ГЕАЛОГІЯ

UDC 566/569(476)

CONODONTS FROM THE LOCHKOVIAN SEDIMENTS OF THE BELARUSIAN PART OF THE VOLYN MONOCLINE (TOMASHOVKA 11 BOREHOLE)

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This paper presents new data on conodonts from the Lower Devonian Lochkovian sediments recovered by Tomashovka 11 borehole drilled in the territory of Belarus, in the northwestern part of the Volyn Monocline. A number of conodont taxa previously unknown in the country have been identified: Zieglerodina mashkovae (Drygant), Z. formosa (Drygant), Z. remscheidensis (Ziegler), Pandorinellina camelfordensis (Farrell), Wurmiella excavata maxima (Drygant), Caudicriodus hadnagyi (Chatterton et Perry). The most important for stratigraphic purposes are Pandorinellina camelfordensis (Farrell), that is the marker of the Borshchovo Horizon, and Wurmiella excavata maxima (Drygant), that is among the index species of the Cypricriodus hesperius Zone. All identified conodont taxa from the assemblage prove the Early Lochkovian age of sedimentation for the studied part of the section.

Keywords: Belarus, Volyn Monocline, conodonts, Lochkovian sediments, Lower Devonian.

INTRODUCTION

Sediments of the Lochkovian Stage of the Lower Devonian, represented by the Borshchovo and Chortkov Horizons, are distributed in the southwestern part of Belarus within the Podliasie-Brest Depression and the Volyn Monocline (fig. 1). Conodont elements of this age were found in three boreholes: Tomashovka 11 (Volyn Monocline); Orlia 28 and Rataichitsy 12 (Podliasie-Brest Depression) [25; 30; 31].

Borehole Tomashovka 11 was drilled in 1968 near the village of Tomashovka in Brest region (see fig. 1). The Lower Devonian sediments occur in the depth interval of 408.0–487.2 m, overlie the rocks of the Kustin Horizon of the Pridolian Stage (Upper Silurian), and are covered by deposits of the Visean Stage (Lower Carboniferous). The stratigraphic range of the studies includes clay-carbonate rocks of Domachevo Formation and the lower part of Dubitsa Formation of the Borshchovo Horizon, as well as claymarl rocks of the upper part of the Dubitsa Formation and the Orkhov Formation of the Chortkov Horizon (fig. 2).

Paleontological studies of the core from borehole Tomashovka 11 were previously held by V. N. Karatayūtė-Talimaa, J. J. Valiukevičius, S. A. Kruchek, T. Märss and D. P. Plax [8; 9; 15; 32]. In this article, the author presents the results of the revision of the Lower Devonian conodont collection from this borehole, that made it possible to update the taxonomic composition and supplement information on Lochkovian vertebrates. The collection was amassed by S. A. Kruchek in the 1970s, it is stored in the Department of Stratigraphy and Tectonics, branch "Institute of Geology" of the State Enterprise "Research and Production Center for Geology", it includes 398 conodont elements from 40 rock samples. Photos of the elements are taken with a stereoscopic microscope Chongqing Optec SZ780.

RESULTS AND DISCUSSION

Sediments of the Domachevo **Formation of the Borshchovo Horizon** (Lochkovian Stage) occur in the depth interval of 454.0–487.2 m, overlie the rocks of Kustin Horizon of the Pridolian Stage (Upper Silurian) and are covered by the rocks of Dubitsa Formation of the Borshchovo Horizon. Numerous badly preserved conodont elements were found in greenish-gray and light-gray marls. Most of them are represented by *Zieglerodina* species. *Zieglerodina mashkovae* (Drygant), a transit species for the Lochkian Stage, was reliably established here, color index of elements is 1–2 (Plate I). Together with conodonts, remains of single corals, brachiopods, tentaculites, thelodonts, acanthodians; bryozoans, crinoids, calcareous algae were found there [15; 32; 33].

Sediments of the **lower part of the Dubitsa Formation of the Borshchovo Horizon** (Lochkovian Stage) occur in the depth interval of 429.2–454.0 m. Numerous taxonomically diversified conodont elements of varying degrees of preservation were found

in a member of greenish-gray marls and biomorphic limestones: *Zieglerodina mashkovae* (Drygant), *Z. formosa* (Drygant), *Z. remscheidensis* (Ziegler); *Pandorinellina camelfordensis* (Farrell); *Wurmiella excavata maxima* (Drygant); *Caudicriodus hadnagyi* (Chatterton et Perry), color index of elements is 1–2 (Plates I, II).

Together with conodont elements, the sediments of this part of the section contain shells of gastropods, bivalves, tentaculites, brachiopods, scales of thelodonts, and acanthodians; colonies of bryozoans, numerous segments of crinoids, calcareous algae [15].

