Middle Devonian Tentaculitoidea from the late generation of fillings of the neptunian dyke in the Koněprusy area (Prague Basin, Czech Republic)

Tentaculitoidea z mladší výplň neptunické žíly v devonu koněpruské oblasti (střední devon, pražská pánev, Česká republika)

(8 figs)

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A dacyroconarid fauna from one Middle Devonian neptunian dyke in the Voskop Quarry (Koněprusy area, Prague Basin, central Bohemia) with Acanthoppyge Limestone infill was studied. Nine species belonging to seven tentaculoid genera (Nowakiia, Viriellitina, Stylolitina, Metastyliolina, Stylonowakia and Homoctenus) were identified. The stratigraphic position of the neptunian dyke infill is also discussed. Two new species, Viriellitina babalae sp. nov. (Nowakiidae) and Lueksia elisi gen. et sp. nov. (Striatostyliolinidae), are described. Viriellitina holochlidana Schöne, 1996, was found in the Prague Basin for the first time.

Key words: Palaeozoic; Middle Devonian; Prague Basin; Tentaculitoidea; stratigraphy; new taxa

Introduction

In the progress of mining at the Velkolom Čertovy schody Quarry (VČS, Koněprusy Devonian, Barrandian area, central Bohemia), a neptunian dyke with polyphase filling has been exposed in the eastern wall of the Voskop Quarry (Figs 1, 2). The Suchomastý Limestone represents the dominant and the Acanthoppyge Limestone a partial infill of this neptunian dyke (Chlupáč, 1996). The present study is aimed at dacyroconarid fauna from the Acanthopyge Limestone. Clasts of these darker grey and reddish bioclastic and biomicritic limestones show a special feature: they contain very abundant dacyroconarid tentaculites as dominant rock-forming components representing true “tentaculitic limestones” (Chlupáč, 1996).

The Middle Devonian stratigraphy of the Koněprusy area has been discussed for more than 100 years (Chlupáč, 1960, Chlupáč et al., 1992 and references herein); however, some problems are still not solved. Chlupáč (1960) presumed a stratigraphical hiatus or a later erosion of stratigraphical equivalents of the Kačák Shale (late Eifelian) in the Koněprusy area. In contrast, Hladil – Kalvoda (1993) and Hladil et al. (1993) regarded the so-called “upper dark interval” from the Jiráskův Quarry as the possible stratigraphic equivalent of the Kačák Shale. This quarry, situated on the NW slope of Zadní Kobyla Hill, displays the upper part of the Acanthopyge Limestone with the “dark interval” above. The “upper dark interval” is about 60 cm thick and corresponds to bed 45 sensu Hladil – Kalvoda (1993). Lithology and palaeontology of the “upper dark interval” was discussed in detail by Hladil – Kalvoda (1993), Hladil et al. (1993) and Budil (1995). According to the latter authors, the “upper dark interval” reflects the effect of the Kačák

Fig. 1. Topographic scheme of the northern part of the Koněprusy Devonian showing the position of sample localities (after Chlupáč, 1996, slightly modified).

Fig. 2. The neptunian dykes transecting the Koněprusy Limestone on the eastern wall of the VČS-E Quarry. The studied neptunian dyke marked with arrow.
Event in Koněprusy area. This interpretation is based on the presence of *Nowakia otomari*, conodonts of the *ensensis* Zone and corals of Givetian type. Budil (1995), who has studied the mentioned dark interval, considered this assumption probable but still kept this question open because of insufficient knowledge of the conodont taxa present.

Three different goals are the subject of this paper: clarification of the stratigraphic assignment of the neptunian dyke infill, which is presumed by Chlupáč (1996) to be late Eifelian or early Givetian in age; a description of the tentaculitoid fauna from the Jiřáškův and Voskop quarries; and a correlation of the studied material from the Voskop Quarry with the “upper dark interval” in the Jiřáškův Quarry (Koněprusy Devonian, Barrandian area, central Bohemia).

