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A PICTORIAL RECORD OF THE PRE-COPULATORY DISPLAY OF THE LARGE-BILLED LARK

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AVIAN BIOLOGY

A PICTORIAL RECORD OF THE PRE-COPULATORY DISPLAY OF THE LARGE-BILLED LARK

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Introduction

Few people have been fortunate to observe the pre-copulatory behaviour of larks but in the few species it has been described, it includes both auditory and postural displays (Donald 2004). Auditory signals may include song, subsong or a variety of other calls (de Juana et al. 2004). Postural displays can be categorized as i) chasing, ii) hopping, iii) bowing, and iv) wing shivering (Donald 2004). Although chasing is usually the precursor to pre-copulatory displays, not all chases necessarily lead to the other pre-copulatory behaviours, and chasing may interrupt any of the other pre-copulatory displays. Raising of the crest, breast, back and tail feathers often accompany these displays (de Juana et al. 2004).

Observations

On 12 and 13 September 2005 I made some observations at a Large-billed Lark *Galerida magnirostris* nest (34°03'S; 20°28'E) under construction in the Bontebok National Park, South Africa. On 12 September 2005 at about 08:10 my attention was drawn to three birds foraging in the road. Subsequent observations confirmed the trio comprised of a male and female, based on their roles in pre-

copulatory displays, and a passive onlooker of unknown sex. On this day the female solicited copulation by assuming a horizontal position and performing a few slow but deliberate bows, i.e. the bowing display (Fig. 1). This was accompanied by erecting the feathers on her back to give a hunch-backed appearance and drooping her wings ever so slightly. This evidently piqued the male's interest as he suddenly appeared alert as evidenced by his more erect posture and raised crest (Fig. 1). The 'third bird' showed no apparent interest. Shortly after this the male started shuffling towards the female in a crouched position (i.e. the bowing display), his wings shivering and tail fanned (Fig. 2). The female took flight and a short chase commenced before the pair alighted out of sight in some dense vegetation approximately 40 m away.

The next day (13 September 2005) I returned to the same site and once again found the three birds foraging in the road. At 07:46 I observed the start of a pre-copulatory display, this time seemingly initiated by the female appearing to lean forward with her crest and back feathers raised and tail held high (Fig. 3). The male responded once again by erecting his crest, fanning his tail and shivering his wings while bowing his head slowly and shuffling in a crouched manner towards the female, calling softly all the while (Fig. 4). Wing shivering also involved slowly opening and closing his wings, sometimes alternately (Fig. 5). On this occasion the 'third bird' appeared interested in the display but the male suddenly turned on it and chased it a short distance in flight. The male actually succeeded in catching the 'third bird' and physically attacked it in flight. The 'third bird' managed to escape and eventually settled about 30 m away. After a brief interlude of about 1½ minutes the male, clearly excited at this stage, landed near the female, his crest raised once again but his body posture now erect, and strutted towards her (Fig. 6). The female responded by shuffling in a crouched manner (bowing display) while opening and closing her shivering wings at the same time and collecting bits of nesting material (Fig. 6). This seemingly triggered the 'hopping' display during which the male adopted an erect posture with his chest thrust out and head held back, crest

raised while performing several (15+) approximately 2 cm high hops (using both legs at a time) in an erratic pattern around the female (Fig. 7). As can be seen in Fig. 7, the female's tail had now risen above the horizontal, a tell-tale sign of imminent copulation. The male also performed a variation of the hopping display during which he skipped with legs alternating (Fig. 8). The male then strutted towards the female, mounted her and copulation ensued, lasting about 2 seconds (Fig. 9). After copulation, both birds ruffled their feathers and preened for about a minute before resuming with foraging. The entire pre-copulatory display from the return of the male to the dismount after copulation lasted just over 2 minutes.

Discussion

These observations seem to fit Donald's (2004) detailed description of the pre-copulatory display of the Skylark *Alauda arvensis*, namely that the pre-copulatory display involves four elements, copulation is solicited by the female and it takes place on the ground. The female also performed both the bowing and wing shivering displays but not the hopping display. Suffern (1951) reported the creation and use of a flattened area of grass by the male Skylark, but neither Donald (2004) or I found any evidence of this behaviour in the Skylark or Large-billed Lark respectively. The presence of the 'third bird' on both days seems interesting but may be an immature bird from a previous brood still in its natal territory.

The similarity in the pre-copulatory displays of the Skylark and Large-billed Lark is not entirely surprising as both these species are clustered within the alaudid clade in the family Alaudidae and are closely related (Alström et al. 2013). In a family that is renowned for its variation in various life-history characteristics such as vocalizations, display flights, nest type, degree of parental care, diet, morphology etc., it remains to be seen if the pre-copulatory displays

of larks in the ammomanid or mirafriid clades are the same as in the alaudid larks.

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Figure 1. Female Large-billed Lark (left) performing the bowing display, male with crest raised and alert posture (middle) and the 'third bird' in the foreground.



Figure 2. Male Large-billed Lark performing the wing shivering and bowing displays with the female looking on.



Figure 3. The female Large-billed Lark (foreground) initiating the pre-copulatory display by performing the bowing display with her crest and back feathers raised slightly.



Figure 4. Male Large-billed Lark performing the wing shivering and bowing displays with his crest slightly raised while singing a muted song. The female is in the foreground and the 'third bird' is looking on in the background.



Figure 5. Male Large-billed Lark performing the wing shivering display while alternating opening and closing his wings.



Figure 6. The male Large-billed Lark (left) strutting towards the female (right) performing a combination of the bowing and wing shivering displays while showing off bits of nesting material in her beak.



Figure 7. The hopping display of a male Large-billed Lark (left) while the female performs the bowing and wing shivering displays. Note the raised tail of the female.



Figure 8. The 'skipping' variation of the hopping display performed by a male Large-billed Lark (left).



Figure 9. The male Large-billed Lark (left) approaching the female to mount her prior to copulation.