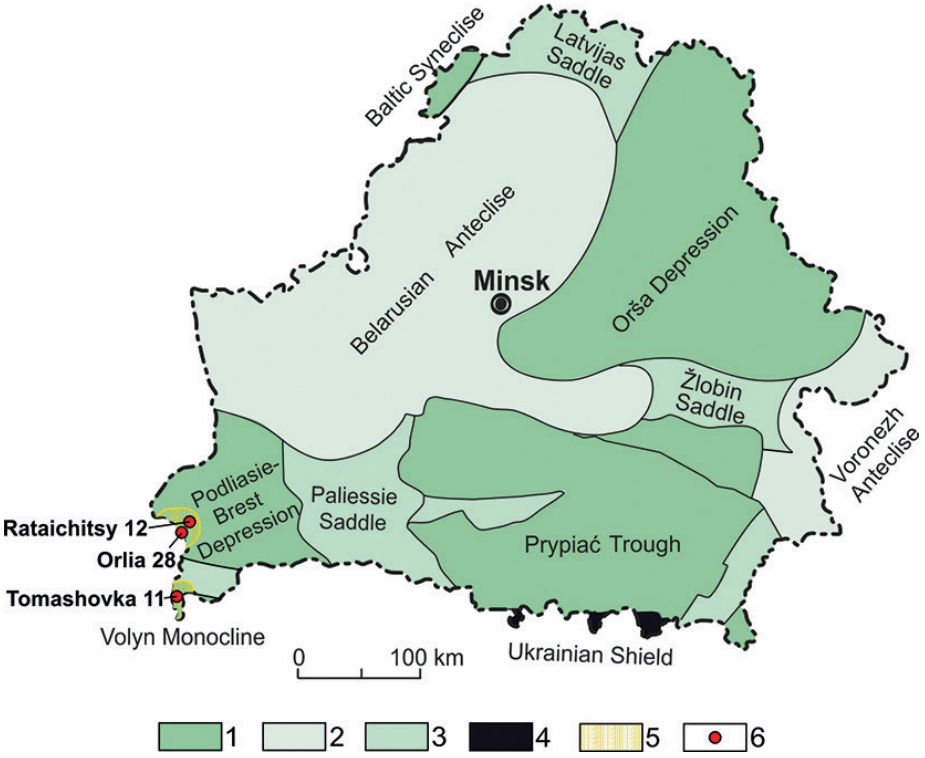

Figure 1 – Tectonic map of Belarus showing the location of boreholes where the Lochkovian conodonts were found [25]: *1* – troughs, depressions, syneclises; *2* – anteclises; *3* – saddles, uplifts, horsts; *4* – crystalline shield; *5* – distribution of the Lochkovian sediments; 6 – borehole

Rocks of the upper part of the **Dubitsa Formation of the Chortkov Horizon** of the Lochkovian Stage (416.5–429.2 m) also contain conodont elements. *Zieglerodina remscheidensis* (Ziegler), *Z. formosa* (Drygant), *Caudicriodus hadnagyi* (Chatterton et Perry) were found in a member of greenish-gray marls and organogenic limestones (see Plates I, II), color index of elements is 1–2.

Together with conodonts the fragments of crinoids, single shells of gastropods, tentaculites, numerous brachiopod shells, scales of thelodonts, placoderms, acanthodians, chondrichthyans; remains of bryozoans were found within these rocks [15].

The cpecies *Zieglerodina mashkovae* (Drygant) is typical for *Cypricriodus hesperius – Caudicriodus serus* Zones; *Zieglerodina remscheidensis* (Ziegler), *Z. formosa* (Drygant) and *Caudicriodus hadnagyi* (Chatterton et Perry) occur in *Cypricriodus hesperius – Caudicriodus transiens* Zones; *Wurmiella excavata maxima* (Drygant) and *Pandorinellina camelfordensis* (Farrell) are found only in *Cypricriodus hesperius* Zone [3; 5; 23]. Thus, the conodont assemblage found in the deposits of the *Cypricriodus* and Dubitsa Formations corresponds to the *Caudicriodus hesperius* Zone.

According to the conodont and ichthyofauna data, sediments of the Domachevo and the lower part of Dubitsa Formations of the Borshchovo Horizon correspond to the lower part of the Tilžė Horizon of the Baltic States, the lower part of the Ovinparma Horizon of the Timan-Pechora Province, the Borshchovo Horizon of the Volyn-Podolia region, the lower part of the Rauchkofel Formation of the Carnic Alps [3; 5; 14; 15; 20; 21; 26].

The Lower Devonian section is terminated by sediments of the Orkhov Formation of the Chortkov Horizon (Lochkovian Stage); conodont elements are not found there. According to the ichthyofauna data, rocks of the upper part of the Dubitsa and Orkhov Formations of the Chortkov Horizon correspond to the upper part of the Tilžė Horizon of the in the Baltic States; the upper part of the Ovinparma Horizon of the Timan-Pechora region, the Chortkov Horizon of Volyn-Podolia [5; 14; 15; 20; 21; 26].

