



## The oldest species of the genus *Laeviprosopon* (Decapoda: Brachyura: Prosopidae) from the Oxfordian of Poland

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**Abstract.** Till now the genus *Laeviprosopon* has comprised 12 species aged from the Late Jurassic to the end of the Early Cretaceous. Recently a new species was found in the Oxfordian locality of Polish Jura Chain, *Laeviprosopon musialiki* n. sp., described herein. Representatives of the genus *Laeviprosopon* are very rare in the Oxfordian localities of southern Poland. *Laeviprosopon musialiki* n. sp. is the oldest member of the genus.

**Key words:** Brachyura, Prosopidae, *Laeviprosopon*, new species, Jurassic.

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### I. INTRODUCTION

The collection of Jurassic brachyurans and anomurans housed in the Museum of the Institute of Systematics and Evolution of Animals Polish Academy of Sciences in Kraków (ISEA PAS, collection prefix: I-F/MP) numbers about 7000 specimens (STARZYK et al. 2011, 2012; STARZYK 2013, 2015a, b, 2016; FRAAIJE et al. 2012a, b, 2014; KRZEMIŃSKA et al. 2015).

So far, 18 species from the superfamily Homolodromioidea have been described from the Polish Jura Chain. They represent three families: Goniidromitidae BEURLIN, 1932 (STARZYK et al. 2012; STARZYK 2015a), Tanidromitidae SCHWEITZER & FELDMANN, 2008a (STARZYK 2013, 2015b, 2016), and Bucculentidae SCHWEITZER & FELDMANN, 2009a (STARZYK et al. 2011).

The genus *Laeviprosopon*, from the family Prosopidae, is very rare in the collection of ISEA PAS and in other collections from Polish localities. *Laeviprosopon leave* was described from the late Oxfordian of the Kujawy region based on four carapaces by COLLINS & WIERZBOWSKI (1985). PATRULIUS (1966) described some specimens from the Tithonian of Woźniki in Poland, but did not illustrate these specimens.

The systematic position of *Laeviprosopon* GLAESSNER, 1933 has changed several times in relation to an issue of the presence or absence of the *linea homolica*. According to SCHWEITZER & FELDMANN (2008b), the species of *Laeviprosopon* lack *linea homolica*, and for that reason *Laeviprosopon* was placed in the Prosopidae.

The oldest representatives of the genus *Laeviprosopon* are known from the Late Jurassic, and there are seven species described from this period in European localities (SCHWEITZER & FELDMANN 2008b, FRANȚESCU 2011).

The genus lasted till the late Early Cretaceous. *Laeviprosopon icaunensis* was reported from the Hauterivian of France by VAN STRAELEN (1936). KLOMPMAKER (2013) described four new species of the genus *Laeviprosopon*: *L. planum*; *L. hispanicum*; *L. edoi*, and *L. crassum* from the Early Cretaceous (Albian) of Spain.

### II. LOCALITIES AND STRATIGRAPHY

The specimen described herein originates from Żarki, a locality in the southern Polish Uplands, north-west of Kraków (Poland) (Fig. 1). The age of

the sediments in Żarki is dated at the Lower Oxfordian: Costicardia Subzone of the Cordatum Zone (GŁOWNIAK 2012).

### III. MATERIAL AND METHODS

The specimen of the species studied herein was collected by Jarosław MUSIALIK and generously donated to the Museum of the ISEA PAS collection.

Measurements for diagnostic purposes were taken from an apical view photograph of the specimen, positioned horizontally (Fig. 2):

HW – maximum width between lateralmost parts of the hepatic region,

BW – width of the widest point, which is at the branchial region,

L – length of carapace,

LM – length of the mesogastric region.

### IV. SYSTEMATIC PALAEOLOGY

Order: **Decapoda** LATREILLE, 1802

Infraorder: **Brachyura** LINNAEUS, 1758

Section: **Dromiacea** DE HAAN, 1833

Superfamily: **Homolodromioidea** ALCOCK, 1900

Family: **Prosopidae** VON MEYER, 1860

Type genus: *Prosopon* VON MEYER, 1835

Other genera included. *Acareprosopon* KLOMPMAKER, 2013; *Laeviprosopon* GLAESSNER, 1933; *Nipponopon* KARASAWA, KATO & TERABE, 2006; *Protuberosa* SCHWEITZER & FELDMANN, 2009a; *Rathbunopon* STENZEL, 1945.