**Material and Methods**

**Material**

The present study is based on a large amount of material, which comprises samples collected from the Čertovy schody – East, Voskop Quarry, by I. Chlupáč and P. Lukeš in the years 1993–1995 and by the author of this paper in 2003. The material from the “upper dark interval” in the Jiřáškův Quarry has been collected by the author and P. Lukeš.

**Methods**

Only very little has been published on the methodology of tentaculitid studies. Some notes were given, e.g., by Lyaschenko (1955), Bouček (1964) and Lardeux (1969). For the present study the dacyroconarids were obtained by mechanical fragmentation of the rock with a hammer. Individual preparation employed a vibrational preparation needle (Vibrograv). The Carl Zeiss binocular microscope was used for the observation of tentaculitoid conchs (magnification 4× to 100×). For a detailed study, latex casts were used. Photomicrographs were taken using the CamScan MX 3200 scanning electron microscope.

**Tentaculitoid fauna**

**Neptunian dyke at the Voskop Quarry**

Besides the very abundant species of *Styliolina* Karpskiy, 1884, the following genera and species were found in the infill of the neptunian dyke (Fig. 2): *Metastylolithina* Bouček – Prantl, 1961 (*Metastylolithina* sp.), *Styliowakia* Lardeux, 1969 (*Styliowakia* sp.), *Homocetnus* Lyashenko, 1955 (*Homocetnus* sp.), *Nowakia* Gürich, 1896 (*Nowakia* ex gr. *otomari* Bouček, 1964, *Nowakia* (*Cepanowakia*) *pumilio* Alberti, 1993), *Viriatellina* Bouček, 1964 (*Viriatellina babaluae* sp. nov.; *Viriatellina holochilidan* Schöne, 1996) and *Luksia* gen. nov. (*Luksia elixi* sp. nov.).

**Jiřáškův Quarry**

The tentaculitoid fauna from the Jiřáškův Quarry is lower in diversity compared to the material from the studied neptunian dyke at the Voskop Quarry. In low abundances only the following taxa were found: *Nowakia* ex gr. *otomari* Bouček, 1964; *Nowakia* (*Cepanowakia*) *pumilio* Alberti, 1993; *Luksia* gen. nov., and *Styliolina* sp.

Strikingly, representatives of the genus *Styliolina* are scarce in the Jiřáškův Quarry although they belong to the most common taxa in the Voskop Quarry. This fact may suggest slightly different environments at the two localities. Zagora (1984) supposed that the frequency of *Nowakia* decreases and the frequency of *Styliolina* increases with increasing water depth. However, there are still few data for such a conclusion; moreover, no other similar relation has been observed in the Barrandian area (P. Lukeš, pers. comm.).

Some authors (Budil, 1995, Hladil – Kalvoda, 1993) mentioned the species *Nowakia* (*Cepanowakia*) *chulpaciana* Alberti, 1979 (by error?), common in the Choteč limestone facies, from both the Jiřášek and Voskop quarries but no specimen of this taxon was found within the present study. The possible absence of the *Nowakia* (*Cepanowakia*) *chulpaciana* Subzone in the Koněprusy area could be explained by either facies dependence of *N. chulpaciana* (very implausible) or by a hiatus in this interval.

The accompanying fauna from both localities is low diverse and not abundant (with the exception of conodonts). Only several fragments of proetid trilobites, brachiopods (*Orbiculoides* sp., *Quasidawidsonia* sp.), and ostracodes were found.

**Conodont fauna**

**Neptunian dyke at the Voskop Quarry**

Slavík (pers. comm.) has determined the following taxa: *Polygnathus costatus costatus* Klapper, 1971; *Polygnathus eifius Bischoff* – Ziegler, 1957; *Polygnathus costatus ssp.*; *Polygnathus sp.*; *Polygnathus linguiformis linguiformis* Hinde, 1879. The latter species may indicate a Givetian age of the material studied; however, this is not an index taxon of any certain biozone, similarly *P. eifius*.

