New crustacean records from the Late Campanian of the Gschliefgraben (Cretaceous, Austria)

by

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Abstract

Three species of crustacean, two malacostracans and one cirripede, are described from the Late Campanian Polyplacum Zone of the Gschliefgraben, Gmunden (Austria). Palaega huetteri n. sp. is the first Cretaceous isopod to be reported from Austria. A specimen of the scalpellid cirripede Arcoscalpellum maximum sulcatum (J. de C. Sowerby, 1829) preserved in the body chamber of the large heteromorph Pseudoxybeloceras (Schlueterella) pseudoarmatum (Schlüter, 1872) is considered to represent stomach contents of the amonite. The co-occurrence of the giant isopod Palaega huetteri n. sp. and the presumable swimming crab Xanthilites sp. is indicative of a relatively deep palaeoenvironment.

Introduction

Records of Cretaceous crustaceans from Austria are rather scanty. In 1931, Glæssner mentioned a crustacean fauna from a presumed late Jurassic limestone from the non-alpine Waschberg belt, near Klement. A recent re-examination by Wright (1997) of this small crab fauna revealed it to be of Cenomanian age comprising Rathbunopon obesus (Van Straelen, 1944), Pithonoton cenomanense (Wright & Collins, 1972), Palaeodromites incertus (Bell, 1863) and Diaulax oweni (Bell, 1863). A chela of Dromiopsis sp. was recorded by Gross (1984) from presumed allochthonous Santonian limestones. Morphologically, this specimen is almost identical with the Dromiopsis chela known from the Campanian of northern Germany. Wank (1986) mentioned the presence of the crab Cyomocarcinus [sic] cf. angustifrons from the Santonian of Klein St. Paul (Carinthia). This specimen is in need of re-examination; it most probably belongs to the genus Graptocarcinus, an identification which is supported by Müller (1998) which has been recorded from the Cenomanian rudist limestones of NE Italy (Collins & Dieni, 1995).

In 1882 von Ammon described the first fossil isopods from Austria from the Oligocene (Hessler, 1969). The oldest Austrian isopods were described by Bachmayer (1949) from late Jurassic limestones of Ernstbrunn. Two years earlier, Bachmayer (1947) had reported on two new isopods from the Miocene of Deutsch-Altenburg. In 1950, Tauber added another Miocene isopod species from the Vienna Basin. Palaega huetteri n. sp. is the first Cretaceous isopod from central Europe. No late Cretaceous cirripedes have been described previously from Austria. For more detailed stratigraphic and palaeontological information of the Gschliefgraben area we refer to Frey (1983), Kennedy & Summesberger (1984), Christensen (1998), Kennedy & Summesberger (this volume), Jagt (this volume) and Tröger, Summesberger & Skoumal (this volume).

Conventions All studied specimens are deposited in the Naturhistorisches Museum Wien, Austria (NHMW registration numbers, ex Hütter collection).

Systematic Palaeontology

Class Cirripedia Burmeister, 1834
Order Thoracica Darwin, 1851
Suborder Lepadomorpha Pilsbr, 1916
Family Scalpellidae Pilsbr, 1916
Subfamily Arcoscalpellinae Zevina, 1978
Genus Arcoscalpellum Hoek, 1907

Arcoscalpellum maximum sulcatum
(J. de C. Sowerby, 1829)

(Plate 1, Fig. A, C)

1829 Pollicipes sulcatus J. de C. Sowerby, p. 221, pl. 606, fig. 2.
1935 Scalpellum (Arcoscalpellum) maximum var. sulcatum (J. deC. Sowerby); Withers, p. 253, pl. 32, figs. 5–8.
1953 Scalpellum (Arcoscalpellum) maximum var. sulcatum (J. de C. Sowerby); Carlsson, p. 20, pl. 5, fig. 1.

Material: The body segments of what appears to be a single specimen is preserved in a portion of the
relatively large body chamber of the ammonite *Pseudoxybeloceras* (Schlueterella) pseudoaarmatum (Schlüter, 1872) (NHMW 1998z29/11). Preserved are the carina, both terga and one scutum.