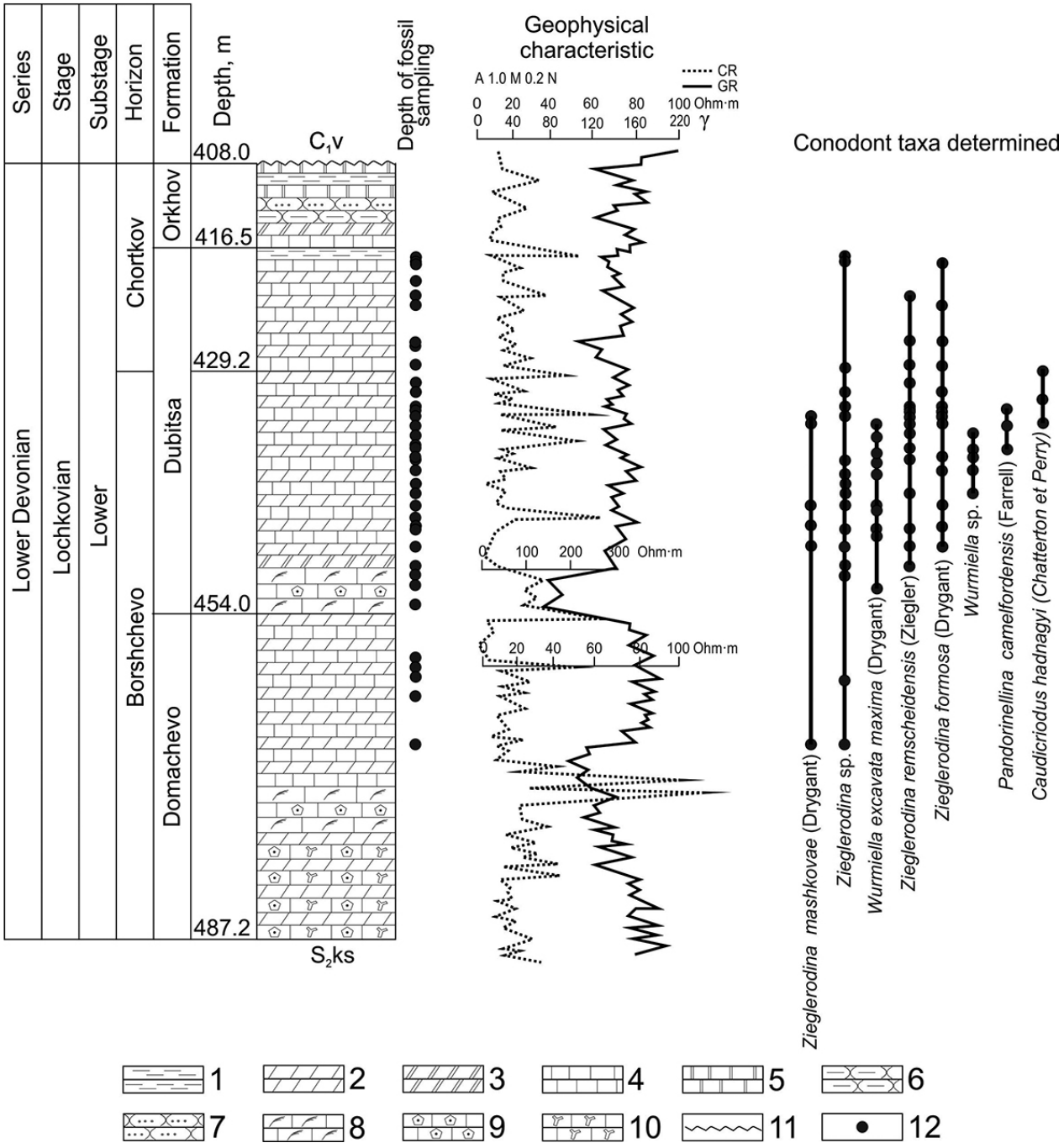

Figure 2 – Distribution of conodonts in the Lower Devonian sediments of the Tomashovka 11 borehole:
1 – clays; *2* – marls; *3* – dolomite marls; *4* – limestones; *5* – dolomites; *6* – clayey sandstones;
7 – sandstones; *8* – algal limestones; *9* – crinoidal limestones; *10* – bryozoan limestones;
11 – discontinuity surfaces; *12* – sampling site. Stratigraphic units:
S_2ks – Kustin Horizon of the Pridolian Stage (Upper Silurian);
C_1v – Visean Stage (Lower Carboniferous)

