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**NESTING SITES OF SYMPATRICALLY BREEDING WEAVERS:  
*PLOCEUS CAPENSIS* AND *P. VELATUS* IN MOUNTAIN GRASSLANDS  
OF SOUTHERN AFRICA**

ABSTRACT

Studies were conducted from 1998-2002 in the Moloti/Drakensberg area, Lesotho, southern Africa. A total of 155 nesting sites of the Cape Weaver and 75 nesting sites of the Southern Masked Weaver were found. Almost all nesting sites of both weaver species were situated along river courses vegetated with willows, poplars and other tree species. They often nested in sympatry. Although most nesting sites of both Cape and Southern Masked Weaver were located in the indigenous *Salix suberecta*, they occupied other tree species with different frequency, so that, on overall they differed significantly in nest site choice. Also the mean number of nests per breeding site was different: 8.4 in the Cape Weaver and 3.3 in the Southern Masked Weaver.

**Key words:** Southern Masked Weaver, Cape Weaver, breeding, nest sites, competition, Lesotho

INTRODUCTION

The Cape Weaver *Ploceus capensis* and Southern Masked Weaver *P. velatus* are the only weaver species which occur in the South African Highveld. They are polygynous and build multiple nests, which are usually suspended from branches in trees, and form sometimes mono- or mixed colonies (Hockey et al. 2005). There are no apparent differences in Cape Weaver and Southern Masked Weaver nests. Both are neat oval, kidney-shaped chambers with a short vertical entrance tube, woven by males using strips of grass and reed leaves (Maclean 1997, Hockey et al. 2005). So they can only be identified while seen with their owners.

The Cape Weaver and Southern Masked Weaver were found to breed sympatrically in the highest areas of southern Africa, viz. Maloti/Drakensberg region (G. Kopij, own obsrv.). In this paper, I studied nest preference of both species in these places. The availability of suitable nesting sites seemed to be limited in this area.

## STUDY AREA AND METHODS

The Maloti/Drakensberg region of Lesotho falls almost entirely within the Mountain Grassland, which can be divided into Afro-montane and Alti-montane Grassland. The former covers 15 489 km<sup>2</sup>, while the latter 7 118 km<sup>2</sup>. The Afro-montane Grassland, sometimes called *Themeda-Festuca* Grassland, occurs between 1 700 and 2 500 m a. s. l. There are many shrubby tree species in river gorges, such as *Leucosidea sericea*, *Buddleia* spp., *Grewia occidentalis*, *Myrsine africana*, *Rhamnus prinoides*, *Euclea crispa*, *Diospyros austro-africana*, *Rhus* spp., *Olea europaea* (May 2000). The Alti-montane Grassland occurs at an altitude above 2 500 m a. s. l. and the only shrubby tree, which commonly occurs in this zone along water courses is the Maloti Willow *Salix suberecta*. An electric line was erected in early 1990's as a part of the Lesotho Highland Water Project.

Nesting sites of weavers were recorded from 1998-2002 all over the Maloti/Drakensberg region in Lesotho. Several areas were more intensively investigated, namely Semonkong, Thaba Tseka, Mokhotlong, Sehlabathebe, Sani Pass, Marakabei, Molimontuse, and Ramabanta. All kinds of water courses were surveyed. In random sites, nests were counted and their average height was estimated. The number of nests was counted at 79 nesting sites (with a total of 635 nests) of the Cape Weaver and 31 nesting sites (with a total of 127 nests) of the Southern Masked Weaver. The mean nest height was estimated for randomly selected 63 sites of the Cape Weaver and 31 sites for the Southern Masked Weaver (Fig. 1 & 2).

The  $X^2$ -test was employed to test the differences in nest site selection between the Cape and the Masked Weaver. Because some values of the expected frequency were less than 5.0, the nine distinguished categories in Table 1 were aggregated into three: 1) *Salix* spp. 2) *Populus canescens* and 3) others.

