THE BROMACKER LAGERSTÄTTE IN THE THURINGIAN FOREST – A UNIQUE WINDOW INTO THE CONTINENTAL LOWER PERMIAN WORLD

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The Lower Permian of Central Europe is mainly recorded by continental, intramountain sediments, since it was positioned in the centre of the supercontinent Pangaea. Sand- and siltstones of several fossil sites in the Tambach Formation contain a characteristic fauna and flora, indicating extreme environments caused by a continental near-equatorial climate. Early tetrapod vertebrates of the lower Permian are increasingly adapted to terrestrial conditions; invertebrates, including conchostracans, hydromedusae, insects, diplopods and others suggest a semiarid environment and perennial water bodies. Typical ichnofossils characterise temporary ponds and their remnants as well. Climate marks such as raindrop imprints, water level- and possible ice marks indicate strong seasonal climatic variability and regular flooding events. Since the late 19th century, the quarries of the Bromacker site close to Tambach-Dietharz in the Thuringian Forest, central Germany, are well known for their fossils, especially for trace fossils. In the 1970s, a regular systematic exploration of the fossil bearing layers started. Since 1993 the Fossillagerstätte Bromacker became better known as a result of its unique and exceptionally preserved lower Permian tetrapod fauna recorded by both skeletons and tracks. After a gap of ten years (2010-2020), the project “Opening science: new ways of knowledge transfer using the example of the research project Bromacker”, funded by the Federal Ministry of Research and Education, restarted research on the Lagerstätte with focus on geological and paleobiological research as well as modern science communication techniques that involve the general public in the research progress. Participating institutions include the Museum für Naturkunde Berlin – Leibniz-Institute for Evolution and Biodiversity Research, the Stiftung Schloss Friedenstein Gotha, the Friedrich-Schiller-Universität Jena and the recently declared UNESCO Global GeoPark Thüringen Inselsberg-Drei Gleichen, with several additional national and international partners. The goal of the project is to comprehensively reconstruct this unique continental Early Permian ecosystem with interdisciplinary and actualistic methods.