

Synopsis of Cenozoic decapod crustaceans from Belgium

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ABSTRACT

Decapod crustaceans are fairly common in Cenozoic strata of northwestern and southern Belgium. In this work, the stratigraphic distribution of all known species is summarized.

Key words: Crustacea, Decapoda, Cenozoic, Belgium.

RESUMEN

Los crustáceos decápodos son comunes en estratos cenozoicos del noroeste y sur de Bélgica. En este trabajo se resume la distribución estratigráfica de todas las especies conocidas.

Palabras clave: Crustacea, Decapoda, Cenozoico, Bélgica.

INTRODUCTION

Van Straelen (1921) provided a list of all decapod crustaceans then known from Cenozoic deposits of Belgium (Table 1). His collection of fossil Crustacea is stored at the Institut Royal des Sciences Naturelles de Belgique (IRScNB, Brussels), but needs to be reviewed (Feldmann and Dhondt, 1991).

The purpose of this contribution is to provide an updated list of all Paleogene and Neogene decapod crustaceans from Belgium known to date. Thirty-five species, in thirty-one genera are currently recorded. These decapods comprise one palinuroid, one nephropid, seven thalassinoids and twenty-six brachyurans (Table 2).

SUMMARY OF MATERIAL

Eocene

Eocene strata are widely distributed in central and southern Belgium. Collins and Smith (1993) described the new calappid *Silvacarcinus laurae* associated with the raninid *Raninoides glabra* (Woodward, 1871) from the Ypresian at Forest (Brussels). A second assemblage of Ypresian age is known from Marke near Kortrijk (southern Belgium). *Zanthopsis* cf. *leachii* (Desmarest, 1822) is common at this locality, with rarer occurrences of the spear lobster *Linuparus scyllariformis* (Bell, 1857). The most diverse Ypresian assemblage is known from clays at

Table 1. Van Straelen's (1921) list of Cenozoic decapod crustaceans from Belgium.

Species (current status)	Verified	Endemic	Stratigraphic occurrence
<i>Linuparus scyllariformis</i> (Bell, 1857)	Y		Ypresian, 'Bruxellian'
<i>Hoploparia gammaroides</i> M' Coy, 1849			Ypresian
<i>H. corneti</i> van Straelen, 1920		Y	Ypresian
<i>Zanthopsis leachii</i> (Desmarest, 1822)	Y		Ypresian, 'Bruxellian'
<i>Z. bispinosa</i> M' Coy, 1849			Ypresian, 'Bruxellian'
<i>Z. unispinosa</i> M' Coy, 1849			Ypresian, 'Bruxellian'
<i>Portunites incerta</i> Bell, 1858			Ypresian
<i>Glyphithyreus wetherelli</i> (Bell, 1858)	Y		Ypresian, 'Bruxellian'
<i>Xanthilites bowerbanki</i> Bell, 1858			Ypresian
<i>Callianassa</i> sp.			'Bruxellian'
<i>Calappa</i> sp.			'Bruxellian'
<i>Palaeocarpilius</i> sp.			'Bruxellian'
<i>Etisus</i> sp.			'Bruxellian'
<i>Cancer burtini</i> Galeotti, 1837		Y	'Bruxellian'
<i>Goniochele angulata</i> Bell, 1858	Y		'Bruxellian'

Egem, including *L. scyllariformis*, *Glyphithyreus wetherelli* (Bell, 1858) (Figure 1.4), and undescribed species of *Upogebia* and *Retropluma*. In addition, a single carapace of *Goniochele*, possibly *G. angulata* Bell, 1858 has recently been discovered.

Possibly new species of *Pagurus* and *Stevea* are found in Middle Eocene (Ledian) deposits near Balegem, while Lutetian strata temporarily accessible at Zaventem airport (Brussels) have yielded several specimens of *Harpactocarcinus punctulatus* (Desmarest, 1822).

Table 2. Updated list of Cenozoic decapod crustaceans from Belgium (as of September 2005).

