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### ABSTRACT

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# Impoverished fossil association in the lowermost Sandbian of the Prague Basin (Czech Republic)

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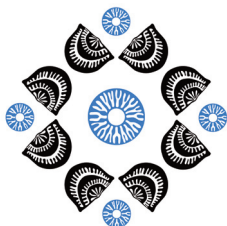
The Darriwilian to the earliest Sandbian Dobrotivá Formation is a sedimentary unit in the Prague Basin (Czech Republic). It conformably overlies the Šárka Formation that formed during GOBE (Great Ordovician Biodiversification Event), during the rapid worldwide increase of faunal diversity. The fauna in the Šárka Formation is rich and reflects the first of the two Ordovician diversity maxima observable in the Prague Basin. The character and diversity patterns of the faunas of both, the Šárka and Dobrotivá formations are similar in many aspects.

Recently, a section of the Dobrotivá Formation, exposed in a low terrain step in Ejpovice, in a village situated halfway between Rokycany and Plzeň, yielded three bulk samples each in size of several cubic metres; more than twenty tons of rock material was extracted. Each of the samples represented a thickness of 1 m of the section. Lithologically, the samples consist mainly of micaceous black shales locally containing infrequent phosphatic nodules. Thousands of specimens were recorded during a detailed study. This dataset was supplemented with information about distributional patterns influenced by taphonomical effects.

Stratigraphically, the succession in this locality belongs to the uppermost Dobrotivá Formation, to the *Cryptograptus tricornis* Biozone. All fossil groups present (hyoliths, molluscs, brachiopods, phyllocarid crustaceans, trilobites, graptolites, and some other minor groups) as well as ichnofossils were studied in detail using semi-quantitative analysis of relative abundances. Combined with taphonomic aspects they were used in paleoecological interpretations, in analysis of diversity and abundance patterns, and in characterisation of faunal associations in each sample.

The fauna at Ejpovice is species-depleted in comparison with the overall diversity within the Dobrotivá Formation. The most abundant fossil groups at this locality, such as graptoloids, cyclopygid trilobites and phyllocarids, are pelagic. However, each of these groups is strongly dominated by specimens of one or two species. Sessile benthic taxa are rarer and their preservation is often fragmentary. Some groups such as conulariids, and taxa such as trilobites of the genus *Placoparia* or brachiopods of the genus *Paterula* are extremely rare at Ejpovice although they are abundant and widespread in the Dobrotivá Formation.

Based on the lithology and fossil associations, deeply dysoxic to anoxic conditions with weak currents prevailed near the bottom at Ejpovice. The fauna is mainly allochthonous and most of the organisms are regarded to be concentrated in postmortal accumulations. Its impoverished composition is typified by prevailing cyclopygid trilobites and graptoloids. The abundance of graptoloids is the highest compared to all other localities of the Dobrotivá Formation in which graptoloids are usually rare or absent. Such considerable differences in abundance of graptoloids in sections of coeval strata are typical for many other Upper Ordovician formations in the Prague Basin.



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