

Extent of overlap between two Common Fiscal *Lanius collaris* subspecies in Lesotho

by Grzegorz Kopij

Received 11 January 2013

Common Fiscal *Lanius collaris* Linnaeus, 1766, is widespread throughout the Afrotropics, and is generally considered to be represented by up to ten subspecies (Harris & Franklin 2000). In southern Africa, four subspecies are currently accepted: *L. c. collaris*, *L. c. subcoronatus* A. Smith, 1841, *L. c. capelli* (Bocage, 1879) and *L. c. aridicolus* Clancey, 1955 (Dean 2005). The entire region encompassed by the Republic of South Africa, Lesotho and Swaziland is inhabited by the nominate and *L. c. subcoronatus* (Dean 2005). However, the boundaries between these two subspecies in southern African are not so clearly delimited as the maps in Hockey *et al.* (2005) suggest. In fact, *L. c. collaris* and *L. c. subcoronatus* appear to be almost randomly scattered across the region. The latter subspecies differs from the nominate one in its distinct white supercilium, while the rump and uppertail-coverts are greyer (less white) in the nominate. The two subspecies are easily separated in the field, making it possible to precisely delimit their geographical ranges.

Maclean & Maclean (1976) found evidence of a clinal change in the percentage of the races *L. c. subcoronatus* and *L. c. collaris*: between Winburg (28°31'S, 27°01'E) and Brandfort, Free State (28°42'S, 26°28'E) 100% of examined birds were *L. c. collaris* ($n = 5$), Brandfort–Kimberley 35% : 65% ($n = 20$), Kimberley–Kuruman 44% : 56% ($n = 48$), Kuruman–Van Zylsrus 77% : 23% ($n = 9$) and between Van Zylsrus and Askham, Northern Cape (26°12'S, 18°35'E) 100% were *L. c. subcoronatus* ($n = 2$). In the most recently published maps of the distribution of these subspecies, the nominate is shown as occurring throughout Lesotho, except for a narrow strip in the northern lowlands, where the nominate and *L. c. subcoronatus* co-occur (Hockey *et al.* 2005, Chittenden *et al.* 2012).

Lesotho is an enclave within the Republic of South Africa. Three-quarters of the country, the highlands (or Maloti) lie above 2,200 m. Lowlands are those areas below 1,700 m while the foothills are between 1,700 and 2,200 m. Lowlands (total surface area 6,051 km²) form a strip of land lying along the enclave's north-east to south-west frontier and extending east to the Cave Sandstone Foothills. The foothills (2,964 km²) form a narrow band bordering the highlands to the east and lowlands to the west, constituting an intermediate region. The Senqu Valley lies below 1,800 m and occupies 3,398 km² (Ambrose *et al.* 2000). Natural vegetation in the lowlands is Highveld Grassland, while in the foothills and highlands it is Afromontane Grassland (Acocks 1988).

During the years 1998–2002, which I spent in Lesotho studying birds (Kopij 2011), I attempted to distinguish the two subspecies of *L. collaris*. As shown in Table 1, both subspecies occur together throughout Lesotho. The extent of this overlap differs regionally and by altitude. Clinal change is evident in the lowlands: the proportion of *collaris* to *subcoronatus* was 1 : 0 in the north, but 0.5 : 0.5 in the centre and 0.6 : 0.4 in the south. Both in the foothills and Senqu Valley, the proportion was 0.3 : 0.7. In the highlands, it was everywhere 0.4 : 0.6, without any apparent regional (clinal) change. Soobramoney *et al.* (2005) found that patterns of variation in morphology and anatomy were significantly correlated with 11 climatic trends along an altitudinal gradient. Common Fiscals were largest in cooler, less humid, more arid areas, and smallest in warmer, wetter, more humid localities, in accordance with Bergmann's Rule.

TABLE 1
Extent of overlap between two Common Fiscal *Lanius collaris* subspecies in Lesotho during the years 1998–2002.