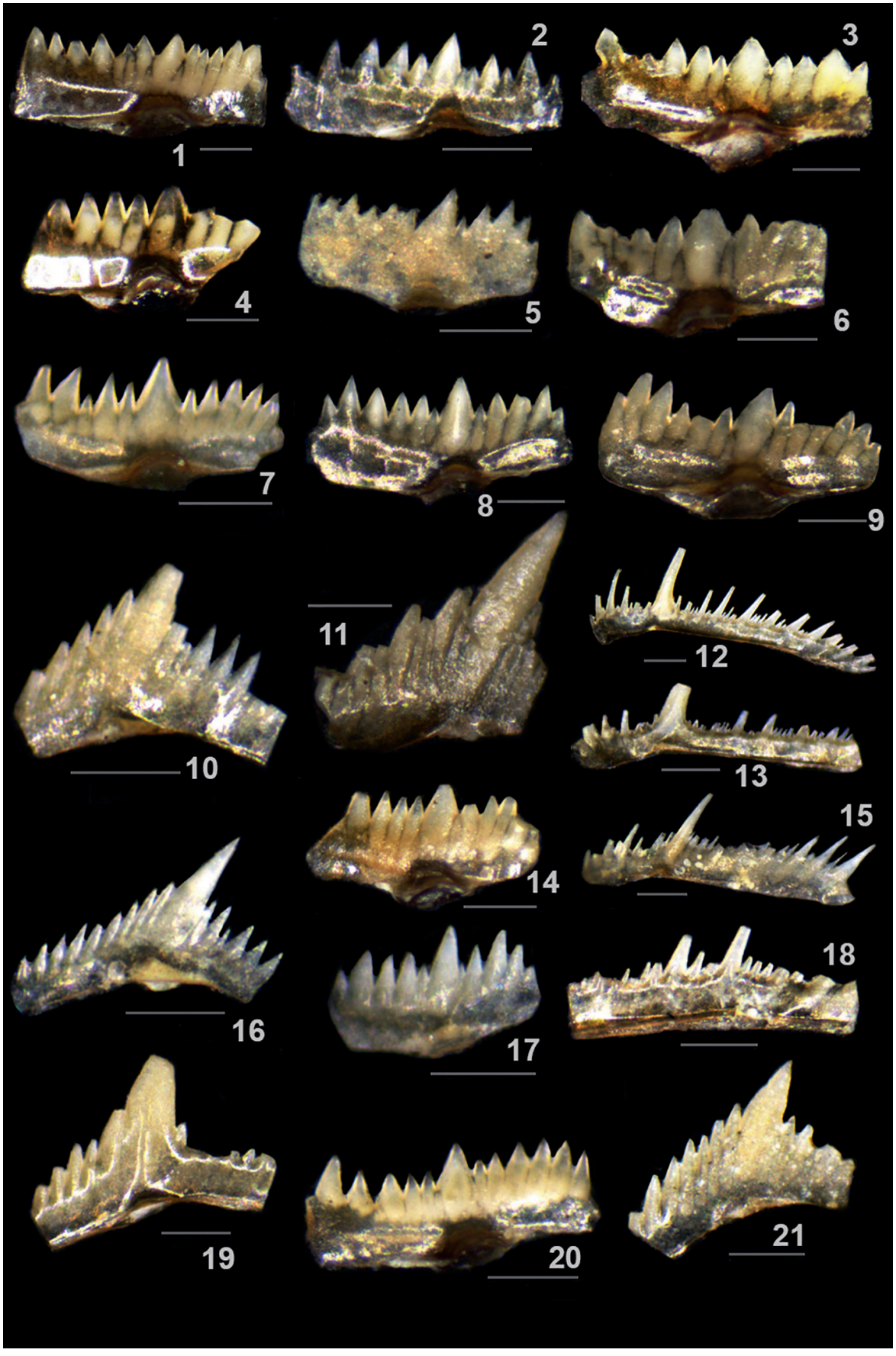

Plate I

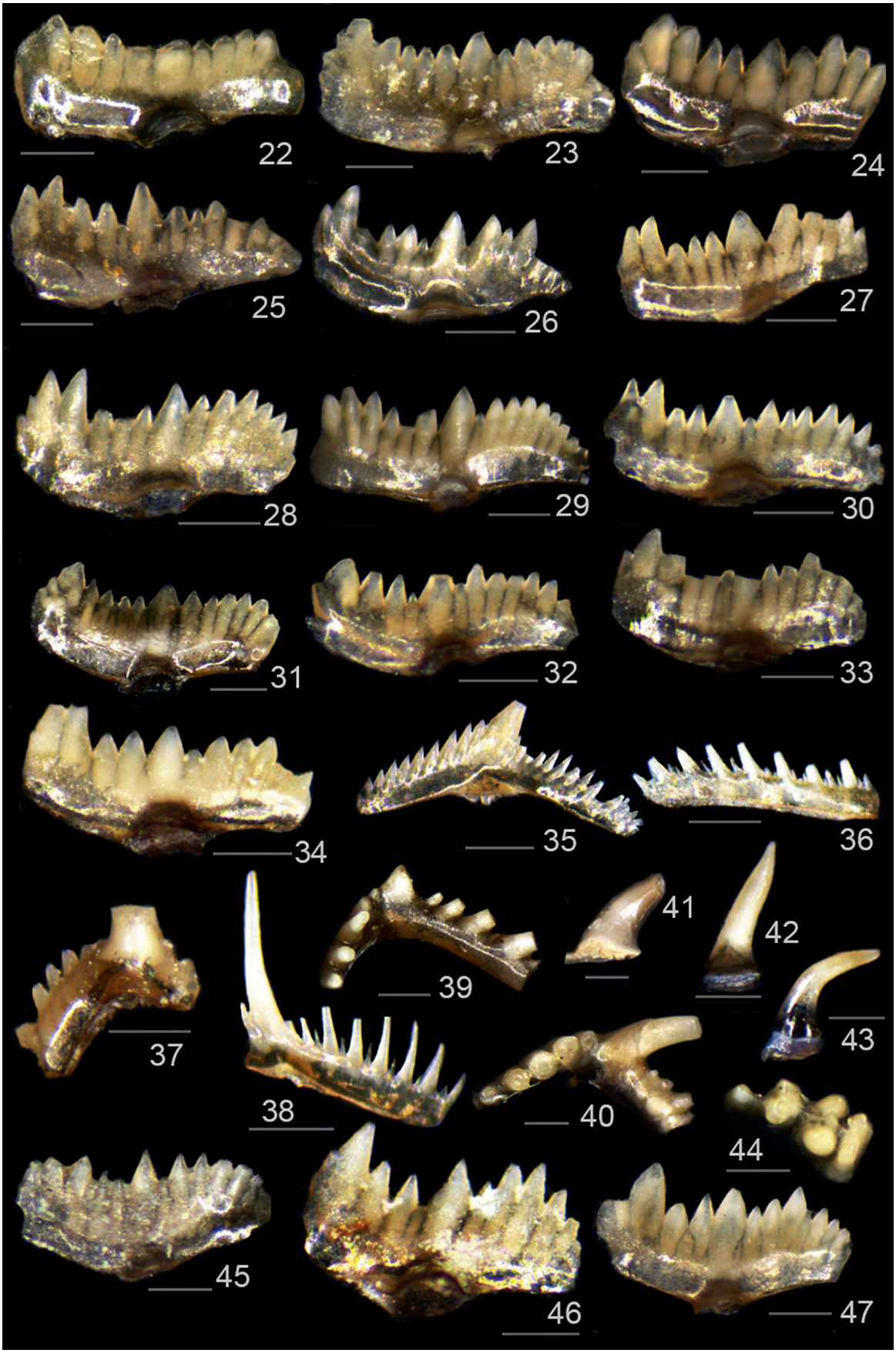
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Plate II