**Jiřáškův Quarry**

Conodont fauna from the Jiřáškův Quarry was described by Hladil – Kalvoda (1993). According to these authors, conodont assemblages of the “upper dark interval” correspond to the *Polygnathus eifius* Zone. This zone embraces the boundary interval of the Eifelian and Givetian, implying either a latest Eifelian or earliest Givetian age for the conodont fauna obtained from this dark interval.
Systematic paleontology

Abbreviations used in the systematic part:
TR...transversal rings
TS...transversal structures
LR...longitudinal ribs
Ich...initial chamber
Wₐ...width at the apertural part of the tube
Wₐₚ...width at the middle part of the tube
WCH...width at the initial chamber

Class Tentaculitoidea Lyashenko, 1957
Order Daercyconarida Fisher, 1962
Family Nowakiidae Lyashenko, 1955

Genus Nowakia Gürich, 1896

Type species: Tentaculites cancellatus Richter, 1854

Nowakia (Cepanowakia) pumilio Alberti, 1987
Figs 3 A–C

1987 Nowakia pumilio Alberti, 1978; Alberti, p. 638, fig. 2.
? 1989 Nowakia (N.) alberti n. sp.; Ruan – Mu, p. 184–5, pl. 12, figs 1, 2.
1989 Nowakia cf. pumilio Alberti, 1978; Lukeš, p. 193–205, pl. 2, figs 6–8, pl. 4, fig. 9.
1993 Nowakia (Cepanowakia) pumilio G. Alberti, 1978; Alberti, p. 65, pl. 33, figs 1–11.


Type locality: Rheinisches Schiefergebirge, Dill-Mulde, Bonn quarry.

Type horizon: Rheinisches Schiefergebirge, Günteröder Kalk, Bed No. 10, Eifelian.

Material: 12 specimens from the VČS-East, Voskop Quarry, neptunian dyke with fillings of Acanthopyge Limestone, eastern wall of the quarry; 5 specimens from the „upper dark interval“ [Beds No. 45 A–L sensu Hladil – Kalvoda (1993)] from the Jiráskov Quarry.

Descriptions: Straight, conical shells of very small size (average length 1 mm). The width ranges from 0.12 to 0.18 mm (Wₐ 0.18 mm; Wₐₚ 0.15 mm; WCH 0.12 mm). Apical angle 10°–12°. The shell is covered with transverse rings and prominent longitudinal ribs. The transverse rings are narrow but prominent and regularly distributed (8–10 per 1 mm of the length). The rings and interspaces between them are of the same width. The number of the longitudinal ribs is 3–4 (exceptionally 5–6) per shell semi-circumference. The longitudinal ribs are present also on the surface of the initial chamber. The initial chamber (Fig. 3 C) is drop-like constricted off from the proximal part of the tube and hypertrophic (about 130 μm in width and 140 μm in length on average).

Relations: Morphologically similar but stratigraphically older taxon Viriatellina minor Ruan – Mu, 1989 (late Emsian) differs from N. pumilio in its smaller size (average length is 0.5 mm) and in the general shape of the transverse structures, which resemble rather transverse ripples.

Stratigraphical range: Middle Devonian, Eifelian–Givetian.

Geographical distribution: N. (C.) pumilio has been described from Asia – China, Guangxi province (Ruan – Mu, 1989); Europe – Germany (Alberti, 1978); Czech Republic (Lukeš, 1989, Alberti, 1993) and from the southwest of Morocco (Alberti, 1993).

