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TRICHOPELTARIIDAE (CRUSTACEA, DECAPODA, BRACHYURA), A NEW FAMILY AND SUPERFAMILY OF EUBRACHYURAN CRABS WITH DESCRIPTION OF ONE NEW GENUS AND FIVE NEW SPECIES

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ABSTRACT

A new family, *Trichopeltariidae*, is proposed to accommodate *Sphaeropeltarion edentatum*, new genus and species, and four additional genera traditionally placed in the family *Atelecyclidae*: *Trichopeltarion* A. Milne-Edwards, 1880 (type genus); *Peltarion* Hombron & Jacquinot, 1846; *Podocatactes* Ortmann, 1893; and *Pteropeltarion* Dell, 1972. Additionally, four new species of *Trichopeltarion* are described and illustrated. The new family exhibits characters of neither superfamilies of the Section *Eubrachyura* and is assigned to its own superfamily, *Trichopeltarioidea* nov. Keys to the genera of *Trichopeltariidae* fam. nov. and to all species in the family are presented (species of *Trichopeltarion* excepted). Six new combinations are proposed or confirmed. The genus *Krunopeltarion* Štević, 1993, is merged into the synonymy of *Trichopeltarion*. A lectotype is selected for *Trichopeltarion corallinum* (Faxon, 1893).

KEYWORDS: Crustacea; Brachyura; New superfamily; New family; New genus; New species; Deep-sea.

INTRODUCTION

French deep-sea expeditions conducted in the Indo-Western Pacific Ocean in the past thirty years have yielded an abundant collection of the so-called atelecyclid crabs including one new genus and five new species. During study of that material, however, it rapidly became obvious that unambiguous familial and generic assignments of the existing species, as well as some of the new ones, was not possible until a better understanding of the atelecyclid and allied genera was available.

Indeed, prompt differentiation between the genera currently referred to as *Atelecyclidae* Ortmann, 1893, is a recurrent problem. Traditionally, too much emphasis has been placed on carapace outline and shape to differentiate genera and, as a result, generic characters overlap as new species are discovered. This is particularly true of the genera *Trachycarcinus* Faxon, 1893, *Trichopeltarion* A. Milne-Edwards, 1880, *Krunopeltarion* Štević, 1993, and *Peltarion* Hombron & Jacquinot, 1846 (Rathbun, 1930:165; Richardson & Dell, 1964; Dell, 1969; Takeda, 1973; Crosnier, 1981; Guinot, 1986; 1989; Guinot *et al.*, 2008; Salva & Feldmann, 2001; Tavares & Melo, 2005), but also *Podocatactes* Ortmann, 1893 and *Pteropeltarion* Dell, 1972.

Our studies revealed that *Atelecyclus* Leach, 1814 on one hand, and *Peltarion*, *Podocatactes*, *Pteropeltarion*, and *Trichopeltarion* on the other hand, can no longer be included in the same family. Indeed, *Atelecyclus* share with the cancrivora crabs a number of features not present in *Peltarion*, *Podocatactes*, *Pteropeltarion*, and *Trichopeltarion*. Conversely, the above four genera have in common several characters possessed neither by *Atelecyclus* nor the other cancrivora

and allied families (Table 1:114). Actually, *Peltarion*, *Podocatactes*, *Pteropeltarion*, and *Trichopeltarion* fit in neither of the existing crab families.

A new family, *Trichopeltariidae*, is then proposed herein to accommodate the genera *Trichopeltarion* (the type genus), *Peltarion*, *Podocatactes*, and *Pteropeltarion*. Additionally, one new genus and five new species are described: *Sphaeropeltarion edentatum* gen. nov., sp. nov., *Trichopeltarion dejouanneti* sp. nov., *Trichopeltarion paradextrum* sp. nov., *Trichopeltarion parvum* sp. nov., and *Trichopeltarion vanuatuensis* sp. nov. The distinguishing characters between *Trichopeltarion alcocki* Doflein, 1903, *T. ovale* Anderson, 1896, and *Trichopeltarion crosnieri* (Guinot, 1985) are discussed. *Trichopeltarion spinulifer* (Rathbun, 1898) is removed from the synonymy of *T. nobile* A. Milne-Edwards, 1880. Six new combinations are proposed or confirmed: *Trachycarcinus foresti* Guinot, 1989 and *Trachycarcinus delli* Guinot, 1989 are transferred to the genus *Podocatactes* Ortmann, 1893; *Peltarion dextrum* (Rathbun, 1898) is assigned to the genus *Trichopeltarion*; *Trachycarcinus elegans* Guinot & Sakai, 1970, *Krunopeltarion timorense* Štević, 1993, and *Trachycarcinus moosai* Guinot, 1989 are placed in the genus *Trichopeltarion*; a lectotype is selected for *Trichopeltarion corallinum* (Faxon, 1893); *Trichopeltarion hystricosum* (Garth in Garth & Haig, 1971) and *Trichopeltarion intesi* (Crosnier, 1981), removed from *Trachycarcinus* by Salva & Feldmann (2001), are herein confirmed in the genus *Trichopeltarion*; the status of *Trachycarcinus* as a junior subjective synonym of *Trichopeltarion* is confirmed and *Krunopeltarion* is merged into the synonymy of *Trichopeltarion*. *Atelecyclus* is now the single genus in the family *Atelecyclidae*. The family *Trichopeltariidae* nov. is placed in its own superfamily, *Trichopeltarioidea* nov. The *Cancrivora*

Latreille, 1802, now encompasses the families Cancridae Latreille, 1802, Atelecyclidae Ortmann, 1893, and Pirimelidae Alcock, 1899.

MATERIAL AND METHODS

Description terminology used for the Trichopeltariidae carapace is explained in figure 1. The carapace length was measured from the central rostral tooth to its posterior border. The carapace width refers to its maximal width, second epibranchial tooth included. The width of the posterior border of the carapace corresponds to the distance between the posterior ends of the molting lines. All morphological measures were given in millimeters (mm), and the first of the two measurements in the material examined is the carapace length. Abbreviations are as follows: G1-G2, first and second male gonopods respectively; ml, median line of the thoracic sternum; mm, millimeters; mxp2, mxp3, for second and third maxillipeds, respectively; P2-5, pereopod 2 to pereopod 5 (P1 is the cheliped); Pl2-Pl8, thoracic pleurite 2 to thoracic pleurite 8. The material herein studied has been deposited in or belongs to the collections of the Museum of Comparative Zoology, Harvard (MCZ); National Museum of Natural History, Smithsonian Institution, Washington D.C. (USNM); Museum of Zoology, University of São Paulo (MZUSP); Museum für Naturkunde, Berlin (MNB); Muséum national d'Histoire naturelle, Paris (MNHN); Natural History Museum and Institute, Chiba, Japan (CBM); National Taiwan Ocean University (NTOU); Raffles Museum of Biodiversity Research, National University of Singapore (ZRC); Indonesian Institute of Sciences Mataram, Indonesia (LIPI); Museum and Art Gallery of the Northern Territory, Darwin, Australia (NTM).

TAXONOMIC ACCOUNT

Brachyura Latreille, 1802

Heterotremata Guinot, 1977

Trichopeltarioidea superfam. nov.

Families included: Trichopeltariidae nov.

Diagnosis: Cephalothorax pentagonal, subcircular or longer than wide. Front cut into three strong teeth. Infraorbital intercalated piece present. Infraorbital tooth and antennal article 2+3 always separated from each

other. Antennal article 2+3 hardly movable, fused to basal part of infraorbital tooth. Antennal article 2+3 and lateral rostral tooth never fused to each other. Antennal article 2+3 cylindrical, never longer than articles 4 and 5. Antennal conduit forming part of prostomial chamber. Sterno-abdominal cavity deeply excavated. Thoracic sternum elongate oval; sternites 1-3 forming triangular, well demarcated, salient shield, inserted between mxp3. Sternal suture 2/3 well recognizable, complete; suture 3/4 well recognizable laterally (never on center of shield). Sternal sutures 4/5, 5/6 incomplete; sutures 6/7, 7/8 complete; sternal sutures never parallel. Sternal median line present only on sternites 7 and 8. Female gonopore (vulva) placed far from lateral border of sternite 6. Thoracic pleural gutter formed by Pl8 alone. Heterochely and heterodonty usually strong in males; sexual dimorphism marked.

Remarks: The Trichopeltariidae nov. exhibit characters of neither superfamilies of the Section Eubrachyura and thus is assigned to its own superfamily, Trichopeltarioidea nov.

Trichopeltariidae fam. nov.

Type genus: *Trichopeltarion* A. Milne-Edwards, 1880.

Genera included: *Trichopeltarion* A. Milne-Edwards, 1880; *Peltarion* Hombron & Jacquinot, 1846; *Podocatactes* Ortmann, 1893; *Pteropeltarion* Dell, 1972; and *Sphaeropeltarion* gen. nov.

Diagnosis: Carapace pentagonal, subcircular, or pear-shaped. Front cut into three teeth, one lateral rostral tooth at each side of central rostral tooth. Orbit delimited superiorly by two supraorbital teeth; laterally by exorbital tooth; inferiorly by infraorbital tooth and antennal article 2+3. Infraorbital intercalated piece (projection of the orbit floor, see remarks) filling gap between antennal article 2+3 and infraorbital tooth. Exorbital and infraorbital teeth separated from each other and from antennal article 2+3 by deep, wide gap; infraorbital tooth and antennal article 2+3 either separated from each other by deep, wide gap or by deep, narrow notch (*Peltarion* only). Orbital cavity either deeply excavated or extremely shallow. Antennal article 1 either slightly beaked laterally or transversally oblong. Antennal article 2+3 hardly movable, fused to basal part of the infraorbital tooth. Either a gap between antennal article 2+3 and lateral rostral tooth, or antennal article 2+3 in close contact to but not fused

with lateral rostral tooth. Antennal article 2+3 cylindrical, never longer than articles 4 and 5. Condyles of antennal article 2+3 articulating with antennal article 4 obliquely in relation to body axis, positioned so that

fourth article moves inwards and upwards. Mandibular palp either 3- or 2-articulated (articles 1-2 fused together and immovable in relation to each other). Limit between endostome and epistome poorly delimited.

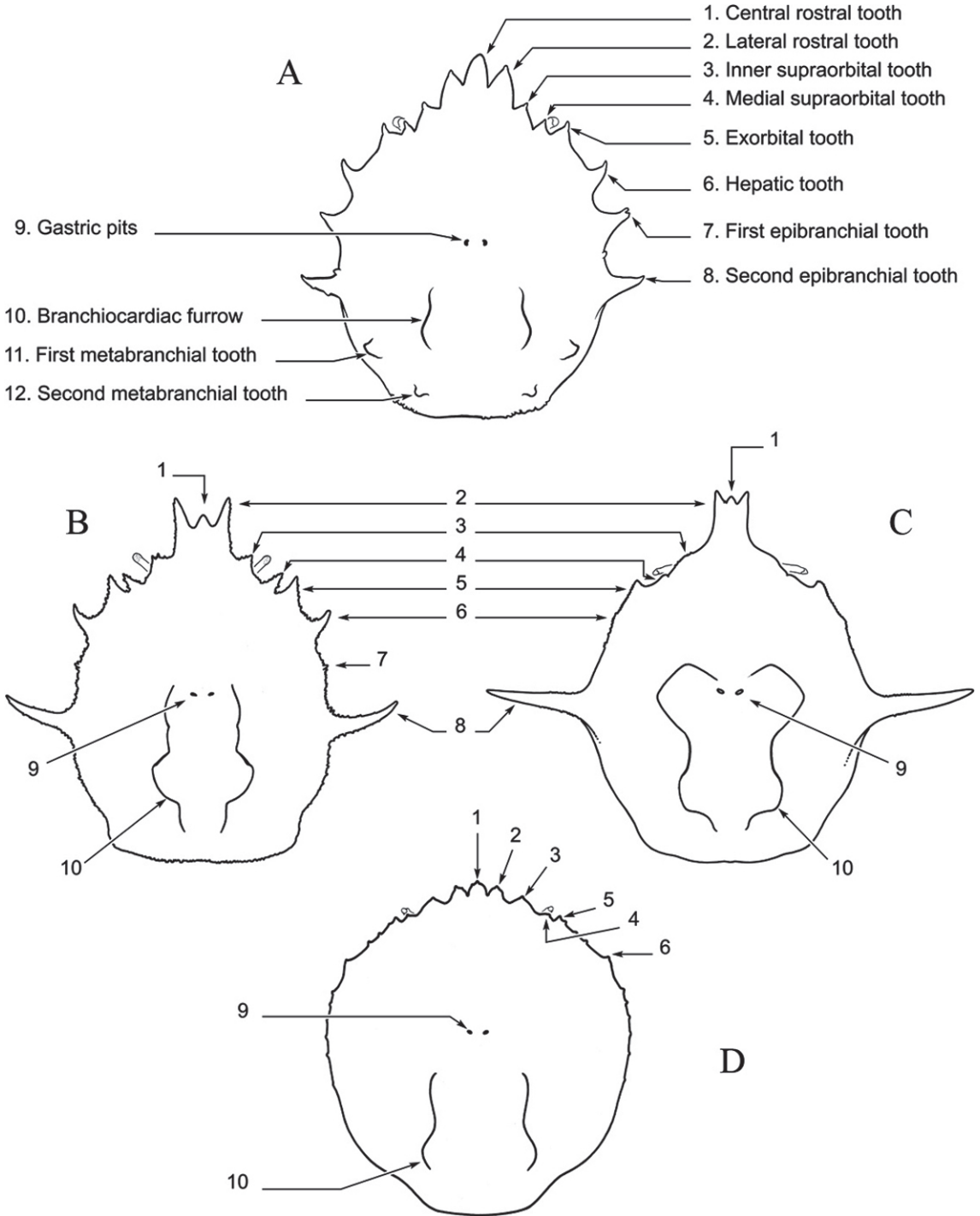


FIGURE 1: Schematic drawing and terminology of the trichopeltariid carapace. A, *Trichopeltarion*. B, *Podocatactes*. C, *Pteropeltarion*. D, *Sphaeropeltarion edentatum* gen. nov., sp. nov.

Endostomial ridges strong, oblique, aligned to antennule of opposite side. Mxp2 podobranchia single, well developed (lacking in *Pteropeltarion*). Merus of mxp3 subcircular, much shorter than ischium, its distal end reaching at most antennal article 1, leaving prostomial chamber open anteriorly. Thoracic sternum elongate, oval; wide portion of visible sternum at each side of abdomen. Thoracic sternite 4 with strongly divergent lateral borders. Sternal suture 1/2 well recognizable, showing as dense row of setae stretching from side to side of shield; suture 2/3 showing as decalcified transversal line; suture 3/4 placed laterally only, well recognizable laterally (unrecognizable medially). Sternal sutures 4/5, 5/6 incomplete; sutures 6/7 and 7/8 complete; sternal sutures 4/5 to 7/8 equidistant, never parallel. Sternal median line recognizable only on sternites 7 and 8 (weak median line on lower part of sternite 6 in *Peltarion*). Sterno-abdominal cavity deeply excavated; male and female sterno-abdominal cavity wide, U-shaped, with distinct, flat, undivided bottom at intersection of sternites 4, 5, and 6; thoracic sternum otherwise V-shaped, divided longitudinally into two halves by median line (sternites 7 and 8). Female gonopore placed near sternal median line, far from lateral border of sternite 6. Thoracic pleural gutter formed by Pl8 alone; lower part of Pl8 upturned to form wide, lunate gutter. Its internal edge bordered with dense setae. Pleurae of thoracic segments 5, 6, and 7 undivided transversally. Both heterochely and heterodonty prevalent in males, sometimes exaggerated. P5 coxae as wide as the maximal width of abdominal segment 1. Male abdomen either of six free segments and telson (*Podocatactes*, *Pteropeltarion*, and *Trichopeltarion*), or of four segments and telson in *Peltarion* (abdominal segments 3+4+5 fused together). Telson short, rounded tip. Male first abdominal segment usually narrower than half of width of posterior border of the carapace. Female abdomen of six free segments and telson. Complementary parts of the abdominal locking system well developed and functional.

Etymology: The family name is derived from the type genus *Trichopeltarion* (itself a combination of the Greek words *tricho* (hair) and *peltari*, diminutive of *pelte* (small shield or buckler).

Remarks: Below are several comparative remarks between the Trichopeltariidae fam. nov. and the Atelecyclidae. First, a brief historical account of the Atelecyclidae is made in order to introduce the main steps leading to present generic composition of the family. Ortmann (1893b:421) erected the Atelecyclidae to

encompass two genera, *Peltarion* (as *Hypopeltarion*) and *Atelecyclus*. Actually, *Peltarion* and *Atelecyclus* have been long treated together under Corystidae/Corystoidea along with *Corystes* Bosc, 1802, and allied genera (Dana, 1852:296-299; Miers, 1886:211). When A. Milne-Edwards (1880:19) described *Trichopeltarion* he considered it to be closely related to *Peltarion*: “Ce genre ne diffère du *Peltarion* que par sa carapace très bombée et velue comme celle des *Dromia* et par la remarquable inégalité de ses pinces”. Alcock (1899b:5, 57), seeming not convinced of the close relationship between *Trichopeltarion* and *Peltarion* (as *Hypopeltarion*), placed *Trichopeltarion* in Corystidae, instead of Atelecyclidae along with *Peltarion* and *Atelecyclus*. Bouvier (1942) concluded that there were two main streams within Corystoidea, “corystiens” and “atélecycliens”, and included *Trichopeltarion* in Atelecyclinae. Following Bouvier (1942), Balss (1957:1635) placed *Trichopeltarion*, *Peltarion* and *Atelecyclus* in Atelecyclidae, Atelecyclinae. After Balss (1957) atelecyclids gained much broader acceptance and have been accorded either familial or subfamilial status. *Podocatactes* was described in Corystidae (Ortmann, 1893a:29) and continued to be regarded as such for many years (Bouvier, 1942; Balss, 1957:1634; Sakai, 1965:109; 1976:306; Guinot, 1978:257; Dai & Yang, 1991:188). It was not until recently that *Podocatactes* has been referred to Atelecyclidae (Ng *et al.*, 2008). *Pteropeltarion* was described already in Atelecyclidae (Dell, 1972:55). A number of genera previously regarded as atelecyclids have been transferred to different families, such as *Erimacrus* Benedict, 1892 and *Telmessus* White, 1846 (both to Cheiragonidae Ortmann, 1893), *Pliosoma* Stimpson, 1860 (to Epialtidae MacLeay, 1838), and *Kraussia* Dana, 1852 (to Xanthidae MacLeay, 1838) (Guinot, 1979; Števcíć, 1990; Guinot & Bouchard, 1998; Ng *et al.*, 2008; De Grave *et al.*, 2009).

Carapace: The shape of the carapace distinguishes Trichopeltariidae fam. nov. and Atelecyclidae from each other, and its shape and ornamentation varies within each family (figures 1A-D; 2A-F; 3A-D). Trichopeltariids and atelecyclids share the front cut into three teeth, one lateral rostral tooth at each side of the central rostral tooth. In the genera *Podocatactes* and *Pteropeltarion* the central rostral tooth is much shorter than the laterals (figures 9A, C; 11A, C). In *Sphaeropeltarion* gen. nov. the central and lateral rostral teeth are flat and about the same size (figure 34A, C). In *Trichopeltarion* the central rostral tooth is usually shorter than the laterals, but in some species the central tooth can be as long as the laterals (as in *T. intesi*)

or even longer (as in *T. dextrum* and *T. crosnieri*). In *Peltarion* and in atelecyclids the central rostral tooth is longer than the laterals (figure 2A-B). In *Peltarion* the carapace (figure 2B) is subcircular and moderately arched transversally, its dorsal surface being covered with fine granules, more prominent posteriorly; the branchio-cardiac groove is well recognizable. The gastric pits are small and close to each other. The hepatic and first and second epibranchial teeth are armed with barbs (secondary spinelets) and lobe-like. These teeth are recognizable but not well distinct. The posterolateral border is irregularly spiny. In *Trichopeltarion* the carapace (figure 2E) is either pentagonal or subcircular and distinctly arched transversally, its dorsal surface ornamented with granules, coalescent tubercles or a combination of the two; the branchio-cardiac groove is deeply excavated. The gastric pits are small and close to each other. The hepatic and the first and second epibranchial teeth are armed with barbs and usually well distinct. In *Podocatactes* the carapace is pear-shaped and its dorsal surface densely covered with small tubercles; the cervical and branchio-cardiac groove are well formed; the gastric pits are small and close to each other. The hepatic and epibranchial teeth are well distinct; the first epibranchial tooth is reduced to a bump, whereas the second epibranchial tooth is strong and slightly curved forward. *Pteropeltarion* share a pear-shaped carapace with *Podocatactes* (figure 2C-D), its carapace dorsal surface being finely granulated; the branchio-cardiac groove is well recognizable; the gastric pits are poorly excavated and close to each other. The second epibranchial tooth is extremely long and strong. The hepatic tooth is reduced to a bump, while the first epibranchial one is absent. In *Sphaeropeltarion* gen. nov. the carapace (figure 2F) is subcircular, slightly oblong longitudinally, and strongly arched transversally, its dorsal surface with sparse, fine granules, and entirely coated with short velvet; the branchio-cardiac groove is poorly delimited; the gastric pits are shallow and close to each other. The hepatic and the first and second epibranchial teeth are reduced to minute, smooth, rounded tubercles, similar to each other. The posterolateral border is poorly delimited and ornamented with a few granules.

In atelecyclids the carapace is either circular or broadly oval, and moderately arched transversally; its dorsal surface is ornamented with sparse granules; the branchio-cardiac groove is well recognizable. The gastric pits are small and close to each other. The hepatic and the first and second epibranchial teeth are armed with small acute spines (barbs) and are similar in form and shape to the remaining anterolateral teeth. The

posterolateral margin is bordered with a sinuous row of granules.

Orbit: In trichopeltariids and atelecyclids the orbit is delimited superiorly by two supraorbital teeth (figures 1A-D; 2A-F; 9A; 11A; 16A-B; 19A-H), laterally by the exorbital tooth, and inferiorly by both the infraorbital tooth and the antennal article 2+3. In all trichopeltariids, however, there is an intercalated piece (termed here infraorbital intercalated piece) inserted between the antennal article 2+3 and the infraorbital tooth (figures 2C-D 4A; 6A; 9C; 11C; 14C), which Salva & Feldmann (2001:20) interpreted as “the development of a fixed article that does have a projection filling the inner hiatus of the orbit”. Actually, that intercalated piece is but a projection of the orbit floor inserted into a gap between the antennal article 2+3 and the infraorbital tooth (figures 6B; 19C-D). That infraorbital intercalated piece is absent in atelecyclids (figure 5A) and most canroids (figure 5B). In all trichopeltariids the exorbital and the infraorbital teeth are separated from each other and the infraorbital tooth separated from the antennal article 2+3 by a deep, wide gap (figure 4A). In *Peltarion*, however, the infraorbital tooth and the antennal article 2+3 are separated by a deep, narrow notch (figures 5C; 6A). Conversely, in *Atelecyclus* exorbital and infraorbital teeth are separated from each other and from the antennal article 2+3 by a deep, narrow notch (figure 5A). *Atelecyclus*, *Peltarion*, *Trichopeltarion*, and *Sphaeropeltarion* gen. nov. share a deeply excavated orbit, whereas in *Podocatactes* and *Pteropeltarion* the orbital cavity is very shallow.

Ocular peduncle and cornea: In *Podocatactes*, *Pteropeltarion*, *Trichopeltarion* (*T. intesi*, *T. dextrum*, and *T. hystricosum* excepted) the ocular peduncle is little movable, not fully retractable into the orbital cavity, noticeably long and slender (globulous proximally), and strongly calcified. The cornea is small (sometimes limited to the distal area of the peduncle, as in *T. nobile*), unpigmented (or only slightly pigmented, as in *P. hamifer*) and the ommatidia hardly recognizable. In *Sphaeropeltarion* gen. nov. the ocular peduncle is freely movable and fully retractable, otherwise it shows as in *Podocatactes*, *Pteropeltarion*, and *Trichopeltarion*. On the other hand, atelecyclids and *Peltarion* share freely movable ocular peduncles. The peduncles are fully retractable into the orbital cavity, thick, and moderately calcified. Atelecyclids and *Peltarion* also show a large cornea (only a little shorter than half of the length of the peduncle), normally pigmented (dark brown), and well recognizable ommatidia.

