

# INDEX OF FOSSILIFEROUS LOCALITIES OF THE OLEŠNÁ MEMBER, KLABAVA FORMATION (LOWER ORDOVICIAN OF THE PRAGUE BASIN, CZECH REPUBLIC)

Jaroslav Kraft<sup>†</sup>, Michal Mergl<sup>1</sup>, Tomáš Hroch<sup>2</sup> & Petr Kraft<sup>3,4\*</sup>

<sup>1</sup> Center of Biology, Geosciences and Environmental Sciences, Faculty of Education, University of West Bohemia in Plzeň, Klatovská 51, 306 19 Plzeň, Czech Republic; E-mail: mmmergl@cbg.zcu.cz

<sup>2</sup> Czech Geological Survey, Klárov 3, 118 21 Praha 1, Czech Republic; E-mail: tom.hroch@gmail.com

<sup>3</sup> Institute of Geology and Palaeontology, Faculty of Science, Charles University in Prague, Albertov 6, 128 43 Praha 2, Czech Republic; E-mail: kraft@natur.cuni.cz

<sup>4</sup> West Bohemian Museum in Plzeň, Kopeckého sady 2, 301 00 Plzeň, Czech Republic

\* Corresponding author

**Abstract:** *Thirty-two fossiliferous localities of the Olešná Member, a distinct unit of the Klabava Formation, are described. As we are able to find they represent all fossil sites of this unit ever been mentioned in publications. Fossil taxa from relevant papers are summarized and the historical names used for the localities are listed. Updated lists of fauna are compiled for each locality; based on them an overall list for the member is completed.*

**Key words:** Ordovician, Olešná Member, Klabava Formation, Prague Basin, fossils

## INTRODUCTION

This paper is the third contribution to a long-term project, making the key data initially and extensively assembled by the senior author on the published fossiliferous localities in the Ordovician of the Prague Basin easily accessible. The aims of this project are explained in a previous paper (Kraft *et al.* 2013). It should be, however, repeated that the series of papers is intended ‘to serve as a basic dataset for diverse research in the Ordovician of the Barrandian area and represents an explanatory document in which synonymous names for localities are listed to aid the researcher when using older publications and collections in their research’ (Kraft *et al.* 2013). This paper is focused on the Olešná Member belonging to the Klabava Formation.

The Olešná Member was considered a part of the Krušná hora Formation (Krušnahora Schichten in original designation by Lipold & Krejčí 1860) together with the present-day Třenice and Mílína formations and formed its upper portion for a long time. It was formally called Cerhovice Beds by Kettner (1916a, 1916b) and subdivided into the lower dark red-brown ferruginous shale to siltstone and the upper siltstone of the “cihlové

vrstvy” (= brick beds) after the prevailing, typical colour (Kettner 1916b). Subsequently, Klouček (1917) renamed the Cerhovice Beds as the Olešná Beds based on the argument of a different area with typical development of this unit. This concept was used until the 1950’s (e.g. Havlíček & Šnajdr 1953) and was accompanied by a confusing terminology of the stratigraphic unit categories (cf. Havlíček & Šnajdr 1955 vs. 1956). In addition, the published information on the Olešná Member as a former part of the Krušná hora Formation is vague in some cases because it can be difficult to distinguish the data related to the individual portions of the formation and their fossil content.

Later, it was found out that the Olešná Member is a part of the Klabava Formation. For the first time it was indicated by Havlíček (1961a), subsequently advocated in detail and formally established by Havlíček (1961b). However, in both papers Havlíček (1961a, 1962a) did not consider it to be an independent unit but only a facies typical for the lower part of the formation. This interpretation was used for example by Havlíček & Vaněk (1966). On the other hand, Havlíček (1998) returned to the Olešná Member as a formal unit

inside the Klabava Formation. Kraft & Kraft (2003) followed this concept in their study on the lithostratigraphy of the Klabava Formation.

The lithological aspects of the Olešná Member were briefly studied by Kukal (1959, 1961). He mentioned that lithological methods cannot contribute to the solution of the questions about the stratigraphic position of those beds studied by Havlíček (1961a, 1962b). However, in his next study Kukal (1963) considered the Olešná Beds as an independent unit overlying the Mílina Formation and underlying the Klabava Formation. He also characterized the rocks of the Olešná Beds as a mixture of silty and clayey material with a sandy admixture, and interpreted the sedimentary conditions predominantly as a depression bordered by a high, mountainous relief causing rapid transport of the coarse clastic material into the basin.

Based on progress of stratigraphic and lithological studies several papers about the paleogeographic extension of the Olešná Member in the Prague Basin were published (Kettner 1921; Havlíček & Šnajdr 1955, 1956; Havlíček 1981, 1998).

The fossil content of the Olešná Member is very specific. Linguliform brachiopods completely prevail, only several other groups occur but are extremely rare; many groups even absent (Havlíček & Vaněk 1966). The only exception seems to be represented by sponges but the data about them are sparse. The uniform character of the fauna is probably a taphonomic bias in major part. Although focused on the Mílina Formation the studies on taphonomy by Mergl (1996, 1997b) touch the Olešná Member as well.

The quite low diversity and dominance of a single group, the linguliform brachiopods, caused

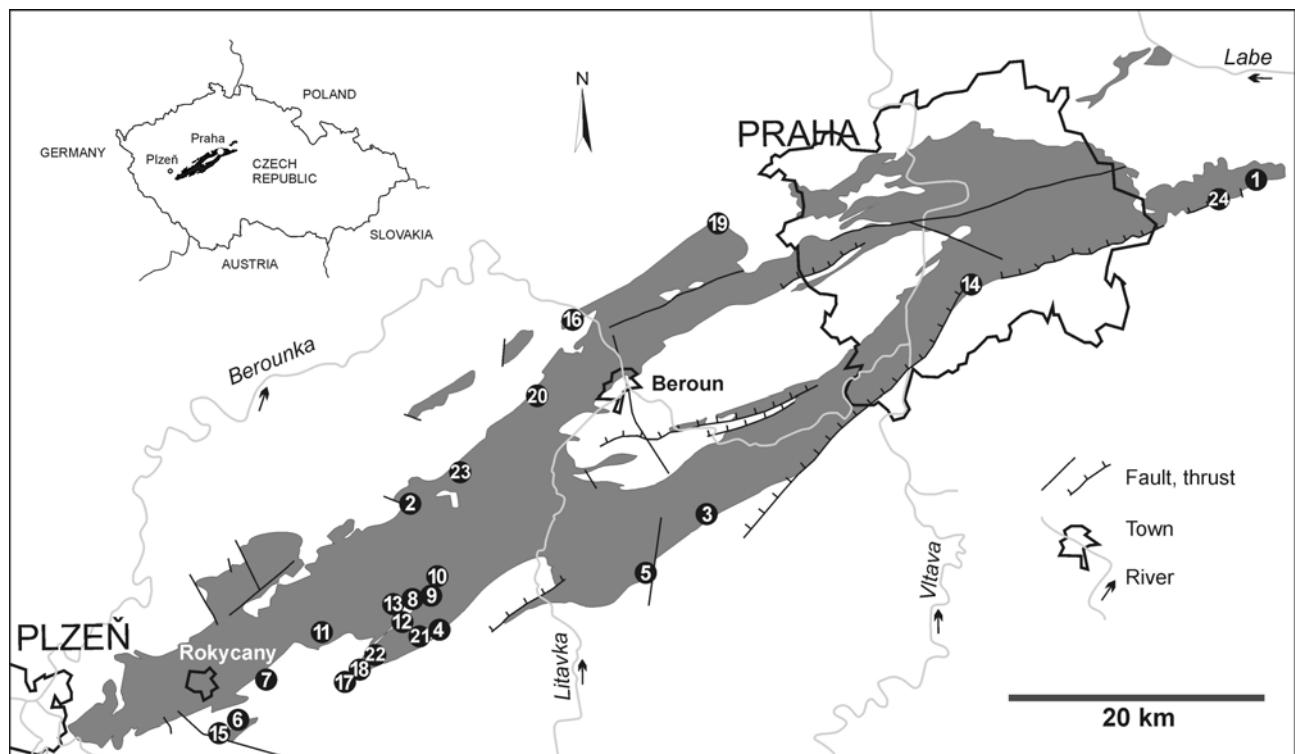


Figure 1. Sketch map of the Prague Basin relic and positions of the described localities. Location of the Prague Basin (black) in the Czech Republic (upper left). The localities are ordered as in the text; those situated close to each other are plotted as a single point. 1 – Břežany – Na Babách Hill; 2 – Cerhovice – Cerhovská hora Hill; 3 – Hatě – Vrahův potok Brook; 4 – Horní Kvaň – field; 5 – Hostomice – Babí štola Gallery; 6 – Hrádek – gorge; 7 – Hůrky; 8 – Jívina Hill, Jívina – quarries; 9 – Kleštěnice – Jalový potok Brook; 10 – Komárov; 11 – Medový Újezd, Medový Újezd – Hradiště; 12 – Mílina Hill; 13 – Olešná – quarry; 14 – Praha – Kunratický hrádek; 15 – Rokycany – Kotel Hill; 16 – Stradonice; 17 – Strašice – centre, Strašice – field near St. Vavřinec; 18 – Strašice – east; 19 – Svárov; 20 – Svatá – Vraní skála; 21 – Svatá Dobrotivá, Zaječov – Hrbek Hill, Zaječov – Jalový potok Brook, Zaječov – quarry near the school building; 22 – Těně – road-cut, Těně – village, Těně – west, Těně; 23 – Točník; 24 – Úvaly.

a limited interest in the paleontological research of the Olešná Member. The first fossils described from this unit are brachiopods (Barrande 1879). At the beginning, however, several papers were published about sponges (Feistmantel 1885, Počta 1898a, 1898b). Subsequently, the main focus was on linguliform brachiopods. It was based on systematic field research especially by C. Klouček (Klouček 1915, 1917, 1919, 1920). Brachiopods were studied by himself but especially by J. Koliha (Koliha 1918, 1924). After a long-time gap, brachiopods were occasionally studied again (Havlíček 1982a). The research was continued by systematic studies of the Olešná Member by M. Mergl who described brachiopods and also some other groups (e.g. Mergl 2002, 2006, 2008, Mergl & Duršpek 2006).

The fossil associations were recently studied in detail by Havlíček (1982b) and Mergl (1986), and summarized by Havlíček & Fatka (1992), Havlíček (1998) and Fatka & Mergl (2009). The fossil associations of the Olešná Member belong to the relatively shallow water *Leptembolon* Association (Community, Fauna by different previous authors).

## LOCALITIES

For the list of localities to be as easily and clearly understandable as possible the explanations of Kraft *et al.* (2013) are repeated:

'Only' the Olešná Member 'localities which are known to have yielded or, in some cases, possibly yielded fauna are included in the list. Records with insufficiently documented localities and lists of ambiguous fossils are omitted. This approach significantly impacts the old papers in which fossils from several formations were listed as a single assemblage.'

Localities are listed in alphabetical order and their descriptions are structured as follows: brief geographical location (geographic co-ordinates if available), lithology, general remarks, references, and updated revised taxonomic list. The references are ordered chronologically. The original locality name or names used in a publication follows the authors, the original list of taxa (including author and year, and errors; original letter style is ignored and italics are used for Latin in the modern way) are listed. Translations to English are placed in square brackets for the localities with obscure or difficult names. Original Czech or German de-

scriptions of fossils are supplemented with verbatim English translations in square brackets. These reports are important in illustrating the history, the available taxa, as currently identified, for systematic studies. Old papers written in Czech, French or German will now have English translations of pertinent parts.'

The last section of this paper is a complete updated list of taxa.

Note that in several cases concerning Mergl (2002), the reader cannot unequivocally prove if some species occur in the Olešná Member or other units in the succession at certain localities. It is because localities are not clearly related to the lithostratigraphic units in that paper. Based on our knowledge (namely M.M.) or other references we list such species herein only if they have been demonstrably recorded from the Olešná Member. All such instances are marked by an asterisk (\*) in the relevant lists of taxa and are summarized as follows: *Dactyloreta prisca* Mergl, 2002. It ranges from the Třenice to the Klabava Formation. The confusing information is referred to Cerhovice – Cerhovská hora Hill, Horní Kvaň – field, Jívina – quarries, Jívina Hill, Kleštěnice – Jalový potok Brook (all with fossiliferous succession of the Třenice to Klabava formations), Mílina Hill, Olešná – quarry, Těně – west, Točník, Zaječov – Hrbek Hill, Zaječov – quarry near the school building (with fossiliferous Mílina and Klabava formations), and Medový Újezd (with fossiliferous Třenice and Klabava formations).

*Celdobolus mirandus* (Barrande, 1879). It occurs in the Třenice and Klabava formations. The confusing information is referred to Cerhovice – Cerhovská hora, Horní Kvaň – field, Jívina – quarries, Jívina Hill, Kleštěnice – Jalový potok Brook and Medový Újezd, all with both fossiliferous formations in the succession. Mílina Hill should be also mentioned although the Třenice Formation has not yielded any fossils.

*Pidiobolus minimus* Mergl, 1995. It ranges from the Mílina to the Klabava Formation. The confusing information is referred to Těně – west with both fossiliferous formations in the succession.

On the other hand, occurrences of some species in the Olešná Member can be inferred erroneously: *Leptembolon insons* (Barrande, 1879) from Hatě – Vrahův potok Brook. The occurrence of this spe-

cies, typical for the Mílina Formation, in the lowermost part of the overlying Klabava Formation is mentioned and discussed by Mergl (2002). However, sites of this stratigraphic level are not explicitly specified therein and the Mílina and Klabava formations are in succession at number of the listed localities. Hatě – Vrahův potok Brook is the single one where Mergl (2002, p. 7) clearly mentioned the occurrence of the Klabava Formation only. Thus, the presence of this species can be deduced for the list therein.

*Teneobolus gracilis* Mergl, 1995 from Zaječov – quarry near the school building. The unit E (Mergl 1986, 2002) has been revised as a top of the Mílina Formation (Fig. 2).

*Rafanoglossa platyglossa* Havlíček, 1982 (occurring in different members of the Klabava Formation) from Hatě – Vrahův potok Brook. Ejpovice Member (Kraft & Kraft 2003) also occurs at the locality.

*Pidiobolus minimus* Mergl, 1995 (ranging from the Mílina to the Klabava Formation) from Zaječov – quarry near the school building.

*Acrotreta scabra* (occurring in the Klabava Formation) from Strašice – field near St. Vavřinec. Loose boulders of the Ejpovice Member, Klabava Formation (Kraft & Kraft 2003) also occur at the locality.

*Celdobolus complexus* (Barrande, 1879) (occurring in the Klabava Formation) from Horní Kvaň – field and Strašice – field near St. Vavřinec. Loose boulders of the Ejpovice Member, Klabava Formation (Kraft & Kraft 2003) also occur at the localities. However, concerning to the former locality, the information about other units of the Klabava Formation than the Olešná Member was omitted by Mergl (2002).

*Siphonotretella filipi* Mergl, 2002 (ranging from the Mílina to the Klabava Formation) from Horní Kvaň – field and Zaječov – quarry near the school building. The specimens described by Mergl (1995) and the synonymy in Mergl (2002), all combined evokes to prove the occurrence of this species at the latter locality.

As stated above, the unit E (Mergl, 1986, 2002) has been recently considered to belong to the top-most portion of the Mílina Formation (Fig. 2). That is why the taxa, such as *Jivinella slaviki* (Klouček, 1915) and *Schmidtites* sp., recorded in this unit by Mergl (1986) at several localities were listed in Kraft *et al.* (2015) and they are not listed

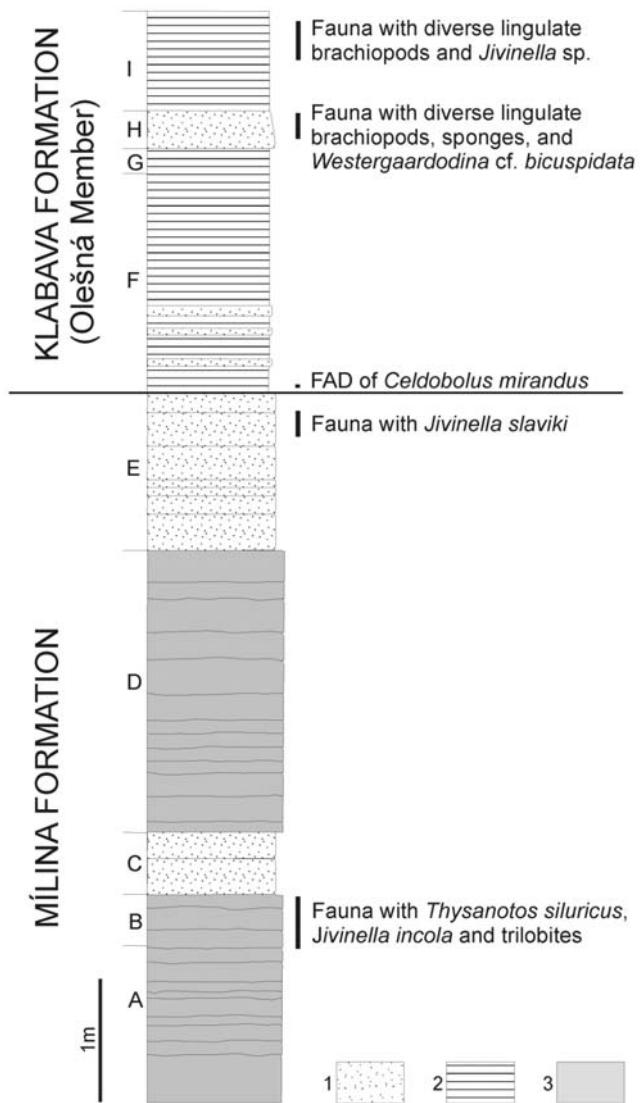


Figure 2. Generalized lithology of the Mílina/Klabava formations boundary interval in the area between Strašice and Komárov with the marked significant fossiliferous levels. Lithological units A–I after Mergl (1986). 1 – red or brown-violet fine-grained lithic sandstone, 2 – red shale, 3 – red and grey chert (after Mergl 1986, modified).

herein to occur in the Olešná Member. It is also the case of *Eosiphonotreta* sp. and *Hyperobolus* sp. from Zaječov – quarry near the school building. The latter species was reclassified by Mergl (2002) as *Rosobolus cf. robertinus* Havlíček, 1982. He also considered *R. robertinus* to occur in the Třenice Formation and the lowermost Olešná Member of the Klabava Formation. In the systematic part, Mergl (2002) mentioned this species as a part

of the description of the erroneously labeled *Rosobolus robertinus* (Havlíček, 1982); it is clear from the paragraph on its occurrence. Subsequently, he listed it correctly and in the open nomenclature in Mergl (2002, tab. 1) in the “Olešná Beds Member” column. Its occurrence in the Olešná Member at that locality is stated at the pl. 18, fig. 11.

