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DOES THE STREAKY-HEADED SEEDEATER DISLOCATE OTHER CANARY SPECIES?

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Abstract. Although the Streaky-headed Seedeater occurs all over the Afrotropical Region, it is absent or rare in urbanised areas. Within a few last years, it became however a common breeding resident in the town Roma, Lesotho, southern Africa. It probably greatly benefits from seeds of cedar and pine cones. It appears likely that it successfully eliminated all other canary species from the well-timbered areas of the Roma Valley, where exotic coniferous tree species predominate. Wherever these trees are absent in the Roma Valley, the Cape Canary predominates in bird communities. A similar situation is expected in other regions of its extensive range.

Key words: Streaky-headed Seedeater, *Carithagra gularis*, Lesotho, population density, competition.

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Вытесняет ли полосатоголовый зерноед другие виды канареек? - Г. Копий. - Беркут. 15 (1-2). 2006. - Хотя полосатоголовый зерноед широко распространен в афротропическом регионе, он отсутствует или редок на урбанизированных территориях. Тем не менее на протяжении нескольких последних лет он стал обычным гнездящимся видом в г. Рома в Лесото на юге Африки. По-видимому, этот вид получил значительное преимущество благодаря обилию интродуцированных экзотических деревьев в долине Рома, он питается семенами кедров, сосен и некоторых других видов. Они как раз начинают выпадать из шишек в начале сезона гнездования зерноеда. Его клюв лучше приспособлен к поеданию таких семян, чем двух других местных видов канареек – *Carithagra atrogularis* и *Serinus canicollis*. В тех местах долины, где преобладают экзотические виды хвойный деревьев, зерноед их вытесняет. Там же, где интродуцентов нет, в населении птиц преобладает *Serinus canicollis.* Возникновение аналогичной ситуации можно ожидать и в других регионах, входящих в ареал полосатоголового зерноеда, где активно интродуцируются хвойные деревья.

INTRODUCTION

The Streaky-headed Seedeater (*Carithagra gularis*) is one of 31 canary species, which are resident in the sub-Saharan Africa (Dowsett, Forbes-Watson, 1993). It occurs all over the Afrotropical Region (Dowsett, Forbes-Watson, 1993) in savanna, open woodland, riverine bush and other similar vegetation (Hockey et al., 2005). It is absent or rare in most towns and cities in the South African Highveld (Kopij, 1997, 2000, 2001a, 2005), but recently it became a common resident in a small town nestled against the Maloti in Lesotho (Ambrose, Maphisa 1999; Kopij 2001b). Since there are also other canary species resident in this area (Kopij, 2001b), the Streaky-headed Seedeater is expected to dislocate them. To test this hypothesis, a study was undertaken on the population development of the Streaky-headed Seedeater and other canary species occurring sympatrically in this town.

STUDY AREA

The National University of Lesotho (NUL) campus, with the surface of 86 ha, was designed as the main study area. The campus is situated at Roma (29º 28´ S; 27º 44´ E; 1 650 m a. s. l.), 32 km E of Maseru, Lesotho. The town of Roma, which include a few settlements (i.e.: the NUL campus, Thoteng, Mafekeng and Mafefoana), is nestled against foothills of the Moloti in a wide valley surrounded by sandstone cliffs. The valley is between the longitude 29.32–29.26 S and the latitude 28.42–28.48 E, at 1500 to 2000 m a. s. l. Roma was founded in 1863 and in 1945 the university was established. Later two catholic seminaries, two high schools and a hospital were also founded. Around these modern buildings there is striking rural setting, and cultivated fields. The maize is a dominant crop. About 30 village settlements are located around the sandstone cliffs.

Numbers and densities of occupied territories of the Streaky-headed Seedeater on NUL campus, Roma, Lesotho, during the years 1998–2002
Численность и плотность населения полосатоголового зерноеда в кампусе Национального университета Лесото в Роме в 1998–2002 гг.

Season	First breeding (September/October)		Second breeding (November/December)		Third breeding (January/February)	
	Pairs	Pairs/100 ha	Pairs	Pairs/100 ha	Pairs	Pairs/100 ha
1998/1999	12	14.0	n/d	n/d	n/d	n/d
1999/2000	13	15.1	9	10.5	n/d	n/d
2000/2001	12	14.0	9	10.5	8	9.3
2001/2002	15	17.4	8	9.3	2	2.4
Total	13.0	15.1	8.7	10.1	5.0	5.8

The NUL campus began as an open grassland, but at present its area is well endowed with various exotic trees, such as eucalypts (*Eucalyptus* spp.), cedars (*Cedrus atlantica*), pines (*Pinus* spp.), oaks (*Quercus* spp.), poplars (*Populus* spp.), blue wattles (*Acacia dealbata*), peaches (*Prunus persica*), she-oaks (*Casuarina* sp., *Chamaecyparis* spp., *Cupressus* spp.), weeping willows (*Salix babylonica*) and others (Ambrose, Maphisa 1999; Kopij 2001b).