Antenna: In trichopeltariids the antennal article 1 can be slightly beaked laterally (*Podocatactes*, *Peltarion*, and *Sphaeropeltarion* gen. nov.) or transversally oblong as in *Trichopeltarion*, *Pteropeltarion*, and in atelecyclids. In all trichopeltariids and atelecyclids the antennal articles 2-3 are fused to one another and

there is no trace of suture in between. Nevertheless, in trichopeltariids the antennal article 2+3 is hardly movable, fused only to the infraorbital intercalated piece but never to the lateral rostral tooth. Also, in trichopeltariids either there is a noticeable gap between the antennal article 2+3 and the lateral rostral

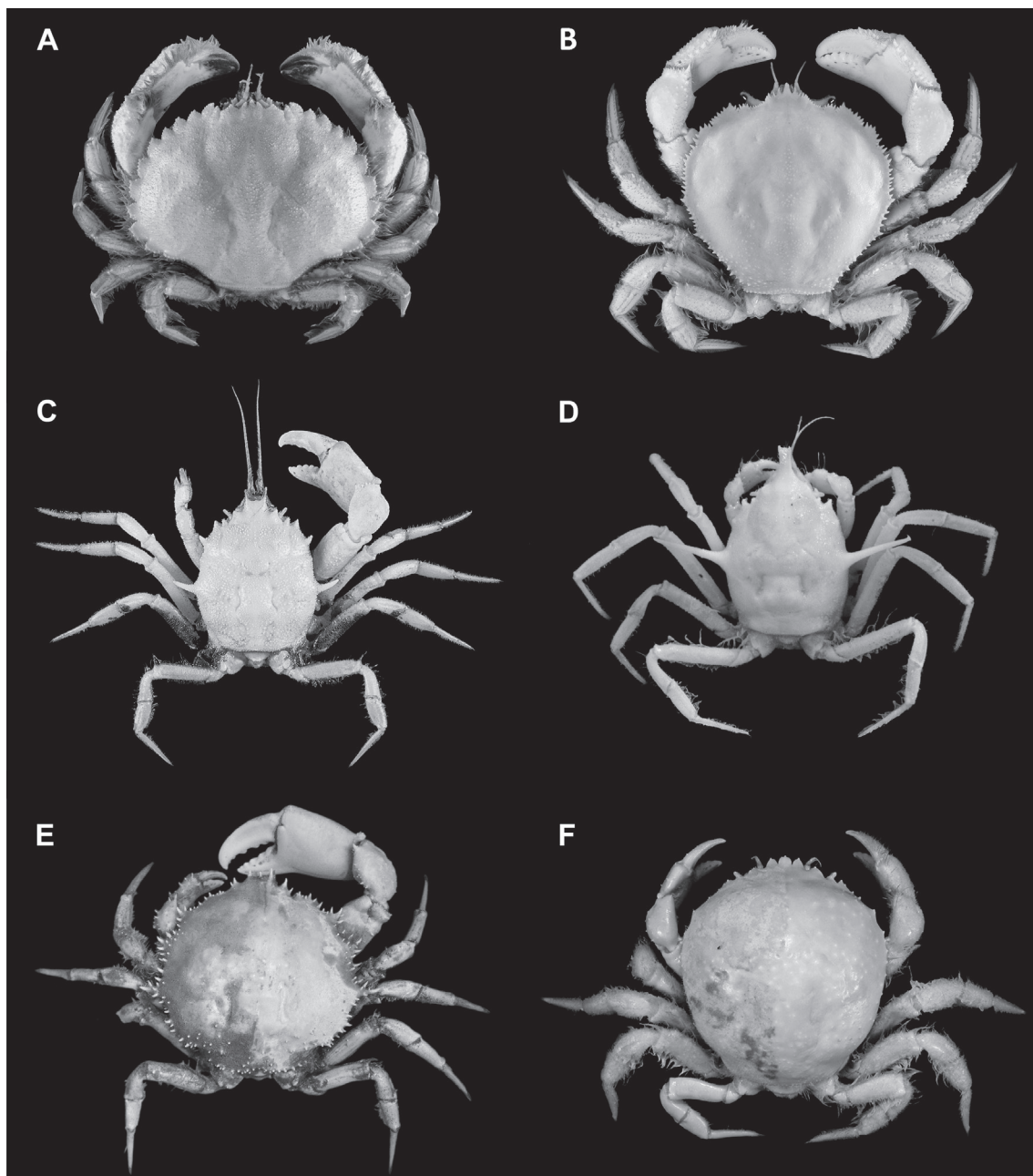


FIGURE 2: General dorsal view. **A**, *Atelecycclus undecimdentatus* (Herbst, 1785) male 57.5 x 75.3 mm (MNHN-B30431). **B**, *Peltarion spinulosum* (White, 1843) male 48.0 x 48.4 mm (MNHN-B11469). **C**, *Podocatactes hamifer* Ortmann, 1893, male (Courtesy of T.-Y. Chan). **D**, *Pteropeltarion novaezelandiae* Dell, 1972, male 15.4 x 20.6 mm (Courtesy of C.L. McLay and K. Schnabel). **E**, *Trichopeltarion nobile* A. Milne-Edwards, 1880, male holotype 65.0 x 76.0 mm (MCZ 3054). **F**, *Sphaeropeltarion edentatum* gen. nov., sp. nov., holotype female 44.2 x 39.4 mm (MNHN-B31974).

tooth (*Peltarion*, *Pteropeltarion*, and *Sphaeropeltarion* gen. nov.) (figures 6A, 11C, 16C, 34C), or the antennal article 2+3 is in close contact to but not fused with the lateral rostral tooth (*Trichopeltarion* and *Podocatactes*) (figures 4A, 9C). Conversely, in the atelecyclids the antennal article 2+3 is fused to both the lateral rostral tooth and the infraorbital tooth (figure 4B). Thus, differently from trichopeltariids, in atelecyclids the mesial side of the infraorbital tooth is completely fused to the antennal article 2+3. As a result atelecyclids have an immovable antennal article 2+3. Furthermore, in trichopeltariids the antennal article 2+3 is rather cylindrical and is never longer than articles 4 and 5. In atelecyclids, however, the article 2+3 is rather flattened and by far the largest antennal article. In *Peltarion* antennal article 4 is the longest, while in *Pteropeltarion* article 5 is the longest.

Trichopeltarion and *Sphaeropeltarion* gen. nov., have the antennal articles 2+3, 4, and 5 of about the same length. In *Podocatactes* the antennal articles 2+3 and 4 are of about the same length, while article 5 is shorter than articles 2+3-4. The antennal flagellum is remarkably long in *Podocatactes*, moderately long in *Pteropeltarion*, and short in the remaining genera.

Antennal conduit: In some trichopeltariids (*Peltarion*, *Podocatactes*, and *Pteropeltarion* only) and in one atelecyclid species (*Atelecyclus rotundatus* only) there is the formation of an antennal conduit as part of the prostomial chamber. The dorsal and ventral faces of the antennae (articles 2+3, 4-5, and flagellum) are fringed along their entire length by two rows of long setae. The setae of each row are directed forwards and towards those of the corresponding row on the antenna

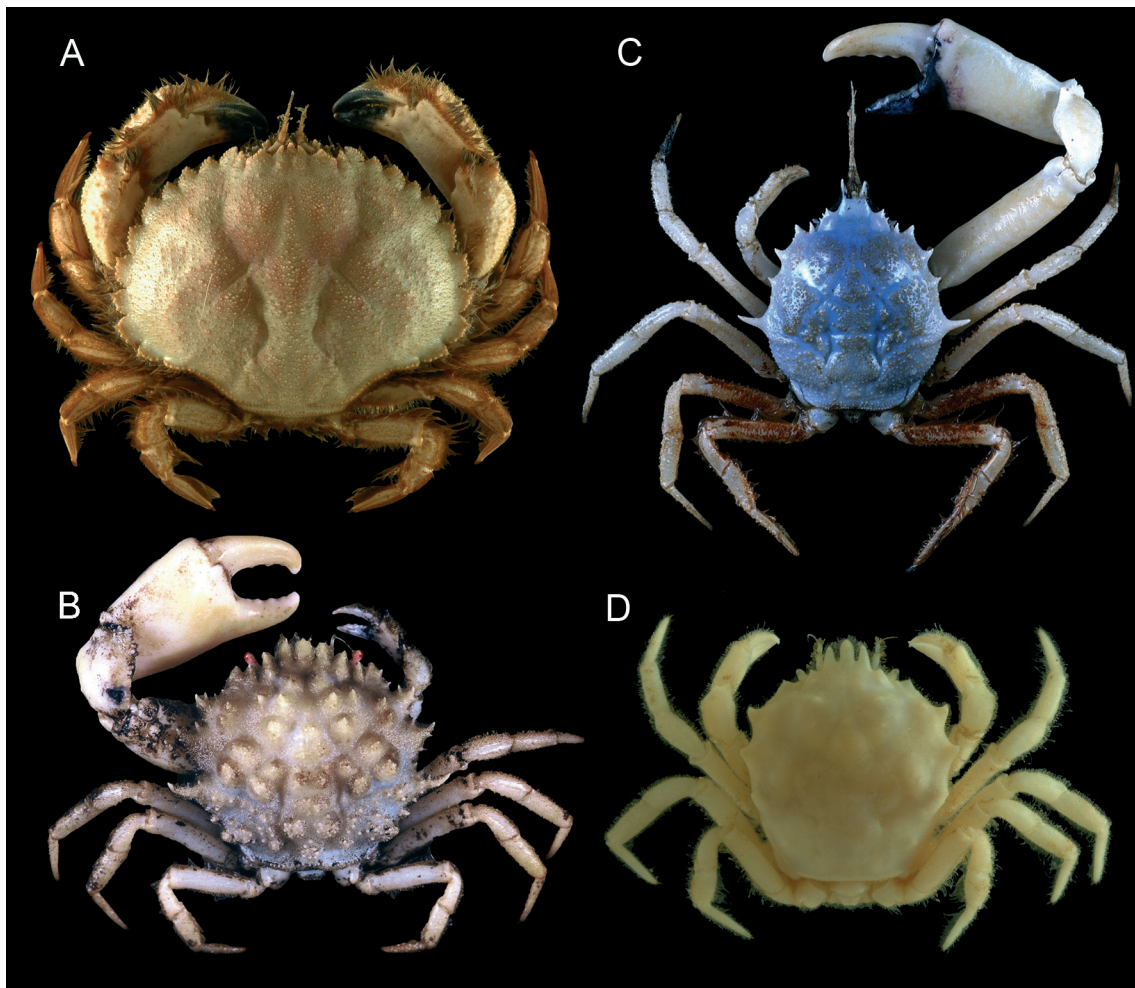


FIGURE 3: General dorsal view. **A**, *Atelecyclus undecimdentatus* (Herbst, 1785) male 57.5 x 75.3 mm (MNHN-B30431). **B**, *Trichopeltarion elegans* (Guinot & Sakai, 1970) male 24.4 x 28.9 mm (Courtesy of T.-Y. Chan). **C**, *Podocatactes hamifer* Ortmann, 1893, male 33.5 x 33.3 mm (Courtesy of T.-Y. Chan). **D**, *Trichopeltarion parvum* sp. nov. paratype female 11.5 x 10.5 mm (MNHN-B31972).

of the opposite side. The opposing rows of setae of the antenna (articles 2+3, 4-5, and flagellum) juxtapose forming a median conduit. The lateral walls of that conduit are formed by the antennal flagellae themselves, whereas its dorsal and ventral walls are formed by the juxtaposing setae. The flat and ventrally concave rostrum and its distal tuft of setae close the conduit ruff posteriorly. The forward process of the pterygostomial region of the carapace and its distal tuft of setae close the chamber laterally, whereas the distal setae of the meri of the third maxillipeds help to close the conduit floor posteriorly. Critical to the formation of the antennal conduit is that the antennal flagellae be parallel and close to one another. Trichopeltariids and atelecyclids differ from each other in respect to the antennal modifications leading to flagellae positioning. In trichopeltariids the condyles articulating with the antennal article 4 are obliquous in relation to the body axis and positioned so that the fourth article moves inwards and upwards. In atelecyclids, however, the articular condyles with antennal article 4 are placed in the opposite side as trichopeltariids so that the fourth antennal article moves inwards and downwards. In both trichopeltariids and atelecyclids the fourth antennal article is slightly curved outward, thus helping the antennal flagellae to be parallel and close to one another longitudinally. In trichopeltariid *Podocatactes* the antennal flagellae are greatly elongated (about as long as the half maximal length of the carapace) and their articles large and well calcified so that the long antennae can be held straight more easily. In the remaining trichopeltariids and in atelecyclids the antennal flagellae are much shorter and their articles comparatively smaller and less calcified. In *Trichopeltarion*, *Sphaeropeltarion* gen. nov., and *Atelecyclus undecimdentatus* the setae are dispersed all around the antennal flagellae.

Mandibular palp: In trichopeltariids the mandibular palp is either 3- or 2-articulated. In *Peltarion* and *Podocatactes* the palp is 3-articulated, with segments 1-2 fused together and imovable in relation to each other. The suture between articles 1-2 is still recognizable. In *Pteropeltarion*, *Trichopeltarion*, and *Sphaeropeltarion* gen. nov., the palp is 2-articulated as articles 1-2 are completely fused to each other and there is no line of suture in between. In atelecyclids the palp is 3-articulated with all articles freely movable.

Endostome and epistome: Trichopeltariids have the limit between the endostome and the epistome poorly recognizable (figures 4A; 5C; 6A; 9C; 11C; 34C). In *Trichopeltarion*, *Podocatactes*, *Pteropeltarion*, and

Sphaeropeltarion gen. nov. the endostome is poorly delimited anteriorly by an interrupted line of dense velvet. In *Peltarion* the endostome is weakly delimited anteriorly by an interrupted, low ridge. Conversely, in atelecyclids (and remaining cancroids) the endostome is well delimited anteriorly by an uninterrupted strong ridge, which clearly demarcates the endostome and the epistome (figure 5A-B).

Endostomial ridges: Both trichopeltariids and atelecyclids have strong, inwardly directed endostomial ridges. In trichopeltariids, however, the endostomial ridges are aligned to the antennule of the opposite side (figures 4A; 5C; 6A; 9C; 11C; 34C), whereas in atelecyclids the endostomial ridges are more inwardly directed, aligned with the antenna of the opposite side (figures 4B; 5A).

Maxillipeds: In trichopeltariids the merus of mxp3 is subcircular, much shorter than the ischium, its distal end reaches at most the antennal article 1, leaving the prostomial chamber open anteriorly (figure 34C). In atelecyclids the merus is elongated, much longer than wide, almost as long as ischium, its distal end reaches the antennal article 2+3 completely closing the prostomial chamber.

Thoracic sternum: The thoracic sternum in trichopeltariids and atelecyclids is very distinct from one another. In males and females trichopeltariids the sterno-abdominal cavity is deeply excavated (sternites 4-8); the thoracic sternite 4 has strongly divergent lateral borders; the thoracic sternum is elongate oval and at each side of the abdomen there is a wide portion of visible sternum; while the sternal sutures 4/5, 5/6 are incomplete the sutures 6/7 and 7/8 are complete; there are no parallel sternal sutures (figures 5F; 6B, 7B, 34D; 31D; male *Sphaeropeltarion* gen. nov. unknown so far). In male and females atelecyclids the sterno-abdominal cavity is moderately excavated; the thoracic sternite 4 has subparallel lateral borders; the thoracic sternum is extremely narrow with subparallel borders (sternite 3 not extending laterally beyond anterior margin of sternite 4), so that at each side of the abdomen only a narrow stretch of the sternum is visible; the sternal sutures 4/5, 5/6, 6/7, and 7/8 are all complete; and the male sternal sutures 5/6 and 6/7 are parallel to each other (sutures 4/5, 5/6, 6/7, and 7/8 all parallel in the female) (figures 5E; 7D). In trichopeltariids, in both males and females, the sternal median line is found only on sternites 7 and 8 (a weak median line is distinguishable on the lower part of sternite 6 in *Peltarion*)

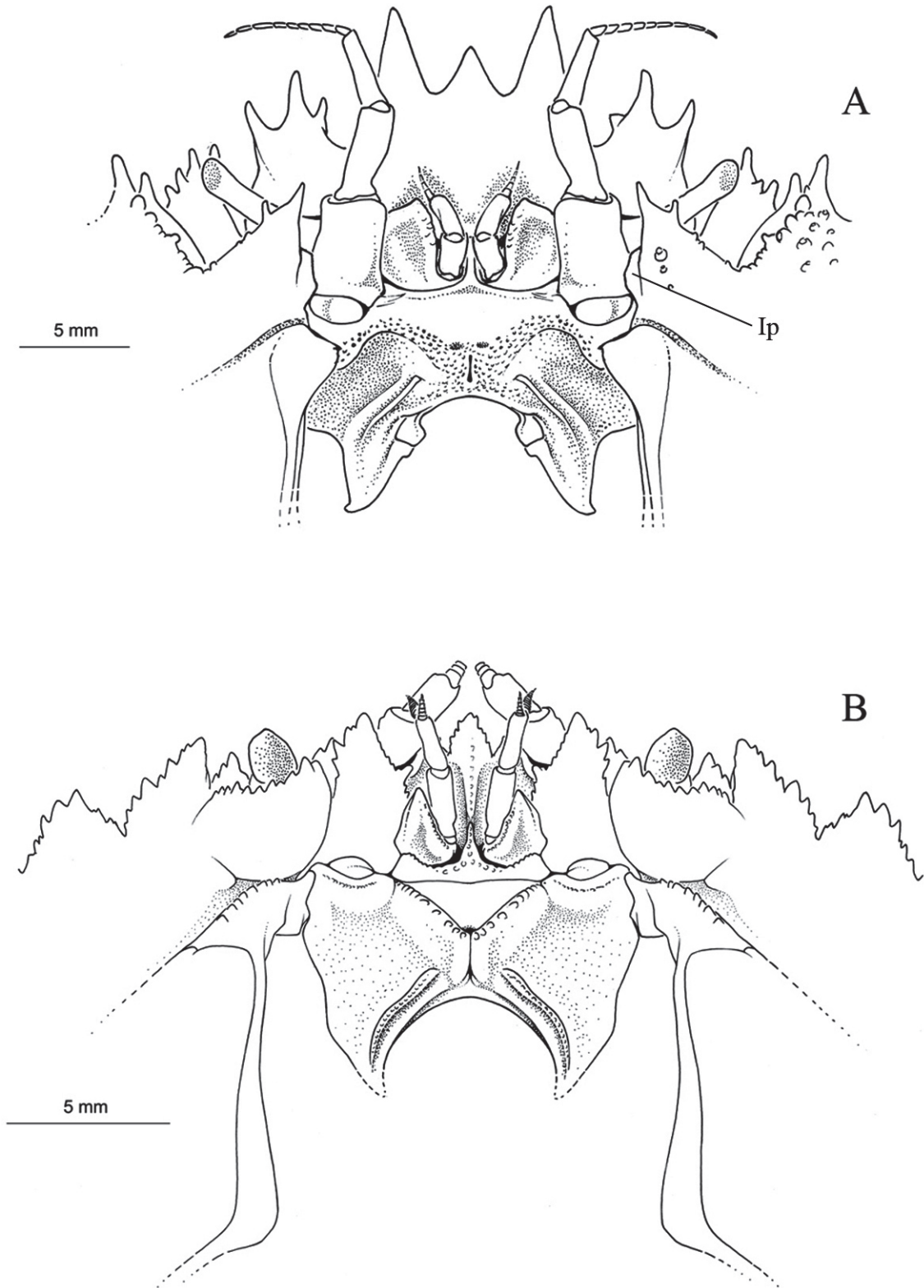


FIGURE 4: Anterior region of body in ventral view (setae not represented). **A**, *Trichopeltarion nobile* A. Milne-Edwards, 1880, male 63.3 x 76.4 mm (MNHN-B29898). **B**, *Atelecyclus undecimdentatus* (Herbst, 1785), male 39.8 x 51.3 mm (MNHN-B5402). Er, Endostome ridge; Ip, Infraorbital intercalated piece.

(figures 5F; 6B; 7B; 34D; 31D), while in male and female atelecyclids the thoracic sternum is divided longitudinally into two halves by a median line stretching uninterruptedly from sternite 4 to 8 (figures 5E; 7D). In male and females trichopeltariids the sterno-abdominal cavity is wide (U-shaped) and with a distinct flat, undivided bottom at the intersection of sternites 4, 5, and 6; otherwise the thoracic sternum is V-shaped and divided longitudinally into two halves by a median line (sternites 7 and 8). Conversely, in male and female atelecyclids the sterno-abdominal cavity is narrow and V-shaped along its length from sternite 4 throughout sternite 8. In trichopeltariids the suture 1/2 shows as a dense row of setae stretching from side to side of the shield; the suture 2/3 shows as a well formed decalcified transversal line stretching from side to side of the shield; and the suture 3/4 placed laterally only is recognizable laterally (unrecognizable medially). On the other hand, in atelecyclids the sternal suture 1/2 is unrecognizable; suture 2/3 is represented by a narrow row of setae on the center of the shield, between the level of the arthroal cavities of mxp2 and mxp3; the sternal suture 3/4 is recognizable from side to side, although weak.

Thoracic pleurites and branchial formula: In both trichopeltariids and atelecyclids the last thoracic pleurite (P18) is always extremely reduced and modified. While representants of both families possess a posterior thoracic pleural gutter related to water flux guiding (figure 7A, C), the trichopeltariid pleural gutter is formed differently than the atelecyclid one. In trichopeltariids that gutter is formed by P18 alone. The lower part of the last pleurite is upturned to form a wide, lunate gutter (figure 7A), whose internal edge is bordered with dense setae. The upturned gutter edge is well developed in *Peltarion*, *Podocatactes*, *Trichopeltarion*, and *Sphaeropeltarion* gen. nov., whereas in *Pteropeltarion* the gutter edge is noticeably lower. In atelecyclids, however, the pleural gutter is formed by both P17 and P18; part of the lateral edges of P17 and P18 are upturned and coalescent, forming a narrow, shallow, triangular gutter (figure 7C). In trichopeltariids the pleurae of the thoracic segments 5, 6, and 7 are undivided, no line of suture being visible, whereas atelecyclids have their 5th, 6th, and 7th thoracic pleurae divided into two parts by a conspicuous transversal suture. All trichopeltariids and atelecyclids lack pleurobranchiae in P17-8; their P16 and P15 have one well developed pleurobranchia each; and their P14, P13 have two pleurobranchia each. In *Atelecyclus*, *Peltarion*, *Podocatactes*, and *Pteropeltarion* both P13 pleurobranchiae are well developed, while in *Trichopeltarion*,

although well developed, both P13 pleurobranchiae are shorter than the P14-6 pleurobranchiae, and the anteriormost P13 pleurobranchiae is the shortest. *Peltarion*, *Podocatactes*, and *Trichopeltarion* share one well developed P12 pleurobranchia and one well developed mxp2 podobranchia, whereas in *Atelecyclus* only the P12 pleurobranchia is well developed, and the mxp2 podobranchia is reduced to a few lamellae. Both the P12 pleurobranchia and the mxp2 podobranchia are absent in *Pteropeltarion*. The branchial formula has not been observed in *Sphaeropeltarion* gen. nov.

Female gonopores: The trichopeltariid female gonopore (vulva) is placed near the sternal median line, far from the lateral border of the sternite 6 (figures 31D; 34D), while atelecyclids females have their gonopore located about mid-width of the sternite 6, between the sternal median line and the lateral border of the sternite.

Heterochely: The heterochely is prevalent in the male trichopeltariid (figures 2C, E; 8A-B, D; 15A; 17A; 18A; 24A; 27A; 31A), whereas atelecyclids show equal chelipeds (figure 2A). In *Trichopeltarion* the heterochely is so extreme (figures 2E; 15A; 17A; 18A; 24A; 27A; 31A) that it may cause a gap between the complementary parts of the press-button abdominal locking mechanism on the major cheliped side in large individuals (see also Guinot & Bouchard, 1998:646). Heterochely is conspicuous although seems less pronounced in *Peltarion* (figure 2B). Heterochely is generally absent in trichopeltariid and atelecyclid females and young males (e.g., *Peltarion* spinulosum male MNHN-B 11472). Dell (1972:56) reported subequal chelipeds in females and young males of *Pteropeltarion novaezelandiae*, stating however that even in females the right cheliped can be more developed. Trichopeltariids and atelecyclids share non-functional articulation between the basis and ischium of the cheliped, while the ischium-merus articulation is extremely limited.

P5 coxa: Adult male trichopeltariids have much larger P5 coxae than male atelecyclids. In trichopeltariids the P5 coxa is about as wide as the maximal width of the abdominal segment 1, whereas in atelecyclids the coxal width is 2/3 at most the maximal width of the abdominal segment 1. In both, trichopeltariids and atelecyclids the penis emerges far from the coxosternal condyle.