Genus: ***Laeviprosopon*** GLAESSNER, 1933

Type species: *Prosopon laeve* (VON MEYER, 1857) (Late Oxfordian-Tithonian).

Other species included *L. crassum* KLOMPMAKER, 2013 (Albian); *L. edoi* KLOMPMAKER, 2013 (Albian); *L. fraasi* (MOERICKE, 1889) (Tithonian) as *Prosopon*; *L. grandicentrum* SCHWEITZER & FELDMANN, 2008b (Tithonian); *L. hispanicum* KLOMPMAKER, 2013 (Albian); *L. icaunensis* (VAN STRAELEN, 1936) (Hauterivian) as *Prosopon*; *L. laculatum* SCHWEITZER & FELDMANN, 2008b (Tithonian); *L. lazarae* FRANȚESCU, 2011 (Late Oxfordian-Early Kimmeridgian); *L. planum* KLOMPMAKER, 2013 (Albian); *L. punctatum* (VON MEYER, 1857) (Kimmeridgian-Tithonian) as *Prosopon*; *L. sublaeve* (VON MEYER, 1857) (Kimmeridgian-Tithonian) as *Prosopon*; *L. musialiki* n. sp. (Early Oxfordian).

Diagnosis as in KLOMPMAKER (2013).

### ***Laeviprosopon musialiki***, n. sp.

Fig. 2, 3

**Diagnosis.** Small sized, well areolated carapace, longer than wide, sharply narrowing anteriorly, moderately vaulted transversally and longitudinally. Rostrum is broad, long and probably trifold. Epigastric regions are rounded. Large tubercle on the anterior part of the mesogastric region. Hepatic region is divided by deep anterior and posterior grooves. Three large tubercles are present on each side of the mesogastric region. A pair of incisions lie laterally from the branchiocardiac groove. Cardiac region is short, triangular with posterior narrow part distinctly areolated.

**Etymology.** The new species' name is dedicated to Jarosław MUSIALIK, a collector of fossils who found and donated the specimen to the collection of ISEA PAS.

**Type material.** Holotype: I-F/MP/6434/1672/17; type locality: Żarki; age: Early Oxfordian (Costicardia Subzone of the Cordatum Zone) (GŁOWNIAK 2012).

**Dimensions.** The width between the lateralmost parts of the hepatic regions is 5.38 mm, the width at widest point, which is the branchial region, is 6.19 mm. The length of the mesogastric region is 2.97 mm.

**Description.** The carapace is well areolated, longer than it is wide, convex transversally and longitudinally, sharply narrowing anteriorly (Fig. 3A, D).

The rostrum is not well preserved, probably trifold. Lateral spines are partially preserved and the middle spine is destroyed (Fig. 3A, B).

The augenrest is not well distinguished and the orbit is not visible.

The epigastric regions are rounded and lay in front of the mesogastric region, which is bottle shaped and distinctly bordered by the grooves. The length of the anterior (narrow) part of this region is about equal to the posterior (wide) part. The posterior part is very wide, divided from the anterior by an incision. There is a large tubercle in the middle of the anterior part of this region (Fig. 3B, D, arrow). The cervical groove has lateral incisions.

The shape of the cervical pits is not preserved. The hepatic region is divided by deep and wide anterior and posterior grooves. There are three large tubercles on each side of the mesogastric region (Fig. 3A; small arrows).

