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## **BREEDING OF BUFF-STREAKED CHAT, INCLUDING AN EYEWITNESS ACCOUNT OF NESTLING PREDATION BY RINKHALS**

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## AVIAN PREDATION

### BREEDING OF BUFF-STREAKED CHAT, INCLUDING AN EYEWITNESS ACCOUNT OF NESTLING PREDATION BY RINKHALS

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This note reports on observations at three nests of the Buff-streaked Chat *Campicoloides bifasciata* made between September 2016 and January 2017 in the conservancy bordering Clarens, eastern Free State, South Africa. Besides witnessing a Rinkhals *Hemachatus haemachatus* predating Buff-streaked Chat nestling, we also take the opportunity to report on apparently unusual nest sites for this species, and what appears to be the first record of the incubation period.

The Clarens Village Conservancy incorporates a range of hills to the west of the town of Clarens. The habitat is comprised of rocky grasslands, with *Leucosidea sericea* scrub in the valleys and on some of the steeper slopes, and many prominent sandstone cliffs. The grasslands in many parts are heavily grazed by cattle, and where these areas coincide with rocky outcrops they seem to be favoured by Buff-streaked Chats. Other species commonly present alongside them were Ground Woodpecker *Geocolaptes olivaceus*, African Stonechat *Saxicola torquatus*, Cape Rock Thrush *Monticola rupestris*, Familiar Chat *Cercomela familiaris*, Wailing Cisticola *Cisticola lais* and Cape Bunting *Emberiza capensis*.

#### Details of nest sites, newly hatched young and incubation period

The Buff-streaked Chat is a ground-nesting species, the typical nest site being on the downslope side of a rock and sheltered by a protruding lip to some degree (Tarboton 2011, Dean 2005). Whilst the three Clarens nests were in sites of similar nature, the above description does not fit any of them *per se*.

The first nest was found on 29 September after observing a female Buff-streaked Chat carrying nesting material near a small, rocky valley. The nest was located in an area of very short grass, devoid of rocks, with occasional large grass tufts and small *Leucosidea sericea* bushes (roughly 1.5 m tall). It was built into the base of a large grass tuft, its entrance on the down-slope side, and there was a prominent “ramp” of grass roots, bark and twigs at the entrance (Figure 1a). Between 2 October and 5 October two eggs were laid (Figure 1b), but on 6 October the nest was empty.

The second nest, found on 20 November, was built under a shallow overhang in a sandy bank about 40 cm high. This was in an area of grassland rather densely wooded with *Leucosidea* scrub, and with large sheets of exposed sandstone. The nest was being predated by a rinkhals when found – see the next section for more details.

The third nest was found on 2 December after observing a female carrying nesting material. It was built on the downslope side of an exposed vertical face of an otherwise buried rock, and was partially overhung by a grass tuft (Figure 1c). The surrounding area has several large sandstone boulders, many smaller rocks and a moderate density of shrubs. When checked in the late afternoon of 5 December the nest contained a single egg, and by midday on 6 December the clutch of two eggs had been completed. Based on checks in the late afternoon of 22 December (two eggs) and 23 December (two chicks), the chicks likely hatched on 23 December.

Assuming that incubation commenced when the second egg was laid (as is known for Familiar Chat; Tarboton 2011), this gives an incubation period of 17 days. The newly hatched young are blind, with a sparse cover of long, wispy grey down (Figure 1d). I was unable to monitor the nest from 27 December to 4 January, but when checked on 5 January the nest was empty. The nestling period in this species is 16 days (Tarboton 2011, Dean 2005), which means the chicks would only have fledged around 8 January, suggesting that the nestlings were predated.



**Figure 1** - (a) The first nest built into a grass tuft with a ramp of debris; the bowl is obscured towards the top left. (b) The first nest with two eggs before it was predated. (c) The third nest site, partially overhung by a grass tuft. (d) The day-old nestlings covered in wispy grey down. – ISSN 2219-0341 –

### Eye-witness account of nestling predation by rinkhals

Just before 14:00 on 20 November I encountered a female Buff-streaked Chat giving alarm calls and allowing me to approach more closely than usual. This behaviour suggested she may have a nest nearby, and a brief inspection revealed the fairly conspicuous nest (the second of the three described above). The nest contained three chicks, one of which was in the grasp of a rinkhals (Figure 2).



**Figure 2** - A young rinkhals with a nestling chat in its jaws.

The chicks were still blind and with feathers just coming into pin on the wing. The snake proceeded to drag the chick from the nest into the adjacent vegetation (Figure 3a & 3b) and orient it to swallow it head first.



**Figure 3** - The rinkhals drags the nestling over the lip of the nest into the surrounding vegetation.

At about 30-40 cm in length the rinkhals appeared to be a juvenile, and could not quickly swallow the relatively large nestling. After five minutes I retreated, concerned that my presence might inhibit the chat from launching an attack on the predator. As I did so the male returned to the nest area carrying food. Despite watching, concealed, from some distance away for 20 minutes, the pair did not appear to harass the snake. Indeed they mostly watched silently from elevated perches in the bushes around the nest, occasionally flying down to the ground to within half a meter of where the snake lay next to the nest. Another inspection after this period revealed that the snake had still not managed to entirely swallow the nestling (Figure 4). At this point I retreated once again and watched the pair from a distance for a further half hour, during which time they continued to merely observe proceedings.

I returned the following day to ascertain the fate of the nest. The nestling that had been dragged from the nest was lying nearby, apparently, it was too large for the snake to swallow. The remaining two chicks in the nest were also dead, and each had noticeable wounds to their bodies. It is not clear if these wounds were caused by the snake in the attack, or by subsequent scavengers.



**Figure 4** - The rinkhals seemingly struggling to swallow the relatively large nestling.

## Discussion

The identification as a juvenile rinkhals is based on the relatively small size, the dark bands across the back, and the keeled scales (Figure 5) - the scales in *Naja* cobras lack the keel. The rinkhals is known to take a wide diversity of prey items, including birds, mammals, lizards, amphibians and smaller conspecifics (Parusnath 2013, Shine *et. al.* 2007). At the same time, it is considered an amphibian specialist, as 80% of 61 prey items examined from rinkhals by Shine *et. al.* were amphibians. In all the cobra species examined in their study, birds formed a relatively small percentage (<20%) of the snakes' diet, and in the rinkhals the percentage was under 2%.

The taxonomic affinities of Buff-streaked Chat have proven elusive, and in the past it has been placed in the genera *Saxicola*, *Myrmecocichla* and *Oenanthe* (Dean 2005). However modern molecular studies place it in the monospecific genus *Campicoloides*, which is most closely related to a group of *Cercomela* chats consisting of Sickie-winged *C. sinuata*, Karoo *C. schlegelii* and Tractrac *C. tractrac* Chats (Outlaw *et. al.* 2010).

Considering these phylogenetic differences, it is interesting to note the substantial difference between the incubation period of 17 days recorded here and that of related chats and wheatears. The species for which I could find data on incubation period – namely African Stonechat, Mountain Wheatear *Oenanthe monticola*, Tractrac and Familiar Chat – spanned a range of 13 -15 days, with a median of 14 days (Tarboton 2011). It would be valuable to know if an incubation period of 17 days is typical for Buff-streaked Chat, or if this was anomalous.



**Figure 5** - A close-up of the scales showing the central ridge or "keel" on the dorsal scales.

## Acknowledgements

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