

Breeding observations on the birds of the Tihamah, Yemen

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Abstract: The breeding season of birds on the Red Sea coast of Yemen commences in January/February, but more usually in March or April with the beginning of the small wet season. Almost all species have finished their reproductive cycle by the beginning of the summer monsoon, but some species such as Helmeted Guineafowl, Palm Dove or Rüppell's Weaver breed during the wet season and autumn. Records of nest construction, egg-laying period, nesting habitats and eggs are given for some species.

Kurzfassung: An der jemenitischen Rotmeerküste beginnt die Brutzeit der Vögel im Januar/Februar, meist aber im März/April mit Beginn der Kleinen Regenzeit. Fast alle Arten haben das Brutgeschehen bis Juni/Juli mit Beginn der sommerlichen Monsun-Regen abgeschlossen, mit Ausnahme einiger Arten wie Helmpferlhuhn, Palmtaube, Gilbweber usw., die auch während der Regenzeit bis in den Herbst hinein brüten. Es werden Daten zu Nestbau, Legeperiode, Neststandorten und Eiern einiger Arten mitgeteilt.

Key words: Birds, behaviour, breeding, breeding season, nests, Yemen.

Introduction

The Republic of Yemen, located in the southwest of the Arabian peninsula, has a large variety of topographic features, extending from coastal plains to alpine altitudes up to some 3700 m a.s.l. and an annual rainfall varying from less than 50 to over 800 mm. This, together with its geographic position at the meeting point of Asia and Africa, contributes to a rich avifauna with a high rate of endemism (BIBBY et al. 1992).

The first comprehensive work on the birds of the Arabian peninsula, including Yemen, was by MEINERTZHAGEN (1954) in his book "Birds of Arabia". More recently, the avifauna of the Yemen has attracted the attention of several visitors. Recent knowledge on the status and distribution of Yemen's birds has been summarised by BROOKS et al. (1987). However, little is known about breeding biology, including the seasonality of breeding. The aim of the present study is to report data on the breeding of eleven bird species found in the Tihamah plains along the Red Sea coast of Yemen.

Methods

Many field trips were made to the different areas of Tihamah plains in order to record the breeding birds in this region of Yemen. Our observations on distribution, behaviour, nest-building, eggs and egg-laying, and incubation were concentrated on eleven species. The number, colour, dimensions and weight of eggs are given in Tab. 1. A description of the study area has been given by AL-SAFADI (1993).

Species accounts

Cattle Egret *Bubulcus ibis*

This is the most abundant resident Ciconiiformes in the Yemen. It is rather widespread at altitudes of less than 1500 m a.s.l., mainly in the wadis, ponds and agricultural areas of Tihamah plains. It is gregarious and is usually seen with grazing animals and following the

plough. The bird feeds on insects, worms, fishes, frogs, toads and small lizards. The breeding season in Tihamah begins in March or April. Nests are built on large trees of thorn *Ziziphus spinachristi* and *Balanites aegytiaca*, in or near wadis, and sometimes associated with Abdim's Stork *Ciconia abdimii*. The nest is a medium, loosely constructed platform, consisting of large sticks of thorn or acacia, 25-30 cm long, and twigs. Colonies with more than 60 nests were found on a single large thorn tree, especially in the wadis of Surdud, Siham and Zabid. The distance between two nests is sometimes less than 15 cm. Usually, the nest contains 3, sometimes 4 and rarely 5 eggs of pale greenish colour. It was noticed that the size and weight of the eggs decreases when more than three eggs per nest are found. MEINERTZHAGEN (1954) described the eggs as pale blue, but we recorded always pale greenish eggs. This suggests that the eggs are more variable than hitherto thought.

Black Kite *Milvus migrans aegyptius*

The Black Kite is the most abundant raptor in Yemen, widespread in all regions and mainly at altitudes of less than 2000 m a.s.l. It builds nests in large trees, on cliffs or buildings. In the Tihamah region, nests are situated in large trees such as thorn, tamarind *Tamarindus indica* and ficus *Ficus sycomorus*. The nest is a large untidy structure of sticks, about 80 cm in diameter. A normal clutch comprises two eggs and is laid in February or early March. Breeding may also begin in late January (KASPAREK et al. 1994). Eggs are dull chalky-white with bold red-brown blotches mainly on the broad end. One of the partners (probably the male) was observed returning to the nest with a Palm dove, *Streptopelia senegalensis*, as prey, while the other partner was incubating the eggs.

