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DESCRIPTIONS OF NEW GENERA FROM THE SUBFAMILY PARTHENOPINAE (CRUSTACEA: DECAPODA: BRACHYURA: PARTHENOPIDAE)

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***ABSTRACT.* –** The systematics of the subfamily Parthenopinae MacLeay, 1838 (Parthenopidae MacLeay, 1838) is revised. Two subfamilies, the Cryptopodiinae Stimpson, 1871, and Lambrachaeinae Števčić, 1994, are synonymised with the Parthenopinae. The generic composition of subfamily Parthenopinae is reviewed and 32 genera are now recognised globally, of which 12 are diagnosed as new, and comparisons with other genera made. A key is provided for all recognised genera of the Parthenopinae.

***KEY WORDS.* –** Review, Parthenopidae, Parthenopinae, new genera, keys.

INTRODUCTION

The composition of the Parthenopidae has received attention in recent years, with genera being split off into new subfamilies, and even families. Many papers have also commented on the composition, with some questioning the composition and relationships of many genera (e.g., see Ng & Rodríguez, 1986; Ng, 1996; Guinot & Bouchard, 1998; Tan & Ng, 2003; Ng et al., 2001). Tan (2004) has undertaken a revision of the Parthenopidae but the results are contained in an unpublished thesis and are not freely available. Formal publication of this work has been delayed by the addition of substantial amounts of new material from major expeditions from the Philippines and Vanuatu, although a revision of the subfamily Daldorfiinae has now been completed (Ng & Tan, 2007). A revision of the Parthenopinae is more challenging as there are many more genera and species, including many new ones, and will take more time to complete. The revised generic system is, however, urgently needed for a variety of systematic reviews (e.g. Ng et al., 2007), molecular phylogenetic revisions, larval and ecological studies. We present here diagnoses and discussion of the new genera to facilitate progress of these studies. In the process, the composition of some of the existing genera is revised and clarified. A complete revision of all parthenopine genera and species, including detailed descriptions, figures and discussions will be done at a later date.

MATERIALS AND METHODS

Carapace measurements in this study are given as carapace width (CW) × carapace length (CL), in millimetres. Carapace width is measured tip to tip of the lateral teeth, and carapace length is measured along the mid-line. Terminology used here largely follows that developed by Tan & Ng (2007) and this work since there are some deviations from that of the widely used Flipse (1930), whose work did not deal in sufficient detail with characters of the carapace margins, and the position and terminology of the carapace grooves.

The abbreviation P refers to the pereopods, with P1 being assigned to the cheliped, P2–P5 thus refer to the first to fourth ambulatory legs. The propodus of the cheliped is referred to as the manus and is prismatic in cross-section. The manus has three margins that are usually dentate. The row of teeth facing outwards away from the frontal region of the specimen is on the outer margin, the row facing upwards is on the upper margin, and the row that is beneath the upper margin and faces downwards is on the lower margin. The surface between the outer and the upper margins is called the upper surface. The surface between the upper and the lower margins is termed the inner surface. The surface between the lower margin and the outer margin is termed the lower surface. The term dorsal surface is not used here with respect to the P1 because the upper surface is usually sloping slightly outwards

and not flat. The abbreviations G1 and G2 refer to the first and second male gonopods respectively.

The material examined for this work is listed in Appendix I. Abbreviations used are as follows: Bernice P. Bishop Museum, Honolulu (BPBM); International Commission for Zoological Nomenclature (ICZN); Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts (MCZ); Muséum national d'Histoire Naturelle, Paris (MNHN); Natural History Museum, London (NHM); National Science Museum, Tokyo (NSMT); National Taiwan Ocean University, Taiwan (NTOU); Queensland Museum, Brisbane (QM); Natur-Museum und Forschung Institut Senckenberg, Frankfurt (SMF); National Museum of Natural History, Smithsonian Institution, Washington D. C. (USNM); Instituut voor Taxonomische Zoologie (Zoologisch Museum), Amsterdam (ZMA); Zoologisk Museum, Copenhagen (ZMUC); and the Zoological Reference Collection, Raffles Museum of Biodiversity Research, National University of Singapore, Singapore (ZRC).

TAXONOMY

PARTHENOPIDAE MacLeay, 1838

Parthenopiens H. Milne Edwards, 1834: 347 (vernacular name, unavailable).
Parthenopina MacLeay, 1838: 55, 58.
Parthenopidae – Bell, 1844: 45; Adams & White, 1848: 25; Miers, 1879: 667; Alcock, 1895: 257; Borradaile, 1903a: 427 (table); 1903b: 689; 1907: 480; Rathbun, 1925: 510; Flipse, 1930: 3; T. Sakai, 1934: 299; 1938: 328; Stephensen, 1946: 110, 219; Barnard, 1950: 11 (key), 63; Monod, 1956: 571; Balss, 1957: 1629; Garth, 1958: 432; T. Sakai, 1965: 92; Guinot, 1968: 163; T. Sakai, 1976: 265; Ingle, 1980: 45 (key), 142; Manning & Holthuis, 1981: 322; Števčić & Gore, 1981: 8; Williams, 1984: 341; Tirmizi & Kazmi, 1986: 188; Ng, 1998: 1069; Hendrickx, 1999: 220; Ng et al., 2001: 14; Martin & Davis, 2001: 74; Davie, 2002: 382; Števčić, 2005: 80.
Parthenopinea – Dana, 1852: 136; Miers, 1879: 641.
Lambrinae Neumann, 1878: 17.
Parthenopinae – A. Milne-Edwards, 1878: 146; Ng et al., 2001: 14; Davie, 2002: 386; Števčić, 2005: 80.
Cryptopodiinae Stimpson, 1871a: 137; Ng et al., 2001: 15 ; Davie, 2002: 383 ; Števčić, 2005: 81.
Mimilambridae Williams, 1979: 399; Manning & Holthuis, 1981: 322; Ng & Rodríguez, 1986: 88; Martin & Davis, 2001: 52; Števčić, 2005: 81.
Daldorfiidae Ng & Rodríguez, 1986: 90 [recte Daldorfidae].
Daldorfiinae – Ng et al., 2001: 15; Števčić, 2005: 80.
Daldorphiinae [sic] – Davie, 2002: 385.
Lambrachaeini Števčić, 1994: 419, 420.
Lambrachaeinae – Ng et al., 2001: 15; Ng & McLay, 2003: 899.
Lambrachaeidae – Števčić, 2005: 100.

***Type genus.* –** *Parthenope* Weber, 1795 (see ICZN Opinion 696).

***Diagnosis.* –** Frontal region narrow. Supraorbital region with one supraorbital suture. Epibranchial region usually large, often strongly inflated, usually diagonal to sagittal plane. Antennal article 2 not produced anteriorly, never fusing with ventral margin of orbit or epistome. Cheliped merus long to relatively long, never completely hidden beneath carapace margin; cheliped fingers usually unable to reach carapace dorsal surface, mobility limited by juxtaposition with ventral teeth and/or with cheliped dorsal meral spines. Male abdominal segments 3–5 fused, sutures may or may not be present. Mature female with abdominal press button locking mechanism present.

***Remarks.* –** The confused state of parthenopid taxonomy lies primarily with the fact that the family had always been poorly characterized, and there is such a wide diversity in body form. For most of the century, the Parthenopidae was thought to be related to the Majidae by superficial similarities. Members of both families often have long chelipeds, usually a distinct rostrum, and a generally triangular carapace shape. Both the Majidae and the Parthenopidae have, at one time or another, been classified together in the Oxyrhyncha, and it was inevitable that characters used to diagnose the Parthenopidae typically emphasized morphological differences between it and the Majidae.

The placement of the Parthenopidae in the Oxyrhyncha was, however, not accepted universally. Some workers placed it in Brachygnatha (De Haan, 1839), others in Cyclometopa (Ortmann, 1893). Flipse (1930) thought that it might be transitional between the Oxyrhyncha and the Cyclometopa. The dismantling of the Oxyrhyncha by Guinot (1977, 1978a) provided the first step in clarifying the taxonomic position of the Parthenopidae. Guinot (1977, 1978a) elevated the Parthenopidae to superfamily status, and at the same time, removed the Eumedoninae and the genus *Aethra*. This was re-emphasised by Števčić & Gore (1981) when they commented on the monophyly of the Oxyrhyncha. The Eumedoninae is now a subfamily of Pilumnidae Samouelle, 1819 (see Ng & Clark, 2000, for detailed discussion), whereas *Aethra* is now placed in Aethridae near Hepatidae sensu Bellwood (1996). Guinot's (1978) arrangement was also supported by larval evidence (Rice, 1980), and is currently widely accepted. Another development was the placement of Mimilambridae as a junior synonym of Parthenopidae (Ng & Rodrìguez, 1986). Ng & Rodríguez (1986) recognised a Parthenopoidea in which there are several families, viz. Parthenopidae, Daldorfiidae, Aethridae Dana, 1851, and Dairidae Serène, 1968. Guinot & Bouchard (1998) recognised instead a family Parthenopidae with two subfamilies (Parthenopinae and Daldorfiinae), and regarded the Aethridae and Dairidae as distinct families. This classification was followed by Ng et al. (2001) (who also recognised two other subfamilies, Cryptopodiinae and Lambrachaeinae in the Parthenopidae); and by Davie (2002) in his synopsis of the Australian fauna. In view of these systematic appraisals and the evidence on hand, the general opinion is that the Parthenopidae are not phylogenetically close to the Majidae (see also Ahyong et al., 2007). Tan (2004) attempted to identify the characters that define the boundaries of the Parthenopidae, as well as the genera and species within. In essence, the resulting system essentially follows Guinot & Bouchard (1998) and Ng et al. (2001) but with some key modifications.

The fusion of the male abdomen segments 3–5 is a character shared only by a few brachyuran families. Besides the Parthenopidae, the Aethridae, Calappidae De Haan, 1833, Carpiliidae, Ortmann, 1893, Panopeidae, Ortmann, 1893, Xanthidae MacLeay, 1838, Trapeziidae Miers, 1886, Geryonidae Colosi, 1923, Portunidae Rafinesque, 1815, some members of the Goneplacidae MacLeay, 1838, the Dairidae Števčić, 2005, Varunidae H. Milne Edwards, 1853, and Plagusiidae Dana, 1851, also possess this condition. The Parthenopidae can be easily distinguished from all the families listed above by the presence of a persistent abdominal press button in mature and ovigerous females. Interestingly, this condition is not unique to the Parthenopidae. Mature females of the Dorippidae MacLeay, 1838, and Retroplumidae Gill, 1894, also possess persistent press buttons (pers. obs.). However, neither male dorippids nor retroplumids have abdominal segments 3–5 fused. Also, the last two pairs of ambulatory legs of the Dorippidae are subchelate, and in Retroplumidae, the last pair of ambulatory leg is reduced, sometimes becoming feather-like. No known parthenopid exhibits these two kinds of modifications of the ambulatory legs. Parthenopids all have a relatively long cheliped merus and this distinguishes them readily from Carpiliidae, Xanthidae, Panopeidae and the Aethridae. The latter four families all have a short cheliped merus that is adjacent to the carapace margin. The four families also have the distal portion of their cheliped carpus practically touching the carapace lateral margin. All parthenopids have considerably longer arms due to the elongated merus and manus. Owing to the elongated merus, the cheliped carpus usually does not touches the carapace lateral margin. Therefore, a parthenopid can be defined as having abdominal segments 3–5 fused; relatively long cheliped merus so that the carpus does not touch the carapace edges; and cheliped with limited mobility, i.e. unable to reach the median portion on the dorsal surface of the carapace.

At the subfamilial level, Ng et al. (2001) recognized four subfamilies in the Parthenopidae viz. Parthenopinae MacLeay, 1838, Cryptopodiinae Stimpson, 1871, Daldorfiinae Ng & Rodríguez, 1986, and Lambrachaeinae Števčić, 1994 (see also Davie, 2002). Števčić (2005: 78) developed his own definition of the Parthenopoidea and recognised three families within: Aethridae, Parthenopidae and Mimilambridae. The Aethridae was split into two subfamilies, Aethrinae and Hepatinae; whilst the Parthenopidae was separated into three subfamilies: Daldorfiinae, Parthenopinae and Cryptopodiinae. The Lambrachaeinae was put into its own family in the Majoidea by Števčić (2005). Thus, it is important to now review each of the four subfamilies:

The Daldorfiinae had never been diagnosed in sufficient detail. Guinot (1978a) argued that *Daldorfia* had a distinct thoracic sternal structure (sutures 4/5 and 5/6 medially interrupted, those of subsequent sternites complete), although she did not formally name the group. However, other parthenopids (e.g. *Parthenope*, *Pseudolambrus* Paul'son, 1875, *Garthambrus* Ng, 1996, *Mimilambrus*) also have all the sutures between sternites 4–8 medially interrupted (as noted by Guinot, 1978a, for what she called the *Parthenope* group). Using the characters enumerated by Guinot (1978a) and other features, Ng & Rodríguez (1986) recognised the Daldorfiidae in a superfamilial system. Their action formally validates the name Daldorfiidae. Tan (2004), after reviewing the entire Parthenopidae, argued that the traditional characters that have been used to separate the Daldorfiidae from the Parthenopidae (including the form of the thoracic sternal suture) are unreliable because they are inconsistent. The only reliable morphological difference between the Daldorfiidae from the Parthenopidae is the enlarged second antennal article 2 of daldorfiids, which is reminiscent of the condition seen in the Aethridae (Fig. 1A). They are very similar to other parthenopids in all other characters, and recognising them as separate family is not justified. Ng et al. (2001) also reached this conclusion in only recognising the Daldorfiinae as a subfamily. Tan (2004) and Tan & Ng (2007) concurred with this decision.

The Cryptopodiinae was established by Stimpson (1871a) for *Celatopesia concava* (Stimpson, 1871), because he felt that the expansion of the lateral margins of the carapace to cover the legs justified subfamily status. Ng et al. (2001) noted that species of *Cryptopodia* and its allies (i.e. *Celatopesia* and *Heterocrypta*) appeared to form a distinct group and formally recognised the Cryptopodiinae. Indo-Pacific *Heterocrypta* species were found to be generically distinct from *Heterocrypta* sensu stricto, and these species are now placed either in *Cryptopodia* or *Furtipodia* (see Tan & Ng, 2003). Looking at all the species in this "subfamily", the degree of variation suggests that there is no basis for recognising the Cryptopodiinae. *Cryptopodia* has very strongly expanded lateral carapace margins, that is accompanied by the formation of a lateroventral cavity (sensu Chiong & Ng, 1998), and all the ambulatory legs can be hidden from dorsal view under the lateroventral cavity. *Furtipodia* has a similarly shaped cavity but is less well developed, and the ambulatory legs cannot be completely hidden under it. *Furtipodia* thus appears intermediate between *Cryptopodia* and genera such as *Heterocrypta* and *Celatopesia* that lack the lateroventral cavity (Fig. 13A, C). Although *Cryptopodia*, *Heterocrypta* and *Furtipodia* have strongly expanded lateral carapace margins, expansion of these margins is also seen in other parthenopine genera. For example, in *Pseudolambrus* (Parthenopinae), the lateral margin is expanded to varying degrees, with some species being slightly expanded [e.g. *Pse. beaumonti* (Alcock, 1895)], more obvious in some species [e.g. *Pse. calappoides* (Adams & White, 1849)], and yet others with a very wide expansion [e.g. *Pse. planus* (Rathbun, 1911)]. The lateral carapace margins of *Pse. planus* cover part of the ambulatory leg, and are similar in condition to that seen in *Celatopesia concava*. Thus, this character, on its own, cannot justify the establishment of a separate subfamily, and we here consider it synonymous with the Parthenopinae.