Abdominal segments and telson: The telson is short with rounded tip in trichopeltariids, whereas atelecyclids have long and acute telson. In *Podocatactes*,

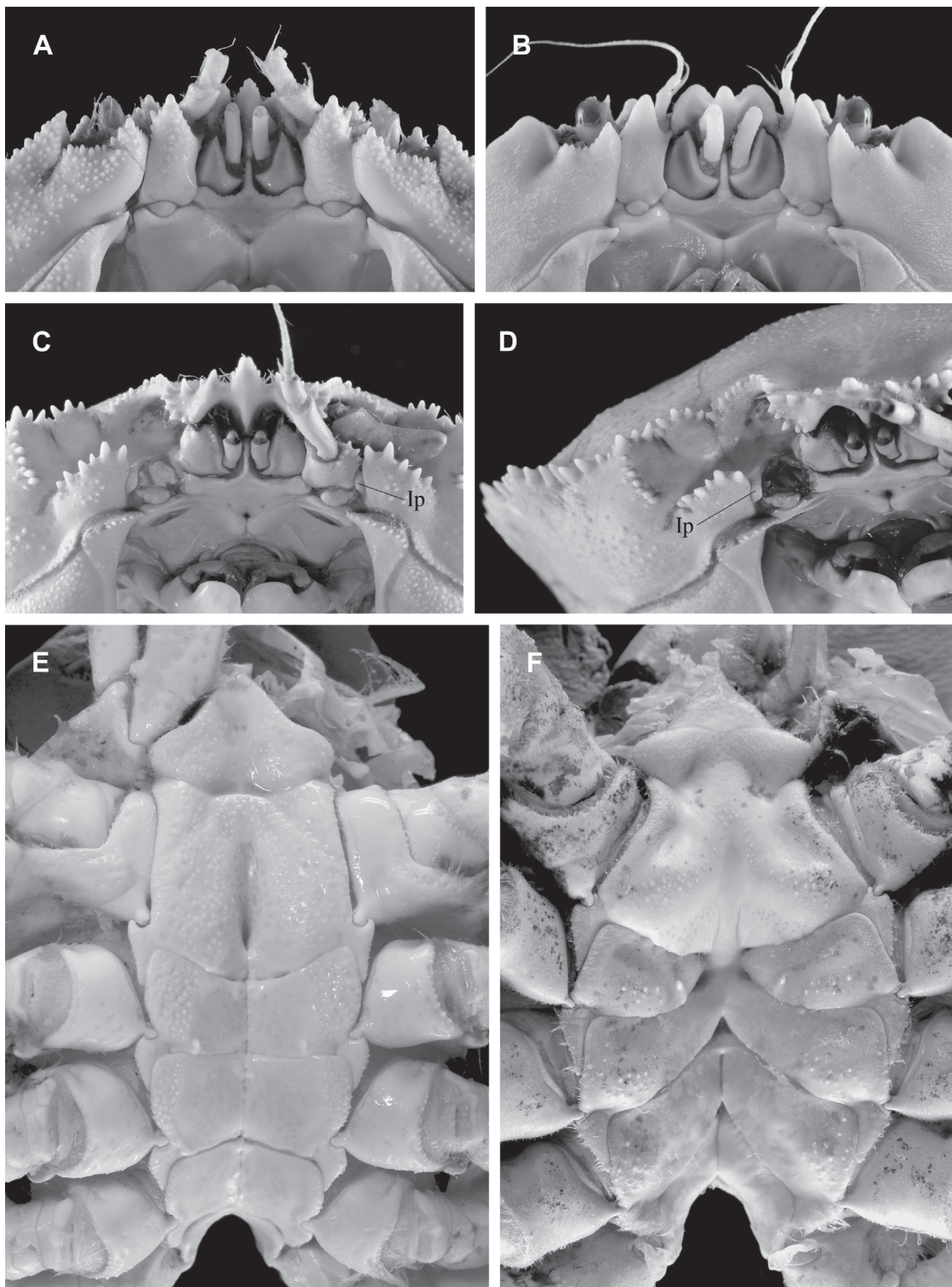


FIGURE 5: A-D, Anterior region of body in ventral view (setae removed). E-F, Thoracic sternum (setae removed). A, E, *Atelecyclus undecimdentatus* (Herbst, 1785) male 57.0 x 74.2 mm (MNHN-B5403). B, *Romaleon nadaensis* (Sakai, 1969) male cl 53.0 mm (MNHN-B26323). C-D, *Peltarion spinulosum* (White, 1843) male 51.5 x 53.5 mm (MNHN-B11476), right ocular peduncle removed. F, *Trichopeltarion nobile* A. Milne-Edwards, 1880, male 63.3 x 76.4 mm (MNHN-B29898). Ip, Infraorbital intercalated piece.

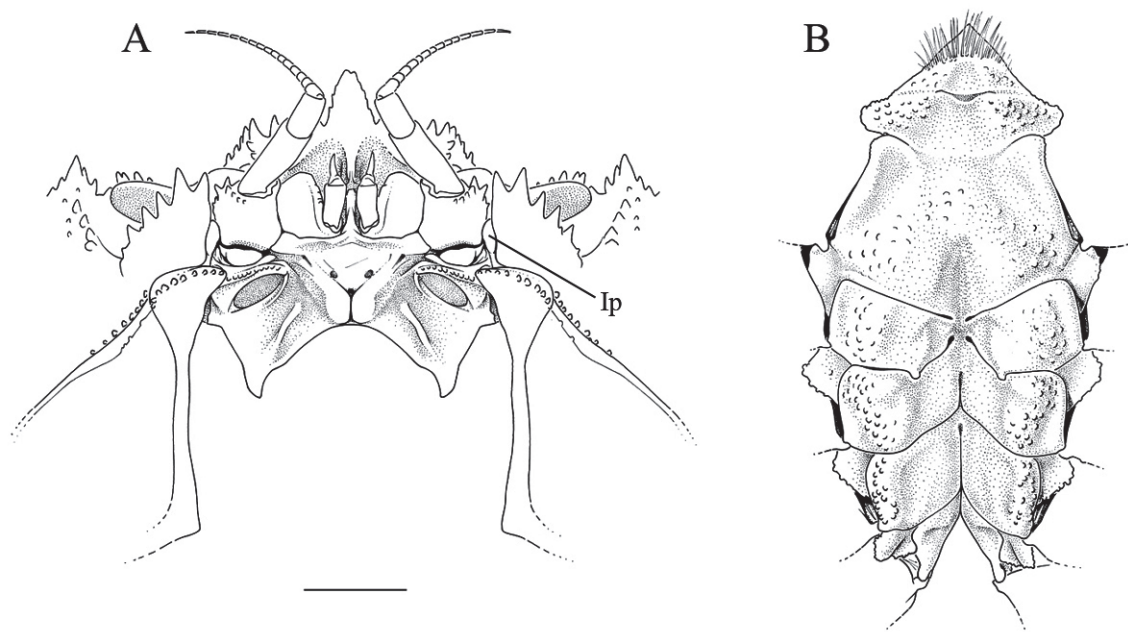


FIGURE 6: *Peltarion spinulosum* (White, 1843). **A**, Anterior region of body in ventral view, male 51.5 x 53.5 mm (MNHN-B11476) (setae not represented). **B**, Thoracic sternum, male 41.0 x 41.7 mm (MNHN-B11456). Er, Endostome ridge; Ip, Infraorbital intercalated piece. Scale bar: A-B, 5 mm.

Pteropeltarion, and *Trichopeltarion* the male abdomen is of six free segments and telson, whereas in *Atelecyclus* and *Peltarion* the male abdomen is of four segments and telson (abdominal segments 3+4+5 fused together). In *Peltarion* the anterolateral angles of segment 6 is strongly produced forward so that the telson show as a narrow triangle intercalated in between (in *Atelecyclus*, *Podocatactes*, *Pteropeltarion*, and *Trichopeltarion* the telson is not intercalated within abdominal segment 6 as the postero-lateral angles of the segment 6 are only weakly produced).

Ratio first abdominal segment/carapace: In male trichopeltariids the maximal width of the abdominal segment 1 is usually narrower than the half of the width of the posterior border of the carapace (distance between the posterior end of the carapace molting lines), ratio ranging from 0,40 and 0,50 (male *Sphaeropeltarion* gen. nov. unknown). In atelecyclids the abdominal segment 1 is always wider than the half of the posterior border of the carapace.

Abdominal locking system: In both trichopeltariids and atelecyclids the two complementary parts of the abdominal locking system are present (the thoracic sternal button and the abdominal socket), well developed, but not always functional. In trichopeltariids the two parts of the press-button system are present and

functional. Interestingly enough, in large individuals of *Trichopeltarion* there can be a gap between complementary parts of the press-button system on the major cheliped side as a result of strong heterochely (see also Guinot & Bouchard, 1998:646). In *Peltarion*, however, the abdominal holding system is present but not functional in large males (e.g., MNHN-B11476) as the sockets do not reach the thoracic sternal buttons. In small males (e.g., MNHN-B11473; B11481) and small females (e.g., MNHN-B11473) sockets and buttons match one another. In small females, however, the buttons are far too small in relation to the sockets, so that the locking system can hardly be functional. In *Atelecyclus*, *Peltarion*, and *Podocatactes hamifer* the sternal button is placed adjacent to the thoracic sternal suture 5/6, whereas in *Pteropeltarion* and *Trichopeltarion* the button is placed far from the sternal suture 5/6.

Comparative Material

Atelecyclidae

Atelecyclus rotundatus (Olivi, 1792): Atlantic Ocean: North Atlantic, *Pourquoi Pas* 1913, stn D7, S.W of Pointe des Baleines, 40 m, Bouvier det., J. Forest det 1990, 1 ♀ 31.6 x 34.3 mm (MNHN-B11465); North Atlantic, *Pourquoi Pas* 1913, stn 15, S.W.

Scilly Islands, Bouvier det. *A. septemdentatus* Montagu, 2 ♂♂ 27.5 x 28.5 mm, other ♂ with carapace damaged (MNHN-B5395); Northeast Atlantic, ISTPM, *Thalassa*, stn C 470, 59°42.6'N-05°56.6'W, 250 m, 1 ♂ 28.0 x 30.0 mm (MNHN-B30423); *Président Théodore Tissier*, stn 180, trawl, 400 m, W of South Ireland, 3 ♂♂ 25.7 x 26.8, 29.7 x 30.5, 31.9 x 32.6 mm, 4 ♀♀ 25.2 x 25.9, 26.0 x 27.8, 26.2 x 26.9, 26.5 x 28.1 mm (MNHN-B5424); France, Bay of Biscay?, 3 ♂♂ 33.5 x 35.3, 33.8 x 35.2, 35.5 x 36.8 mm (MNHN-B5400); France, Bay of Biscay, *Talisman*, 180 m, 1 ♂ 21.5 x 21.5 mm, 1 ♀ 17.0 x 17.4 mm (MNHN-B5431); France, Bay of Biscay, around Haut Fond de la Chapelle, Mission Charcot 1914, stn XCIII, 47°38'N-09°31'W, 05 Jun 1914, Bouvier det. *A. septemdentatus* Montagu, J. Forest det. 05-1990, 1 ♂ 23.2 x 23.5, 1 ♀ 21.4 x 22.6 mm (MNHN-B11462); same cruise, stn XCVIII, 47°10'N-06°32'W, 1 ♂ 22.2 x 23.0 mm, 1 ♀ 18.8 x 20.0 mm (MNHN-B11458); same cruise, stn CX, Bouvier det. *A. septemdentatus* Montagu, 1 ♂ 20.9 x 21.4 mm (MNHN-B30427); France, Mission Charcot 1914, Mission Charcot 1914 (or 1916), stn CXIII, 7 et 8, Bouvier det. *A. septemdentatus* Montagu, 1 ♂ 27.0 x 27.9 mm (MNHN-B5421); locality unknown, *Jean Charcot*, Museum 1968, stn 9, 130 m, 2 ♀♀ 8.5 x 8.5 & 10.5 x 10.7 mm (MNHN-B16351); *ibidem*, stn 28, 120 m, 1 ♂ 8.0 x 8.2 mm, 1 ♀ 9.8 x 10.0 mm (MNHN-B16352); France, Concarneau, A. Milne Edwards det. *Ateleyclus cruentatus* Dem., Bouvier det. *Ateleyclus septemdentatus* Mont., 1 ♀ 22.2 x 23.9 mm (MNHN-B5427); France, Les Glenans Islands, May 1982, R. Cleva det. Jun 2007, 1 ♀ 25.3 x 27.4 mm (MNHN-B30426); France, Camaret Bay, 35 m depth, 10 Mar 1993, P. Noël det., 1 ♂ 34.0 x 35.5 mm (MNHN-B30428); Porcupine Bank, *Thalassa*, PROCELT 2, stn L222, 52°35'N-13°46'W, 296-300 m, R. v. Cosel coll. 26 May 1985, R. Cleva det. Jun 2007, 1 ♂ 29.6 x 31.1 mm (MNHN-B30421); Porcupine Bank, *Thalassa*, PROCELT 2, stn L224, 52°03'N-14°39'W, 402-408 m, R. v. Cosel coll. 27 May 1985, R. Cleva det. Jun 2007, 1 ♂ front damaged (MNHN-B30420); Porcupine Bank, *Thalassa*, PROCELT 2, stn L244, 53°27'N-12°37'W, 310 m, R. v. Cosel coll. 31 May 1985, R. Cleva det. Jun 2007, 1 ♂ 26.0 x 27.0 mm (MNHN-B30422); Morocco, Atlantic coast, *Vanneau*, stn CXX, 1926, 1 ♂ 17.6 x 18.4 mm (MNHN-B5425); *Jean Charcot*, Museum 1968, stn 5, 150 m, 04 Dec 1968, 2 ♂♂ 13.8 x 14.5, 15.2 x 15.7 mm (MNHN-B30424). Mediterranean Sea: France, Banyuls, near cape Oullestreil, P. Noël coll. 09 Oct 1974 and det., sand, 1 ♂ 22.5 x 23.4 mm (MNHN-B30425);

Tunisia, 250 m, E. Postel coll. 30 Apr 1955, 1 ♂ 21.5 x 21.7 mm (MNHN-B5428).

Ateleyclus undecimdentatus (Herbst, 1783): Atlantic Ocean: France, Yeu island, Apr 1974, P. Noël coll., R. Cleva det Jun 2007, 2 ♂♂ 40.2 x 51.0 & 42.0 x 52.0 mm, 1 ovigerous ♀ 33.0 x 40.0 mm, 1 ♀ 45.2 x 56.0 mm (MNHN-B30429); France, Roscoff, Apr 1977, P. Noël coll, R. Cleva det. Jun 2007, 1 ovigerous ♀ 37.3 x 45.0 mm (MNHN-B30430); France, Houat Island, Er Yoc'h, 5 m deep, Franck Mazéas coll. 03 Sep 1994, R. Cleva det Jun 2007, 2 ♂♂ 51.0 x 67.0 & 57.5 x 75.3 mm (MNHN-B30431); France, Le Croisic, 2 ♂♂ 41.0 x 52.2 & 49.0 x 63.8 mm (MNHN-B10544); France, La Baule Bay, low tide, J. Forest coll. Feb 1958 and det., 2 ♂♂ 45.8 x 59.4 & 57.0 x 74.2 mm (thoracic sternum drawn and photographed), 4 ♀♀ 36.4 x 44.8, 43.8 x 55.3, 46.3 x 57.0, 50.9 x 61.8 mm (MNHN-B5403); France, La Baule beach, J. Forest coll. and det., 1 ♀ 40.0 x 48.2 mm (MNHN-B5432); France, La Rochelle, A. d'Orbigny coll., 3 ♂♂ 36.4 x 46.0, 39.0 x 50.0, 39.5 x 51.2 mm, 1 ♂ 39.8 x 51.3 mm dissected and drawn, 2 ♀♀ 22.3 x 26.4 & 26.5 x 31.6 mm, 1 carapace 34.5 x 43.4 mm, (MNHN-B5402); France, St. Martin de Ré (Charentes Maritimes), bank of *Chlamys varia* L., 5 m, R.P. Dolfuss coll., det. *Ateleyclus septemdentatus* Leach, and leg., 1 ♂ 43.3 x 56.0 mm (MNHN-B5398); France, Le Pouliguen, Le Neuthiecoll. 24 Feb 1957, J. Forest det., 1 ♂ 50.0 x 65.3 mm, 1 ♀ 31.9 x 39.5 mm (MNHN-B5433); Morocco, off Mogador, Institut Scientifique Chérifien, 32°08'N-09°02'W, Panouse det. 17 Apr 1957, J. Forest det. 1960, 1 ♂ 34.4 x 43.2 mm, 1 ♀ 31.0 x 37.3 mm (MNHN-B5396); Mauritania, bottom with shells, 20-30 m, Th. Monod coll. Aug 1923: 1 ♂ 11.0 x 12.0 mm (MNHN-B5439); Mauritania, Port Etienne, A. Gruvel coll., 1 ♀ 11.0 x 12.5 mm (MNHN-B5422); Senegal, Dakar (Haan), J. Cadenat coll. 30 Apr 1947, 1 ♂ 18.0 x 22.3 mm (MNHN-B5438); Dakar, 10 m, Postel coll. Dec 1931, 1 ♀ 18.5 x 21.9 mm (MNHN-B5436); Dakar, off Tiaroye, 10 m, 29 Apr 1953, 2 ♂♂ 10.5 x 11.7 & 13.0 x 15.5 mm (MNHN-B5435); IFAN, Senegal, between Tiaroye and Bel-Air, Marche-Marchad coll. 20 Apr 1954, Th. Monod det. 1954, 6 ♂♂ 16.7 x 20.0, 17.5 x 21.3, 18.5 x 22.4, 18.5 x 22.5, 19.0 x 23.6, 19.5 x 23.7 mm, 7 ♀♀ 13.0 x 14.7, 13.3 x 15.8, 13.7 x 15.9, 13.7 x 16.2, 14.0 x 16.4, 15.6 x 18.5, 21.3 x 24.8 mm (MNHN-B5434); IFAN, stn 10 and 11, dredge, I. Marche Marchad coll. 10 Apr 1967, J. Forest det. May 1990, 4 ♂♂ 18.9 x 23.6, 19.5 x 23.2, 20.0 x 24.5, 26.2 x 32.4 mm, 2 ♀♀ 24.4 x 29.0 &

24.5 x 29.8 mm (MNHN-B16349). Mediterranean Sea: Pointe du Lido, tramails, 17 Mar 1953, J. Forest det. 1990, 1 ♂ 33.0 x 42.0 mm (MNHN-B12324).

Cancridae

Anatolikos japonicus (Ortmann, 1893): East coast of Taiwan, TAIWAN 2000, stn CP 58, 24°35.1'N-122°05.89'E, 221 m, Bouchet *et al.* coll. 04 Aug 2000, T.-Y. Chan det., 1 male cl 52.5 mm, 1 female cl 42.8 mm (MNHN-B28895).

Cancer irroratus Say, 1817: off coast of Virginia, stn 901, 1880, 18 faths, 2 males cl 24.7 & 29.5 mm, 3 females (1 ovigerous) cl 29.0 to 33.6 mm (MNHN-B11410).

Glebocarcinus amphioetus (Rathbun, 1898): Mexico, *Cortes II*, Gulf of California, off Roca Consag, 16 Mar 1985, 3 males cl 16.3 to 17.3 mm (MNHN-B20849).

Metacarcinus novaezelandiae (Hombron & Jacquinot, 1846): New Zealand, Bellemare coll., 1 male dry, rehydrated, cl 35.8 mm (MNHN-B6354).

Platepistoma guezei (Crosnier, 1976): La Réunion, P. Guézé coll., 2 males cl 33.7, cl 39.0 mm, 1 female cl 42.5 mm (MNHN-B8800).

Romaleon nadaense (Sakai, 1969): Taiwan, Ilan County, May 1998, T.-Y. Chan leg. 1998, 1 male cl 53.0 mm, 1 female cl 39.3 mm (MNHN-B26323).

Cheiragonidae

Telmessus cheiragonus (Tilesius, 1812): Unalaska, U.S. Fish Commission, *Albatross*, 20 May 1892, 1 male

cl 46.8 mm (MNHN-B5410): Japan, Franck coll. 175-95 (= 1895?), 2 males cl 61.0 & 69.0 mm, 1 female cl 42.0 mm (MNHN-B5445).

Telmessus acutidens (Stimpson, 1848): Japan, 1897, 1 female cl 33.7 mm (MNHN-B5408). *Erimacrus isenbeckii* (Brandt, 1848): Bering Sea, U.S. Fish Commission, *Albatross*, stn 3275, 22 faths, 1 female cl 36.8 mm (MNHN-B5404).

Corystidae

Corystes cassivelanus (Pennant, 1777): East Channel, France, 2 males cl 24.6, cl 30.7 mm, 3 females cl 28.4 to 34.6 mm (MNHN-B5385): France, Brittany, Roscoff, Apr 1977, P. Noël coll. et det., 1 female cl 32.5 mm (MNHN-B31966).

Gomezia bicornis Gray, 1831: Indonesia, Moluccas, Mariel King Memorial Exp., w.s.w of Tg Lelar, Trangan, 21-22 faths, 21 Jun 1970, 1 male cl 25.6 mm (MNHN-B17168): New Caledonia, Réveillère coll. 1883-1900, Bouvier det. *Gomezia vigintispinosa* de Haan, 2 ovigerous females cl 11.3 & 15.3 mm (MNHN-B5390).

Jonas formosae (Balss, 1922): Indonesia, Moluccas, Mariel King Memorial Exp., 1970, AW 1/H 5, 1 male cl 17.5 mm, 1 female cl 20.5 mm (MNHN-B17172): Indonesia, Moluccas, Mariel King Memorial Exp., 1970, AT II/H 1, 1 male cl 11.5 mm, 1 female cl 29.0 mm (MNHN-B17171).

Pirimelidae

Pirimela denticulata (Montagu, 1808): Turquia, Izmir Korgesi, 05 Apr 1967, 2 males cl 9.5, cl 9.7 mm, 6 females cl 9.0 to 16.5 mm (MNHN-B28998).

Key to the Trichopeltariidae genera

1. Carapace pear-shaped. Orbital cavity remarkably shallow. Antennal flagellae either greatly elongated (about as long as half maximal length of carapace) or short. Dorsal and ventral faces of antennae (articles 2+3, 4-5, and flagellum) always fringed along entire length by row of long setae; setae of each row directed towards those of corresponding row on antenna of opposite side, forming median antennal conduit ...2
 - Carapace either subcircular or pentagonal, never pear-shaped. Orbital cavity deeply excavated. Antennal flagellum always short (much less half maximal length of carapace).....3
2. Carapace dorsal surface densely covered with either strong, acute or rounded tubercles; medial supraorbital tooth strong, triangular, acute; hepatic and epibranchial teeth well distinct; first epibranchial tooth either strong or reduced to a bump, second epibranchial tooth long. Antennal article 2+3 in close contact

- to but not fused with lateral rostral tooth. Antennal article 5 shorter than 2+3 and 4. Antennal flagellae greatly elongated. One well developed P12 pleurobranchia and one well developed mxp2 podobranchia *Podoctactes*
- Carapace dorsal surface finely granulated; second epibranchial tooth extremely long, strong; hepatic tooth reduced to a bump; first epibranchial tooth absent. Second supraorbital tooth reduced to a rounded bump. A narrow gap between antennal article 2+3 and lateral rostral tooth. Antennal article 5 distinctly longer than 4. Antennal flagellae short. Both P12 pleurobranchia and mxp2 podobranchia lacking..... *Pteropeltarion*
- 3. Infraorbital tooth separated from antennal article 2+3 by a deep, wide gap. Antennal setae dispersed all around antennal articles (articles 2+3, 4-5) and flagellae, setae of opposing sides of flagellum forming incipient antennal conduit at most. Male abdomen of six free segments and telson.....4
- Infraorbital tooth and antennal article 2+3 separated by a deep, narrow notch. Dorsal and ventral faces of antennae (articles 2+3, 4-5, and short flagellum) fringed along entire length by row of long setae. Male abdomen of four segments and telson (abdominal segments 3-5 fused together) *Peltarion*
- 4. Carapace either pentagonal or subcircular; hepatic, first and second epibranchial teeth well recognizable, usually armed with barbs (if second epibranchial teeth little distinct carapace heavily ornamented and central rostral tooth much longer than laterals). P2-5 distinctly long, meri and propodi much more than three times as long as wide *Trichopeltarion*
- Carapace subcircular, hepatic tooth showing as gently swollen tubercle; first and second epibranchial teeth indistinct, reduced to minute, rounded, smooth tubercles similar to each other and to others anterolateral tubercles. P2-5 noticeably short, meri and propodi much less than twice as wide as long..... *Sphaeropeltarion* gen. nov.

***Peltarion* Hombron & Jacquinot, 1846**

Peltarion Hombron & Jacquinot, 1846:80 [type species by monotypy *Peltarion magellanicus* Hombron & Jacquinot, 1846, junior synonym of *Atelecyclus spinulosus* White, 1843].

Hypopeltarium Miers, 1886:210 [type species: *Atelecyclus spinulosus* White, 1843. Unjustified replacement name for *Peltarion* Hombron & Jacquinot, 1846].

Hypopeltarion Ortmann, 1893b:421 [unjustified emendation of *Hypopeltarium* Miers, 1886].

Species included: *Peltarion spinulosum* (White, 1843). This species is known from Chile south to the Strait of Magellan, Argentina, and Uruguay (Rathbun, 1898b; Garth, 1957; Boschi, 2000; Boschi *et al.*, 1992).