Site	Coordinates	Number of birds	
		<i>subcoronatus</i>	<i>collaris</i>
LOWLANDS		(29)	(35)
<i>Northern</i> (north of Maputsoe)		(0)	(10)
Leribe Plateau	28°07'S, 29°05'E	0	10
<i>Central</i>		(12)	(13)
Berea	29°17'S, 27°38'E	3	4
Ha Baroana: Lipiring Gorge	29°21'S, 27°47'E	3	1
Thaba-Bosiu	29°22'S, 27°37'E	3	2
St. Michael	29°26'S, 27°40'E	0	3
Maseru	29°20'S, 27°12'E	3	3
<i>Southern</i> (south of Maseru)		(17)	(12)
Morija	29°38'S, 27°31'E	6	7
Matsieng	29°37'S, 27°35'E	6	3
Mantšebo: Qeme Plateau	29°29'S, 27°31'E	5	2
FOOTHILLS (central)		(16)	(35)
Nyakosoba	29°31'S, 27°46'E	7	7
Moitšsupeli	29°34'S, 27°45'E	1	12
Popanyana	29°31'S, 27°44'E	6	4
Thaba Telle	29°45'S, 27°40'E	2	8
Dikolobeng	29°29'S, 27°55'E	0	4
SENQUE VALLEY		(5)	(15)
Masitise–Villa Maria	30°24'S, 27°38'E	2	8
Quthing	30°25'S, 27°43'E	2	4
Qacha's Nek	30°07'S, 28°42'E	1	3
HIGHLANDS		(21)	(29)
<i>Northern</i>		(12)	(15)
Mokhotlong	29°18'S, 29°03'E	6	9
Mapholaneng	29°12'S, 28°52'E	6	6
<i>Central</i>		(7)	(11)
St. Theresa	29°37'S, 28°48'E	1	1
Thaba Tseka	29°31'S, 28°36'E	4	6
Marakabei	29°33'S, 28°07'E	2	4
<i>Southern</i>		(2)	(3)
Semonkong	29°51'S, 28°03'E	2	3
TOTALS		61	114

Overall in Lesotho, the nominate was almost twice as common as *L. c. subcoronatus*. The extent of overlap varied spatially and probably also temporally. Although both subspecies are common and widespread in Lesotho, hybridisation is apparently rather rare. Only four (2.3%) intermediate individuals (the white supercilium being less distinct, shorter and narrower, and the rump dark grey) were recorded during my work (at Matšebo: 28 September 1999, Matsekua: 13 May 2000, Morija: 3 July 2001, and Matsieng: 3 July 2001), but others could have been missed. In the Roma Valley, where the species was closely studied during the breeding season, in 1999–2002 26–36 pairs bred on the 82-ha National University of Lesotho campus, with c.10% of 31 pairs in the 2000/2001 breeding season mixed, while in all others both sexes were of the nominate subspecies (Kopij 2002, 2004, 2006). Because there

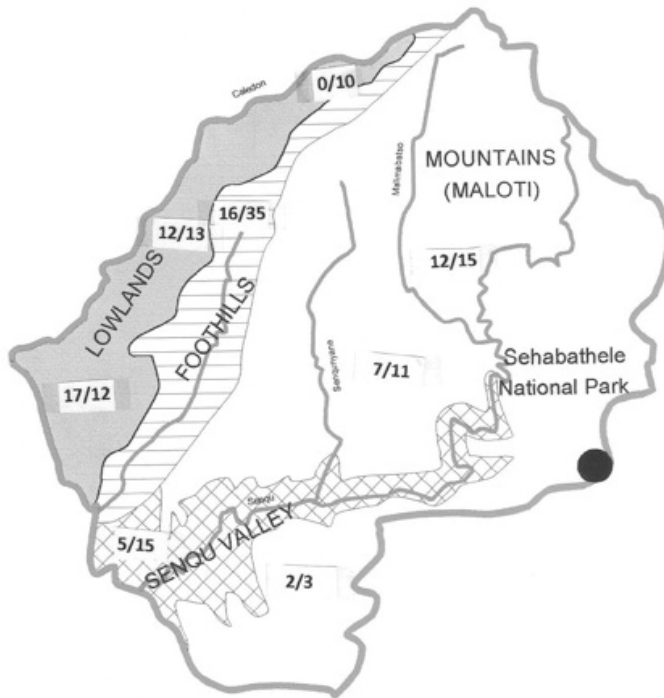


Figure 1. Numbers of two subspecies of Common Fiscal *Lanius collaris* recorded in Lesotho: *subcoronatus* (first) and *collaris* (second).

