

**The scorpion *Cheloctonus jonesii* Pocock, 1892 (Scorpiones, Liochelidae) as a possible predator of the red-billed quelea, *Quelea quelea* (Linnaeus, 1758)**

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**Summary**

Scorpions are reported for the first time predated on birds. In Kruger National Park, South Africa, we observed, in an area of approximately 20 m<sup>2</sup>, eight *Cheloctonus jonesii* Pocock, 1892. Each scorpion was in its burrow and had captured, by a leg, a juvenile red-billed quelea *Quelea quelea* (Linnaeus, 1758).

**Introduction**

Although birds and other vertebrates are known predators of scorpions (McCormick & Polis, 1990), scorpions are not considered to be predators of birds (McCormick & Polis, 1990; V. Fet & L. Prendini, pers. comms). Scorpions do, however, prey on non-bird vertebrates such as geckos, snakes, lizards and rodents (Lamoral, 1971a; McCormick & Polis, 1990) as well as arthropods and non-arthropod invertebrates (Lamoral, 1971b; McCormick & Polis, 1990). Our observations below suggest that birds, at least the red-billed quelea, *Quelea quelea* (Linnaeus, 1758), may be a prey item of the scorpion *Cheloctonus jonesii* Pocock, 1892.

Burrows of *C. jonesii*, found in the Kruger National Park, South Africa, are usually made in pelitic soil, and are oval in cross section and 15 to 30 cm deep (Newlands, 1972). The red-billed quelea, often reported to be the most abundant bird in the world with an African population estimated to be 1.5 billion, is a pest of, among other things, cultivated cereals, particularly on small farms (Elliott, 1989).

**Material and methods**

On 12 March 2009, while on safari in the central part of Kruger National Park, between the Nwanetsi River and Lebombo Ridge, we had two brief opportunities, at approximately 0900 h and 1700 h, to walk through an area dominated by buffalo grass, *Cenchrus ciliaris*, and stinking grass, *Bothriochloa radicans*.

**Results**

One of us (TB), during the first walk, noted a bird on the ground in obvious distress. As we approached, we anticipated a ruse and predicted the bird would fly off.

The bird, a red-billed quelea, remained still. Upon closer examination and on lifting the bird, we discovered that one of the bird's legs was in a scorpion's burrow and gripped by the scorpion's pedipalp (Fig. 1). Our manipulation freed, with some difficulty, the bird and it flew away. We then searched an area of approximately 20 m<sup>2</sup> and found six more queleas gripped similarly. One of the birds managed to escape as we approached. We carefully worked to release another bird, which then flew away seemingly unharmed by venom. Unfortunately we had to leave the area without further observations. We discovered during our second brief stay that two of the remaining four birds were missing and two birds were dead, covered by ants and still held by a scorpion. We discovered a struggling eighth bird that was alive and held by a scorpion. Regrettably, we could not remain at the site to see if the scorpions would exit their burrows to feed on the birds.

**Discussion**

Since 12 March 2009 was a sunny, hot day it is possible that the dead birds we located died of heat exhaustion, not scorpion venom. Presumably the missing birds had freed themselves or were picked up by scavengers. We speculate that the scorpion *C. jonesii* could have stung the leg of its captives in the confines of its oblong burrow entrance, since the laboratory observations of Harington (1978) revealed a sideways strike. If the birds were stung, the venom may not have affected them.

Our two tracker guides, although they had grown up in the area, admitted to having never seen red-billed quelea caught by scorpions. None of the ranger naturalists we talked to at the Lebombo Lodge had heard of, or witnessed this phenomenon. Opportunities to view quelea and *C. jonesii* interactions may be rare because



Fig. 1: Partially excavated burrow of *Cheloctonus jonesii* showing the scorpion's palp (arrow) grasping the leg of a red-billed quelea, *Quelea quelea*.

the quelea is itinerant and remains in an area for no more than a few weeks (Elliott, 1989). However, considering the great abundance of red-billed quelea, the typical high densities of *C. jonesii* (L. Prendini, pers. comm.), the copious amounts of grass seed for the birds, and the typical location of exposed *C. jonesii* burrows in open areas near the base of grass tufts (Harington, 1978), the chance encounter of bird and scorpion seems plausible. The probability of a chance encounter may have been enhanced since, based on photographs of the captured birds and the feeding location away from water, the birds were inexperienced juveniles (Robert Cheke, pers. comm.).

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