Emended diagnosis: Carapace subcircular, moderately arched transversally, its dorsal surface covered with fine granules, more prominent posteriorly; branchio-cardiac groove well recognizable. Gastric pits small, close to each other. Hepatic, first and second epibranchial teeth of carapace lobe-like, little distinct, armed with barbs. Carapace posterolateral border irregularly spiny. Front cut into three teeth; central rostral tooth longest, sided by short lateral teeth. Orbit delimited superiorly by two supraorbital teeth (inner and medial orbital teeth); laterally by exorbital tooth, inferiorly

by both infraorbital tooth and antennal article 2+3. Exorbital and infraorbital teeth separated by deep, wide gap; infraorbital tooth and antennal article 2+3 separated by deep, narrow notch partially filled by intercalated piece. Orbital cavity deeply excavated. Ocular peduncle freely movable, thick, moderately calcified, fully retractable into orbital cavity. Cornea large, only little shorter than half length of peduncle, normally pigmented (dark brown), ommatidia well recognizable. Antennal article 1 slightly beaked laterally; articles 2-3 fused to one another with no trace of suture in between. Antennal article 2+3 hardly movable, fused basally to intercalated piece; a gap between antennal article 2+3 and lateral rostral tooth. Antennal article 2+3 distinctly shorter than article 4; article 4 longest. Antennal conduit present; antennal flagellum short, from 0.15 to 0.30 of maximal carapace length. Dorsal and ventral faces of antennae (articles 2+3, 4-5, and flagellum) fringed along entire length by row of long setae. Setae of each row directed towards corresponding row on antenna of opposite side. Opposing rows of setae juxtapose, forming median conduit. Mandibular palp 3-articulated, articles 1-2 fused together, immovable in relation to each other; suture between articles 1-2 still recognizable. Limit between endostome and epistome poorly recognizable. Endostomial ridges strong, straight, inward directed. Merus of mxp3 operculiform, much shorter than ischium, its distal end reaching to antennal article 1, helping to

close prostomial chamber. Sternal median line on sternites 7 and 8, weakly distinguishable on lower part of sternite 6. Edge of last thoracic pleurite lunate pleural gutter well developed. P12-3 with one, well developed pleurobranchiae each; mxp2 with one, well developed podobranchia. Heterochely distinct but not very pronounced. Male abdomen of four segments and telson (abdominal segments 3+4+5 fused together). Anterolateral angles of abdominal segment six strongly

produced forward, telson showing as narrow triangle intercalated in between. Female abdomen of six free segments and telson. Abdominal sockets and thoracic sternal buttons missing one another in large males, abdominal locking system not functional. In both young males and young females complementary parts of abdominal locking system matching one another; in young females buttons far too small in relation to sockets. Sternal button adjacent thoracic sternal suture 5/6.

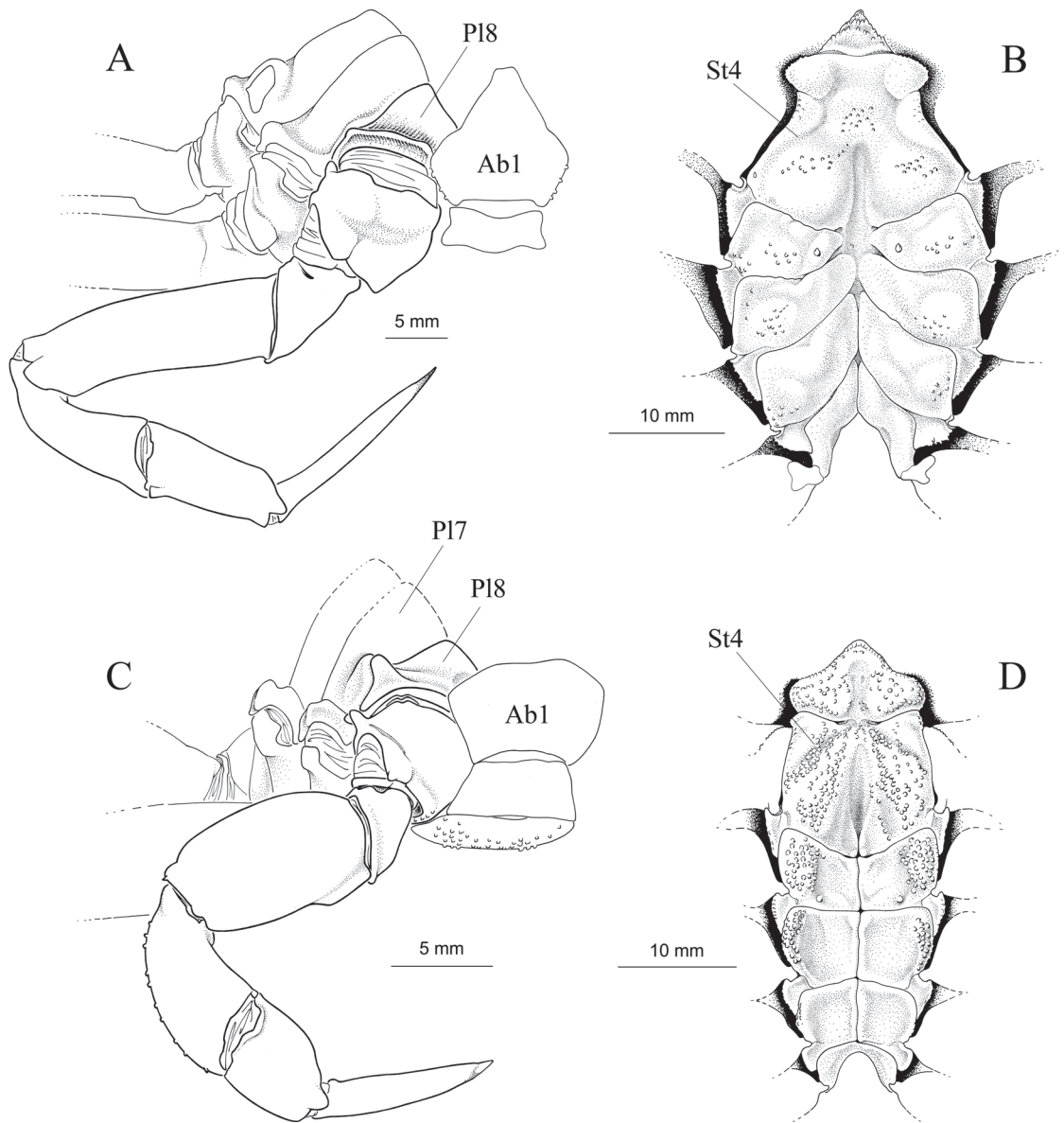


FIGURE 7: A-B, *Trichopeltarion nobile* A. Milne-Edwards, 1880, male 63.3 x 76.4 mm (MNHN-B29898). **A**, Thoracic pleural gutter. **B**, thoracic sternum. **C-D, *Atelecyclus undecimdentatus*** (Herbst, 1785). **C**, Thoracic pleural gutter, male 39.8 x 51.3 mm (MNHN-B5402). **D**, Thoracic sternum, male 57.0 x 74.2 mm (MNHN-B5403). Setae not represented. Ab1, Abdominal segment 1. P17-P18, Thoracic pleurites 7-8. St, Thoracic sternite 4.

TABLE 1: Comparison between Trichopeltariidae fam. nov. and allied families.

Character/Family	Orbit/antennae	Antennal article 2+3	Heterocheley	Thoracic pleural gutter (P1)	Thoracic pleurites P5-P17	Sterno-abdominal cavity	Thoracic sternite 4	Thoracic sternum	Thoracic sternal sutures
Trichopeltariidae	Infraorbital intercalated piece present, originating from bottom of orbit	Hardly movable, fused to basal part of infraorbital tooth; cylindrical, never longer than articles 4 and 5	Present, prevalent in males	Pleural gutter wide, lunate, formed by P18 alone	Undivided	Deeply excavated	Lateral borders strongly divergent	Elongate oval; wide portion of sternum visible at sides of abdomen	Sutures 4/5, 5/6 incomplete; 6/7, 7/8 complete
Arelecyclidae	Infraorbital intercalated piece absent	Immovable, fused to both lateral rostral tooth and infraorbital tooth; rather flattened, by far the largest antennal article.	Chelipeds equal	Pleural gutter narrow, triangular, formed by both P17-P18.	Divided transversally into two parts by conspicuous transversal suture	Moderately excavated	Lateral borders subparallel	Extremely narrow, with subparallel borders; only narrow stretch of sternum visible at sides of abdomen	Sutures 4/5, 5/6, 6/7, and 7/8 complete
Corystidae	Infraorbital intercalated piece absent	Hardly movable; in close contact to basal part of infraorbital tooth; cylindrical, about as long as articles 4-5	Chelipeds equal	Pleural gutter nearly triangular, formed mostly by P18	Undivided	Sternites 4-6 poorly excavated; sternites 7-8 deeply excavated	Lateral borders subparallel	Extremely narrow, with subparallel borders; only narrow stretch of sternum visible at sides of abdomen	Sutures 4/5, 5/6, 6/7, and 7/8 complete
Cancridae	Infraorbital intercalated piece absent	Immovable, fused to both lateral rostral tooth and infraorbital tooth; rather flattened, by far the largest antennal article	Chelipeds equal	Pleural gutter narrow, triangular, formed by both P17-P18.	Divided transversally into two parts by conspicuous transversal suture	Moderately excavated	Lateral borders moderately divergent	Elongate oval; wide portion of sternum visible at sides of abdomen	Sutures 4/5, 5/6, 6/7, and 7/8 complete
Cheiragonidae	Infraorbital intercalated piece present originating from infraorbital tooth	Immovable; in close contact to both lateral rostral tooth and infraorbital tooth; rather flattened, subequal in size with articles 4-5	Chelipeds subequal	Gutter somewhat narrow and triangular formed by both P17 and P18.	Divided transversally into two parts by conspicuous transversal suture	Deeply excavated	Lateral borders subparallel strongly divergent	Elongate oval; wide portion of sternum visible at sides of abdomen	Sutures 4/5, 5/6, 6/7, and 7/8 complete
Primelidae	Infraorbital intercalated piece present, originating from bottom of orbit	Immovable, fused to both lateral rostral tooth and infraorbital tooth; little longer than articles 4-5	Chelipeds equal	Pleural gutter wide, lunate, formed mostly by P18	Undivided	Deeply excavated	Lateral borders subparallel	Elongate oval; wide portion of sternum visible at sides of abdomen	Sutures 4/5, 5/6, 6/7, and 7/8 complete

TABLE 1 (CONTINUED): Comparison between Trichopeltariidae fam. nov. and allied families.

Character/Family	Thoracic sternal median line	Sterno-abdominal cavity	Female gonopore (vulva)	Telson	Mxp3 merus	Mandibular palp	P5 coxa	Endostome	Ratio abdominal segment 1/ Posterior border of carapace
Trichopeltariidae	Present on sternites 7-8 only	Wide (U-shaped), with distinct, flat, undivided bottom at intersection of sternites 4-6.	Near thoracic sternal median line, far from lateral border of thoracic sternite 6	Short, rounded tip	Subcircular, much shorter than ischium	3- or 2-articulated (articles 1-2 fused together, sutures recognizable)	As wide as first abdominal segment	Poorly delimited anteriorly	0.4-0.5
Atelecyclidae	Uninterrupted from sternites 4-8	Narrow, V-shaped along entire length from sternite 4-8	About mid-width of thoracic sternite 6	Long, acute tip	Elongated, much longer than wide; almost as long as ischium	3-articulated	2/3 of first abdominal segment width at most	Well delimited anteriorly	> 0.5
Corystidae	Uninterrupted from sternites 4-8	Narrow, V-shaped along entire length from sternite 4-6; sternites 7-8 U-shaped	Near thoracic sternal median line in <i>Corystes</i> and <i>Jonas</i> ; about mid-length of thoracic sternite 6 in <i>Gomezza</i>	Short, rounded tip in <i>Corystes</i> and <i>Gomezza</i> ; short, triangular in <i>Jonas</i>	Elongated, much longer than wide; longer than ischium in <i>Corystes</i> ; subtriangular, almost as long as ischium in <i>Gomezza</i> and <i>Jonas</i>	2-articulated (suture recognizable)	2/3 of first abdominal segment width at most in <i>Corystes</i> ; subequal in width in <i>Jonas</i> and <i>Gomezza</i>	Well delimited anteriorly	<i>Gomezza</i> (< 0.5); <i>Corystes</i> (> 0.5); <i>Jonas</i> (< 0.5).
Caneridae	Uninterrupted from sternites 4-8, faint on St4	Narrow, V-shaped along entire length from sternite 4-8	About mid-width of thoracic sternite 6	Long, acute tip	Subquadrate, shorter than ischium	3-articulated	2/3 of first abdominal segment width at most	Well delimited anteriorly	< 0.5
Cheiragonidae	Uninterrupted from sternites 4-8	Wide, V-shaped. No distinct flat, undivided bottom at intersection of sternites 4-6.	Near lateral border of abdomen (not covered by abdomen in both <i>Erimacrus</i> and <i>Telmessus</i>)	Short and acute	Subcircular, much shorter than ischium	3-articulated in <i>Erimacrus</i> ; 2-articulated in <i>Telmessus</i> (no suture between articles 1-2)	Little wider than half width of abdominal segment 1	Well delimited anteriorly	0.5
Primelidae	Uninterrupted from sternites 4-8	Moderately wide, V-shaped along entire length from sternite 4-8	About mid-width of thoracic sternite 6	Long, acute tip	Elongated, shorter than ischium	2-articulated (no suture between articles 1-2)	Little wider than half width of abdominal segment 1	Well delimited anteriorly	0.5

Material examined: Mission du Cap Horn, 1882-1883, 3 ♂♂ 51.5 x 53.5 mm, 52.3 x 51.3 and 53.6 x 54.3 mm (MNHN-B11476); 1 ♂ 56.5 x 58.5 mm (MNHN-B5443); 10 ♀♀ 36.2 x 37.5 to 45.4 x 48.2 mm (MNHN-B11477); 2 ♂♂ 51.5 x 53.0 and 41.5 x 41.0 mm (MNHN-B11451); 1 ♂ 51.5 x 55.0 mm (MNHN-B5442); 1 ♂ 43.0 x 44.5 mm, 3 ♀♀ 40.7 x 42.5 to 43.0 x 46.7 mm (MNHN-B11466). Mission du Cap Horn, 1882-1883, Mission à Terre, 1 ♂ 54.0 x 57.0 mm (MNHN-B5405); 4 ♂♂ 42.0 x 43.2 to 51.5 x 53.0 mm, 1 ♀ carapace damaged (MNHN-B11440). Mission du Cap Horn, 1882-1883, "Romanche", 5 ♀♀ 38.2 x 39.6 to 43.2 x 46.2 mm (MNHN-B11474); 2 ♂♂ 31.0 x 32.0 and 42.6 x 42.4 mm (MNHN-B11479). Mission du Cap Horn, 1882-1883, "Romanche", Orange Bay, N°34, 1 ♂ 21.4 x 20.7 mm, 15 ♀♀ 35.7 x 36.5 to 42.8 x 44.8 mm (MNHN-B11472). Mission du Cap Horn, 1882-1883, Orange Bay, N°36, Mission à Terre 2 ♂♂ (rostrum broken), cw 51.8 mm and 48.0 x 48.4 mm (MNHN-B11469). Mission du Cap Horn, Fleuriais Bay, N°142, 33 m, 29 Apr 1883, 1 ♂ 32.6 x 31.2 mm, 3 ♀♀ 32.9 x 33.5 to 34.7 x 35.0 mm (MNHN-B11468). Mission du Cap Horn, Terre de Feu, N°39, 20 m, 21 Nov 1882, 2 ♂♂ 26.3 x 26.4 & 41.7 x 43.8 mm, 3 ♀♀ 22.0 x 21.6 mm to 24.6 x 25.0 mm (MNHN-B11473). Mission du Cap Horn, Punta Arenas, dredge, 21 Feb 1883, 2 ♂♂ 34.3 x 35.2 mm and 41.0 x 41.7 mm (MNHN-B11456). Mission du Cap Horn 1882-1883, N°34, Yeudegaia, "Romanche", dredge, 2 ♂♂ 31.6 x 32.0 mm and 30.5 x 29.6 mm, 4 ♀♀ 32.3 x 32.8 to 41.2 x 43.3 mm (MNHN-B5406). Locality unknown, M. Serres coll. 1877, 3 ♂♂ 40.0 x 40.8 to 46.0 x 47.7 mm, 2 ♀♀ 38.3 x 40.0 and 43.3 x 44.8 mm (MNHN-B11452). Chile, Corral, 1903, Porter coll., 1 ♂ 29.3 x 30.0 mm (MNHN-B11481).

Remarks: The French ships "Astrolabe" and "Zélée" made a famous expedition to Antarctica and Oceania, under the command of Dumont-d'Urville, between 1837 and 1840. The dates of publication of the zoological results of that expedition (atlas by Hombron & Jacquinot published between 1842-1854; text by Jacquinot & Lucas published in 1853) have always been uncertain until Clark & Crosnier (2000) clarified the dates of publication of all the Crustacea plates (1842-1854) and text (1854). While agreeing with the proposed dates of publication for the plates, in Holthuis' (2002) view the year of publication of the Crustacea text should be 1853, instead of 1854 as advocated by Clark & Crosnier (2000). Because the

names in the plates satisfy the International Code of Zoological Nomenclature (ICZN, 1999: Art. 12) for names published before 1931, the names on the plates with their authorships and dates have priority over the text.

Podocatactes Ortmann, 1893

Podocatactes Ortmann, 1893a:29, pl. 3, fig. 1 [type species *Podocatactes hamifer* Ortmann, 1893, by monotypy].

Species included: *Podocatactes hamifer* Ortmann, 1893; *Podocatactes delli* (Guinot, 1989) comb. nov.; and *Podocatactes foresti* (Guinot, 1989) comb. nov.

Emended diagnosis: Carapace pear-shaped, its dorsal surface densely covered with rounded or acute tubercles; cervical and branchio-cardiac groove well formed, smooth. Gastric pits small, close to each other. Hepatic, first and second epibranchial teeth of carapace well distinct; first epibranchial tooth either strong or reduced to a bump; second epibranchial tooth long, either directed outward or curved forward. Posterolateral margin of carapace well delimited. Front cut into three teeth; central rostral tooth much shorter than laterals, either acute or rounded. Orbit delimited superiorly by two supraorbital teeth (inner and medial orbital teeth); laterally by exorbital tooth, inferiorly by infraorbital tooth and antennal article 2+3. Exorbital and infraorbital teeth separated by deep, wide gap; infraorbital tooth and antennal article 2+3 separated by deep notch partially filled by intercalated piece. Orbital cavity very shallow. Ocular peduncle noticeably slender and long (globulous proximally), strongly calcified, little movable, not fully retractable into orbital cavity. Cornea small, either slightly pigmented or unpigmented; ommatidia hardly recognizable. Antennal article 1 slightly beaked laterally; articles 2-3 fused to one another with no trace of suture in between. Antennal article 2+3 hardly movable, fused basally to intercalated piece; antennal article 2+3 and lateral rostral tooth in close contact to but not fused to each other. Antennal article 2+3-5 cylindrical; antennal article 5 shorter than articles 2+3 and 4. Antennal conduit present; antennal flagellum remarkably long, about as long as half of maximum carapace length; articles noticeably large and well calcified. Dorsal and ventral faces of antennae (articles 2+3, 4-5, and flagellum) fringed along entire length by row of long setae. Setae of each row directed towards corresponding row on antenna of opposite side. Opposing rows of setae

juxtapose, forming median conduit. Mandibular palp 3-articulated, articles 1-2 fused together, immovable in relation to each other; suture between articles 1-2 still recognizable. Limit between endostome and epistome poorly recognizable, represented by curved row of short setae. Endostomial ridges strong, straight, inward directed. Merus of mxp3 operculiform, much shorter than ischium, its distal end not reaching to antennal article 1. Sternal median line only on sternites 7 and 8. Pl8 gutter edge lunate, well developed. Pl4-3 with two, well developed pleurobranchiae each; Pl2 with one, well developed pleurobranchia; mxp2 with one, well developed podobranchia. Heterochely distinct but not very pronounced. Male and female abdomen of six segments and telson; postero-lateral angles of segment 6 only weakly produced forward; telson not intercalated within abdominal segment 6. Abdominal locking system functional only in males, thoracic sternal button either adjacent to or far from sternal suture 5/6; young females with tiny sternal buttons.

Remarks: The genus *Podocatactes* is no longer monotypic as it now comprises, in addition to its type species *Podocatactes hamifer*, *Podocatactes delli* (Guinot, 1989) comb. nov. and *Podocatactes foresti* (Guinot, 1989) comb. nov., both originally described in the genus *Trachycarcinus* Faxon, 1893 (junior synonym of *Trichopeltarion* A. Milne-Edwards, 1880) and herein included in *Podocatactes*. Actually, both *Podocatactes delli* and *P. foresti* share with *P. hamifer* a unique set of

characters of the genus *Podocatactes*, such as the antennal article 2+3 and the lateral rostral tooth in close contact to but not fused with each other (versus a noticeable gap between the antennal article 2+3 and the lateral rostral tooth in *Trichopeltarion*) and the possession of an antennal conduit with a remarkably long antennal flagellum, about as long as half of maximum carapace length; articles of flagellum noticeably large and well calcified, so that the long antenna can be easily held straight; dorsal and ventral faces of antenna (articles 2+3, 4-5, and flagellum) fringed along entire length by row of long setae; setae of each row directed towards corresponding row on antenna of opposite side; opposing rows of setae juxtapose, forming median conduit (such an antennal conduit is lacking in *Trichopeltarion*). Additionally, in the three species of *Podocatactes* the orbital cavity is very shallow (versus orbital cavity deeply excavated in *Trichopeltarion*); and the mandibular palp is 3-articulated, with articles 1-2 fused together and immovable in relation to each other, with line of suture between articles 1-2 still recognizable (in *Trichopeltarion* the mandibular palp is 2-articulated as articles 1-2 are completely fused to each other, with no line of suture in between). Salva & Feldmann (2001:29) mentioned that *Trachycarcinus hystriocosus* Garth in Garth & Haig, 1971; *Trachycarcinus delli* and *Trachycarcinus foresti* do not fit in their definition of *Trichopeltarion*, so "They should be reclassified into another already existing, or a new genus". Salva & Feldmann (2001) did not elaborate on this any further.

Key to the *Podocatactes* species

1. P2-5 meri remarkably long, distal end of merus of P5 reaching to about the half length of second epibranchial tooth..... *Podocatactes delli*
- P2-5 meri short, distal end of merus of P5 far from reaching to the proximal end of second epibranchial tooth.....2
2. Dorsal surface of carapace coarsely ornamented with strong, acute tubercles; central rostral tooth acute. First epibranchial tooth strong, ornamented with barbs. Dorsal face of P2-P5 meri with longitudinal row of curved forward, acute spines. Male thoracic sternal button far from thoracic sternal suture 5/6 *Podocatactes foresti*
- Dorsal surface of carapace finely ornamented with small, rounded tubercles; central rostral tooth rounded. First epibranchial tooth reduced to a bump. Dorsal face of P2-P5 meri with no row of spines. Male thoracic sternal button adjacent thoracic sternal suture 5/6 *Podocatactes hamifer*

***Podocatactes delli* (Guinot, 1989) comb. nov.
(Figure 8D)**

Trachycarcinus delli Guinot, 1989:365, figs. 7A-B, 12A-C, pl. IV, A-F.

Material examined: Philippines, MUSORSTOM II: stn CP 49, 13°38.4'N-121°44.1'E, 416-425 m, 26 Nov 1980: holotype, ♂ 23.0 x 28.0 mm (MNHN-B11574), 2 ♀♀ paratypes 15.5 x 20.0 & 17.5 x 21.0 mm (MNHN-B12792); stn CP 36,

13°31.4'N-121°23.9'E, 569-595 m, 24 Nov 1980, 1 ♂ 14.5 x 17.5 mm (MNHN-B16942); stn CP 44, 13°23.2'N-122°20.7'E, 760-820 m, 26 Nov 1980, 2 juveniles 10.5 x 11.5 & 10.8 x 11.2 mm (MNHN-B11575) (Guinot det. *Trachycarcinus* aff. *delli*); stn CP 46, 13°25.7'N-122°17.0'E, 445-520 m, 26 Nov 1980, 1 ♀ 24.5 x 28.0 mm (MNHN-B11577); Philippines, MUSORSTOM 3, stn CP 122, 12°20'N-121°42'E, 673-675 m, 04 Jun 1985, 1 ♀ 26.6 x 32.0 mm (MNHN-B16651).

Type locality: Philippines, 13°38.4'N-121°44.1'E, 416-425 m.