The urogastric region is strongly convex (the highest region of the carapace) and divided into two parts by an incision, which connects with the postcervical groove. The tubercle in the urogastric region is absent. There are deep incisions between the urogastric and epibranchial regions. This species also has a pair of second incisions lying laterally from the first ones, connected with the branchio-cardiac groove (Fig. 3A,

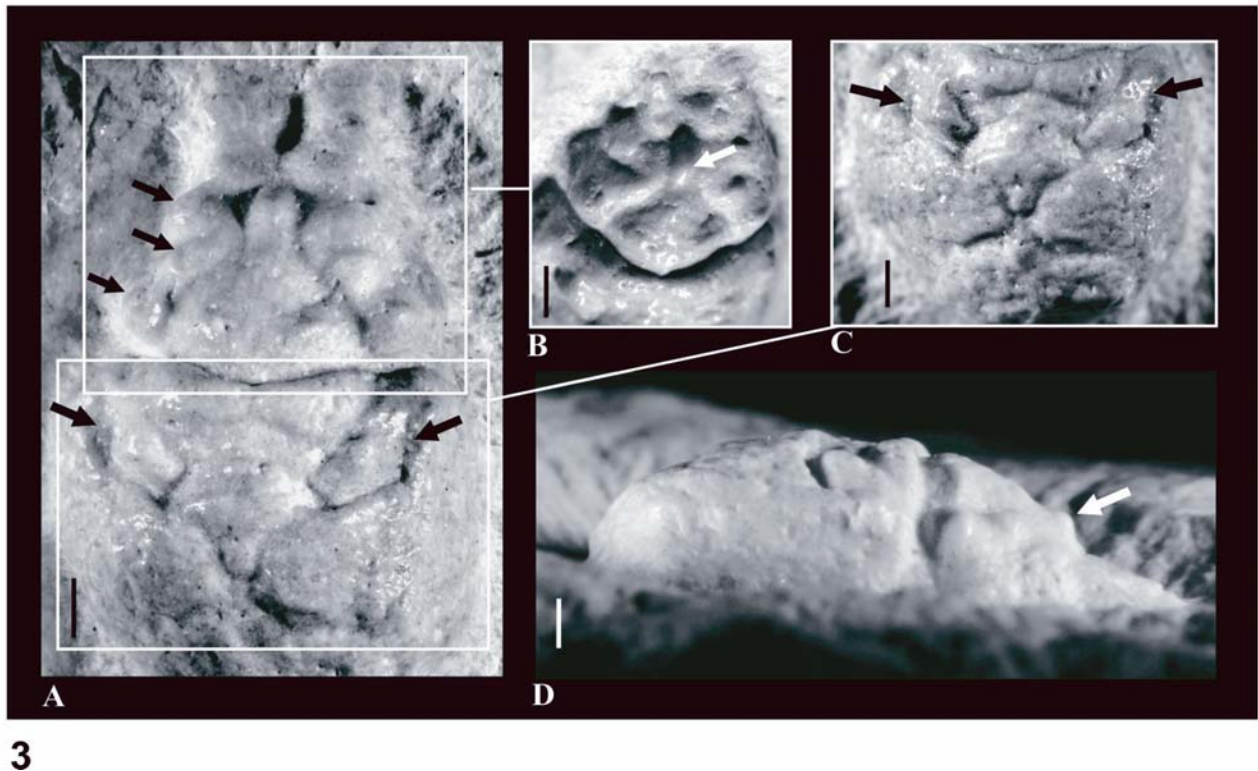
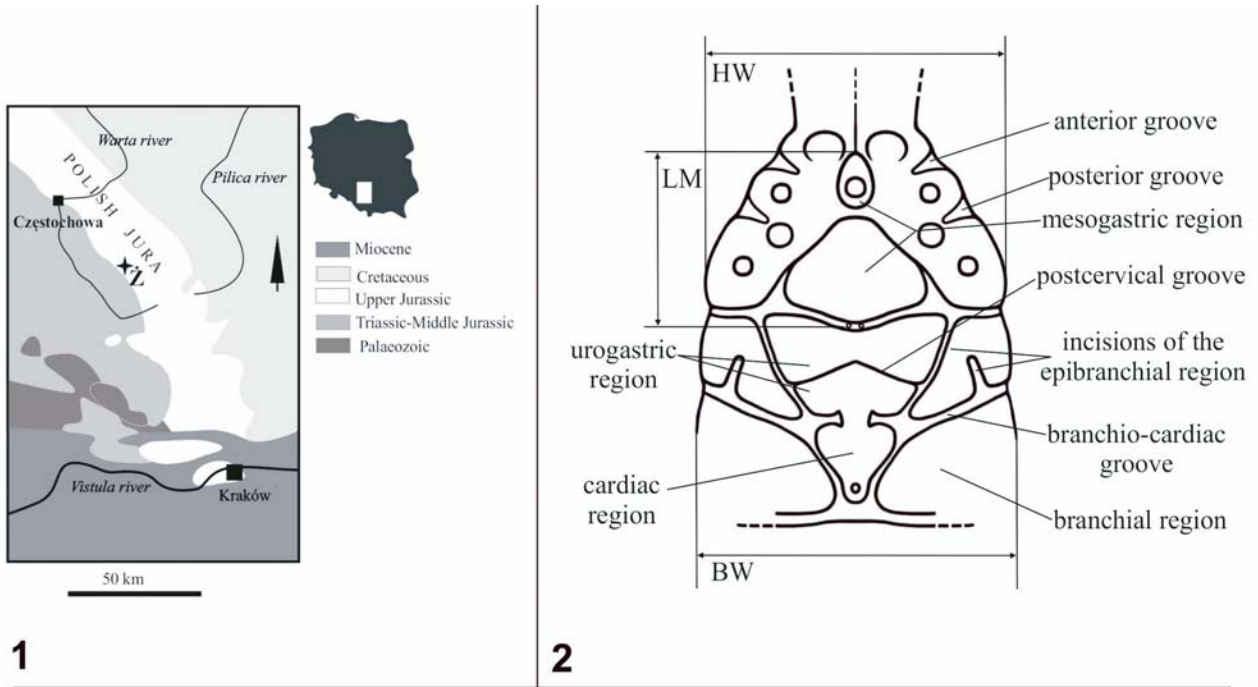


