

Trace fossils at the Arenig – Llanvirn boundary (Ordovician, Czech Republic)

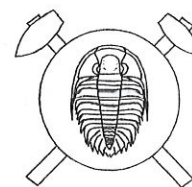
Ichnofosilie z hranice arenig – llanvirn (ordovik, Česká republika) (Czech summary)

(2 text-fig., 4 plates)

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Changes of ichnological content at the Klabava Fm./Šárka Fm. boundary (= near the Arenig/Llanvirn boundary) consist namely in decrease of diversity of ichnotaxa and in diminution of ichnofabric indices, joined with volcanic activity and consequent sedimentation of Fe-oolites. Trace fossil assemblages in clay shales of uppermost part of Klabava Formation, compared with those from lower part of Šárka Fm., do not differ much both in ethological spectrum of traces and in occurrence of identical or similar ichnotaxa. Overall intensity of bioturbation (ichnofabric index) is somewhat smaller in lower part of Šárka Fm. than in uppermost layers of Klabava Fm. Ichnotaxa *Chondrites* div. ichnosp., *Planolites* ichnosp., *Glockerichnus glockeri*, *Phycodes* ichnosp., *Helminthopsis* ichnosp., *Rhizocorallium* ichnosp., *Zoophycos* ichnosp., a.o., are represented in these ichnoassemblages.

Introduction

At present, enhanced attention is paid to a stage division of the Ordovician in the Prague basin (Barrandian area). The Ordovician of this area should serve as a stratigraphical standard for the Mediterranean region, using the stages suggested by Havlíček and Marek (1973). It should help to solve the existing problems with establishing of the boundaries of Ordovician chronostratigraphical units. A detailed biostratigraphical research of the Arenig/Llanvirn boundary at the locality Drahouš, carried out by J. and P. Kraft in 1990–1991, was motivated, a.o., also by this aim. The results of this research were preliminary published (J. Kraft and P. Kraft 1993). The purpose of the present paper is to give a report on ichnological conditions of the sequence studied by the above-mentioned authors.

The outcrops at Drahouš are partly natural, partly temporary, originated during the building of a speedway; the temporary ones are almost inaccessible at present (see J. and P. Kraft 1993).

The Klabava Formation at Drahouš is composed of clay shales greyish-green, yellowish-green or yellowish-brown in colour. The shales pass to overlying, 1.9 m thick sequence of tuffitic shales and tuffites. The upper surface of this sequence is identical with the Klabava Fm./Šárka Fm. boundary. 1.1 m thick layer of oolitical Fe-ore is developed at the base of the Šárka Fm. This layer is sharply bordered from the overlying greyish clay, in places micaceous shales. This succession is disrupted by a fault after 3.3 m. Above the fault, ca. 20 m of further succession of grey clay shales is exposed (J. and P. Kraft

1993). As concerns the finds of fossils and biostratigraphical position of respective strata, see Fig. 2 and the above-quoted paper.

Ichnology of the studied sequence

Ichnological content is schematically given in Tab. I. It was possible to distinguish six layers (resp. seven, if we consider also the tuffitic layer at the top of the Klabava Fm., from which I did not obtain any trace fossil. J. and P. Kraft quoted rare finds of *Bergaueria* ichnosp.). These layers in the context to results of the research made by J. and P. Kraft are shown in Fig. 2.

Layer I. Lowermost layers of the Drahouš locality (about 4 m under the base of the Šárka Fm.) – yellowish-brown and yellowish-green clay shales. They are rather strongly bioturbated; ichnofabric index (after Bottjer and Droser 1991) reaches 2 to 3, locally 4 to 5 (see Tab. I). Ichnotaxa *Chondrites* div. ichnosp. (“thin forms” – roughly up to 2 mm of tunnel diameter, and “large forms” – wider than “thin forms”, usually 5 – 10 mm), *Planolites* ichnosp., *Phycodes* ichnosp., *Helminthopsis* ichnosp. share in the bioturbation.

Layer II. Mostly greyish-green clay shales with ichnofabric index 2 to 3. *Chondrites* div. ichnosp. (namely “thin forms”), *Helminthopsis* ichnosp., *Planolites* ichnosp., *Glockerichnus glockeri* are prevailing.

Layer III. Fe-oolite with small content of Fe and substantial share of clay material. Bioturbation is weak, only *Planolites* ichnosp. rarely occurs.