Remarks: *Podocatactes delli* can be easily distinguished from both *P. foresti* and *P. hamifer* by its remarkably longer P5 meri, whose distal end reach to about the half length of second epibranchial tooth. Although young, the two males MNHN-B11575 referred by Guinot (1989:368) as to "*Trachycarcinus* aff. *delli* sp. nov." show the same characteristic P5 merus. Young individuals of *Podocatactes delli* have much less ornamented carapace (versus heavily ornamented carapace in adults), longer and acuter central rostral tooth (versus comparatively shorter and less acute central rostral tooth in adults); and P2-P5 meri with tiny spinules (versus strong and acute spines in adults).

Distribution: This species is hitherto known only from the Philippines, between 416 and 820 meters depth.

***Podocatactes foresti* (Guinot, 1989) comb. nov.**
(Figures 8A-C)

Trachycarcinus foresti Guinot, 1989:369, figs. 10A-C, 11A-C, pl. V, A-C.

Material examined: Indonesia: CORINDON 2, Makassar Strait, stn 276, 01°54.6'S-119°13.8'E, 450-395 m, 08 Nov 1980, holotype, ♂ 25.4 x 25.8 mm (MNHN-B11576); KARUBAR, Tanimbar Island, *Baruna Jaya 1*, stn CP 59, 08°20'S-132°11'E, 405-399 m, 31 Oct 1991, 1 ♀ 19.5 x 20.5 mm (MNHN-B28767); *ibidem*, stn CP 69, 08°42'S-131°53'E, 356-368 m, 02 Nov 1991, 3 ♀♀ 23.5 x 23.7 mm (ovigerous), 25.0 x 25.0 mm, 29.5 x 28.2 mm (right epibranchial tooth blunted), 2 ♂♂ 15.5 x 16.5 and 26.0 x 26.0 mm (MNHN-B28768); *ibidem*, stn CP 70, 08°41'S-131°47'E, 413-410 m, 02 Nov 1991, 1 ♀ 17.5 x 19.0 mm (MNHN-B28769).

Description of the female: Females and males resemble each other in the ornamentation and proportions of the carapace and pereopods. Otherwise, female chelipeds equal, closely resembling the small male cheliped. Abdomen of six free segments and telson. Abdomen sparsely covered with fine, short, setae; segments 1-2 with few, sparse, rounded tubercles, remaining segments smooth. Abdominal segment 6 longest, about twice as long as segment 5, its anterolateral angles only slightly protruded, not swollen dorsally. Abdominal locking system not functional, thoracic sternal tubercle distinct in young females (19.5 x 20.5 mm), vestigial or absent in larger females. Vulvae large, sub-circular, operculate in young females, placed near sternal median line, far from lateral border of sternite 6, close to sternal suture 5/6.

Type locality: Indonesia, Makassar Strait, 01°54.6'S-119°13.8'E, between 395 and 450 meters depth.

Remarks: This species was hitherto known only from the male holotype. The discovery of seven additional specimens, including five females, has permitted additional taxonomic details to be added herein to the original description. Small specimens (such as the male 15.5 x 16.5 mm and the females 17.5 x 19.0 mm and 19.5 x 20.5 mm) have longer and more slender and acute supraorbital spines as well as more acute tubercles on the dorsal surface of the carapace (figure 8C). All *Podocatactes* species share the presence of a boss right behind the inner supraorbital tooth (absent in both *Peltarion* and *Sphaeropeltarion*; vestigial in *Pteropeltarion*; well distinct in *Trichopeltarion* as well). That boss is already well recognizable in youths of *Podocatactes foresti*. Some males of *Podocatactes foresti* can be much more heterochelous than other males of about the same size (figure 8A-B), as illustrated by the male MNHN-B 28768 (26.0 x 26.0) and the male holotype (25.4 x 25.8). The females carry few and large eggs of about 1.2 mm.

Distribution: Indonesia, Makassar Strait and Tanimbar Island, between 356 and 450 meters depth.

***Podocatactes hamifer* Ortmann, 1893**
(Figures 9A-C; 10A-C)

Podocatactes hamifer Ortmann, 1893a:29, pl. 3, fig. 1. *Podocatactes hamifer* — Balss, 1922:115; Yokoya, 1933:179; Sakai, 1936:117; 1939:370; 1965:109; 1976:306; Takeda & Miyake, 1968:545; Miyake, 1983:74; Dai & Yang, 1991:188; Ikeda, 1998:37, pl. 44; Komatsu & Komai, 2009:598.

Material examined: Taiwan: TAIWAN 2001, N.E. coast of Taiwan, Commercial trawler, Bouchet, Richer/IRD & Chan coll.: stn CP 74, 24°50.8'N-121°59.8'E, 220 m, 07 May 2001, 1 ♂ 16.5 x 15.2 mm (MNHN-B28796); stn CP 75, 24°56.7'N-122°01.8'E, 139 m, 07 May 2001, 1 ♀ 15.5 x 15.0 mm (MNHN-B28797); stn CP 77, 24°54.2'N-122°02.5'E, 360 m, 07 May 2001: 3 ♀♀ 10.8 x 11.5 to 17.2 x 18.0 mm (MNHN-B28798); stn CP 79, 24°50.4'N-121°59.9'E, 145-200 m, 08 May 2001, 1 ovigerous ♀ 19.2 x 18.4 mm (MNHN-B28799); stn CP 80, 24°50.9'N-121°59.4'E, 194-214 m, 08 May 2001, 1 ♀ 13.7 x 14.1 mm (MNHN-B28800); stn CP 90, 24°53.6'N-122°01.4'E, 300-330 m, 10 May 2001, 2 ♀♀ 11.0 x 11.7 & 16.0 x 17.0 mm (MNHN-B28801); stn CP 91, 24°50.6'N-122°01.4'E, 400 m, 10 May 2001, 1 ♂ 9.2 x 9.7 mm, 1 ♀ 20.0 x 21.0 mm (MNHN-B28802); stn CP 102, 24°48.4'N-122°08.0'E, 326-331 m, 19 May 2001, 1 ♂ 15.3 x 17.3 mm (MNHN-B28803); stn CP 103, 24°48.8'N-122°06.0'E, 367-424 m, 19 May 2001, 1 ♀ 21.5 x 23.2 mm (MNHN-B28804); stn CP 104, 24°48.9'N-122°05.3'E, 365-447 m, 19 May 2001, 1 ♀ 12.5 x 13.0 mm (MNHN-B28805); stn CP 109,

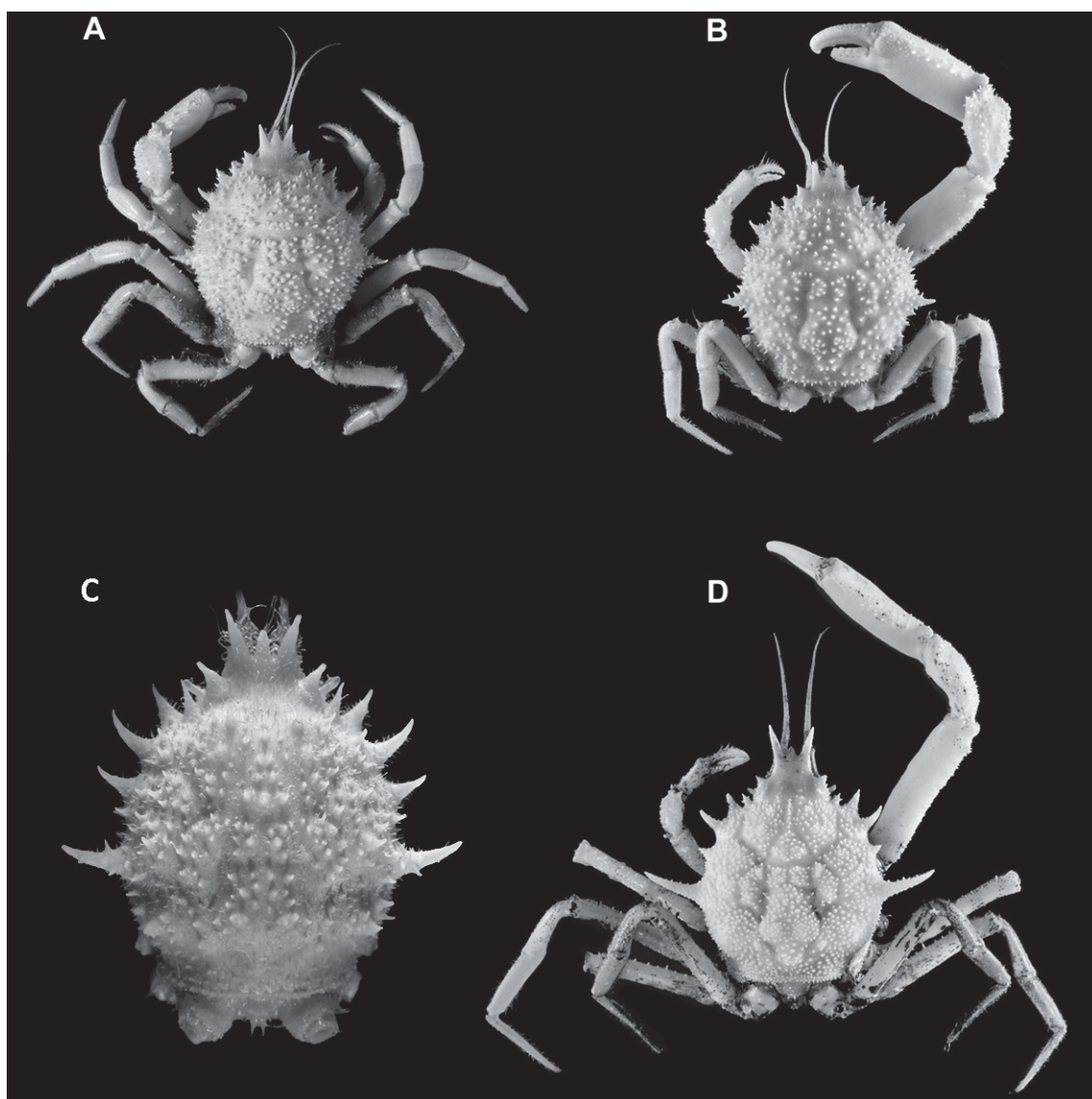


FIGURE 8: A-C, *Podocatactes foresti* (Guinot, 1989) comb. nov. **A**, Holotype male 25.4 x 25.8 mm (MNHN-B11576). **B**, male 26.0 x 26.0 mm (MNHN-B28768). **C**, Male 15.5 x 16.5 mm (MNHN-B 28768). **D**, *Podocatactes delli* (Guinot, 1989) comb. nov., holotype male 23.0 x 28.0 mm (MNHN-B11574).

24°48.3'N-122°84.0'E, 246-256 m, 20 May 2001, 1 ♂ 23.2 x 23.8 mm (MNHN-B28806); stn CP 114, 24°51.0'N-121°58.3'E, 128-250 m, 21 May 2001, 1 ♀ 7.4 x 7.5 mm (MNHN-B28807); stn CP 115, 24°53.9'N-122°02.0'E, 381-440 m, 21 May 2001, 1 ♀ 23.2 x 23.6 mm (MNHN-B28808).

Remarks: Although Ortmann (1893a:29) described the male abdomen in *Podocatactes hamifer* as being 5-segmented and with segments 3, 4, and 5 fused to each other, the male and female abdomen is actually of six segments and telson in all species of the genus.

Type locality: Sagami Bay, Japan, between 91.4 and 182.8 meters depth.

Distribution: Japan, East China Sea, and Taiwan, between 50 and 550 meters in depth.

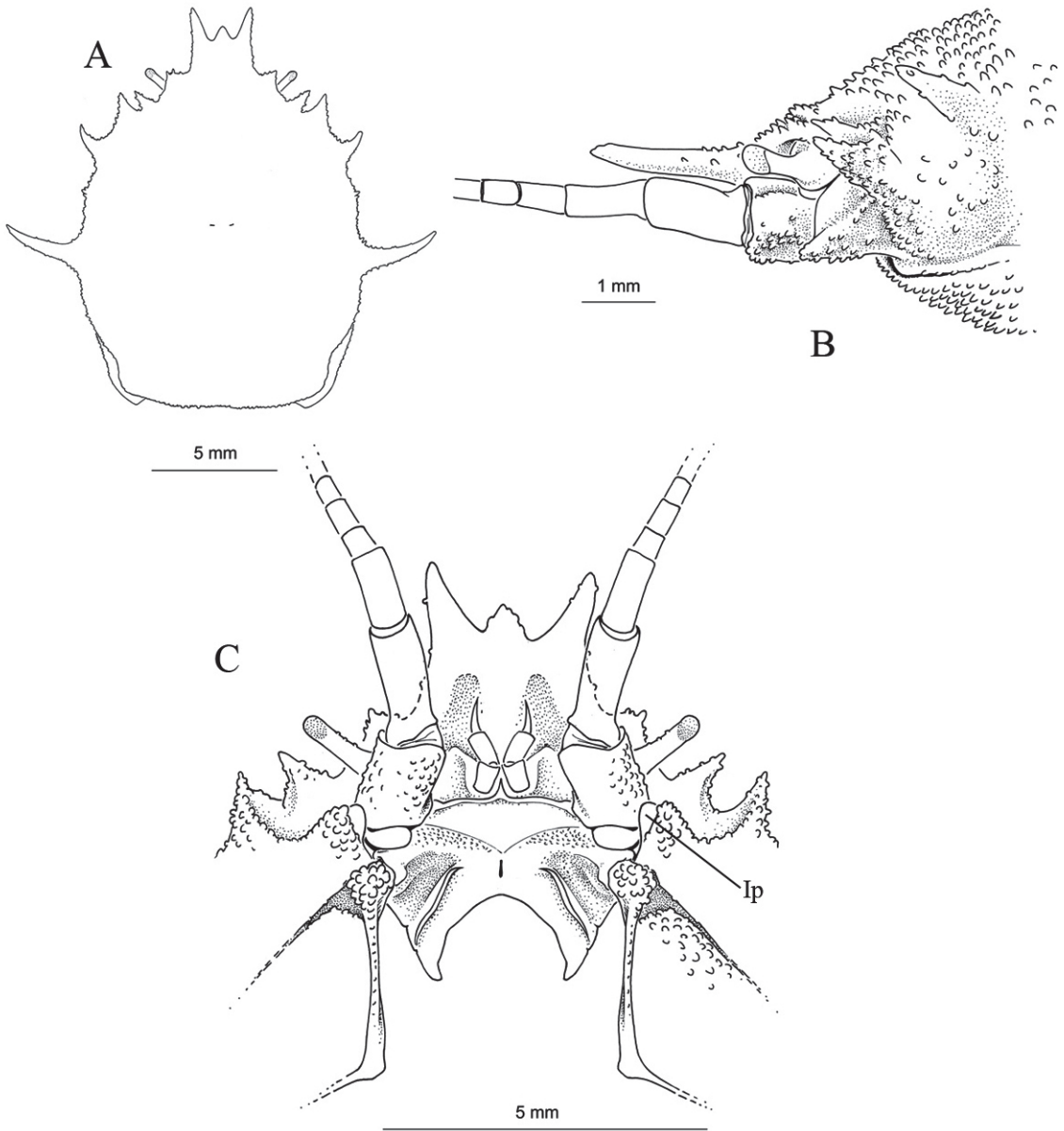


FIGURE 9: *Podocatactes hamifer* Ortmann, 1893, male 15.3 x 17.3 mm (MNHN-B28803). **A,** Outline of carapace in dorsal view. **B,** Anterior region of body in lateral view. **C,** Anterior region of body, in ventral view. Setae not represented. Ip, Infraorbital intercalated piece.

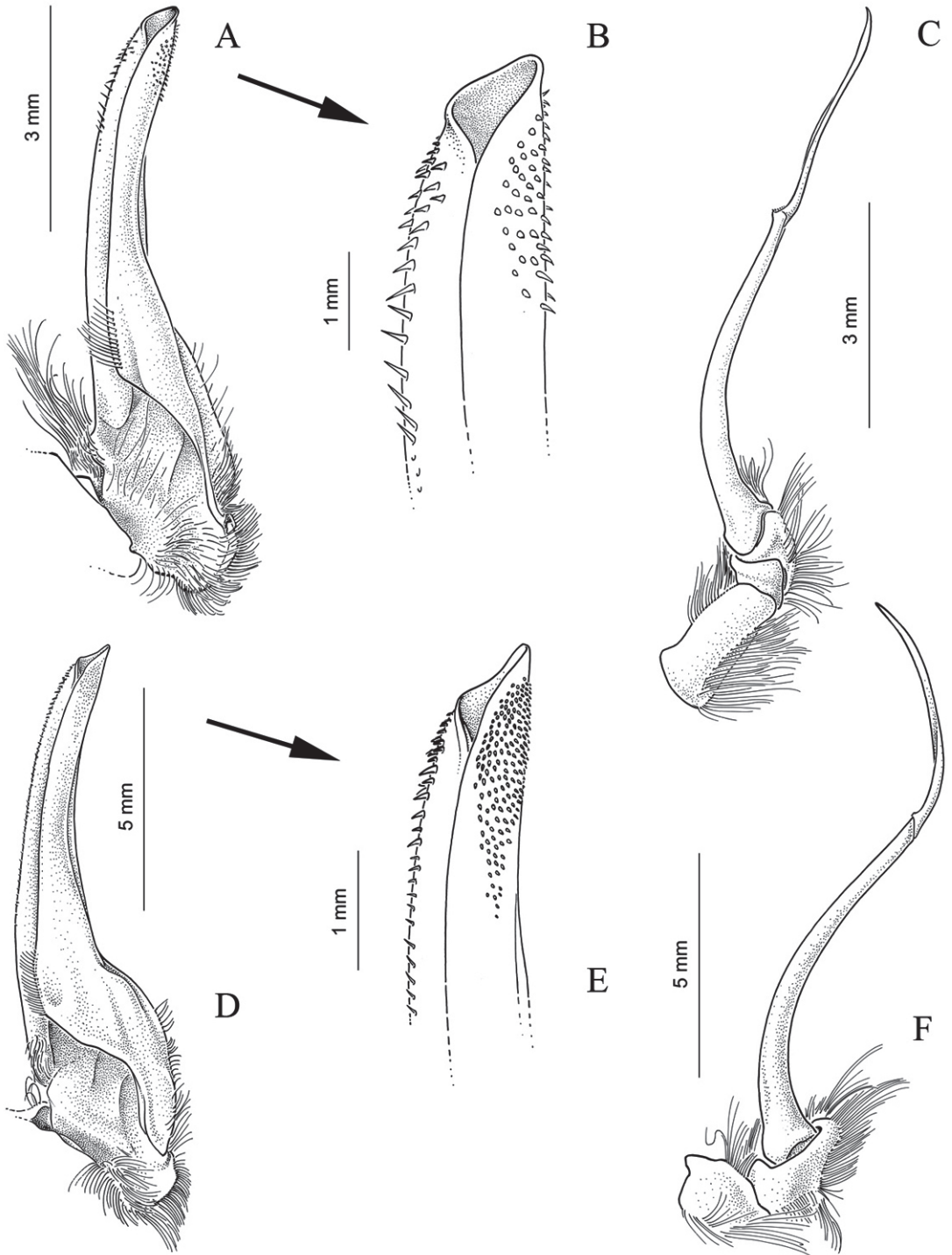


FIGURE 10: *Podocatactes hamifer* Ortmann, 1893, male 23.2 x 23.8 mm (MNHN-B 28806). **A-B**, first gonopod. **C**, second gonopod. **D-E**, *Trichopeltarion timorensis* (Števc̆ić, 1993) comb. nov., male 49.0 x 54.5 mm (MNHN-B 28795). **D-E**, first gonopod. **F**, second gonopod.

Pteropeltarion Dell, 1972

Pteropeltarion Dell, 1972:55 [type species: *Pteropeltarion novaezelandiae* Dell, 1972, by original designation. Gender neuter].

Species included: *Pteropeltarion novaezelandiae* Dell, 1972.

Emended diagnosis: Carapace pear-shaped, its dorsal surface finely granulated; branchio-cardiac groove well formed. Gastric pits poorly excavated, close to each other. Hepatic tooth reduced to a bump; first epibranchial tooth absent; second epibranchial tooth extremely long, strong, forward directed. Posterolateral margin of carapace well delimited. Front cut into three teeth; central rostral tooth much shorter than laterals. Orbit delimited superiorly by two supraorbital teeth; laterally by exorbital tooth, inferiorly by infraorbital tooth and antennal article 2+3. Exorbital and infraorbital teeth separated by deep, wide gap; infraorbital tooth and antennal article 2+3 separated by deep, narrow notch. Orbital cavity very shallow. Ocular peduncle noticeably long and slender (globulous proximally), strongly calcified, little movable, not fully retractable into orbital cavity. Cornea small, unpigmented; ommatidia hardly recognizable. Antennal article 1 slightly transversally oblong; articles 2-3 fused to one another with no trace of suture in between. Antennal article 2+3 hardly movable, fused to the intercalated piece basally; wide gap between antennal article 2+3 and lateral rostral tooth. Antennal article 2+3-4 cylindrical of about same length; fifth longest. Antennal flagellum moderately long, less than half of maximum carapace length; articles moderately large. Dorsal and ventral faces of the antennae (articles 2+3, 4-5, and flagellum) fringed along entire length by two rows of noticeably long setae; setae of opposing rows juxtapose, forming antennal conduit. Mandibular palp 2-articulated, articles 1-2 completely fused together, immovable in relation to each other; no line of suture between articles 1-2. Limit between endostome and epistome poorly recognizable. Endostomial ridges strong, straight, inward directed. Merus of mxp3 operculiform, slightly shorter than ischium, its distal end reaching to antennal article 1. Sternal median line only on sternites 7 and 8. Edge of last thoracic pleurite lunate pleural gutter noticeably low. Two well developed Pl3 pleurobranchiae; Pl2 pleurobranchia and mxp2 podobranchia lacking. Heterochely very pronounced in males. Male and female abdomen of six segments and telson; postero-lateral angles of segment 6 only weakly produced forward;

telson not intercalated within abdominal segment 6. Abdominal locking system functional only in males, thoracic sternal button placed far from thoracic sternal suture 5/6, absent in young females.

Material examined: South of New Zealand, New Zealand Plateau, "D. Mendeleev", stn 1277, 51°00.8'S-169°59.5'E, 570 m, Zarenkov leg., 4 ♂♂ 7.8 x 10.5 (estimated, right epibranchial tooth blunt) mm to 14.6 x 20.8 mm, 7 ♀♀ 7.2 x 9.0 to 16.5 x 21.5 mm, 1 juvenile (MNHN-B27885).

Remarks: Although not mentioned nor illustrated by Dell (1972: fig. 9), the infraorbital intercalated piece is well distinct in *Pteropeltarion novaezelandiae* (figure 11A-C).

Trichopeltarion A. Milne-Edwards, 1880

Trichopeltarion A. Milne-Edwards, 1880:19, pl. 2, fig. 1-5 [type species: *Trichopeltarion nobile* A. Milne-Edwards, 1880, by monotypy. Gender neuter].

Trachycarcinus Faxon, 1893:156 [type species: *Trachycarcinus corallinus* Faxon, 1893, by monotypy. Gender masculine].

Trichopeltarium Alcock, 1899a:57 [unjustified emendation of *Trichopeltarion* A. Milne-Edwards, 1880.

Trichopeltarium – Alcock, 1899b:99; Alcock & Anderson, 1899a:10.

Krunopeltarion Števc̃ić, 1993:1097 [type species: *Krunopeltarion timorensis* Števc̃ić, 1993, by original designation].

Included species: Twenty-three recent species are known so far in the genus *Trichopeltarion*. They are as follows: *Trichopeltarion alcocki* Doflein, in Chun, 1903; *Trichopeltarion balsi* (Rathbun, 1932); *Trichopeltarion corallinum* (Faxon, 1893); *Trichopeltarion crosnieri* (Guinot, 1986); *Trichopeltarion dejouanneti* sp. nov.; *Trichopeltarion dextrum* (Rathbun, 1898) comb. nov.; *Trichopeltarion elegans* (Guinot & Sakai, 1970) comb. nov.; *Trichopeltarion fantasticum* Richardson & Dell, 1964; *Trichopeltarion glaucus* (Alcock & Anderson, 1899); *Trichopeltarion hystricosum* (Garth, in Garth & Haig, 1971); *Trichopeltarion intesi* (Crosnier, 1981); *Trichopeltarion janetae* Ahyong, 2008; *Trichopeltarion moosai* (Guinot, 1989) comb. nov.; *Trichopeltarion nobile* A. Milne-Edwards, 1880; *Trichopeltarion ovale* Anderson, 1896; *Trichopeltarion parvum* sp. nov.; *Trichopeltarion paradextrum*

sp. nov.; *Trichopeltarion pezzutoi* Tavares & Melo, 2005; *Trichopeltarion sagamiensis* (Rathbun, 1932); *Trichopeltarion spinulifer* (Rathbun, 1898); *Trichopeltarion timorensis* (Števcic, 1993) comb. nov.; *Trichopeltarion wardi* Dell, 1968; *Trichopeltarion vanuatuensis* sp. nov.