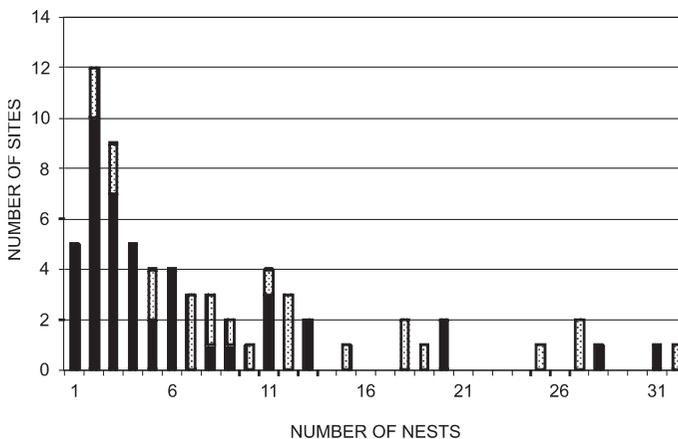


Fig.1. The number of Cape Weaver nests per nesting site in the Maloti/Drakensberg region [Black columns – nests in Maloti willows, dotted columns – other trees].

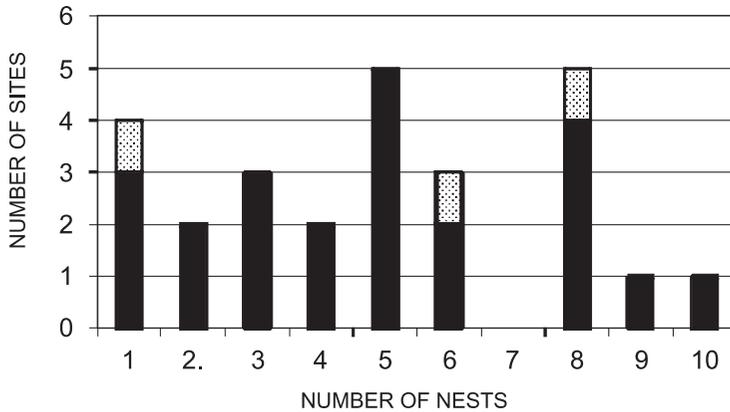


Fig. 2. The number of Southern Masked Weaver nests per nesting site in the Maloti/Drakensberg region [Black columns – nests in Maloti willows, dotted columns – other trees].

## RESULTS AND DISCUSSION

Almost all nesting sites of both weaver species were situated along river courses vegetated with willows, poplars and other tree species. Banks of larger rivers, such as Senqu, Senqunyane, Malibamatso, Makhaleng, Mokhotlong or Tselikane were especially preferred. Behind all the valleys treeless mountain grassland prevailed. Weavers' nests were located only sporadically in human settlements, where some suitable trees occurred. In the Alti-mountain grassland no weavers' nests were found at all.

Table 1. Nesting sites of the Cape Weaver and Southern Masked Weaver in the Maloti/Drakensberg region.

Nesting site	<i>Ploceus capensis</i>		<i>Ploceus velatus</i>	
	N	%	N	%
Maloti Willow <i>Salix suberecta</i>	112	72.3	55	73.3
Grey Poplar <i>Populus canescens</i>	6	3.9	12	16.0
Weeping willow <i>Salix babylonica</i>	9	5.8	1	1.3
Cypress <i>Cupressus spp.</i>	8	5.2	0	0.0
Bamboo <i>Thamnocalamus tessellatus</i>	1	0.6	3	4.0
Reeds <i>Phragmites communis.</i>	3	1.9	0	0.0
Apple tree <i>Malus pumila</i>	1	0.6	1	1.3
Cedar <i>Cedrus atlantica</i>	1	0.6	1	1.3
Rose <i>Rosa sp.</i>	1	0.6	1	1.3
Sumac <i>Rhus sp.</i>	1	0.6	1	1.3
Electric wires	12	7.7	0	0.0
Total	155	100.0	75	100.0