Nowakia ex gr. otomari Bouček – Prantl, 1959
Figs 4 B–C; Fig. 6 A–C

1882 Tentaculites acuarius Richter; Novák, p. 54–55, pl. 12, figs 1–4, 18.
1959 Nowakia otomari Bouček – Prantl; Bouček – Prantl, p. 7; (brief description only).
1964 Nowakia otomari Bouček – Prantl, 1959; Bouček, p. 91–93, pl. 15, figs 1–4.
1969 Nowakia cf. otomari Bouček – Prantl, 1959; Lardeux, p. 106, pl. 36, fig. 4.
1978 Nowakia otomari Bouček – Prantl; Alberti, p. 263.
1983 *Nowakia otomari* Bouček – Prantl; Mu – Ruan, p. 310, pl. 1, figs 1–2. (sic).
1983 *Nowakia otomari* Bouček – Prantl, 1959; Mu – Ruan, p. 57, pl. 9, fig. 6, pl. 20, figs 1–2.
1985 *Nowakia otomari* Bouček – Prantl; Lütké, p. 203, pl. 3, fig. 8–9.
1993 *Nowakia (Novakia) otomari* Bouček – Prantl; Alberti, p. 49, pl. 26, figs 1–6.
1993 *Nowakia otomari* Bouček – Prantl, 1959; Lukeš, p. 10, pl. 2, figs 1–7

**Holotype:** Specimen figured by Bouček (1964), pl. 8, fig. 5; deposited in the collections of the Czech Geological Survey.

**Type locality:** Czech Republic, Prague Basin, Barrandian area, Hostim.

**Type horizon:** Middle Devonian (Givetian), Srbsko Formation, Kačák Member.

**Material:** Numerous incomplete and 4 complete specimens from the Voskopol Quarry; several fragments and 2 complete specimens from the Jiráškův Quarry (beds 45 A–L, the maximum abundance was found in the bed 45 A).

**Description:** Conical shells of medium size, total length of the shell ranges from 5 to 7 mm, the apical angle is 6–8°. Width of the tube increases from 0.29 mm to 0.75 mm (Wₐ 0.75 mm; Wₘ 0.5 mm; WᵢCH 0.29 mm). The surface of the shell is covered with marked and widely spaced regular transversal rings (TR) and fine, dense longitudinal ribbing (LR). The rings are prominent, with sharp ridges, interspaces between the rings are approximately three times wider than the rings. There are 5 rings per 1 mm. Number of LR is 22–26 on the semi-circumference. The initial chamber (ICH) is small, drop-like, with no LR observed on the ICH. Fine microribs and growth lines were observed under the SEM (Fig. 4 B, C).

**Remarks:** The shells of *N. otomari* from the Voskopol Quarry (Fig. 6 A, C) differ from specimens from the Jiráškův Quarry (Fig. 6 B) in their smaller proportions and scatter distribution of LR (this fact was already mentioned by Hladil – Kalvoda, 1993). Despite these morphological differences, specimens from both quarries are here ascribed to one species. It is necessary to evaluate morphological variation in *N. otomari* (some notes were given already by Schöne, 1996b). A further investigation and discussion of the morphological variability of *Novakia* ex gr. *otomari* is necessary.

**Stratigraphical range:** Middle Devonian, Eifelian–Givetian.


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**Fig. 4.** A – *Stylistina fissurella* Hall, 1845. Longitudinal ribbing noticeable only with the SEM observation, Acantopyge limestone, Voskopol Quarry, scale bar is 20 μm; B – *Nowakia* ex gr. *otomari* Bouček – Prantl, 1959. Microribs between ribs noticeable only with the SEM observation, Acantopyge Limestone, Voskopol Quarry, scale bar is 40 μm; C – *Nowakia* ex gr. *otomari* Bouček – Prantl, 1959. Growth lines between longitudinal ribs (noticeable only with the SEM observation). Acantopyge Limestone, Voskopol Quarry, scale bar is 40 μm.
**Genus Viriatellina Bouček, 1964**

*Type species:* *Viriatellina hercynica* Bouček, 1964

**Viriatellina babaluæ sp. nov.**

*Fig. 5, 6 E.*

**Derivation nominis:** After my friend Babalu.

**Holotype:** Specimen figured in Fig. 6 E deposited in the collections of the Czech Geological Survey SB 1.

**Type locality:** Czech Republic, Barrandian area, Koněprusy area, VČS-East, Voskop Quarry, neptunian dyke with partial filling of Acanthopyge Limestone, eastern wall of the quarry.

