

Biometrics

Biometrics and moult of White-throated Canaries *Crithagra albogularis* in South Africa and Namibia

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Introduction

White-throated Canaries *Crithagra albogularis* are endemic to western South Africa, Namibia and southern Angola (Dean 1997). Four subspecies are recognised, based on differences in plumage colour (Fry 2004). Few biometric data have been published. Maclean (1993) gives a small, pooled data set (n=17) of unspecified provenance. Fry (2004) gives biometrics for 20 individuals (10 males and 10 females) from the Western Cape. Underhill *et al.* (1998) gives wing and mass data for 48 and 50 Western Cape birds, respectively. The data reported by Underhill *et al.* (1998) are included in the SAFRING database and are consequently re-examined in this paper. Friedmann & Northern (1975) reports a mass value for a single Namibian bird. No moult data has been published.

This paper reports the biometric and moult data collected by ringers for this species.

Methods

Wing, mass and moult data for White-throated Canaries were extracted from the SAFRING database. UF and VW took other biometric measurements from birds

captured in Namibia and the Western Cape, South Africa, respectively. All measurements were taken, and moult scored following de Beer *et al.* (2000).

A statistical software package (Statistica V 4.0) was used to test for binomial distribution in adult wing length datasets collected by UF and JJ, in Namibia and South Africa, respectively.

Results and discussion

Biometry

The analysed wing length data sets were not bimodal and therefore no sexual dimorphism could be detected using these data. Ward (2002) and Ward *et al.* (2003) found no sexual differences in adult Streakyheaded Seed eaters and Forest Canaries *Crithagra scotops*, respectively. Fry (2004) however, reports that males are larger than females (Table 1). The mean wing lengths in both countries were not significantly different (p=0.005) (Table 2 & 3). There is no significant difference (p=0.005) between other biometric measurements of adult birds taken in Namibia and South Africa (Table 1). Adult White-throated Canaries ringed in the South Africa were how-

ever, significantly heavier ($p=0.005$) than in those caught in Namibia.

The majority of birds caught in South Africa would have been of the nominate subspecies and birds caught in Namibia would have most likely been *C. a sordahlae* or *C. a. crocopygia*. The results of this study have shown that there are no significant size differences between these taxa. The lower mass values from Namibia are explained by Bergmann's Rule, which states that there is a clinal decrease in body mass with decreasing latitude. Ward (2002) found a similar northward decrease in body mass in Streakyheaded Seed eaters *Crithagra gularis*.

Moult

White-throated Canaries in South Africa ($n=42$) undergo primary moult from October to May, and in Namibia ($n=32$), primary moult occurs from March to November (Fig 1 & 2). In the Western Cape, White-throated Canaries breed from July to March, with peak breeding occurring in September-October (Winterbottom 1968, Dean 1997). In Namibia, breeding is less seasonal and occurs when the conditions are suitable (Winterbottom 1971, Dean 1997). As in other canary species, primary moult in White-throated Canaries therefore starts soon after birds have finished breeding (Ward 2002, Ward *et al.* 2003).

There is a need for further work to be done on White-throated Canaries. This study would have benefited from larger samples of moult and biometric data. Ringers encountering this species are encouraged to take measurements and to record moult.

References

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Table 1. Biometrics of sexed specimens compared with unsexed individuals ringed

	Male ¹			Female ¹			Unsexed ²			
	N	Range	Mean	N	Range	Mean	N	Range	Mean	SD
Wing	10	78–83	80.4	331	67–89	80.1	10	73–79	75.7	3.3
Culmen	10	15–17	15.9	23	13.1–16.1	14.1	10	14–15.5	14.9	0.8
Tarsus	10	19.5–21	20.6	23	18.0–21.6	20.4	10	19–20	19.9	0.9
Tail	10	53–59	55.7	23	47–61	56.1	10	49–56	52.9	3.5

¹ Birds from Western Cape (Fry 2004)

² Data from birds ringed in South Africa, mostly Western Cape

Table 2. Biometrics of adult Whitethroated Canaries (Mass in gram, other measurements in mm)

	Namibia			South Africa ¹		
	N	Range	Mean SD	N	Range	Mean SD
Mass	247	11–32	23.9 2.8	331	13.5–38	27.7 2.8
Wing	187	67–89	80.8 3.5	331	67–89	80.1 3.3
Head	61	30–34.2	32.2 0.98	23	30.5–34.3	32.6 1.1
Culmen ¹	–	–	–	23	13.1–16.1	14.1 0.8
Culmen ²	58	14.7–20.7	18.5 1.1	23	16.1–18.5	17.6 0.6
Bill depth	–	–	–	23	10.2–11.9	10.9 0.5
Tarsus	56	17–24.2	19.8 1.1	23	18.0–21.6	20.4 0.9
Tail	91	48–77	57.2 3.0	23	47–61	56.1 3.5

¹ includes data from Underhill *et al.* (1998).