Most nesting sites of both Cape and Southern Masked Weaver were located in the indigenous Maloti Willow (Table 1). Some nests were located in weeping willows *Salix babylonica*, in aspens *Populus canescens*, and in a few other exotic tree species (Table 1). Only single nests of the Cape Weaver and Masked Weaver were recorded in shrubby indigenous trees, *Rhus* sp. Weaver nests were not recorded in *Prunus persica*, which grow commonly in many villages and towns. In southern African lowlands, Cape Weaver is known to prefer *Eucalyptus* spp., *Salix* spp., *Phragmites* spp. and *Typha capensis* for nesting sites, while favorite trees of the Southern Masked Weaver include indigenous *Acacia erubescens*, *A. karroo*, *Poenix reclinata*, *Combretum molle*, *Rhus quartiniana*, and alien *Prosopis* spp., *Eucalyptus* spp. and *Salix* spp. (Hockey et al. 2005)

Nesting tree preference in the Cape and Southern Masked Weaver were found to differ significantly ( $X^2$ -test,  $\chi^2 = 17.2$ ,  $df=2$ ,  $p<0.01$ ). Although both weaver species placed their nests equally often on the Maloti willow, they occupied other three species with different frequency (Table 1). Also the range and average number of nests per site in these trees were different in both weaver species (Table 2).

Table 2. Number of nests per particular site in the Cape and Southern Masked Weaver.

Nesting site	Ploceus capensis				Ploceus velatus			
	Range	x	SD	N	Range	x	SD	N
<i>Salix suberecta</i>	1-31	6.3	6.9	44	1-10	4.9	2.6	20
<i>Populus cenascens</i>	3-32	15.0	13.0	5	1-8	4.7	3.5	3
<i>Salix babylonica</i>	1-24	7.7	7.8	9	-	-	-	-
<i>Cedrus atlantica</i>	1-12	6.1	5.2	8	-	-	-	-
Wires	2-27	12.8	9.3	12	-	-	-	-
Others	1-5	2.7	2.0	6	1-3	1.3	0.8	7
	1-32	8.4	7.9	84	1-10	3.3	2.5	30

Most males constructed several nests. The mean number of nests per breeding site was 8.4 in the Cape Weaver and 3.3 in the Southern Masked Weaver (Table 2). Nest height in the Cape Weaver ranged from 1 to c. 15 m ( $x = 3.3$  m;  $sd = 2.89$ ;  $n = 55$ ); while that of the Southern Masked Weaver ranged from 1 to c. 8 m ( $x = 3.3$  m;  $sd = 1.31$ ;  $n = 23$ ).

Out of 155 Cape Weaver nesting sites, seven sites with colonies (2-10 males) were recorded. However, colonial nesting was probably more frequent, especially in reed beds. In 75 Masked Weaver nesting sites, no colonies were recorded, although they could have been undetected. Several sites occupied by both weaver species were also recorded. Their nests were located on the same vegetation type.

Special preference of both weaver species to willows as nesting sites can be explained by the fact that willow twigs are hanging and flexible. Of special interest are electric wires as nesting sites of Cape Weavers. These enable them to colonize areas devoid of any shrubby vegetation, normally beyond river valleys.

In the Maloti/Drakensberg region the Cape Sparrow *Passer melanurus* and Southern Red Bishop *Euplectes orix* were recorded on a few occasions in abandoned nests of both weaver species. Weaver nests are known to be usurped by other bird species. The following species were recorded in abandoned Southern Masked Weavers' nests: Red-throated Finch *Amadina erythrocephala*, Orange-breasted Waxbill *Sporaeginthus subflavus*, Blue Waxbill *Uraeginthus angolensis*, Scaly-feathered Finch *Sporopipes squamifrons*, Cape Sparrow and also small mammals (Hockey et al. 2005). The only species recorded in the Cape Weaver's nests were Cape Sparrows and Dusky Flycatchers *Muscicapa adusta* (Hockey et al. 2005).

In conclusion, it should be pointed out that both the Southern Masked Weaver and Cape Weaver were able to expand their ranges into Afro-montane Grassland of southern Africa through river valleys where some exotic trees are growing or where electric wires were recently installed. They can often nest in sympatry, as their nesting preferences differ significantly. To date, however, they have not been able to colonize the Alti-montane Grassland, where there is still a lack of suitable nesting sites.

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