METHODS

Studies were carried out in four consecutive breeding seasons (September – February) during the years 1998–2002. Territories were identified and plotted by means of the mapping method (Bibby, Burgess, 1992). Only singing males or families were census units. The campus was divided into two parts: northern and southern and counts were conducted in the morning in one part and next morning on the other part. Each counting lasted about two hours.

Breeding season in the Streaky-headed Seedeater extends from September to February (Skead 1960; Hockey et al., 2005), the incubation phase lasts 13–15 days and nestlings remain in nest for 17 days (Hockey et al., 2005), it has been assumed therefore that first breeding in this species is in September/ October, second breeding in November/December and third (if so) breeding in January/ February. In order to detect differences in territory occupation within one breeding season, 4–8 counts were conducted in each of those two-month periods during the years 2000–2002. In 1998/1999 breeding season, seven counts were conducted only in the first period, while during the 1999/2000 breeding season, in the first and the second periods.

RESULTS AND DISCUSSION

During the years 1998–2002, the number of breeding pairs of the Streaky-headed Seedeater increased in the study area from 12 to 15 (Table), i. e. from 14.0 pairs/100 ha to 17.4 pairs/100 ha. This constitutes 25 % increase over four consecutive breeding seasons. Within two breeding seasons of 2000/2001 and 2001/2002, the highest densities of occupied territories were recorded during the first breeding attempt (x = 13.5), lower by 37 % during the second breeding attempt (x = 8.7), and lower by 63 % during the third breeding attempt. In 2000/2001 breeding season, 75 % and 66 % of pairs held territories during the second and the third breeding season respectively, while in 2001/2002 breeding season, only 53.3 % and 13.3 % pairs held territories during the second and third breeding respectively. Most territories were established in clumps of ex-

otic coniferous trees, namely cedars and pines. Birds avoided orchards, oaks, blue wattles, *Acacia* spp. and other broad-leaved trees.

There were two other canary species, which nested sympatrically with the Streaky-headed Seedeater, namely the Black-throated Seedeater (*Carithagra atrogularis*) and the Cape Canary (*Serinus canicollis*). In all four breeding seasons, only 1–2 occupied territories of each of these species were identified. These territories were established on the periphery of the campus. The Cape Canary's territories included large gum trees, while Black-throated Seedeater's territories included mainly the blue wattles.

It should be stressed that, despite intense observations, no records of the Streaky-headed Seedeater were made before 1990, when it was seen on 24 June. However, it continuously had been increasing in numbers, reaching in 2001 a density of 17.4 pairs/100 ha (Ambrose, Maphisa, 1999 and this study). During that period, the Streaky-headed Seedeater became also fairly common breeding resident (20–30 pairs) in other parts of the Roma Valley (Kopij, 2001b).

The situation of its closest relative, the Black-throated Seedeater, appears to be reverse. During the years 1998–2002, only 1–2 breeding pairs were recorded on the NUL campus, and 5–10 pairs in the whole Roma Valley (Kopij, 2001b). However, before 1990, it was classified as a common resident on the NUL campus (Ambrose, Maphisa, 1999).

Other Streaky-headed Seedeater's relative, the Cape Canary was very common breeding resident in the Roma Valley during the years 1998–2002 (Kopij, 2001b). Although it was only the second to the Cinammon-breasted Bunting (*Emberiza tahapisi*) most common breeding bird species in the Roma Valley (c. 142 pairs), only single pairs were recorded on the campus. Two other *Serinus* species, the Yellow Canary (*Serinus flaviventris*) and White-throated Canary (*Carithagra albogularis*) were only vagrants to the campus and to the Roma Valley at large (Ambrose, Maphisa, 1999; Kopij 2001b).

The Streaky-headed Seedeater feeds mainly on buds, flowers, seeds, fruits, nectar and insects (Skead 1960; Milewski, 1978; Hockey et al., 2005). On NUL campus they were often observed feeding on seeds of cedars, pines and she-oaks. These seeds are commonly available on the campus, especially at the beginning of the Streaky-headed Seedeater's breeding season (August/September), when the seeds start to fall out from cones. Streaky-headed Seedeater's beak may be better adopted to handle these seeds than the beak of the Black-throated Seedeater and Cape Canary.

It appears likely that the Streaky-headed Seedeater successfully eliminated all other canary species from areas timbered with conifers in the Roma Valley. Wherever these trees are absent in this valley, the Cape Canary predominates, not only among canary species, but in bird assemblages at large (Kopij, 2001b). A similar situation is suspected in other regions of its extensive range, where coniferous trees have been introduced.

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