The monotypic Lambrachaeinae Števčić, 1994, was added as a subfamily of the Parthenopidae by Ng et al. (2001) without comment, although Števčić (1994) first recognised it as a tribe in the Majoidea. *Lambrachaeus* Alcock, 1895, is an unusual looking crab, and it is because of its 'spider-like"

appearance that it had usually been placed in the Inachinae or Inachidae of the Majoidea. Edmondson (1952) suggested that it should be moved to the Parthenopidae, with Griffin & Tranter (1974) questioning its place in the Majidae. Griffin & Tranter (1986) finally stated emphatically that it was not a majid, but did not indicate where it belongs. Števčić (1994) commented that it was a majid, and classified it in its own tribe in the Inachinae, Lambrachaeini. Ng & McLay (2004) subsequently argued that despite the superficial "majid-like" features, *Lambrachaeus* was clearly a parthenopid. Števčić (2005) nevertheless maintained that *Lambrachaeus* was a majoid and recognised the family Lambrachaeidae in the Majoidea. The characters speak for themselves in arguing that *Lambrachaeus* is a parthenopid. Segments 3–5 of the male abdomen are fused, a character not usually found in the Majidae. In majids with an elongate epistome, the antennal article 2 is usually also elongated and very often completely fused with the epistome. In *Lambrachaeus ramifer* the antennal article 2 is not elongated, never exceeding the anterior margin of the antennular article 1 despite the very elongated epistome, and not fused with the epistome (see Fig. 1D). In addition, the antennular article 1 of *Lambrachaeus ramifer* is situated next to the antennules and not the buccal cavity. In majids, the distal portion of the antennal article 2 usually extends beyond the anterior margin of antennular article 1. As such, the antennal article 1 is often close to the buccal cavity rather than the antennules. These characters support the inclusion of this subfamily in the Parthenopidae and *Lambrachaeus* appear to be simply an extremely elongated version of *Rhinolambrus*. Other than these various unique apomorphies, there seems little basis to recognise a separate subfamily grouping for *Lambrachaeus*. As such, the Lambrachaeinae is also synonymised under the Parthenopinae.

A note about the authorship of this family is pertinent. Henri Milne Edwards (1834) was the first to use the word Parthenopiens to describe a group of parthenopid crabs. However, authorship is not credited to him as the term was used in the French vernacular and is not Latin. As such, the Parthenopina of MacLeay (1838) is considered to be the first valid usage of the family name, although the spelling had to be amended (ICZN Opinion 696).

Key to the subfamilies of the Parthenopidae MacLeay, 1838

1. Second antennal article as long as or longer than first antennular article (Fig. 1B) ..... **Daldorfiinae**
– Second antennal article less than half length of first antennular article (Fig. 1C, D) ..... **Parthenopidae**

PARTHENOPINAE MacLeay, 1838

Parthenopina MacLeay, 1838: 55, 58 (partim).
Parthenopinae – A. Milne-Edwards, 1878: 146; Miers, 1879: 668; Alcock, 1895a: 258; Borradaile, 1903a: 427 (table); 1903b: 689; 1907: 481; Rathbun, 1925: 510; Flipse, 1930: 29; T. Sakai, 1934: 299; 1938: 329; Ward, 1942: 75; Stephensen, 1946: 110, 219; Balss, 1957: 1629; Garth ,1958: 433; T. Sakai, 1965: 93; Ingle, 1980: 142; Manning & Holthuis, 1981: 327; Tirmizi & Kazmi, 1986: 196; Ng et al., 2001: 14; Davie, 2002: 386; Števčić, 2005: 80.
Cryptopodiinae Stimpson, 1871a: 137; Ng et al., 2001: 15; Davie, 2002: 383; Števčić, 2005: 81.
Lambrinae Neumann, 1878: 17.
Mimilambridae Williams, 1979: 399; Manning & Holthuis, 1981: 322; Ng & Rodríguez, 1986: 88; Števčić, 2005: 81.
Lambrachaeini Števčić, 1994: 419, 420.
Lambrachaeinae – Ng et al., 2001: 15; Ng & McLay, 2003: 899.

***Type genus.* –** *Parthenope* Weber, 1795.

***Other genera.* –** *Agolambrus*, new genus; *Aulacolambrus* Paul'son, 1875; *Celatopesia* Chiong & Ng, 1998; *Certolambrus* Tan & Ng, 2003; *Costalambrus*, new genus; *Cryptopodia* H. Milne Edwards, 1834; *Derilambrus*, new genus; *Distolambrus*, new genus; *Enoplolambrus* A. Milne-Edwards, 1878; *Furtipodia* Tan & Ng, 2003; *Garthambrus* Ng, 1996; *Heterocrypta* Stimpson, 1871; *Hypolambrus*, new genus; *Lambrachaeus* Alcock, 1895; *Latulambrus*, new genus; *Leiolambrus* A. Milne-Edwards, 1878; *Mesorhoea* Stimpson, 1871; *Mimilambrus* Williams, 1979; *Neikolambrus* Tan & Ng, 2003; *Nodolambrus*, new genus; *Ochtholambrus*, new genus; *Parthenopoides* Miers, 1879; *Patulambrus*, new genus; *Piloslambrus*, new genus; *Platylambrus* Stimpson, 1871; *Pseudolambrus* Paul'son, 1875; *Rhinolambrus* A. Milne-Edwards, 1878; *Solenolambrus* Stimpson, 1871; *Spinolambrus*, new genus; *Tutankhamen* Rathbun, 1925; *Velolambrus*, new genus.

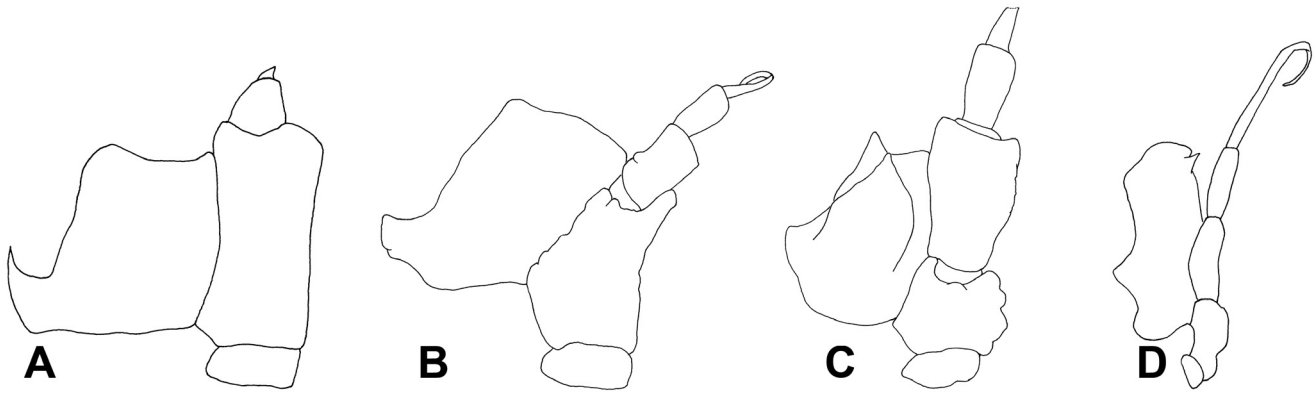

Fig. 1. Comparisons of the relative length of the first antennular article and the antennal articles: A, *Aethra edentata* Edmonson, 1951; B, *Daldorfia horrida* (Linnaeus, 1758); C, *Parthenope longimanus* (Linnaeus, 1758); D, *Lambrachaeus ramifer* Alcock, 1895.

***Diagnosis.* –** Carapace subcircular, semi-elliptical, or triangular; surface smooth, granulated or eroded to varying degrees. Orbits complete. Anntennal article 1 near posterior margin of epistome. Antennal article 2 usually about half to one-quarter size of antennular article 1. Ambulatory leg merus upper margin with or without teeth, proximalmost tooth never positioned slightly posterior to the remainder.

***Remarks.* –** Rathbun (1925) has been the standard reference for the generic arrangement of the western Atlantic species, Flipse (1930) for the Indo-West Pacific species, Garth (1958) for the eastern Pacific species, and Manning & Holthuis (1981) for the eastern Atlantic and some Mediterranean species. Ng (1996), however, noted that the generic system within the Parthenopidae had actually not significantly changed since Alcock (1895). He also commented that some of the subgenera in *Parthenope* used by Flipse (1930) are very distinctive and deserve generic status (see also Ng & Rodríguez, 1986). He remarked that *Platylambrus* is heterogenous, and contains some 20 Atlantic, Eastern and Indo-West Pacific species. In recent years, most subgenera have indeed been used as full genera (e.g. Chia & Ng, 1993; Davie & Turner, 1994; Ng & Tan, 1999; Tan et al., 1999; Ng & Rahayu, 2000; Ng et al., 2001; Davie, 2002; Tan & Ng, 2003).

Tan (2004) vindicated Ng's (1996) comments, and 32 genera (including 12 new) are here recognized in the Parthenopinae. In essence, *Parthenope* is a species restricted to the Indo-Pacific. Atlantic species previously placed in *Parthenope* are referred to *Agolambrus*, and eastern Pacific species transferred to *Hypolambrus*. *Platylambrus* is now restricted to two species in the western Atlantic, *Pla. serratus* and *Pla. granulatus*. Indo-Pacific species formerly placed in *Platylambrus* are referred to *Enoplolambrus*. Two species from the Atlantic and eastern Pacific formerly placed in *Platylambrus* are referred to two new genera, *Spinolambrus* and *Piloslambrus*, respectively. *Pseudolambrus* is restricted to Indo-Pacific species, with its two eastern Pacific species transferred to a new genus, *Ochtholambrus*. One Indo-Pacific species originally described in *Pseudolambrus*, and another species described from the Mediterranean, are transferred to a new genus, *Velolambrus*. *Heterocrypta* species described from the Indo-Pacific are divided between *Cryptopodia* and *Furtipodia*. One Mediterranean species is referred to the new genus, *Distocrypta*, whereas another species from the eastern Pacific is placed in another new genus, *Latcrypta*. A unique species described from Brazil is referred to *Costalambrus*.

In this work, 12 new genera are described, and *Enoplolambrus* A. Milne-Edwards, 1878, is resurrected. *Parthenope* sensu Flipse (1930) is now recognized as *Daldorfia* (see Tan & Ng, 2007) and Rathbun, 1894, belongs to the Daldorfiinae sensu Tan & Ng (2007). Our proposed parthenopine generic system is based on adult morphology. The revised generic system for previously described taxa is modified from the system proposed by Flipse (1930) for the Indo-Pacific parthenopids, and summarized below:

Aulacolambrus Paul'son, 1875: elevated to full generic rank; Indo-West Pacific.
Cryptopodia H. Milne Edwards, 1834: Indo-West Pacific.
Celatopesia Chiong & Ng, 1998: western Atlantic and eastern Pacific
Certolambrus Tan & Ng, 2003: Indo-West Pacific.
Enoplolambrus A. Milne-Edwards, 1878: Indo-West Pacific.
Furtipodia Tan & Ng, 2003: Indo-West Pacific.
Garthambrus Ng, 1996: Indo-West Pacific and eastern Pacific.
Heterocrypta Stimpson, 1871: western Atlantic and eastern Pacific.
Lambrachaeus Alcock, 1895: Indo-West Pacific.
Leiolambrus A. Milne-Edwards, 1878: western Atlantic and eastern Pacific.
Mesorhoea Stimpson, 1871: western Atlantic and eastern Pacific.
Mimilambrus Williams, 1979: western Atlantic.
Neikolambrus Tan & Ng, 2003: Indo-West Pacific.
Parthenope Weber, 1795 (= *Lambrus* sensu Flipse 1930): Indo-West Pacific.
Parthenopoides Miers, 1879: Mediterranean.
Pseudolambrus Paul'son, 1875: elevated to full generic rank; Indo-West Pacific.
Platylambrus Stimpson, 1871: elevated to full generic rank; western Atlantic.
Rhinolambrus A. Milne-Edwards, 1878: elevated to full generic rank; Indo-West Pacific.
Solenolambrus Stimpson, 1871: western and eastern Atlantic and eastern Pacific.
Tutankhamen Rathbun, 1925, western Atlantic. It is being treated in a separate study, along with the genus *Garthambrus* by McLay & Tan (in press) and will not be discussed further in this work.

Key to the genera of the subfamily Parthenopinae

1. Rostrum long, about half of carapace length. Orbits shallow, eyes cannot be enclosed within orbits ..... ***Lambrachaeus***
– Rostrum always shorter than half carapace length. Orbits deep, eyes able to be enclosed within orbits **2**
2. Carapace dorsal surface with three low, parallel ridges, one on each epibranchial regions and one on cardiac region ..... ***Leiolambrus***
– Carapace dorsal surface without parallel ridges **3**
3. Third maxilliped exopod totally hidden behind third maxilliped ..... ***Mimilambrus***
– Third maxilliped exopod exposed or partially hidden behind third maxilliped **4**
4. Suborbital region with a diagonal ridge, angled 45º to the sagittal plane ..... ***Agolambrus***, new genus
– Suborbital region without a diagonal ridge **5**
5. Epistome with protrusion below antennular article one **6**
– Epistome without protrusion below antennular article one . **7**
6. Hepatic margin very short. Pterygostomial ridge with dense, long setae covering afferent channel. Pterygostomial region excavated, forming distinct afferent channel ..... ***Aulacolambrus***
– Hepatic margin short. Pterygostomial ridge without dense setae. Pterygostomial region not excavated, no distinct afferent channel ..... ***Piloslambrus***, new genus
7. Epibranchial teeth elongate, subrectangular in shape, with long narrow gaps between adjacent teeth ..... ***Pseudolambrus***
– Epibranchial teeth not elongate, usually triangular in shape, with or without gaps between adjacent teeth **8**
8. Carapace lateral margins expanded, covering most or part of ambulatory legs **9**
– Carapace lateral margins not expanded, ambulatory legs visible dorsally **15**

9. Third maxilliped merus triangular ..... ***Celatopesia***
– Third maxilliped merus rectangular **10**
10. Lateral carapace margin strongly expanded, forming dome-shaped ventral depression, hiding all ambulatory legs ..... ***Cryptopodia***
– Lateral carapace margin not expanded, not forming dome-shaped ventral depression, ambulatory legs not hidden or partially hidden **11**
11. Gastric region with distinct V-shaped ridge **12**
– Gastric region without V-shaped ridge **13**
12. Epistome relatively broad, lower margin more or less straight. Sub-branchial region between epibranchial margin and sub-branchial ridge without large rounded tubercle ..... ***Distolambrus*****,** new genus
– Epistome relatively narrow, lower margin V-shaped. Sub-branchial region between epibranchial margin and sub-branchial ridge with large rounded tubercle ..... ***Latulambrus*****,** new genus
13. Epibranchial region with a distinct diagonal ridge. Suborbital margin with narrow slit. Male thoracic sternum without any pits ..... ***Heterocrypta***
– Epibranchial region with distinct diagonal ridge. Suborbital margin entire. Male thoracic sternum with several large pits **14**
14. Antennal article 4 about half length of antennal article 3. Cheliped merus outer margin proximal teeth fused with adjacent members, forming wing-like expansion. Mature female telson slightly longer than length of abdominal segment 6 ..... ***Furtipodia***
– Antennal article 4 about same length as antennal article 3. Cheliped merus outer margin proximal teeth not fused, not forming wing-like expansion. Mature female telson about twice length of abdominal segment 6 ..... ***Velolambrus*****,** new genus
15. Carapace dorsal surface generally smooth, except for ridges on the gastric and branchial regions **16**
– Carapace dorsal surface tuberculate or rugose **18**
16. Hepatobranchial notch wide and distinct. Pterygostomial ridge separated from subepibranchial ridge by wide subhepatobranchial groove ..... ***Costalambrus*****,** new genus
– Hepatobranchial notch absent. Pterygostomial ridge continuous with subepibranchial ridge, subhepatobranchial groove absent **17**
17. Third maxilliped merus upper margin with a median notch; palps hidden behind merus. Male and female thoracic sternum smooth ..... ***Mesorhoea***
– Third maxilliped merus upper margin without any notch; palps exposed, not hidden behind merus. Male and female thoracic sternum lightly tuberculate ..... ***Solenolambrus***
18. Carapace shape ovate **19**
– Carapace shape triangular to subtriangular **20**
19. Last tooth on hepatic region almost touching first tooth of anterolateral margin, forming a circular post-hepatic notch. Female with large capitate tubercle on sternite 4. Outer margin of chelipeds with closely spaced teeth ..... ***Hypolambrus*****,** new genus
– Last tooth on hepatic region not touching first tooth of anterolateral margin, not forming a circular post-hepatic notch. Female without large capitate tubercle on sternite 4. Outer margin of cheliped without closely spaced teeth ..... ***Parthenope***
20. Last epibranchial tooth placed posteriorly, in same line or slightly anterior to posterior margin ..... ***Certolambrus***
– Lateral tooth placed anterior to posterior margin, never in same line as posterior margin **21**
21. Carapace flat. Outer margin of cheliped manus with large, flat, smooth, closely spaced teeth ..... ***Platylambrus***
– Carapace regions, especially epibranchial region inflated. Outer margin of cheliped manus teeth well-spaced, conical, often spinate or granulated **22**
22. Cheliped marginal teeth short, rounded, pearl-like. Male telson longer than broad. G1 elongated, tip strongly tapered distally ..... ***Nodolambrus*****,** new genus
– Chelipeds outer margin teeth long, triangular. Male telson broader than long. G1 usually blunt, tip not greatly tapered **23**
23. Protogastric region with two median tubercles, both higher than mesogastric median tubercle ..... ***Ochtholambrus*****,** new genus
– Protogastric region median tubercle or tubercles, if any, both lower than mesogastric median tuberlce **24**
24. Distance between last epibranchial teeth widest portion of carapace. Outer margin of proximal half of cheliped merus outer margin with diagonal row of tubercles. G2 much longer than G1 ..... **25**
– Distance between last epibranchial teeth not widest portion of carapace. Outer margin of proximal half of cheliped merus without diagonal row of tubercles. G2 shorter or about same length as G1 ..... **26**
25. Epistome with median transverse lamelliform protrusion. Suborbital region with a diagonal lamelliform protrusion ..... ***Tutankhamen***
– Epistome flat, without lamelliform protrusion. Suborbital region without lamelliform protrusion ..... ***Garthambrus***
26. Outer margin of cheliped manus with two large teeth. Small teeth may be present in between both teeth **27**
– Outer margin of cheliped manus with more than two large teeth. Smaller teeth always present between large teeth **28**
27. Hepatobranchial notch wide ..... ***Neikolambrus***
– Hepatobranchial notch very narrow ..... ***Parthenopoides***
28. Epibranchial margin slightly convex. Lateral tooth and last epibranchial very short, tips rounded, blunt. Ambulatory legs cross-section strongly compressed laterally ..... ***Derilambrus*****,** new genus
– Epibranchial margin strongly convex. Lateral tooth and last epibranchial usually long, tips may be blunt or sharp. Ambulatory legs cross-section subcylindrical to slightly compressed laterally **29**
29. Mature female telson lateral margins straight or convex .. **30**
– Mature female telson lateral margins concave **31**
30. Mature female telson lateral margins straight. Postorbital region with distinct notch ..... ***Rhinolambrus***
– Mature female telson lateral margins convex. Postorbital region without notch ..... ***Enoplolambrus***
31. Suborbital region concave. Metagastric region not inflated ..... ***Patulambrus*****,** new genus
– Suborbital region not concave. Metagastric region inflated ..... ***Spinolambrus*****,** new genus

Agolambrus, new genus

(Fig. 2)

Parthenope (*Parthenope*) – Rathbun 1925: 513 (in part); Williams 1984: 342.