EXPLANATION OF PLATES I, II
Scale bar of 0.2 mm

1–4 – *Zieglerodina mashkovae* (Mashkova, 1972): 1 – depth of 434.0 m; 2 – depth of 434.8 m; 3 – depth of 443.2 m; 4 – depth of 445.3 m.
5–21 – *Zieglerodina remscheidensis* (Ziegler, 1960): 5 – depth of 432.9 m; 6, 11, 14 – depth of 434.0 m; 7, 12, 13, 15–17, 20 – depth of 434.8 m; 8 – depth of 443.2 m; 9 – depth of 433.6 m; 10 – depth of 421.6 m; 18 – depth of 442.0 m; 19, 21 – depth of 437.3 m.
22–34 – *Zieglerodina formos*a Drygant, 2010: 22 – depth of 418.2 m; 23 – depth of 422.5 m; 24–25 – depth of 428.7 m; 26 – depth of 433.6 m; 27–29 – depth of 434.0 m; 30 – depth of 434.8 m; 31 – depth of 438.2 m; 32 – depth of 439.6 m; 33 – depth of 445.3 m; 34 – depth of 445.7 m.
35–40 – *Wurmiella excavata maxima* (Drygant, 1984): 35–36 – depth of 434.8 m; 37 – depth of 445.5–449.6 m; 38 – depth of 443.2 m; 39–40 – depth of 445.3 m.
41–44 – *Caudicriodus hadnagyi* (Chatterton and Perry, 1977): 41 – S-element, depth of 428.7 m; 42–43 – S-element, depth of 431.5 m; 44 – Pa-element, depth of 434.0 m.
45–47 – *Pandorinellina camelfordensis* (Farrell, 2004): 45 – depth of 433.3 m; 46 – depth of 437.3 m; 47 – depth of 434.0 m.

SYSTEMATIC PALAEONTOLOGY

Systematic notes include essential taxonomic description; synonymy lists are limited to main captions. Suprageneric classification is proposed by W. Sweet [18].

Phylum Chordata Bateson, 1886
Class Conodonta Pander, 1856
Order Ozarkodinida Dzik, 1976
Family Spathognathodontidae Hass, 1959
Genus *Zieglerodina* Murphy, Valenzuela-Ríos and Carls, 2004
Species ***Zieglerodina remscheidensis*** (Ziegler, 1960)
Plate I, fig. 5–21.

1960 *Spathognathodus remscheidensis* n. sp.; Ziegler 1960 [24]: 194, pl. 13: 1, 2, 4, 5, 7 (non pl. 13: 8, 10, 14).
1972 *Ozarkodina steinhornensis remscheidensis* (Ziegler, 1960); Mashkova 1972 [11]: 83, pl. 2: 19–21, 23, 24 (non pl. 2: 22).
1984 *Spathognathodus eosteinhornensis* Walliser; Drygant 1984 [27]: 123, pl. 13: 5–8, 11, 12, 15.
1990 *Ozarkodina remscheidensis remscheidensis* (Ziegler, 1960); Olivieri and Serpagli 1990 [13]: pl. 4: 10.
Non 2005 *Ozarkodina remscheidensis* (Ziegler, 1960); Barrick et al. 2005 [1]: 120, pl. 1: 1 (=?), 2 (=? *Z. planilingua* [Murphy and Valenzuela–Ríos, 1999 [12]]), 9, 10 (=?); pl. 2, fig. 8 (= *Z. prosoplatys* Mawson, Talent, Molloy and Simpson, 2003 [16]).
2010 *Zieglerodina remscheidensis* (Ziegler, 1960); Drygant 2010 [26]: 49, pl. 1: 1–10, 12.
2012 *Zieglerodina remscheidensis* (Ziegler, 1960); Drygant 2012 [5]: 853, fig. 8N, O, 12A-G.

