

Abstract for the general public

The main goal of this research is a revision of fossil turtles from Czechia and Poland. This fossil material was not revised in decades and, surprisingly, some specimens even in a century. Besides that, new material has been discovered and waits for scientific evaluation. All these leads to the conclusion that we do not know which turtles lived in Central Europe (meaning Czechia and Poland) since the beginning of the Mesozoic (approximately 230 million years ago) to subrecent time. Filling of this gap in our knowledge is important for example because turtles are one of the best indicators for paleoclimatic reconstructions. Thanks to them we are able to reconstruct zonation of the environment, like steppe or humid forest, the mean annual temperature, and – together with the remaining amphibians and reptiles – the precipitation, as well. But, for proper paleoclimatic reconstructions, we must do a proper taxonomic identification first. The fossil record from Czechia contains Mesozoic and Cenozoic representatives of turtles. For example, the Miocene (approximately 17 million years ago) fossil turtle finds are abundant in number and a high diversity is expected. This material contains historical specimens and new, unpublished specimens, as well. Similar conditions are preserved in the Polish fossil record, where especially the Triassic (approximately 215 million years ago) and Cenozoic (less than 66 million years ago) deposits are very rich. As for now, the Czech and Polish biodiversity is more or less similar. Analogous conditions can be expected in the past and a simultaneous study of the Czech and Polish material will allow to avoid taxonomic misidentification and to diagnose specimens in a broader context. Besides the traditional methods such as anatomical descriptions, we would use modern imaging technologies like photogrammetry or 3D surface scanners to obtain the most complete and accurate digital models. Our results will be shared with the international scientific community. In conclusion, we want to achieve three main goals: 1) comprehensive revision and redescription of historical fossil turtle material from Czechia and Poland; 2) description of new material, and 3) development of a better understanding of the environmental and climatic conditions in Central Europe in the past and their changes over time based on gathered data and information on other animal groups.