



**The taxonomic status of *Eurypterus podolicus* CHERNYSHEV, 1947
(Arthropoda: Eurypterida),
from the Silurian of Podillia, Ukraine**

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Abstract: This article presents the results of an investigation into the complex history of the eurypterid species "*Eurypterus podolicus* CHERNYSHEV, 1947", for which neither an original description nor a type series is known. The study confirms that this species is a *nomen nudum*, as it was never formally described. Moreover, the specimens of "*Eurypterus podolicus*" from the Borys CHERNYSHEV's collection lack distinct morphological features that would justify recognizing it as a separate species.

Keywords:

- taxonomy;
- original description;
- type series;
- holotype;
- Ludlow (Epoch)

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Résumé : Statut taxonomique de *Eurypterus podolicus* CHERNYSHEV, 1947 (Arthropoda : Eurypterida), du Silurien de Podolie, Ukraine.- Cet article présente les résultats d'une étude consacrée à l'histoire taxinomique complexe de l'espèce d'euryptéridé "*Eurypterus podolicus* CHERNYSHEV, 1947", pour laquelle aucune description originale ni série-type n'est connue. L'étude confirme que cette espèce constitue un *nomen nudum*, dans la mesure où elle n'a jamais fait l'objet d'une description formelle. En outre, les spécimens désignés sous le nom d'*Eurypterus podolicus*, provenant de la collection de Borys CHERNYSHEV, ne présentent pas de caractères morphologiques distinctifs permettant de justifier sa reconnaissance en tant qu'espèce à part entière.

Mots-clefs :

- taxinomie ;
- protologue ;
- série-type ;
- holotype ;
- Ludlowien

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1. Introduction

Eurypterida BURMEISTER, 1843, is an order of Palaeozoic aquatic predatory chelicerates with an almost global distribution (POSCHMANN, 2006; DUNLOP *et al.*, 2023; LAMSDALL, 2025). To date, approximately 250 species across 21 families have been identified, ranging in age from the Early Ordovician to the Late Permian (TETLIE, 2007; BICKNELL *et al.*, 2020; BRADDY, 2022; VAN ROY *et al.*, 2025). These arthropods inhabited marine to freshwater (continental) environments (BICKNELL *et al.*, 2020). In Ukraine, eurypterid remains have been found in Silurian and Devonian deposits of the Volyn-Podillia Monocline (FISCHER de WALDHEIM, 1839; VENIUKOV, 1899; KASIANYK & MATUZ, 2017; NAUGOLNYKH & SHPINEV, 2018; DERNOV, 2026) as well as in Carboniferous strata of the Donets Basin (CHERNYSHEV, 1933; SHPINEV, 2014).

Silurian eurypterids from Ukraine were first described by FISCHER de WALDHEIM in 1839. Later, VENIUKOV (1899) referred to *Eurypterus tetragonophthalmus* FISCHER de WALDHEIM, 1839, under the name *Eurypterus fischeri* EICHWALD, 1854. Subsequently, additional specimens were illustrated by various researchers, including VÄSCĂUȚANU (1932), NIKIFOROVA (1954), and SELDEN and DRYGANT (1987), among others. More recently, NAUGOLNYKH and SHPINEV (2018) described *Pterygotus* sp. from Silurian strata of Podillia (Podolia in Russian-language literature) in western Ukraine. However, despite nearly two centuries of study, most Silurian eurypterids from this region have not been revised.

This article focuses on clarifying the taxonomic status of *Eurypterus podolicus* CHERNYSHEV, 1947, a species occasionally cited in the literature (e.g., NIKIFOROVA, 1954; PIROZHNIKOV, 1957, 1965; DRYGANT, 1968; UZIUK *et al.*, 2007; HOTSANIUK & IVANINA, 2017; DUNLOP *et al.*, 2023). The validity of this species remains uncertain due to the lack of a verifiable original description and the absence of known type material. LAMSDALL (2025) suggested that *Eurypterus podolicus* is a *nomen nudum*; however, he did not provide convincing arguments, likely due to the limited accessibility of Soviet palaeontological literature in the West, which is necessary for the successful completion of such a complex taxonomic investigation as the one presented in this paper.