EOCENE	<i>Zanthopsis</i> cf. <i>leachii</i> (Desmarest, 1822)	Collins and Smith (1993)	Marke (Kortrijk)
	<i>Harpactocarcinus punctulatus</i> (Desmarest, 1822)	herein	Zaventem (Brussels)
	<i>Raninoides glabra</i> (Woodward, 1871)	Collins and Smith (1993)	Forest (Brussels)
	<i>Silvacarcinus laurae</i> Collins and Smith, 1993	Collins and Smith (1993)	Forest (Brussels)
	<i>Glyphithyreus wetherelli</i> (Bell, 1858)	herein	Egem
	<i>Linuparus scyllariformis</i> (Bell, 1857)	herein	Egem, Marke (Kortrijk)
	<i>Upogebia</i> n. sp.	herein	Egem
	<i>Stevea</i> n. sp.	herein	Balegem
	<i>Retropluma</i> n. sp.	herein	Egem
	<i>Goniochele</i> cf. <i>angulata</i> Bell, 1858	van Straelen (1921)	Egem
	<i>Pagurus</i> n. sp.	herein	Balegem
OLIGOCENE	<i>Ciliopagurus obesus</i> van Bakel <i>et al.</i> , 2003	van Bakel <i>et al.</i> (2003b)	Sint-Niklaas
	<i>Coeloma</i> (<i>Coeloma</i>) sp.	herein	Sint-Niklaas
	<i>Coeloma</i> (<i>Paracoeloma</i>) <i>rupeliense</i> Stainier, 1887	Stainier (1887)	Boom
	<i>Eocarpilius wilkeningi</i> (Bachmayer and Mundlos, 1968)	herein	Zemst
	<i>Homarus percyi</i> van Beneden, 1872	van Beneden (1872)	Boom
	dromiid n. gen. n. sp.	herein	Sint-Niklaas
MIOCENE	<i>Tasadia carniolica</i> (Bittner, 1884)	Janssen and Müller (1884)	Ramsel, Berlaar
	<i>Mursia lienharti</i> (Bachmayer, 1962)	Janssen and Müller (1984)	Ramsel
	<i>Glebocarcinus</i> n. sp.	herein	Borgerhout (Antwerpen)
	<i>Calliax</i> n. sp.	herein	Emblem
PLIOCENE	<i>Callianassa</i> sp.	herein	Kallo (Antwerpen)
	<i>Galathea dispersa</i> Bate, 1859	van Bakel <i>et al.</i> (2004)	Kallo (Antwerpen)
	<i>Pagurus bernhardus</i> (von Linné, 1758)	van Bakel <i>et al.</i> (2004)	Kallo (Antwerpen)
	<i>Ebalia cranchii</i> Leach, 1817	van Bakel <i>et al.</i> (2004)	Kallo (Antwerpen)
	<i>Ebalia jacqueshermani</i> van Bakel <i>et al.</i> , 2004	van Bakel <i>et al.</i> (2004)	Kallo (Antwerpen)
	<i>Ebalia tumefacta</i> (Montagu, 1808)	van Bakel <i>et al.</i> (2004)	Kallo (Antwerpen)
	<i>Maja squinado</i> (Herbst, 1788)	van Bakel <i>et al.</i> (2004)	Kallo (Antwerpen)
	<i>Corystes holsaticus</i> (Noetling, 1881)	van Bakel <i>et al.</i> (2004)	Kallo (Antwerpen)
	<i>Cancer</i> cf. <i>pagurus</i> Linné, 1758	van Bakel <i>et al.</i> (2004)	Kallo (Antwerpen)
	<i>Cancer vancalsteri</i> van Bakel <i>et al.</i> , 2003	van Bakel <i>et al.</i> (2003a)	Oelegem
	<i>Metacarcinus tenax</i> van Bakel <i>et al.</i> , 2004	van Bakel <i>et al.</i> (2004)	Kallo (Antwerpen)
	<i>Pliopirimela deconincki</i> van Bakel <i>et al.</i> , 2004	van Bakel <i>et al.</i> (2004)	Kallo (Antwerpen)
<i>Liocarcinus holsatus</i> (Fabricius, 1798)	van Bakel <i>et al.</i> (2004)	Kallo (Antwerpen)	
PLEISTOCENE	<i>Brachyura</i> gen. et spec. indet.	herein	Kallo (Antwerpen)