Institutional abbreviations:

MM – Czech Geological Survey, collection of Michal Mergl,  
NM – National Museum in Prague,  
PCZCU – Faculty of Education, University of West Bohemia.

## LIST OF LOCALITIES

### Břežany – Na Babách Hill

Geography: Old partly flooded quarry near the top of the low elevation called Na Babách (elevation point 267), west-south-west of its top, 1.5 km west of the village of Břežany II (distance and direction related to the chapel in the centre of the village), ~ 27 km east of centre of Prague. Cadastre of Břežany II, District of Kolín.

Lithology: Red to reddish-violet shale.

Kalat (1949): Na babách, nejvyšší polohy v jižní část lomu [uppermost layers in the southern part of the quarry].

(Although the locality is not related exactly to the Olešná Member in the paper its stratigraphic position is indicated by the lithology and colour of rock. Next study by Havlíček 1950 proved this assignment.)

*Orbiculoides* sp.

hojná dosud neurčená fauna [abundant undetermined fauna]

Havlíček (1950): Lom na Babách [Na Babách Quarry].

(A brief, incomplete and joint list of taxa is published in this paper for this locality and for Úvaly. It is impossible to prove unequivocally the occurrences of those taxa at an individual locality. However, as only generally abundant genera are quoted it is very probable that the list is valid for both sites.)

*Orbiculoides* d'Orbigny

*Lingulella* Salter

*Acrotreta* Kutorga

and others

Havlíček (1987): Lom “Na babách” u Břežan II [“Na babách” Quarry near Břežany II].

*Orbithele*

*Leptembolon*

*Conotreta*

Updated list of fauna: It is impossible to be reliably compiled.

### Cerhovice – Cerhovská hora Hill

Geography: Old infilled quarries, and small natural exposures in the eastern and south-eastern slopes of the Cerhovská hora Hill (also called Třenická hora Hill) near the village of Cerhovice, ~ 1 km north-west of the village centre, western of Třenice. Cadastre of Cerhovice, District of Beroun.

Lithology: Red siltstone.

Remark: The fossiliferous Třenice and Milina formations also occur at this locality. For details see Kraft et al. (2013, p. 36; 2015, pp. 19–20).

Kettner (1916a): Cerhovská hora u Třenice [Cerhovská hora Hill near Třenice].

*Discina undulosa* Barr.

*Obolella complexa* Barr.

*Pyritonema Barrandei* Poč.

Koliha (1924): Cerhovská hora a Kvásek [Cerhovská hora and Kvásek]; Cerhovice. (We refer Cerhovská hora Hill and neighbouring Kvásek Hill together because in the list of occurrences of the species *Obolus complexus* they are not distinguished.)

*Obolus complexus* Barrande

*Lingulella insons* (Barr.) (Occurrence of this species is not allowed to refer to the locality unequivocally according to the record in the paper.)

*Lingulella insons* (Barr.) var. *lata* n. var.

Andrusov (1925): Cerhovská hora u Cerhovic [Cerhovská hora near Cerhovice]; Cerhovská hora.

*Obolus complexus* Barr.

*Pyritonema Barrandei* Poč.

Kraft (1928): Cerhovská hora.

*Baroisella sodalis* Barr.

*Obolus complexus* (mentioned also as *Obolus compl.*) jehlice hub druhu *Pyritonema* [spicules of sponge species *Pyritonema*]

Havlíček (1982a): Cerhovice.

*Leptembolon insons testis* (Barrande, 1879)

*Lingulella lata* Koliha, 1924

*Elkanisca klouceki* (Koliha, 1918)

Mergl (1994): Cerhovice.  
*Elkanisca klouceki* (Koliha, 1918)

Mergl (1997a): Cerhovice.  
*Lingulella lata* Koliha, 1924

Mergl (2002): Cerhovice (Cerhovská hora Hill);  
Cerhovice (Cerhovický vrch Hill); Cerhovice; Cerhovice (Cerhovská hora – Cerhovská hora Hill).  
*Leptembolon testis* (Barrande, 1879)  
*Lingulella lata* Koliha, 1924  
*Elkanisca klouceki* (Koliha, 1918)  
*Dactyloreta prisca* sp. n. (\*)  
*Celdobolus mirandus* (Barrande, 1879) (\*)

Mergl & Duršpek (2006): Cerhovice (Cerhovská Hora hill).  
Hexactinellida gen. et sp. indet. A

Updated list of fauna:

*Cyathophycus* sp.  
*Leptembolon testis* (Barrande, 1879)  
*Lingulella lata* Koliha, 1924  
*Elkanisca klouceki* (Koliha, 1918)  
*Orbithele undulosa* (Barrande, 1879)  
*Dactyloreta prisca* Mergl, 2002  
*Celdobolus mirandus* (Barrande, 1879)

### Hatě – Vrahův potok Brook

Geography: Exposures on the eastern bank of a small, unnamed pond on the Vrahův potok Brook, in the forest 2.8 km south-south-east of the village of Hatě, on the ridge of Hřebeny. Cadastre of Dobříš, District of Příbram.

Lithology: Red siltstone, tuffaceous shale and reworked tuff.

Havlíček & Šnajdr (1952): Profil podél potoka tekoucího k Hatím [The section along the brook flowing to Hatě].

spongie [sponges]

*Obolus complexus* Barr.

*Lingulella insons* (Barr.)

*Acrotreta minima* (Barr.)

*Orbiculoides* sp.

and others

Mergl (1995): Hatě (Vrahův creek).

*Teneobolus gracilis* sp.n.

*Rowellella distincta* Bednarczyk - Biernat, 1978

Mergl (2002): Hatě (Vrahův potok creek); Hatě (Vrahův potok – Vrahův potok creek).

*Leptembolon testis* (Barrande, 1879)

*Teneobolus gracilis* Mergl, 1995  
*Rowellella distincta* Bednarczyk et Biernat, 1978  
*Dactyloreta prisca* sp. n.  
*Celdobolus mirandus* (Barrande, 1879)

Updated list of fauna:

*Leptembolon testis* (Barrande, 1879)  
*Teneobolus gracilis* Mergl, 1995  
*Rowellella distincta* Bednarczyk et Biernat, 1978  
*Orbithele undulosa* (Barrande, 1879)  
*Dactyloreta prisca* Mergl, 2002  
*Celdobolus mirandus* (Barrande, 1879)

### Horní Kvaň – field

Geography: Debris in the fields extended along a low ridge near the south margin of the village of Kvaň, ~ 900 m east of the monastery in Zaječov (Coordinates of the artificial furrow excavated in 2006 which yielded a number of fossils: N 49° 46' 06.0" E 13° 51' 52.0"; Pl. 5, fig. 7). Cadastre of Kvaň, District of Beroun.

Lithology: Red siltstone and shale.

Remark: The fossiliferous Třenice and Mílina formations also occur at this locality. For details see Kraft et al. (2013, p. 51; 2015, pp. 21–23).

? Koliha (1924): Horní Kváň.

*Obolus complexus* Barrande

Mergl (1981): Horní Kvaň.

*Orbithele undulosa* (Barrande, 1879)

Mergl (1986): Kváň (KV); Kváň.

*Celdobolus mirandus*

*Leptembolon insons testis*

*Elkanisca klouceki*

*Orbithele undulosa*

*Conotreta turricula*

*Conotreta grandis*

Mergl (1994): Horní Kvaň, field.

*Elkanisca obesa* (Havlíček, 1980)

Mergl (1995): Horní Kváň (slope debris at the field); Horní Kváň (slope debris of the field).

*Elliptoglossa celdai* sp. n.

*Rowellella distincta* Bednarczyk - Biernat, 1978

Mergl (2002): Kváň (field); Kváň (pole – field).

*Leptembolon testis* (Barrande, 1879)

*Elliptoglossa celdai* Mergl, 1995

*Rowellella distincta* Bednarczyk et Biernat, 1978

*Elkanisca obesa* (Havlíček, 1980)

*Orbithele undulosa* (Barrande, 1879)

*Acrotreta foetida* sp. n.

*Dactyloretta prisca* sp. n. (\*)

*Celdobolus mirandus* (Barrande, 1879) (\*)

Mergl & Duršpek (2006): Horní Kvaň (field).

Hexactinellida gen. et sp. indet. A

Updated list of fauna:

*Cyathophycus* sp.

*Leptembolon testis* (Barrande, 1879)

*Elliptoglossa celdai* Mergl, 1995

*Rowellella distincta* Bednarczyk et Biernat, 1978

*Elkanisca kloucekii* (Koliha, 1918)

*Orbithele undulosa* (Barrande, 1879)

*Acrotreta foetida* Mergl, 2002

*Dactyloretta prisca* Mergl, 2002

*Celdobolus mirandus* (Barrande, 1879)

### Hostomice – Babí štola Gallery

Geography: Probe gallery mined on the southern slope of the Studený vrch Hill, ~ 3.5 km south-east of the centre of the village Hostomice. Cadastre of Dobříš, District of Příbram.

Lithology: Red-brown shale, siltstone and greyish sandstone.

Remark: The fossiliferous Mílina Formation also occurs at this locality. For details see Kraft *et al.* (2015, p. 23).

? Feistmantel (1880): Der Berg Baba, Baba bei Dobřisch [Baba Hill, Baba near Dobřisch]; Eisensteinbergbau Baba [Baba Iron Ore Mine]. (We quote this paper here. However, see Kraft *et al.* (2015) for discussion about the locality. The fossils were listed in the study on the Mílina Formation but their origin from the Olešná Member cannot be excluded.)

*Lingula*

eine kleine *Obolus*-Art [a small species of *Obolus*]

Kettner (1916b): Baba u Hostomic [Baba near Hostomice].

*Obolus minimus*

*Obolella complexa*

jehlice houbové, jehlice hub [sponge spicules]

Koliha (1924): Baba u Hostomic [Baba near Hostomice].

*Obolus complexus* Barrande

Bouček (1944a): "Babí štola" ["Babí štola" Gallery]; Baba.

*Obolus* sp. (juvenile *O. complexus*?), mentioned also as *Obolus* (juvenile *Obolus complexus*?); [ju-

venile] (This species was recorded in the violet shale which are of unresolved status. They can represent a part of the Olešná Member in that part of the basin but are considered as independent facies in the south-western part of the basin, in the Starý Plzenec area.)

*Lingulella insona* (Barr.) (Both from violet shale and the typical red facies of the Olešná Member at this locality.)

*Obolus complexus* Barr.

*Orbiculoides undulosa* (Barr.)

jehlice hub (*Pyritonema*) [sponge spicules]

*Acrotreta minima* (Barr.)

Bouček (1944b): Der Zubauftollen ("Babí štola") [Supporting gallery ("Babí štola" Gallery)]; Baba, kleine (juvenile ?) Form von *Obolus* (? *complexus* Barr.) [small form of *Obolus*].

*Lingulella insona* (Barr.)

*Obolus complexus* Barr.

*Orbiculoides sodalis* (Barr.)

*Acrotreta minima* (Barr.)

Spongiennädelchen (*Pyritonema*), mentioned also as Nadelchen von *Pyritonema* [sponge spicules]

*Orbiculoides sodalis undulosa* (Barr.)

Havlíček & Šnajdr (1952): Štola „na Babě“ pod Studeným vrchem [The gallery "at Baba" below the Studený vrch Hill].

The authors referred to Bouček (1944a) and repeated the following taxa:

*Obolus complexus* Barr.

*Lingulella insona* (Barr.)

*Orbiculoides undulosa* (Barr.)

*Acrotreta* sp.

(They also recorded numerous fragments of linguiform brachiopods from several sites in the surroundings of the locality such as Písek, Malá Baba, Velká Baba and Studený vrch hills. However, they specified neither taxa nor exact localities.)

Updated list of fauna:

sponge spicules

*Leptembolon testis* (Barrande, 1879)

*Orbithele undulosa* (Barrande, 1879)

*Dactyloretta prisca* Mergl, 2002

*Celdobolus mirandus* (Barrande, 1879)

### Hrádek – gorge

Geography: Exposures on the steep slopes of a short and deep gorge in Kocanda, in the north-western edge of the town of Hrádek, north-east of

street Za Mostem, along the road from Hrádek to Rokycany (no. 11724), north of the sharp curve. Cadastre of Nová Huť (part of Hrádek u Rokycan), District of Rokycany.

Lithology: Brown-violet siltstone and sandstone.

Mergl (1994): Hrádek, gorge at the E margin of the village.

*Elkanisca obesa* (Havlíček, 1980)

Mergl (1995): Hrádek (gorge).

*Teneobolus gracilis* sp. n.

Mergl (1997a): Hrádek (gorge); Hrádek, small gorge along the road to Strašice; Hrádek.

*Lingulella lata* Koliha, 1924

*Rowellella* sp.

*Collarotretella septata* sp. n.

undescribed acrotretaceans

*Pidiobolous minimus* Mergl

*Teneobolus gracilis* Mergl

*Elliptoglossa celdai* Mergl

*Elkanisca obesa* (Havlíček)

*Celdobolus mirandus* (Barrande)

*Orbithele undulosa* (Barrande)

*Schizotreta* (?) sp.

Mergl (2002): Hrádek (gorge); Hrádek (gorge near the road to Dobřív).

*Leptembolon testis* (Barrande, 1879)

*Lingulella lata* Koliha, 1924

*Teneobolus gracilis* Mergl, 1995

*Elliptoglossa celdai* Mergl, 1995

*Elkanisca obesa* (Havlíček, 1980)

*Rowellella* sp. A

*Eoschizotreta veterna* sp. n.

*Dactylotreta prisca* sp. n.

*Celdobolus mirandus* (Barrande, 1879)

*Collarotretella septata* Mergl, 1997

Updated list of fauna:

*Leptembolon testis* (Barrande, 1879)

*Lingulella lata* Koliha, 1924

*Teneobolus gracilis* Mergl, 1995

*Elliptoglossa celdai* Mergl, 1995

*Elkanisca klouceki* (Koliha, 1918)

*Rowellella* sp.

*Eoschizotreta veterna* Mergl, 2002

*Orbithele undulosa* (Barrande, 1879)

*Dactylotreta prisca* Mergl, 2002

*Celdobolus mirandus* (Barrande, 1879)

*Collarotretella septata* Mergl, 1997

## Hůrky

Geography: Former exposure on the slope above the Hůrecký potok Brook south of the village centre (municipality), at the place called "Na škrobu". Cadastre of Hůrky u Rokycan, District of Rokycany.

Lithology: Reddish-brown siltstone.

Kraft (1928): Hůrky.

*Obolus complexus*

Updated list of fauna:

*Celdobolus mirandus* (Barrande, 1879)

## Jívina Hill

Geography: Natural exposures and slope debris on the east slope and the top of the Jívina Hill, southwest and south of the village of Jívina. Cadastre of Jívina, District of Beroun.

Lithology: Red-brown siltstone.

Remark: The fossiliferous Třenice and Mílina formations also occur at this locality. For details see Kraft et al. (2013, p. 52; 2015, p. 24).

? Feistmantel (1885): Ivina.

Spongien, Spongien-Reste, Skeletnadeln (Spiculae), Nadeln, Ordnung Hexactinellidae [Sponge, sponge remains, spicules, spicules, order Hexactinellidae].

? Krejčí & Feistmantel (1885): Ivina.

The authors referred to Feistmantel (1885) and repeated the following information:

Reste von Spongien, zahlreichen Nadeln [sponge remains, numerous spicules]

? Krejčí & Feistmantel (1890): Ivina.

(The same as Krejčí & Feistmantel 1885)

zbytky hub, četné jehlice [sponge remains, numerous spicules]

? Katzer (1892): Bei Jívina [Near Jívina].

*Acanthospongia siluriensis* M'Coy

? Počta (1898a): Ivina.

*Pyritonema Feistmanteli* Počta

? Počta (1898b): Ivina.

*Pyritonema Feistmanteli* Počta

Mergl (1986): Jivina (JI); Jivina.