2. Historical context

NIKIFOROVA (1954: footnote on p. 21) reported that the name *Eurypterus podolicus* was first used by Dr Borys I. CHERNYSHEV in 1947 but did not specify in which work. The same information was confirmed by PIROZHNIKOV (1957, 1965), but he also did not refer to a specific work by CHERNYSHEV (probably repeating NIKIFOROVA's report without proper data verification). NIKIFOROVA (1954) did not designate either a holotype or provide a

species diagnosis, both of which are key requirements for the availability of a published name (International Code of Zoological Nomenclature, 1999, articles 11 and 13).

In the official bibliography of the academician Borys I. CHERNYSHEV (anonymous, 1950, and in the list compiled by the author of this paper), no work was published in 1947 that could describe this species (there are only one article on Carboniferous bivalves and four chapters on arthropods for a reference book on the guiding species of the Triassic and Jurassic systems of the former USSR). A check of bibliographical lists in reference books (e.g., NOVOZHILOV, 1962; BZHELENKO *et al.*, 1971) did not yield any new information.

NIKIFOROVA (1954: footnote on p. 21) noted that in the opinion of Borys I. CHERNYSHEV, Podillian eurypterids, including the specimens figured by VENIUKOV (1899: Pl. 9, fig. 9), are morphologically significantly different from *Eurypterus fischeri* (junior synonym of *Eurypterus tetragonophthalmus* according to SELDEN, 1981), so they were named by him *Eurypterus podolicus* sp. nov. NIKIFOROVA (1954: Pl. 6) figured two specimens of *Eurypterus podolicus*, probably originating from the Ustia Horizon (the Ustia Member of the Bago-vytsya Formation, Yaruga Group, Gorstian in the modern lithostratigraphic scheme).

CHERNYSHEV (1949) did not formally report *Eurypterus podolicus* from the Silurian of Podillia, although, according to NIKIFOROVA (1954) and PIROZHNIKOV (1957, 1965), he first used this name as early as 1947. However, the planned publication of a series of reference volumes, including a chapter on Silurian eurypterids of the former USSR authored by CHERNYSHEV, was delayed by the outbreak of the Second World War. As a result, the relevant section was likely written well before 1947, probably in the pre-war years. Supporting this, the bibliography of CHERNYSHEV (anonymous, 1950) indicated that the manuscript on Silurian eurypterids of the USSR was submitted to the publisher in 1939. In the 1949 work (Pl. 63, fig. 7), CHERNYSHEV illustrated *Eurypterus fischeri* EICHWALD, 1857, based on a specimen from VENIUKOV's collection, now housed in the National Museum of Natural History, National Academy of Sciences of Ukraine (NMNHU), Kyiv.

Until recently, the only sources providing insight into the morphology of *Eurypterus podolicus* were the images of two specimens published by NIKIFOROVA (1954: Pl. 6; see also Fig. 1A, C in this paper), as well as specimens from VENIUKOV's collection (VENIUKOV, 1899: Pl. 9, fig. 9; CHERNYSHEV, 1949: Pl. 63, fig. 7; Fig. 1B in this paper), which CHERNYSHEV (as cited in NIKIFOROVA, 1954) referred to *Eurypterus podolicus*. The author's search for eurypterid specimens in the VENIUKOV's collection NMNHU-G 367 in June 2025 was unsuccessful, suggesting that the material has likely been lost.



Figure 1: Specimens attributed to *Eurypterus podolicus* CHERNYSHEV, 1947. A, C - "*Eurypterus podolicus* CHERN." figured by NIKIFOROVA (1954: Pl. 6). B - "*Eurypterus fischeri* EICHWALD, 1854" from the collection of VENIUKOV, figured by CHERNYSHEV (1949: Pl. 63, fig. 7). Not to scale.

During the period after the Second World War, Borys I. CHERNYSHEV worked in Kyiv, holding positions at Kyiv University and the Institute of Geological Sciences, Academy of Sciences of the Ukrainian SSR (NOVIK, 1950; MAKARENKO, 1998). However, an examination of CHERNYSHEV's personal archive at the Institute of Archival Studies of the Vernadsky National Library of Ukraine (Kyiv) and his technical reports at the State Geological Information Fund of Ukraine (Kyiv) did not yield any information regarding the bibliographic details of the original description of *Eurypterus podolicus*.

