

**A CALANTICID CIRRIPEDE FROM THE MIDDLE TURONIAN OF THE OPOLE
CRETACEOUS BASIN**

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ABSTRACT: In general, cirripedes appear to be rare constituents in macrofaunal assemblages of the Middle to lower Upper Cretaceous (Cenomanian-middle Coniacian; *c.* 100-*c.* 87 Ma) in the Opole Basin, southwest Poland. Here we add an example of a long-ranging, widely distributed species (or species group), *Cretiscalpellum striatum* (Darwin, 1851), from the Lower Argillaceous Marls unit of Middle Turonian (probably uppermost *Inoceramus apicalis* Zone) age, as exposed at the Odra Nowa quarry, just at the outskirts of the city of Opole. Previous records of cirripedes from sections in the Opole area, as well as elsewhere in Poland, are briefly listed.

KEY WORDS: Thoracica, Cirripedia, Calanticipidae, *Cretiscalpellum*, Cretaceous, Turonian, Poland

Introduction

As outlined in a few previous papers (e.g., Collins and Radwański 1982; Jagt et al. 2008), records of Late Cretaceous cirripedes from Poland, whether it be scalpellomorphs, verrucosomorphs or brachylepadomorphs, are comparatively scanty. However, from personal experience we know that, with a few exceptions, this mostly is a sampling artefact. Rich and fairly diverse assemblages, obtained through bulk processing, are now known from Campanian and Maastrichtian strata in southern and eastern Poland, and these await description (see Jagt et al. 2008 for details). Amongst cirripedes that have been recorded to date from Polish sections, long-ranging and widely distributed species predominate; co-occurring are what appear to be endemic taxa.

Here we add another long-ranging species (or species group), *Cretiscalpellum striatum*, from the Odra Nowa quarry, at the outskirts of Opole (Fig. 1A), collected from

the top of the Lower Argillaceous Marls unit (Fig. 1B; compare Walaszczyk 1992) of middle Turonian (uppermost *Inoceramus apicalis* Zone) age (Tarkowski 1991; Mazurek 2008; but see also Kędzierski 2008, fig. 2, for a dating as earliest *Inoceramus lamarcki* Zone of this part of the section).

Earlier records of rare, dissociated cirripede plates (C.F. Roemer 1870; Leonhard 1898; Wegner 1913) are briefly discussed, and some observations on material from other areas in Poland are added below.

