

SHORT NOTE

Prolonged aggressive encounter between two starlings (*Sturnus vulgaris*) below a prospective nest site

BEN D. BELL

School of Biological Sciences, Victoria University of Wellington, PO Box 600, Wellington, New Zealand.
Ben.Bell@vuw.ac.nz

At 1720 h on 28 September 2003, I observed two starlings *Sturnus vulgaris* tumbling down a roof in Seatoun, Wellington, locked in an intense, grappling fight. The two birds fell over the roof edge, landing ca. 4 m below on a wooden deck (Fig. 1). They continued wrestling there for a further 33 min., after which they fell to the ground ca. 4 m below. The fight continued there for a further 12 min. Until ca. 1800 h I watched the birds from an adjacent window through 10 x 42 binoculars from a distance of ca. 15 m. After that I approached more closely, although the birds were then obscured from my view by a hedge (Fig. 1). Singing could be heard from the ground position they had fallen to until 1805 h. The birds were not seen to fly off, but a check at 1815 h failed to reveal any sign of them.

The nest site above where the birds fought had been used by starlings over the previous five years. In preceding months, a male had been seen singing from the aerial by the nest site, accompanied by an apparent female over the previous one-two weeks. From the time fight observations commenced at 1720 h until 1745 h, a male starling sang more or less continuously from a television aerial by the nest site (Fig. 1) as the other two birds fought below. The following morning a pair of starlings was again present (from 0605 h), the male singing from the aerial as during previous weeks. No more fights were seen there over the subsequent two weeks.

The fighting starlings remained tightly locked, gripping each other in a manner reminiscent of the fight illustrated by Flux & Flux (1992). For most of the time the two birds lay on their sides facing each other head to tail, a foot of one bird (A) being held in the bill of the other (B), while the right foot of bird B frequently grasped the head of bird A. The

wings of both birds were flicked frequently and while the birds were mostly lying on their sides, bird A periodically adopted a more upright posture, at times pecking B and flapping its wings over it. Their changing positions indicated that the two birds were not irretrievably locked together, but could potentially uncouple at any time. After ca. 25 min. (1745 h) bird A appeared to be somewhat stronger and more dominant, pushing bird B (and itself) over the edge of the deck at 1753 h. Their sustained 45 min. of fighting made them both potentially vulnerable to predators, especially during the last 12 min. when on the ground. The weather at the time was overcast, with moderate to heavy rain, and after fighting for so long in the rain, the birds became noticeably bedraggled, especially around their heads.

The fight was similar to fatal combats described by Flux & Flux (1992), who report 24 male-male and 22 female-female fights at Belmont, near Wellington, but never a fight between members of opposite sex. They noted that these fights did not match the bill stabbing and "dance-fighting" reported in United Kingdom by Feare (1984). Other New Zealand records of starling fights are given by Horny School (1946) and Coleman (1974), while Kessel (1957) described fighting starling pairs at Ithaca, New York, that were "seen to fall to the ground, gripping each other strongly and pecking savagely." Taylor (1969) described two bellbirds (*Anthornis melanura*) locked tightly together on the forest floor near St. Aranaud, Nelson, noting that such prolonged physical assault seldom occurs in wild birds, and that physical combat is disadvantageous since it requires much energy and exposes the birds to attack by predators.

The fighting starlings were apparently females – no blue was evident on the rami of the lower bill as in males (Heather & Robertson 1996), their plumages were more spotted with metallic colours that were less pronounced than in males (Witherby *et al.* 1938; Cramp 1994), and the singing male above them did not intervene, as expected with female-female fights (J.E.C. Flux pers.comm.). During the fight bird A was seen opening its bill as if in song, while after the birds had fallen to the ground song was distinctly heard from at least one of them. Female starlings occasionally sing, mostly in the autumn and winter, but according to Cramp (1994) very little during the breeding season and the function is obscure. However, in an experiment on starlings, Sandell & Smith (1997) simulated intrusions by placing cages containing a male or female near the nests of breeding pairs. Female starlings responded more aggressively to caged

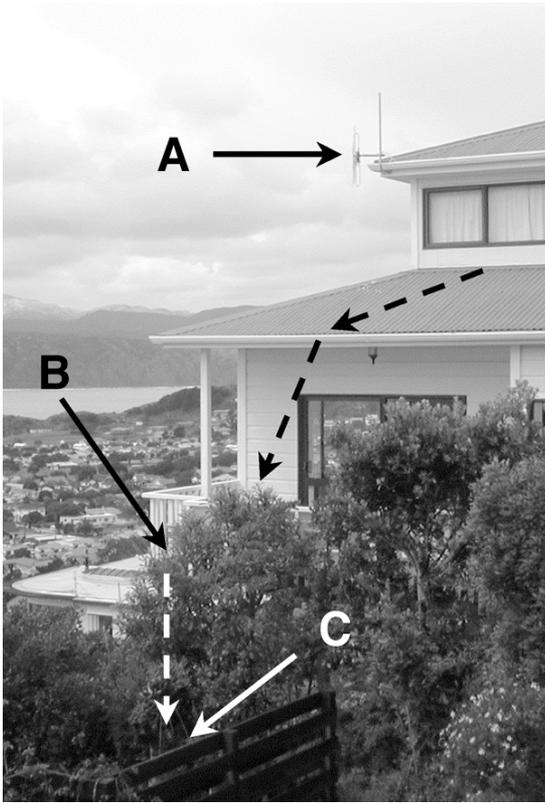


Figure 1. Site of observations. 'A' denotes the television aerial song perch of the male not involved in the fight, with the nest site being at the corner of the upper roof immediately behind the aerial. 'B' is the wooden deck on which most of the fight took place, while 'C' is the ground position where the birds eventually landed. Dashed arrows show the progressive movement of the two birds from the lower roof to the deck (1720 h), then to the ground (1753 h).

females than caged males, and during the pre-laying and egg-laying periods 33% of females sang at the intruding females (Langmore 1998). Thus, female song in the context of a female-female fight during the pre-laying period is not unexpected. Sandell & Smith (1997) noted that in Sweden attempts at physical attacks by females were rare (two of 66 cage-trials), but were directed towards females. Langmore *et al.* (2002) noted that in many songbirds, females occasionally sing in contexts of high female-female competition and that testosterone may be involved in the activation of song. Testosterone implants elicit female song in many species, including the starling (Hausberger *et al.* 1996) and can increase the size of the vocal control regions of the brain (Nottebohm 1980; Brenowitz & Arnold 1990). Langmore *et al.* (2002)

found evidence of a rise in testosterone levels in female dunnocks (*Prunella modularis*) in aggressive situations, providing for female birds experimental support for the challenge hypothesis (Wingfield *et al.* 1990), which predicts a rise in testosterone in response to aggressive interactions during socially unstable situations. They suggested that testosterone can regulate facultative female song in songbirds. This New Zealand record of a prolonged 45 min. fight between two apparent female starlings occurred at a time of year when competition for nest sites is intense, and while it did not end in the death of either combatant, this was a high possibility (Flux & Flux 1992), as was the risk of predation had cats or other mammalian predators encountered them while fighting.

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