

Knots, White-rumped Sandpipers and other wader species performing bat-like aerial acrobatics on staging sites

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On several occasions, Knots *Calidris canutus* having just arrived on staging areas in Argentina and Iceland, and White-rumped Sandpipers *C. fuscicollis* under similar circumstances in Argentina, were observed to make very peculiar movements in flight whilst and after taking off over the sea from high tide roosts at receding tides. On such occasions many individual birds independently "shot out" of the departing flocks in all directions and with quick turning movements immediately retreated back in the flock. These weirdly flying waders briefly resembled bats (Chiroptera) or Swallows (*Hirundo*) hunting aerial insects. Functional explanations for this peculiar phenomenon have to take into account that it was only observed in roost-leaving flocks just after they had arrived at stopover sites.

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Knots *Calidris canutus* and other shorebirds are well known for the co-ordinated aerial manoeuvres made by their large flocks (Davis 1980; Potts 1984), sometimes in response to aerial attacks by predators such as Peregrines *Falco peregrinus* (Harrington 1996). Completely independently, and at staging sites very far apart, we have witnessed a very different and striking kind of flight by waders that briefly leave a synchronized flock for short bursts of unsynchronized flight manoeuvres before re-entering it. This phenomenon appears to be undescribed in the literature. If this note serves to alert others to similar phenomena at other sites and times, and in other species, a future compilation of observations might perhaps suggest causal and/or adaptive hypotheses to account for these funny and intriguing flights.

In northwest Iceland on 10 May 1988 in the afternoon, GAG and ÅL were observing 3,300 Knots on a roost in Vatnsfjörður. Many of the birds must have just arrived here; 2,400 were present on 7 May and 5,200 were counted on both 11 and 12 May. At about 15.00 hr local time the birds started to leave the roost and it was noticed that they did so in a very strange way. Parts of the flocks flying off over the water were temporarily broken up, the individuals "throwing themselves wildly in all directions, a bit like swallows or bats in foraging flights" (translated quote from notebook in Swedish). Such flights were observed under similar conditions on a few other occasions the two following days. They are referred to as "bat-flights" but were not described in detail again. The peculiar flight behaviour has not been observed by GAG

and ÅL on other occasions whilst working with Knots on stopover in Iceland later in May.

On 6 March 1995 in the late afternoon, PMG, PdG and TP were observing 3,500 Knots and several thousand White-rumped Sandpipers *Calidris fuscicollis* at their high-tide roost on the beach at Los Alamos facing the Golfo San Matías, just southwest of San Antonio Oeste, Río Negro, Argentina. The Knots had arrived at this site during the preceding 24 hrs; the week before only a handful of birds were present at maximum. White-rumped Sandpipers were also much more numerous than on earlier dates. Between 17.00 and 17.22 hr local time the Knots left the roost in flocks of 200-400 birds. These flocks departed low over the water towards the feeding areas at Banco Lobos in a south-easterly direction. Immediately after take off from the beach roost, the first individual Knots started their "bat-flights". Such birds flew almost vertically out of the onward flying flock in an erratic fashion, immediately "falling back" in the flock. There were tens of individuals doing this simultaneously out of different parts of the flock, and the behaviour continued as the flocks disappeared low over the sea. In flocks of White-rumped Sandpipers roosting close by on the same beach, some birds "jumped up" with opened wings to a height of 10-20 cm. It gave the impression that the beach was too hot to stand on (but it was a cool day!). When the White-rumped Sandpipers started to leave the roost in small flocks, individual birds jumped out of and into the flying flocks, just as with the Knots. The type of flight displayed by these Knots and White-rumped Sandpipers reminded

us (independently of the observers in Iceland) of aerially foraging swallows and bats.

PMG had seen this behaviour several times previously during periods of northward migration, although never with the same intensity as in March 1995. On 19 January 1995 at Rio Grande, Tierra del Fuego, 2-3 Knots were seen in bat-flight as their flock left a beach-roost. Jumping up from the ground to a greater height than on the roost, perhaps as high as 1 m, was seen on 10 March 1989 in a group of White-rumped Sandpipers foraging on intertidal flats near San Antonio Oeste. On 7 April 1995 vertical, up and down, bat-flights were two times observed in a flying flock of about 100 Hudsonian Godwits *Limosa haemastica*. The behaviour was never seen during southward, postbreeding, migration or during the austral summer.

Our observations of bat-flights in Iceland and Argentina show striking similarities in the behaviour patterns of two species of long-distance migratory waders. Not only was the behaviour similar if not identical, the conditions during which the bat-flights were seen were also remarkably alike at the two sites. All three areas were used as staging sites during northward migration by the two species of long-distance migrating waders. At both sites the behaviour occurred on days just after the arrival of large numbers of migrants, and it happened as roosting flocks broke up into smaller units that flew off over the sea to low-water feeding grounds.

All of us have spent much time looking at waders, especially during the migration seasons, but these bat-flight observations stand entirely on their own. Alerted by the Argentinian experience earlier in the year, in late July 1995 TP noticed similar vertical erratic flights of Bar-tailed Godwits *Limosa lapponica*, jumping out of small flocks as they left the high-tide roost of Richel (in the western Dutch Wadden Sea) low over the water. In agreement with the

observations in Iceland and Argentina, the godwits had just arrived, but in contrast to the earlier observations their bat-flights occurred during south-bound, post-breeding, migration.

What are bat-flights for? Do they represent the stretching of tired breast muscles after long and sustained flights? Do they signal aspects of the birds' quality, for example their proficiency in aerial acrobatics? Do bat-flights enable birds to quickly oversee larger areas than would otherwise be possible when flying low over the water? Given the paucity of descriptive material on this peculiar flight phenomenon, we refrain from picking our choice or expanding the list of causal and functional explanations for the flights. Rather, we like to hear from other observers whether they have witnessed something similar, and if so, in which species and under which conditions these bat-flights occurred. We look forward to hearing your experiences.

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