3. Collection of *Eurypterus podolicus*

In the Department of Geology of the NMNHU, the author discovered a small collection of Silurian eurypterids from Podillia (NMNHU-G 1335), collected by Borys I. CHERNYSHEV. The museum digital catalogue lists this collection as "Impressions of *Eurypterus podolicus* sp. n. from Silurian deposits of the Dniester River area." The original label was preserved for only one specimen (NMNHU-G 1335/07) (Fig. 2A-B), but it and the inventory of the collection NMNHU-G 1335 compiled by Borys I. CHERNYSHEV (Fig. 2C-D) (archive of the Department of Geology, NMNHU)

confirm that this is the material that CHERNYSHEV attributed to *Eurypterus podolicus*.

NOVIK (1950) reported that two months before his death (*i.e.*, approximately in June 1950), Borys I. CHERNYSHEV visited Podillia, from where he brought back a collection of eurypterids that he intended to study in the future. This collection is most likely the one currently housed in the NMNHU under catalogue number 1335.

The collection comprises relatively poorly preserved fragments of eurypterid exoskeletons, which can be identified as *Eurypterus tetragonophthalmus* FISCHER de WALDHEIM, 1839 (Fig. 3), Pterygotidae indet. (Fig. 4.A-B, E), and Eurypterida indet. (Fig. 4.C-D, F-H). Specimens identified here as Pterygotidae indet. were assigned by CHERNYSHEV to *Pterygotus* sp. (Fig. 2C-D). Together with the eurypterid specimens, slabs containing orthocerid moulds are also present. The specimens assigned by CHERNYSHEV to *Eurypterus podolicus* (Fig. 1) show no morphological differences from *Eurypterus tetragonophthalmus* that would justify the separation of the putative species. Therefore, based on this material, there are insufficient morphological grounds to support the distinction of the species *Eurypterus podolicus*.



сбори В.И. Чернышева. <i>Eurypterus podolicus</i> Tschern. Верхн. силур, устьевый горизонт Лев. берег Днестра с. Мухи Инв. 1335/7.	Collection by B.I. Chernyshev <i>Eurypterus podolicus</i> Tschern. Upper Silurian, Ustia Horizon No. 1335/7 Left bank of the Dniester River near the Muksha village
A	B

Список зразків фауни силуру р. Дністра біля с. Мухи. Передаю до музею акад. Б.І. Чернышеву.						
№ п/п	Инв. №	Визначення	Місцевість	Вік	Кількість	Місце зберігання
1.	1-7 ^а	<i>Eurypterus podolicus</i> Tschern.	р. Дністр с. Мухи	Верхн. силур.	5	Кім. 93, б-р. 106/2
2.	8-32	<i>Pterygotus</i> sp.	" "	" "	25	Зразки 1, 2, 7 знах. у б-р. 86
3.	33-42	<i>Orthoceras</i> sp.	" "	" "	10	
№ 1335/2 - жакет						

No. 1335 K List of Silurian faunal remains from the Dniester River near the Muksha village Deposited in the museum by the academician B.I. Chernyshev						
No.	Spec. no.	Identification	Area	Age	Number	Place of storage
1	1-7 ^a	<i>Eurypterus podolicus</i> Tschern.	Dniester River, Muksha village	Upper Silurian	5	Room 93, display case 106/2.
2	8-32	<i>Pterygotus</i> sp.	[same]	[same]	25	Specimens 1, 2, 7 are in the display case 86
3	33-42	<i>Orthoceras</i> sp.	[same]	[same]	10	
Specimen 1335/2 - hall No. 2						

Figure 2: Documents accompanying collection NMNHU-G 1335. A - Original label of specimen NMNHU-G 1335/07; B - Translation of the label of specimen NMNHU-G 1335/07 from Russian; C - Inventory of the collection NMNHU-G 1335 compiled by Borys I. CHERNYSHEV; D - Translation of the inventory from Ukrainian.



Figure 3: Some specimens identified by Dr Borys I. CHERNYSHEV as *Eurypterus podolicus* sp. nov. (Ustia Member, Bagovytsya Formation, Gorstian, Late Silurian; Podillia, western Ukraine). A-I - *Eurypterus tetragonophthalmus* FISCHER DE WALDHEIM, 1839 (A - prosoma NMNHU-G 1335/09, B - prosoma NMNHU-G 1335/07a, C - prosoma NMNHU-G 1335/?, D - prosoma NMNHU-G 1335/04, E - prosoma NMNHU-G 1335/03, F - prosoma NMNHU-G 1335/18, G - prosoma NMNHU-G 1335/07, H - prosoma NMNHU-G 1335/06, I - prosoma NMNHU-G 1335/11). Scale bars equal 5 mm.