Material: 74 elements from the rocks of Dubitsa Formation; samples from depths of 421.6; 426.2; 428.7; 430.5; 431.5; 432.9; 433.3; 433.6; 434.0; 434.8; 435.8; 437.3; 438.5; 442.0; 445.7; 447.6; 449.5 m.

Description: typical Pa-elements are characterized by an elongated (0.9–1.3 mm) and high (0.2–0.35 mm) blade with straight lower margin, a noticeably higher cusp and two–four denticles at the anterior part. The basal cavity is located closer to the posterior end of the blade. In specimens of earlier forms (Silurian–Devonian boundary) the height of the anterior denticles and cusp doesn't differ significantly from the rest ones.

Stratigraphic and geographic range: Upper Silurian – Lower Lochkovian; the very top of the *Delotaxis detorta* – *Caudicriodus postwoschmidti* Zones; Borshchovo and Chortkov Horizons of Volyn-Podolia (Belarus, Ukraine), Carnic Alps (Austria, Italy), Rhenish Slate Mountains, Haragan Formation in Oklahoma, Road River Formation in the Canadian Cordillera, Barrandia Region in the Czech Republic and Poland, New South Wales Australia [3–5].

Species ***Zieglerodina mashkovae*** **(Drygant, 1984)**
Plate I, fig. 1–4.
1971 *Spathognathodus* sp. nov.; Mashkova 1971 [29]: pl. 3: 11, 14.
1979 *Ozarkodina remscheidensis remscheidensis* (Ziegler); Lane and Ormiston 1979 [10]: pl. 1: 18, 34.
1984 *Spathognathodus mashkovae* sp. n.; Drygant 1984 [27]: 125, pl. 14: 10, 11, 13–21 (non 12 = Pandorinellina? formosa Drygant).
1994 *Ozarkodina eladioi* n. sp; Valenzuela–Ríos 1994 [19]: 59, pl. 5: 1–35.
2010 *Zieglerodina mashkovae* (Drygant); Drygant 2010 [26]: 53, pl. 1: 18–20.
2012 *Zieglerodina mashkovae* Drygant 2010; Drygant 2012[5]: 853, fig. 12H, I, J.
2016 *Zieglerodina mashkovae* Drygant 2010; Corriga et al. 2016 [3] fig. 5C–E.

Material: 25 elements from the rocks of Domachevo and Dubitsa Formations; samples from depths of 431.5; 432.9; 434.0; 434.8; 443.2; 445.3; 445.7; 447.6; 467.4–468.7 m.

Description: Pa-elements of the species are characterized by a short (0.6–0.7 mm) and low (0.2 mm)

blade with straight lower and upper margins; cusp substantially higher and larger than other denticles, straight or slightly inclined backwards. From both sides of cusp, there are 5–7 low, almost equal in height denticles, which become wider in the posterior part and slightly inclined backwards. Basal cavity with circular, symmetrical lips is located in the at mid–length or slightly shifted towards the posterior end.

Comparison: it differs from ancestral species *Zieglerodina remscheidensis (*Ziegler, 1960), *Z. repetitor* (Carls and Gandl, 1969) and *Z. serrula* (Drygant, 1984) with a shorter and higher blade, larger cusp, different widths of denticles on the anterior and posterior parts, as well as the location of the basal cavity in the center of the lower margin.

Stratigraphic and geographic range: Lochkovian Stage, *Cypricriodus hesperius – Caudicriodus serus* Zones; Borshchovo and Chortkov Horizons in Volyn-Podolia (Belarus, Ukraine), Carnic Alps (Austria, Italy), Pyrenees, Iberian Mountains, Sierra de Guadarrama (Spain) [3–5].

Species ***Zieglerodina formosa*** (Drygant, 2010)

Plate II, fig. 22–34.

1971 *Spathognathodus steinhornensis* subsp. nov. aff. sp. *Steinhornensis remscheidensis* Ziegler; Mashkova 1971 [29]: pl. 3: 10.

1984 *Spathognathodus remscheidensis* Ziegler; Drygant 1984 [27]: pl. 13: 28, pl. 14: 4.

1984 *Spathognathodus mashkovae* sp. n.; Drygant 1984 [27]: pl. 14: 12.

2010 *Pandorinellina formosa* nov. sp.; Drygant 2010 [26]: 54, pl. 1: 25.

2012 *Pandorinellina? formosa* Drygant 2010; Drygant 2012 [5]: fig. 12K, M, N, P–R.

2016 *Zieglerodina formosa* (Drygant 2010); Corriga et al. 2016 [3] fig. 5M.

Material: 30 elements from the rocks of Dubitsa Formation; samples from depths of 418.2; 422.5; 426.2; 428.7; 431.5; 432.9; 433.6; 434.0; 434.8; 438.2; 439.6; 443.2; 445.3 m.