**Type horizon:** Acanthopyge Limestone, Eifelian.

**Material:** 16 specimens from the Voskop Quarry.

**Diagnosis:** Shell regularly conical, average length is 2 mm; the width is 0.29 mm at the apertural part of the tube. The apical angle is 7–8°. The surface of the shell is covered with longitudinal ribbing LR (7–10 LR on the semi-circumference) and transversal undulations. The distal part of the ripple is more abrupt than the proximal part.

**Description:** Shells are straight and narrow; the maximal length is 2.4 mm (the average length is 2 mm). Shell gradually widens up to the maximum width of 0.29 mm (W₄ 0.29 mm; W₅ 0.24 mm; Wᵦ 0.09 mm). The apical angle is 7–8°. The surface of the shell is covered with low and broad ripple-like rings or undulations. There are 8 transversal undulations per 1 mm of length. The distal part of the ripple is more abrupt than the proximal part. The undulations are observable directly above the ICH. The entire surface (except ICH) is covered with fine longitudinal ribbing (7–10 LR on the semi-circumference). The ICH is small, drop-like (0.09 mm in length and 0.06 mm in width).

**Relat ions:** *Viriatellina babaluæ sp. nov.* is most similar to stratigraphically older taxon *Viriatellina hercynica* Bouček, 1964 which differs from the described species in the greater width of its tube and in the shape of its undulations.

**Stratigraphical range:** Middle Devonian, Eifelian–Givetian.

**Geographical distribution:** Czech Republic, Barrandian area, Koněprusy Devonian.

**Viriatellina holochlidana Schöne, 1996**

*Fig. 6 D*

**Holotype:** Specimen No. 4820X1 figured by Schöne (1996a), pl. 3.

**Type locality:** Rhensich Slate Mountains, Ense region, “Blauer Bruch” (an abandoned quarry).

**Type horizon:** Dark calcareous shale in the upper part of “Oderhausen-Formation”, ensensis Zone, Eifelian.

**Material:** 1 complete specimen from VČS-East, Voskop Quarry, neptunian dyke with partial filling of Acanthopyge Limestone, eastern wall of the quarry.

**Description:** A slender shell of medium size (total length 2.25 mm); the shell gradually widens up to the maximum width of 0.5 mm (W₄ 0.55 mm; W₅ 0.4 mm; Wᵦ 0.29 mm). The apical angle is 13°. Transversal structures resemble narrow, regularly distributed ripples. The surface of the shell is covered with a fine longitudinal ribbing (LR), 12 LR on semi-circumference. The initial chamber is small, drop-like.

**Stratigraphical range:** Middle Devonian, Eifelian–Givetian.

**Geographical distribution:** Germany (Rhenisch Slate Mountains), Czech Republic (Barrandian area, Koněprusy Devonian).

**Genus Styliowakia Lardeux, 1969**

*Type species:* *Styliowakia ligriensis* Lardeux, 1969

**Styliowakia sp.**

**Material:** 2 incomplete specimens from the Voskop Quarry.

**Diagnosis:** Transversal rings (TR) are narrow, low, and were observed only in the apertural part in the number of 3 TR. Fine longitudinal ribbing (LR) present, 5–6 LR on the semi-circumference. The length of the fragment is 1.8 mm, the width of the aperture is 6.24 mm.