is only slight sexual dimorphism in Common Fiscal (Dean 2005), no attempt was made to detect any sexual bias towards one subspecies.

A low level of interbreeding between *L. c. collaris* and *L. c. subcoronatus* recorded in Lesotho perhaps indicates that some *L. c. subcoronatus* migrate from the highlands to the lowlands in the dry season, i.e. the non-breeding season, which possibility was also suggested by Clancey (1980). However, in this study most records were made in the wet (breeding) season. The two forms, therefore, occur in Lesotho sympatrically. Furthermore, at least in the Roma Valley, both the level of hybridisation is low and the number of hybrids even lower. It is, therefore, plausible that the two forms might represent separate species within a superspecies. This premise merits further investigation.

Acknowledgements

Prof. Coleen Downs and Bob Dowsett are gratefully acknowledged for their suggestions, corrections and comments on an earlier draft of this note.

References:

- Acocks, J. P. H. 1988. Veld types of South Africa. *Mem. Bot. Sur. S. Afr.* 57: 1–146.
- Ambrose, D., Talukdar, S. & Pomela, E. M. 2000. *Biological diversity in Lesotho: a country study*. National Environment Secretariat, Maseru.
- Chittenden, H., Allan, D. & Weiersbye, I. 2012. *Roberts' geographic variation of southern African birds*. John Voelcker Bird Book Fund, Cape Town.
- Clancey, P. A. 1976. Intergradation between two subspecies of the Fiscal Shrike. *Ostrich* 47: 145.
- Clancey, P. A. (ed.) 1980. *S.A.O.S. checklist of southern African birds*. S. Afr. Orn. Soc., Houghton.
- Dean, W. R. J. 2005. Common Fiscal *Lanius collaris*. Pp. 752–753 in Hockey, P. A. R., Dean, W. R. J. & Ryan, P. G. (eds.) *Roberts' birds of southern Africa*. John Voelcker Bird Book Fund, Cape Town.
- Harris, T. & Franklin, K. 2000. *Shrikes and bush-shrikes*. Christopher Helm, London.

- Hockey P. A. R., Dean, W. R. J. & Ryan, P. G. (eds.) *Roberts' birds of southern Africa*. John Voelcker Bird Book Fund, Cape Town.
- Kopij G. 2002. Temporal variation in territoriality of the fiscal shrike. *Vogelwelt* 42: 40.
- Kopij, G. 2004. Breeding density of Fiscal Shrike (*Lanius collaris*). *Biol. Lett.* 41: 77–85.
- Kopij, G. 2006. Breeding biology of the Fiscal Shrike, *Lanius collaris* (Laniidae), in a peri-urban environment in Roma (Lesotho). *Vestnik Zool.* 40(6): 39–45.
- Kopij, G. 2011. Avian diversity in ruderal and urbanized habitats in Lesotho. *Berkut* 20(1/2): 22–28.
- Maclean, G. L. & Maclean, C. M. 1976. Extent of overlap in two races of the Fiscal Shrike. *Ostrich* 47: 66.
- Soobramoney, S., Downs, C. T. & Adams, N. J. 2005. Morphological variation in the Common Fiscal *Lanius collaris* along an altitudinal gradient in southern Africa. *Ostrich* 76: 130–141.
- Address:* Dept. of Wildlife Management, Univ. of Namibia, Katima Mulilo Campus, Private Bag 1096, Winela Road, Katima Mulilo, Namibia, e-mail: gkopij@unam.na