Based on the inscriptions on the slabs bearing the eurypterids, this material originates from the Ustia, Muksha, and Dumaniv localities (Khmel'nytskyi Oblast, Ukraine). These localities are situated near the village of Ustia, at the mouth of the Smotrych River (outcrop No. 13 in TSEGELNYUK *et al.*, 1983); at the mouth of the Muksha River, near the village of Velyka Slobidka (outcrop No. 20 in NIKIFOROVA & PREDTECHENCKIY, 1968; NIKIFOROVA *et al.*, 1972, or Nos. 33 and 34 in TSEGELNYUK, 1974); and near the village of Dumaniv (outcrop No. 98 in NIKIFOROVA *et al.*, 1972), respectively. Specimens of *Eurypterus fischeri* from Dumaniv were described by VENIUKOV (1899). Detailed information on these localities can be found in NIKIFOROVA and PREDTECHENCKIY (1968), NIKIFOROVA *et al.* (1972), TSEGELNYUK (1974, 1980), TSEGELNYUK *et al.* (1983), SELDEN and DRYGANT (1987), and JAROCZOWSKA *et al.* (2016).

The eurypterid-bearing strata are currently designated as the Ustia Member of the Bagovytsya Formation (Yaruga Group, Gorstian) (TSEGELNYUK *et al.*, 1983; SELDEN & DRYGANT, 1987; KONSTANTYNENKO & TSEGELNYUK, 2013).

4. Discussion

Borys I. CHERNYSHEV passed away in 1950 (NOVIK, 1950; MAKARENKO, 1998). According to the bibliography section "Works submitted for publication" (anonymous, 1950), he had planned to publish 15 papers in 1950 and later, including an article on new Palaeozoic arthropod taxa from the former USSR. Although this article was reportedly submitted for publication in the Materials of the Tsentral'nyy Nauchno-Issledovatel'skiy Geologorazvedochnyy Institut (Central Research Geological Exploration Institute, Leningrad) (anonymous,