**Remarks:** The available material from the Voskop Quarry does not allow a determination to the species level.
Family Styliolinidae Grabau – Shimer, 1910

Genus Styliolina Karpinskiy, 1884

Type species: Styliolina nucela Karpinskiy, 1884

Styliolina? fissurella Hall, 1845

Fig. 4 A

n. v.1843 Tentaculates fissurella n. sp.; Hall, p. 182, fig. 71/10.
1882 Styliolina clavula Barr.; Novák, p 59, pl. 13, figs 27–30.
1942 Styliolina clavula (Barrande); Prantl, p. 158–9, text. fig. 158.
1952 Styliolina clavula (Barrande); Prantl, p. 195.
1962 Styliolina clavula Barrande; Fisher, p. 166, fig. 55/2.
1982 Styliolina clavula (Barrande, 1852); Strnad – Barth, p. 116, fig. 55/2.
1984 Styliolina fissurella (Hall 1843); Bouček, p. 127–128, pl. 31, figs 1–2, pl. 32, figs 3–9.
1969 Styliolina fissurella (Hall, 1843); Lardeux, p. 159–160, pl. 48, figs 122, 133.
1989 Styliolina fissurella (Hall, 1843); Ruan – Mu, pl. 23, figs 1, 2a, 3–6.


Type locality: North America, New York State, South of Alden.

Material: 2 complete specimens from the Voskop Quarry, several fragments from the Voskop and Žirákov quarries. In the Žirákov Quarry species of this taxon are rare (beds 45 A–F), no species of this taxon were found in beds 45 G–L.

Description: Tube narrowly conical, straight or slightly curved at the proximal part of the tube. Shells are medium in size (the total length of a complete specimen is 4.2 mm). The width of the shell is 0.45 mm in the apertural part (W A 0.45 mm; W M 0.39 mm; W H 0.21 mm). The apical angle is 6°. The surface of the shell is smooth. Fine longitudinal ribbing was observed under the SEM (Fig. 4 A). The initial chamber is small, slender, not well differentiated from the rest of the tube.

Remarks: Due to the poor preservation of the shell, the assignment to species S. fissurella is uncertain. In general, the diagnostic features on shells of the genus Styliolina are very few, the initial chamber, the most important part, is rarely preserved.

Stratigraphical range: Middle Devonian, Eifelian–Givetian.

Geographical distribution: The species has been reported from the Czech Republic (Prague Basin, Barrandian area, Bouček, 1964); southwest Africa (Morocco – Algeria – Alberti, 1993), south China (Ruan – Mu, 1989), Australia and North America (Lütke, 1985).

Family Striatostyliolinidae Bouček, 1964

Diagnosis: Shells of medium size, straight or sometimes slightly curved. Initial chamber drop-like or conical. Shells longitudinally ribbed or grooved

Lukesia gen. nov.

Derivatio nominis: In honour of Pavel Lukeš, who has investigated especially the Early Devonian dacryonarid tentaculates in the Barrandian area.

Type species: Lukesia elixi sp. nov., Middle Devonian, Eifelian.

Diagnosis: Conical shells of medium size (maximum observed length 4.2 mm). Transverse structures (TS) are very narrow and low, irregularly arranged. A characteristic feature of this genus is the presence of longitudinal grooves, which were observed only in the interspaces of TS (or the proximal parts of TS). The initial chamber is small, slender.
**Lukesia elixi** sp. nov.

Figs 7, 8 A–D

**Derivatio nominis:** from Latin word “elix” – groove.

**Holotype:** Specimen figured in Fig. 8 A. Deposited in the collections of the Czech Geological Survey SB 2.

**Type locality:** Czech Republic, Barrandian area, Koněprusy area, VČS-East, the Voskop Quarry, neptunian dyke with partial filling of the Acanthopyge Limestone, eastern wall of the quarry.

**Type horizon:** Acanthopyge Limestone, Eifelian.

**Material:** 6 specimens from the Voskop Quarry, 1 specimen from the Jiráskův Quarry.

**Diagnosis:** Slender shells of medium size (average length 4 mm, width 0.4 mm). The apical angle is 6–8°. TS are narrow and low, irregularly arranged. Longitudinal grooves are present in the interspaces of TS. The initial chamber is small, slender.

