

DARWIN WASPS AND THE K-PG MASS EXTINCTION

A PhD position in systematics and macroevolution is available at the University of Bern and the Natural History Museum Basel. The project combines entomology, palaeontology, molecular clock analyses, and computer simulations to assess the impact of the K-Pg mass extinction event on Darwin wasps (Ichneumonidae), a species-rich group of parasitoids.

Evidence of past mass extinctions is only conclusive for groups with a dense fossil record, such as hard-bodied marine taxa. Insects have been the most species-rich taxon on earth ever since the Carboniferous, but our knowledge of their fate during past mass extinctions is limited by their capricious fossil record. Bayesian phylogenetic methods potentially allow estimating the impact of mass extinction events on groups that do not fossilize well, provided a well-dated phylogeny is at hand.

Our project aims to date the tree of life of Darwin wasps using total-evidence dating, an approach that integrates morphological and molecular data of extant and fossil taxa. The wasp time tree will then be used to assess the impact of the K-Pg extinction event on this group, which is at the top of the insect food web. The project spans a broad range of tasks, from analysing and describing new fossil species, over coding morphological characters and filtering next-generation sequencing data, to Bayesian phylogenetic and macroevolutionary analyses.

We are looking for a highly motivated and versatile applicant with an interest in morphology, palaeontology, and macroevolutionary inference. The PhD student will be enrolled at the University of Bern and will work at the Natural History Museum in Basel. He or she will be supported by a postdoc and supervised by PI Seraina Klopstein. The position is funded by the Swiss National Science Foundation for four years.

Applications should include a brief CV, two references with contact details, a publication list, and a motivation letter detailing previous experiences with any of the aspects of the project. Please send these documents in a single PDF file to seraina.klopstein@bs.ch. The deadline for applications is 31 May 2020 and the position is available at the earliest from 1 July 2020.



FIG. 1. „T-rex on a mission – who says cockroaches can survive anything?“. Artwork by Michael Bradley.