Parthenope – Gore & Scotto 1979: 35 (in part).

Types and only species. – *Lambrus agonus* Stimpson, 1871, by present designation.

Etymology. – The genus name is an arbitrary combination of the first three letters of the name of the type species *agonus* and the best-known synonym for parthenopids, *Lambrus*. Gender masculine.

***Diagnosis.* –** Carapace subcircular, slightly broader than long; regions inflated; dorsal surface sparsely tuberculate, pitted; epibranchial margin rounded, not covering ambulatory legs; not produced beyond base of abdomen; no lateral ventral depression. Exorbital angle acute. Gastro-orbital notch present, broad. Hepatic margin indistinct, not continuous with epibranchial region. Hepatobranchial notch present, broad. Epibranchial margin strongly convex, posterior one-third angle obtuse, more produced than last epibranchial tooth; teeth triangular, gaps between adjacent teeth wide; last epibranchial tooth anterior to posterior margin. Proto-, meso- and metagastric regions differentiated, without ridge. Hepatic region slightly inflated, lower than epibranchial and gastric regions. Epibranchial region without diagonal ridge. Suborbital region without a diagonal ridge; upper suborbital margin without V-shaped hiatus. Epistome slightly depressed medially, smooth, without protrusion below antennular article one, lower margin with U-shaped invagination. Pterygostomial region not excavated, no distinct afferent channel. Pterygostomial ridge present, without dense setae covering afferent channel, not continuous with subepibranchial ridge, subhepatobranchial notch present. Subepibranchial region smooth. Posterior sub-branchial teeth present, visible dorsally. Antennal article 3 long, anterior margin reaching beyond antennular article 1 anterior lateral corner; antennal article 4 above antennular article 1 anterior lateral corner, subequal to antennal article 3. Third maxilliped merus subquadrate, upper margin entire; carpus outer surface distal portion with a small spine, exposed; propodus outer surface distal portion with a small spine, exposed; dactylus exposed; exopod exposed, mesial margin distal one-third with a tooth. Cheliped margins dentate, teeth short, triangular, fairly widely spaced, 3 or 4 large interspaced with smaller teeth; merus upper surface tuberculate, with a median row of tubercles; dactylus about 45º to manus central axis. Male fused thoracic sternum lightly tuberculate, inflated; with transverse groove between sternites 3 and 4; longitudinal groove present. Male telson triangular, equilateral.

***Remarks*. –** This new western Atlantic taxon genus superficially resembles the Indo-West Pacific genus *Parthenope*. *Agolambrus* is easily differentiated from *Parthenope* by having a strongly produced pterygostomial ridge that is visible dorsally; an inverted V-shaped hepatic ridge that is reduced and placed higher up on the carapace; and the presence of a ridge-like structure on the infraorbital region. *Agolambrus* has a distinct suborbital ridge, which is absent in *Parthenope*. In *Agolambrus*, the pterygostomial ridge is reduced to a row of small tubercles situated directly under the hepatic margin. In *Parthenope*, there is a distinct pterygostomial ridge, which is separated from the hepatic margin by a shallow subhepatic groove.

Less significant characters include *Agolambrus* having a shorter and slimmer P1 (3.1–3.7 times CL in *Agolambrus* vs 4.7 times CL in *Parthenope*). In *Agolambrus*, P2–P5 are longer and more slender than in *Parthenope*, which are shorter, stouter and flattened. *Agolambrus* has a longer nontrifid rostrum, while *Parthenope* has a relatively shorter and distinctly trifid rostrum. On the lateral margins of sternite 4, there is a pair of strong capitate tubercles. These tubercles are considerably lower in *Parthenope*. There is a strong, bifid, lamelliform projection on ventral surface of the first antenullar article in *Agolambrus*, but in *Parthenope* it is just a low lamelliform ridge. In *Agolambrus*, the antennal segments 2–4 possess knob-like tubercles. In *Parthenope*, there are no tubercles on these three segments.

Costalambrus, new genus
(Fig. 3)

Heterocrypta – Melo 1996: 278 (key) (in part).

***Types and only species.* –** *Heterocrypta tommasii* Rodrigues da Costa, 1959, by present designation.

***Etymology.* –** The genus name is in honor of the Brazilian carinologist, Henrique Rodrigues da Costa, who described the type species. An arbitary combination of part of the family name *Costa*, and *Lambrus* Leach, 1815, a junior synonym of *Parthenope* Weber, 1795. Gender masculine.

***Diagnosis.* –** Carapace subcircular, slightly broader than long, regions relatively flat; dorsal surface smooth, except for epibranchial ridges and tubercles on mesogastric and cardiac

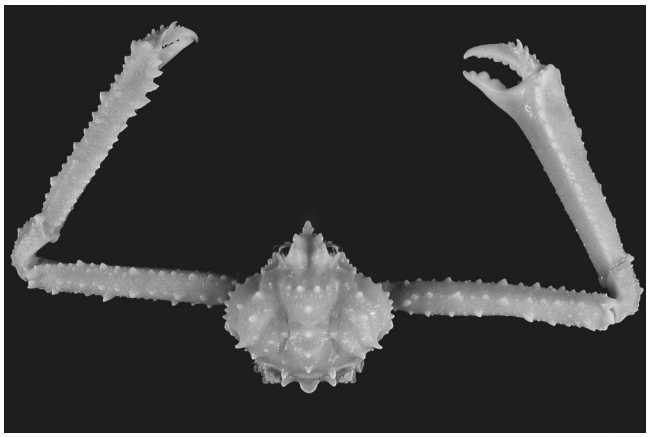

Fig. 2. *Agolambrus agonus* (Stimpson, 1871): male 14.9 × 13.5 mm (USNM 274732), Gulf of Mexico, off Florida.

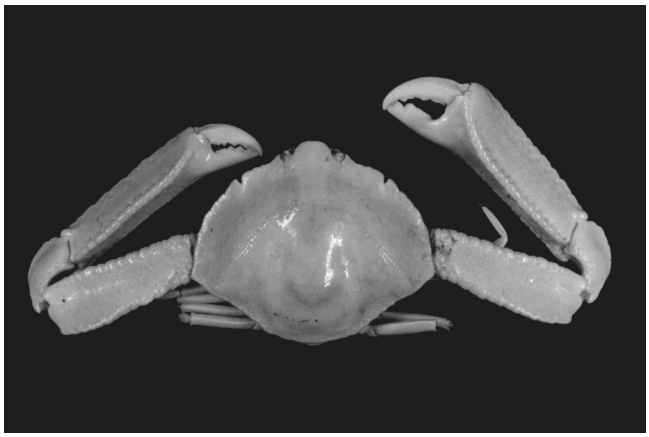

Fig. 3. *Costalambrus tommasii* (Rodrigues da Costa, 1959): female 10.9 × 9.3 mm (LACM), Brazil, Sao Paulo, Cananea.

regions; epibranchial margin slightly expanded, partially covering ambulatory legs; not produced beyond base of abdomen. Exorbital angle acute. Gastro-orbital notch present, shallow. Hepatic margin short, not continuous with epibranchial region. Hepatobranchial notch present, distinct, V-shaped. Epibranchial margin strongly convex, posterior one-fifth region angled, angle obtuse, more produced than last epibranchial tooth; teeth rectangular, not separated by gaps, sides fused with adjacent teeth, fusion line faint; last epibranchial tooth anterior to posterior margin. Proto-, meso- and metagastric regions not clearly demarcated, without ridge. Hepatic region slightly depressed, lower than epibranchial and gastric regions. Epibranchial region with a low continuous diagonal ridge. Suborbital region without a diagonal ridge; upper suborbital margin with a V-shaped hiatus. Epistome slightly depressed medially, without protrusion below antennular article 1, lower margin chevron-shaped. Pterygostomial region not excavated, no distinct afferent channel. Pterygostomial ridge present, without dense setae covering afferent channel, not continuous with subepibranchial ridge. Subhepatobranchial notch present, broad. Subhepatobranchial groove deep. Subepibranchial region smooth. Posterior subbranchial teeth absent. Antennal article 3 relatively short, barely reaching antennular article 1 anterior lateral corner; antennal article 4 anterior margin above antennular article 1 anterior lateral corner, length subequal to antennal article 3. Third maxilliped merus squarish, upper margin dentate, teeth small; carpus outer surface tuberculate, exposed; propodus upper surface lightly tuberculate, exposed; dactylus exposed; exopod exposed, mesial margin distal one-third with a tooth. Cheliped margins dentate, teeth regular, rectangular, not separated by gaps, sides fused with adjacent teeth, fusion line faint; merus upper surface smooth; dactylus about 30º diagonal to manus central axis. Male fused thoracic sternum tuberculate, inflated; with V-shaped transverse groove between sternites 3 and 4; longitudinal groove present.

***Remarks.* –** *Costalambrus*, new genus, is established to accommodate *Heterocrypta tommasii*, which is morphologically very different from *Heterocrypta* sensu stricto. Unlike all other *Heterocrypta* species, the lateral carapace margins of *H. tommasii* are not at all expanded to cover the ambulatory legs. The carapace shape is also very different from *Heterocrypta*, being subcircular in *Costalambrus* but subtriangular to subpentagonal in *Heterocrypta*. In addition, *Costalambrus* has a prominent V-shaped hepatobranchial notch, which is absent in *Heterocrypta*. The chelipeds of *Costalambrus* are also comparatively longer, more slender, and more strongly prismatic in cross-section, than *Heterocrypta*.

Costalambrus resembles *Solenolambrus* owing to the slender chelipeds that are also strongly prismatic in cross-section. Both genera also have carapaces that are relatively free of tubercles except for a row of tubercles on the epibranchial region and a small cluster on the cardiac region, and relatively short rostrum. Neither possess laterally-expanded carapace margins that cover the ambulatory legs. *Costalambrus* differs from *Solenolambrus* in carapace shape (subcircular vs pentagonal), presence of a deep hepatobranchial notch (vs absent), presence of a deep and wide subhepatobranchial groove (vs absent), and a subquadrate third maxilliped merus (vs triangular). The shape of the female telson is also different from that of *Costalambrus*, being triangular with the lateral margins strongly concave, while that of *Solenolambrus* is broadly triangular with the lateral margins straight to slightly convex.

***Derilambrus*, new genus**

(Fig. 4)

Parthenope – Latreille 1825: 14 (in part).
Lambrus – H. Milne Edwards 1834: 352 (in part); Lucas 1840: 126 (in part).

***Type and only species.* –** *Parthenope angulifrons* Latreille, 1825, by present designation.

***Etymology.* –** The genus name is an arbitrary combination of the Greek word *dere*, meaning neck, and the common suffix *lambrus* for parthenopids. This alludes to the straight exorbital margin, that is parallel to the central axis. Gender masculine.

***Diagnosis.* –** Carapace subpyriform, slightly broader than long, region inflated; dorsal surface tuberculate; epibranchial margin rounded, not expanded to cover ambulatory legs; not

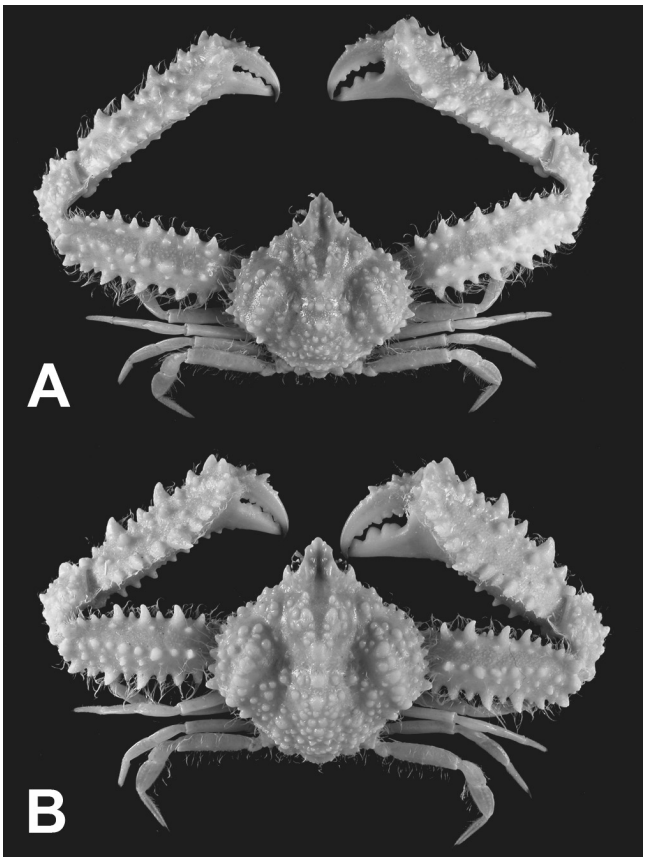

Fig. 4. *Derilambrus angulifrons* (Latreille, 1825): A, male 26.3 × 25.0 mm; B, male 26.8 × 23.7 mm; C, male 22.3 × 21.1 mm; D, female 19.5 × 18.8 mm. A, B, Italy, Sicily, Palermo, Caron coll., P. Roux Collection (RMNH D 43592) (dry); C, D, France, Argelès, no other data (USU1406).

produced beyond base of abdomen. Exorbital angle acute. Gastro-orbital notch present, U-shaped. Hepatic margin short, not continuous with epibranchial region. Hepatobranchial notch present, U-shaped. Epibranchial margin strongly convex, posterior one third region angled, angle obtuse, more produced than last epibranchial tooth; teeth triangular, subtriangular gaps between adjacent teeth present; last epibranchial tooth anterior to posterior margin. Proto- and meso- regions indistinct, metagastric region distinct, with discontinuous V-shaped ridge. Hepatic region slightly inflated, lower than epibranchial and gastric regions. Epibranchial region without continuous diagonal ridge. Suborbital region without a diagonal ridge, upper suborbital margin with deep V-shaped invagination. Epistome sloping posteriorly, depressed medially, without protrusion below antennular article 1, lower margin slightly chevron-shaped. Pterygostomial region not excavated, no distinct afferent channel. Pterygostomial ridge present, without dense setae covering afferent channel, not continuous with subepibranchial ridge, subhepatobranchial notch present. Subepibranchial region smooth. Posterior sub-branchial teeth present, visible dorsally. Antennal article 3 long, reaching beyond antennular article 1 anterior lateral corner; antennal article 4 anterior margin above antennular article 1 anterior lateral corner, subequal to antennal article 3. Third maxilliped merus squarish, upper margin entire, anterior mesial corner with broad W-shaped notch; carpus upper surface smooth, exposed; propodus upper smooth, exposed; dactylus exposed; exopod exposed, mesial margin distal one-third with a tooth. Cheliped margins dentate, teeth relatively short, stout, triangular, larger teeth interspaced with smaller teeth; merus upper surface tuberculate, with a median row of tubercles; dactylus about 45º to manus central axis. Male fused thoracic sternum smooth, slightly inflated; with shallow transverse groove between sternite 3 and 4; longitudinal groove present, shallow. Male telson triangular, broader than long.