**Description:** Medium-sized shells (maximum observed length 4.2 mm). Shell gradually widens to the maximum width of 0.4 mm ($W_A$ 0.4 mm; $W_M$ 0.35 mm; $W_{ECH}$ 0.3 mm). Shell is slender, apical angle is 6–8°. Initial chamber (ICH) is small, slight, not well differentiated from the rest of the tube. The length of ICH is 0.15 mm, width 0.09 mm. TS are very low and narrow, resembling rather transversal projections. The setting of TS is irregular with a greater density of TS in the aperture part of the tube (8 TS per 0.3 mm). Longitudinal structures developed as grooves observed in the interspaces of TS only (or distal parts of TS), 12 grooves on the semi-circumference. Longitudinal grooves were observed along the length of the tube (except ICH). Fine longitudinal ribs were also observed under the SEM, mainly in the distal part of the tube (Fig. 8 B, C).

![Fig. 7. Lukesia elixi gen. et sp. nov., drawing of reconstructed shell showing characteristic features (drawn by P. Lukeš), scale bar is 1 mm.](image)

![Fig. 8. A–D – Lukesia elixi gen. et sp. nov. A – Holotype SB 2, incomplete shell with well preserved apertural part and longitudinal grooves, Acanthopyge Limestone, Voskop Quarry, scale bar is 1 mm. B – detail of the proximal part of the tube with noticeable longitudinal ribs and grooves. Acanthopyge Limestone, Voskop Quarry, scale bar is 100 µm. C – Detail of the middle part of the shell with observable longitudinal ribbing (noticeable only with the SEM observation), Acanthopyge limestone, Voskop Quarry, scale bar is 100 µm. D – Detail of the distal part of the shell with observable longitudinal ribbing (noticeable only with the SEM observation), Acanthopyge limestone, Voskop Quarry, scale bar is 500 µm.](image)
Relations: The main diagnostic feature of the described taxon – the longitudinal grooves – is also known at the genus Distriatostylus Lardeux, 1969; however, this genus differs from Lukesia in several respects. The main difference is that the grooves at Distriatostylus are not only longitudinal, but also transversal; moreover, the grooves run uninterrupted along the whole tube length.

Stratigraphical range: Middle Devonian, Eifelian-?Givetian.

Geographical distribution: Czech Republic, Barrandian area, Koněprusy Devonian

Genus Metastylolina Bouček – Prantl, 1961

Type species: Metastylolina striatissima Bouček – Prantl, 1961

? Metastylolina sp.

Material: 1 incomplete specimen from the Voskop Quarry and one fragment from the Jiráskův Quarry (bed no. 45 A sensu Hladil – Kalvoda, 1993).

Description: The length of the fragment is 1.6 mm, aperture width is 0.45 mm. A very dense longitudinal ribbing (LR) was observed (16–18 LR on the semi-circumference).

Relations: The genus Metastylolina Bouček, 1964 differs from the genus Striatostylina Bouček – Prantl, 1959 in its shape and size of the initial chamber, and especially in the higher density of LR distribution.

Order Homoctenida Bouček, 1964
Family Homoctenidae Lyashenko, 1955

Genus Homoctenus Lyashenko, 1955

Type species: Homoctenus krestovnikovi Lyashenko, 1955

Homoctenus sp.

Material: 1 incomplete specimen from the Voskop Quarry.

Description: The length of the fragment is 0.43 mm, width is 0.5 mm. The rings are narrow but prominent, regularly and closely distributed (19 TR in 0.43 mm). No longitudinal structures were observed.

Conclusions

Middle Devonian dacryocarnid fauna from the Koněprusy area was studied. So far, the tentaculitid studies have been concentrated mainly on the Early Devonian tentaculitids (Bouček, 1964, Lukeš, 1982a, b; 1991a, b). The present study reveals a presence of two new Middle Devonian species: Virotellina babalae sp. nov. and Lukesia elixi gen. et sp. nov. The species Virotellina holochlidana Schöne, 1996 was found in the Prague Basin for the first time.