*Leptembolon insons testis*

*Orbithele undulosa*

*Conotreta turricula*

*Celdobolus mirandus*

Mergl (2002): Jivina Hill; Jivina (Jivina Hill).  
*Leptembolon testis* (Barrande, 1879)  
*Orbithele undulosa* (Barrande, 1879)  
*Dactylotreta prisca* sp. n. (\*)  
*Celdobolus mirandus* (Barrande, 1879) (\*)

Updated list of fauna:

sponge spicules  
*Leptembolon testis* (Barrande, 1879)  
*Orbithele undulosa* (Barrande, 1879)  
*Dactylotreta prisca* Mergl, 2002  
*Celdobolus mirandus* (Barrande, 1879)

### Jívina – quarries

Geography: Abandoned quarries in a now forested area along the road (no. 117) from the village of Jívina to the town of Komárov, some 800 m north-north-east of the centre of Jívina. (Coordinates of the main quarry with the Mílina Formation read from map: N 49° 47' 56.5" E 13° 50' 17.0"). Cadastre of Jívina, District of Beroun.

Lithology: Red siltstone.

Remark: The fossiliferous Třenice and Mílina formations also occur at this locality. For details see Kraft *et al.* (2013, pp. 51–52; 2015, pp. 23–24).

Mergl (2002): Jivina (old quarries); Jivina (staré lomy – old quarries).

*Leptembolon testis* (Barrande, 1879)  
*Dactylotreta prisca* sp. n. (\*)  
*Celdobolus mirandus* (Barrande, 1879) (\*)

Updated list of fauna:

*Leptembolon testis* (Barrande, 1879)  
*Dactylotreta prisca* Mergl, 2002  
*Celdobolus mirandus* (Barrande, 1879)

### Kleštěnice – Jalový potok Brook

Geography: Natural exposures on the steep slope on the right bank (i.e. east the stream) of the Jalový potok Brook near the village of Kleštěnice, ~ 1.3 km south-west of the castle in Komárov. Cadastre of Kleštěnice, District of Beroun.

Lithology: Red siltstone and shale.

Remark: The fossiliferous Třenice and Mílina formations also occur at this locality. For details see Kraft *et al.* (2013, p. 52; 2015, pp. 24–25).

Mergl (1986): Komárov; Komárov (KO).

*Leptembolon insons testis*  
*Orbithele undulosa*  
*Celdobolus mirandus*

Mergl (2002): Kleštěnice (section along the Jalový potok creek); Komárov (section along the Jalový potok creek); Kleštěnice (profil podél Jalového potoka – section along the Jalový potok creek).

*Leptembolon testis* (Barrande, 1879)  
*Orbithele undulosa* (Barrande, 1879)  
*Dactylotreta prisca* sp. n. (\*)  
*Celdobolus mirandus* (Barrande, 1879) (\*)

Updated list of fauna:

*Leptembolon testis* (Barrande, 1879)  
*Orbithele undulosa* (Barrande, 1879)  
*Dactylotreta prisca* Mergl, 2002  
*Celdobolus mirandus* (Barrande, 1879)

### Komárov

Geography: A cumulative name for localities in surroundings of the town of Komárov, usually unspecified. In one case, an exact place near Komárov, which cannot be related to any other locality or fossil record, is placed on the list. District of Beroun.

Lithology: Siltstone.

Remark: The fossil site or, maybe, sites of the Mílina Formation also appeared under this cumulative name (Kraft *et al.* 2015, p. 25).

Jahn (1904a): Jjz od Komárova u cesty 400 (1 : 25,000)... v úhlí zatáčky... silnice ... ve větším lomu [SSW of Komárov near the elevation point 400 m (1 : 25,000) ... in the road curve ... in a larger quarry] (Note that the site is related to the elevation point in the map of the 3rd Military Survey); Komárov.

(Based on the lithotypes described in the text it is very probable that the following list published therein is a mixture of taxa collected in the Mílina Formation and the Olešná Member. It was not mentioned by Kraft *et al.* 2015. That is why it is quoted with reserve herein.)

*Barroisella transiens* Barr. sp.

*Barroisella insons* Barr. sp.

*Lingula miranda* Barr.

*Discina undulosa* Barr.

*Discina* n. sp.

*Obolella complexa* Barr. sp. (mentioned also as *Obolus?* (*Obolella*) *complexus* Barr.)

*Obolella* n. sp.

nejspíše *Obolella advena* Barr. sp. [probably]

nejspíše *Acrothele bohemica* Barr. sp. [probably]

Jahn (1904b): Südsüdwestlich von Komorau bei der Kote 400 (1 : 25.000) ...die Straße ... in dem Winkel dieser Biegung ... ein Aufschluß [SSW of Komorau near the elevation point 400 m (1 : 25,000) ... in the road curve ... in an exposure]. (The same remarks to the elevation point and the list of species as seen above are also relevant here.)  
*Barroisella transiens* Barr. sp.

*Barroisella insons* Barr. sp.

*Lingula miranda* Barr.

*Discina undulosa* Barr.

*Discina* n. sp.

*Obolella complexa* Barr. sp.

*Obolella* n. sp.

vielleicht *Obolella advena* Barr. sp. [probably]  
vielleicht *Acrothele bohemica* Barr. sp. [probably]

Koliha (1924): Komárov.

*Obolus complexus* Barrande

*Lingulella insons* (Barr.)

Kraft (1928): Jívina - Komárov; při silnici z Komárova do Sv. Dobrotivé, na levé straně stráňe [near the road from Komárov to Sv. Dobrotivá, on the left side of the slope]. (The location of this site is questionable. Deducing from the chapter title in the book it is situated in the area between or around Jívina and Komárov. The specification in the text shows that it can be the foot part of the eastern slope of Jívina Hill above the Jalový potok Brook rather than the locality Kleštěnice – Jalový potok Brook. However, because of the uncertainty of its location it is listed herein in the widely understood locality Komárov.)

*Obolus compl.* Barr. [the species name is an abbreviation of *complexus*]

Updated list of fauna: The lists above can include fossils from several sites in the Komárov area. Thus, it is purposeless to compile a single faunal list.

## Medový Újezd

Geography: Abandoned quarry on the south-western slope (Pl. 5, fig. 5) of the hill in the north-eastern part of the centre of the village of Medový Újezd, above the Medoújezdský potok Brook. (GPS coordinates: N 49° 46' 28.6" E 13° 43' 12.8".) Protected area of PP Medový Újezd. Cadastre of Medový Újezd, District of Rokycany.

Lithology: Red siltstone and shale.

Remark: The fossiliferous Třenice Formation also occurs at this locality. For details see Kraft *et al.* (2013, p. 56).

Klouček (1919): Medoújezd.

*Obolus complexus* Barr., velká i malá varieta [large and small variety]

Koliha (1924): Medový Újezd.

*Obolus complexus* Barrande

Kraft (1928): Medový Újezd.

*Obolus complexus*

Mergl (1981): Medový Újezd.

*Orbithele undulosa* (Barrande, 1879)

Havlíček (1982a): Medový Újezd.

*Celdobolus mirandus* (Barrande, 1879)

Mergl (2002): Medový Újezd (quarry); Medový Újezd (lom – quarry).

*Leptembolon testis* (Barrande, 1879)

*Orbithele undulosa* (Barrande, 1879)

*Dactyloretta prisca* sp. n. (\*)

*Celdobolus mirandus* (Barrande, 1879) (\*)

Updated list of fauna:

*Leptembolon testis* (Barrande, 1879)

*Orbithele undulosa* (Barrande, 1879)

*Dactyloretta prisca* Mergl, 2002

*Celdobolus mirandus* (Barrande, 1879)

## Medový Újezd – Hradiště

Geography: Outcrops in an abandoned, small, shallow quarry on the hill south-east of the village. Cadastre of Medový Újezd, District of Rokycany.

Lithology: Red siltstone.

Remark: This locality could be confused with that or those related to the hill of the same name near Stradonice (see below).

The fossiliferous Třenice Formation also occurs at this locality. For details see Kraft *et al.* (2013, p. 56).

Barrande, J. (1879): Hradischt.

*Lingula testis*. Barr.

*Lingula miranda*. Barr.

Jahn (1904a): Hradiště.

Based on a revision of type material the species of Barrande (1879) are only repeated as:

*Lingula miranda* Barr.

*Lingula testis* Barr.

Jahn (1904c): Hradiště.

The same approach as Jahn (1904a).

Koliha (1924): Hradiště.

*Lingulella insons* (Barr.)

Havlíček (1982a): Medový Újezd (Hradiště); Hradiště near Medový Újezd.

*Leptembolon insons testis* (Barrande, 1879)

*Celdobolus mirandus* (Barrande, 1879)

Mergl (2002): Medový Újezd (Hradiště; Hradischt in original spelling).

*Leptembolon testis* (Barrande, 1879)

Updated list of fauna:

*Leptembolon testis* (Barrande, 1879)

*Celdobolus mirandus* (Barrande, 1879)

### Mílina Hill

Geography: Abandoned quarries on the top and the western and north-western slope of the Mílina Hill, ~ 1.2 km south of the chapel in the village of Olešná. Cadastre of Olešná, District of Beroun.

Lithology: Reddish-brown siltstone and sandstone.

Remark: The fossiliferous Mílina Formation also occurs at this locality. For details see Kraft *et al.* (2015, pp. 25–27).

Barrande (1879): Milinsky Wrch, près Wolesschna [Milinsky Wrch Hill, near Wolesschna].

*Obolus? complexus* Barr.

Feistmantel (1885): Der Milineberg bei Wolesschna [Milina Hill near Wolesschna]; der Maliner Berge [Malinský Hill].

Spongien, Spongien-Reste, Skeletnadeln (Spiculae), Nadeln, Ordnung Hexactinellidae [Sponge, sponge remains, spicules, spicules, order Hexactinellidae].

Počta (1898a): Milínský vrch u Olešné [Milínský vrch Hill near Olešná].

*Pyritonema Feistmanteli* Počta

Počta (1898b): Milín.

*Pyritonema Feistmanteli* Počta

Jahn (1904a): Milínský Vrch u Olešné [Milínský Vrch Hill near Olešná]; Milínský (Malínský) vrch [Milínský (Malínský) vrch Hill].

Based on a revision of type material the species of Barrande (1879) are only repeated as:

*Obolus?* (*Obolella*) *complexus* Barr. (mentioned also as *Obolella complexa*)

Jahn (1904c): Milínský Vrch près Olešná [Milínský Vrch Hill near Olešná]; Malínský Vrch; Milín; Milínský (Malínský) Vrch.

The same approach as Jahn (1904a):

*Obolus?* (*Obolella*) *complexus* Barr. (mentioned also as *Obolella complexa*)

Klouček (1915): Mílina.

*Obolella complexa* Barr.

Kettner (1916a): Vrch Mílina (563) jižně od Olešné [Mílina Hill (elevation point 563) south of Olešná].

*Obolella complexa*

jehlice houbové [sponge spicules]

*Barroisella insons*

*Lingula* sp.

Klouček (1917): Milina, s. z. lom [north-western quarry].

*Obolella complexa* Barr.

*Orthis* n. sp.?

Koliha (1924): Milina.

*Obolus complexus* Barrande

*Lingulella insons* (Barr.)

Klouček (1924): Mílina u Olešné [Milina near Olešná].

orthiska asi druhu *Orthis Slavíki* Klou. blízká [*Orthis* probably close to *Orthis Slavíki* Klou.]

Kraft (1928): Vrch Milina [Milina Hill].

*Barroisella insons*

*Obolus minimus*

*Acrotreta* sp.

drobné jehličky hub [minute sponge spicules]

Mergl (1981): Mílina.

*Orbithele undulosa* (Barrande, 1879)

Havlíček (1982a): Mílina.

*Leptembolon insons testis* (Barrande, 1879)

*Lingulella lata* Koliha, 1924 (One specimen from this locality is figured under the erroneous name *Lingulella lata* (Koliha) but the locality is not listed in the paragraph on occurrences in the systematic part.)

Mergl (1986): Mílina; Mílina (MI).

*Leptembolon insons testis*

*Orbithele undulosa*

*Celdobolus mirandus*

*Conotreta turricula*

*Conotreta grandis*

Mergl (2002): Mílina Hill; Mílina (quarry); Mílina (Mílina Hill).

*Leptembolon testis* (Barrande, 1879)

*Elliptoglossa celdai* Mergl, 1995

*Orbithele undulosa* (Barrande, 1879)

*Dactylotreta prisca* sp. n. (\*)

*Celdobolus mirandus* (Barrande, 1879) (\*)

Mergl & Duršpek (2006): Mílina (quarry); Mílina. Hexactinellida gen. et sp. indet. C

Updated list of fauna:

*Cyathophycus* sp.

*Leptembolon testis* (Barrande, 1879)

*Elliptoglossa celdai* Mergl, 1995

*Orbithele undulosa* (Barrande, 1879)

*Dactyloreta prisca* Mergl, 2002

*Celdobolus mirandus* (Barrande, 1879)

*Jivinella* sp.

### Olešná – quarry

Geography: Old, abandoned quarry in the small forested area along the eastern side of the Olešná – Komárov road (no. 117), 350 m north-north-east of the chapel in the village of Olešná. (Coordinates read from map: N 49° 47' 06.0" E 13° 48' 52.0"). Cadastre of Olešná, District of Beroun.

Lithology: Red siltstone.

Remark: The fossiliferous Mílina Formation also occurs at this locality. For details see Kraft *et al.* (2015, pp. 27–33).

Klouček (1915): Olešná.

*Obolella complexa* Barr.

Kettner (1916a): Olešná; východnější lom u Olešné [eastern quarry near Olešná].

*Obolella complexa* Barr.

Klouček (1917): Olešná.

*Obolella complexa* Barr.

*Obolella complexa* Barr., větší varieta [larger variety]

Koliha (1924): Olešná.

*Obolus complexus* Barrande

*Obolus Nováki* (Klouček)

*Lingulella insonis* (Barr.) var. *lata* n. var.

Kraft (1928): Olešná (za Olešnou po pravé straně silnice do Jiviny, na svahu vršku /k. 510/, lom bližší k obci) [behind Olešná, on the right side of the road to Jivina, on the slope of the hill (elevation point 510 m), the quarry closer to the village].

*Baroisella insonis*

*Orbiculoides undulosa*

*Obolus complexus*

jehlice hub [sponge spicules]

? Heritsch (1928): Olešná.

*Obolus complexus*

*Lingulella insonis*

*Orbiculoides undulosa*

(The mentioned species are referred to the “Schichten von Olešná” [Beds from Olešná] which indicates the stratigraphic level. However, it can be also understood in the geographic sense referring to the typical locality.)

? Koliha (1937): Olešná. (It was mentioned as Schistes d’Olešná [Olešná Shale]).

*Obolus complexus*

*Ob. kloučekii*

*Lingulella insonis*

*Orbiculoides sodalis undulosa*

etc.

Havlíček (1982a): Olešná.

*Lingulella lata* Koliha, 1924

*Elkanisca klouceki* (Koliha, 1918)

*Celdobolus mirandus* (Barrande, 1879)

Mergl (1986): Olešná; Olešná (OL).

*Leptembolon insonis testis*

*Orbithele undulosa*

*Celdobolus mirandus*

*Schmidtites* sp.

*Conotreta turricula*

Mergl (1995): Olešná (quarry).

*Teneobolus gracilis* sp. n.

Mergl (2002): Olešná (quarry); Olešná (quarry, unit F); Olešná (lom – quarry).

*Leptembolon testis* (Barrande, 1879)

*Lingulella lata* Koliha, 1924

*Teneobolus gracilis* Mergl, 1995

*Orbithele undulosa* (Barrande, 1879)

*Dactyloreta prisca* sp. n. (\*)

*Celdobolus mirandus* (Barrande, 1879)

*Eosiphonotreta krafti* (Růžička, 1927)

Mergl & Duršpek (2006): Olešná (quarry).

Hexactinellida gen. et sp. indet. A

Hexactinellida gen. et sp. indet. C

Mergl (2008): Abandoned small quarry E of the Olešná village; small quarry near Olešná village; Olešná.

*Cyathophycus* sp.

*Dactyloreta prisca* Mergl, 2002

*Celdobolus mirandus* (Barrande, 1879)

Updated list of fauna:

*Cyathophycus* sp.

*Leptembolon testis* (Barrande, 1879)

*Lingulella lata* Koliha, 1924

*Teneobolus gracilis* Mergl, 1995  
*Elkanisca klouceki* (Koliha, 1918)  
*Orbithele undulosa* (Barrande, 1879)  
*Dactylotreta prisca* Mergl, 2002  
*Celdobolus mirandus* (Barrande, 1879)  
*Eosiphonotreta krafti* (Růžička, 1927)

### Praha – Kunratický hrádek

Geography: Small outcrops in the eastern part of the moat of Nový Hrádek Castle (called also Nový hrad or Kunratický Hrádek), on the eastward slope below the ruins, near the bridge on the access road from Kunratice. Cadastre of Kunratice, District of Hlavní město Praha [Capital city Prague].  
Lithology: Pale red weathered siltstone, fine-grained violet greywacke with laminae of coarse detritus.

Havlíček (1982b): Exposure at Nový Hrádek and on the slope above Kunratický brook.

*Conotreta turricula* Havlíček

Mergl, M. (2002): Praha-Kunratický hrádek; Praha-Kunratický Hrádek.

*Leptembolon testis* (Barrande, 1879)  
*Orbithele undulosa* (Barrande, 1879)  
*Dactylotreta prisca* sp. n.