Fig. 1. Studied area – the Polish Jura Chain, northwest of Kraków (Poland) Ż – Żarki (modified after GŁOWNIAK, 2006: fig. 2).  
 Fig. 2. Groundplan of the morphological structures in the *Laeviprosopon musialiki* n. sp. L – length without rostrum; HW – width of the hepatic region; BW – width of the branchial region; LM – length of the mesogastric region.  
 Fig. 3. *Laeviprosopon musialiki* n. sp. – holotype (I-F/MP/6434/1672/17, Żarki; Oxfordian of Poland): A – carapace (arrows: tubercles on side of the mesogastric region); B – mesogastric region (arrow: tubercle on the anterior part of this region); C – posterior part of the carapace (arrows: incisions connected with the branchio-cardiac groove); D – lateral view (arrow: tubercle on the anterior part of the mesogastric region). Scale bars equal 1 mm.

C, large arrows). They correspond with the attachments of the dorso-ventral muscles as was noticed in SCHWEITZER & FELDMANN (2009b).

The triangular cardiac region is short, with a distinctly distinguished posterior tubercle (Fig. 3A, C).

The grooves are very deep and wide. The cervical groove is the deepest; the branchio-cardiac groove reaches the posterior margin of the carapace. The postero-lateral border is not well preserved.

## V. CONCLUDING REMARKS

*Laeviprosopon* is one of the most rare brachyuran genera found in the Polish Jura Chain. Although a new species, *Laeviprosopon musialiki*, was described herein based on only one specimen, it has several unique characteristics that clearly distinguish it from other species of the genus. It is the only anteriorly narrowing species besides *L. lazarae*. A large tubercle in the middle of the anterior part of the mesogastric region, present only in *L. musialiki* n. sp., distinguishes this species from *L. lazarae* (FRANȚESCU 2011). Also, the three tubercles on each side of the mesogastric region are unique to the new species. It also has a postcervical groove interrupted in the middle like *L. punctatum* and *L. fraasi* (SCHWEITZER & FELDMANN 2008b). The rostrum is long, probably trifid as in *L. laeve*.

The specimen is well preserved and symmetrical, therefore characteristics of the carapace seem genuine and not caused by taphonomic factors. So far, this is the oldest member of the genus.

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