Further notes on the breeding biology of some birds in Saudi Arabia

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We present the first breeding record of Gabar Goshawk *Micronisus gobar* in Arabia, and make comparisons with studies of this species in Africa. The first descriptions of the nestlings of Dunn’s Lark *Eremalauda dunni*, South Arabian Wheatear *Oenanthe lugentoides*, Brown Woodland Warbler *Phylloscopus umbroviros* and Fan-tailed Raven *Corvus rhipidurus* are made. New, or additional details, are provided for the nests of South Arabian Wheatear and Brown Woodland Warbler; for the latter, new information is also included on breeding chronology (much earlier than previously reported), the role of the sexes in incubation and in tending young.

This paper presents the results of a three-week visit to western Saudi Arabia between 21 March and 10 April 2001 and, in the case of one species, includes information from a previous visit, in June 2000. Unless otherwise stated all dates relate to 2001. Details of the first nest of Gabar Goshawk *Micronisus gobar* found in Arabia are provided, along with the first descriptions of nestlings of four species (one of which, South Arabian Wheatear *Oenanthe lugentoides*, is endemic to Arabia); and several additional details on aspects of breeding biology.

**Gabar Goshawk** *Micronisus gobar*

Apparently resident south-west Arabia; courtship has been observed in January and there are records of pairs but no reports of confirmed breeding (Jennings 1995). While most aspects of breeding biology are known from studies in Africa (Brown et al. 1982), details of the first breeding record are included here because of minor differences compared to African data, and some additional information on the appearance of nestlings. The nest was found on 2 April near Abu Arish, Tihamah.

**Nest site and nest**

Dry woodland within a partially cultivated area. The nest was located in the fork of a Tamarind *Tamarindus indica* at 7 m above ground. It was shallow, constructed of small twigs, and lined with finer twigs, rootlets, paper, grasses and tissue paper. Extremely small for the bird’s size, the outer diameter was 26.2 cm, maximum depth 20 cm, and the inner cup was 5.6 cm deep and 11.2 cm in diameter. Small quantities of down were attached to the outer twigs of the nest and on nearby branches. The female circled us and perched within 30 m while we examined the nest. Nests in Africa are normally covered by webs of colonial spiders (Brown et al. 1982), unlike the present nest.

**Eggs**

Smooth and non-glossy; white (Plate 1). Measurements: 39.5 x 30.5 mm, 39.6 x 30.4 mm, 39.6 x 31.2 mm, thus slightly smaller than those in Africa (41 x 31.5 mm; Brown et al. 1982).

**Nestlings**

MS was able to return to the nest on 30 April, when it contained three nestlings c. 10–12 days old. Nestlings in Africa are described as having white down and the iris

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Plate 6. Newly hatched young and eggs of Fan-tailed Raven *Corvus rhipidurus*, near Taif, Saudi Arabia, March 2001. (Jeffory Coburn)
dark brown (Brown et al. 1982); this presumably refers to recently hatched young in the first coat of down. Those here had clearly attained the second down coat, they being off-white, buff on the neck-sides and throat, with a grey cere, black bill, yellow legs and feet, and blue iris (Plate 2).

**Dunn’s Lark** *Eremalauda dunnii*

A detailed description of the nestling was previously unavailable. We found a nest containing three eggs at the Mahazat-as-Sayd Protected Area on 25 March but on 7 April it was empty, having been predated. Subsequently, Dr J. B. Williams, from Ohio State University, who is studying other larks in the reserve, photographed the newly hatched young of this species, and provided a colour transparency from which the following description was compiled. Altricial and downy, pale grey down long and dense on head and upperparts, mouth orange-yellow with two black spots at rear of tongue, one at tip, and one on inner tip of each mandible, and gape flanges whitish-yellow (see Fig. 1 for pattern of mouth and tongue markings). The five-spot pattern is typical of young larks in the Western Palearctic, but distinct differences in the size and shape of markings exist between species, as well as considerable inter-specific variation (Harrison & Castell 1998).

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**Figure 1.** Diagram showing the tongue and mouth markings of newly hatched nestling Dunn’s Lark *Eremalauda dunnii* (Steven Williams from a photograph by Dr J. B. Williams).