Table 3. Biometrics of non-adult White-throated Canaries (Mass in grams, other measurements in mm)

	South Africa				Namibia			
	N	Range	Mean	SD	N	Range	Mean	SD
Mass	22	20–34	27.5	2.9	344	19–31	23.9	2.0
Wing	22	71–83	79	2.7	344	75–89	80.8	2.6
Head	–	–	–	–	49	30.3–34.4	31.8	0.97
Culmen	–	–	–	–	48	15.2–22.8	18.2	1.4
Tarsus	–	–	–	–	44	18.5–21.2	19.7	0.6
Tail	–	–	–	–	162	50–65	53.0	2.5

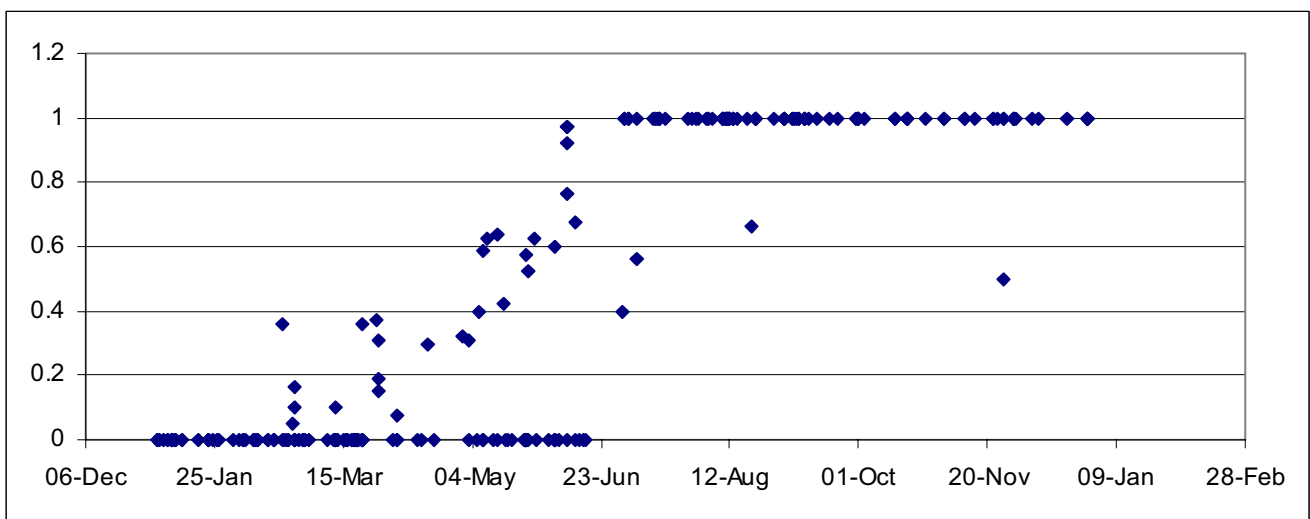


Figure 1. Moult data for Western Cape ringed White-throated Canaries (n=253)

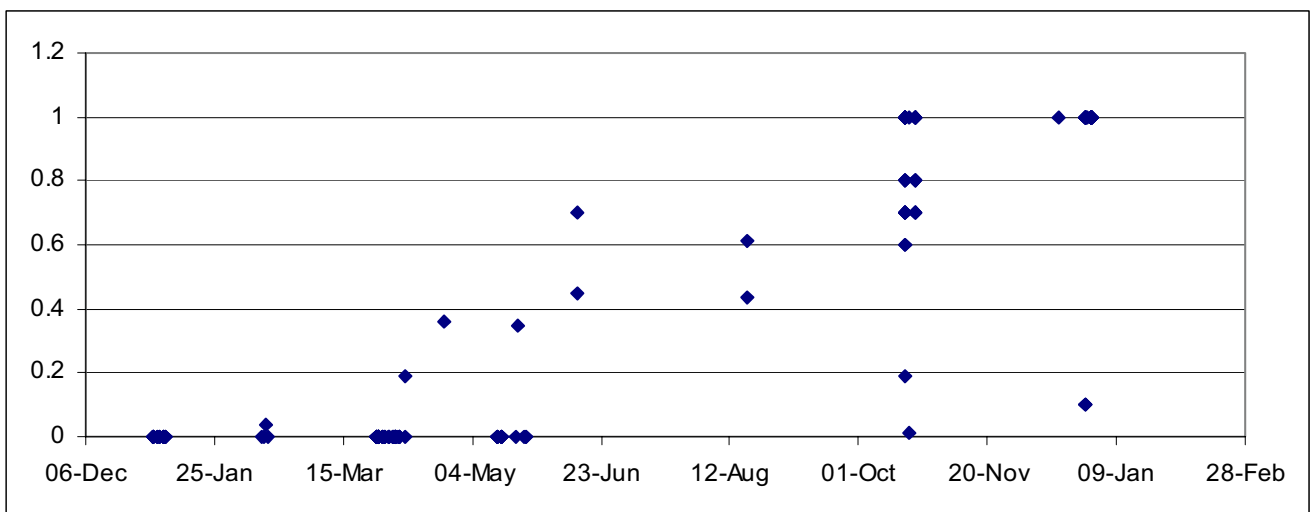


Figure 2. Moult data for Namibian ringed White-throated Canaries