Updated list of fauna:

*Leptembolon testis* (Barrande, 1879)  
*Orbithele undulosa* (Barrande, 1879)  
*Dactylotreta prisca* Mergl, 2002

### Rokycany – Kotel Hill

Geography: Old shallow pit iron mine; small pits located on the forested north slope of the Kotel Hill, ~ 200 m north-north-east of the saddle between the Kotel and Kotlík hills, between historical and current (no. 11732) roads from Rokycany to Veselá. (GPS coordinates of the centre of the pit field: N 49° 42' 52.4" E 13° 36' 28.2").  
Cadastre of Kamenný Újezd u Rokycan, District of Rokycany.

Lithology: Red siltstone.

? Feistmantel (1885): Rokycany.

Spongien, Spongien-Reste, Skelettnadeln (Spiculae), Nadeln, Ordnung Hexactinellidae [Sponge, sponge remains, spicules, spicules, order Hexactinellidae].

? Počta (1898a): Rokycany.

*Pyritonema Feistmanteli* Počta

? Počta (1898b): Rokycany.

*Pyritonema Feistmanteli* Počta

Purkyně (1914): Kotel, ohyb silnice vedoucí z Rokycan do Veselé, ještě severní svah a velmi blízko čáry spojující vrchol Kotle s hřebenem Kotlíku [Kotel, curve of the road from Rokycany to Veselá, further north slope, and very close to the line interconnecting the top of the Kotel Hill and range of the Kotlík Hill].

*Obolella* sp. (*complexa*?)

*Obolella* sp. (příbuzná *O. advena*) [related to *O. advena*]

*Discina undulosa*

*Barroisella insons* (mladý exemplář) [young specimen]

*Lingula aff. miranda*

Kettner (1916b): Kotel.

*Obolella* sp. (*complexa*?)

*Discina undulosa*

*Barroisella insons*

*Lingula aff. miranda*

*Obolella* sp. (příbuzná *O. advena*) [related to *O. advena*]

Koliha (1924): Kotel u Rokycan.

*Obolus complexus* Barrande

*Lingulella insons* (Barr.)

Kraft (1928): Kotel u Rokycan.

*Obolus complexus*

Havlíček, V. (1980): Kotel Hill near Rokycany.

*Conotreta turricula* sp. n.

Mergl (2002): Kotel Hill; Kotel (Kotel Hill).

*Leptembolon testis* (Barrande, 1879)

*Lingulella lata* Koliha, 1924

*Elliptoglossa celdai* Mergl, 1995

Updated list of fauna:

sponge spicules

*Leptembolon testis* (Barrande, 1879)

*Lingulella lata* Koliha, 1924

*Elliptoglossa celdai* Mergl, 1995

*Orbithele undulosa* (Barrande, 1879)

*Dactylotreta prisca* Mergl, 2002

*Celdobolus mirandus* (Barrande, 1879)

### Stradonice

Geography: Exact locality unknown. Unspecified locality or localities near Stradonice and Nová Huť (a part of Nižbor nowadays), ~ 6 km north-west of Beroun city centre. Cadastres of Stradonice u Nižboru and Nižbor, District of Beroun.

Lithology: Red siltstone.

Remark: We mention two references under this cumulative name. It may be that both represent a single forgotten fossil site. If there are two historical sites they were situated nearby, both probably on the slope of Hradiště Hill.

Feistmantel (1885): Der Berg Hradischt bei Nischburg [Hradischt Hill near Nischburg]; der Berg Hradischt (bei Nischburg) [Hradischt Hill (near Nischburg)].

Spongien, Spongien-Reste, Skeletnadeln (Spiculae), Nadeln, Ordnung Hexactinellidae [Sponge, sponge remains, spicules, spicules, order Hexactinellidae].

Krejčí & Feistmantel (1885): Hradiště.

The authors referred to Feistmantel (1885) and repeated the following information:

Reste von Spongien, zahlreichen Nadeln [sponge remains, numerous spicules]

Krejčí & Feistmantel (1890): Hradiště.

(The same as Krejčí & Feistmantel 1885)

zbytky hub, četné jehlice [sponge remains, numerous spicules]

Katzer (1892): Hradiště.

*Acanthospongia siluriensis* M'Coy

Počta (1898a): Vrch Hradiště u Nové Huti.

*Pyritonema Feistmanteli* Počta

Počta (1898b): Hradiště.

*Pyritonema Feistmanteli* Počta

Kettner (1916a): Stradonice u Nové Huti [Stradonice near Nová Huť].

*Obolella complexa*  
(*Obolella*) *advena*

Koliha (1924): Stradonice u Nové Huti.

*Obolus complexus* Barrande

Updated list of fauna:

sponge spicules

*Celdobolus mirandus* (Barrande, 1879)

### Strašice – centre

Geography: Temporary excavations in the centre of the village, at the main street between the school building (house no. 531) and the post office (no. 566). Cadastre of Strašice, District of Rokycany.

Lithology: Red-brown siltstone.

Mergl (2002): Strašice (E margin); Strašice (town); Strašice (východní okraj obce – E margin).

*Celdobolus mirandus* (Barrande, 1879)

*Elliptoglossa celdai* Mergl, 1995

Updated list of fauna:

*Elliptoglossa celdai* Mergl, 1995

*Celdobolus mirandus* (Barrande, 1879)

### Strašice – east

Geography: Road-cut of and surrounding fields around the former “panel” army road in the fields (Pl. 5, fig. 2) near the north-eastern edge of the village of Strašice, ~ 950 m north-east of the St. Lawrence (sv. Vavřinec) Church, ~ 400 m south-east of the crossing of the army road and the road from Strašice to Olešná (no. 117). (GPS coordinates: N 49° 44' 43.4" E 13° 46' 16.6".) Cadastre of Strašice, District of Rokycany.

Lithology: Red-brown siltstone.

Mergl (1981): Strašice.

*Orbithele undulosa* (Barrande, 1879)

Havlíček (1982a): Strašice; Strašice (boring).

(According to personal experience of M.M., V. Havlíček predominantly studied the material, referred to the location of Strašice, from the outcrop at Strašice – east. It is why we list the reference here even if we are not able to identify a boring and distinguish the material from it.)

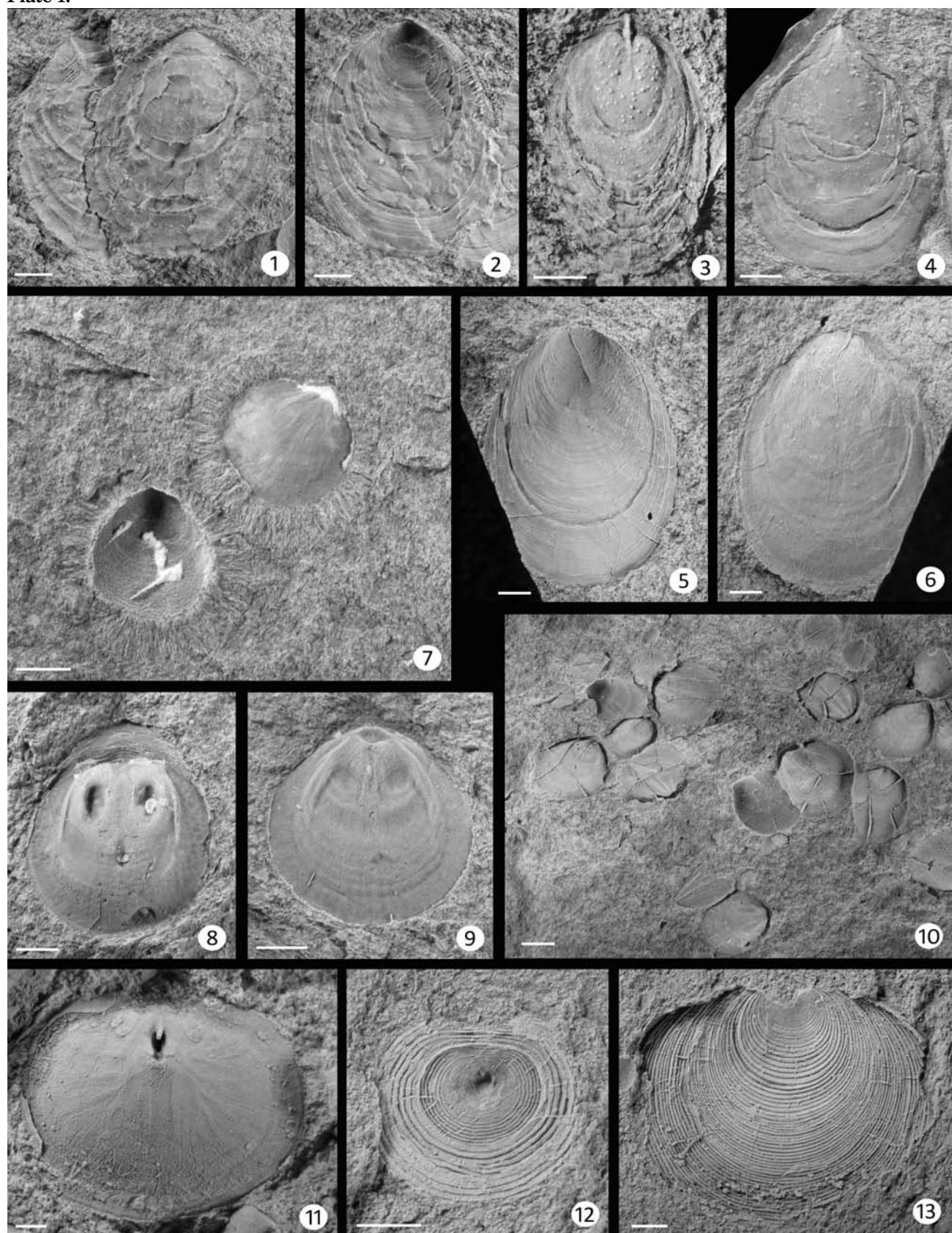
*Leptembolon insonis testis* (Barrande, 1879)

*Celdobolus mirandus* (Barrande, 1879)

Plate 1. The most common lingulate brachiopods of the Olešná Member, Klabava Formation.

1, 2 – *Lingulella lata* Koliha, 1924: 1 – ventral and dorsal valve, internal mould, 2 – its counterpart, PCZCU 542, Strašice – field near Sv. Vavřinec. 3 – *Teneobolus gracilis* Mergl, 1995: ventral valve, internal mould, MM512, Těně – west. 4–6 – *Leptembolon testis* (Barrande, 1879): 4 – ventral valve, internal mould, PCZCU 537+, Strašice; 5, 6 – dorsal valve, internal mould and its counterpart, PCZCU 2132, Strašice – east. 7–10 – *Celdobolus mirandus* (Barrande, 1879): 7 – two specimens showing spinose ornament around shells, internal and external moulds, PCZCU 678-, Strašice – field near Sv. Vavřinec; 8 – dorsal valve, internal mould, PCZCU 673, Strašice – field near Sv. Vavřinec; 9 – ventral valve, internal mould, PCZCU 670+, Strašice – field near Sv. Vavřinec; 10 – cluster of valves, PCZCU 2132, Strašice – east. 11, 12 – *Orbithele undulosa* (Barrande, 1879): 11 – ventral valve, internal mould, PCZCU 645+, Těně – west; 12 – ventral valve, external mould, PCZCU 2134, Strašice – east. 13 – *Elkanisca kloucekii* (Koliha, 1918): ventral valve, external mould, PCZCU 2135, Horní Kvaň – field. Scale bars equal 1 mm.

Plate 1.



Mergl (1986): Strašice (ST); Strašice.

*Celdobolus mirandus*

*Leptembolon insons testis*

*Orbithele undulosa*

*Conotreta turricula*

Mergl (1995): Strašice (východ).

*Elliptoglossa celdai* sp. n.

Mergl (2002): Strašice (east); Strašice (východ – east).

*Leptembolon testis* (Barrande, 1879)

*Elliptoglossa celdai* Mergl, 1995

*Celdobolus mirandus* (Barrande, 1879)

Mergl & Duršpek (2006): Strašice (east); Strašice, east.

Hexactinellida gen. et sp. indet. A

*Anakrusa feistmanteli* (Počta, 1898)

Updated list of fauna:

*Anakrusa feistmanteli* (Počta, 1898)

*Cyathophycus* sp.

*Leptembolon testis* (Barrande, 1879)

*Elliptoglossa celdai* Mergl, 1995

*Orbithele undulosa* (Barrande, 1879)

*Dactylotreta prisca* Mergl, 2002

*Celdobolus mirandus* (Barrande, 1879)

*Drepanodus* sp.

*Drepanoistodus* sp.

### Strašice – field near St. Vavřinec

Geography: Temporary excavations, limited outcrops and loose stones in the field near the road from the centre of the village to the St. Lawrence

(sv. Vavřinec) Church, south-west of the church, and the field east of the church. Cadastre of Strašice, District of Rokycany.

Lithology: Red-brown siltstone.

Remark: The fossils collected in the fields near the St. Lawrence (sv. Vavřinec) Church and the cemetery have been referred to the single, widely understood locality. We can specify two different sites inside this area:

a) The field west of the road from the centre of Strašice to the church, the margin of which is 200 m south-west of the church. A temporary excavation was dug out there in past. The bedrock is very shallow in its north-eastern corner and along its eastern limit (Pl. 5, fig. 1). Thus, it can be partly exposed after ploughing and loosed stones are concentrated at that place (GPS coordinates: N 49° 44' 20.0" E 13° 45' 33.9".) The references of Mergl (1994, 1995, 1997a and 2002) below are related to this part of the locality.

b) The marginal zone of the field east of the church (GPS coordinates: N 49° 44' 25.3" E 13° 45' 41.0" and around.) The sponge material described by Mergl & Duršpek (2006) was collected in that part.

Mergl (1994): Strašice, excavations near St. Vojtěch Church.

*Elkanisca obesa* (Havlíček, 1980)

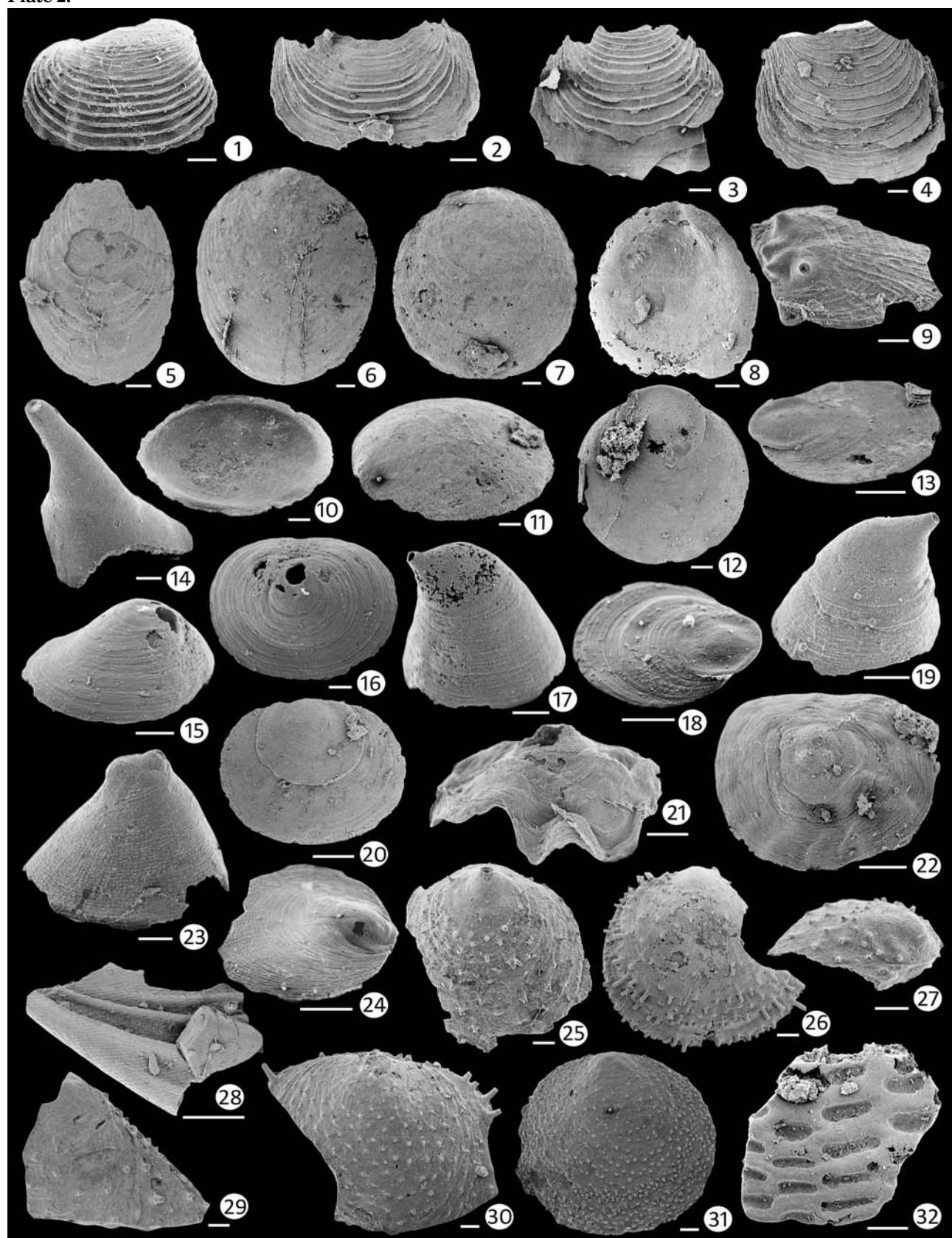
Mergl (1995): Strašice (temporary excavation); Strašice, temporary excavation in a field west to the Vavřinec Church; Strašice.