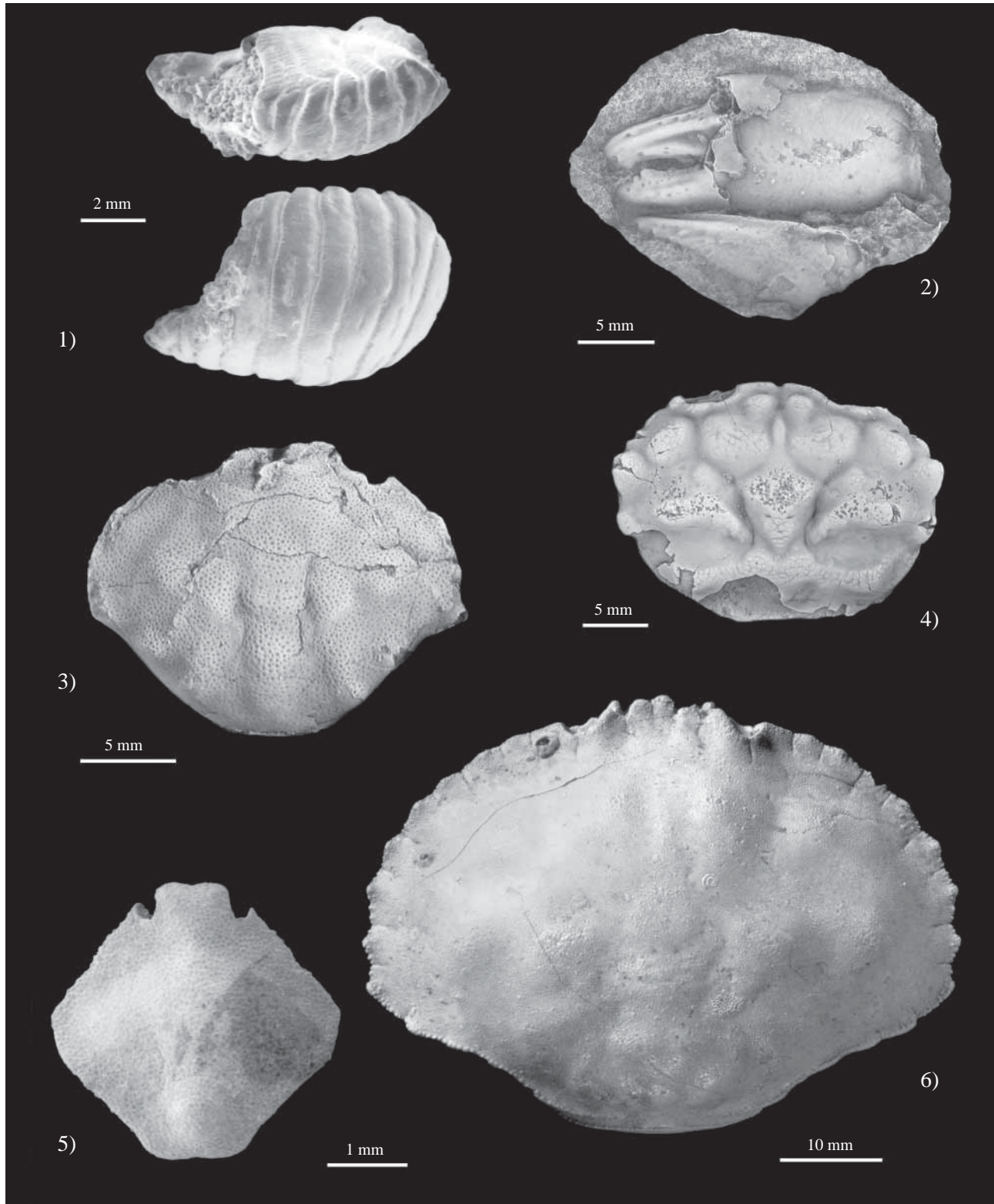


Figure 1. Cenozoic decapod crustaceans from Belgium; abbreviation: MAB: collections of Oertijdmuseum De Groene Poort (Boxtel, the Netherlands). 1: *Ciliopagurus obesus* van Bakel, Jagt and Fraaije, 2003b (MAB k.2365, holotype), Rupelian (Oligocene), Sint-Niklaas (SEM). 2: *Axius* sp. (MAB k.2404), lower Pliocene, Emblem; latex cast coated with ammonium chloride prior to photography. 3: *Zanthopsis* cf. *leachii* (Desmarest, 1822), juvenile (MAB k.2405), Ypresian (Lower Eocene), Marke (Kortrijk); specimen coated with ammonium chloride prior to photography. 4: *Glyphithyreus wetherelli* (Bell, 1858), dorsal carapace (MAB k.2406), Ypresian (Lower Eocene), Egem; specimen coated with ammonium chloride prior to photography. 5: *Ebalia jacqueshermanni* van Bakel, Jagt, Fraaije and Wille, 2004 (MAB k.2372, holotype), Pliocene, Kallo (Antwerp) (SEM). 6: *Metacarcinus tenax* van Bakel, Jagt, Fraaije and Wille, 2004 (MAB k.2386, holotype), Pliocene, Kallo (Antwerp).