Emended diagnosis: Carapace either pentagonal or sub-circular, distinctly arched transversally; its dorsal surface ornamented with granules, coalescent tubercles

or a combination of the two; branchio-cardiac groove deeply excavated. Gastric pits deep, close to each other. Hepatic, first and second epibranchial teeth usually well distinct and armed with barbs. Postero-lateral margin of carapace either well or poorly delimited. Front cut into three teeth; central rostral tooth either shorter, longer or as long as lateral teeth. Orbit delimited superiorly by two supraorbital teeth; laterally by exorbital tooth, inferiorly by infraorbital tooth and antennal article 2+3. Exorbital and infraorbital

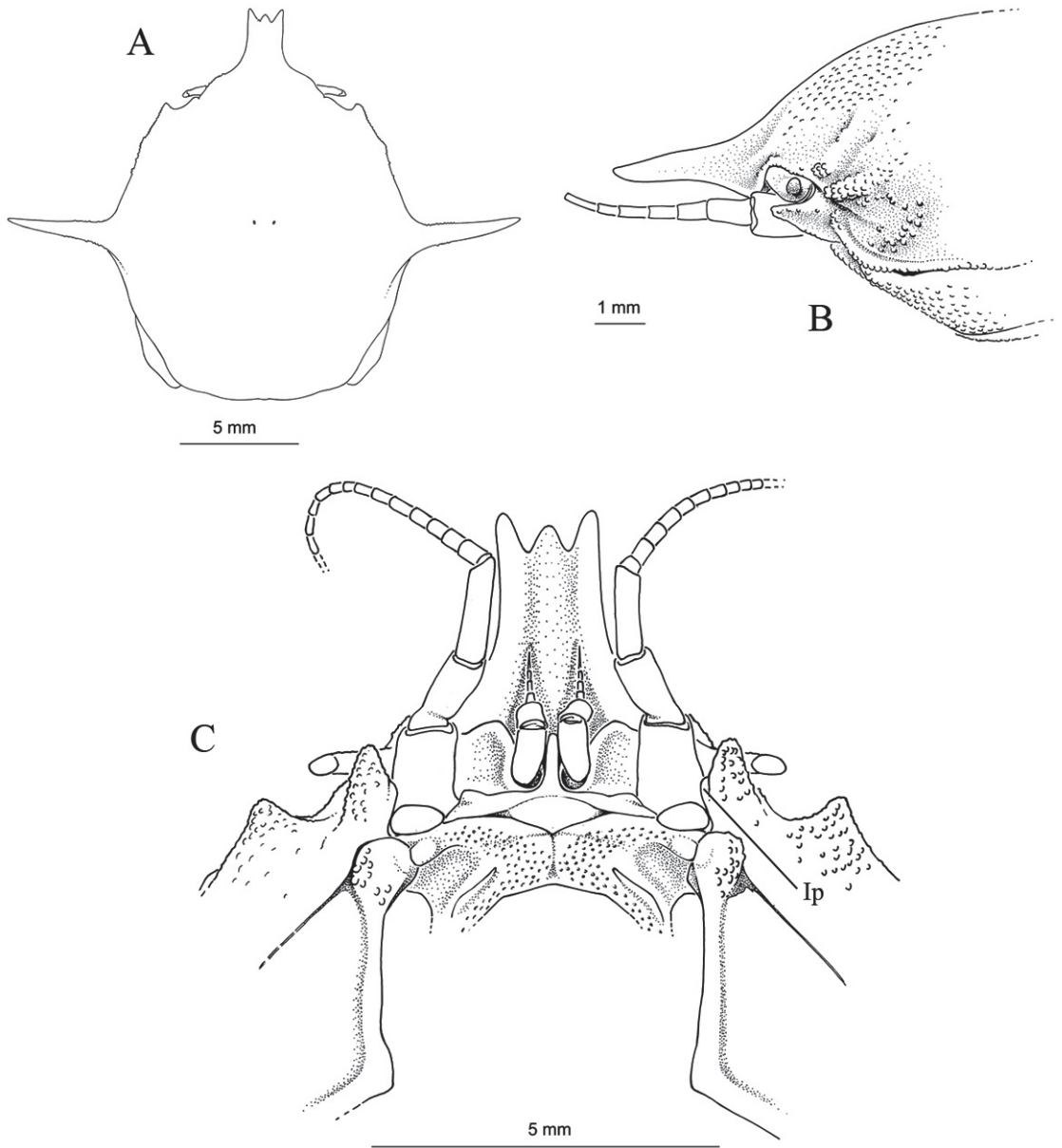


FIGURE 11: *Pteropeltarion novaeseelandiae* Dell, 1972, female 16.5 x 21.5 mm (MNHN-B27885). **A**, Outline of carapace in dorsal view. **B**, Anterior region of body in lateral view. **C**, Anterior region of body, in ventral view. Setae not represented. Ip, Infraorbital intercalated piece.

teeth separated by deep, wide gap; infraorbital tooth and antennal article 2+3 separated by deep, wide gap. Orbital cavity deeply excavated. Ocular peduncle usually little movable, not fully retractable into the orbital cavity, noticeably long and slender (globulous proximally), strongly calcified. Cornea usually small, unpigmented, ommatidia hardly recognizable. Antennal article 1 slightly transversally oblong; articles 2-3 fused to one another with no trace of suture in between. Antennal article 2+3 hardly movable, fused to intercalated piece basally, in close contact but not fused with lateral rostral tooth. Antennal articles 2+3-5 cylindrical, antennal article 5 shorter than articles 2+3 and 4. Antennal setae dispersed all around antennal articles and flagellae (not fringed); setae of opposing sides forming incipient antennal conduit. Mandibular palp 2-articulated, articles 1-2 completely fused together, immovable in relation to each other; no line of suture between articles 1-2. Limit between endostome and epistome poorly recognizable. Endostomial ridges strong, straight, inward directed. Merus of mpx3 operculiform, much shorter than ischium, its distal end not reaching to antennal article 1. Sternal median line only on sternites 7 and 8. Edge of last thoracic pleurite lunate, pleural gutter well developed. Pl8 gutter edge well developed. Pl4-3 with two, well developed pleurobranchiae each; Pl3 pleurobranchiae shorter than Pl4-6 pleurobranchiae, anteriormost Pl3 pleurobranchia shortest. Pl2 with one, well developed pleurobranchia; mpx2 with one, well developed podobranchia. Both heterochely and heterodonty strongly developed, resulting in gap between complementary parts of press-button abdominal locking mechanism on major cheliped side in large individuals. Male and female abdomen of six segments and telson; posterolateral angles of segment 6 only weakly produced forward; telson not intercalated within abdominal segment 6. Thoracic sternal button of abdominal locking system far from sternal suture 5/6.

Remarks: The genus *Krunopeltarion* Štević, 1993 is herein merged into the synonymy of *Trichopeltarion* A. Milne-Edwards, 1880. Štević (1993:1101) provided four distinguishing characters for *Krunopeltarion*, which are either species-specific (carapace covered with smooth, glossy, apically rounded, ivory-yellow tubercles; lateral teeth relatively short and triangular with very wide bases, their apices elongated and narrowed distally, tips not sharply pointed) or are shared with the remaining trichopeltariid genera (surface of carapace with several pairs of distinct grooves and one unpaired postfrontal groove; sternal sutures 4/5 to 6/7 are interrupted, suture 7/8 entirely). Actually in *Trichopeltarion*

timorense, as well as in all trichopeltariids, only the sternal sutures 4/5 and 5/6 are interrupted, whereas the sutures 6/7 and 7/8 are complete (figures 31D). The discovery of the male (see under *Trichopeltarion timorense*) further confirms *Trichopeltarion timorense* as a typical representative of the genus *Trichopeltarion*.

Faxon (1893) erected *Trachycarcinus* for a single species, *T. corallinus*. He compared his new genus with *Telmessus* (Cheiragonidae) and *Peltarion* (as *Hypopeltarium*), pointing out a number of differences between them. In the year 1893 *Trichopeltarion nobile* A. Milne-Edwards, 1880, was the only known representative of *Trichopeltarion*. Should Faxon (1893) had compared his species to *Trichopeltarion nobile* he would certainly refrain from erecting *Trachycarcinus*, as all distinguishing characters proposed for *Trachycarcinus* were actually also found in *Trichopeltarion*.

***Trichopeltarion alcocki* Doflein in Chun, 1903 (Figures 12A-D; 13A-D; 14A)**

Trichopeltarium alcocki Doflein in Chun, 1903:531, fig. n. n.

Trichopeltarium alcocki – Doflein, 1904:88 [Text].

Trichopeltarium alcocki Doflein, 1904: Atlas pl. 28, figs. 4-5 [objective synonym and homonym of *Trichopeltarium alcocki* Doflein in Chun, 1903].

Trichopeltarion alcocki – Richardson & Dell, 1964:146; Ng *et al.*, 2008:51 [list].

Trichopeltarium alcocki – Guinot & Sakai, 1970:203.

Trachycarcinus alcocki – Rathbun, 1930:165; Guinot, 1986:810; 1989:351.

Material examined: Indonesia: West of Sumatra, Siberut Strait, Deutsche Tiefsee-Expedition, *Valdivia*, Fundort stn 191, 00°39.2'S-98°52.3'W, 750 m, 03 Jan 1899, holotype ♀ 24.5 x 24.5 mm (MNB 13713); Tanimbar Island, *Baruna Jaya 1*, KARUBAR, stn CP 54, 08°21'S-131°43'E, 836-869 m, 30 Oct 1991, 1 ♂ 24.7 x 24.5 mm (MNHN-B28809). Philippines: MUSORSTOM 2, stn 38, 12°53.5'N-122°26.6'E, 1650-1660 m, 25 Nov 1980, 1 ♂ 70.5 x 65.5 mm (but rostral and lateral spines broken/blunted) (MNHN-B11571); same cruise, stn 39, 13°02.8'N-122°37.1'E, 1030-1190 m, 25 Nov 1980, 1 ♂ 32.0 x 31.5 mm (MNHN-B12766). Taiwan: TAIWAN 2001, stn CD 139, 22°10.73'N-120°14.1'E, 852-718 m, 23 Nov 2001, juvenile ♀ 18.5 x 19.2 mm (NTOU).

Type locality: Indonesia, West of Sumatra, Siberut Strait, 00°39'57.62"S-98°52.3'W, 750 meters depth.

Remarks: Still nowadays *T. alcocki* is known only from a few individuals. The species was described in 1903 based upon a single juvenile female caught in west of Sumatra in 1899 (see material examined and Doflein, 1904:89, and not upon a male as mentioned by Doflein in Chun, 1903:531, fig. n. n., and Doflein, 1904: pl. 28, figs. 4-5). No additional specimens had been reported until Guinot (1989) obtained one adult male, one juvenile male, and 1 damaged female from the Philippines for study (see material examined herein). Additionally we

obtained one young female from Indonesia and one male from Taiwan. *Trichopeltarion alcocki* closely resembles *T. ovale* from which it can be distinguished by its walking legs distinctly longer and slender, and the P5 merus-carpus articulation almost reaching the carapace second epibranchial tooth (lying well before the second epibranchial tooth in *T. ovale*).

Distribution: Taiwan, Philippines, and Indonesia, between 718 and 1660 meters in depth.

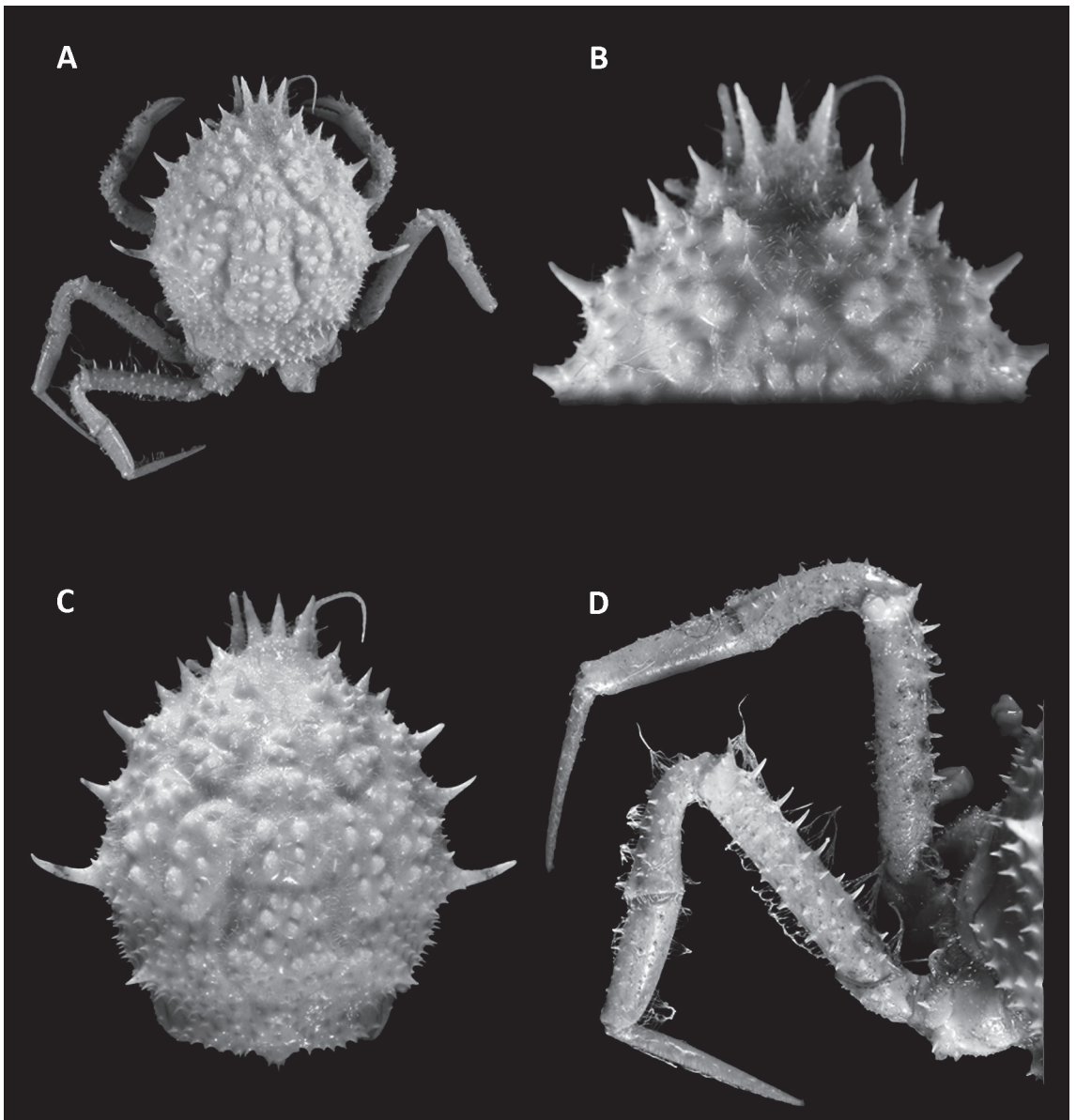


FIGURE 12: *Trichopeltarion alcocki* Doflein in Chun, 1903, holotype female 24.5 x 24.5 mm (MNB 13713). **A,** General dorsal view. **B,** Carapace in dorsal view. **C,** Anterior region of carapace in dorsal view. **D,** Left P4-P5.

***Trichopeltarion corallinum* (Faxon, 1893)**
(Figures 15A-B)

Trachycarcinus corallinus Faxon, 1893:156.

Trachycarcinus corallinus – Faxon, 1895:26, pl. A;
Rathbun, 1930:165, pl. 72; Guzmán *et al.*,
2009:276.

Trichopeltarion corallinum – Ng *et al.*, 2008:51 [list].

Material examined: Panama, Bay of Panama, *Albatross*,
stn 3356, 07°09'30"N-81°08'30"W, 23 Feb 1891,
998.5 m, ♂ lectotype 26.0 x 27.0 mm, 4 ♂♂ and
3 ♀♀ paralectotypes (MCZ 4491); stn 3353,
07°06'15"N-80°34'00"W, 23 Feb 1891, 1271 m,
♀ paralectotype 12.6 x 13.3 mm (USNM 20619);
Mexico, off Acapulco, *Albatross*, stn 3418, 16°33'N-

99°52'30"W, 11 Apr 1891, 1207 m: ♂ paralectotype
26.4 x 30.2 mm (USNM 20618).

Type locality: Bay of Panama, 07°09'30"N-
81°08'30"W, 998.5 m.

Remarks: The type series of *Trachycarcinus coral-*
linus Faxon, 1893, encompasses in total 5 males
and 6 females syntypes (Faxon, 1893:157; see also
Rathbun, 1930:166). In order to ensure that the
above name be properly and consistently applied,
the male MCZ 4491 26.0 x 27.0 mm from Bay
of Panama, 07°09'30"N-81°08'30"W, 998.5 m,
is selected herein as the lectotype. The remain-
ing males and females from the type series are the
paralectotypes.

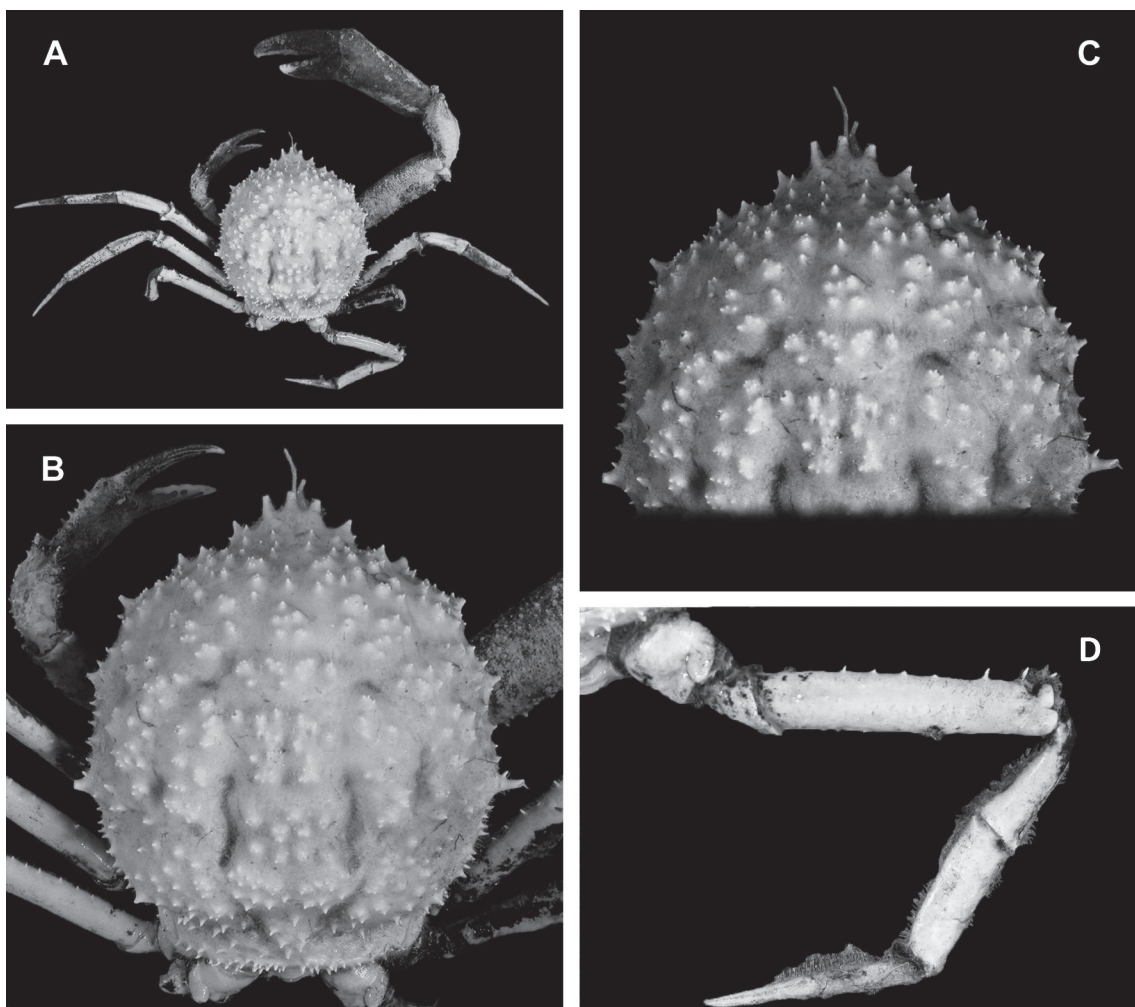


FIGURE 13: *Trichopeltarion alcocki* Doflein in Chun, 1903, male 70.5 x 65.5 mm (MNHN-B 11571). **A**, General dorsal view. **B**, Carapace in dorsal view. **C**, Anterior region of carapace in dorsal view. **D**, Right P5.

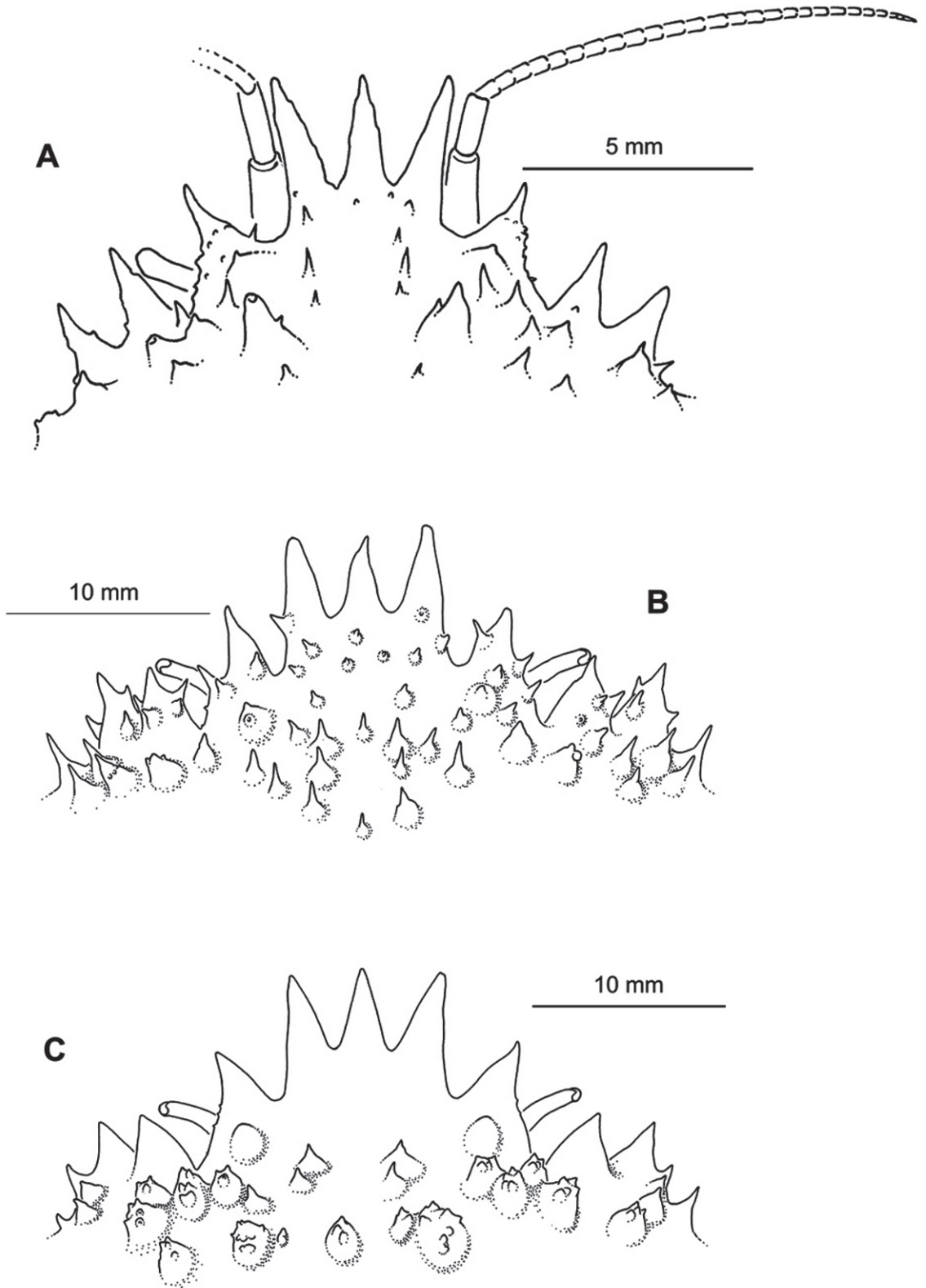


FIGURE 14: Anterior region of carapace in dorsal view (setae not represented). **A**, *Trichopeltarion alcocki* Doflein, 1903, holotype female 24.5 x 24.5 mm (MNB N°13713) (right eye missing). **B-C**, *Trichopeltarion ovale* Anderson, 1896. **B**, female 60.0 x 62.5 mm (MNHN-B28810). **C**, female 59.5 x 60.5 mm (NTOU).

Distribution: Panama, Mexico, between 998.5 and 1271 meters depth.