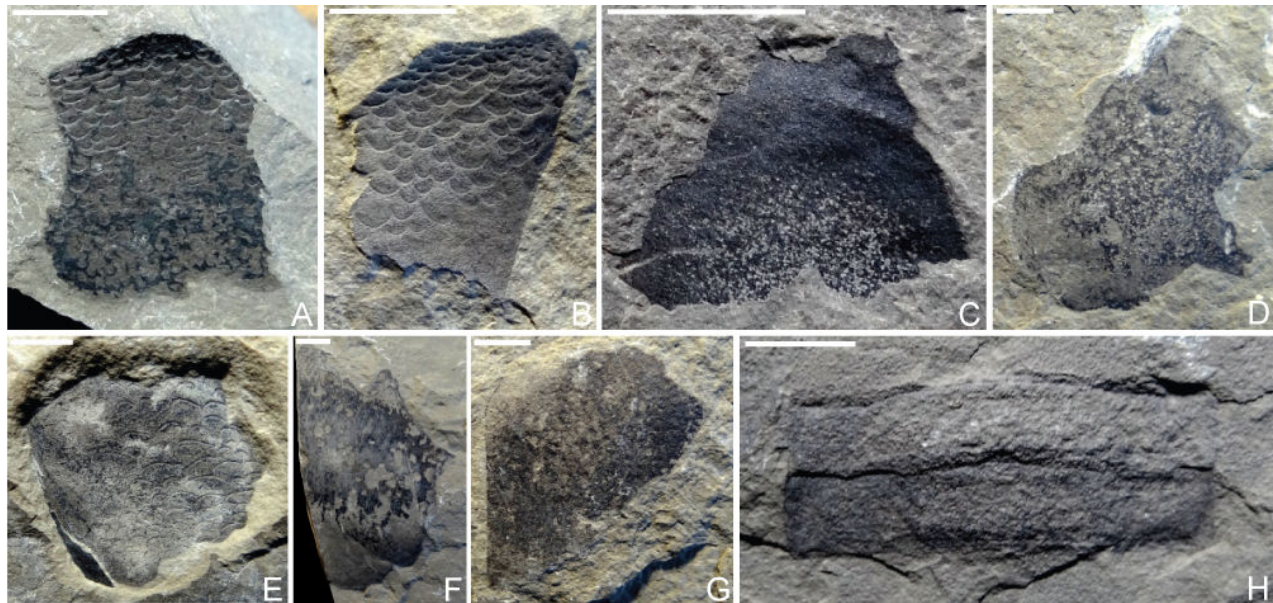


Figure 4: Some specimens identified by Dr Borys I. CHERNYSHEV as *Pterygotus* sp. and *Eurypterus podolicus* sp. nov. (Ustia Member, Bagovytsya Formation, Gorstian, Late Silurian; Podillia, western Ukraine). A, B, E - Pterigotidae indet. (A - exoskeleton fragment NMNHU-G 1335/28, B - exoskeleton fragment NMNHU-G 1335/27, E - exoskeleton fragment NMNHU-G 1335/22b); C, D, F-H - Eurypterida indet. (C - exoskeleton fragment NMNHU-G 1335/14, D - exoskeleton fragment NMNHU-G 1335/21, F - exoskeleton fragment NMNHU-G 1335/26, G - exoskeleton fragment NMNHU-G 1335/25, H - segments of opisthosoma NMNHU-G 1335/22). Scale bars equal 5 mm.

1950), in 1953 CHERNYSHEV's work on Palaeozoic arthropods from the Angara River in Siberia was published in the Yearbook of the All-Union Palaeontological Society (CHERNYSHEV, 1953). If this is indeed the article referenced as "submitted for publication" in CHERNYSHEV's bibliography, then no publication remains in which *Eurypterus podolicus* could have been formally described. Furthermore, the Department of Geology of the NMNHU does not hold any publication containing a description of the *Eurypterus podolicus* specimens.

It should also be noted that NIKIFOROVA, in her later works (e.g., NIKIFOROVA & PREDTECHENKIY, 1968), when describing the Ustia "Horizon", did not mention *Eurypterus podolicus* but assigned the eurypterids from this unit to *Eurypterus tetragonophthalmus*. This fact also likely indicates that the formal publication of *Eurypterus podolicus* never took place. NIKIFOROVA *et al.* (1972, p. 53) further stated that N.S. KRYLOV collected a new collection of Silurian eurypterids from Podillia and concluded that *Eurypterus podolicus* sp. nov., "provisionally identified by B.I. CHERNYSHEV in 1949 [this is probably an error; 1947 is meant - VD]" is morphologically identical to *Eurypterus tetragonophthalmus*. However, KRYLOV's research results were never published. Moreover, it is not entirely clear who N.S. KRYLOV was, since the only Soviet palaeontologist with the surname KRYLOV (Igor Nikolaevich) specialized in the study of stromatolites (ZANINA, 1968; SERGEEV & SUMINA, 2015) and never worked as field researcher in Podillia (SERGEEV & SUMINA, 2015). The researcher KRYLOV, who worked on eurypterids, is not mentioned in the lists of Soviet palaeontologists (ZANINA, 1968; DONAKOVA *et al.*, 1984; MIRONOVA, 1990).

5. Conclusion

Eurypterus podolicus is here considered a *nomen nudum*. Although CHERNYSHEV likely used this name for Silurian eurypterids from Podillia as early as 1947, the species was never formally described. Thus, the formal requirements for publishing a new species, as defined by Articles 8, 11, and 13 of the International Code of Zoological Nomenclature (1999), have not been fulfilled.

The material attributed to *Eurypterus podolicus* by CHERNYSHEV (collection NMNHU-G 1335) does not exhibit sufficient morphological features to support designation as a new species and can only be defined as *Eurypterus tetragonophthalmus*, Pterygotidae indet., and Eurypterida indet.

Thus, the Silurian eurypterids of Podillia are currently represented by only two species-level taxa, *Eurypterus tetragonophthalmus* and *Pterygotus* sp., both confined to a narrow stratigraphic interval (Ustia Member). Overall, in addition to these taxa, the Silurian chelicerate assemblage of Podillia also includes *Pasternakevia podolica* SELDEN & DRYGANT, 1987, and *Smotrychaspis kurtopleurae* SMITH & SELDEN, 2025, both of which likewise originate from the Ustia Member (SELDEN & DRYGANT, 1987; KRZEMIŃSKI *et al.*, 2010; SMITH & SELDEN, 2025).





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