PROJECT TITLE: Small vertebrates at a time of crisis: the Late Triassic mass extinction

Project Supervisor: Michael J. Benton, University of Bristol, School of Earth Sciences

Co-Supervisor (if any): Claudia Hildebrandt, University of Bristol, School of Earth Sciences

Project Enquiries: mike.benton@bristol.ac.uk

Project keywords: fossil, vertebrates, Mesozoic, Triassic, Jurassic

Proposed start date: 19th June 2023 (flexible)

Project description

The project is focused on the Late Triassic, the time when dinosaurs, mammals, and other groups were taking over the world. There are important questions about the Late Triassic mass extinction and how different organisms responded to the crisis. Also, locally around the Bristol Channel area, we find different styles of bonebed representing different water depths and other details of the local palaeogeography.

We focus on the Bristol area which was a tropical archipelago of islands at the time, populated by dinosaurs and other tetrapods on land, and diverse fishes and marine reptiles in the seas around their shores. These beasts are sampled in a diversity of bone beds and cave fillings around Bristol and in South Wales. The student will investigate a single location and characterise the fauna, identifying the species and drawing up basic ecology (species proportions, food web). We have samples from bone beds from a number of localities around Bristol and in South Wales, and these will produce thousands of specimens.

The student will learn a broad range of practical skills: processing bone-rich sediment, picking identifiable bones and teeth under the light microscope, identifying them, producing basic ecosystem statistics (relative abundances; food webs, making microphotographs, and writing up descriptions of the fossils. The supervisors will provide support and training throughout. The student has a chance to engage in preparing a publication about their work at the end.

This is part of a long-running programme, where former students have often used their skills learned during the internship as good evidence to secure funding for a PhD: https://mscpalaeo.blogs.bristol.ac.uk/under-the-feet-of-the-dinosaurs/

Candidate requirements

Basic background in palaeontology and sedimentology will be helpful. Training in microscopy, microphotography, and systematics will be provided and the student will be supported throughout the project.

Background reading

Project web page: https://mscpalaeo.blogs.bristol.ac.uk/under-the-feet-of-the-dinosaurs/