Helmeted Guineafowl *Numida meleagris*

This species is an endangered game bird in Yemen. It is usually encountered in parties of 8 to 30 in the western foothills, always in or near bushes, grasses and crops. The female has one annual brood between February and March. Eggs are laid in a scrape on the ground under the cover of dense shrubs. She lays one egg daily, the full clutch being 6 to 16. The egg is dull creamy buff or pale brown, and the shape broadly oval. The shell is very strong and resistant. In general, the colour of the eggs matches the colour of the ground and the egg shape prevents it from rolling. Incubation starts after the last egg and extends over 29-30 days. The chicks have dark down feathers, and are able to move and feed.

MEINERTZHAGEN (1954) reported the beginning of egg-laying in Yemen at the end of May and early June, and D. J. BROOKS (pers. comm.) recorded breeding in September and October. Our records are from February and March. The breeding season of this species is thus spread over a long period.

Red-eyed Dove *Streptopelia semitorquata*

The Red-eyed Dove is rather common in vegetated areas of the Tihamah and not far from water. It feeds mainly on the ground on grain and seeds, and sometimes on fruit taken from the trees. In the Tihamah nest-building commences in May. This is similar to the Aden area, where egg-laying begins between mid-April and mid-May (MEINERTZHAGEN 1954). The nest is a thin platform of loose twigs, about 30 cm long, situated about 3 m from the ground in thick-foliaged acacia trees such as *Acacia ehrenbergiana*, *A. tortilis* and *A. oerfota*. Two white eggs are laid, rarely one.

Palm Dove *Streptopelia senegalensis*

The Palm Dove is a rather common breeding resident, which is widespread in most habitats but mainly in well-vegetated areas. In the Tihamah, the bird prefers the eastern edge parallel to the western foothills where trees, shrubs and agricultural regions are found. Food is usually taken from the ground and consists almost entirely of grain and seeds of many sorts with occasional green food.

In Tihamah, nest-building commences in March, which agrees with MEINERTZHAGEN (1954), who recorded egg-laying between early March and July, and with CORNWALLIS & PORTER (1982), who found a nest with eggs in April. PHILLIPS (1982) recorded breeding in September. The flimsy nest is a thin platform of twigs and small sticks, about 30 cm across, and is situated about 3 m from the ground in thick-foliaged thorn and acacia trees. The two eggs are completely white.

Shining Sunbird *Nectarinia habessinica*

The Shining Sunbird exceeds the Nile Valley Sunbird *Anthreptes metallicus* and the Palestine Sunbird *Nectarinia osea* in number. All three species live sympatrically and can sometimes be observed together on a single full-flowering acacia tree or a thorn tree. The Shining Sunbird is widely distributed in most well-vegetated regions of Yemen. It feeds mainly on nectar taken from flowers and occasionally on insects.

In the Tihamah plain the nest is built by the male in early March, suspended from the end of an acacia, thorn, tamarind, henna *Lawsonia inermis* or guava *Psidium guajava* branch. In general, the nest is about 2-3 m above ground. It is bottle-shaped with a side entrance over which is a slight penthouse. It is composed almost entirely of cotton with a few threads and fine flexible twigs for hanging. The clutch comprises one or two bright white eggs speckled with black streaks on the broader side. These observations agree with MEINERTZHAGEN (1954) and HOLLOM et al. (1988).

House Sparrow *Passer domesticus*

The House Sparrow is widely distributed all over Yemen. It feeds mainly on grain and seeds and sometimes on insects (especially on small grasshoppers and flying ants). Nest-building in Tihamah commences in March or April in holes, crevices, on buildings beneath and alongside air-conditioning, balconies and ledges, and in trees such as acacia, thorn and balanites. Nests on buildings are large and of untidy structure, and are made of dried grasses and threads, loosely woven together and copiously lined with cotton, wool, feathers and any odd rubbish. The number of eggs is three to four per clutch. There seem to be two to three broods per year, but this needs confirmation by ringing. Tree nests are large and ball-shaped, about 15-18 cm in diameter, loosely constructed of dried grasses, untidily lined with feathers, cotton and wool. The number of eggs is three, rarely two. There is no evidence for more than one brood per year in tree nests. Eggs are densely spotted dark brown on a white background, which changes gradually to brown or dirty pale green during the incubation period.