***Remarks.* –** *Derilambrus*, new genus, differs from *Parthenope* sensu stricto mainly in the shape of the carapace, being subpyriform (vs subcircular in *Parthenope*). This is related to the length and orientation of the exorbital margin and the differences in the hepatic margin length. The exorbital margin of *Derilambrus* is long and parallel to the central axis, but short and diverging outwards in *Parthenope*. The hepatic margin length is comparatively longer in *Derilambrus* than *Parthenope*. The relatively longer exorbital and hepatic margins in *Derilambrus* makes it appear to have a 'neck', whereas *Parthenope* appears 'neckless'. The overall carapace length of *Derilambrus* is also greater than that of *Parthenope*, due to the elongated hepatic region and rostrum. On the dorsal surface of the carapace, there is a discontinuous V-shaped ridge on the gastric region in *Derilambrus*. There is no corresponding ridge in *Parthenope*.

Derilambrus bears some resemblance to *Nodolambrus*, new genus, due to the elongated exorbital margin and the presence of the discontinuous V-shaped ridge on the gastric region. However, it is easily differentiated by several characters (see ***Discussion*** under *Nodolambrus*), but most obviously because of the very differently shaped G1 of *Nodolambrus*.

Derlilambrus is morphologically similar to *Hypolambrus*, but can be differentiated from the latter mainly by four characters: 1) there are distinct spine-like tubercles on the proximal border of the third maxilliped merus in *Derilambrus* (vs very low to practically absent in *Hypolambrus*); 2) the third segment of the male abdomen has the lateral edges projecting outwards in *Derilambrus* (vs gently curving across the entire lateral margin in *Hypolambrus*); 3) the depression on sternites 2–4 is in the shape of an inverted 'T' (vs small heart-shaped depression on sternites 2–3 in *Hypolambrus*); and 4) the teeth on the manus are relatively widely spaced in *Derilambrus* (vs closely set in *Hypolambrus*).

***Distolambrus*, new genus**
(Fig. 5)

Heterocrypta – Ortmann, 1893: 417 (in part); Manning & Holthuis, 1981: 322.

***Type and only species.* –** *Heterocrypta maltzami* Miers, 1881, by present designation.

***Etymology.* –** The genus name is an arbitary combination of the Latin word *disto*, meaning to differ or be distinct, with *lambrus*, a junior synonym of *Parthenope* Weber, 1795. This alludes to the fact that the type species was originally described in a different genus, *Heterocrypta*, and now found to be generically distinct from it. Gender masculine.

***Diagnosis.* –** Carapace pentagonal, broader than long; dorsal surface generally smooth except for ridges on the gastric, epibranchial and cardiac regions; lateral margins expanded, partially covering ambulatory legs; not produced beyond abdomen base; no lateral ventral depression. Exorbital angle acute, slightly less than 90º. Gastro-orbital notch absent. Hepatic margin indistinct, continuous with epibranchial region. Hepatobranchial notch absent. Epibranchial margin strongly convex, median portion more produced than last epibranchial tooth. Epibranchial teeth subrectangular, no gaps between adjacent teeth, teeth lateral margins visible; last epibranchial tooth slightly anterior to posterior margin, not strongly differentiated from other epibranchial teeth. Proto,

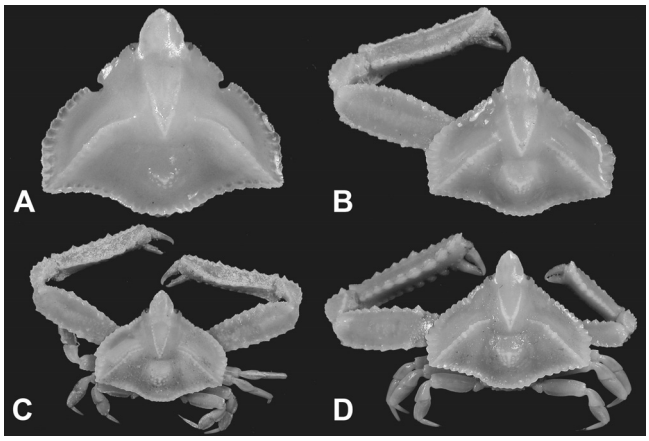

Fig. 5. *Distolambrus maltzami* (Miers, 1881), syntypes, Goree Island (NHM 1881.24): A, female ovig. 10.4 × 9.1 mm; B, male 12.0 × 10.0 mm; C, male 12.7 × 10.6 mm; D, male 12.6 × 10.5 mm.

meso- and metagastric regions fused, with strong V-shaped ridge. Hepatic region flat, sloping posteriorly. Epibranchial region with a strong diagonal ridge. Suborbital region without a diagonal ridge, upper suborbital margin with V-shaped hiatus. Epistome slightly depressed, smooth, without protrusion below antennular article 1, lower margin straight, with slight median invagination. Pterygostomial region not excavated. Pterygostomial ridge present, without dense setae covering afferent channel, continuous with subepibranchial ridge. Subhepatobranchial notch absent, replaced by a narrow line. Subepibranchial region without large rounded tubercle. Posterior sub-branchial teeth absent. Antennal article 3 short, reaching to half length of antennular article 1; antennal article 4 short, reaching to antennular article 1 anterior lateral corner. Third maxilliped merus subtriangular, upper margin entire; carpus upper margin entire, exposed; propodus upper margin entire, exposed; dactylus hidden; exopod exposed, mesial margin distal one-quarter with a tooth. Cheliped margins dentate, teeth short, broadly circular, edges denticulate; merus upper surface smooth; dactylus almost perpendicular to manus central axis. Male fused thoracic sternum smooth, depressed. Male telson triangular, equilateral.

Remarks. – *Distolambrus*, new genus, is generically distinct from *Heterocrypta* due to the presence of a V-shaped ridge on the gastric region (vs U-shape); the branchial ridge not being continuous with the gastric ridge (vs continuous); male fused thoracic sternites without a transverse groove (vs with a broad transverse groove); third maxilliped merus sub-triangular (vs subquadrate); and the posterior margin not produced beyond the base of the abdomen (vs produced).

Two other genera, *Solenolambrus* and *Latulambrus*, new genus, also have an undifferentiated gastric region with a distinct and continuous V-shaped ridge. *Distolambrus* can be easily distinguished from *Solenolambrus* by the very different carapace shape (triangular vs pentagonal), and the carapace lateral margin being expanded, partially covering the ambulatory legs (vs not expanded, ambulatory legs exposed). In addition, the carapace angle is strongly produced at the last epibranchial tooth, but not so in *Solenolambrus*.

Latulambrus bears some similarities to *Distolambrus* in that the carapace angle is strongly produced at the lateral tooth, and the carapace lateral margins are expanded, partially covering the ambulatory legs. Both genera also have smooth and totally fused second to fourth thoracic sternites. However, the epistome is shorter in *Latulambrus* than in *Distolambrus*. As such, the distal portion of the pterygostomial ridge is also directly underneath the distal portion of the epibranchial margin. In *Distolambrus*, with the epistome being longer, the positioning of the pterygostomial ridge is different. Additionally, the lower margin of the epistome in *Latulambrus* is V-shaped, whereas it is straight in *Distolambrus*.

Enoplolambrus A. Milne-Edwards, 1878
(Fig. 6)

Maja – Bosc 1802: 245 (in part); Latreille 1803: 87 (in part) [non *Maja* Lamarck, 1801].

Parthenope – Latreille 1818: 23; Lamarck 1818: 428 [non *Parthenope* Weber, 1795].

Lambrus – Desmarest 1825: 85 (in part); H. Milne Edwards 1834: 352 (in part); Miers 1886: 92 (in part).

Enoplolambrus A. Milne-Edwards, 1878: 147.

Lambrus (*Platylambrus*) – Alcock, 1895a: 261; Balss, 1922: 133; Flipse, 1930: 23; Barnard, 1950: 65 [non *Platylambrus* Stimpson, 1871].

Oncodolambrus De Man, 1906: 400.

Parthenope (*Platylambrus*) – T. Sakai, 1976: 268; Dai et al., 1986: 148; Dai & Yang, 1991: 163 [non *Platylambrus* Stimpson, 1871].

Platylambrus – Davie, 2002: 388 [non *Platylambrus* Stimpson, 1871].

Type species. – *Enoplolambrus* A. Milne-Edwards, 1878: *Lambrus carenatus* H. Milne Edwards, 1834, by original designation.
Lambrus (*Oncodolambrus*) De Man, 1906: *Lambrus* (*Oncodolambrus*) *praedator* De Man, 1906, by original designation.

Other included species. – *Enoplolambrus echinatus* (Herbst 1790), new combination; *E. laciniata* (De Haan, 1839), new combination; *E. pransor* (Herbst, 1794), new combination; *E. valida* (De Haan, 1837), new combination.

Diagnosis. – Carapace subtriangular to subrhomboidal, broader than long, regions inflated; dorsal surface tuberculate; epibranchial margin expanded, partially covering ambulatory legs; not produced beyond base of abdomen; no lateral ventral depression. Exorbital angle acute. Gastro-orbital notch present, small, shallow, indistinct. Hepatic margin distinct, not continuous with epibranchial region. Hepatobranchial notch present, reduced to a narrow slit or U-shaped. Epibranchial margin strongly convex, posterior one-quarter to one-third region angled, angle obtuse to slightly obtuse, more produced than last epibranchial tooth; teeth triangular, adjacent teeth separated by triangular to U-shaped gaps; last epibranchial tooth anterior to posterior margin. Proto-, meso- and metagastric regions differentiated, without ridge. Hepatic region slightly inflated, lower than epibranchial and gastric regions. Epibranchial region without continuous, diagonal ridge. Pterygostomial region not excavated, without distinct afferent channel. Pterygostomial ridge present, without dense setae covering afferent channel; not continuous with subepibranchial ridge. Suborbital region without diagonal ridge, upper suborbital margin with a V-shaped hiatus. Epistome slightly depressed medially, smooth, without

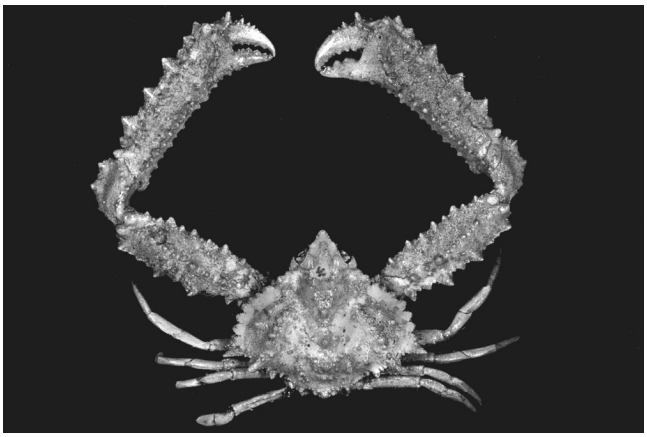

Fig. 6. *Enoplolambrus carenatus* (H. Milne-Edwards, 1834): **A**, holotype, male 22.3 × 18.0 mm (MNHN B 4589), Mer des Indes.

protrusion below antennular article one, lower margin median portion V-shaped invagination. Subhepatobranchial notch present. Subepibranchial ridge glabrous, slightly higher to higher than pterygostomial ridge. Posterior sub-branchial teeth present, one or two teeth, not visible dorsally. Antennal article 3 long, reaching to antennular article 1 anterior lateral corner; antennal article 4 anterior margin above antennular article 1 anterior lateral corner, subequal to antennal article 3 length. Third maxilliped merus squarish, upper margin entire, anterior inner corner broadly W-shaped; carpus upper margin entire, exposed; propodus upper margin entire, exposed; dactylus exposed; exopod exposed, mesial margin distal one-third region with tooth. Cheliped margins dentate, teeth long, triangular, alternating large and smaller teeth; merus upper surface tuberculate, with a median row of tubercles; dactylus about 45º to manus central axis. Male fused thoracic sternum tuberculate to lightly tuberculate, edges inflated; transverse groove between sternites 3 and 4; longitudinal groove present. Male telson triangular, equilateral.

Etymology. – Probably derived from the Greek word *enoplo* meaning armed, and referring to the broad teeth on the outer margins of the chelipeds. This is placed in combination with the junior syonym of *Parthenope* Weber, 1795, *Lambrus*. Gender masculine.

Remarks. – Alphonse Milne-Edwards (1878) divided *Lambrus* into 10 genera, one of which is *Enoplolambrus*. In it, he mentioned only one species, *Lambrus carenatus*, but in a footnote, he discussed in detail the taxonomic problems of species related to *Lambrus carenatus* and *Cancer prensor* (recte *pransor*) (A. Milne-Edwards, 1878: 147). Alcock (1895) reduced *Enoplolambrus* to a junior synonym of *Platylambrus*, probably because of their superficial similarities, which include a V-shaped ridge of tubercle between the inter-orbital and protogastric regions, relatively short hepatic margin, and one to two tubercle ridges on the epibranchial region. Since Alcock (1895), *Enoplolambrus* has not been used at the generic or subgeneric level. Ng (1996) noted that *Platylambrus* is heterogenous even after transferring Indo-West Pacific *Platylambrus* species into a new genus, *Garthambrus*. According to him, at least two groups were still discernable: the first consists of *Lambrus serratus* H. Milne Edwards, 1834, and *Lambrus granulatus* Kingsley, 1879; and the second includes several American and the Indo-Pacific species currently assigned to *Platylambrus*. The present study confirms the observations by Ng (1996) and concludes that *Platylambrus* sensu stricto is indeed restricted to the two Atlantic species. Tan (2004) also pointed out that the second *Platylambrus* group sensu Ng (1996) actually consists of two groups; the Indo-Pacific species are transferred to the resurrected *Enoplolambrus*; while the remaining American species are referred to a new genus, *Spinolambrus*.

Enoplolambrus can be differentiated from *Platylambrus* sensu stricto by having a considerably more inflated carapace (vs relatively flat). The mature female telson of both species is triangular, but it is subequilateral in *Enoplolambrus*, and much broader than long in *Platylambrus*. In *Enoplolambrus*, the inner and outer margins of the cheliped merus are parallel, whereas in *Platylambrus*, the distal portion of the cheliped merus inner and outer margins are converging. In addition, the last epibranchial tooth of *Enoplolambrus* is usually large and directed posteriorly, whereas in *Platylambrus*, it is rather small and directed upwards. Lastly, the teeth on the outer and inner margins of the chelipeds of *Enoplolambrus* are less lamelliform than that of *Platylambrus*.

Enoplolambrus is similar to *Spinolambrus* in carapace shape, relatively short hepatic margin, and spination pattern on the chelipeds. Generally, *Enoplolambrus* can be differentiated from *Spinolambrus* by having flatter epibranchial teeth (vs thin and spine-like); the possession of a V-shaped ridge of tubercles on the interorbital and the protogastric regions (no V-shaped ridge in *Spinolambrus*, but a subparallel pair of tubercles present on the region between the interorbital and protogastric regions); the lateral margins of the mature female telson of *Enoplolambrus* are concave (vs *Spinolambrus* is convex in). *Enoplolambrus*, as presently defined, consist of six species, all from the Indo-West Pacific (see above).

Hypolambrus, new genus
(Fig. 7)

Parthenope (*Parthenope*) – Rathbun 1910a: 576; 1925: 513 (in part); Garth 1958: 436 (in part).

Type and only species. – *Lambrus hyponcus* Stimpson, 1871, by present designation.

Etymology. – An arbitrary combination of the first four letters of species name *hyponca*, and the most well-known synonym of *Parthenope*, *Lambrus*. Gender masculine.