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**South Arabian Wheatear** *Oenanthe lugentoides*

Widespread and often common resident of highlands and rocky areas of south-west Arabia and Dhofar. The nest is placed within a crevice in rocks, a hole in a wall or similar (Jennings 1995). The recently fledged young was previously undescribed, while information on ‘decoration’ of the nest entrance and materials were also incomplete or lacking. Most other aspects of breeding are unknown; the eggs being undescribed, as is the role of the sexes in incubation and its period. Young are tended by both adults, but the fledging period is also unrecorded. In the last week of March,
near Taif and Tanumah, we observed three broods of flying young and found three nests containing young. At one of these nests we handled a recently fledged young, still incapable of proper flight.

Nest and nest site
At one nest, sited in a crevice within a low cliff, we were able to observe the near rim of the nest, which was constructed of coarse grass, c. 30 cm from the entrance hole; the base of the tunnel leading to the nest was entirely lined with small flat pebbles. No pebbles were visible at the entrances to the other nests. Apparent ‘decoration’ with pebbles is a feature of the nests of several other species, including certain wheatears, Blackstart Cercomela melanura and Cory’s Shearwater Calonectris diomedea. It is unclear if this is intended to strengthen the nest structure, afford increased protection from predators or is a part of courtship.

Recently fledged young
Rump white, tail white with black band at tip, traces of long grey down on head and back, mouth yellow and gape flanges lemon-yellow (see also Plate 3).

Brown Woodland Warbler  Phylloscopus umbroviens
 Resident in wetter, well-vegetated parts of the Western Escarpment and summits of highland south-west Arabia (Jennings 1995). The nestling was previously undescribed, and we also noted a much earlier start to the breeding season than previously reported, present a more detailed description of the nest and nest site than is currently available, and new information on the role of the sexes in incubation and tending young. On 5 June 2000, at Tanumah, we found a nest containing two eggs being incubated. In nearby areas, on the same visit, we commonly heard calling pairs, usually uttering a monosyllabic note, which is quite typical of the ‘off-nest’ or alarm call of Phylloscopus. The following year, on 23 March, we heard several singing in juniper Juniperus forest near Jarabah. On 28 March, at Tanumah, we discovered a nest containing two large nestlings, observed a brood of flying young, and heard several adults singing and alarm-calling.

Breeding season
Previously reported as May (eggs) to July (young) in Arabia (Jennings 1995), but our data from March 2001 demonstrate a much earlier start to the breeding season. Incubation and fledging periods are unknown, but are each typically c. 13 days among similar Phylloscopus, and incubation usually commences on completion of the clutch. The flying young seen on 28 March would, therefore, have been fresh eggs in early March, two months earlier than previously recorded. The breeding season is evidently protracted, with the distinct possibility that the species is double-brooded.

Nest site and nest
Both nests were in montane open Juniperus woodland, within slight hollows in banks on the ground, and concealed by overhanging vegetation. The nest is a rounded, domed structure with a large entrance hole at one side, and constructed of stems, leaves, dry grass and moss, and softly lined with feathers, plant down and a few hairs (Plate 4). Height was 14 cm, width 10 cm and the entrance hole 3.5 cm in diameter.

Eggs
Subelliptical and smooth, white spotted red and paler lavender grey, and more densely marked at the larger end (Plate 4). Measurements: 17 x 12.6 mm. Eggs in Kenya are 17–19 x 12–13 mm (mean 17.6 x 12.6 mm; Urban et al. 1997).
Incubation
The role of the sexes and the period taken are unknown. An adult singing very close to the nest in June 2000 was (presumably) a male, while the (presumed) female was incubating.

Nestlings and fledglings
Nestlings are altricial and downy, with brownish-grey down on head and back, an unmarked orange-yellow mouth, and pale yellow gape flanges. Recently fledged young (see Plate 5) have the flight feathers noticeably fringed olive-green, with mainly yellowish-buff underparts (whitish in adults), greyish-pink legs and feet (bluish-grey or slate-grey in adults) and the narrow pale supercilium of adults is scarcely evident.

Care of the young
The role of the sexes in feeding young was previously unknown. We observed both adults feeding nestlings and both tending fledged young.

Fan-tailed Raven *Corvus rhipidurus*
The nestling was previously undescribed and additional information is included on an aspect of incubation. On 22 March we found six nests within crevices of roadside cliffs, c. 50 km from Taif on the road to Beni Sa‘ad. One of these contained three eggs and two newly hatched young, and, on the following day, there were two eggs and three young. Incubation must have commenced upon the laying of the second egg.

Nestling
Altricial and downy, with orange-pink skin, long but sparse brownish-grey down on central back and tuft on shoulders and flanks, pinkish-red mouth and tongue with prominent cream rear tongue spurs, and pale yellow gape flanges (Plate 6).

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