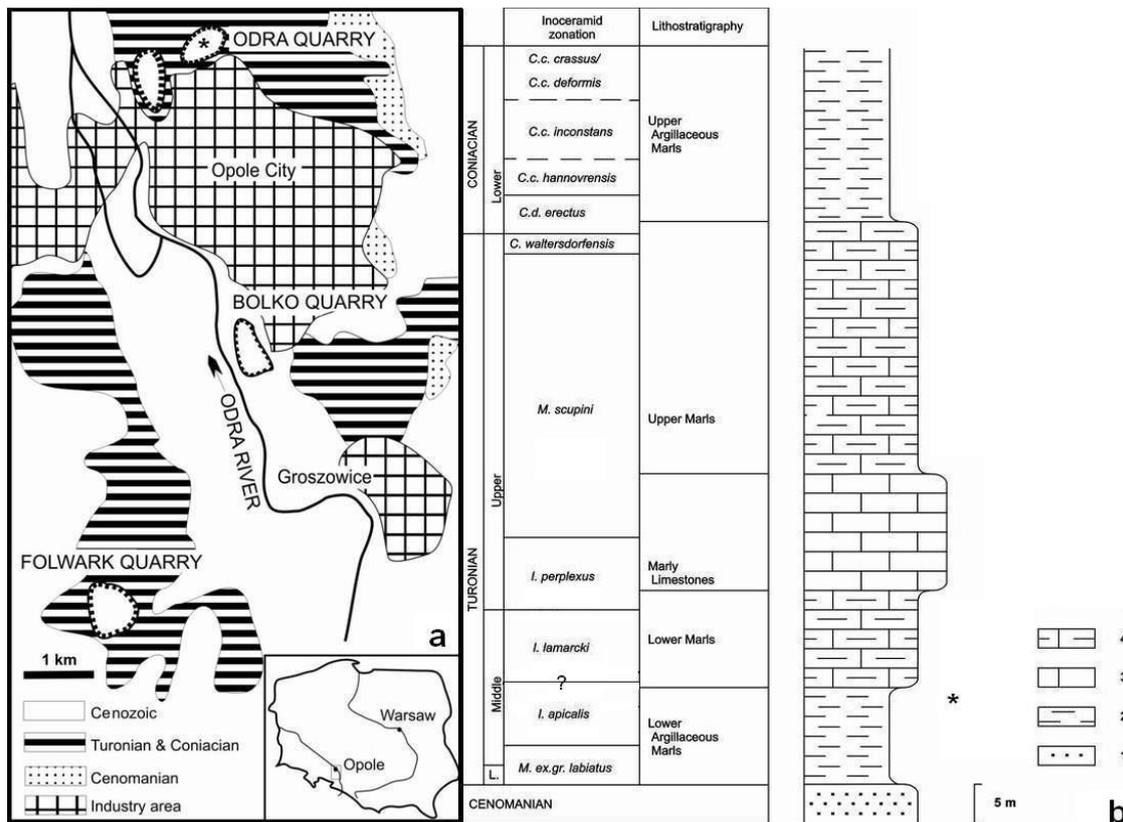


Fig. 1. Simplified map (a) of the Opole area, southwest Poland (modified after Niedźwiedzki and Godlewska, 2005), with indication of the Odra Nowa quarry to the north of the city, and lithostratigraphy and inoceramid bivalve zonation (b); the asterisk marks the provenience of the cirripede carina described here.

Previous work

From unspecified Turonian strata in the Opole area, Leonhard (1898, p. 62, pl. 6, fig. 11) recorded a right scutum under the name of *Pollicipes conicus* Reuss, 1845. His illustration, however, clearly shows this to belong to *Cretiscalpellum glabrum* (F.A. Roemer 1841), as indicated previously by Withers (1935). Reuss's species, from the Cenomanian-Turonian of the Czech Republic, was transferred to *Calantica* (*Scillaelepas*) by Withers (1935, p. 120, pl. 8, figs. 1-7). The second species listed and illustrated by Leonhard (1898, p. 62, pl. 6, fig. 10a-c) is *Pollicipes glaber* (now *Cr. glabrum*), as based on a scutum, two terga and a single carina from various localities in the Opole area. All specimens were said to be from the *Inoceramus brongniarti* Zone; this means that Leonhard's material is younger (early Coniacian; see Walaszczyk 1992, fig. 30) than the present specimen of *Cr. striatum*.

Leonhard (1898, p. 63) also opined that what C.F. Roemer (1870, pl. 37, fig. 14), on the basis of two carinae and a tergum, had listed and illustrated under the name of *Scalpellum maximum* J. de C. Sowerby, 1829 actually comprised three different species; the tergum was transferred to *P. glaber* (= *Cr. glabrum*). According to that author, only the smaller of the two carinae appeared to belong to *S. maximum* (now *Arcoscalpellum maximum*), justifiably noting that Roemer's illustration was unsatisfactory. Leonhard supplied (his pl. 6, fig. 12a, b) a new illustration of this specimen; despite the fact that Collins and Radwański (1982, p. 43) still expressed reservations, we hold that specific assignment to be correct.

The fourth taxon noted by Leonhard (1898, p. 63, pl. 6, fig. 13a, b) is *Scalpellum oppoliense*, introduced as a *nomen novum* for *S. maximum* C.F. Roemer, 1870 (pl. 37, fig. 13; *non* J. de C. Sowerby, 1829), on the basis of a carina from the 'Oppelner Kalkmergel'. As later authors agreed (see e.g. Withers 1935), this in fact is *Cr. glabrum*. All of Leonhard's originals should be housed in the collections of the 'Mineralogisches Museum der Universität Breslau' (= Wrocław), but we have not yet attempted to trace them. Such is deferred to another occasion.