Arabian Golden Sparrow *Passer euchlorus*

A common resident in the cultivated regions of the Tihamah, in or around crops in flocks of between 20 and 90 birds. The breeding season in the Tihamah begins in March and breeding

was still recorded in early July. This long breeding season may indicate at least double broods. Heavy rains are characteristic towards the end of the breeding season in July on the eastern Tihamah and the western foothills. The nests are built in colonies in acacia trees, usually with 3 to 6 nests per tree. The largest colony comprised more than 80 nests with one fifth unoccupied. Nests of House Sparrows *Passer domesticus* and Rüppell's Weavers *Ploceus galbula* are often found within the colonies. The nests are built between the origin of two or three branches about 3 - 4 m above ground. The large, globular nests with a diameter of about 18 cm are untidy in structure, with dried spiny acacia twigs lined with thin soft grasses, cotton and sparse feathers (cf. RAHMANI et al. 1994, who described the nest as small). Before egg-laying, the partners become more active and add more and more spiny acacia twigs in front of the opening. The newly added twigs are about twice the size of the previous nest but without lining. The side entrance of the nest thus becomes very long and spiny which helps to prevent enemies from reaching the eggs. The nest contains 3 eggs (sometimes 2 or 4) which are dirty white with dark brown spots. The ground-colour changes gradually to dirty pale greenish during incubation. The female incubates the eggs alone, but the young are fed by both parents.

Rüppell's Weaver *Ploceus galbula*

A common resident in Yemen, mainly at altitudes of less than 1500 m a.s.l. It is widespread and common particularly in agricultural areas of the Tihamah. Flocks comprise up to 60 birds, sometimes even more. The species feeds mainly on grain and seeds and causes some damage to cereal crops. Egg-laying by Rüppell's Weaver in the Tihamah commences in early March. Egg-laying was also recorded in April, late May and in early July. It appears that egg-laying coincides with heavy rainfall in the eastern Tihamah and in the western foothills. The species usually forms colonies in different types of trees such as acacia, thorn, tamarind, citrus, reeds and banana, but it also uses telephone wires. Usually, the male constructs more than one nest, each suspended from a branch or twig end. The nest is penduline-like, shaped like a retort, and with an everted tubular side entrance. The nest is composed mainly of green grasses, skilfully interwoven. The lower parts of the nest are lined with cotton, wool, small and tiny feathers or any available soft material found in its habitats, such as leaves of weeds or shrubs and fibres of wild fruits. The number of eggs is usually two, ranging from one to three and even four. Their colour is white, pale pinkish, pale green or pale brown with dark brown spots mainly at the thicker end. The female incubates the eggs alone for about 15 days. Nestlings are fed by both parents and the nestling period lasts 16 to 18 days.

African Silverbill *Euodice cantans*

Breeding in open green and dry grassland and in well-vegetated regions. It is distributed at most altitudes and is fairly common in the Tihamah and also Taiz province. It feeds on seeds, especially on grass seeds. Small flocks of about 50 birds are rather frequently seen. Egg-laying by African Silverbills begins in early March. We once found two female Silverbills which had laid 5 eggs each in an unoccupied nest of Rüppell's Weaver suspended in acacia trees. The eggs are pure white. MEINERTZHAGEN (1954) described nests built in palm trees in Saudi Arabia and HOLLOM et al. (1988) mentioned Silverbill nests in bushes, crevices, suspended, or in unoccupied weavers' nests.