Diagnosis. – Carapace subcircular, slightly broader than long, region inflated; dorsal surface tuberculate; epibranchial margin not expanded to cover ambulatory legs; not produced beyond base of abdomen. Exorbital angle acute. Gastro-orbital notch absent. Hepatic margin short, last tooth usually overlapping first epibranchial tooth. Hepatobranchial notch present, indistinct to distinct. Epibranchial margin strongly

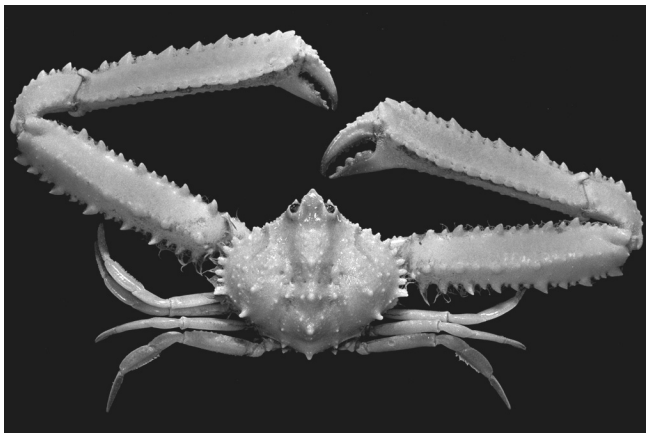

Fig. 7. *Hypolambrus hyponcus* (Stimpson, 1871): male 27.9 × 24.8 mm (LACM; ex. AHF 1968-8), Mexico, Tartar Shoals.

convex, posterior one third region angled, angle obtuse, more produced than last epibranchial tooth; teeth relatively larger, gaps between adjacent teeth narrow, subtriangular to circular; last epibranchial tooth anterior to posterior margin, small. Proto-, meso- and metagastric regions differentiated, with discontinuous, low V-shaped ridge. Hepatic region slightly inflated, lower than epibranchial and gastric regions. Epibranchial region without continuous, diagonal ridge. Suborbital region without diagonal ridge, upper suborbital margin without deep V-shaped hiatus. Epistome depressed medially, without protrusion below antennular article one, lower margin chevron-shaped. Pterygostomial region not excavated, without distinct afferent channel. Pterygostomial ridge present, without dense setae covering afferent channel, not continuous with subepibranchial ridge, subhepatobranchial notch present. Subepibranchial region narrow, smooth. Posterior sub-branchial teeth present, visible dorsally. Antennal article 3 short, not reaching antennular article 1 anterior lateral corner; antennal article 4 slightly above antennular article 1 anterior lateral corner, shorter than antennal article 3. Third maxilliped merus subquadrate, upper margin entire, anterior mesial corner with broad U-shaped notch; carpus upper margin entire, exposed; propodus upper margin entire, exposed; dactylus exposed; exopod exposed, mesial margin distal one-quarter with a tooth. Cheliped margins dentate, teeth relatively short, triangular, bases broad, closely spaced, alternating large and smaller teeth; merus upper surface tuberculate, with a median row of tubercles; dactylus about 45º to manus central axis. Male fused thoracic sternum tuberculate, inflated; transverse groove between sternites 3 and 4; longitudinal groove present.

***Remarks.* –** This new genus is established for the eastern Pacific species *Lambrus hyponca* Stimpson, 1871. *Hypolambrus* strongly resembles *Parthenope*, but can be differentiated from the latter by having a comparatively shorter third antennal article, which is about half the length of the first antennular article. In *Parthenope*, the third antennal article is about the same length as the first. The lateral sides of the rostrum in *Hypolambrus* are entire, but in *Parthenope* teeth are present. *Hypolambrus* also lacks a distinct gastrobranchial notch, present in *Parthenope*.

Hypolambrus bears some similarities to *Mimilambrus*, but can be differentiated from the latter having the third maxilliped expod exposed (vs hidden). *Hypolambrus* has a longer rostrum that is also triangular. In *Mimilambrus*, the rostrum is rather short and trifid. The shape of the teeth on the cheliped margins are also very different, with those of *Hypolambrus* being broad and closely spaced; but being less broad and well-spaced in *Mimilambrus*.

Latulambrus, new genus
(Fig. 8)

Cryptopodia – A. Milne-Edwards 1878: 167 (in part) [non *Cryptopodia* H. Milne Edwards, 1834].

Heterocrypta – Rathbun 1925: 554 (in part); Garth 1958: 473 (in part).

***Diagnosis.* –** Carapace broadly triangular; dorsal surface generally smooth except for ridges on gastric, cardiac and epibranchial regions; lateral margins expanded, partially covering ambulatory legs; not produced beyond abdomen base; lateral ventral depression shallow. Exorbital angle acute. Gastro-orbital notch present. Hepatic margin distinct, not continuous with epibranchial region. Hepatobranchial notch present. Epibranchial margin sinuous. Epibranchial teeth subrectangular, no gaps between adjacent teeth, teeth lateral margins visible; last epibranchial tooth long, strongly produced, slightly anterior to posterior margin. Proto-, meso- and metagastric regions fused, with relatively low V-shaped ridge. Hepatic region slightly inflated. Epibranchial region with a continuous, diagonal, low ridge. Suborbital region without a diagonal ridge, upper suborbital margin with V-shaped hiatus. Epistome slightly depressed medially, smooth, without protrusion below antennular article 1, lower margin broadly V-shaped. Pterygostomial region not excavated, no distinct afferent channel. Pterygostomial ridge present, without dense setae, setae not covering afferent channel, continuous with subepibranchial ridge. Subhepatobranchial notch absent, replaced by a narrow line. Subepibranchial region with large rounded tubercle. Posterior sub-branchial teeth absent. Antennal article 3 relatively long, nearly reaching antennular article 1 anterior lateral corner; antennal article 4 subequal to antennal article 3, anterior margin above antennular article 1 anterior lateral corner. Third maxilliped merus subquadrate, upper margin entire, anterior mesial corner with chevron-shaped notch; carpus upper margin entire, exposed; propodus upper margin entire, partially hidden; dactylus partially hidden; exopod exposed, mesial margin distal one-quarter with a tooth. Cheliped margins dentate, teeth short, broadly triangular; merus upper surface smooth; dactylus almost perpendicular to manus central axis. Male fused thoracic sternum smooth, slightly inflated. Male telson triangular, equilateral.

***Type and only species.* –** *Cryptopodia occidentalis* Dana, 1854, by present designation.

***Etymology.* –** A combination of the Latin word for broad, *latus*, with the common suffix for parthenopids, *lambrus*. Gender masculine.

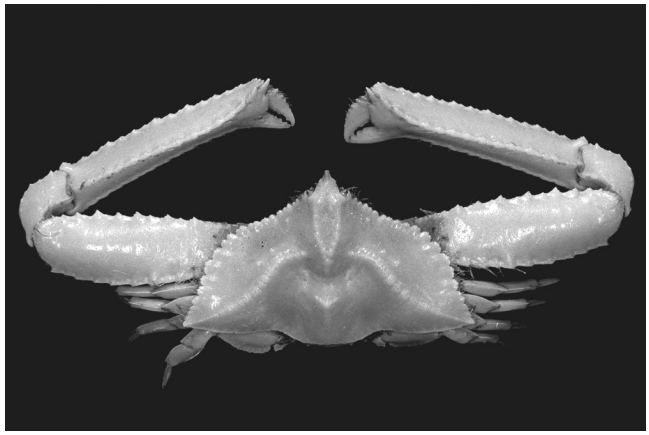

Fig. 8. *Latcrypta occidentalis* (Dana, 1854): male 30.1 × 18.2 mm (LACM) California, off Santa Barbara, no other data.

***Remarks.* –** This new genus is established for *Cryptopodia occidentalis* Dana, 1854, which has traditionally been placed in *Heterocrypta*. It differs from *Heterocrypta* sensu stricto, however, in that the carapace is much wider than long, and has a distinct branchial ridge that terminates at the lateral tooth. In *Heterocrypta*, the branchial ridge terminates at the mesobranchial tooth, which is posterior to the lateral tooth. *Heterocrypta maltzami* Miers, 1881, like *Latcrypta*, also has the lateral tooth and the branchial tooth almost in the same line, making it difficult to distinguish whether the widest portion of the carapace is between the lateral teeth or between the branchial teeth. However, *Latcrypta* has deep afferent channels that are fringed on both sides by dense setae. There is also a large rounded protrusion on both sides of the subbranchial region, not seen in any other known parthenopids.

Nodolambrus new genus
(Fig. 9)

Parthenope (*Parthenope*) – Sakai, 1976: 266; Davie 2002: 387 (in part).

***Type species.* –** *Lambrus nodosus* Jacquinot & Lucas, 1853, by present designation.

***Etymology.* –** The genus name is an arbitrary combination of the type species name *nodosus*, and the junior synonym of *Parthenope* Weber, 1795, *Lambrus* Leach 1815. Gender masculine.

***Diagnosis.* –** Carapace subcircular, slightly broader than long, region inflated; dorsal surface tuberculate; epibranchial margin not expanded to cover ambulatory legs; not produced beyond base of abdomen. Exorbital angle acute. Gastro-orbital notch present. Hepatic margin not continuous with epibranchial region. Hepatobranchial notch present. Epibranchial margin strongly convex, posterior one third region angled, angle obtuse, more produced than last epibranchial tooth; low rounded teeth, teeth short, evenly spaced; last epibranchial tooth anterior to posterior margin. Proto- and meso- regions indistinct, metagastric region distinct, with discontinuous V-shaped ridge. Hepatic region slightly inflated, lower than epibranchial and gastric regions. Epibranchial region without continuous diagonal ridge. Suborbital region without diagonal ridge, upper suborbital margin with broad V-shaped invagination. Epistome sloping posteriorly, depressed medially, without protrusion below antennular article 1, lower margin chevron-shaped. Pterygostomial region not excavated, no distinct afferent

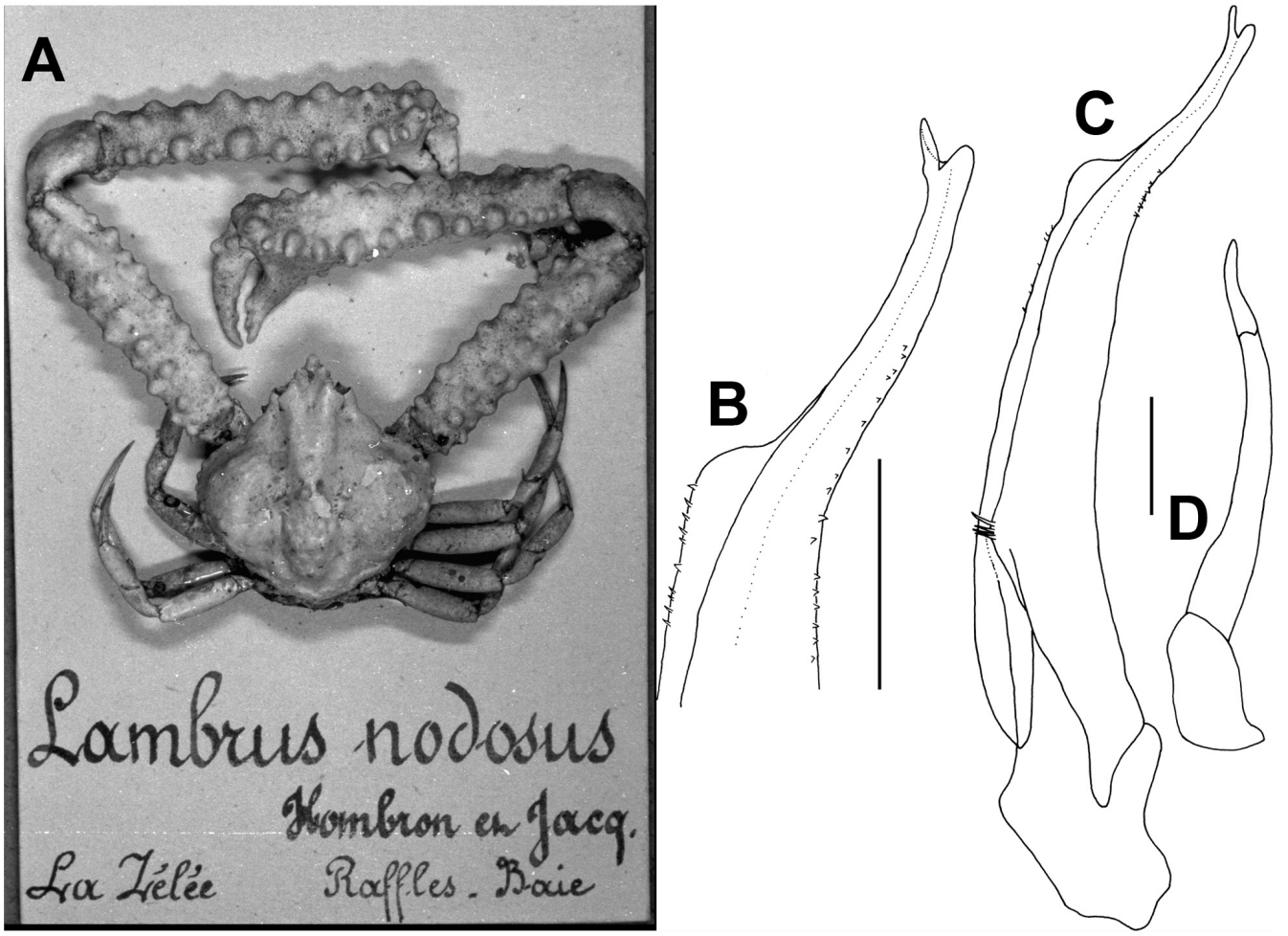

Fig. 9. *Nodolambrus nodosus* (Jacquinot & Lucas, 1843): A, holotype, female 23.6 × 24.1 mm (MNHN 4579S), Raffles Bay, La Zélée, Hombron & Jacquinot coll., no date. B–D, male 21.2 × 21.7 mm (QM P 18644), Australia, Queensland. B, magnified view if G1 tip; C, left G1; D, left G2. Scale bar = 1 mm.

channel. Pterygostomial ridge present, without dense setae covering afferent channel, not continuous with subepibranchial ridge, subhepatobranchial notch present. Subepibranchial region smooth. Posterior sub-branchial teeth present, very low, visible dorsally. Antennal article 3 long, reaching slightly beyond antennular article 1 anterior lateral corner; antennal article 4 anterior margin above antennular article 1 anterior lateral corner, shorter than antennal article 3. Third maxilliped merus squarish, upper margin entire, anterior mesial corner with broad U-shaped hiatus; carpus upper surface smooth, exposed; propodus upper smooth, exposed; dactylus exposed; exopod exposed, mesial margin distal one-quarter with a tooth. Cheliped margins with low rounded teeth, teeth short, evenly spaced; merus upper surface tuberculate, with median row of tubercles; dactylus about 45º to manus central axis. Male fused thoracic sternum smooth, slightly inflated; transverse groove between sternites 3 and 4, shallow; longitudinal groove shallow. Male telson triangular, longer than broad.

***Remarks.* –** This new genus bears a superficial resemblance to *Parthenope*, but differs by having a longer exorbital margin and also the presence of a discontinuous V-shaped ridge. In terms of external morphology, *Nodolambrus* resembles *Derilambrus*. However, *Nodolambrus* differs from *Derilambrus* in that the shape of the G1 is very different. There is a large semicircular lamelliform protrusion on the G1 of *Nodolambrus*. In *Derilambrus*, the G1 is simple and is gently tapering distally. This unusually shaped G1 of this genus is unique in the Parthenopinae.

Ochtholambrus, new genus
(Fig. 10)

Parthenope (*Pseudolambrus*) – Rathbun, 1925: 528 (in part); Garth, 1958: 444 (in part).

***Type species.* –** *Lambrus excavatus* Stimpson, 1871, by present designation.

***Other included species.* –** *Ochtholambrus pulchellus* (A. Milne-Edwards, 1868), new combination; *O. stimpsoni* (Garth, 1958), new combination; *O. triangulus* (Stimpson, 1860), new combination.

***Etymology.* –** The genus name is an arbitrary combination of the Greek word *ochthos*, meaning any elevation, with the junior synonym of *Parthenope* Weber, 1795, *Lambrus* Leach, 1815. The genus name is in reference to the two median tubercles on the protogastric region, which are usually higher than the mesogastric median tubercle. Gender masculine.