***Trichopeltarion dejouanneti* sp. nov.**
(Figures 16A-B; 17A-F)

Material examined: Holotype: ♂ 24.4 x 21.7 mm, Solomon Islands, SALOMON 2, *Alis*, stn CP 2195, 08°25.5'S-159°26.4'E, 543-593 m, Bouchet/Waren/Samadi coll. Nov 2004 (MNHN-B 29942). Paratypes: Solomon Islands, SALOMON 1, *Alis*, Bouchet/Dayrat/Waren/Richer de Forges coll.: stn CP 1749, 25 Sep 2001, 09°20.9'S-159°56.2'E, 582-594 m, 2 ♂♂ 22.5 x 21.5 & 23 x 21.2 mm, 1 ovigerous ♀ 27.5 x 22.5 mm (MNHN-B 29611); stn CP 1750, 25 Sep 2001, 09°15.6'S-159°54.6'E, 693-696 m, 1 ♂ 18.2 x 17.0 mm (MNHN-B 29612); stn CP 1783, 29 Sep 2001, 08°32.8'S-160°41.7'E, 399-700 m, 2 ♀♀ 24.0 x 21.7 & 24.0 x 20.0 mm (MNHN-B 29613). Solomon Islands, SALOMON 2, *Alis*, Bouchet/Waren/Samadi coll. Nov 2004: stn CP 2184, 08°16.9'S-159°59.7'E, 464-523 m, 1 ♂ 21.4 x 18.9 mm, 1 ♀ 24.5 x 22.0 mm (MZUSP 22697, ex-MNHN-B 29940); stn CP 2187, 08°17.5'S-159°59.8'E, 482-604 m, 1 ♀ 24.5 x 22.3 mm (MNHN-B 29941); stn CP 2195, 08°25.5'S-159°26.4'E, 543-593 m, 1 ♀ 18.0 x 16.2 mm, 4 ♂♂ (3 parasitized with *Sacculina* sp.) 20.3 x 17.8, 23.9 x 20.5, 24.5 x 22.2, 24.6 x 20.8 mm (MNHN-B30514); stn CP 2206, 07°43.4'S-158°29.0'E, 391-623 m, 2 ♂♂ (1 parasitized with *Sacculina* sp.) 16.5 x 13.8 & 19.3 x 16.5 mm (MNHN-B 29943); stn CP 2213, 07°38.7'S-157°42.9'E, 495-650 m, 2 ♂♂ 22.4 x 20.7 & 24.2 x 20.8 mm, 4 ♀♀ 18.4 x 16.8, 20.0 x 18.2, 22.5 x 19.6,

22.6 x 21.0 mm (MNHN-B 29944); stn CP 2214, 07°41.6'S-157°43.8'E, 550-682 m, 2 ♂♂ 21.0 x 19.0 & 21.0 x 18.6 mm, 1 ♀ 24.0 x 22.3 mm (MNHN-B 29945); stn CP 2227, 06°37.2'S-156°12.7'E, 508-522 m, 2 ♂♂ 22.5 x 19.5 & 24.0 x 20.6 mm, 1 ♀ parasitized with *Sacculina* sp. 25.5 x 22.0 mm (MNHN-B 29946); stn CP 2228, 06°34.7'S-156°10.5'E, 609-625 m, 1 ♀ 14.5 x 13.0 mm (MNHN-B 29947); stn CP 2244, 07°45.0'S-156°26.7'E, 554-586 m, 1 ♂ 15.2 x 14.0 mm (MNHN-B 29948); Solomon Islands, SALOMONBOA 3, *Alis*, Richer de Forges & Boisselier coll.: stn CP 2825, 10°25'S-162°02'E, 532-883 m, 20 Sep 2007, 6 ♂♂ 18.0 x 16.5, 20.0 x 17.0, 21.3 x 19.0, 21.6 x 20.0, 22.2 x 19.4 & 22.7 x 19.2 mm, 1 ♀ 13.5 x 12.0 mm (MNHN-B31975), 2 ♂♂ 22.5 x 20.4 & 23.0 x 20.0 mm, 2 ♀♀ 13.7 x 12.0 & 24.2 x 21.0 mm (MZUSP 22698); same cruise, stn CP 2833, 10°42'S-162°19'E, 565-585 m, 21 Sep 2007, 1 ♂ 18.3 x 16.0 mm (MZUSP 22699); same cruise, stn CP 2850, 09°37'S-160°47'E, 502-621 m, 21 Sep 2007, 1 ♀ 23.0 x 21.7 mm (MZUSP 22700); same cruise, stn CP 2857, 09°44'S-160°49'E, 473-505 m, 25 Sep 2007, 1 ovigerous ♀ 20.0 x 18.3 mm (MNHN-B31978); same cruise, stn CP 2858, 09°40'S-160°45'E, 650-725 m, 25 Sep 2007, 1 ♂ 15.7 x 15.0 mm (MNHN-B31979).

Non types: SALOMON 1, stn CP 1794, 30 Sep 2001, 09°16.1'S-160°07.7'E, 494-504 m, 1 ♀ 16.7 x 14.5 mm (MNHN-B 29614); SALOMON 2, stn CP 2213, 07°38.7'S-157°42.9'E, 495-650 m, 1 ♀ 17.2 x 16.0 mm (MNHN-B30677).

Type locality: Solomon Islands, 08°25.5'S-159°26.4'E, between 543-593 meters depth.

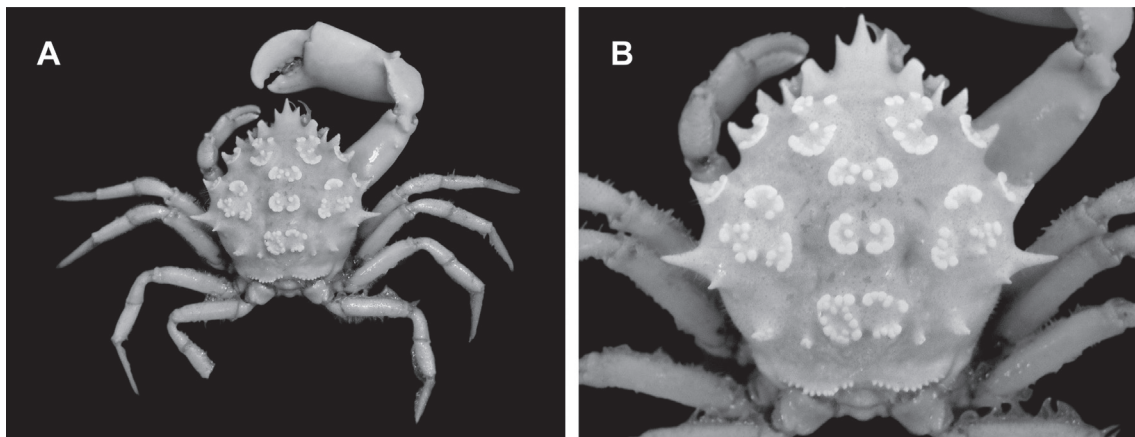


FIGURE 15: *Trichopeltarion corallinum* (Faxon, 1893) male lectotype 26.0 x 27.0 mm, (MCZ 4491). A, General dorsal view. B, Carapace in dorsal view.

Description of the holotype: Small *Trichopeltarion*. Carapace elongate oval, distinctly longer than wide, slightly arched transversally, moderately arched longitudinally, entirely and sparsely covered with short setae. Front cut into three prominent, forward directed, triangular teeth, bordered with long setae; central tooth distinctly longer than laterals. Rostral teeth lacking barbs. Orbits large, directed laterally; ocular peduncles slender, cornea very small with only scant traces of pigment. Orbital teeth lacking barbs, triangular in outline. Innerorbital tooth separated from lateral rostral tooth by deep, wide, U-shape gap; innerorbital and second supraorbital teeth separated by shallow gap, much narrower than preceding one, second supraorbital tooth much shorter than first; exorbital tooth small, slightly longer than second supraorbital one, slightly directed outward. Anterolateral margin rounded, marked with three small teeth, hepatic, first-, and epibranchial, all devoid of barbs, directed forwards and upwards. Hepatic tooth short, tip-rounded, separated from exorbital tooth by wide subtle depression. First epibranchial tooth smallest, reduced to distinct tubercle, space between first epibranchial and hepatic teeth distinctly narrower and deeper than space between hepatic and exorbital teeth. Second epibranchial tooth longest, slightly stronger and longer than hepatic tooth. Posterolateral margin weakly convex, extending obliquely into posterior margin, ornamented with few, sparse, rounded granules. Posterior margin almost straight, only slightly concave axially, bordered with row of rounded granules, all about same size. Dorsal surface of carapace with patches of rounded granules, absent in depressions bounding elevated regions. Gastric, mesogastric, and proto-gastric regions distinctly swollen. Gastric crested with sparse rounded granules, well delimited laterally by two, well excavated, shallow, smooth grooves. Mesogastric region slightly lower than gastric one, with few small granules. Metagastric, urogastric, and cardiac regions swollen, crested with rounded granules. Branchiocardiac grooves smooth, deeply excavated, sinuous. Intestinal and branchial regions moderately granulated. Protogastric, hepatic, and pterygostomial regions smooth, except for few sparse granules.

Thoracic sternum sparsely granulated; thoracic sternal tubercles of abdominal locking system placed equidistantly between sternal sutures 4/5 and 5/6.

Right cheliped extremely developed, massive. Dactylus smooth, noticeably curved downward terminally, longer than fixed finger, ending in rounded massive tooth; cutting edge armed with low, molariform teeth. Fixed finger smooth, rather straight,

ending in massive tooth; cutting edge teeth low, molariform. Propodus smooth, except for two tubercles and few minute granules on its upper face and anterior dorsal margin. Upper face of carpus with row of spiny tubercles, lateral surface sparsely covered with both rounded and spiny granules, carpus otherwise smooth. Merus smooth, except for some sparse granules on its upper and lower borders and mesial surface. Small cheliped missing. Dactyli of all pereiopods longer than propodus, densely setose all over, that of P5 additionally with long setae ventrally. P5 with long hairs on its upper and lower margins, except for carpus with long hairs dorsally only. Pereiopods smooth, except for few, minute, sparse granules.

Abdomen of both male and female of six free segments and telson. Male abdomen sparsely covered with fine, short, setae; segments 1-2 with few, sparse tubercles, remaining segments smooth. Male abdominal segment 6 longer than preceding ones, squarish, its anterolateral angles only slightly protruded, weakly swollen; complementary parts of press-button system present and functional. G2 reaching to thoracic sternal suture 5/6, styliform, rather straight, tip not crossing.

Variations: The density of granules on the carapace is subject to variation, regardless of sex and size. The protogastric and hepatic regions are subject to minor variation only, whereas the density of granules on the intestinal region may vary strongly between individuals. In smaller individuals, both males and females, the first two supraorbital and the exorbital teeth, as well as the hepatic and first and second epibranchial teeth appear longer and thinner. The number and size of granules or spiny tubercles on the propodus, carpus, and merus of the larger cheliped also vary between individuals.

Etymology: This species is named after our colleague Jean-François Dejouannet, artist at the Muséum national d'Histoire naturelle, Paris, who kindly prepared several drawings and arranged most of the figure plates for the present paper.

Remarks: *Trichopeltarion dejouanneti* sp. nov. can be readily separated from the other species in the genus by having a central rostral tooth markedly longer than the lateral rostral teeth in the combination of the frontal, orbital, hepatic, protogastric, and mesogastric regions of the carapace almost smooth; both dactylus and propodus of the major cheliped smooth, looking polished, excepted for a few isolated tubercles on its upper margin; supraorbital teeth devoid of barbs or granules; G2 reaching to the thoracic sterna suture 5/6.

Distribution: The species is so far known only from the Solomon Islands, between 391 and 883 meters depth.

***Trichopeltarium dextrum* (Rathbun, 1898)
comb. nov.
(Figures 18A-D)**

Hypopeltarium dextrum Rathbun, 1898a:277, pl. 6, fig. 2.

Peltarion dextrum – Rathbun, 1930:161; Soto 1979:165; Salva & Feldmann, 2001:51; Ng *et al.*, 2008:51.

Material examined: Mexico, Yucatan, off Cozumel Island, *Albatross*, stn 2359, 20°19'10"N-87°03'30"W, 29 Jan 1885, 422.4 m: holotype male 42.0 x 36.5 mm (USNM 9558).

Remarks: *Trichopeltarium dextrum* (Rathbun, 1898) was originally described in the genus *Hypopeltarium* Miers, 1886 (objective synonym of and unjustified replacement name for *Peltarion* Hombron & Jacquinot, 1846). Rathbun (1898a:277) pointed out that *Peltarion dextrum* differs from *Peltarion spinulosum* (as

Hypopeltarium spinulosum) in its strongly pronounced heterochely (less developed in *P. spinulosum*) and its abdomen of six free segments and telson (abdominal segments 3, 4, and 5 fused together in *P. spinulosum*), at which points it resembles *Trichopeltarium*. Salva & Feldmann (2001:51) remarked that *Peltarion dextrum* is similar to *Trichopeltarium* in respect to the orbital and anterolateral spines. Tavares & Melo (2005:240-241) commented on a number of similarities between *Peltarion dextrum* and *Trichopeltarium* not shared with *Peltarion spinulosum*, and have called for a re-evaluation of the systematic position of *Peltarion dextrum*. *Peltarion dextrum* is herein transferred to the genus *Trichopeltarium*, with which it shares a unique combination of characters including: (i) antennal setae dispersed all around antennal peduncle (articles 2+3, 4-5) and flagellae, setae of opposing sides of flagellum forming incipient antennal conduit at most (dorsal and ventral faces of antennae fringed along its entire length by a row of long setae forming an antennal conduit in *Peltarion*); (ii) infraorbital tooth separated from the antennal segments 2+3 by a deep, wide gap (infraorbital tooth and antennal articles 2+3 separated from each other by a deep, narrow notch in *Peltarion*); (iii) antennal articles 2+3 in close contact to but not fused with the lateral rostral tooth (a noticeable gap

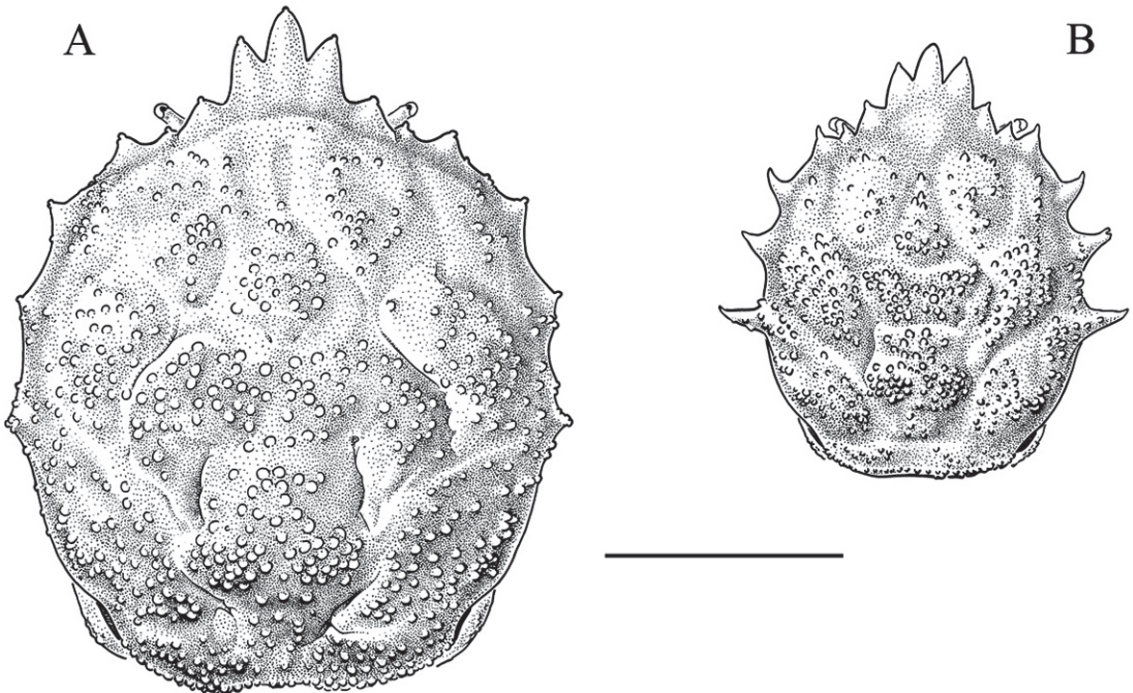


FIGURE 16: *Trichopeltarium dejouanneti* sp. nov. carapace in dorsal view (setae not represented). **A**, paratype ovigerous female 27.5 x 22.5 mm (MNHN-B29611). **B**, paratype male 18.2 x 17.0 mm (MNHN-B29612). Scale bar: A-B, 10 mm.

between the antennal articles 2+3 and the lateral rostral tooth in *Peltarion*); (iv) antennal articles 2+3, 4, and 5 of about the same length (fourth antennal article distinctly longer in *Peltarion*); (v) mandibular palp 2-articulated, with article 1-2 completely fused to one another and no line of suture in between (mandibular

palp 3-articulated in *Peltarion*); (vi) P13 pleurobranchiae two, anteriormost shorter (both P13 pleurobranchiae equally developed in *Peltarion*); (vii) male abdomen of six free segments and telson (male abdomen of four segments and telson as abdominal segments 3+4+5 are fused together in *Peltarion*); (viii) telson

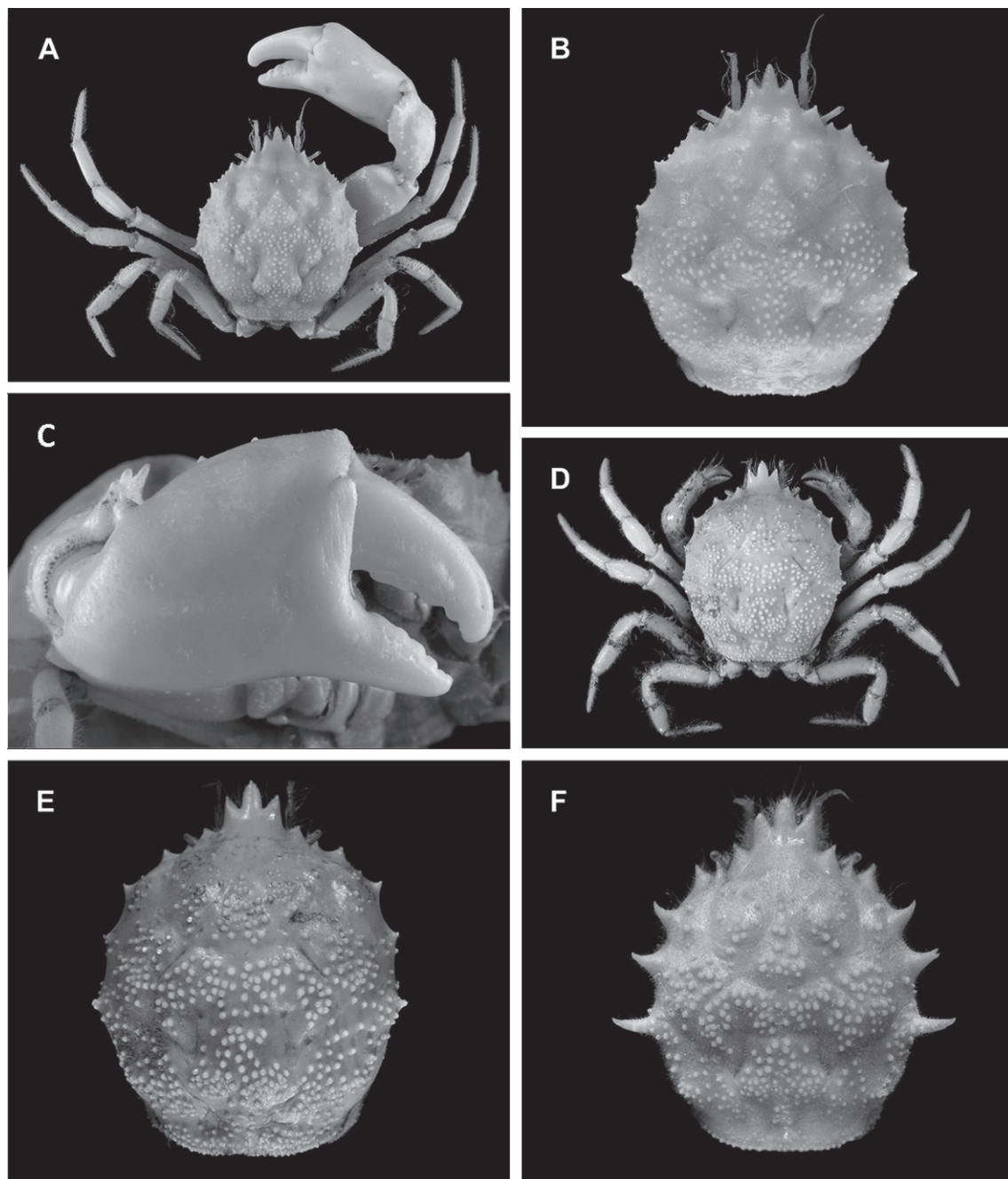


FIGURE 17: *Trichopeltarion dejouanneti* sp. nov. **A-C**, Holotype male 24.4 x 21.7 mm (MNHN-B 29942). **D-E**, paratype ovigerous female 27.5 x 22.5 mm (MNHN-B 29611). **F**, paratype male 18.2 x 17 mm (MNHN-B 29612). **A-D**, General dorsal view. **B**, Carapace in dorsal view. **C**, Right cheliped. **D**, General dorsal view. **E-F**, Carapace in dorsal view.

not intercalated within abdominal segment 6 as the postero-lateral angles of that segment is only weakly protruded (anterolateral angles of abdominal segment 6 strongly protruded forward so the telson show as narrow triangle intercalated in between in *Peltarion*).

Distribution: Mexico, Lesser Antilles, between 203 and 422 meters depth. Soto (1979) is probably mistaken when referring to 203 fathoms.

***Trichopeltarion elegans* (Guinot & Sakai, 1970)
comb. nov.
(Figures 19A-H; 20A-F)**

Trachycarcinus elegans Guinot & Sakai, 1970:201, figs. 1-6.

Trachycarcinus elegans – Sakai, 1976:312; Ng & Chan, 1997:108; Ikeda, 1998:38, pl. 46.

Trichopeltarion elegans – Ng *et al.*, 2008:51 [list].

Material examined: Japan, off Mikawa Bay, trawl, 100-150 m, holotype ♂ approx. 24.7 x 27.0 mm

(left epibranchial tooth broken) (MNHN-B5409); Japan, Sagami Nada, H. Hayashi coll., Oct 1966, 1 ♀ 30.0 x 34.5 mm (MNHN-B5411). Taiwan, N.E coast, TAIWAN 2001, commercial trawler, Bouchet, Richer-IRD, et Chan coll.: stn CP 88, 24°51.28'N-122°02.80'E, 650 m, 09 May 2001, 1 ♀ 28.0 x 34.5 mm (NTOU); stn CP 96, 24°04.24'N-122°04.25'E, 472-586 m, 18 May 2001, 1 ♂ 16.8 x 18.3 mm (ZRC 2001.2206); stn CP 104, 24°48.9'N-122°05.3'E, 365-447 m, 19 May 2001, 1 ♀ 28.3 x 31.5 mm (NTOU); stn CP 111, 24°52.2'N-122°04.3'E, 540-700 m, 21 May 2001, 1 ♂ 13.7 x 16.0 mm, 3 ♀♀ 13.5 x 16.0 mm, 14.0 x 16.7 mm & 16.5 x 20.4 mm (NTOU); 1 ♂ 10.5 x 11.7 mm, 1 ♀ 11.5 x 13.0 mm (ZRC 2001.2207); stn CP 120, 24°51.79'N-122°02.54'E, 520-640 m, 31 Jul 2001, 1 ♀ 40.0 x 42.0 mm (NTOU). TAIWAN 2002, stn CP 195, 24°52.02'N-122°03.11'E, 605-572 m, 11 Sep 2002, 1 ♂ 28.5 x 33.5 mm, 1 ♀ 30.5 x 37.4 mm (NTOU); stn CP 196, 24°51.75'N-122°03.75'E, 636-787 m, 11 Sep 2002, 1 ♀ 17.2 x 21.0 mm (NTOU). Taiwan, I-Lan County, Tachi fish port, P. Ng & K.