Tab. 1. Dimensions, weight and colour of eggs of some bird species in the Tihamah, Yemen. Mean height and mean diameter are given in mm, weight in g.

| species | no. nests | no. eggs | mean height | mean diameter | weight | colour |
|------------------------|--------------|-------------|----------------|------------------|--------|--|
| Cattle Egret | 12 | 39 | 43.0 | 32.4 | 23.4 | greenish |
| Abdim's Stork | 5 | 15 | 59.1 | 54.4 | 81.7 | white |
| Black Kite | 3 | 6 | 51.1 | 41.7 | 51.5 | blotch white |
| Helmeted Guineafowl | 1 | 6 | 48.8 | 38.6 | 40.5 | buff |
| Red-eyed Dove | 2 | 4 | 27.8 | 21.4 | 7.0 | white |
| Palm Dove | 3 | 6 | 31.7 | 22.8 | 7.1 | white |
| Shining Sunbird | 2 | 4 | 18.1 | 11.4 | 1.8 | speckled white |
| House Sparrow/hole | 2 | 8 | 19.3 | 14.9 | 2.1 | spotted white |
| House Sparrow/tree | 6 | 18 | 20.7 | 14.2 | 2.2 | spotted white |
| Arabian Golden Sparrow | 10 | 29 | 17.6 | 13.6 | 1.9 | spotted white |
| Rüppell's Weaver | 25 | 50 | 20.6 | 14.0 | 2.1 | spotted green or white, white pinkish |
| African Silverbill | 2 | 10 | 15.4 | 11.2 | 1.6 | white |

Discussion

The climate of the Tihamah is characterised by two features: high temperatures (the meaning of "Tihamah" is "hot land") and monsoon rains. Mean temperatures in June and July are about 27°C (max. about 40°C) and drop gradually to 18-20°C in December to February. However, temperatures around 32°C are still reached in winter. The season of the summer monsoon is July to September (October). Precipitation is then irregular, but usually very heavy. There is another wet season is from late-March to May, but precipitation is less regular and in some years there is no rain.

The breeding season of most of the species in the Tihamah commences in March and usually ends in July. This means that breeding takes place in the little wet season and ends at the latest at the beginning of the main monsoon season. For example, our records show Cattle Egret, Shining Sunbird, House Sparrow, Arabian Golden Sparrow and African Silverbill breeding from March onwards; Red-eyed Dove was found nesting in May. CORNWALLIS & PORTER (1982) reported the breeding of the White-throated Bee-eater (*Merops albicollis*) and Amethyst Starling (*Cinnyricinclus leucogaster*) in April and KASPAREK et al. (1994) of the Kentish Plover (*Charadrius alexandrinus*) in April. In the Saudi Arabian Tihamah, RAHMANI et al. (1994) found Black-winged Stilt (*Himantopus himantopus*) breeding in May, Spotted Thick-knee (*Burhinus capensis*) in July, Lichtenstein's Sandgrouse (*Pterocles lichtensteinii*) and Chestnut-bellied Sandgrouse (*P. exustus*) in March, and Black-crowned Finch Lark (*Eremopterix nigriceps*) in May.

Some species start breeding in the Tihamah as early as the beginning of the year. January breeding records in the Saudi Arabian Tihamah are available for Grey Heron (*Ardea cinerea*), Hamerkop (*Scopus umbretta*), Black Kite, and Cinnamon-breasted Rock Bunting (*Emberiza tahapsi*), and February records for Osprey (*Pandion haliaetus*) and Nile Valley Sunbird (*Anthreptes metallicus*) (RAHMANI et al. 1994). We found a Black Kite nesting in

(January) February, and our earliest nesting record of Helmeted Guineafowl is also from this month. CORNWALLIS & PORTER (1982) reported Black-crowned Finch Lark (*Eremopterix nigriceps*) breeding in January and AL-SAFADI (1993) has shown that Abdim's Stork (*Ciconia abdimii*) starts breeding in late-February or early March.

Rüppell's Weaver seems to have a prolonged breeding season starting as early as January (RAHMANI et al. 1994 for the Saudi Arabian Tihamah) and February (CORNWALLIS & PORTER 1982). Our earliest record is from early March. Breeding records from August (CORNWALLIS & PORTER 1982) suggest that breeding continues during the wet season. This is confirmed by a highland record from September (PHILLIPS 1982). Other autumn breeders are Helmeted Guineafowl which nests from February to October, and Palm Dove which starts breeding in March, but breeding records in September show that breeding takes place even towards the end of the wet season.

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