***Diagnosis.* –** Carapace subtriangular, broader than long; regions inflated; dorsal surface tuberculate; epibranchial margin slightly expanded, partially covering ambulatory legs; not produced beyond base of abdomen; no lateral ventral depression. Exorbital angle acute. Gastro-orbital notch present, deep or shallow. Hepatic margin distinct, not continuous with epibranchial region. Hepatobranchial notch present, distinct. Epibranchial margin convex, angled at last epibranchial tooth; teeth broadly triangular, closely spaced; last epibranchial tooth anterior to posterior margin. Proto-, meso- and metagastric regions differentiated, without ridge. Hepatic region inflated, slightly lower than epibranchial and gastric regions. Epibranchial region without continuous diagonal ridge. Suborbital region without diagonal ridge, slightly depressed or slightly inflated; upper suborbital margin with a broad V-shaped hiatus. Epistome slightly depressed medially, without protrusion below antennular article 1, posterior margin inverted W-shaped or chevron-shaped. Pterygostomial region not excavated, no distinct afferent channel. Pterygostomial ridge present, without setae covering afferent channel; separated from subepibranchial ridge by distinct subhepatobranchial hiatus. Subepibranchial region narrow, tuberculate. Posterior sub-branchial teeth present, indistinct. Antennal article three relatively long, anterior margin reaching beyond antennular article 1 anterior lateral corner; antennal article 4 anterior margin above antennular article 1 anterior lateral corner, about half antennal article 3 length. Third maxilliped merus subquadrate, upper margin entire, anterior mesial corner with W- or broad U-shaped hiatus; carpus distal outer surface with a small tubercle, exposed; propodus outer surface with a small tubercle, exposed; dactylus exposed; exopod exposed, mesial margin distal one-sixth with a tooth. Cheliped manus outer margin with two to three teeth, teeth triangular, widely spaced; merus upper margin with an oblique row of tubercles or cristae, cristae with strong lamelliform spine; dactylus about 60º diagonal to manus central axis. Male fused thoracic sternum tuberculate, inflated; transverse groove between sternites 3 and 4; longitudinal groove present. Male telson triangular, slightly longer than wide.

***Remarks.* –** The new genus contains two eastern Pacific *Pseudolambrus* species, sensu Rathbun (1925) and Garth (1958) (excluding *Lambrus triangulus* Stimpson, 1860), as well as the Atlantic *Lambrus pulchellus* A. Milne-Edwards, 1868. *Lambrus triangulus* differs from *Ochtholambrus* in the differently shaped carapace and male abdomen and telson. In addition, the carapace of *L. triangulus* is also more pilose than *Ochtholambrus* species, and is here referred to a new genus, *Pisolambrus*.

Ochtholambrus superficially resembles *Pseudolambrus* and *Parthenopoides*, but can be easily differentiated from the latter two genera in that the two median protogastric tubercles are usually higher than the mesogastric median tubercle. In *Pseudolambrus* and *Parthenopoides* the mesogastric median tubercle is typically higher than the protogastric tubercles.

Patulambrus, new genus
(Fig. 11)

Lambrus (*Rhinolambrus*) – Alcock, 1895: 265 (in part).
Lambrus (*Platylambrus*) – Sakai, 1976: 268 (in part).

***Type species.* –** *Lambrus* (*Rhinolambrus*) *petalophorus* Alcock, 1895, by present designation.

***Other included species.* –** *Patulambrus nummifera* (Rathbun, 1906), new combination.

***Etymology.* –** The genus name is an arbitrary combination of Latin word *patulus* meaning broad, and the common suffix *lambrus* for parthenopids. The genus name is in allusion to the comparatively broader male telson when compared to the male telson of its nearest parthenopid genus, *Rhinolambrus*. Gender masculine.

***Diagnosis.* –** Carapace subtriangular, broader than long, regions inflated; dorsal surface smooth to tuberculate; epibranchial margin expanded, partially covering ambulatory legs; not produced beyond base of abdomen; no ventral depression. Exorbital angle acute. Gastro-orbital notch indistinct, very shallow. Hepatic margin indistinct, not continuous with epibranchial margin. Hepatobranchial notch present, broader. Epibranchial margin convex, posterior one-third region angled, angle obtuse, more produced than last epibranchial tooth; teeth lobiform, U-shaped gaps between adjacent teeth present; last epibranchial tooth anterior to posterior margin. Proto-, and mesogastric regions not differentiated, without ridge; metagastric region depressed. Hepatic region inflated, continuous with epibranchial regions. Epibranchial region without continuous diagonal ridge. Sub-

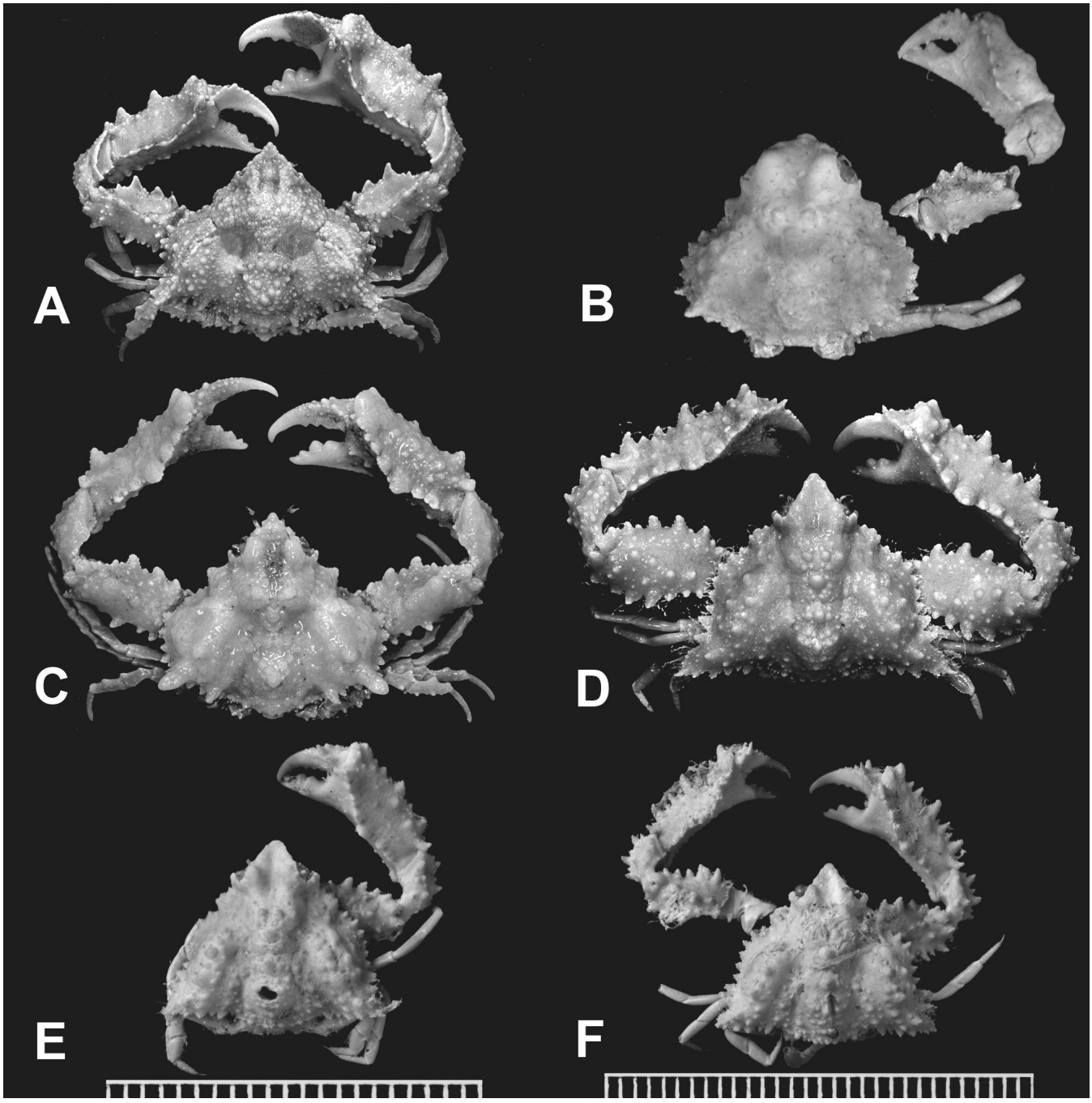

Fig. 10. *Ochtholambrus excavatus* (Stimpson, 1871): A, female 38.3 × 31.6 mm, Panama (USNM 3270). *Ochtholambrus pulchellus* (A. Milne-Edwards, 1868): B, syntype, male 6.0 × 5.3 mm (MNHN B6275), Iles de Cape Verde. *Ochtholambrus stimpsoni* (Garth, 1958): C, holotype, male 18.1 × 16.1 mm (USMN 100919), Panama, Secas Island. *Ochtholambrus triangulus* (Stimpson, 1860): D, male 23.2 × 17.2 mm, Galapagos, Hood Island; E, syntype, male ca. 12.5 × 11.0 mm (NHM 61.44), California, Cape St. Lucas; F, female ca. 15.0 × 12.5 mm (NHM 61.44), California, Cape St. Lucas.

orbital region without diagonal ridge, upper suborbital margin with narrow V-shaped hiatus. Epistome slightly depressed medially, smooth, without protrusion below antennular article 1, lower margin straight, median portion slightly invaginated. Pterygostomial region not excavated, without distinct afferent channel. Pterygostomial ridge present, without dense setae covering afferent channel, not continuous with subepibranchial ridge. Subhepatobranchial notch present, usually broad, U-shaped. Subepibranchial region narrow, smooth. Posterior sub-branchial teeth present, anterior portion visible dorsally. Antennal article 3 short, not reaching to antennular article 1 anterior lateral corner; antennal article 4 anterior margin reaching just above antennular article 1 anterior lateral corner, shorter than antennal article 3. Third maxilliped merus subquadrate, upper margin entire, anterior lateral corner slightly expanded; carpus upper surface smooth, exposed; propodus upper surface smooth, exposed; dactylus exposed; exopod exposed, mesial margin distal one-quarter with a tooth. Cheliped margins merus outer margin dentate, teeth triangular, relatively long, base broad, three to four teeth larger, interspaced with smaller teeth; merus upper surface smooth, finely pitted, with a median row of tubercles; dactylus about 60º diagonal to manus central axis. Male fused thoracic sternum tuberculate, edges inflated; transverse groove between sternites 3 and 4; longitudinal groove forming medial triangular depression. Male telson triangular, broader than long. Male abdomen sixth segment broader than long.

Remarks. – *Patulambrus* is similar to *Rhinolambrus*, although its two included species have been placed in the subgenus *Platylambrus* by some earlier workers. *Platylambrus* is restricted to two Atlantic species, while most of the Indo-Pacific species formerly placed in *Platylambrus* has been transferred to *Garthambrus* (see Ng, 1996), *Enoplolambrus* (this study) or the present new genus, *Patulambrus*. All *Patulambrus* species possess relatively long and slender cheliped and ambulatory legs, and thus resemble *Rhinolambrus* species like *R. turriger* and *R. sisimanensis*.

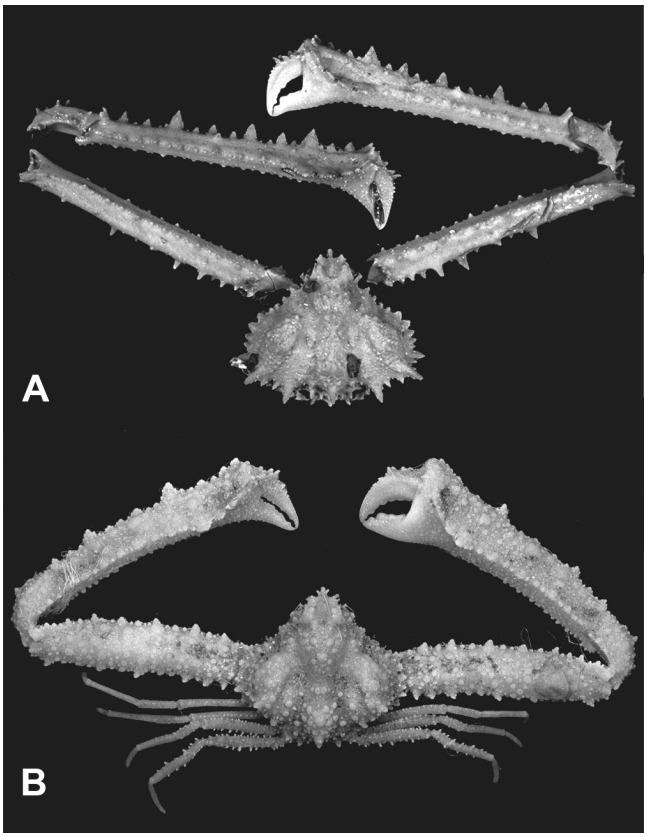

Fig. 11. *Patulambrus petalophorus* (Alcock, 1895): A, syntype, male 21.7 × 16.7 mm (ZSI 14/10; ZSI 2664-66/10), off Sri Lanka. *Patulambrus nummifera* (Rathbun, 1906): B, holotype, male 16.6 × 15.0 mm (USNM 29826), Hawaiian Islands, northeast coast of Hawaii.

Patulambrus differs from *Rhinolambrus* in the shape of both the male and female telson. In *Patulambrus*, the male telson is triangular in shape, but broader than long, while in *Rhinolambrus* it is shaped like an equilateral triangle. In *Patulambrus*, the lateral margins of the mature female telson are convex, whereas they are concave in *Rhinolambrus*. In *Patulambrus*, the sixth male abdominal segment is distinctly broader than long, but longer than broad in *Rhinolambrus*. In addition, the third antennal article of *Patulambrus* is shorter than that of *Rhinolambrus*. In *Patulambrus*, the anterior inner corner of the third antennal article does not reach the anterior outer corner of the first antennular article; whereas in *Rhinolambrus*, the anterior inner corner of the third antennal article reaches or exceeds the anterior outer corner of the first antennular article.

***Piloslambrus*, new genus**
(Fig. 12)

Parthenope (*Platylambrus*) – Rathbun, 1925: 516 (in part); Garth 1958: 438 (in part).

Type species. – *Lambrus depressiusculus* Stimpson, 1871b, by present designation.

Other included species. – *Piloslambrus guerini* (Brito Capello, 1871), new combination.

Etymology. – The genus name is an arbitary combination of the Greek word *pilos*, meaning hairy, in reference to members of this new genus that are usually setose; and junior synonym of *Parthenope* Weber, 1795, *Lambrus* Leach, 1815. Gender masculine.

Diagnosis. – Carapace subellipitical to triangular, broader than long; dorsal surface tuberculate; regions inflated; epibranchial margin rounded, slightly expanded, partially covering ambulatory legs; not produced beyond base of abdomen; no lateral ventral depression. Exorbital angle acute. Gastro-orbital notch present. Hepatic margin distinct. Hepatobranchial notch present. Epibranchial margin convex, not angled, last epibranchial tooth largest, strongly to slightly produced; teeth triangular, gaps between adjacent teeth triangular; last epibranchial tooth slightly anterior to posterior margin. Proto-, meso- and metagastric regions differentiated, without ridge. Hepatic region slightly inflated, lower than epibranchial and gastric regions. Epibranchial region without continuous diagonal ridge. Suborbital region slightly depressed, without a diagonal ridge; upper suborbital margin with or without V-shaped hiatus. Epistome narrow, depressed

medially, with protrusion below antennular article one; posterior margin broadly inverted W-shaped. Pterygostomial region not excavated, without distinct afferent channel. Pterygostomial ridge present, sparsely setose to glabrous; separated from subepibranchial ridge by distinct subhepatobranchial notch. Subepibranchial ridge setose, setae dense, long. Subepibranchial region narrow, smooth. Posterior sub-branchial teeth absent or reduced to one tooth, not visible dorsally. Antennal article 3 long, anterior margin reaching beyond antennular article 1 anterior lateral corner; antennal article 4 anterior margin above antennular article 1 anterior lateral corner, equal to subequal to antennal article 3. Third maxilliped surface setose; merus squarish, upper margin entire, anterior mesial corner with W-shaped or broad U-shaped hiatus; carpus outer surface smooth or with a small distal spine, exposed; propodus outer surface smooth or with a small spine, exposed; dactylus exposed; exopod exposed, mesial margin distal one-quarter region with a tooth. Cheliped manus outer margin dentate, teeth flat, relatively long; longer teeth interspaced with shorter, smaller, teeth, well-spaced to closely-spaced; merus upper margin tuberculate, with a median row or diagonal row of tubercles; dactylus about 60º diagonal to manus central axis. Male fused thoracic sternum tuberculate, edges inflated; transverse groove between sternites 3 and 4; longitudinal groove present, forming plus-shaped depression. Male telson triangular, broader than long.