Subsequently, Wegner (1913, p. 200) recorded *Scalpellum angustatum* [now *Arcoscalpellum angustatum* (Geinitz, 1843)], from the Plänerkalk of Strehlen (= Strzelin), the Korycaner Schichten of Bohemia (Czech Republic) and the 'displaced' Cretaceous rocks at Königlich Neudorf (= Nowa Wieś Królewska), as well as *Pollicipes glaber* F.A. Roemer, 1841 (now *Cr. glabrum*). Of the latter, he noted that it was widely distributed in the 'Senonian' and upper Turonian of northern Germany, also occurring in the Plänerkalk of Sarstedt and Hildesheim (Germany), at Wollin (= Wolin, northwest Poland), in the lower 'Senonian' of England, the Pläner at Strehlen (= Strzelin) and the Teplitzer Schichten in Bohemia. Of *Cr. glabrum*, Wegner (1913, p. 201) had seven carinae and a single tergum at his disposal, all from the 'displaced' Cretaceous strata near Opole and of *Inoceramus brongniarti* Zone (i.e., early Coniacian) age.

Systematic description

Family Calanticidae Zevina, 1978

Genus *Cretiscalpellum* Withers, 1922

Type species – *Pollicipes unguis* J. de C. Sowerby, 1836, by original designation.

Cretiscalpellum striatum (Darwin, 1851)

