

Afring News

An electronic journal published by SAFRING, Animal Demography Unit at the University of Cape Town



Afring News accepts papers containing ringing information about birds. This includes interesting ringing trips, interesting captures, faunistic observations relating to ringing, analyses of ringing data, and reports of projects and conferences that had a ringing component.

Editor: H. Dieter Oschadleus

MATING SYSTEMS, MIST NETS, AND MOULTING BIRDS

Adrian J.F.K. Craig

Recommended citation format: Craig AJFK. Mating systems, mist nets, and moulting birds. Afring News 40:19-21

URL: http://safring.adu.org.za/afring_news_current.php

Published online: 15 August 2011

- ISSN 2222-341X -



MATING SYSTEMS, MIST NETS, AND MOULTING BIRDS

Adrian J.F.K. Craig

Department of Zoology & Entomology, Rhodes University, Grahamstown, 6140, South Africa; a.craig@ru.ac.za

Looking back, I often think of myself as an “accidental ornithologist” since I originally went to university planning to become a marine biologist. During my undergraduate years at the University of Cape Town I became intrigued by animal behaviour, and approached Prof. Gerry Broekhuysen, who had taught the course, to ask where I should go to specialise in this field. He put me in touch with a number of leading European scientists, and this ultimately led to an exchange year in Germany with Prof. Klaus Immelmann. However, Immelmann was about to take up a new post, and he suggested that I should wait a further year, and do fieldwork in South Africa in the interim. So I approached Gerry Broekhuysen for a research project, bought my first pair of binoculars, and started a MSc study of the courtship behaviour of the Southern Red Bishop *Euplectes orix*.

This behavioural study naturally necessitated colour-ringed birds, so I had to become a bird-ringer also. Clive Elliott (now Sir Clive and retired to Oxford, UK) was registered for a PhD on the Cape Weaver *Ploceus capensis* under Gerry Broekhuysen’s supervision. He had suggested the Southern Red Bishop as a suitable study species, since they nested in his main weaver colony on the grounds of Dr Geoff McLachlan’s zoo at Tygerberg. Clive was also the national ringing organiser (NUBRA, the National Unit for Bird-ringing Administration, was based on the UCT campus), so I joined the team which mist-netted weavers at the Tygerberg roost and breeding colony. My chief mentors as I trained as a ringer would be Clive and George Underhill. To this day, I imagine George’s critical comments if I accidentally put a ring on “the wrong way up”!

The best study site for observing the Southern Red Bishops proved to be the late Nico Myburgh’s farm “Klawervlei” on the Cape Flats. Here my future wife Cheryl had her first introduction to fieldwork with an ornithologist partner, standing waist deep in a windswept dam on a chilly night, holding a torch while I struggled to disentangle a Common Waxbill *Estrilda astrild*. She earned her co-authorship on my first bird publication, a note in *Safring News* (Craig & Burman 1973). With individually marked birds, I could confirm Jack Skead’s (1956) description of polygyny in the Southern Red Bishop, and compare the courtship performance and breeding success of individual males. Despite painfully bitten fingers, I retain a deep affection for the Southern Red Bishop and its colourful territorial and courtship displays. Later studies by Thomas Friedl, still relying on colour-ringed birds but using modern genetic techniques also, have confirmed and extended my earlier observations (Craig 1974, Friedl 2004).

Returning from Germany and moving to Pietermaritzburg, I continued studying bishops, looking at their whole annual cycle and including comparative data on the other *Euplectes* species which occurred there. Colour-ringed birds still played their part at a study colony on Jack Masson’s farm “Malton”, but there were also monthly ringing trips to a roost site in the grounds of Cedara Agricultural College to monitor moult and breeding condition in the population. Richard Brooke had suggested that both the timing of breeding and moult into breeding plumage varied in different years in relation to rainfall in Zimbabwe (Brooke 1966), and my field seasons in KwaZulu-Natal spanned both wet and dry years.

From the staff at SAFRING I heard that Alec Manson, an ‘amateur’ ringer in Zimbabwe, had submitted large numbers of records for Southern Red Bishops and other *Euplectes*. I wrote to him, and learnt that he also had detailed information on moult, weight, and other measurements, which he was happy to make available to me. A large cardboard box arrived by rail, containing his original hand-written data sheets. In the 1970’s, computers were huge machines occupying dedicated buildings frequented by an elite who understood arcane programming languages; my analyses of our



combined data were done using a small electronic calculator and only the most basic statistical methods. To my relief, the Zimbabwe data confirmed the patterns of moult and seasonal plumage change which I had found in Pietermaritzburg, with a slight shift in timing, but no evidence of significant year-to-year variation in the prenuptial moult. Four publications resulted from this collaboration (Craig & Manson 1979a, b, c, 1981). Sadly, Alec Manson and I never met, but I think that he was pleased to see how much his records had contributed to our understanding of the annual cycle in these birds.

