibly considerably older.

For centuries there have been persistent rumours of small ostriches occurring in the north eastern portion of Africa. Frescoes of Pharaonic Egypt clearly depict men training ostriches no taller than themselves, and reports of "small ostriches" appeared as late as the nineteenth century. Ornithologists first became aware of them through an unpublished drawing by the explorer Levaillant, which was seen by Temminck though the latter does not seem to have published anything on the subject. The first mention in print was by G. R. Gray (1841) who said:

> "Temminck speaks of a series of drawings collected together by Levaillant that contained a figure of a 'petit gralle bidactyle', which perhaps would belong to this sub-family [the Charadrinae]. He has proposed the generic name of *Autruchon* in the event of this very curious bird being rediscovered."

The bird was named *Charadrius bidactylus* Gray (1847), though it was subsequently realised that, if it existed, it was not a plover, but an ostrich (*Struthio*). Two more reports were to come from nineteenth century literature, from quite independent sources. Heuglin (1859) comments:

> "I was told by a rather trustworthy man, a hunter, that south of Fazogloa, near Djebel Dul, there existed a little *didactyle ostrich*, not higher than *Otis arabs*, but in figure and colour much like *S. camelus*."

The other report was from Sclater (1862):

> "In the interior of Africa there is said, by some of the older writers, to exist a diminutive ostrich (*L'Autruchon*). I have lately received some information on this subject from Mr. J. Petherick, H. M. B. Consul for the Soudan, who tells me that his hunters have actually had this bird alive; and I have requested him to endeavour to procure further evidence on the point."

Sclater received no specimens, and nothing further was heard of *Struthio* (=*Charadrius*) *bidactylus*. If it did exist, it is almost certainly now extinct. None of the above reports, of course, excludes the possibility that young (rather than small adult) ostriches, were involved.

That small ostriches can occur, however, is demonstrated by the existence of one and possibly two small races of *Struthio camelus* in modern times. *S.c.syriacus* formerly occurred in the deserts of Syria, Jordan, Iraq and Saudi Arabia, but is now probably extinct. *S.c.spatzi* was described by Stresemann (1926) from a series of chicks and eggs obtained at the Rio de Oro in the former Spanish Sahara. The chicks were sent to Berlin Zoo but their ultimate fate does not seem to be stated. The eggs were very much smaller than those of typical *camelus* and with a very distinct pattern of pores. Stresemann infers strongly that the population was an isolated one, separated from typical *camelus* by the high desert where ostriches do not normally occur. It is possible, therefore, that *Struthio bidactylus* represented a similar race, or merely an extension of the former range of *S.c.syriacus*.

Measurements of the North African races of *Struthio camelus* taken from Schönwetter (1960) are given below, and compared with the egg from Egypt:—

Name	Sample size	Length range	Breadth range	Average size
S.c.camelus	48	142-175	120-145	158.5 x 131.0
S.c.spatzi	8	127-152	111-126	145.0 x 122.7
S.c.syriacus	13	135-148.5	111.5-122	142.8 x 115.8
Cunliffe's egg		138.6	119.4	[138.6 x 119.4]

All measurements are in millimetres.

Mr. Cunliffe's egg, therefore, corroborates the possibility of a former population(s) of diminutive ostriches in the Middle East and North African area, north of the main range of *Struthio camelus*.

ACKNOWLEDGEMENTS

I am grateful to Colin Harrison, Derek Goodwin, Nigel Collar and Steven Goodman who read drafts of this note, and made helpful comments and to Mr. R. J. L. Cunliffe for bringing the attention of the Museum to the egg.

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