

## Abstract

This thesis deals with early vertebrate fossil remains from the Lower Palaeozoic strata of the Barrandian area (Bohemian Massif). It is presented as a compilation of four papers that were published or submitted in scientific peer-reviewed journals with impact factor. All included papers are focused on the most abundant and diverse vertebrate fauna from the Barrandian area – the placoderms. Placoderms are early vertebrates characterized by articulated head and trunk shields composed of dermal bony plates. In the Barrandian area, they occur exclusively in the Devonian of the Prague Basin. The main objectives of the thesis are modern taxonomic revisions of the placoderm taxa from the Prague Basin as well as discussions about trends in their abundance, diversity, and distribution in space and time, taphonomy, and the evolutionary and phylogenetic implications of their morphology.

Two characteristic placoderm associations were distinguished. In the Lochkovian and Pragian, members of the group Acanthothoraci dominate the placoderm record. Acanthothoracid placoderms are among the most basal jawed vertebrates and thus a detailed study of their morphology has a great potential to illuminate the relationships and evolutionary patterns among the stem jawed vertebrates. They are most abundant in the Lochkovian, where they constitute an unusually diversified association of four genera – *Radotina*, *Tlaspis*, *Sudaspis*, and *Kosoraspis*. Two genera (*Radotina* and *Holopetalichthys*) occur in the Pragian. Placoderms are less abundant in the Pragian than in the Lochkovian.

All the determinable specimens from the Emsian belong among the homostiid arthrodire placoderms – large filter feeders. Two species of two genera (*Antineosteus* and *Johannaspis*) could be distinguished. *Antineosteus rufus* is the largest known Early Devonian placoderm. The placoderm record in the Emsian is scarce. The significant decrease in diversity and abundance of placoderms in the Prague Basin throughout the Early Devonian is in contradiction to the general trend in placoderm faunas worldwide. It is interpreted as a factor of specific local paleogeography. The revisions significantly changed the previous view of the taxonomic composition and diversity of placoderms in the Lower Devonian of the Prague Basin.