

***Megistaspis gibba* from the Area of Mining Works in Mielenko Drawskie, the Drawskie Lakeland, Poland**

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1. Introduction

The area of mining works in Mielenko Drawskie in the Drawskie Lakeland, Western Pomeranian Province, is a typical post-glacial site. However, marine sedimentary limestones of Swedish origin can be found here. These limestone rocks are characterised first of all by a large content of ferric oxide (III) (Fe_2O_3). Fossilised arthropods (*Arthropoda*) can be observed in them, in particular trilobites (*Trilobita*). It can be stated that the largest and most frequently encountered here trilobites of the *Megistaspis* genus are *Megistaspis gibba*. However, no complete specimens of these trilobites have been observed so far.

In the territory of Poland, about 170 species within the group of Ordovician trilobites, belonging to 84 genera and represented by 36 families, have been known. Twenty one species are Polish holotypes. The Ordovician trilobites have not been examined to the same extent. The Upper Ordovician trilobites have been elaborated the best. About 80 species, belonging to 40 genera, have been found. The expansion of trilobites depends on the distribution of lithofacies within the Ordovician sedimentation basin. In limestone and marl lithofacies, trilobites are found accompanied by most abundant brachiopods, cephalopods, ostracods and echinoderms.

Trilobites are found abundantly together with brachiopods in light, limestone clayey-mud sediments of the Upper Ordovician period in the Świętokrzyskie Mountains. Trilobites are of fundamental importance when elaborating the biostratigraphy of Ordovician sediments, in particular those developed on carbonate, marl and mud lithofacies. Starting with the Lower Arenian period,

trilobites became abundant. The leading species of the Arenig trilobites belong to *Megistaspis*, *Symphysurus*, *Nileus*, *Metaptychopyge* and *Asaphus* orders. Special attention should be paid to two species: *Symphysurus angustatus* (Sars et Boeck), a leading species for the Lower Arenig period, and *Megistaspis limbata* (Boeck), both being broadly distributed geographically and delimiting the horizon within the Upper Arenig period. Within the area of the aforesaid opencast mine (mining works in Mielenko Drawskie), one can find post-glacial Quaternary sediments, containing the fossils dated back to the period from the Cambrian to the Quaternary. However, the most abundant are limestone sediments with Ordovician trilobites [1-27].

2. Materials and methods

The technique of searching for trilobites was limited to looking for limestone sediments with a large content of ferric oxide (III) (Fe_2O_3). During the search, limestone rocks were found, out of which some had distinctive features basing on which one could suspect the presence of fossilised trilobites in them. Such a distinctive feature of limestone rocks is trilobite contours. Such sedimentary limestones are then slowly opened in a traditional way with a hammer and a chisel along natural cracks and fissures.

The work site was located within the area of opencast mine, after having the approval from the management of the mining works in Mielenko Drawskie obtained.

3. Systematic paleontology

- Family Asaphidae Burmeister, 1843
- Genus *Megistaspis* Jaanusson, 1956
- *Type species: Megistaspis gibba* Schmidt, 1898
- *Other species: Megistaspis limbata* Boeck, 1838
- *and Megistaspis (Megistaspidella) gigas* Angelin, 1851

4. Locality

The whole Western Pomerania is covered with the mantle of deposits left by the Scandinavian ice-sheet. This mantle, if one can call the upper surface of the whole region this way, is thick, being sometimes tens or even hundreds meters in thickness. The layer of beds, which were left here by the glacier, is thick thus and this makes reaching the older deposits, remembering earlier geological epochs, impossible or badly difficult. In principle, older formations do not emerge on the surface. All, what can be seen here, is a moraine which covers the whole Western Pomerania with a uniform mantle. Thus, it is correct to

state that the glacier formed the landscape of Western Pomerania. The glacier, which came several times to the territory of Poland, stretched far away to the south, sometimes as far as to the Carpathian Mountains.

The Western Pomerania was always covered with it. Coming down from the Scandinavia, it carried not only huge masses of ice but first of all the stone rubble, which then deposited on our land. This stone rubble is just the Western Pomerania. The process of glacier melting was not uniform. In some places, the glacier stopped moving and stagnated for a longer time. Climatic conditions were like that. The climate cooling induced a stop in ice mass moving and their slower melting. These different situations affected the surface formation. In the places, where more or less flat terrains are found at present, the glacier melting was unhindered, being regular and systematic, and this way a ground moraine developed.



Fig. 1. Map showing a location of gravel-pit in Mielenko Drawskie, where trilobites of the *Megistaspis* genus were found

Rys.1. Mapa przedstawia lokalizację kopalni w Mielenku Drawskim, w którym zostały znalezione trilobity z rodzaju *Megistaspis*.

On the other hand, in the places where there were obstacles in the melting regularity, e.g. due to climate cooling, the glacier stopped there and melted away slower, with stone rubble hillocks developing at its front, or the so called frontal moraines. The process presented above repeated many times. The gla-

cier, advancing again, destroyed the hillocks developed previously, evening them and forming new ones. But finally, after retreating of the last glacier, such a topographic configuration remained in the broad outline as can be observed at present. Thus, the glacier raised a belt of hillocks that stretches out throughout the middle part of Western Pomerania.

