

Report Arne Schröder Short Visit Grant No 3873

Objectives:

I visited Umeå between the 17th May 2011 and the 27th May 2011 to

- (1) terminate one and set up another field experiment on size-dependent species interactions
- (2) continue personal discussions on conducting further experiments and turning this research agenda into a Marie-Curie Fellowship application
- (3) compile and analyze existing data to unravel the interactions between the size-structured populations constituting the food web.

Descriptions and results:

The visit was successful and most objectives were reached.

- (1) a field experiment on the winter survival of instar IV *Chaoborus* larvae was terminated. Preliminary analysis of the obtained data showed that winter survival is dependent on density and body sizes. The data further suggests that emergence of *Chaoborus* imagoes in late spring may show even stronger density-dependence. A new experiment has been set-up to test this new hypothesis and also to test for the size-dependent cannibalistic interactions in *Chaoborus* cohorts.
- (2) a general outline for a Marie-Curie Fellowship Application on dynamics in an experimentally manipulated size-structured food web has been discussed and started to be written. I plan to submit this application latest in August 2012.
- (3) already existing data on dynamics in an experimentally manipulated size-structured food web have been compiled. However, because field work and sample processing took more time than anticipated, I could not start analyzing these data yet. Preliminary plotting of some data suggests now even stronger than before that the food web's key species *Chaoborus* exhibits cyclic dynamics. Also the discussion of a dynamical food web model did not happen for this reason.

Collaborations:

Future collaboration with the host is planned and has already been initiated during the visit. In particular, further field experiments were started and analysis of compiled data is planned.

Projected publications:

We expect one (possibly two) publication to result from this grant. It will focus on the presence and the causes of cyclic population dynamics in the food web's key species *Chaoborus*.

Expenses:

Travel:

Flight Manchester – Umeå and retour	2,801.00 SEK
Train Sheffield – Manchester Airport and retour	30.20 £
Taxi Home – Sheffield Train Station and retour	8.50 £ + 7.00 £
Taxi Umeå Airport – accommodation and retour	180 SEK + 165 SEK
Taxi accommodation – Umeå University	166 SEK

Regarding Taxi travel: no suitable public transport was available

Total: 3,312.00 SEK + 45.70 £ = 371.68 + 52.72€ (converted 28th May 2011)

Living:

During travel to Umeå 17th May 2011

12.04 £
132.00 SEK
31.00 SEK
25.00 SEK

During return to Manchester 27th May 2011

82.00 SEK
201.00 SEK

During stay in Umeå

Groceries

(I stayed at friends at we agreed that I pay one grocery)	1,410.00 SEK
Diverse lunches and evening meals	60 SEK
	60 SEK
	65 SEK
	218 SEK
	176 SEK
	100 SEK

Total: 2560 SEK + 12.04 £ = 287.29 + 13.89 € (converted 28th May 2011)

Total: 725.58 €