*Tenebolas gracilis* sp. n.

Plate 2. Organophosphatic microbrachiopods of the Olešná Member, Klabava Formation from the locality Těně – west (sandstone, bed H of Mergl 1986).

1–4 – *Rowellella distincta* Bednarzyk et Biernat, 1978: incomplete dorsal valves, exterior, 1 – PCZCU 615, 2 – PCZCU 619, 3 – PCZCU 618, 4 – PCZCU 614. 5 – *Tenebolas gracilis* Mergl, 1995: juvenile ? dorsal valve, exterior, PCZCU 551. 6, 10 – *Elliptoglossa celdai* Mergl, 1995: 6 – dorsal valve, exterior, PCZCU 588; 10 – ventral valve, interior, PCZCU 595. 7, 8, 11 – *Pidiobolus minimus* Mergl, 1995: 7, 8 – dorsal valve, exterior, PCZCU 608; 11 – ventral valve, interior, PCZCU 606. 9 – *Orbithele undulosa* (Barrande, 1879): juvenile dorsal valve, exterior, PCZCU 647. 12, 13, 17–19 – *Pomeraniotreta holmeri* Mergl, 1995: 12 – dorsal valve, exterior, PCZCU 771; 13 – dorsal valve, exterior, PCZCU 774; 17 – ventral valve, exterior PCZCU 772; 18 – dorsal valve, exterior, PCZCU 775; 19 – juvenile ventral valve, exterior, PCZCU 767. 14 – Acrotretidae gen. et sp. indet.: incomplete ventral valve, PCZCU 758. 15, 16, 20 – *Mammata retracta* (Popov 1980): 15, 16 – ventral valve, exterior, PCZCU 765; 20 – juvenile dorsal valve, exterior, PCZCU 762. 21, 22 – *Eoconulus gemmatus* Mergl, 1995: 21 – dorsal valve, exterior, PCZCU 777; 22 – dorsal valve, exterior, PCZCU 778. 23, 24 – *Dactylotreta prisca* Mergl, 2002: 23 – ventral valve, exterior, PCZCU 734; 24 – dorsal valve, exterior, PCZCU 2136. 25–27 – *Siphonotretella filipi* Mergl, 2002: 25 – ventral valve, exterior, PCZCU 697; 26 – dorsal valve, exterior, PCZCU 698; 27 – juvenile dorsal valve, exterior, PCZCU 700. 28 – *Elkanisca kloouceki* (Koliha, 1918): shell fragment with microornament, PCZCU 2137. 29 – *Eosiphonotreta krafti* (Růžička, 1927): shell fragment, PCZCU 703. 30–31 – *Celdobolus mirandus* (Barrande, 1879): 30 – ventral valve, exterior, PCZCU 683; 31 – juvenile dorsal valve, exterior, PCZCU 681. 32 – *Koligium* sp.: shell fragment, PCZCU 714. Scale bars equal 0.1 mm.

Plate 2.



Mergl (1997a): Strašice (temporary excavation); Strašice (excavation); Strašice.

*Lingulella lata* Koliha, 1924

*Celdobolus mirandus* (Barrande)

undeterminable acrotretids

*Teneobolus gracilis* Mergl

*Elkanisca obesa* (Havlíček)

*Elliptoglossa celdai* Mergl

*Siphonotretella* sp.

*Orbithele undulosa* (Barrande)

Mergl (2002): Strašice (field near St. Vojtěch); Strašice (temporary excavation in a field W to the St. Vojtěch Church); Strašice (field); Strašice (pole u sv. Vojtěcha – field near St. Vojtěch).

*Leptembolon testis* (Barrande, 1879)

*Lingulella lata* Koliha, 1924

*Teneobolus gracilis* Mergl, 1995

*Elkanisca obesa* (Havlíček, 1980)

*Orbithele undulosa* (Barrande, 1879)

*Celdobolus mirandus* (Barrande, 1879)

*Siphonotretella filipi* sp. n.

Mergl & Duršpek (2006): Strašice (field near St. Vojtěch); Strašice (St. Vojtěch); Strašice, St. Vojtěch.

Hexactinellida gen. et sp. indet. A

*Anakrusa feistmanteli* (Počta, 1898)

Updated list of fauna:

*Anakrusa feistmanteli* (Počta, 1898)

*Cyathophycus* sp.

*Leptembolon testis* (Barrande, 1879)

*Lingulella lata* Koliha, 1924

*Teneobolus gracilis* Mergl, 1995

*Elliptoglossa celdai* Mergl, 1995

*Elkanisca klouceki* (Koliha, 1918)

*Orbithele undulosa* (Barrande, 1879)

*Celdobolus mirandus* (Barrande, 1879)

*Siphonotretella filipi* Mergl, 2002

## Svárov

Geography: Exact locality unknown, probably cumulative name for several exposures. Probably cadastre of Svárov, District of Kladno.

Lithology: Silstone.

Remark: The fossiliferous Třenice Formation also occurs at this locality. For details see Kraft *et al.* (2013, p. 57).

Barrande, J. (1879): Swarow; Svarov.

*Obolus?* *advena*. Barr.

*Obolus?* *minimus*. Barr.

*Discina undulosa*. Barr.

*Lingula insons*. Barr.

Wentzel (1891): Svaro v.

*Discina undulosa*. Barr.

*Lingula insons*. Barr.

Jahn (1904a): Svárov.

Based on a revision of type material the species of Barrande (1879) are only repeated as:

*Discina undulosa* Barr.

*Lingula (Barroisella) insons* Barr. (mentioned also as *Barroisella insons*)

*Obolus (Obolella) advena* Barr. (mentioned also as *Obolella advena*)

*Obolus minimus* Barr.

Jahn (1904c): Svárov.

The same approach as Jahn (1904a):

*Discina undulosa* Barr.

*Lingula (Barroisella) insons* Barr. (mentioned also as *Barroisella insons*)

*Obolus (Obolella) advena* Barr. (mentioned also as *Obolella advena*)

*Obolus minimus* Barr.

Klouček (1920): Svárov, podél nové silnice u táhlého lomu [along the road near an elongated quarry]. (It probably represented the quarry situated ~ 900 m south-south-west of the pond in Svárov on the map by Vála a Helmhaber 1872, 1874.)

*Obolus complexus* Barr.

*Ob. ancillus*

Koliha (1924): Svárov.

*Obolus complexus* Barrande

*Lingulella insons* (Barr.)

Havlíček (1982a): Svárov.

*Leptembolon insons testis* (Barrande, 1879)

Mergl, M. (2002): Svárov.

*Leptembolon testis* (Barrande, 1879)

*Elliptoglossa celdai* Mergl, 1995

*Dactyloreta prisca* sp. n.

*Celdobolus mirandus* (Barrande, 1879)

Updated list of fauna:

*Leptembolon testis* (Barrande, 1879)

*Elliptoglossa celdai* Mergl, 1995

*Orbithele undulosa* (Barrande, 1879)

*Dactyloreta prisca* Mergl, 2002

*Celdobolus mirandus* (Barrande, 1879)

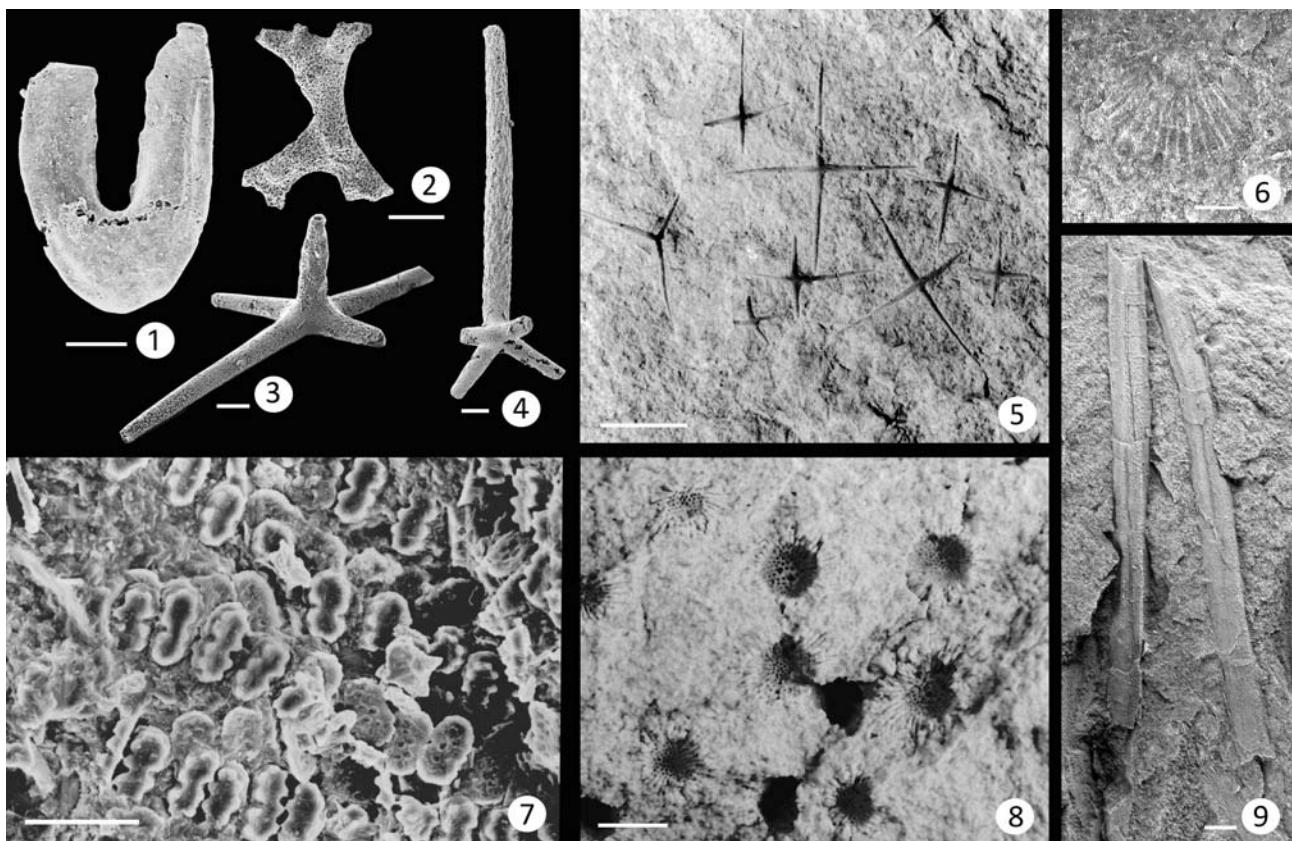


Plate 3. Other fossils of the Olešná Member, Klabava Formation.

1 – Paraconodont *Westergaardodina* cf. *bicuspidata* Müller, 1959: PCZCU 1671, Těně – west. 2 – Dendroclone spicule of lithistid sponge *Lithistida* gen. et sp. indet.: PCZCU 1545, Těně – west. 3–5 – Hyalosponge *Cyathophycus* sp.: 3 – isolated pentactine, PCZCU 1542, Těně – west, 4 – PCZCU 1523, Těně – west, 5 – spicules on bedding plane, external moulds, PCZCU 1547, Strašice – east. 6 – Eoorthid brachiopod *Jivinella* sp.: ventral valve, PCZCU 2138, Těně – west. 7 – “*Palaeoscolex*” *tenensis* Kraft et Mergl, 1989: detail of sclerites, MM 199, Těně – west. 8 – ? Radiolaria *Anakrusa feistmanteli* (Počta, 1898) on bedding plane: external moulds, PCZCU 1549, Strašice – field near St. Vavřinec. 9 – Problematic tubular phosphatic fossil *Torerella* ? sp. on bedding plane: PCZCU 2139, Těně – west. Scale bars equal 0.1 mm.

### Svatá – Vraní skála

**Geography:** The historical locality of an unknown exact location. All fossils were collected by J. Barrande, subsequently revised with occurrence referred to the original designation. Chlupáč (2002) related the original name Rabenberg (see below) tentatively to unidentified outcrops on the Vraní skála Hill, the low forested range between the villages of Hředle and Svatá. Cadastre of Svatá, District of Beroun.

**Lithology:** Red siltstone.

Barrande (1879): Rabenberg [Raven Hill].

*Lingula transiens*. Barr.

*Obolus?* *complexus*. Barr.

*Lingula ancilla*. Barr.

Jahn (1904a): Krkavčí hora; Krkavčí Hora [Raven Hill].

Based on a revision of type material the species of Barrande (1879) are only repeated as:

*Lingula ancilla* Barr.

*Lingula (Barroisella) transiens* Barr. (mentioned also as *Barroisella transiens*)

*Obolus?* (*Obolella*) *complexus* Barr. (mentioned also as *Obolella complexa*)

Jahn (1904c): Krkavčí Hora (= Rabenberg) [Raven Hill]; Krkavčí Hora.

The same approach as Jahn (1904a):

*Lingula ancilla* Barr.

*Lingula (Barroisella) transiens* Barr. (mentioned also as *Barroisella transiens*)

*Obolus?* (*Obolella*) *complexus* Barr. (mentioned also as *Obolella complexa*)

Koliha (1924): Krkavčí hora [Raven Hill].

*Obolus complexus* Barrande

*Lingulella insons* (Barr.)

Havlíček (1982a): Krkavčí hora.

*Leptembolon insons testis* (Barrande, 1879)

Updated list of fauna:

*Leptembolon testis* (Barrande, 1879)

*Celdobolus mirandus* (Barrande, 1879)

### Svatá Dobrotivá

Geography: Not specified locality or localities in Svatá Dobrotivá, the part of the village of Zaječov. One of them is apparently Zaječov – quarry near the school building (see below) but it may include exposures near the monastery and possibly also loose boulders in the topsoil of the surrounding fields. Cadastre of Zaječov, District of Beroun.

Lithology: Red-brown siltstone.

Remark: The fossiliferous locality or localities of the Mílina Formation also appeared under this cumulative name (Kraft *et al.* 2015, pp. 33–34).

Barrande (1879): Sta. Benigna.

*Discina undulosa*. Barr.

Feistmantel (1885): St. Benigna.

Spongien, Spongien-Reste, Skeletnadeln (Spiculae), Nadeln, Ordnung Hexactinellidae [Sponge, sponge remains, spicules, spicules, order Hexactinellidae].

Krejčí & Feistmantel (1885): St. Benigna.

The authors referred to Feistmantel (1885) and repeated the following information:

Reste von Spongien, zahlreichen Nadeln [sponge remains, numerous spicules]

Krejčí & Feistmantel (1890): Sv. Dobrotivá.

(The same as Krejčí & Feistmantel 1885)  
zbytky hub, četné jehlice [sponge remains, numerous spicules]

Wentzel (1891): St. Benigna.

*Discina undulosa*. Barr.

Katzer (1892): St. Benigna.

*Acanthospongia siluriensis* M'Coy

Počta (1898a): Sv. Dobrotivá.

*Pyritonema Feistmanteli* Počta

Počta (1898b): Sct. Benigna; St. Benigna.

*Pyritonema Feistmanteli* Počta

Jahn (1904a): Sv. Dobrotivá.

Based on a revision of type material the species of Barrande (1879) are only repeated as:

*Discina undulosa* Barr.

*Lingula (Barroisella) insons* Barr. (mentioned also as *Barroisella insons*)

Jahn (1904c): St. Benigna.

The same approach as Jahn (1904a):

*Discina undulosa* Barr.

*Lingula (Barroisella) insons* Barr. (mentioned also as *Barroisella insons*)

? Kettner (1916a): Sv. Dobrotivá.

*Obolella complexa* (It is not possible to decide unequivocally if the author refers to a find of the species or only to the stratigraphic level typical by the species.)

Mergl, M. (1981): Svatá Dobrotivá.

*Orbithele undulosa* (Barrande, 1879)

Mergl (2002): Zaječov (Svatá Dobrotivá) (Sta. Benigna in original spelling); Zaječov (Svatá Dobrotivá).

*Orbithele undulosa* (Barrande, 1879)

Mergl & Duršpek (2006): Zaječov (Svatá Dobrotivá); Zaječov.

Hexactinellida gen. et sp. indet. A

Hexactinellida gen. et sp. indet. C

*Anakrusa feistmanteli* (Počta, 1898)

Updated list of fauna:

*Anakrusa feistmanteli* (Počta, 1898)

*Cyathophycus* sp.

*Orbithele undulosa* (Barrande, 1879)

### Těně – road-cut

Geography: Exposure in the cut of the road from Těně to Cheznovice (no. 11719) north-west of the village, ~ 450 m north-west of the chapel in the village. We suppose that nearby was a small quarry in past. Cadastre of Těně, District of Rokycany.

Lithology: Red greywacke and siltstone.

Kettner (1916a): Těně; sz. od Tění u cesty vedoucí ku strašické silnici, malý lom po levé straně cesty mezi kotami 549 a 517 [north-west of Těně near a path leading to the road to Strašice, a small quarry on the left side of the path between the elevation points 549 and 517. (Note that the elevation points are in the map of the so-called Third Military Survey, 1877–1880, 1 : 25,000.).]