In the following Figure 1 a map is presented, in which a location of gravel-pit in the locality of Mielenko Drawskie is showed, 2.5 kilometres away to the south from the district town of Drawsko Pomorskie.

5. Description

Megistaspis gibba has not been yet found as whole until now. Only its caudal plates (pygidia) can be found. Caudal plates of these trilobites are found in different state of preservation. Sometimes, only certain fragments of the caudal plate itself are found. However, well-preserved caudal plates are rather frequently encountered. The pygidium of *Megistaspis gibba* is large, semi-elliptical, moderately convex, and very broad. The pygidium axis is slightly convex and narrowing towards the rear. The duplicature is covered by concentric lines.

Figure 2 presents a very well-preserved caudal plate of *Megistaspis gibba*. In Figure 3 are presented two incomplete caudal plates of *Megistaspis gibba*. In Figure 4, on the right-hand side, a duplicature can be clearly observed that is covered with concentric lines. All three specimens come from one limestone rock piece found in the mining works in Mielenko Drawskie.

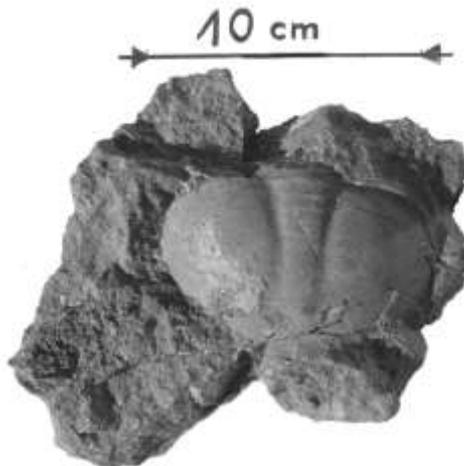


Fig. 2. Photograph of *Megistaspis gibba* – caudal plate (pygidium).

Rys. 2. Zdjęcie *Megistaspis gibba* – tarcza ogonowa (pygidium)

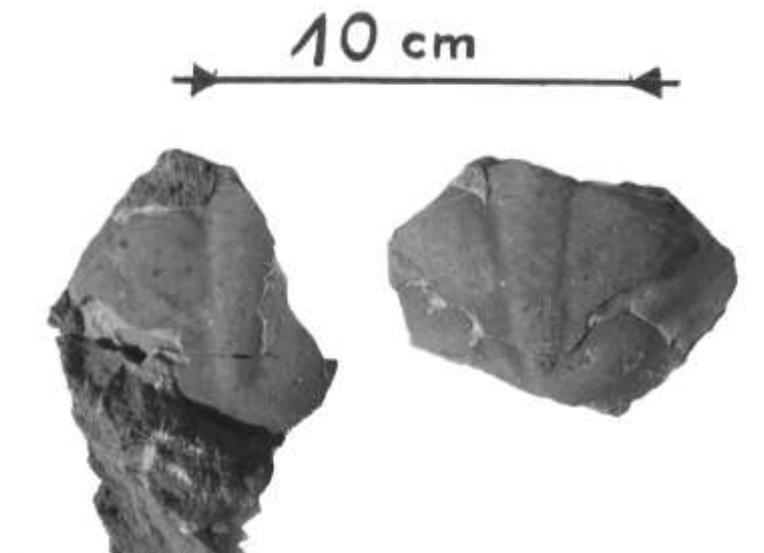


Fig. 3. Photograph presenting two caudal plates of *Megistaspis gibba* (pygidium)
Rys. 3. Zdjęcie przedstawia dwie tarcze ogonowe *Megistaspis gibba* (pygidium)

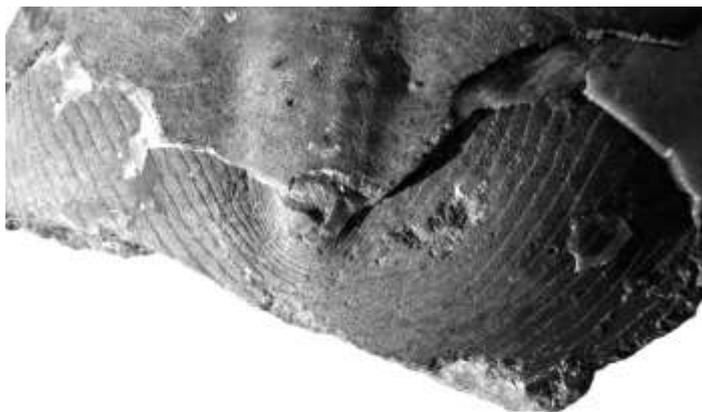


Fig. 4. Photograph presenting a caudal plate of *Megistaspis gibba* (pygidium) with well-preserved duplicature covered with concentric lines. This is an enlargement of Photo 2 – caudal plate on the right-hand side
Rys. 4. Zdjęcie przedstawia tarczę ogonową *Megistaspis gibba* (pygidium) z dobrze zachowaną duplikaturą pokrytą liniami koncentrycznymi. Jest to powiększenie pygidium zdjęcia nr 2 – tarcza ogonowa po prawej stronie

6. Acknowledgements

All these specimens, which are presented in this report, were found personally by the author in the mining works in Mielenko Drawskie in the Drawsko Pomorskie District, Western Pomeranian Province, in the north-western Poland. At present, these three specimens of *Megistaspis gibba* trilobites are housed in a private collection of the author, at the following address:

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