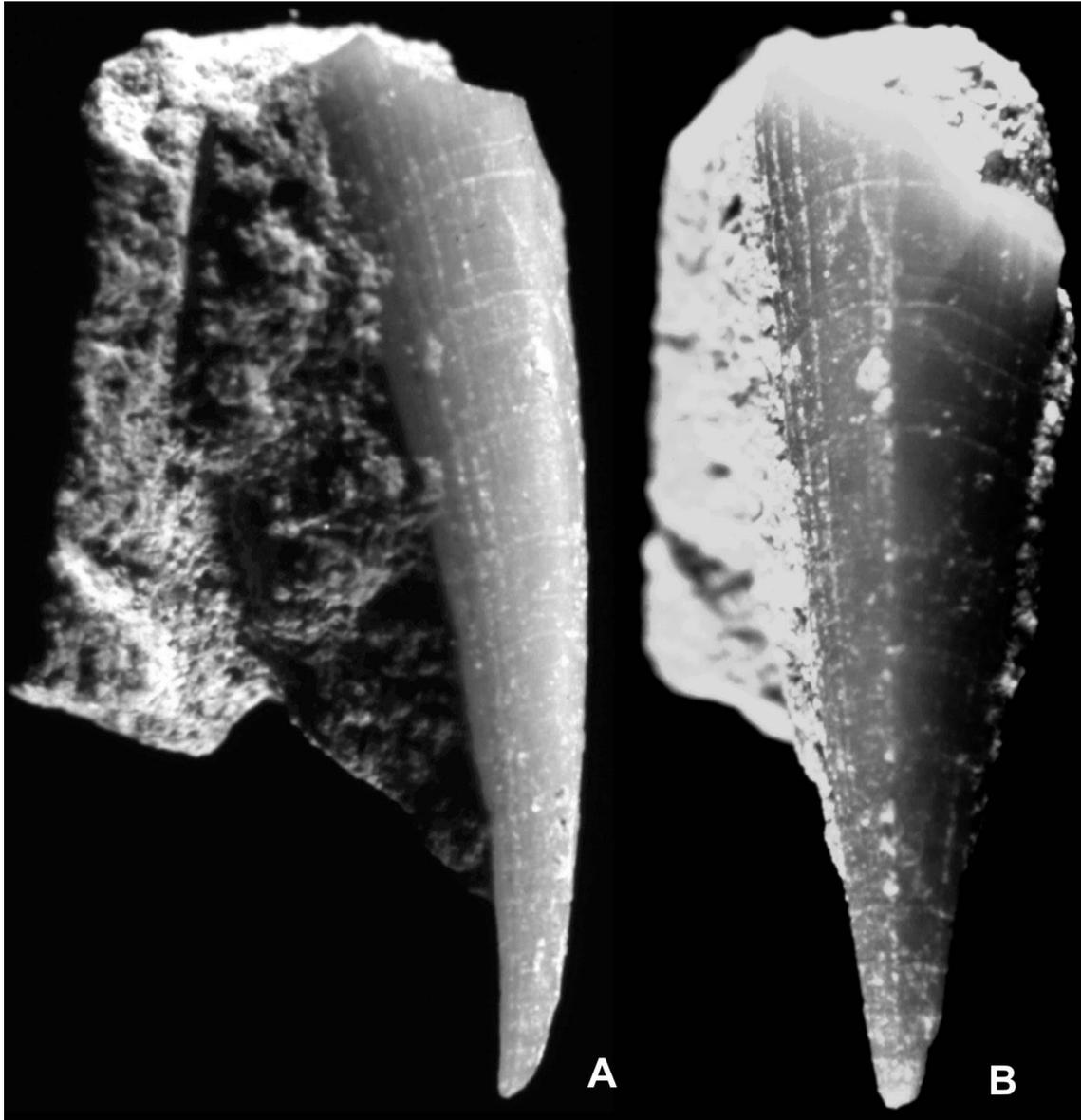


Fig. 2. *Cretiscalpellum striatum* (Darwin, 1851), carina (NHMM 2010 165) in lateral (A) and outer (tectum, B) views; the length of the original, as preserved, is 8.7 mm.

Material – A single, small-sized, incomplete carina (NHMM 2010 165, leg. D. Mazurek), 8.7 mm in length (as preserved) and 2.6 mm in greatest width (near basal margin, as preserved).

Description – Carina faintly arched longitudinally (Fig. 2A); well-developed, yet narrow, apico-basal ridge extending over entire length of plate (Fig. 2B); basal margin broken, but judging from growth lines, originally obtusely angular (Fig. 2B); parietes abruptly bent downwards from tectum and directed inwards; transition between parietes and tectum rounded, more or less smooth (Fig. 2A); longitudinal ridges over entire surface of tectum, comparatively coarse and regular near lateral margins (Fig. 2A, B), with interspaces much narrower to near-equal in width, but tending to become more obscure towards apico-basal ridge (Fig. 2B); growth lines faint, more conspicuous at more or less regular intervals (growth halts, *c.* 1 mm apart; Fig. 2A, B), but lacking bead-like prominences where transverse ridges are crossed.

Discussion

The structure of the parietes and the striate ornament clearly show this carina to be assignable to one of the more characteristic extinct species which Darwin (1851) described as *Pollicipes striatus*, a few years prior to the publication of this masterpiece, *On the Origin of Species* (1859), as recently discussed by Jagt (2010). Withers (1935, p. 183, pl. 20, figs. 1-5, 15-21; pl. 21, figs. 1-18; pl. 22, figs. 1-12) demonstrated that the group of *Cr. striatum* was an offshoot of *Cr. unguis*, of Early Cretaceous (Albian) age, first recorded from the Cenomanian and ranging into the Maastrichtian, with little apparent change.

Previous records of cirripedes from Polish sections (see Collins and Radwański 1982; Jagt et al. 2008) include mostly fairly wide-ranging species such as the scalpellomorphs *Zeugmatolepas cretae* (Steenstrup, 1837), *Arcoscalpellum fossula* (Darwin, 1851) and *A. maximum* (J. de C. Sowerby, 1829), the brachylepadid *Brachylepas naissantii* (Hébert, 1855) and the verrucid *Verruca prisca* Bosquet, 1854. Associated are other calanticids and scalpellids, some of which appear to be still undescribed species, as well as the diminutive proverrucid *Eoverruca hewitti* Withers, 1935. We can only conclude that there is still a lot to be discovered in the way of Late Cretaceous cirripedes from Polish territories.

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