Description: Pa-elements of the species are characterized by a comparatively long (0.8–1.1 mm) sigmoidal blade, twisted up in the anterior part, and down in the posterior. Denticles are low, with wide basis; cusp is slightly larger than the adjacent ones. Three or four denticles in the anterior part of the element are higher than other, slightly bowed backwardly or rarely increasing rapidly and erect. Basal cavity is located at mid–length or a bit closer to the posterior end.

Comparison: differs from similar *Zieglerodina remscheidensis* (Ziegler, 1960) by sigmoidal blade; from *Pandorinellina camelfordensis* (Farrell) by deeper and wider basal cavity, and by larger and rounded cavity lips.

Stratigraphic and geographic range: Lower–Middle Lochkovian, *Cypricriodus hesperius – Caudicriodus transiens* Zones; Borshchovo and Chortkov Horizons in Volyn-Podolia (Belarus, Ukraine), Carnic Alps (Austria, Italy) [3–5].

Genus *Pandorinellina* Müller et Müller, 1957

Species ***Pandorinellina camelfordensis*** **(Farrell, 2004)**

Plate II, fig. 45–47.

2003 *Ozarkodina cf. canadensis* (Walliser); Farrell [6], pl. 7, fig. 3–10.

2004 *Ozarkodina camelfordensis* sp. nov. Farrell [7], p. 966, pl. 7, fig. 1–14.

2010 *Pandorinellina camelfordensis* (Farrell, 2004): Drygant 2010 [26], p. 54.

2021 *Pandorinellina camelfordensis* (Farrell, 2004): Zhen 2021 [23]: Fig. 4, a.

Material: 3 elements from the rocks of Dubitsa Formation; samples from depths 433.3; 434.0; 437.3 m.

Description: Pa-elements of are characterized by a sigmoidal blade, the anterior part is straight or rounded. 8–12 denticles of mostly triangular shape vary in height and size. The second denticle in the anterior margin is usually higher than the others, almost equal in height of cusp. Posterior section of blade contains 1–2 large denticles with smaller denticles towards posterior extremity. The basal cavity is deep, located in the mid-length or slightly shifted to the posterior section.

Stratigraphic and geographic range: Lower–Middle Lochkovian, *Cypricriodus hesperius* Zone; Borshchovo Horizon in Volyn-Podolia (Belarus, Ukraine), New South Wales (Australia) [5; 23; 26].

Genus *Wurmiella* Murphy, Valenzuela-Ríos and Carls, 2004

Species ***Wurmiella excavata maxima*** **(Drygant, 1984)**

Plate II, fig. 35–40.

1960 *Spathognathodus* n. sp.; Walliser 1960 [22]: 35, pl. 8: 7.

1968 *Spathognathodus inclinatus inclinatus* (Rhodes); Drygant 1968 [28]: 51, fig. 24, 25.

1980 *Ozarkodina wurmi* (Bischoff and Sannemann); Schünlaub 1980 [17]: pl. 19: 17.

1984 *Spathognathodus inclinatus maximus* ssp. n.; Drygant 1984 [27]: 122, pl. 10: 17, 18.

2005 *Ozarkodina wurmi* (Bischoff and Sannemann); Barrick et al. 2005 [1]: pl. 2: 15.

2010 *Wurmiella excavata maxima* (Drygant, 1984); Drygant 2010 [26]: 55.

2012 *Wurmiella excavata maxima* (Drygant, 1984); Drygant 2012 [5]: 858.

Material: 17 elements from the rocks of Dubitsa Formation; samples from depths 434.8; 435.8; 437.3; 438.2; 438.5; 439.6; 443.2; 445.3; 445.7; 451.5 m.

Description: elements of the species are characterized by a long, low, thick, arched blade (blade length up to 1.7 mm, height up to 0.27 mm;); wedge-shaped, high denticles up to 0.3 mm; and significantly larger cusp size. Basal cavity is small and shallow.

Comparison: differs from the other *Wurmiella* species in its large size and arcuate blade.

Stratigraphic and geographic range: Lower–Middle Lochkovian, *Cypricriodus hesperius* Zone in Volyn-Podolia (Belarus, Ukraine) and Barrandia Region (the Czech Republic and Poland); *Laneaomoalpha* Zone in West Texas, Southerland River Formation of Devon Island (Canadian Arctic Archipelago) [4; 5; 26].

Family Icriodontidae Müller and Müller, 1957

Genus *Caudicriodus* Bultynck, 1976

Species ***Caudicriodus hadnagyi* (Chatterton and Perry, 1977)**

Plate II, fig. 41–44.

1977 *Icriodus hadnagyi* n. sp.; Chatterton and Perry 1977 [2]: 792, pl. 4: 10–22.

2010 *Caudicriodus hadnagyi* (Chatterton and Perry, 1977); Drygant 2010 [26]: 59, pl. 3: 4, 5.

2012 *Caudicriodus hadnagyi* (Chatterton and Perry, 1977); Drygant 2012 [5]: 848, pl. 10.

Material: 4 elements from the rocks of Dubitsa Formation; samples from depths 428.7; 431.5; 434.0 m.

Description: Pa-elements are short, with two cusps in the posterior part; basal cavity has a narrow anterior part and a sharp posterolateral expansion; the narrow upper surface may consist of three rows of denticles in transverse ridges, or of unevenly spaced median denticles without lateral rows.