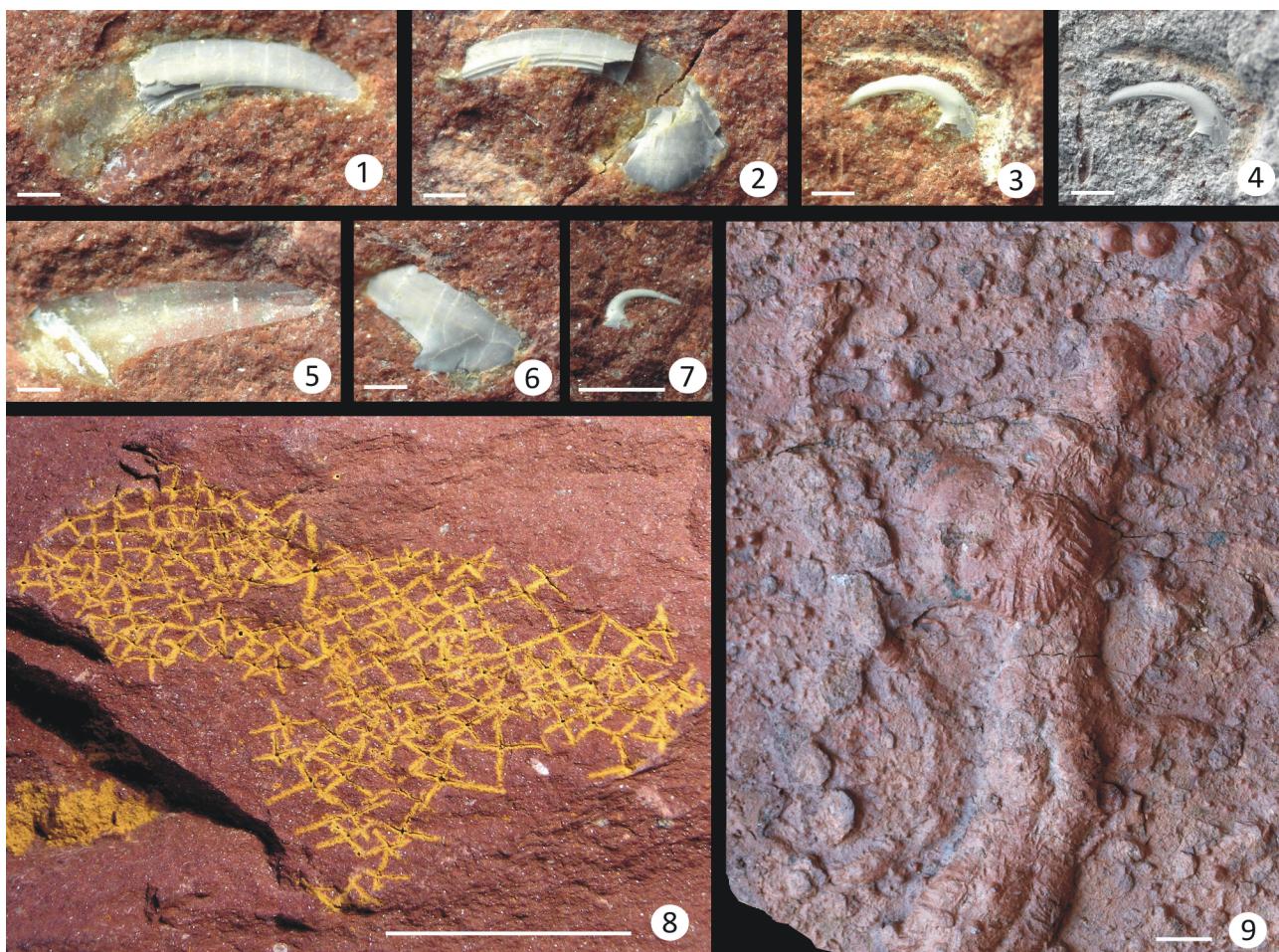


Plate 4. Other fossils of the Olešná Member.

1–7 – Euconodonts: 1, 2 – *Drepanoistodus* sp., PCZCU 2139, PCZCU 2140; 3, 4, 7 – *Drepanodus* sp., uncoated (3, 4), uncoated (7), PCZCU 2141, PCZCU 2242; 5, 6 – *Drepanoistodus* sp., PCZCU 2143, PCZCU 2144, all Strašice – east. 8 Hyalosponge *Cyathophycus* sp.: part of the body, NM L 39308, Olešná – quarry. 9 Trace fossil *Cruziana* isp.: PCZCU 2146, Zaječov – Jalový potok Brook. Scale bars equal 0.5 mm (1–7), and 10 mm (8, 9); Uncoated except of fig. 4.

*Obolus complexa*

*Obolus minimus*

aj. [and others]

Koliha (1924): Těně. (Although mentioned under the name of the village the exact locality is determined as referred to Kettner 1916a.)

*Obolus complexus* Barrande

Kraft (1928): Těně; po pravé straně cesty vedoucí do Těně ze silnice strašické, mezi k. 549 a 517 [on the right side of the road to Těně from Strašice road, between the elevation points 549 and 517]. (For specification see above.)

*Obolus complexus*

*Ob. minimus*

Mergl (1986): Těně – sever (TN); Těně-sever.

*Leptembolon insonis testis*

*Orbithele undulosa*

*Conotreta turricula*

*Celdobolus mirandus*

Mergl (2002): Těně (road cut); Těně (silniční zářez – road cut).

*Leptembolon testis* (Barrande, 1879)

*Celdobolus mirandus* (Barrande, 1879)

Updated list of fauna:

*Leptembolon testis* (Barrande, 1879)

*Celdobolus mirandus* (Barrande, 1879)

### Těně – village

Geography: Temporary excavations in the sawmill premise in the north-western edge of the village. Cadastre of Těně, District of Rokycany.

Lithology: Red greywacke and siltstone.

Mergl (2002): Těně (village); Těně (obec – village).

*Leptembolon testis* (Barrande, 1879)

*Orbithele undulosa* (Barrande, 1879)

*Celdobolus mirandus* (Barrande, 1879)

Mergl & Duršpek (2006): Těně (village).

Hexactinellida gen. et sp. indet. A

Updated list of fauna:

*Cyathophycus* sp.

*Leptembolon testis* (Barrande, 1879)

*Orbithele undulosa* (Barrande, 1879)

*Celdobolus mirandus* (Barrande, 1879)

### Těně – west

Geography: Exposure on the top of a low, flat knoll (Pl. 5, figs 3, 4) near the Strašice – Těně dirt road, 550 m west of the chapel in the village of Těně. (GPS coordinates: N 49° 45' 02.8" E 13° 47' 11.4".) Cadastre of Těně, District of Rokycany.

Lithology: Red-brown siltstone and shale.

Remark: The fossiliferous Mílina Formation also occurs at this locality. For details see Kraft *et al.* (2015, p. 34).

Havlíček (1982a): Těně.

*Leptembolon insonis testis* (Barrande, 1879)

*Celdobolus mirandus* (Barrande, 1879)

Mergl (1986): Těně – západ [Těně – west]; Těně – západ (TE); Těně-západ.

*Leptembolon insonis testis*

*Orbithele undulosa*

*Celdobolus mirandus*

*Elkanisca klouceki*

*Rowellella* sp.

*Schmidtites* sp. (in the text mentioned as undescribed, minute obolids (similar to *Schmidtites*))

*Jivinella slaviki*

*Palaeoscolex* sp.

*Conotreta turricula*

obolids indet. (obolids should be correct)

*Conotreta grandis*

Kraft & Mergl (1989): Těně.

"*Palaeoscolex*" *tenensis* sp. n. (Mentioned erroneously in explanation of pl. 1 as "*Palaeoscolex*" *tenensis* gen. et sp. n.)

Hinz *et al.* (1990): Tene.

'*Palaeoscolex*' *tenesis* Kraft & Mergl, 1989 (Note an error in the species name.)

Mergl (1994): Těně, small hill W of the village; Těně.

*Elkanisca obesa* (Havlíček, 1980)

Mergl (1995): Těně (západ); Těně (západ), an exposure west of the village Těně; Těně.

*Pidiobolus minimus* sp. n.

*Teneobolus gracilis* sp. n.

*Elliptoglossa celdai* sp. n.

*Rowellella distincta* Bednarczyk - Biernat, 1978

*Pomeraniotreta holmeri* sp. n.

*Myotreta* ? sp.

*Siphonotretella* sp.

*Eosiphonotreta* sp.

*Eoconulus gemmatus* sp. n.

*Koliuum* sp.

Mergl (2002): Těně (west); Těně (west, units E, H, I); Těně (west; units H, I); Těně (west, bed H); Těně (západ – west).

*Leptembolon testis* (Barrande, 1879)

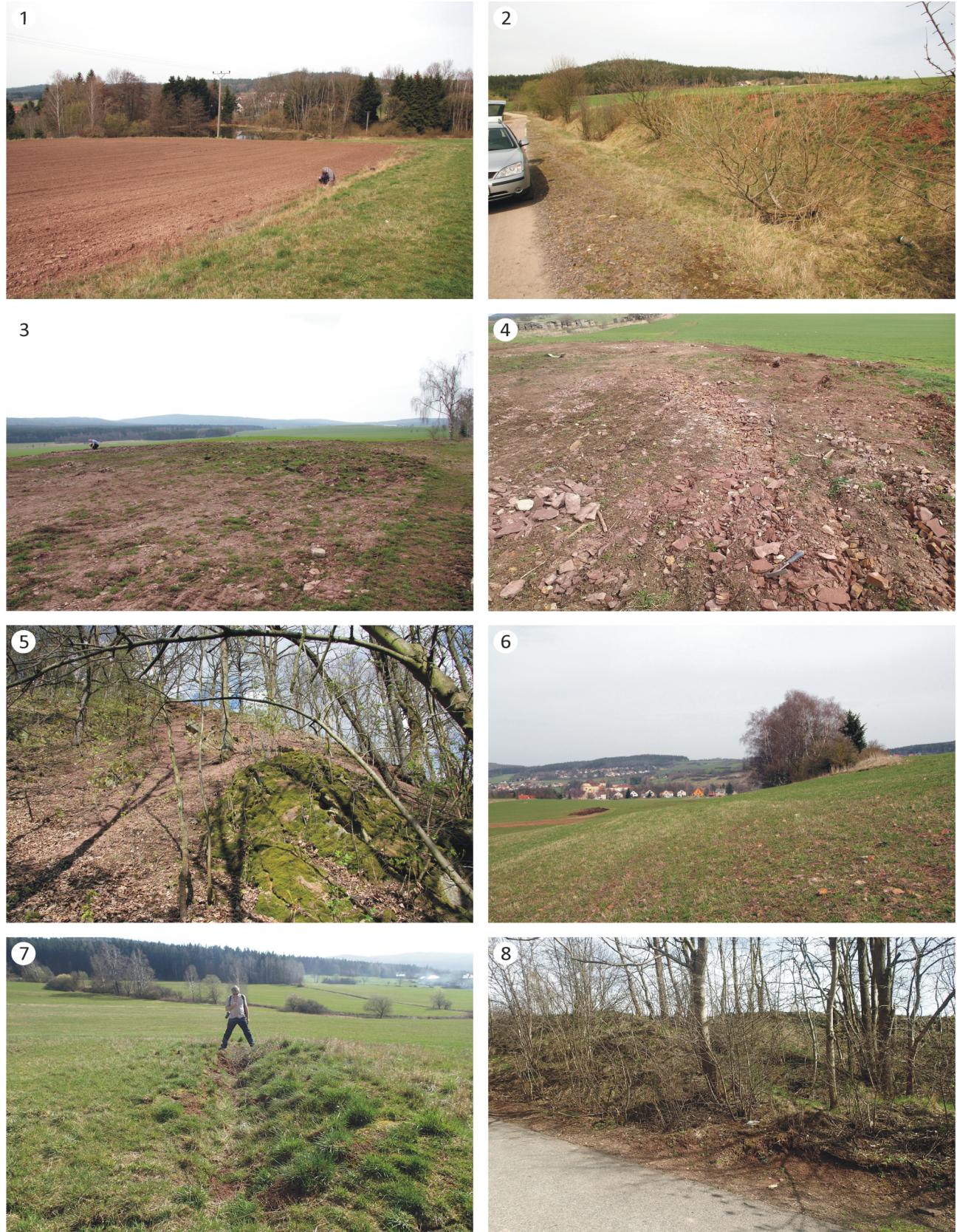
*Teneobolus gracilis* Mergl, 1995

*Rafanoglossa platyglossa* Havlíček, 1982

Plate 5. Localities of the Olešná Membeber, Klabava Formation.

1 – Strašice – field near St. Vavřinec, part a): the field south-west of the church, blocks of the fossiliferous siltstone, visible on the surface in the lower left corner, can be traced along the field margin where the collector hammers them; 2 – Strašice – east: low slope of the road-cut with exposure of the Olešná Member; 3, 4 – Těně – west: 3 – south-westward view from the north-eastern edge of the locality, 4 – detail of exposed layers of the Olešná Member, north-eastward view from the south-western part of the locality; 5 – Medový Újezd: slope in the eastern part of the protected area, the hard layers sticking out in the foreground belong to the uppermost Třenice Formation and the basal Klabava Formation, crumpled overlying red siltstone and shale of the Olešná Member fall over them downslope; 6 – Zaječov – Hrbek Hill: gentle, north-western slope of the hill, the place where the historical pit mine was located; 7 – Horní Kvaň – field: remnant of the research furrow from 2006; 8 – Zaječov – quarry near the school building: eastern part of the abandoned quarry and the road-cut with upper part of the Mílina formation and the base of the Olešná Member. All photos were taken in spring 2016.

Plate 5.



*Elliptoglossa celdai* Mergl, 1995  
*Pidiobolus minimus* Mergl, 1995 (\*)  
*Rowellella distincta* Bednarczyk et Biernat, 1978  
*Elkanisca obesa* (Havlíček, 1980)  
*Orbithele undulosa* (Barrande, 1879)  
*Acrotreta foetida* sp. n.  
*Dactylotreta prisca* sp. n. (\*)  
Acrotretidae gen. et. sp. indet.  
*Mamatia retracta* (Popov, 1980)  
*Pomeraniotreta holmeri* Mergl, 1995  
*Eoconulus gemmatus* Mergl, 1995  
*Celdobolus mirandus* (Barrande, 1879)  
*Eosiphonotreta krafti* (Růžička, 1927)  
*Siphonotretella filipi* sp. n.  
*Koligium* sp.

Mergl (2006): Těně (west) at Komárov; near the small village of Těně in the Komárov area; Těně (west); Těně.  
*Westergaardodina* cf. *bicuspidata* Müller, 1959

Mergl & Duršpek (2006): Těně (west), low hill west of the village Těně, near the field road from Těně to Strašice; Těně, west.

Hexactinellida gen. et sp. indet. A  
Hexactinellida gen. et sp. indet. B  
Hexactinellida gen. et sp. indet. C  
Lithistida gen. et sp. indet. D  
*Anakrusa feistmanteli* (Počta, 1898)

Updated list of fauna:

*Anakrusa feistmanteli* (Počta, 1898)  
Lithistida gen. et sp. indet. D *sensu* Mergl & Duršpek (2006)  
*Cyathophycus* sp.  
*Torerella* ? sp.  
*Leptembolon testis* (Barrande, 1879)  
*Teneobolus gracilis* Mergl, 1995  
*Rafanoglossa platyglossa* Havlíček, 1982  
*Elliptoglossa celdai* Mergl, 1995  
*Pidiobolus minimus* Mergl, 1995  
*Rowellella distincta* Bednarczyk et Biernat, 1978  
*Elkanisca kloučekii* (Koliha, 1918)  
*Orbithele undulosa* (Barrande, 1879)  
*Acrotreta foetida* Mergl, 2002  
*Dactylotreta prisca* Mergl, 2002  
Acrotretidae gen. et. sp. indet.  
*Mamatia retracta* (Popov, 1980)  
*Pomeraniotreta holmeri* Mergl, 1995  
*Eoconulus gemmatus* Mergl, 1995  
*Celdobolus mirandus* (Barrande, 1879)

*Eosiphonotreta krafti* (Růžička, 1927)  
*Siphonotretella filipi* Mergl, 2002  
*Koligium* sp.  
*Jivinella* sp.  
"Palaeoscolex" *tenensis* Kraft et Mergl, 1989  
*Westergaardodina* cf. *bicuspidata* Müller, 1959

## Točník

Geography: Natural and artifical exposures in the surroundings of the castles Točník and Žebrák in the south-western part of the range of Zámecký vrch Hill, north to north-east of the village of Točník, 1.7 km NW to NNW of the church in Žebrák. Cadastre of Točník, District of Beroun.

Lithology: Red siltstone.

Remark: The fossiliferous Mílina Formation also occurs at this locality. For details see Kraft et al. (2015, p. 40).

Feistmantel (1885): Točník.

Spongien, Spongien-Reste, Skelettnadeln (Spiculae), Nadeln, Ordnung Hexactinellidae [Sponge, sponge remains, spicules, spicules, order Hexactinellidae]

Krejčí & Feistmantel (1885): Točník.

The authors referred to Feistmantel (1885) and repeated the following information:

Reste von Spongien, zahlreichen Nadeln [sponge remains, numerous spicules]

Krejčí & Feistmantel (1890): Točník.

(The same as Krejčí & Feistmantel 1885)

zbytky hub, četné jehlice [sponge remains, numerous spicules]

Katzer (1892): Točník.

*Acanthospongia siluriensis* M'Coy

Počta (1898a): Točník.

*Pyritonema Feistmanteli* Počta

Počta (1898b): Točník.

*Pyritonema Feistmanteli* Počta

Kettner (1916a): Točník.

Not specified abundant fossils.

Koliha (1918): Okolí Žebráka a Točníka [surroundings of Žebrák and Točník].

