A PhD project on subterranean amphipods in Iceland – phylogeny and population structure

Two species of subterranean amphipods, *Crangonyx islandicus* and *Crymostygius thingvallensis*, were recently found in Iceland. This finding is unique for the biota of Iceland, and northern Europe. These species are the only endemic animals found in Iceland. Furthermore, one of the species defines a new family within amphipoda. The two main aims of the project are:

1. The phylogeny of the two species. Did the two species colonize Iceland after the last glacial period or have they existed in Iceland throughout its geological history, possibly for 40 million years? Aside from the geographical isolation from other countries and a northerly position, Iceland is a geologically young country. Being centered on a volcanic hot spot on the Atlantic ridge, its geology is affected by volcanism and tectonics.

2. Analyses of the population structure of *Crangonyx islandicus* within Iceland. Does the divergence of populations reflect geological separation of the areas within Iceland? The study will relate genetical information and the extensive knowledge of the geology of Iceland.

Genetic relationship among and within species will be studied by sequencing of three genes, mtDNA COI and 16S rRNA, and the nuclear gene 18S rRNA. These genes have been extensively used in studies of phylogeny and biogeography. Sequence information is already known from several related species. In addition, related species from Europe and N-America will be sampled and sequenced. Variation in morphology and life-history will be analysed. Applicants should have a masters degree, with some experience of molecular biology, phylogenetics or population biology. Salary for the PhD student are paid by the University of Iceland research fund for doctoral studies. Further information is provided by Snæbjörn Pálsson, snaebj@hi.is, www.hi.is/˜ snaebj.

Crymostygius thingvallensis; Kristjánsson and Svavarsson 2004 Journal of Natural History 38:1881–1894.