

## **East, West, what's best ... ugebrev nr. 6, 8. juli 2007**

Not a real change of weather, but the week started with a few days on which the south-easterly breeze blew inland whirls of the fog cloud hanging over the ice of the Tyrolerfjord. Once ashore they were quickly dissolved by the sun and most clouds did not make it further than the airstrip, though some moved on to add a mystic touch to the landscape of Zackenbergdalen. With the airstrip covered in fog one moment and brightly sunlit five minutes later, speculations began: would the airplane be able to land on Tuesday?

After a day of waiting those about to leave the station finally got the message that it would be a day later, although the reasons for the delay remained a bit 'misty'. Wednesday morning, however, was bright and clear, and saw the departure of no less than six Zackenbergers: Charlotte, Ditte, Koos, Lena, Mikhail and Philip. The plane delivered Line, here for a census of winter nests of lemmings and other BioBasis work, and Ingrid, who will reinforce the sanderling team for four weeks.

Before joining Jeroen's study this year, Ingrid and I, and Joop as well, have spent several summers in the central Siberian Arctic. There we studied breeding shorebirds too, though not sanderlings. Being in a new place but doing familiar things, you automatically start making comparisons. The place where we worked on the Taimyr Peninsula is at almost the same latitude as Zackenberg, but the landscape is quite different. The impressive mountains that dominate the scenery here are lacking; instead there are endless, gently sloping hills and valleys not reaching more than 100 m above sea level. The weather was quite different too: while calm sunny days seem to be the rule here, they were more exceptional on Taimyr, and wind, fog and drizzle were common. Some clothing layers that we wore almost every day in Taimyr have been hanging unused in the closet this year. The upside of the cooler Taimyr weather though is that mosquito days were infrequent ... Despite the less benign climate, the tundra on Taimyr has a quite diverse and numerous bird fauna.

In fact, the much lower densities of birds, and shorebirds especially, were quite striking on the first days we walked around in the Zackenberg area. While here there are about 14 shorebird territories per km<sup>2</sup>, on Taimyr we found ca. 50 nests or broods per km<sup>2</sup>. There are also fewer species at Zackenberg: 5-6 compared with 9-11 at Medusa Bay. Another interesting, though less striking difference, lies in the breeding systems of those species present. On Taimyr, systems where only one parent incubates the eggs and guards the chicks are quite common, and involve about 80 percent of all breeding shorebirds. The other parent in those species either migrates away from the tundra early, or tries to raise a second brood by itself ('double-clutching').

At Zackenberg, such a system occurs only in some of the sanderlings that we are studying; all other breeding shorebirds (90 percent) share incubation of the eggs between both members of the pair. Of course such differences beg for an explanation, and it is interesting to speculate about possible reasons – that may also help explain the variation in parental care system we see in sanderlings. In the animal world, many things are governed by the availability of food. More food – mainly surface-dwelling arthropods in the case of arctic shorebirds - may sustain more birds. Birds incubating alone have less time to feed, because the eggs cool down when they leave the nest, with possible negative consequences.

Single incubators generally sit on the nest for 70-75 percent of the time, and thus have only 6-7 hours per day to find the food they need. Birds that share incubation have 12 hours each, even when the eggs are incubated continuously. Hence, you'd expect that single-parent incubation occurs more often where there is more food available, and less time needed to collect it. So, are there more surface arthropods in the Taimyr tundra than at Zackenberg?

The summer is only half way and we haven't yet analysed the insect catches in our pitfall trap lines, so it is too early to say. Walking around in the tundra we don't get the impression that there is a large difference. But with insects it is not only the numbers that matter, but also their activity. On cold days, most animals don't move much and even take shelter in the vegetation or in crevices in the soil, and on such days they are largely unavailable to feeding shorebirds. And from what we've witnessed so far, such days are far more common in Taimyr than here. Perhaps Taimyr is no food bonanza after all, especially if you add that on cold days the birds themselves also expend more energy, and thus need to eat more. So, we're still in the mist about the reason for the differences in shorebird fauna between these two arctic sites. Perhaps, comparing some of our data from Taimyr with the large dataset from the BioBasis programme will help us answer these questions.

That is work for later, when we're back behind our desks. In the meanwhile, we enjoy the natural highlights of Zackenberg. One such highlight shouldn't be forgotten here: on Saturday we caught a ringed sanderling on the nest that already wore a leg ring. It was ringed as a chick in this same area in 1997, and on 15 July it (or at least, we) will celebrate its 10th anniversary. Flying up and down to some unknown wintering site in Europe or Africa, it is well on its way to accumulating more Zackenberg summers than the man who originally ringed it, Hans Meltofte.

/Hans Schekkerman