*Obolus Kloučekii* n. sp.

Koliha (1924): Žebrák, Točník.

*Obolus Kloučekii* Koliha

*Lingulella insons* (Barr.) var. *lata* n. var.

Havlíček (1982a): Žebrák; Outcrop east of Žebrák Castle.

*Elkanisca klouceki* (Koliha, 1918)

Mergl (1994): Žebrák, hillside SW of Točník; Žebrák.  
*Elkanisca klouceki* (Koliha, 1918)

Mergl (2002): Točník; Žebrák, Točník (hillside); Žebrák.

*Leptembolon testis* (Barrande, 1879)

*Elkanisca klouceki* (Koliha, 1918)

*Dactyloretta prisca* sp. n. (\*)

*Celdobolus mirandus* (Barrande, 1879)

Updated list of fauna:

sponge spicules

*Leptembolon testis* (Barrande, 1879)

*Elkanisca klouceki* (Koliha, 1918)

*Dactyloretta prisca* Mergl, 2002

*Celdobolus mirandus* (Barrande, 1879)

## Úvaly

Geography: A cumulative name for localities near the town of Úvaly. Cadastre of Úvaly u Prahy, District of Praha-východ.

Lithology: Red to reddish-violet shale.

Remark: The fossiliferous Třenice and Mílina formations also occur at this locality. For details see Kraft *et al.* (2013, pp. 58–59) and Kraft *et al.* (2015, pp. 42–43).

Havlíček (1950): Okolí Úval [Surroundings of Úvaly].

(A brief, incomplete and joint list of taxa is published in this paper for this locality and for Břežany – Na Babách Hill. It is impossible to prove unequivocally the occurrences of those taxa at the individual localities. However, as only generally abundant genera are quoted it is very probable that the list is valid for both sites.)

*Orbiculoides d'Orbigny*

*Lingulella* Salter

*Acrotreta* Kutorga

and others

Updated list of fauna: The list above can include fossil sites from the extended area around Úvaly. Thus, a single faunal list is purposeless.

## Zaječov – Hrbek Hill

Geography: Loose boulders in the fields and partly on the forested slope of the low Hrbek Hill (Pl. 5,

fig. 6), about 1 km west-south-west of the monastery in Zaječov. Cadastre of Zaječov, District of Beroun.

Lithology: Red greywacke and siltstone.

Remark: The fossiliferous Mílina Formation also occurs at this locality. For details see Kraft *et al.* (2015, pp. 43–44).

Kettner (1916a): Hrbek u Sv. Dobrotivé [Hrbek Hill near Sv. Dobrotivá].

*Obolella complexa*

Kraft (1928): Hrbek.

*Ob. compl. Barr.* [abbreviation of *Obolus complexus* Barr.]

Mergl (2002): Zaječov (Hrbek).

*Leptembolon testis* (Barrande, 1879)

*Orbithele undulosa* (Barrande, 1879)

*Dactyloretta prisca* sp. n. (\*)

*Celdobolus mirandus* (Barrande, 1879)

Mergl & Duršpek (2006): Zaječov (Hrbek); Zaječov.

*Hexactinellida* gen. et sp. indet. A

*Hexactinellida* gen. et sp. indet. C

Updated list of fauna:

*Cyathophycus* sp.

*Leptembolon testis* (Barrande, 1879)

*Orbithele undulosa* (Barrande, 1879)

*Dactyloretta prisca* Mergl, 2002

*Celdobolus mirandus* (Barrande, 1879)

## Zaječov – Jalový potok Brook

Geography: Exposure in the right bank of the Jalový potok Brook meander near the south-west edge of Zaječov, 120 m north-east of the eastermost edge of the Heřman Pond, 500 m south-west of the Augustinian Svatá Dobrotivá Monastery in Zaječov. (GPS coordinates: N 49° 45' 45.0" E 13° 50' 06.5".) Cadastre of Zaječov, District of Beroun.

Lithology: Intercalation of fine tuffaceous material inside a red-brown succession of coarse greywacke alternated with fine-grained siltstone (Pl. 6, figs 1, 2).

Mergl (2011): Zaječov near Komárov, the righ bank of the Jalovýpotok Creek; exposure near vilage Zaječov.

*Cruziaria* isp.

*Planolites*-like trace (mentioned also as *Planolites*-like ichnofossils)

*Dimorphichnus* type

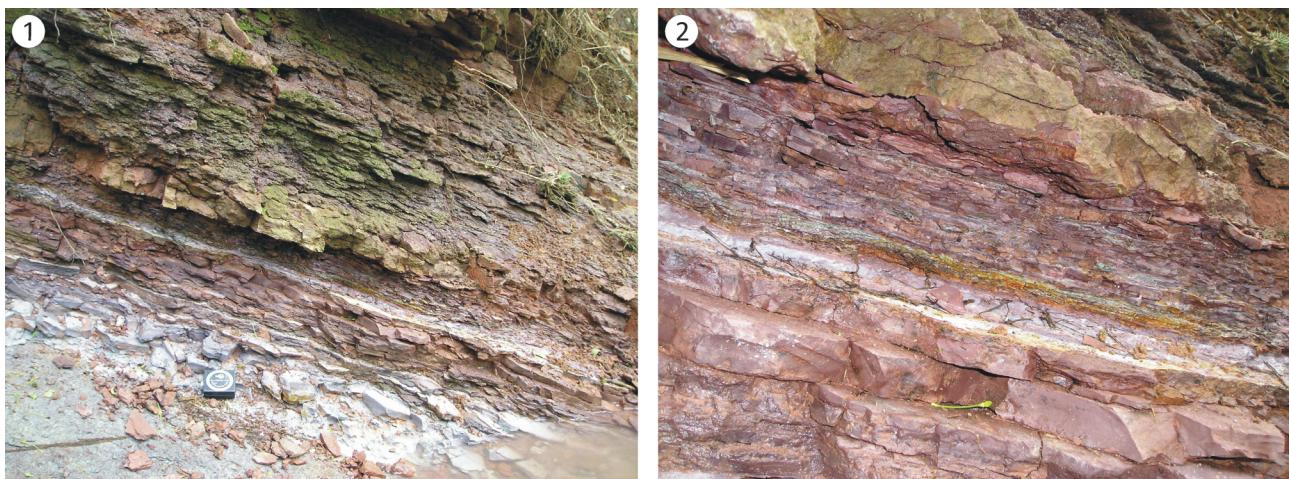


Plate 6. The section at Zaječov – Jalový potok Brook.

1 – Section showing red shales below the intercalations of fine tuffaceous shales (blue-grey) overlain by lithic sandstone; the base of sandstone is unique by the occurrence of *Cruziana* isp. 2 – The same section, detail of the tuffitic intercalations and uneven contact of sandstone bed with *Cruziana* isp. Both photos were taken in 2011.

resting ?cnidarian burrows (= circular resting traces or drop-like resting traces)

Updated list of fauna:

*Cruziana* isp.

*Planolites*-like ichnofossils

*Dimorphichnus* type ichnofossils

circular resting traces

#### Zaječov – quarry near the school building

Geography: A small abandoned quarry and adjacent section in the road-cut above the quarry (Pl. 5, fig. 8) near the school building in the village of Zaječov, 250 m north-east from the Zvěstování Panny Marie Church in the complex of Augustinian Svatá Dobrotivá Monastery (Coordinates for the centre of the quarry read from map: N 49° 45' 59.9" E 13° 50' 39.2"). Cadastre of Kvaň, District of Beroun.

Lithology: Red greywacke and siltstone.

Remark: The fossiliferous Mílina Formation also occurs at this locality. For details see Kraft *et al.* (2015, pp. 44–45).

Klouček (1919): Sv. Dobrotivá.

(The following list was mentioned by Kraft *et al.* (2015) in the study on the Mílina Formation as coming from this unit. However, it cannot be unequivocally excluded that the fossils or some of them, at least, were collected from the Olešná Member.)  
jehlice hub [sponge spicules]

*Obolus complexus* Barr. velká varieta [large variety] nový asi druh acrotrety (s lamellami) [probable new species of *Acrotreta* (with lamellae)] velký obolus snad nový [probably new large *Obolus*] orbiculoidea velká lingulella?, snad varieta druhu *L. insons* Barr. [large *Lingulella*?, perhaps a variety of the species *L. insons* Barr.]

Koliha (1924): Svatá Dobrotivá a okolí [Svatá Dobrotivá and surroundings]; Svatá Dobrotivá. (It is referred only to the material published by Klouček (1919) – see above. That is why the second species in the following list was mentioned by Kraft *et al.* (2015) but in the synopsis of the locality Svatá Dobrotivá.)

*Obolus complexus* Barrande

*Lingulella insons* (Barr.)

Mergl (1986): Zaječov; Zaječov (DO).

*Leptembolon insons testis*

*Orbithele undulosa*

*Elkanisca klouceki*

*Celdobolus mirandus*

*Conotreta turricula*

Mergl (1994): Svatá Dobrotivá, a quarry near the school building.

*Elkanisca obesa* (Havlíček, 1980)

Mergl (1995): Zaječov (old quarry near school building); Zaječov (quarry near scholl building).

*Rosobolus* sp.

*Teneobolus gracilis* sp. n.

*Siphonotretella* sp.

Mergl (2002): Zaječov (quarry near the school building); Zaječov (lom u školy – quarry near the school building).

*Leptembolon testis* (Barrande, 1879)

*Elkanisca obesa* (Havlíček, 1980)

*Orbithele undulosa* (Barrande, 1879)

*Acrotreta foetida* sp. n.

*Dactyloretta prisca* sp. n. (\*)

*Celdobolus mirandus* (Barrande, 1879)

Updated list of fauna:

*Leptembolon testis* (Barrande, 1879)

*Teneobolus gracilis* Mergl, 1995

*Elkanisca kloouceki* (Koliha, 1918)

*Orbithele undulosa* (Barrande, 1879)

*Acrotreta foetida* Mergl, 2002

*Dactyloretta prisca* Mergl, 2002

*Celdobolus mirandus* (Barrande, 1879)

*Siphonotretella filipi* Mergl, 2002

#### Updated list of fauna of the Olešná Member

*Anakrusa feistmanteli* (Počta, 1898)

Lithistida gen. et sp. indet.

*Cyathophycus* sp.

*Torerella* ? sp.

*Leptembolon testis* (Barrande, 1879)

*Lingulella lata* Koliha, 1924

*Teneobolus gracilis* Mergl, 1995

*Rafanoglossa platyglossa* Havlíček, 1982

*Elliptoglossa celdai* Mergl, 1995

*Pidiobolus minimus* Mergl, 1995

*Rowellella distincta* Bednarczyk et Biernat, 1978

*Elkanisca kloouceki* (Koliha, 1918)

*Eoschizotreta veterna* Mergl, 2002

*Orbithele undulosa* (Barrande, 1879)

*Acrotreta foetida* Mergl, 2002

*Dactyloretta prisca* Mergl, 2002

Acrotretidae gen. et. sp. indet.

*Mamatia retracta* (Popov, 1980)

*Pomeraniotreta holmeri* Mergl, 1995

*Eoconulus gemmatus* Mergl, 1995

*Celdobolus mirandus* (Barrande, 1879)

*Collarotretella septata* Mergl, 1997

*Eosiphonotreta krafti* (Růžička, 1927)

*Siphonotretella filipi* Mergl, 2002

*Kolihiump* sp.

*Jivinella* sp.

“*Palaeoscolex*” *tenensis* Kraft et Mergl, 1989

*Westergaardodina* cf. *bicuspidata* Müller, 1959

*Drepanodus* sp.

*Drepanoistodus* sp.

*Cruziana* isp.

*Planolites*-like ichnofossils

*Dimorphichnus* type ichnofossils

circular resting traces

#### REMARKS TO OTHER LOCALITIES

##### Holoubkov

Geography: Old shallow pit iron mine, number of small pits located in the currently forested area north-west of the village of Holoubkov. This area is ~ 1 km from the centre of the village and is crossed by the freeway D5. Cadastre of Holoubkov, District of Rokycany.

Lithology: Gradded conglomerate with hematite matrix (ferrolith), and finely banded haematite.

Remark: Brachiopods described from this locality were considered to be recorded from the Olešná Member in some papers. However, they were proved to come from the Třenice Formation. The following lists contain the species incorrectly mentioned from the Olešná Member but belonging to the Třenice Formation (see Kraft et al. 2013).

Havlíček (1949): Holoubkov.

*Jivinella postcedens* n. sp.

*Apheoorthina ferrigena* n. sp.

*Apheoorthina bohemica* n. sp.

*Ocnerorthis soror* (Barrande, 1879)

*Ocnerorthis filia* n. sp.

*Orthambonites růžičkai* n. sp.

*Poramborthis lamellosa* (Růžička, 1927)

*Poramborthis grimmi* (Barrande, 1879)

*Poramborthis anomala* n. sp.

*Orthis?* *potens* Barrande, 1879

Havlíček (1951): Holoubkov.

*Jivinella postcedens* Havlíček, 1949

*Apheoorthina ferrigena* Havlíček, 1949

*Apheoorthina bohemica* Havlíček, 1949

*Ocnerorthis soror* (Barrande, 1879)

*Ocnerorthis filia* Havlíček, 1949

*Orthambonites růžičkai* Havlíček, 1949

*Poramborthis lamellosa* (Růžička, 1927)

*Poramborthis grimmi* (Barrande, 1879)

*Poramborthis anomala* Havlíček, 1949

## Řevnice

Geography: Not specified south-west surroundings of Řevnice. Cadastre of Řevnice, District of Praha-západ and/or Zadní Třebaň, District of Beroun.

Lithology: Chert with tuffaceous admixture.

Remarks: Fossils as follow, referred to the Mílina Formation, likely come from the Olešná Member of the Klabava Formation as mentioned by Kraft *et al.* (2015).

Havlíček & Šnajdr (1952): Jihozápadně od Řevnic [South-west of Řevnice].

*Obolus complexus* Barr.

*Lingulella* cf. *insonis* (Barr.)

tetraxonní jehlice hub [tetraxon spicules]

In the same paper, Havlíček & Šnajdr (1952) mentioned another locality of the Olešná Member near the town: les Kalvárie severně od Řevnic [Kalvárie Forest north of Řevnice]. They found “common species of inarticulate brachiopods” there but listed no taxa.

Dark violet shale occurs in the Klabava Formation. This facies is similar to the Olešná Member in a predominant occurrence of organo-phosphatic shells of the linguliform brachiopods and rarity of carbonate or organic-walled fossils. That is why the localities of this facies are listed below as a part of this paper. However, it is not typical for the Olešná Member and is not classified to belong to this unit in general.

## Sedlec – gorge

Geography: Outcrops in the deep gorge in the eastern edge of the village of Sedlec, east of Starý Plzenec, ~ 50 m south-west of the confluence of Tymákovský potok and Lhůtský potok brooks. Cadastre of Lhůta, District of Plzeň-město.

Lithology: Dark violet shale, usually with admixture of coarse sand grains and hyaloclasts.

Remark: The violet shale occurs in the upper part of the section in the gorge (units f-i of Mergl 1978).

Mergl (1978): Lokalita č. 1 [Locality no. 1].

*Lingulella*

*Orbithele*

*Sphenothallus* sp.

*Lingulella* Sp.

Mergl, M. (1981): Sedlec – NE part of the village; Sedlec.

*Orbithele undulosa* (Barrande, 1879)

Mergl (2002): Sedlec (gorge); Sedlec (strž – gorge).

*Spondyglossella spondylifera* Havlíček, 1980

*Orbithele undulosa* (Barrande, 1879)

Updated list of fauna:

*Spondyglossella spondylifera* Havlíček, 1980

*Orbithele undulosa* (Barrande, 1879)

## Sedlec – excavations above gorge

Geography: Temporary excavations for four pillars of the pylon in the field near the forest margin, east of the village of Sedlec, ~ 180 m south-east of the confluence of the Tymákovský potok and Lhůtský potok brooks, 130 m east of the southern edge of the protected area PP Sedlecká rokle. Cadastre of Lhůta, District of Plzeň-město.

Lithology: Dark violet and greyish-yellow shale, often with siliciclastic admixture.

Remark: The violet shale corresponds to that in the uppermost part of the section in the gorge (unit i of Mergl 1978).

Mergl (1978): Lokalita č. 2 [Locality no. 2].

*Leptembolon insonis* (Barr.)

*Lingulella* sp.

*Orbithele sodalis undulosa* (Barr.)

*Conotreta* sp.

*Conularia* sp.

*Sphenothallus* sp.

*Pyritonema?* sp.

Mergl (1994): Sedlec, excavation above gorge.

*Elkania lineola* (Havlíček, 1982)

Mergl (1997a): Sedlec (excavations); Sedlec (excavation); Sedlec, temporary excavation in the field above confluence of Lhůtský and Tymákovský Creeks; Sedlec (gorge); Sedlec.

*Palaeoglossa* sp.

*Sedlecilingula sulcata* sp. n.

*Spondyglossella spondylifera* Havlíček, 1980

*Rowellella* sp.

undescribed minute acrotretids and lingulids

*Orbithele undulosa* (Barrande)

*Elkania lineola* (Havlíček)

*Koligium* sp.

*Sphenothallus* sp.

smooth conulariid

problematic phosphatis tubes  
undescribed acrotretid  
*Elkanisca obesa* (Havlíček)  
undeterminable acrotretids  
minute siphonotretid

Mergl (2002): Sedlec (gorge, temporary excavations); Sedlec (gorge); Sedlec (excavation above the gorge); Sedlec (strž – gorge).