Remark. Elements of the species are highly variable. Pa-elements vary from pelekysgnatidae to icryodidae forms. S-elements range from rounded simple cones to slightly flattened and almost crescent-shaped, the basal cavity may be rounded, subtriangular or subsquare. The degree of curvature of the denticles is also different.

Comparison: The Pa-elements of this species differ from the closest *Caudicriodus ruthmawsonae* Drygant by the presence of a prominent cusp, weakly developed inner lobe and expanded basal cavity in its middle part.

Stratigraphic and geographic range: Lower Lochkovian; the upper part of *Cypricriodus hesperius* Zone, the lower part of the *Caudicriodus transiens* Zone; the upper part of the Borshchovo Horizon and the lower part of the Chortkov Horizon in Volyn-Podolia (Belarus, Ukraine), Delorme Formation of Northwestern Canada [5].

CONCLUSIONS

Conodont studies of the sediments of the Domachevo and Dubitskaya Formations (Borshchovo and Chortkov Horizons, Lower Lochkovian, Lower Devonian) of the Tomashovka 11 section made it possible to identify a number of taxa that were not previously known on the territory of Belarus: *Zieglerodina mashkovae* (Drygant), *Z. formosa* (Drygant), *Z. remscheidensis* (Ziegler), *Pandorinellina camelfordensis* (Farrell), *Wurmiella excavata maxima* (Drygant), *Caudicriodus hadnagyi* (Chatterton et Perry). Such assemblage is specific for the *Cypricriodus hesperius* Zone.

The conodont data presented in this paper supplement the information on the taxonomic composition, paleogeographic and stratigraphic distribution of vertebrates in the Lower Devonian sediments in the southwest of Belarus, and allow correlations with synchronous deposits of the adjacent territories of the Ukraine as well as with more remote region of Carnic Alps.

ACKNOWLEDGMENTS

The author expresses her deep gratitude to Dr. A. A. Makhnach (Institute of Geology, Minsk) and Ph.D. D. P. Plax (Belarusian National Technical University, Minsk) for discussion of the materials and constructive comments that have significantly improved this publication.

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Артыкул паступіў у рэдакцыю 06.07.2023 *Рэцэнзент А. А. Махнач*

КАНАДОНТЫ З ЛОХКАЎСКІХ АДКЛАДАЎ БЕЛАРУСКАЙ ЧАСТКІ ВАЛЫНСКАЙ МАНАКЛІНАЛІ (СВІДРАВІНА ТАМАШОЎКА 11)

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У артыкуле прыводзяцца новыя дадзеныя аб канадонтах з адкладаў лохкаўскага яруса ніжняга дэвона, выкрытых свідравінай Тамашоўка 11, прасвідраванай на тэрыторыі Беларусі ў паўночна-заходняй частцы Валынскай манакліналі. Выяўлены шэраг таксонаў, раней не вядомых на тэрыторыі краіны: *Zieglerodina mashkovae* (Drygant), *Z. formosa* (Drygant), *Z. remscheidensis* (Ziegler), *Pandorinellina camelfordensis* (Farrell), *Wurmiella excavata maxima* (Drygant), *Caudicriodus hadnagyi* (Chatterton et Perry). Найбольшае значэнне для мэт стратыграфіі маюць *Pandorinellina camelfordensis* (Farrell), што з'яўляецца кіруючым відам баршчоўскага гарызонту, і *Wurmiella excavata maxima* (Drygant), якія ўваходзяць у лік відаў-індэксаў зоны *Cypricriodus hesperius*. Усе выяўленыя таксоны канадонтавага комплексу пацвярджаюць раннелохкаўскі ўзрост асадканазапашвання даследаванай часткі разрэзу.

Ключавыя словы: Беларусь, Валынская манакліналь, канадонты, лохкаўскія адклады, ніжні дэвон.

КОНОДОНТЫ ИЗ ЛОХКОВСКИХ ОТЛОЖЕНИЙ БЕЛОРУССКОЙ ЧАСТИ ВОЛЫНСКОЙ МОНОКЛИНАЛИ (СКВАЖИНА ТОМАШОВКА 11)

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Приведены новые данные о конодонтах из отложений лохковского яруса нижнего девона, вскрытых скважиной Томашовка 11, пробуренной на территории Беларуси в северо-западной части Волынской моноклинали. Выявлен ряд таксонов, ранее не известных на территории страны: *Zieglerodina mashkovae* (Drygant), *Z. formosa* (Drygant), *Z. remscheidensis* (Ziegler), *Pandorinellina camelfordensis* (Farrell), *Wurmiella excavata maxima* (Drygant), *Caudicriodus hadnagyi* (Chatterton et Perry). Наибольшее значение для целей стратиграфии имеют *Pandorinellina camelfordensis* (Farrell), являющийся руководящим видом борщовского горизонта, и *Wurmiella excavata maxima* (Drygant), входящие в число видов-индексов зоны *Cypricriodus hesperius*. Все выявленные таксоны конодонтового комплекса подтверждают раннелохковский возраст осадконакопления исследованной части разреза.

Ключевые слова: Беларусь, Волынская моноклиналь, конодонты, лохковские отложения, нижний девон.