Agonistically displaying Knots *Calidris canutus* in a southern hemisphere nonbreeding area

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On 25 October 1997 a group of 20 adult Knots *Calidris canutus* was observed from the Geelbek hide at Langebaan Lagoon in South Africa (33° 05'S 18° 02'. The Knots were feeding on the mud in a layer of *Zostera* at a distance of approximately 30m from the hide. Observations were made from 7:30 am until 9:00 am. The group was vocalising loudly while feeding. At 7:40 one adult Knot in nonbreeding plumage was observed chasing another feeding bird (also in nonbreeding plumage) in a tail-up display (as described in Whitfield & Brade 1991) over a stretch of several tens of metres for 30s. During this chase a loud sound was uttered, very like the display call of Knots on the tundra which was described in Whitfield & Brade (1991) as 'a repeated high pitched and drawn out *wee*'. Several times the chasing bird pecked the back feathers of the bird being chased. At 7:58 another individual in nonbreeding plumage chased a feeding Knot for 22 seconds with a tail-up posture. At the end of this pursuit the chasing bird changed target and started chasing another Knot which was in partial breeding plumage. Several short chases were also observed by this and other individuals without the tail-up display or any other display (Piersma *et al.* 1991). Contrary to observations of display in Knots in the Wadden Sea and in Iceland, no distinctions in plumage could be made between the chasers and the victims. No singing as described by Piersma *et al.* (1991) was heard. At 8:14 the whole group of Knots and all other waders on this mudflat were disturbed by a Yellow-billed Kite *Milvus parasitus*. The group of Knots landed approximately 30m further away from the hide. No more displays were observed until 9:00, when the tide was coming in and the birds started to depart for their high tide roosts. No observations were carried out on following tides.

Knots that spend the non-breeding season in southern Africa belong to the subspecies *canutus* and probably breed in Taimyr, or possibly even further east (Tomkovich 1992). In southern Africa, Knots start arriving in late October (Pringle & Cooper 1975, Underhill 1997). On 25 October only small numbers of Knots were present in Langebaan lagoon, it is therefore likely that the observations were made on birds that were newly arrived from staging areas in West Africa (Piersma *et al.* 1992).

The tail-up display is described in a wide variety of heterosexual contexts (Nettleship 1974, Whitfield & Brade 1991), although Whitfield & Brade (1991) did not observe the tail-up display on the breeding grounds after clutch completion. Having left the breeding grounds in late July, nearly three months have passed by the time they arrive in Langebaan. Being 13,000 km from 'home' and months beyond their normal breeding season it seems most unlikely that the display behaviour occurred in a reproductive context. To our knowledge nothing is known of breeding hormone levels, but it seems highly unlikely that high levels are maintained several months after breeding, considering the energetic costs likely to be involved with producing hormones. Therefore our guess is that this behaviour might express a ritualised behaviour pattern, not used for reproductive purposes but in agonistic interactions. Knots are not known to be territorial away from the breeding grounds although hostility increases with increasing density of birds, with frequent chases and displacing interactions (Cramp & Simmons 1983). The chases observed lacking the tail-up posture in this group indicate that agonistic interactions were also occurring at that time, despite the fact that only few Knots were present. In captivity similar behaviour as described above was observed. When kept in small groups, the tail-up posture was used in agonistic interactions to dominate food-or water-trays (T. Piersma pers.comm.). The fact that this behaviour occurred throughout the season implies that the tail-up posture also has a function in agonistic display.

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