(The author described a single locality called Sedlec (strž – gorge). It comprised both the gorge and the excavations above it. However, in occurrences of individual species he specified the latter site in some cases. We distinguished the lists of the taxa from those places as independent localities based on the experience of M.M.)

*Sedlecilingula sulcata* Mergl, 1997

*Mytoella pusilla* (Želízko, 1921)

*Wosekella filiola* gen. et sp. n. (The information on its stratigraphic range by Mergl 2002 is confusing because brown-violet shale are stated to belong to the *Corymbograptus v-similis* Biozone though no graptolites occur in this facies. Thus, it can give the impression that this species was found in the Mýto Shale as defined by Kraft & Kraft 2003)

*Elkania praelineola* sp. n.

*Orbithele undulosa* (Barrande, 1879)

*Lacunites* sp.

Updated list of fauna:

*Conularia* sp.

*Sedlecilingula sulcata* Mergl, 1997

*Mytoella pusilla* (Želízko, 1921)

*Wosekella filiola* Mergl, 2002

*Roweella* sp.

*Elkania praelineola* Mergl, 2002

*Orbithele undulosa* (Barrande, 1879)

*Lacunites* sp.

## ACKNOWLEDGEMENT

We are grateful to Valéria Vaškaninová for her help with language improvement of the manuscript. The compilation of primary data was funded by a project of Ministry of Culture No. RK01P03OMG022. The paper was finished and completed for publishing under the project of the West Bohemian Museum in Plzeň no. UUP 2015/1. Parts of the study were supported by Charles University in Prague through the projects Progress Q45 (to PK.).

## REFERENCES

- Andrusov, D. 1925. Geologické poměry Zbirožska. *Sborník Státního geologického ústavu československé republiky* 5, 53–110.
- Barrande, J. 1879. *Système silurien du centre de la Bohême. 1<sup>re</sup> Partie: Recherches Paléontologiques. Vol. 5. Classe des Mollusques. Ordre des Brachiopodes. Planches 72–153.* Pls 72–153. Privately published, Prague and Paris.
- Bouček, B. 1944a. O profilu spodním ordovikem na vrchu Babě u Hostomic. *Zprávy Úřadu pro výzkum půdy v Čechách a na Moravě* 19 (1943–44)(2), 41–53.
- Bouček, B. 1944b. Über das Profil durch das untere Ordovizium am Begre Baba bei Hostomitz. *Zprávy Úřadu pro výzkum půdy v Čechách a na Moravě* 19 (1943–44)(2), 54–64.
- Chlupáč, I. 2002. *Explanatory remarks to reprinted Joachim Barrande: Système silurien du centre de la Bohême, Vol. I. Crustace: Trilobites. Trilobit*, Praha.
- Fatka, O. & Mergl, M. 2009. The ‘microcontinent’ Perunica: status and story 15 years after conception, 65–101. In Bassett, M.G. (ed.) *Early Palaeozoic peri-Gondwana terranes: new insights from tectonics and biogeography*. Geological Society of London, Special Publication 325.
- Feistmantel, K. 1880. Zwei Profile durch die Basis der böhmischen Silur-Etage D an den entgegengesetzten Beckenrändern. *Sitzungsberichte der königl. böhmischen Gesellschaft der Wissenschaften* 1879, 256–266.
- Feistmantel, K. 1885. Spongiens-Reste aus silurischen Schichten von Böhmen. *Sitzungsberichte der königl. böhmischen Gesellschaft der Wissenschaften* 1884, 100–106.
- Havlíček, V. 1949. Orthoidea a Clitambozoidea z českého tremadoku. *Sborník Státního geologického ústavu Československé republiky* 16, 93–144. [Czech and English versions, Russian summary.]
- Havlíček, V. 1950. Geologie úvalského staršího paleozoika. *Sborník Státního geologického ústavu Československé republiky, oddíl geologický* 17, 141–184.
- Havlíček, V. 1951. Ramenonožci českého ordoviku. *Rozpravy Ústředního ústavu geologického* 13 (1950), 1–133.

- Havlíček, V. 1961a. Úvodní zpráva. In *Paleozoikum. Barrandien – Železné hory. Zprávy o geologických výzkumech v roce 1959*, 40–41.
- Havlíček, V. 1961b. Starší paleozoikum, 58–91. In Čepel, L. & Zoubek, V. (eds) *Vysvětlivky k přehledné geologické mapě ČSSR 1 : 200 000 M – 33 – XX Plzeň*. Ústřední ústav geologický, Nakladatelství Československé akademie věd.
- Havlíček, V. 1980. Conotreta Walcott (Brachiopoda) in the Lower Ordovician of Bohemia. *Věstník Ústředního ústavu geologického* 55(5), 297–299.
- Havlíček, V. 1981. Development of a linear sedimentary depression exemplified by the Prague Basin (Ordovician–Middle Devonian; Barrandian area – Central Bohemia). *Sborník geologických věd, Geologie* 35, 7–48.
- Havlíček, V. 1982a. Lingulacea, Paterinacea, and Siphonotretacea (Brachiopoda) in the Lower Ordovician sequence of Bohemia. *Sborník geologických věd, Paleontologie* 25, 9–82.
- Havlíček, V. 1982b. Ordovician in Bohemia: Development of the Prague Basin and its benthic communities. *Sborník geologických věd, Geologie* 37, 103–136.
- Havlíček, V. 1987. Starší paleozoikum, 14–19. In Kříž, J. (ed.) *Vysvětlivky k základní geologické mapě ČSSR 1 : 25 000 13-133 Úvaly*. Ústřední ústav geologický, Praha.
- Havlíček, V. 1998. Ordovician, 41–79. In Chlupáč, I., Havlíček, V., Kříž, J., Kukal, Z. & Štorch, P. *Palaeozoic of the Barrandian (Cambrian to Devonian)*. Czech Geological Survey, Prague.
- Havlíček, V. & Fatka, O. 1992. Ordovician of the Prague Basin (Barrandian area, Czechoslovakia, 461–471. In Webby, B.D. & Laurie, J.R. (eds) *Global Perspectives on Ordovician Geology*. Balkema, Rotterdam.
- Havlíček, V. & Šnajdr, M. 1952. Kambrium a ordovik v Brdských Hřebenech a na Jinecku. *Sborník Ústředního ústavu geologického, oddíl geologický* 18 (1951), 145–276.
- Havlíček, V. & Šnajdr, M. 1953. Nové poznatky o českém spodním a středním ordoviku. *Věstník Ústředního ústavu geologického* 28, 102–109.
- Havlíček, V. & Šnajdr, M. 1955. Některé problémy paleogeografie středočeského ordoviku. *Sborník Ústředního ústavu geologického, oddíl geologický* 21 (1954), 449–518.
- Havlíček, V. & Šnajdr, M. 1956. Paleogeografie tremadockého moře v Barrandienu. *Sborník Ústředního ústavu geologického, oddíl geologický* 22 (1955), 237–255.
- Havlíček, V. & Vaněk, J. 1966. The Biostratigraphy of the Ordovician of Bohemia. *Sborník geologických věd, Paleontologie* 8, 7–69.
- Hinz, I., Kraft, P., Mergl, M. & Müller, K.J. 1990. The problematic *Hadimopanella*, *Kaimenella*, *Milaculum*, and *Utahphosphpha* identified as sclerites of Palaeoscolecida. *Lethaia* 23(2), 217–221.
- Jahn, J.J. 1904a. O krušnohorských vrstvách ( $d_{1a}$ ). *Rozpravy České Akademie pro vědy, slovesnost a umění, Třída II* 13, 30, 1–16.
- Jahn, J.J. 1904b. Ein Beitrag zur Kenntnis der Bande  $d_{1a}$ . *Verhandlungen der kaiserlich-königlichen geologischen Reichsanstalt* 1904, 9, 209–211.
- Jahn, J.J. 1904c. Über die Brachiopodenfauna der Bande D<sub>1</sub>. *Verhandlungen der kaiserlich-königlichen geologischen Reichsanstalt* 1904, 12, 270–280.
- Kalat, N. 1949. Stratigrafie krušnohorských vrstev v okolí Úval. *Příroda* 42, 44–45, 77–79.
- Katzer, F. 1892. *Geologie von Böhmen. Der geognostische Aufbau und die geologische Entwicklung des Landes. Mit besonderer Berücksichtigung der Erzvorkommen und der verwendbaren Minerale und Gesteine*. I. Taussig, Prag 1–1606.
- Kettner, R. 1916a. Příspěvek k petrografii vrstev krušnohorských (D<sub>1a</sub>). Část I. *Rozpravy České Akademie císaře Františka Josefa pro vědy, slovesnost a umění, Třída II* 25, 16, 1–33.
- Kettner, R. 1916b. Příspěvek k petrografii vrstev krušnohorských (D<sub>1a</sub>). Část II. *Rozpravy České Akademie císaře Františka Josefa pro vědy, slovesnost a umění, Třída II* 25, 34, 1–32.
- Kettner, R. 1921. O transgresích a regresích spodnosilurského moře v Čechách. *Rozpravy České Akademie pro vědy, slovesnost a umění, Třída II* 30, 43, 1–7.
- Klouček, C. 1915. Novinky z krušnohorských vrstev – d<sub>1a</sub>. *Rozpravy České Akademie císaře Františka Josefa pro vědy, slovesnost a umění, Třída II* 24, 42, 1–3.
- Klouček, C. 1917. Novinky z krušnohorských vrstev – d<sub>1a</sub>. Část II. *Rozpravy České Akademie císaře Františka Josefa pro vědy, slovesnost a umění, Třída II* 26, 10, 1–7.
- Klouček, C. 1919. Novinky z krušnohorských vrstev – d<sub>1a</sub>. Část IV. *Rozpravy České Akademie pro vědy, slovesnost a umění, Třída II* 27, 38, 1–6.

- Klouček, C. 1920. Novinky z krušnohorských vrstev – d<sub>1α</sub>. Část V. *Rozpravy České akademie věd a umění, Třída II* 29, 3, 1–4.
- Klouček, C. 1924. Nové zprávy z vrstev komárovských d<sub>β</sub> (Dd<sub>1β</sub>). *Věstník státního geologického ústavu Československé republiky* 4, 199–204.
- Koliha, J. 1918. Brachiopoda z krušnohorských vrstev – d<sub>1α</sub>. *Časopis Musea Království českého* 92, 128–139.
- Koliha, J. 1924. Atremata z krušnohorských vrstev (d<sub>α</sub>). *Palaeontographica Bohemiae* 10, 1–61.
- Koliha, J. 1937. Sur le Tremadocien et sur l'Arénigien inférieur en Bohême. *Bulletin de la Société géologique de France, 5<sup>e</sup> série* 7, 477–495.
- Kraft, J., Mergl, M., Hroch, T. & Kraft, P. 2013. Index of fossiliferous localities of the Třenice Formation (Lower Ordovician of the Prague Basin, Czech Republic). *Folia Musei rerum naturalium Bohemiae occidentalis, Geologica et paleobiologica* 47(1–2), 33–64.
- Kraft, J., Mergl, M., Hroch, T. & Kraft, P. 2015. Index of fossiliferous localities of the Mílina Formation (Lower Ordovician of the Prague Basin, Czech Republic). *Folia Musei rerum naturalium Bohemiae occidentalis, Geologica et paleobiologica* 49(1–2), 17–50.
- Kraft, P. & Kraft, J. 2003. Facies of the Klabava Formation (?Tremadoc – Arenig) and their fossil content (Barrandian area, Czech Republic), 309–314. In Albanesi, G.L., Beresi, M.S. & Peralta, S.H. (eds) Ordovician from the Andes. *INSUGEO, Serie Correlación Geológica* 17.
- Kraft, P. & Mergl, M. 1989. Worm-like fossils (Palaeoscolecida; ?Chaetognatha) from the Lower Ordovician of Bohemia. *Sborník geologických věd, Paleontologie* 30, 9–36.
- Kraft, V. 1928. *Geologické poměry Rokycanska. Rokycany*, 120 pp.
- Krejčí, J. & Feistmantel, K. 1885. Orographisch-geotektonische übersicht des silurischen Gebietes im mittleren Böhmen. *Archiv für Naturwissenschaftliche Landesdurchforschung von Böhmen* 5, 5, 1–124.
- Krejčí, J. & Feistmantel, K. 1890. Orogafický a geotektonický přehled území silurského ve středních Čechách. *Archiv pro přírodovědecké prozkoumání Čech* 5, 5, 1–94.
- Kukal, Z. 1959. Petrografický výzkum barrandienských ordovických jílovitých hornin. *Acta Universitatis Carolinae, Geologica* 1–2, 125–140.
- Kukal, Z. 1961. Petrografický výzkum vrstev olešenských barrandienského ordoviku. *Zprávy o geologických výzkumech v roce 1960*, 75–77.
- Kukal, Z. 1963. Výsledky sedimentologického výzkumu barrandienského ordoviku. *Sborník geologických věd, Geologie* 1, 103–138.
- Lipold, M.V. & Krejčí, J. 1860. In Sitzung am 24. April 1860. *Verhandlungen der kaiserlich-königlichen geologischen Reichsanstalt* 11, 88–91.
- Mergl, M. 1978. Výsledky paleontologického výzkumu ordoviku v širším okolí Starého Plzence. *Sborník Západočeského muzea v Plzni, Příroda* 28, 1–70.
- Mergl, M. 1981. The genus *Orbithele* (Brachiopoda, Inarticulata) from the Lower Ordovician of Bohemia and Morocco. *Věstník Ústředního ústavu geologického* 56(5), 287–292.
- Mergl, M. 1986. The Lower Ordovician (Tremadoc – Arenig) Leptembolon Community in the Komárov area (SW part of the Prague Basin; Bohemia). *Folia Musei rerum naturalium Bohemiae occidentalis, Geologica* 24, 1–34.
- Mergl, M. 1994. Inarticulate brachiopod genera *Elkania* Ford and *Elkanisca* Havlíček in the Lower Ordovician of Bohemia. *Věstník Českého geologického ústavu* 69, 4, 47–55.
- Mergl, M. 1995. New lingulate brachiopods from the Mílina Formation and the base of the Klabava Formation (late Tremadoc – early Arenig), Central Bohemia. *Věstník Českého geologického ústavu* 70(2), 101–114.
- Mergl, M. 1996. Tafonomická ztráta informací – příklad z barrandienského tremadoku. Seminár k 75. výročí narození Prof. RNDr. Bohuslava Růžičky. *Sborník referátů. VŠB – Technická univerzita v Ostravě, Institut geologického inženýrství. Ostrava*, 14.
- Mergl, M. 1997a. New and rare lingulate brachiopods from lower part of the Klabava formation (Arenig, Lower Ordovician) of Prague Basin, Bohemia. *Journal of the Czech Geological Society* 42(1–2), 95–104.
- Mergl, M. 1997b. Selective dissolution of fossils – an example from Tremadoc of Bohemia. *Sborník vědeckých prací VŠB – Technická univerzita v Ostravě, Řada hornicko-geologická, zvláštní číslo*, 13–17.
- Mergl, M. 2002. Linguliformean and craniiformean brachiopods of the Ordovician (Třenice to Do-

- brotivá Formations) of the Barrandian, Bohemia. *Acta Musei Nationalis Pragae, Series B, Historia Naturalis* 58(1–2), 1–82.
- Mergl, M. 2006. Paraconodont *Westergaardodina* in the Lower Ordovician of the Prague Basin, Czech Republic. *Bulletin of Geosciences* 81(4), 305–308.
- Mergl, M. 2008. The hexactinellid sponge *Cyathophycus* from the Lower Ordovician Klabava Formation of the Prague Basin, Czech Republic. *Bulletin of Geosciences* 83(2), 233–236.
- Mergl, M. 2011. Early Ordovician arthropod trace fossils in the Prague Basin (Czech Republic), 367–370. In Gutiérrez-Marco, J.C., Rábano, I. & García-Bellido, D. (eds) Ordovician of the World. *Cuadernos del Museo Geominero* 14. 679 pp. Instituto Geológico y Minero de España, Madrid.
- Mergl, M. & Duršpek, J. 2006. Sponge spicules and radiolarians from the Olešná Member of the Klabava Formation (Ordovician, Prague Basin, Czech Republic). *Bulletin of Geosciences* 81(1), 17–26.
- Počta, F. 1898a. O zbytcích hub z české pánve paleozoické. *Rozpravy České Akademie císaře Františka Josefa pro vědy, slovesnost a umění, Třída II* 7, 24, 1–8.
- Počta, F. 1898b. Ueber Spongienreste aus dem palaeozoischen Becken Böhmens. *Bulletin international de l'Académie des sciences de l'Empereur François-Joseph* 1898, 1–3.
- Purkyně, C. r. 1914. Kambrium mezi Plzencem a Žďárem u Rokycan. *Sborník Městského historického musea v Plni* 3, 1–7.
- Vála, J. & Helmhaber, R. 1872. Rudy železné v krajině mezi Prahou a Berounem. *Archiv pro přírodovědecký výzkum Čech* 2, 1, 87–336.
- Vála, J. & Helmhaber, R. 1874. Das Eisensteinvorkommen in der Gegend zwischen Prag und Beraun. *Archiv der naturwissenschaftliche Landesdurchforschung von Böhmen* 2, 1, 102–407.
- Wentzel, J. 1891. Ueber die Beziehungen der Barrande'schen Etagen C, D und E zum britischen Silur. *Jahrbuch der kaiserlich-königlichen geologischen Reichsanstalt* 41(1), 117–170.