Remarks. – *Piloslambrus*, new genus, bears some resemblance to *Aulacolambrus* due to the presence of large flat teeth on the outer margin of the cheliped merus, carpus and manus, lateral teeth that are placed posteriorly, presence of epistomal protrusions, and smooth ambulatory legs that are laterally compressed. They also are similar in having smooth tubercles on the ventral margin of the cheliped propodus, and by the presence four broad spines on the upper surface of the cheliped dactylus. However, *Piloslambrus* differs from *Aulacolambrus* by lacking an excavated pterygostomial region, and possess a longer hepatic region. The epistomal protrusions are also smaller and less ornamented than most *Aulacolambrus*. The placement of the lateral tooth is also somewhat different. There is a distinct notch between the lateral tooth and the preceding tooth in *Aulacolambrus*, whereas the notch is not present in *Piloslambrus*. The mesobranchial tooth in *Aulacolambrus* is also longer and more distinct than in *Piloslambrus*. The hepatic region is also more inflated in *Aulacolambrus*, being about the same height as the branchial regions; in *Piloslambrus* it is lower than the branchial regions.

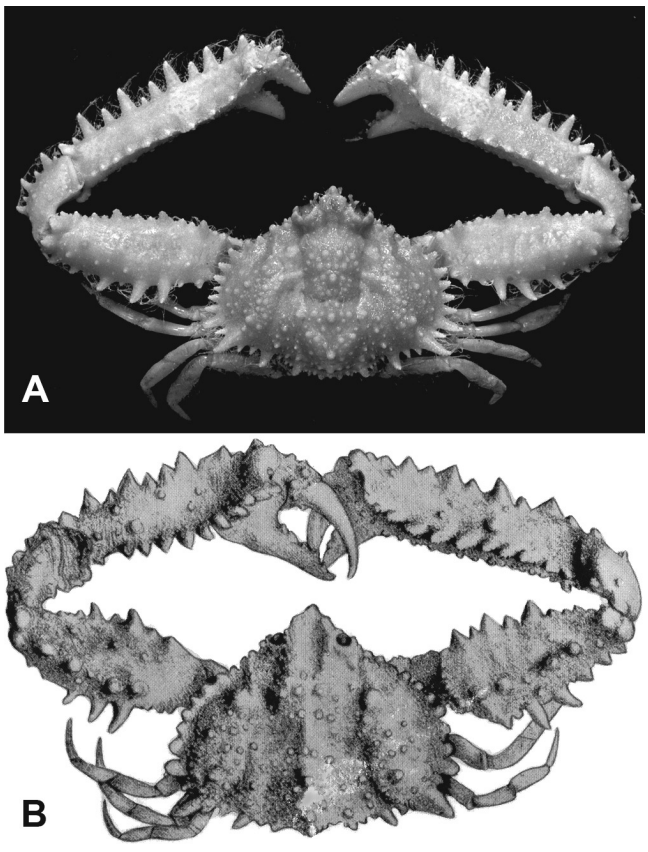

Fig. 12. *Piloslambrus depressiculus* (Stimpson, 1871): A, male 24.2 × 18.1 mm (LACM), Panama, Taboga Island. *Piloslambrus guerini* (Brito Capello, 1871): B, holotype, male 48 × 36 mm [after Rathbun 1925: Pl. 278 Fig. 4 (after Brito Capello, 1871: 264, Pl. 3 Fig. 5)].

Piloslambrus resembles *Certolambrus* Tan & Ng, 2003, as both genera lack a distinct gap between the lateral tooth and the preceding tooth on the epibranchial margin, and the carapace regions of both genera are also somewhat less strongly inflated. *Certolambrus,* however, does not have epistomal protrusions, which are present in *Piloslambrus*. In addition, the pterygostomial lobe of *Certolambrus* is larger than that of *Piloslambrus*.

This genus appears to be restricted to the eastern Pacific and the western Atlantic coast. One of the species, *Pil. guerini*, was reportedly described from Mauritius, but the given type locality might be incorrect and will be discussed in a separate work.

Spinolambrus, new genus
(Figs. 13–15)

Maja – Bosc, 1802: 245 (in part) [non *Maja* Lamarck, 1801].
Parthenope – Latreille, 1817: 23 (in part).
Lambrus – Desmarest, 1825: 85 (in part); H. Milne Edwards 1834: 352 (in part); Doflein 1904: 87.
Parthenope (*Platylambrus*) – Rathbun, 1925: 516 (in part); Garth 1958: 438.
Parthenope – Manning & Holthuis, 1981: 327 (in part).

Type species. – *Cancer macrochelos* Herbst, 1790, by present designation.

Other included species. – *Spinolambrus exilipes* (Rathbun, 1893), new combination; *S. fraterculus* (Stimpson, 1871a), new combination; *S. johngarthi* (Hendrickx & Landa-Jaime, 1997), new combination; *S. meridionalis* (Boschi, 1965), new combination; *S. notialis* (Manning & Holthuis, 1981), new combination; *S. pourtalesii* (Stimpson, 1871), new combination; *S. verrucosus* (Studer, 1882), new combination.

Etymology. – The genus is the arbitary combination of the Latin word *spinose*, meaning spiny, alluding to the spine-like teeth on the third maxilliped carpus upper margin, and *Lambrus* the most well-known synonym of *Parthenope*.

***Diagnosis.* –** Carapace subtriangular to subrhomboidal, broader than long, regions inflated; dorsal surface tuberculate; epibranchial margin expanded, partially covering ambulatory legs; not produced beyond base of abdomen; no lateral ventral depression. Exorbital angle acute. Gastro-orbital notch present, broad, distinct. Hepatic margin distinct, not continuous with epibranchial region. Hepatobranchial notch present, broad, U-shaped. Epibranchial margin strongly convex, posterior one-third region angled, angle obtuse, more produced than last epibranchial tooth; teeth usually triangular, usually with triangular gaps between adjacent teeth; last epibranchial tooth anterior to posterior margin. Proto-, meso- and metagastric regions differentiated, without ridge. Hepatic region slightly inflated, lower than epibranchial and gastric regions. Epibranchial region without continuous diagonal ridge. Suborbital region without a diagonal ridge, upper suborbital margin curved, without V-shaped hiatus. Epistome slightly depressed medially, smooth to rugose, without protrusion below antennular article 1, lower margin median portion with V-shaped. Pterygostomial region not excavated, without distinct afferent channel. Pterygostomial ridge present, without dense setae covering afferent channel; not continuous with subepibranchial ridge, subhepatobranchial notch present. Subepibranchial ridge glabrous, about same height as pterygostomial ridge. Posterior sub-branchial teeth present, sometimes reduced to one or two teeth, not visible dorsally. Antennal article 3 short, not reaching to antennular article 1 anterior lateral corner; antennal article 4 anterior margin reaching to above antennular article 1 anterior lateral corner, about equal to antennal article 3 length. Third maxilliped merus squarish, upper margin spinate to entire, anterior mesial corner broadly U-shaped, junction with carpus with distinct hiatus; carpus outer surface with two spines, exposed; propodus outer surface with one distal spine, exposed; dactylus exposed; exopod exposed, mesial margin distal one-quarter region with tooth. Cheliped manus outer margins usually spinate, teeth usually long, triangular, spinose, alternating large and smaller teeth; merus upper surface spinose to tuberculate, with a median row of tubercles; dactylus about 60º to manus central axis. Male fused thoracic sternum usually tuberculate, edges inflated; transverse groove between sternites 3 and 4; longitudinal groove forming deep triangular depression. Male telson triangular, broader than long.

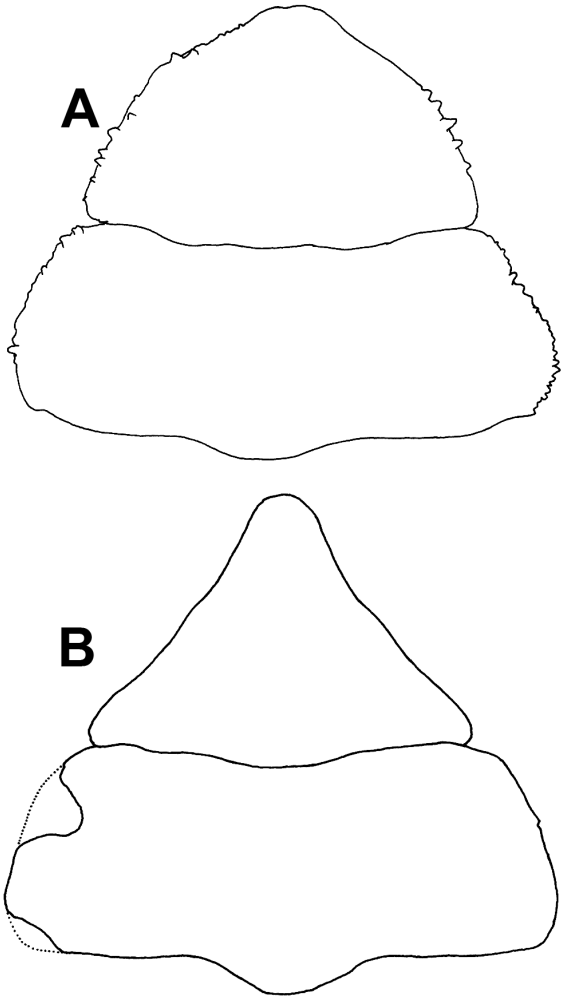

Fig. 13. Mature female abdomen of: A, *Spinolambrus macrochelos* (Herbst, 1790), female 51.6 × 39.6 mm (RMNH D 27503), Portugal, between Cado de Santa Maria and Barra da Fuzeta; B**,** *Enoplolambrus carenatus* (H. Milne Edwards, 1834), female 20.4 × 16.2 mm (SMF Acc No. 3822), United Arab Emirates, Dubai.

***Remarks.* –** *Spinolambrus*, new genus, is established for nine species, with seven from the Atlantic Ocean (including the Mediterranean Sea) (*S. fraterculus*, *S. macrochelos*, *S. meridionalis*, *S. notialis*, *S. Pourtalesii* and *S. verrucosus*), and two from the eastern Pacific Ocean (*S. exilipes* and *S. johngarthi*). Most of these nine species have, at one time or another, been placed in *Platylambrus* sensu lato. Ng (1996) transferred several deep-sea Indo-West Pacific *Platylambrus* species to *Garthambrus*, and pointed out that *Platylambrus*, as then understood, was still heterogenous and contained two recognisable groups. The first of these, *Platylambrus* sensu stricto, contains two Atlantic species; the second group recognised by Ng (1996) consists of various species from the Atlantic, and the remaining Indo-West Pacific species not transferrred into *Garthambrus*. Species from the Indo-West Pacific are distinct, and should be in *Enoplolambrus* (see earlier). Species from the Atlantic and the Eastern Pacific must be placed in the present genus, *Spinolambrus*.

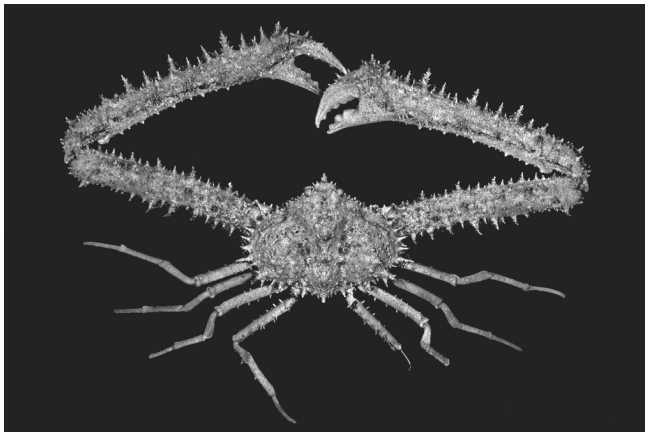

Fig. 14. *Spinolambrus macrochelos* (Herbst, 1790): A**,** male 54 × 48 mm (RMNH D 43604), Mediterranean Sea, Italy, Genoa.

Spinolambrus bears striking similarities to *Enoplolambrus* in the carapace shape (broader than long), inflated branchial regions, presence of sub-branchial teeth that are not visible dorsally, and relatively long chelipeds. *Spinolambrus* is differentiated from *Enoplolambrus* by several characters. The mature female telson in *Spinolambus* is subpentagonal with the lateral margins convex (vs triangular with the lateral margin slightly concave) (Fig. 13).

In *Spinolambrus*, the suborbital region is inflated (vs depressed in *Enoplolambrus*). In addition, the upper suborbital margin of *Spinolambrus* is entire and without a hiatus, whereas in *Enoplolambrus*, there is a distinct V-shaped hiatus (Fig. 15A, B). All *Spinolambrus* species also possess two teeth on the third maxilliped carpus upper margin, and one tooth on the propodus upper margin (Fig. 15C, D). In *Enoplolambrus*, these teeth are usually absent, but if present, they are not as strong as those seen in *Spinolambrus*.

Velolambrus, new genus
(Figs. 16, 17)

Pseudolambrus – Flipse, 1930: 48 (in part) [non *Pseudolambrus* Paul'son, 1875].

Parthenope – Manning & Holthuis, 1981: 327 (in part) [non *Parthenope* Weber, 1795].

Type species. – *Lambrus* (*Pseudolambrus*) *tuberculatus* Flipse, 1930.

Other included species. – *Velolambrus expansus* (Miers, 1879), new combination.

Etymology. – The genus is derived from an arbitary combination of the Latin word *velo* meaning to cover or conceal, in reference to the ambulatory legs being partially covered by the expanded lateral margins of the carapace, with *Lambrus* the best-known synonym of *Parthenope*. Gender masculine.

Diagnosis. – Carapace triangular, broader than long; region slightly inflated, relatively flat; dorsal surface smooth to slightly tuberculate; lateral margin expanded, partially covering ambulatory legs; posterior margin slightly to very slightly expanded beyond base of abdomen; lateral ventral depression present, shallow. Exorbital angle acute. Gastrobranchial notch absent. Hepatic margin distinct, not continuous with epibranchial margin. Hepatobranchial notch present, broad, shallow. Epibranchial margin slightly convex; teeth subtriangular to triangular, gaps between adjacent teeth triangular or well-spaced; last epibranchial tooth slightly anterior to posterior margin. Proto- and mesogastric regions distinct, inflated; metagastric region depressed. Hepatic region not inflated, lower than epibranchial and gastric regions. Epibranchial region without a continuous diagonal ridge.

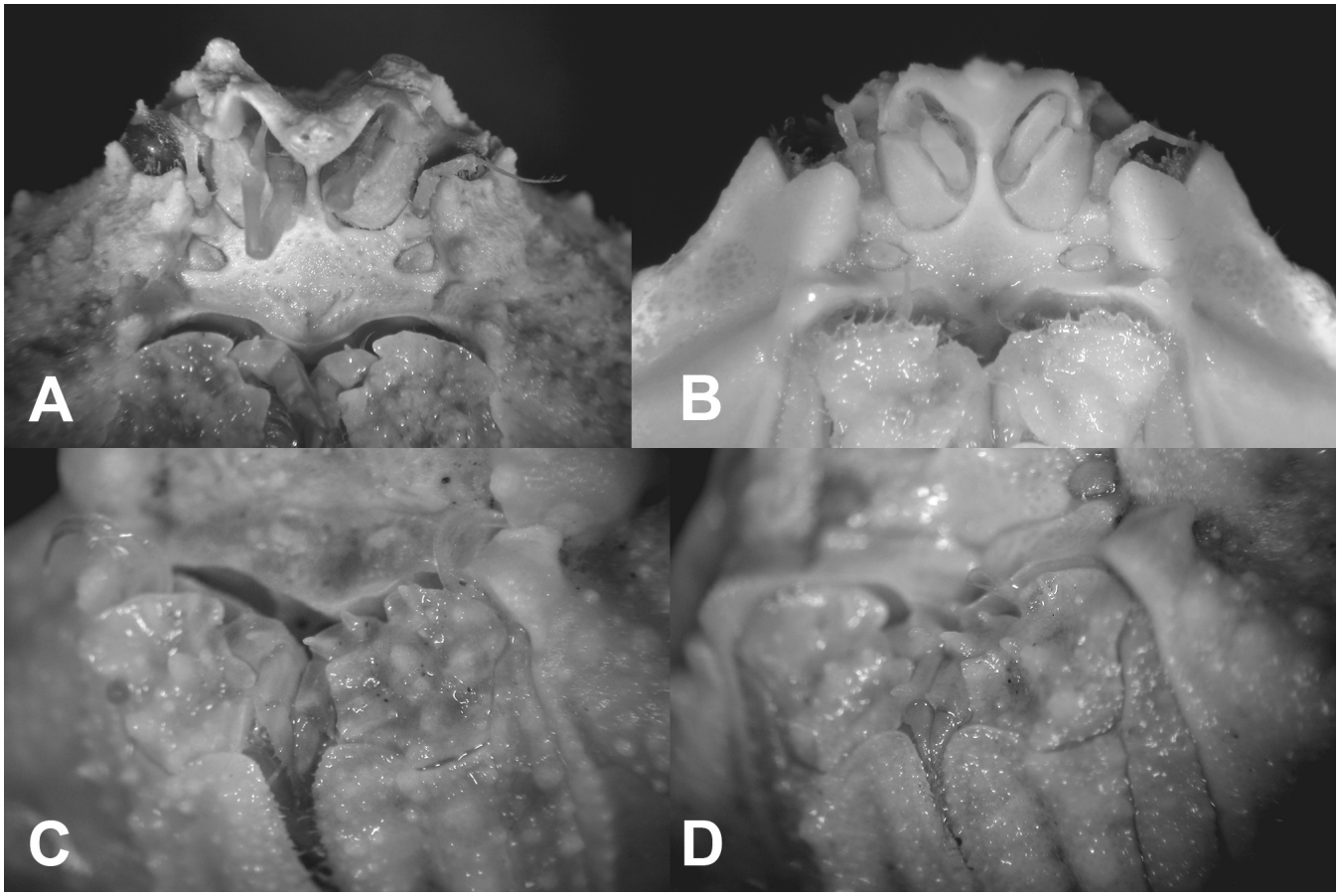

Fig. 15. Ventral view of the epistome and suborbital region: A, *Spinolambrus macrochelos* (Herbst, 1790), male 58.0 × 40.1 mm (RMNH D), northeastern Spain; B, *Enoplolambrus carenatus* (H. Milne Edwards, 1834), male 28.3 × 22.6 mm (SMF 3813), off Kuwait. Close-up view of the left third maxilliped showing the two teeth on the carpus upper margin and one tooth on the propodus upper margin: C, *Spinolambrus fraterculus* (Stimpson, 1817), male 18.5 × 16.7 mm, Florida (USNM Acc. 232276); D, *Spinolambrus pourtalesii* (Stimpson, 1871), male 20.5 × 16.5 mm (USNM 39938), New Jersey, off Martha's Vineyard.