Cenozoic decapod crustaceans listed by van Straelen in 1921 correspond chiefly to species of Eocene age. Of these, four have been verified on the basis of available material (Table 2). Of the remaining taxa, five were first described from outside Belgium. Occurrences of *Zanthopsis* have been lumped by us under the name of *Zanthopsis* cf. *leachii* (Figure 1.3). Van Straelen (1921) also listed *Z. bispinosa* M'Coy, 1849 and *Z. unispinosa* M'Coy, 1849, but we have not yet verified the validity of these species. Three other taxa, *Hoploparia gammaroides* M'Coy, 1849, *Xanthilites bowerbanki* Bell, 1858 and *Portunites incerta* Bell, 1858, are expected to occur at Egem.

Unnamed species of *Callianassa*, *Calappa*, *Palaeocarpilius* and *Etisus*, all from 'Bruxellian' strata in the Brussels area, were noted by Le Hon (1862), while *Hoploparia corneti* van Straelen, 1920 and *Cancer burtini* Galeotti, 1837 definitely are from Belgium and may in fact be endemic, but the current whereabouts of the types (or additional material for that matter) is unknown to us.

Oligocene

Brachyuran faunas of Oligocene age are dominated by *Coeloma* (*Paracoeloma*) *rupeliense* Stainier, 1887. Numerous well-preserved specimens in concretions are known from the Boom area (Feldmann and Dhondt, 1991; Verheyden, 2002). Associated are much rarer remains of a large lobster, *Homarus percyi* van Beneden, 1872. *Coeloma* (*P.*) *rupeliense* has also been recorded from reworked nodules in post-Miocene transgressive deposits at Kallo (Antwerpen area). Claws of a new hermit crab, *Ciliopagurus obesus*, have been recently documented by van Bakel *et al.* (2003b) from Rupelian strata at Sint-Niklaas; these claws show a characteristic stridulatory apparatus (Figure 1.1). A single, small specimen of dromiid crab from the same locality and strata is currently under study; it appears to be close to *Dromia eotvoesi* Müller, 1976 from the Miocene of Hungary (Müller, 1984).

Miocene

As for Eocene and Oligocene assemblages, Miocene strata have also yielded a dominant crab fauna; numerous well-preserved specimens of *Tasadia carniolica* (Bittner, 1884) have been collected, associated with much rarer material of *Mursia lienharti* (Bachmayer, 1962) (Janssen and Müller, 1984). In contrast to Eocene and Oligocene faunas, dominated by specimens of different sizes of *Zanthopsis* and *Coeloma* respectively, the Miocene assemblage of *Tasadia* consists of remarkably equally sized individuals. Other growth stages and sizes appear to be missing, suggesting juveniles inhabited shallower water. The main locality to have furnished *T. carniolica* is now a rubbish tip. A few specimens of this species have recently

been collected at Berlaar. A second, much larger cancruid represented by a single decorticated carapace was collected from Borgerhout (Antwerpen ring road). It most likely represents *Glebocarcinus*, characterised by distinctly swollen proto gastric regions.

Pliocene

Van Bakel *et al.* (2000, 2004) described assemblages from Kallo (Antwerpen area), of Piacenzian age, comparable to extant faunas from the North Sea. Small-sized specimens were obtained by carefully emptying infill of large gastropod shells (Figure 1.5). Larger specimens, such as the cancruids *Cancer* cf. *pagurus* Linnaeus, 1758, *Metacarcinus tenax* van Bakel *et al.*, 2004 (Figure 1.6) and a well-preserved corpse of the spider crab *Maja squinado* (Herbst, 1788), were obtained by screening the wind-blown surfaces of foundation pits in dock works.

A review of recently collected specimens of *Corystes holsaticus* (Noetling, 1881) has shown that *Micromithrax* Noetling, 1881 is a junior synonym of *Corystes* Latreille, 1802. Recently, the new species *Cancer vancalsteri* has been described by van Bakel *et al.* (2003a) from Oelegem, dated as Pliocene on the associated molluscan faunule. A possibly new species of *Axius* from Emblem (east of Antwerpen) is under study (Figure 1.2).

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