PhD position: Fossil chironomid remains as indicators of temperature change and lake ecosystem development during the last ice age and the preceding interglacial period

Our understanding of the long-term dynamics of the climate system relies on temperature proxy-indicators preserved in environmental archives such as lake sediments. Fossil chironomid (non-biting midge) remains preserved in lake sediments are a widely used proxy for reconstructing past variations in summer temperature during the Holocene and the preceding Lateglacial period. However, very few chironomid-based temperature reconstructions are available for older time intervals and the potential of chironomid records for reconstructing climatic changes during key intervals of the late Quaternary such as the last glacial maximum, the early and mid-Würmian/Weichselian glaciation and the Eemian interglacial remains to be explored.

A three-year PhD position is available at the Section Palaeoecology, University of Bern, that will allow the successful applicant to work on developing a new chironomid record and chironomid-based temperature reconstruction covering the interval 130,000 to 40,000 years before present. The position is funded by the Swiss National Science Foundation and forms part of a wider research collaboration between researchers at the University of Bern (Switzerland), University of Franche-Comté (France) and University of Heidelberg (Germany) with the aim of developing new and reinterpretting existing chironomid records in Central Europe to provide a continuous chironomid-based reconstruction of millennial-scale summer temperature change during the past ca. 130,000 years. The successful candidate will develop a new chironomid record from Füramoos, a key locality for late Quaternary stratigraphy in southern Germany. He/she will analyse the remains of chironomid larvae and other aquatic invertebrates in the sediments, coordinate sedimentological and palaeoecological analyses on the sediments together with representatives of the partner institutes, expand available chironomid-temperature calibration datasets to make them suitable for temperature reconstruction from interglacial sediments of Central European lowland lakes, use the chironomid record and supporting sedimentological data to assess the long-term development of the lake ecosystem, and compare and interpret the developed chironomid-based temperature record with other available palaeoclimatic evidence. The successful candidate will be involved in fieldwork and sampling campaigns in Switzerland and abroad, and will be expected to present results at national and international workshops and symposia and in research articles submitted to peer-reviewed scientific journals. Good communication skills in English are considered a prerequisite and a driving license an asset for this position. The position will be based at University of Bern’s Palaeoecology section and will be embedded in an international research team dealing with a wide range of palaeoecological research questions, including the reconstruction of the natural, long-term development of ecosystems and landscapes, the effects of early human impact on the environment, and past environmental conditions based on palaeoecological records. Palaeoecology Bern is hosted by the Institute of Plant Sciences of the University of Bern (www.ips.unibe.ch) and affiliated with the Oeschger Centre for
Climate Change Research (www.oeschger.unibe.ch). Candidates with an MSc in Quaternary geology, palaeolimnology, palaeoecology, zoology, biogeosciences or related fields in environmental sciences are encouraged to apply. Salaries follow the guidelines of the Swiss National Science Foundation (www.snf.ch).

**Starting date:** September 2016 (negotiable)

**Contact:** Interested candidates are requested to apply by June 15 2016 via e-mail by contacting the project coordinator Oliver Heiri (oliver.heiri@ips.unibe.ch). Applications should include a detailed Curriculum Vitae, a motivation letter, copies of academic qualifications, and the names and addresses of two referees. Documents should be provided in a single pdf file. Late applications may be accepted in case the position is not yet filled after the first round of applications. Late applicants are encouraged to contact the project coordinator before preparing and submitting their applications.