The following species were determined in the material studied:

1. The neptunian dyke infill, Voskop Quarry:
   Novakia ex gr. otomari Bouček, 1964 (very abundant)
   Novakia (Cepanowakia) pumilio Alberti, 1993 (abundant)
   Virotellina holochlidana Schöne, 1996 (rare)
   Stylolina ? fissurella Hall, 1845 (very abundant)
   Virotellina babalae sp. nov. (very abundant)
   Lukesia elixi sp. nov. (abundant)
   Metastylolina sp. (rare)
   Stylionowakia sp. (rare)
   Homoctenus sp. (rare)

2. “Upper dark interval”, Jiráskův Quarry:
   Novakia (Cepanowakia) pumilio Alberti, 1993: beds 45 A–L (rare)
   Stylolina ?fissurella Hall, 1845: beds 45 A–F (rare)
   Lukesia elixi sp. nov. (rare)
   Metastylolina sp.: bed 45 A (rare)

This study clarifies the stratigraphical assignment of the neptunian dyke infill. Late Eifelian age of the studied material from the neptunian dyke is clearly evidenced by the presence of the tentaculite Novakia pumilio Zone (this study) and the conodont faunas belonging to the Polygnathus costatus costatus Zone (Slavik pers. comm.). Similarly, Eifelian age was also documented in the Jiráskův Quarry by the presence of fauna belonging to the tentaculite Novakia pumilio Zone (this study) and the conodont Polygnathus costatus costatus Zone (Hladil – Kalvoda, 1993).

The present study shows that the stratigraphical correlation of the Voskop Quarry material with the material from the “upper dark interval” in the Jiráskův Quarry is ambiguous, as has been already mentioned by Chlupač (1996). According to Hladil – Kalvoda (1993) the “upper dark interval” represents a probable equivalent of the Kačák Shale. Their interpretation is mainly based on the presence of Novakia otomari, conodonts of the P. ensensis Zone and corals of Givetian type. However, specimens of N. otomari from the Jiráskův Quarry differ in some morphological aspects from the specimens from the Voskop Quarry (see systematic part) as has been already mentioned by Hladil – Kalvoda (1993). On the other hand, Budil (1995) has found N. otomari in several other sections of the Prague Basin, always within the Kačák Shale. In contrast to that, Walliser (2000) and House (2002) stated the first occurrence of N. otomari below the mentioned interval. This makes the stratigraphical correlation of the “upper dark interval” in the Jiráskův Quarry with the neptunian dyke infill (Voskop Quarry) unclear.

Acknowledgments. I gratefully thank Pavel Lukeš for lending me his samples from the Voskop and Jiráskův quarries and some rare papers on dacryocarnids. I wish to thank him especially for his patient and willing tuition on dacryocarnids. I also thank Jiří Frýda, Oliver Lehnert,
Eberhard Schindler and Oldřich Fatka for their useful critical remarks and Ladislav Slavík for determination of some conodont taxa. This study was partly financially supported by the Grant Agency of the Czech Republic within grant project 206/04/0599. The SEM photos were taken in the LAREM (Czech geological Survey).

Submitted November 20, 2004

References


Tentaculitoida z mladšího výběhu neptunické žíly v devonu koněpruské oblasti (střední devon, pražské pánev, Česká republika)

V práci je popsána tentakulitová fauna středního devonu z výběhu nově odkrytý neptunické žíly ve východní stěně lomu Voskop (Velkolom Čertovy schody). Jsou popsány 2 nové druhy Viriatellina babaultae sp. nov. (Nowakiadne) a Lukesia elixi gen. et sp. nov. (Striatostyliolinidae). Druh Viriatellina holochildana Schöne. 1996 byl popsán z pražské pánev poprvé. Diskutována je též stratigrafická korelace se „svrchním tmaňvim intervalem“ v Jiráskově lomu, který je některými autory považován za možný ekvivalent kačáčích řídel známých z jiných částí pražské pánev.