**Description** For a detailed description of this preserved within the body chambers of relatively large ammonites have been recorded by several authors (e.g. Frisch & Kafka, 1887; Ernst, 1967; Collins, 1986; Oekentorp, 1989; Hauschke, 1994). In all of these cases only cirripedes of the family Stramentidae were involved.

**Remarks** Examples of late Cretaceous cirripedes preserved within the body chambers of relatively large ammonites have been found inside or attached to the body chambers of ammonites, as do the majority of the above mentioned cirripedes. Oekentorp (1889) was the only author who considered the possibility, that the lepadomorph cirripedes could represent stomach contents of the ammonites. The Gschliefgraben collection to the Museum of Natural History, Vienna.

**Etymology** This species is named after Mag. Herbert Hütter, who donated not only the three specimens described herein but also his complete collection to the Museum of Natural History, Vienna.

Although the majority of these remaines have been found inside or attached to the body chambers of ammonites, they have been interpreted as hitchhikers on living ammonites or as epibions on/in empty ammonite shells (bentic islands). Oekentorp (1889) was the only author who considered the possibility that the lepadomorph cirripedes could represent stomach contents of the ammonites. The Gschliefgraben cirripede is situated in the posterior half of the body chamber, as do the majority of the above mentioned examples. Jäger & Fraeye (1997) reported portions of chelipeds and abdominal segments of decapod crustaceans as ammonite stomach contents. The majority of these remains have been found in the posterior half of the body chambers. This fact and Oekentorp’s reported size-relationship (larger cirripedes are found in larger body chambers and smaller cirripedes in smaller ones) are seen as evidence in favour of the view that most “in ammonite” cirripedes are in fact ammonite stomach contents.

The genus *Arcoscalpellum* is common in the late Cretaceous of Europe. *Arcoscalpellum maximum sulcatum* is known from the Campanian and Maastrichtian of Denmark, England, France, Germany (Withers, 1935), Sweden (Carlsson, 1953), Belgium (Jagt & Collins, 1989) and the Czech Republic (Frisch & Kafka, 1887)

Class Malacostraca Latreille, 1806
Order Isopoda Latreille, 1817
Suborder Flabellifera G.O. Sars, 1882
Family Cirolanidae Dana, 1852
Genus *Palaega* Woodward, 1870

**Palaega huetteri** n.sp.

(Plate 1, Fig. D)

**Material** Holotype and sole specimen (NHMW 1998z42/1) is the incomplete ventral part of a brachyuran decapod.

**Description:** Although the ventral part of the specimen is very well preserved it lacks the carapace, which must have been wider than long as deduced from the preserved ventral parts (abdomen, sternites, legs and mouth parts). Left chela almost twice as large as right one. Both chelae uniformly covered with fine pustules. Elongated fingers with curved smooth tips and cutting edge darker coloured. Fixed finger gently curving down- and inwards with a longitudinal shallow groove extending from the tip to the middle of three cusps. Longer dactylus with two grooves running parallel, the first close to the cutting edge, the
second more centrally, both starting from the basal cusp and extending to the last of four sharp cusps. A row of pits runs parallel to the entire strongly serrated outer edge.

Remarks: The overall morphology of the chelae, the probable spine shape of the carapace and especially the typically elongated and strongly pointed fingers indicate a relationship with presumably members of the probable swimming Xanthidae such as Xanthilites, Xanthosia or Xanthostraca, which all occur in the Late Cretaceous (FORSTER, 1970; JAGT, COLLINS & FRAAYE, 1991; FRAAYE, 1996). In Austria, species of Xanthilites are known from the Eocene and Paleocene of the environs of Salzburg (FORSTER, 1970) and from a new, fairly rich decapod crustacean fauna of Danian age in the Kambihel area (PAL MÜLLER pers. comm.).

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References


PLATE 1

A. *Arcoscalpellum maximum sulcatum* in the body chamber of the heteromorph ammonite *Pseudoxybelocera (Schlueterella) pseudoarmatum* (NHMW 1998z29/11) A x1, C x2,

B. ventral side and chelae of *Xanthilites* sp. (NHMW 1998z42/0001) x2, D. external mould of posteriortportion of *Palaega huetteri* n. sp., holotype (NHMW 1998z42/2), x1.
PLATE 1
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