Moving to the Eastern Cape, I turned my attention to starlings, which seemed a neglected group. The Pied Starling *Spreo bicolor* was the focus of behavioural observations on colour-ringed birds, with the discovery that this species was a cooperative breeder as first reported in *Safring News* (Craig 1983a). A very different mating system from those which I had studied in weavers! Breeding birds were also found with active wing-moult and, supplementing my ringing data with information from museum specimens, revealed different moult strategies in sympatric starling species (Craig 1983b). I became increasingly intrigued by the role of moult in the annual cycle of birds, how adaptable its timing and sequence might be, and the extent to which it might restrict other activities.

Reflecting on my publications as a whole, more than half of them include data derived from bird-ringing, which remains a regular part of my fieldwork. The 'incidental' species gain in importance over the years, thus Cape White-eyes *Zosterops pallidus* which were a 'by-catch' at sites where sunbirds were the main target have been the subject of two moult papers (Craig & Hulley 1996, Hulley *et al.* 2004). Combining data from different ringers provides much larger sample sizes and better geographical coverage, so that we are starting to understand regional variations in the annual cycle of our birds. Using new techniques (Underhill & Zucchini 1988, Erni *et al.* in press) we have also been able to revisit old data, including the Southern Red Bishop (Craig *et al.* 2010). The next comprehensive review of moult in southern African passerines (c.f. Craig 1983c) will certainly provide a much more comprehensive picture of the role of moult in the annual cycle of our birds in relation to activities such as

breeding and migration – before climate change may necessitate resetting the clocks!

Acknowledgements

In this personal odyssey I am indebted to many people: Gerry Broekhuysen and Gordon Maclean inspired my abiding fascination with birds, and as supervisors gave me the freedom and enough guidance to find my own way; Klaus Immelmann opened new vistas in ornithology for me; Jack Skead shared a wealth of personal field experience in the Eastern Cape. Many ringers and helpers have provided support, advice and assistance in the field and elsewhere, and I would like to thank sincerely, in alphabetical order, Bo Bonnevie, Richard Brooke, Cheryl Craig, Clive Elliott, Pat Hulley, Pat Morant, Terry Oatley, Dieter Oschadleus, Tony Tree, George Underhill, Les Underhill, Carl Vernon and Craig Whittington-Jones. My research has been funded over the years by the Council for Scientific and Industrial Research, the University of Natal, the National Research Foundation, and Rhodes University.

References

- Brooke RK. 1966. Nuptial moult, breeding season and clutch size of Rhodesian Red Bishops *Euplectes orix* and congeners in relation to rainfall. *Ostrich Supplement* 6: 223-235.
- Craig AJFK. 1974. Reproductive behaviour of the male Red Bishop Bird. *Ostrich* 45: 149-160.
- Craig AJFK. 1983a. A Pied Starling study. *Safring News* 12: 8-11.
- Craig A. 1983b. The timing of breeding and wing-moult of four African Sturnidae. *Ibis* 125: 346-352.
- Craig AJFK. 1983c. Moult in southern African passerine birds: a review. *Ostrich* 54: 220-237.
- Craig AJFK, Bonnevie BT & Oschadleus HD. 2010. Regional patterns in moult and sexual dimorphism of adult Southern Red Bishops *Euplectes orix* in southern Africa. *Ostrich* 81: 123-128.



- Craig A & Burman C. 1973. Stork killing birds in mist nets. *Safring News* 2: 5.
- Craig AJFK & Hulley PE. 1996. Supplementary head molt in Cape White-eyes: A consequence of nectar feeding? *Journal of Field Ornithology* 67: 358-359.
- Craig AJFK & Manson AJ. 1979a. Sex ratios among three *Euplectes* species in southern Africa. *Ibis* 121: 224-227.
- Craig AJFK & Manson AJ. 1979b. Molt of the Red Bishop and related species of *Euplectes*. *Ostrich* 50: 65-69.
- Craig AJFK & Manson AJ. 1979c. Mortality rates of the Red Bishop and the Redcollared Widow. *Ostrich* 50: 113-116.
- Craig AJFK & Manson AJ. 1981. Sexing *Euplectes* species by wing-length. *Ostrich* 52: 9-16.
- Erni B, Oschadleus H-D, Bonnevie BT, Altwegg R, Underhill L. (in press). Molt: An R package to analyse molt in birds. *Journal of Statistical Software*.
- Friedl TWP. 2004. Breeding behaviour of the Red Bishop (*Euplectes orix*): a synthesis and new observations. *Vogelwarte* 42: 178-190.
- Hulley PE, Craig AJFK, Underhill GD, Bonnevie BT, Nuttall RJ & de Swardt DH. 2004. Timing of molt and breeding in the Cape White-eye *Zosterops pallidus* from three different geographical regions in South Africa. *Emu* 104: 353-358.
- Skead CJ. 1956. A study of the Red Bishop. *Ostrich* 27: 112-126.
- Underhill LG & Zucchini W. 1988. A model for avian primary molt. *Ibis* 130:358-372.

Photos:

Red-billed Quelea, adult female head, in breeding condition, Addo
 Cape Weaver (CV15479), adult male non-breeding, "Hounslow", EC
 Southern Red Bishop, adult male, courting, "Klawervlei", WC
 Village Weaver, adult male head, Addo
 Pied Starling, adult, "Table Farm", EC

