**The Least Sandpiper** (ASCAP, April, 1993, Vol 6, No 4, p 5-6)

There is a little bird which lives on the beach in Belize (during the winter) and which is remarkable for wagging its tail (up and down, not from side to side). It is brown on top and beige underneath, and it is quite difficult to tell from some other species of bird which also live here. Each bird seems to have a strip of beach to itself, and it walks along, in a northerly direction (so that the sun is behind it, presumably) pecking at tiny things at the very edge of the sea. Every now and then it flies off and perches on a mango stem or post some yards off shore. I am not sure whether the ones I have been watching are male or female or both, and I have not seen any social interaction.

The wagging action is a repetitive raising of the tail, with a slightly irregular rhythm and a rate of about 120 per minute. From a purely rhythm point of view, it is very like atrial fibrillation (but I have resisted the temptation to scatter crumbs of digoxin for them). There is also an extension of the head and neck, not in phase with the wagging tail, and occurring at a rate of about 40 per minute. Both these movements seem to be inhibited when the bird is walking.

When I first saw the bird, I thought I was observing some neurological disease, a sort of avian Parkinsonism, but then I was told they all wag. No-one seems to know why. The theories are as follows:

1. It could be an adaptation for combatting parasites. Since they feed on the sand, they are liable to be parasitised by sandflies (which are very numerous at times) and the wagging serves to flick the flies off - this would explain why the head and tail are both involved, in fact between the two movements, the whole bird is flicked or twitched quite regularly, so unless the flies have some means of clinging on, it might well dislodge them. This would put the behaviour in the same category as a horse swishing its tail.

2. It could assist thermoregulation. The birds live in a hot climate and may need to keep moving to lose heat. Since their method of foraging is much less active than, say, birds which live on fish, they need to have an extra heat-losing mechanism.

3. It has been suggested that it might be a camouflage device, although to the human eye, it makes them much more conspicuous. In fact, they are so easy to see due to the movements, that one may well be missing similar birds who are remaining still. But it could be that to their predator or predators (unknown) the movement makes them less conspicuous.

4. In contrast to the previous idea, it could be an advertisement of some sort, either a species recognition signal, or a courtship display, or a warning to same-sexed conspecifics. I am sympathetic to the view that it is an agonistic or threat signal, because after watching it for a while one becomes quite irritated, and if I was a conspecific I might quite easily fly away to get away from the annoying irregularity of the rhythm.

The idea of a species recognition signal gains credence from the fact that there are a lot of other small birds with very similar appearance which seem to share the same habitat. Also, the particular ecological properties of its littoral habitat make it difficult for it to advertise itself in the usual bird way through song. The conditions of the shoreline are not favourable to high pitched sounds, which are damped or obscured by the sound of the waves and the wind. Therefore some visual signal is more likely to have evolved. Since the plumage is drab, a repetitive movement is an obvious candidate for selection.

<u>September, 1993</u>

Since getting back from Belize, I have continued to pursue the problem of the wagging tail of the least sandpiper (ASCAP, April, 1993). There is a British bird which wags its tail, called, surprisingly, the wagtail (1, pp. 118-119):

> Like pipits the wagtails are mainly terrestrial birds and walk or run well over the ground in a somewhat fussy manner. They are often denizens of grassland and other kinds of open country, of swampy regions and the banks of rivers and lakes.....being, according to Thomas Bewick, "easily distinguished by their brisk and lively motions, as well as by the great length of their tails, which they jerk up and down incessantly, from which circumstance they derive their name."

I rang Eric Simms, the author of the above book, and he really had no idea of the function of the wagging. He thought it might be a sign of tension, which certainly does not apply to the sandpiper, which wagged away incessantly while it was undisturbed on the beach for

hours on end.

The Encyclopedia Britannica (15th ed) tells us that the wagtails comprise "7 to 10 species of the genus Motacilla of the family Motacillidae (order Passeriformes), together with the forest wagtail (Dendronanthus indicus) of Manchuria and Korea, which wags its entire body from side to side. The former are strongly patterned birds of beaches, meadows and streamsides; they usually nest on the ground but roost in trees. They pump their long tails up and down." And all it says about the least sandpiper, Caludris minutilla (family Scolopacidae) is that "it is the smallest sandpiper, under 15 centimetres. Sometimes called American stint, it is abundant in Alaska and across sub-Arctic Canada to Nova Scotia. It winters on coasts from Oregon and North Carolina to South America." Together with plovers and lapwings, the sandpipers are shorebirds and waders, members of the suborder Charadrii of the order Charadriiformes.

Since seeing the least sandpiper I have been watching out for movements in other birds, and the other day, visiting the wildfowl sanctuary in Arundel, I saw a small drab bird which looked rather like a moorhen, and had an up and down wag like the sandpiper, at a frequency of about 40 per minute (one third the rate of the sandpiper) and also irregular in rhythm. It disappeared into some reeds before I could complete my observations. I do not think it had the sandpiper's to and fro movement of the head and neck.

1. Simms, E. (1992) British Larks, Pipits and Wagtails . London: HarperCollins.