Suborbital region without a diagonal ridge, slightly depressed; upper suborbital margin gently curved, no hiatus. Epistome tuberculate or pitted, posterior median region slightly depressed, without protrusion below antennular article one, posterior margin straight. Pterygostomial region not excavated, without distinct afferent channel. Pterygostomial ridge present. Subhepatobranchial notch and groove distinct. Subepibranchial ridge present. Posterior sub-branchial teeth absent. Antennal article 3 short, anterior margin not reaching antennular article 1 anterior outer lateral corner; antennal article 4 anterior margin not reaching to just reaching antennular article 1 anterior lateral corner, about same length as antennal article 3. Third maxilliped merus subquadrate, upper margin entire; anterior mesial corner with diagonal hiatus, junction with carpus without gap; carpus outer surface smooth to slightly triberculate, partially exposed; propodus outer surface smooth, partially hidden; dactylus exposed; exopod exposed, mesial margin distal one-quarter with a tooth. Cheliped manus outer margin with two to three teeth, teeth lobate or triangular; merus upper surface irregular, without distinct row of tubercles; dactylus about 45º to 60º diagonal to manus central axis. Male fused thoracic sternum pitted, edges slightly inflated; transverse and longitudinal grooves present, shallow, fused medially, forming shallow triangular depression. Male telson triangular, broader than long.

Remarks. – *Velolambrus*, new genus, bears some similarities to *Furtipodia* on the basis of the expanded lateral carapace margins, but differs in several aspects. In *Velolambrus*, the ventral lateral depression is not as deep as that in *Furtipodia*. The carapace of *Velolambrus* is considerably less inflated than *Furtipodia*, especially the epibranchial, gastric and cardiac regions. The antennal article 3 is considerably shorter in *Velolambrus*, with the anterior margin reaching to about the middle portion of the antennular article 1 (vs antennal article 3 reaches beyond the anterior outer lateral corner of the antennular article 1 in *Furtipodia*). In addition, the antennal article 4 of *Velolambrus* is about the same length as that of the antennal article 3; while in *Furtipodia*, it is about half the length of the antennal article 3. Also, the teeth on the proximal portion of the cheliped outer margin are not fused with each other. In *Furitpodia*, these teeth are fused, forming a wing-like expansion. Most importantly in *Velolambrus*, the mature female telson is about twice the length of the sixth abdominal segment 6, while in *Furtipodia*, it is slightly longer than that of the abdominal segment 6.

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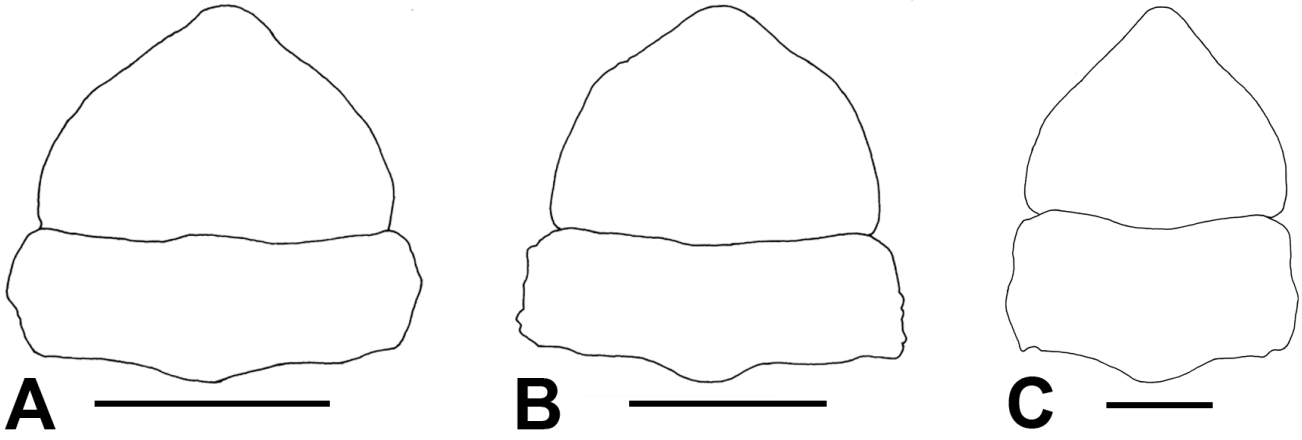

Fig. 16. *Velolambrus tuberculatus* (Flipse, 1930): **A**, female 8.0 × 6.6 mm (ZMUC), Indonesia, Java Sea. *Velolambrus expansus* (Miers, 1879): **B**, female 8.3 × 6.6 mm (RMNH D 39018), Canary Islands, southeast of Fueteventura. *Furtipodia gemma* Tan & Ng, 2003: **C**, holotype, female 14.8 × 10.4 mm (ZRC), Guam (after Tan & Ng 2003: fig. 1a). **A**, **B**, **C**, mature female telson and sixth abdominal segment. Scale bar = 1 mm.

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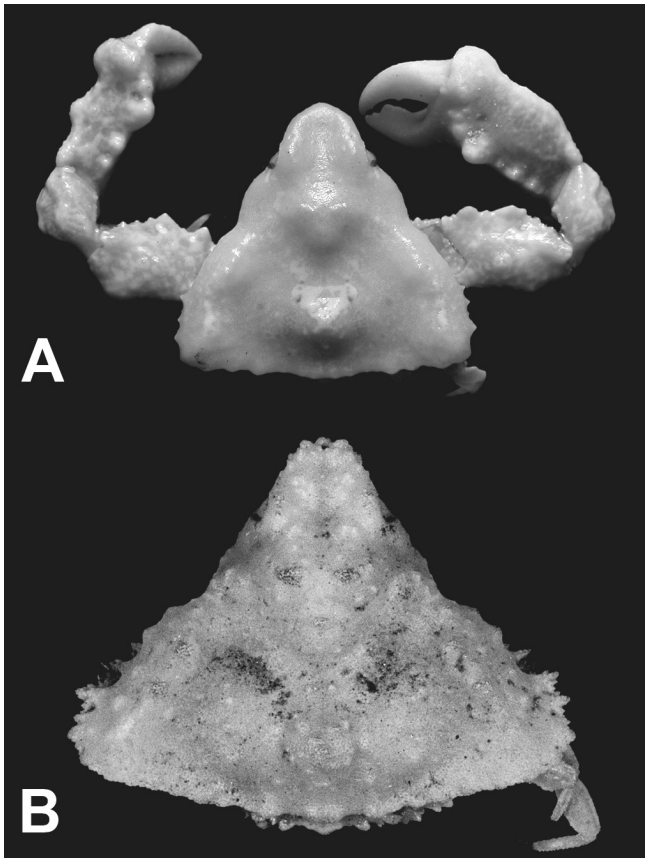

Fig. 17. *Velolambrus tuberculatus* (Flipse, 1930): A, lectotype, male 6.3 × 5.8 mm (ZMA De 103.049), the Philippines, Sulu Archipelago, Tongquil Island. – *Velolambrus expansus* (Miers, 1879): B, holotype, male 11.6 × 7.4 mm (NHM 762), Portugal, Madeira Island.

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Appendix I

List of material examined

Parthenope longimanus Linnaeus, 1758: 1 male 19.1 × 18.0 mm, 1 female 21.5 × 19.5 mm (ZRC; ex. QM W 18771), Gulf of Carpentaria, 11º50'08"S 136º33'09"E, 33 m, CSIRO coll., 18 Nov.1991; 1 male 21.7 × 19.8 mm (QM W 16113), Australia, Queensland: Torres Straits, south of Richardson Reef, 10º12'S 143º00'E, 21 m, J. Smith coll., 27 Sep.1988.

Agolambrus agonus (Stimpson, 1871): 1 male 14.9 × 13.5 mm, 1 female 14.0 × 12.5 mm (USNM 274732), Gulf of Mexico. Off Florida, Continental Shelf Associates for MMS: 26º45'52"N 83º21'26"W, 50.2 m, 1 Feb.1982.

Costalambrus tommasii (Rodrigues da Costa, 1959): female 10.9 × 9.3 mm (LACM), Brazil, Sao Paulo, Cananea, ca. 25º6'00'S 47º51'05'W, 9 m, Luiz Roberto Tommasi coll., 26 Jul.1959.

Derilambrus angulifrons (Latreille, 1825): 2 males (26.3 × 25.0 mm, 26.8 × 23.7 mm) (RMNH D 43592) (dry), Italy, Sicily, Palermo, Caron coll., before 1830, P. Roux Collection; 1 male 22.3 × 21.1 mm, 1 female 19.5 × 18.8 mm (USU1406), France, Argelès, no other data.

Distolambrus maltzami (Miers, 1881), syntypes, Goree Island (NHM 1881.24), no other data: 1 female ovig. 10.4 × 9.1 mm, 3 males (12.0 × 10.0 mm, 12.7 × 10.6 mm, 12.6 × 10.5 mm).

Enoplolambrus carenatus (H. Milne-Edwards, 1834): holotype, male 22.3 × 18.0 mm (MNHN B 4589), Mer des Indes, no other data;), female 20.4 × 16.2 mm (SMF Acc No. 3822), United Arab Emirates, Dubai, collected specimen, C. Lehmann coll., 1993.

Furtipodia gemma Tan & Ng, 2003: holotype, female 14.8 × 10.4 mm (ZRC 2002.211), Guam, Pago Bay, fore-reef, in sand channels, about 3 m, night coll. L. Kirkendale, 26 Sep.1999.

Hypolambrus hyponcus (Stimpson, 1871): 1 male 27.9 × 24.8 mm (LACM; ex. AHF 1968-8), Mexico, Tartar Shoals, south of Acapulco, 13 fms. (24 m), otter trawl, Te Vega XVIII-21, E. Ball coll., 22 May 1968.

Lambrachaeus ramifer Alcock, 1895: 1 male CW 7.2 mm (ZMUC), Hawaiian Islands, Oahu, Honolulu, 18–72 m, coral substratum, 5 May 1915; 1 male 3.2 × 12.6 mm (ZRC), Guam, Orote Point, 18.3 m, rubble field, L. Kirkendale coll., 22 May 1998.

Latolambrus occidentalis (Dana, 1854): 1 male 30.1 × 18.2 mm (LACM) California, off Santa Barbara, no other data.

Mimilambrus wileyi Williams, 1979: holotype, male 27.9 × 23.5 mm (USNM 172222), West Indies, Tobago, Man-of-War Bay, gill net over sand at night, 10 feet (3 m), M. L. Wiley, F. D. Martin et al., 14 Apr.1978; **B**, allotype, female 27.8 × 23.7 mm (USNM 172223), same data as holotype.

Nodolambrus nodosus (Jacquinot in Jacquinot & Lucas, 1853): holotype, female 23.6 × 24.1 mm (MNHN 4579S), Raffles Bay, La Zélée, Hombron & Jacquinot coll., no date; 1 male 21.1 × 21.6 mm (AM P 18644), Australia, Queensland, Gulf of Carpentaria, Gulf of Carpentaria Prawn Survey, Southeast corner, 16º36.1'S 139º43.45'E, 22 m, Dec.1963.

Ochtholambrus excavatus (Stimpson, 1871): female 38.3 × 31.6 mm (USNM 3270), Panama, no other data.

Ochtholambrus pulchellus (A. Milne-Edwards, 1868): syntype, male 6.0 × 5.3 mm (MNHN B 6275), Iles de Cape Verde, M. de Folin coll., 1869.

Ochtholambrus stimpsoni (Garth, 1958): holotype, male 18.1 × 16.1 mm (USMN 100919), Panama, Secas Island, no other data.

Ochtholambrus triangulus (Stimpson, 1860): 1 male 23.2 × 17.2 mm, Galapagos, Hood Island, RV VELERO, stn 361-35, Gardner Bay, 12 fm (22 m), 19 Dec.1934; syntype, male ca. 12.5 × 11.0 mm (NHM 61.44), California, Cape St. Lucas, J. Xanthus coll., no date; female ca. 15.0 × 12.5 mm (NHM 61.44), California, Cape St. Lucas, J. Xanthus coll., no date.

Patulambrus petalophorus (Alcock, 1895): syntype, male 21.7 × 16.7 mm (ZSI 14/10, ZSI 2664-66/10), off Sri Lanka, stn 238, 60–75 fm (109–137 m), Marine Survey of India.

Patulambrus nummiferus (Rathbun, 1906): holotype, male 16.6 × 15.0 mm (USNM 29826), Hawaiian Islands, northeast coast of Hawaii, 63–113 fm (115–207 m), U.S. Fish Commission Steamer ALBATROSS, stn 4062, 18 Jul.1902

Pilolambrus depressiculus (Stimpson, 1871): male 24.2 × 18.1 mm (LACM), Panama, Taboga Island, RV VELERO, stn 959-39, 2–5 fm (4–9 m), 2 May 1939.

Spinolambrus fraterculus (Stimpson, 1817): male 18.5 × 16.7 mm (USNM Acc. 232276), Florida, RV SILVER BAY, stn 2010, 28º17'N 80º01'W, 34–41 fm (62–75 m), 25 Apr.1960.

Spinolambrus macrochelos (Herbst, 1790)]: 1 male 54 × 48 mm (RMNH D 43604), Mediterranean Sea, Italy, Genoa, F. J. Cantraine coll., Jul.1827; 1 male 58.0 × 40.1 mm (RMNH), Spain, northeastern Spain, Province, Mediterranean Sea, M. Rubio donated, 1963**;** 1 female 51.6 × 39.6 mm (RMNH D 27503), Portugal, between Cado de Santa Maria and Barra da Fuzeta**,** 200 m, donated by M. J. de Figueiredo, 11 May 1971.

Spinolambrus pourtaleii (Stimpson, 1871): 1 male 20.5 × 16.5 mm (USNM 39938), New Jersey, off Martha's Vineyard, RV FISH HAWK, stn 950, 69 fm (126 m), 23 Aug.1881.

Velolambrus expansus (Miers, 1879): holotype, male 11.6 × 7.4 mm (NHM 762), Portugal, Madeira Island, no other data.

Velolambrus tuberculatus (Flipse, 1930): syntype, male 6.3 × 5.8 mm (ZMA De 103.049), the Philippines, Sulu Archipelago, Siboga Expedition, stn 109, anchorage off Pulu Tongkil (= Tongquil Island, ca. 6º1'60"N 121º50'60"E), 13 m, lithothamnion substratum, 5–6 Sep.1899.