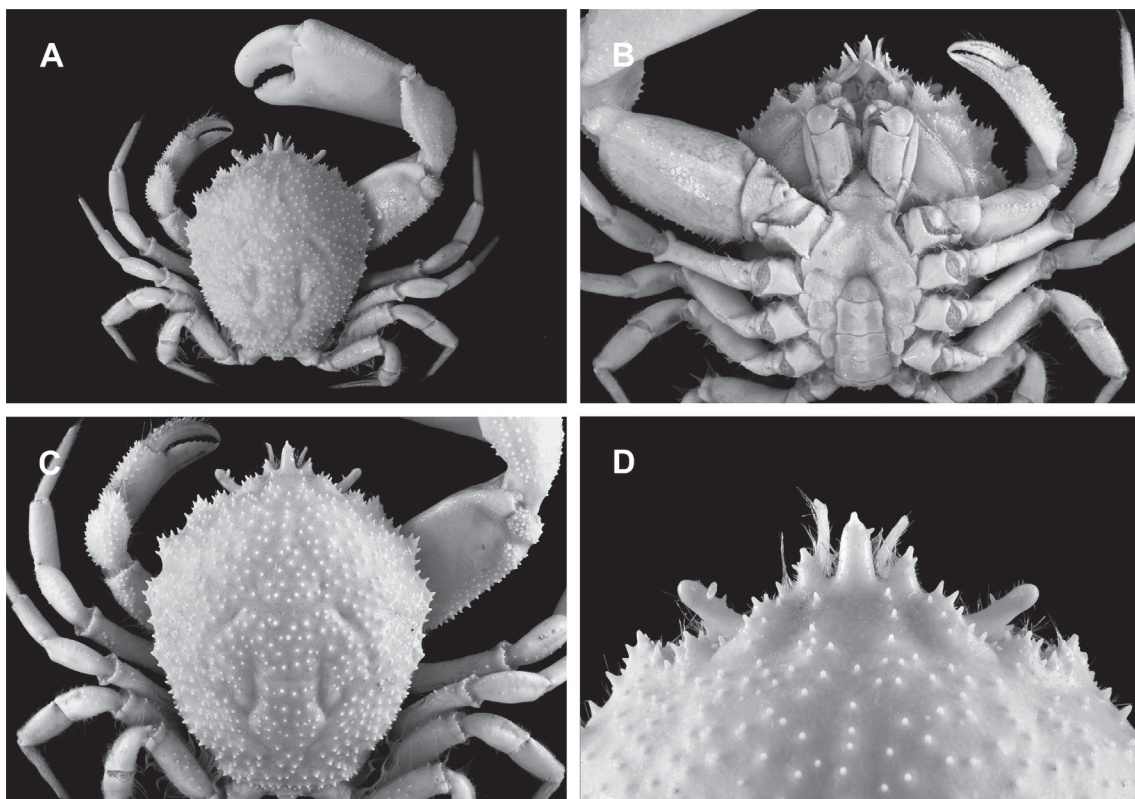


FIGURE 18: *Trichopeltarion dextrum* (Rathbun, 1898) comb. nov., holotype male 42.0 x 36.5 mm (USNM 9558). **A**, General dorsal view. **B**, Cephalothorax in ventral view. **C**, Carapace in dorsal view. **D**, Anterior region of carapace in dorsal view.

Lin coll. May 1999, P. Ng det. 07 Jun 1999, 1 ♀ 35.0 x 40.8 mm (rostrum blunted) (ZRC 1999.0741).

Type locality: Japan, off Mikawa Bay, between 100 and 150 meters depth.

Remarks: *Trachycarcinus elegans* is herein transferred to *Trichopeltarion*, with which it shares a unique combination of characters including: (i) antennal setae dispersed all around antennal peduncle (articles 2+3, 4-5) and flagellae, setae of opposing sides of flagellum forming incipient antennal conduit at most; (ii) infraorbital tooth separated from the antennal articles 2+3 by a deep, wide gap; (iii) antennal articles 2+3 in close contact to but not fused with the lateral rostral tooth; (iv) antennal articles 2+3, 4, and 5 of about the same length; (v) mandibular palp 2-articulated, with articles 1-2 completely fused to one another and no line of suture in between; (vi) PL3 pleurobranchiae two, anteriormost shorter; (vii) male abdomen of six free segments and telson.

Ng & Chan (1997) obtained one male of *Trichopeltarion elegans* from northeastern Taiwan and took the opportunity to elaborate on some variations between the Taiwanese specimen and the holotype male from Japan. The following are additions to the variations in this species, as revealed by examination of additional Taiwanese males and females as well as the holotype of *Trichopeltarion elegans*. In the Taiwanese material some tubercles from protogastric and hepatic regions of the carapace are more acute in smaller specimens; epigastric and protogastric granule-bearing tubercles showing more individualized granules (granules coalescent in the Japanese individuals); the protogastric, meso- and metabranchial tubercles are more numerous in larger individuals; the barbs on the hepatic, first epibranchial, and second epibranchial teeth clearly well distinct (absent or poorly visible in the Japanese specimens) (figure 20A-F).

Distribution: Known from Japan and Taiwan, between 100 and 787 meters depth.

***Trichopeltarion hystricosum* (Garth,
in Garth & Haig 1971)**

Trachycarcinus hystricosus Garth in Garth & Haig, 1971:6.12, pl. 3, figs. 1-5.

Trachycarcinus hystricosus – Bahamonde & Báez, 1975:3; Andrade & Báez, 1980:263; Salva & Feldmann, 2001:29.

Trichopeltarion hystricosus – Guzmán *et al.*, 2009:278. “*Trichopeltarion*” *hystricosum* – Ng *et al.*, 2008:52.

Material examined: Central Chile, *Golden Wind*, H. Andrade coll. & det.: stn GW-05, 31°56'S-71°45'W, 350-400 m, 03 Oct 1976, 1 ♂ 30.2 x 30.5 mm (MNHN-B31967); stn GW-56, 32°31'S-71°54'W, 300-350 m, 20 Mar 1979, 2 ♀♀ 32.0 x 33.3 & 33.0 x 34.3 mm (MNHN-B31968); stn GW-59, 32°31'S-71°54'W, 400 m, 09 Jul 1979, 6 ♂♂ 25.3 x 26.5 mm to 34.8 x 35.4 mm, 8 ♀♀ 28.5 x 31.7 to 33.8 x 36.4 mm (MNHN-B31969); stn GW-68, 32°33'S-71°43'W, 300 m, 09 Apr 1979, 3 ♂♂ 27.0 x 28.2 to 30.8 x 32.5 mm (MNHN-B31970); *ibidem*, 2 ♂♂ 17.0 x 18.3, 31.2 x 32.4 mm, 1 ♀ 32.0 x 34.5 mm (MZUSP 22701); stn GW-72, 32°42'S-71°48'W, 350-400 m, 08 Nov 1979, 1 ♂ 31.0 x 32.7 mm, 2 ♀♀ 28.2 x 30.5 & 33.3 x 33.2 mm (MNHN-B31971).

Type locality: Off Peru, 11°50'S-77°58'W, between 935 and 907 meters depth.

Description: The following are additions to the previously published data. Carapace pentagonal, surface densely covered with long setae; front cut into three teeth of about same length. Orbits large, deeply excavated; ocular peduncles thick, cornea large, dark brown, freely movable, fully retractable into orbital cavity; ommatidia well recognizable. Orbitals, hepatic, and epibranchial teeth strong, acute, lacking barbs. Mxp3 merus not reaching antennal article 1. Thoracic sternal tubercles from abdominal locking system adjacent to sternal sutures 5/6.

Right cheliped extremely developed. Dactylus and fixed finger noticeably long, straight, curved terminally only; cutting edges armed with salient, rather acute teeth. Female chelipeds equal, closely resembling small male cheliped.

Male abdomen of six free segments and telson; abdominal segment 6 longest, its anterolateral angles slightly protruded, weakly swollen; complementary parts of abdominal locking system present and functional. G2 very long, styliform, rather straight, crossing well before tip. Female abdomen of six free segments and telson; thoracic sternal tubercle distinct in young females only (30 x 28 mm), abdominal locking system not functional. Vulvae large, subcircular, operculate in young females, placed near sternal median line, far from lateral border of sternite 6, adjacent to sternal suture 5/6.

Remarks: Salva & Feldmann (2001:29) concluded that *Trichopeltarion hystricosum* should no longer remain in the genus *Trichopeltarion* and suggested its assignment to another existing genus or to a new

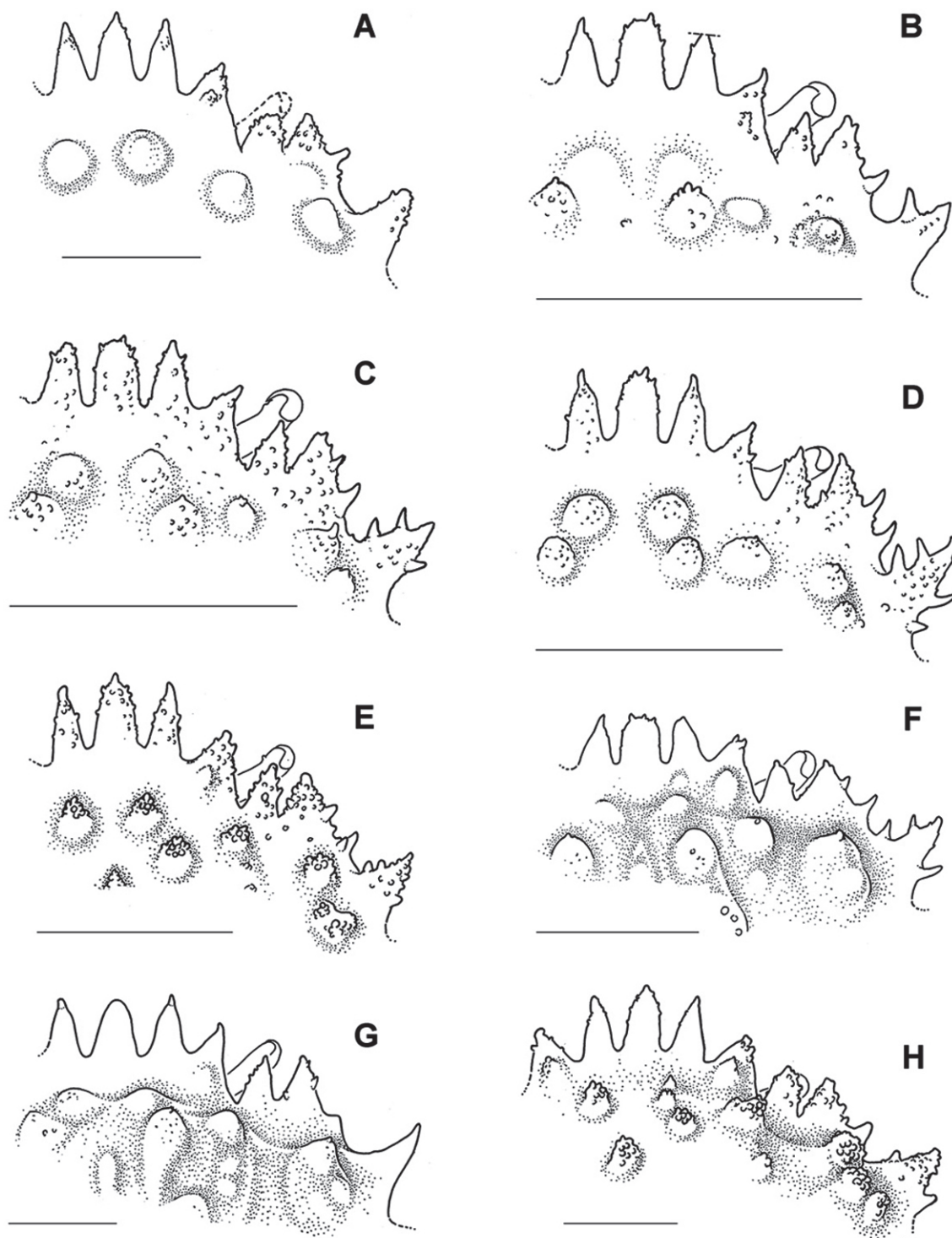


FIGURE 19: *Trichopeltarion elegans* (Guinot & Sakai 1970) comb. nov., anterior region of carapace in dorsal view (setae not represented). **A**, holotype male 24.7 x 27.0 mm (MNHN-B5409). **B**, male 10.5 x 11.7 mm (ZRC 2001-2207). **C**, female 11.5 x 13.0 mm (ZRC 2001-2207). **D**, male 13.7 x 16.0 mm (NTOU). **E**, male 16.8 x 18.3 mm (ZRC 2001-2206). **F**, female 17.2 x 21.0 mm (NTOU). **G**, female 28.0 x 34.5 mm (NTOU). **H**, female 28.3 x 31.5 mm (NTOU). Scales bars: 5 mm.

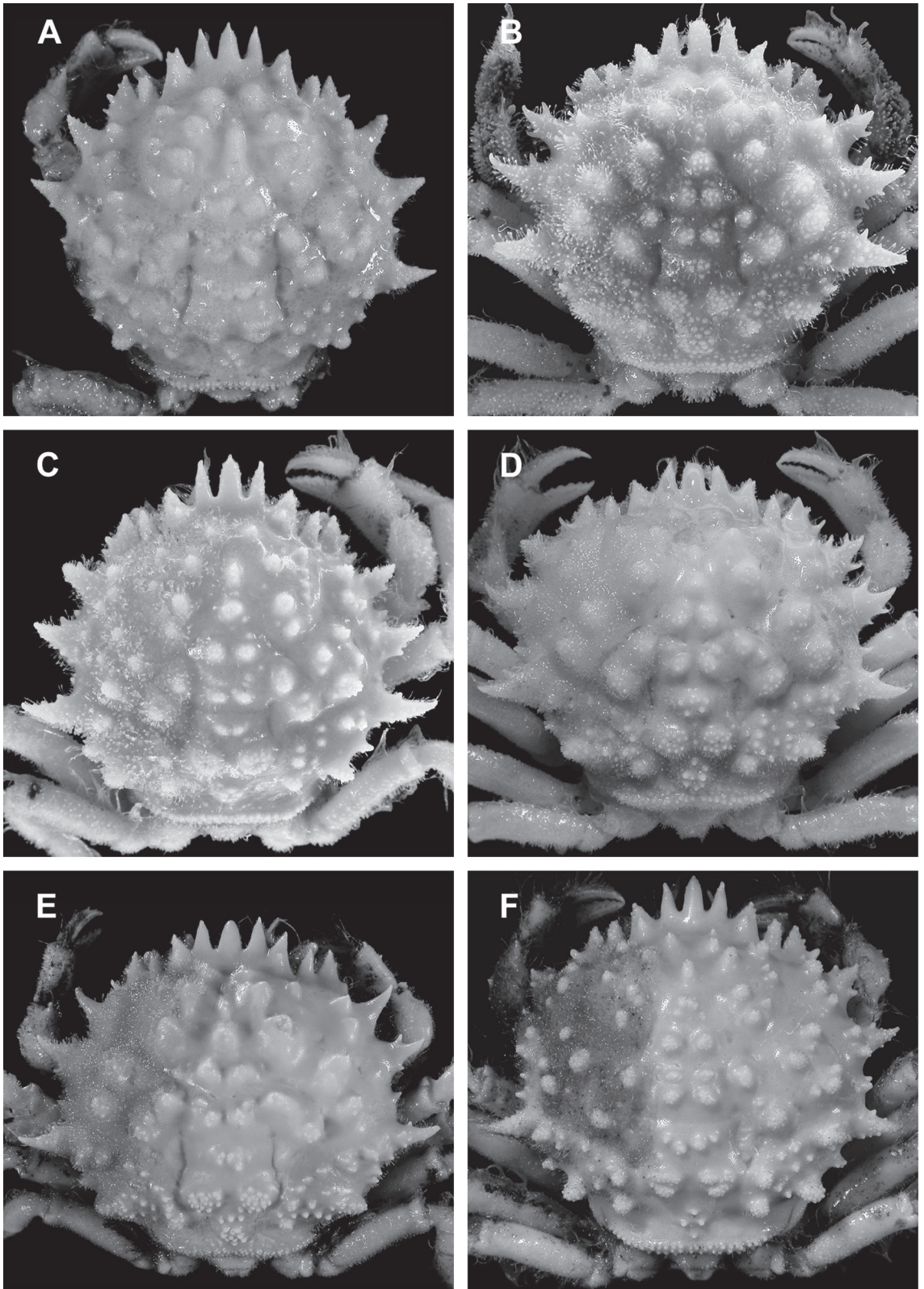


FIGURE 20: *Trichopeltarion elegans* (Guinot & Sakai 1970) comb. nov. **A**, holotype male 24.7 x 27.0 mm (MNHN-B5409). **B**, Female 11.5 x 13.0 mm (ZRC 2001-2207). **C**, Male 16.8 x 18.3 mm (ZRC 2001-2206). **D**, Female 17.2 x 21.0 mm (NTOU). **E**, Female 28.0 x 34.5 mm (NTOU). **F**, Female 28.3 x 31.5 mm (NTOU).

genus yet to be created for it. Our examination of a number of males and females of *Trichopeltarion hystricosum* revealed, however, that it shows a combination of characters only found in *Trichopeltarion*, including: carapace pentagonal; deeply excavated orbital cavity; antennal setae dispersed all around antennal segments (articles 2+3, 4-5) and flagellae, setae of opposing sides of flagellum forming incipient antennal conduit at most, antennal flagellae short; possession of well distinct first epibranchial tooth; mandibular palp 2-articulated, with articles 1-2 completely fused to one another and no line of suture in between; one well developed P12 pleurobranchia; one well developed mxp2 podobranchia; anteriormost of the two P13 pleurobranchiae shortest; male and female abdomen of six free segments and telson.

Distribution: Known from Peru and Chile. Although Retamal (1993) recorded *Trichopeltarion hystricosum* from shallow waters (5 m), this species seems more common between 200 and 1124 meters in depth (Guzmán *et al.*, 2009).

Trichopeltarion intesi (Crosnier, 1981)

Trachycarcinus intesi Crosnier, 1981:303.

Trachycarcinus intesi – Salva & Feldmann, 2001:29.

Trichopeltarion intesi – Tavares & Melo, 2005:240; Ng *et al.*, 2008:52.

Material examined: Ivory Coast, off coast of Cape Palmas, RV “Capricorne”, 04°05’N-07°40’W, 600 m, A. Intès coll., 13 Oct 1975, ♂ holotype 17.0 x 15.5 mm (MNHN-B6624).

Type locality: Off coast of Cape Palmas, 04°05’N-07°40’W, Ivory Coast, West Africa, 600 meters depth.

Remarks: Salva & Feldmann (2001:29) commented that “*Trachycarcinus intesi* was never directly observed and no photographic illustrations studied. While the species probably is a member of *Trichopeltarion*, observation of only one line drawing leaves room for question”. Based on the examination of the holotype Tavares & Melo (2005:240) did include *Trachycarcinus intesi* in the genus *Trichopeltarion*, although mentioning that “Future research may prove that *T. intesi* actually belongs to an undescribed genus”. Indeed, contrary to most *Trichopeltarion* species, in *T. intesi* the ocular peduncle is thick, fully movable and fully retractable into the orbital cavity; the cornea is large, dark brown, and the ommatidia well recognizable

(versus ocular peduncle little movable, not fully retractable into the orbital cavity, and noticeably slender; the cornea is very small and unpigmented or slightly pigmented). In these respects *Trichopeltarion intesi*, *Trichopeltarion dextrum*, *Trichopeltarion hystricosum* resemble each other. Otherwise *T. intesi* share all the characteristic features of *Trichopeltarion* and actually there is no reason for assigning it to a new genus.

Distribution: Known only from the type locality so far.

Trichopeltarion moosai (Guinot, 1989) comb. nov. (Figures 21A-B)

Trachycarcinus moosai Guinot, 1989:361, figs. 4 A-C, 9 A-C, pl. 3, A-H.

Trichopeltarion moosai – Ng *et al.*, 2008:52 [list].

Material examined: Indonesia: Makassar Strait, CORINDON 2, stn 211, 00°12.8’S-117°53.7’E, 313 m, 31 Oct 1980, holotype ♂ 15.5 x 16.0 mm (MNHN-B11570); Tanimbar Island, KARUBAR, *Baruna Jaya 1*, stn CP 38, 07°40’S-132°27’E, 620-666 m, 28 Oct 1991, 1 ♀ 13.5 x 14.0 mm (MNHN-B28770); same cruise, stn CP 39, 07°47’S-132°26’E, 477-466 m, 28 Oct 1991, 1 ♂ nearly 15.5 x 16.0 mm (epibranchial teeth broken), 1 ovigerous ♀ 25.0 x 26.5 mm (MNHN-B28771); same cruise, no station number, 1 ♀ 20.8 x 21.0 mm (MNHN-B28772).

Type locality: Indonesia, Makassar Strait, 00°12.8’S-117°53.7’E, 313 m.

Remarks: *Trachycarcinus moosai* share with *Trachycarcinus elegans* (see above), the same combination of characters unique to *Trichopeltarion* and is, likewise, transferred to *Trichopeltarion*. *Trichopeltarion moosai* was previously known only from the holotype male from the Makassar Strait. The discovery in Tanimbar of four additional individuals allowed for the confirmation of some characteristic features of *T. moosai*, including central rostral tooth longer than laterals ones; strong hepatic, first, and second epibranchial teeth; two strong, acute tubercles in front of the protogastric region; two large cardiac bosses, covered with fine granules; and metabranchial regions with two distinct tubercles each, lateral larger than mesial (figure 21A-B). The female carry few (25) and large eggs, of about 1.5 mm.

Distribution: Known from Indonesia, between 313 and 666 meters depth.

***Trichopeltarion ovale* Anderson, 1896**
(Figures 22A-D; 23A-E)

Trichopeltarion ovale Anderson, 1896:103.

Trichopeltarium ovale – Alcock & Anderson, 1896: pl. 25, fig. 4, 4a; Alcock & MacGilchrist, 1905: pl. 75, fig. 1, 1a-c.

? *Trichopeltarium ovale* – Alcock, 1899a:57; 1899b:99.

Trichopeltarion ovale – Sakai, 1976:314; Salva & Feldmann, 2001:37; Takeda *et al.*, 2005:112; Ng *et al.*, 2008:51 [list].

Trachycarcinus ovalis – Guinot, 1989:355.

Trachycarcinus aff. *ovalis* – Guinot, 1989:358.

Material examined: Indonesia. Makassar Strait, CORINDON 2, stn 214, 00°31.4'N-117°50.1'E, 595-592 m, 01 Nov 1980, 1 ♀ 60.0 x 58.6 mm (MNHN-B11572); Tanimbar Island, *Baruna Jaya I*, KARUBAR cruise, stn CC58, 08°19'S-132°02'E, 457-461 m, 31 Oct 1991, 2 ♀♀ 59.5 x 62.5 and 64.0 x 65.3 mm (MNHN-B28810); same cruise, stn CP 71, 08°38'S-131°44'E, 477-480 m, 02 Nov 1991, 1 ♂ 80.5 x 80.5 mm (MNHN-B28811), carapace very fragile, due to the probable recent moulting of the specimen; Piru Bay, Ceram, Maluku, 03°18'S-128°16'E, *Coriolis*, 14 Apr 1981, 1 ♀ 69.0 x 70.0 mm, left epibranchial tooth broken (LIPI). Philippines. MUSORSTOM 1, *Vauban*, stn 43, 13°50.5'N-120°28.0'E, 484-448 m, 24 Mar 1976, 1 ♀ 57.0 x 53.5 mm (MNHN-B11573). *Albatross*, stn 5423, 09°38'30"N-121°11'E, Palawan, Cagayan Id., 508 fms (928 m), 31 Mar 1909, 1 ♀ 45.0 x 46.8 mm (USNM 239373). Taiwan. TAIWAN 2001, stn CD 138, 22°13.13'N-120°20.17'E, 441-789 m, 23 Nov 2001, 1 ♀ 59.5 x 60.5 mm (NTOU).

Type locality: Southwest of Ceylon, 06°50'20"N-79°36'E, 329.1-396.8 m.

Remarks: *Trichopeltarion ovale* and *T. crosnieri* resemble one another in having the P5 merus-carpus articulation lying well before the carapace second epibranchial tooth, in which they differ from *T. alcocki*, whose P5 merus-carpus articulation almost reaches the second epibranchial tooth. Otherwise, the distinction between *Trichopeltarion ovale* and *T. crosnieri* is clear-cut. In *Trichopeltarion ovale* the rostral teeth are usually of the same length or the central tooth is only slightly longer than the laterals, whilst in *T. crosnieri* the central rostral tooth is always much longer than the laterals. The short carapace second epibranchial tooth in *Trichopeltarion ovale* and the strong and extremely long second epibranchial tooth in *T. crosnieri* further support the distinction between these two species.

Distribution: Ceylon, Taiwan, Philippines, Indonesia, and Japan, between 100 and 928 meters depth.

***Trichopeltarion paradextrum* sp. nov.**
(Figures 24A-B; 25)

Material examined: Philippines, Bohol, Panglao, Balicasag Island, in tangle nets of local fishermen, 200-300 m, holotype ♂ 29.2 x 25.0 mm (ZRC 2002-0635); same data, 50-500 m, 1 ♂ paratype 22.0 x 18.8 mm (ZRC 2001-0501).

Comparative material: *Trichopeltarion balsi* (Rathbun, 1932): Japan, stn 11, 34°33'N-129°04.5'E, 125 m, coarse sand, Tsushima Exp., 26 Jul 1967, 1 ♀

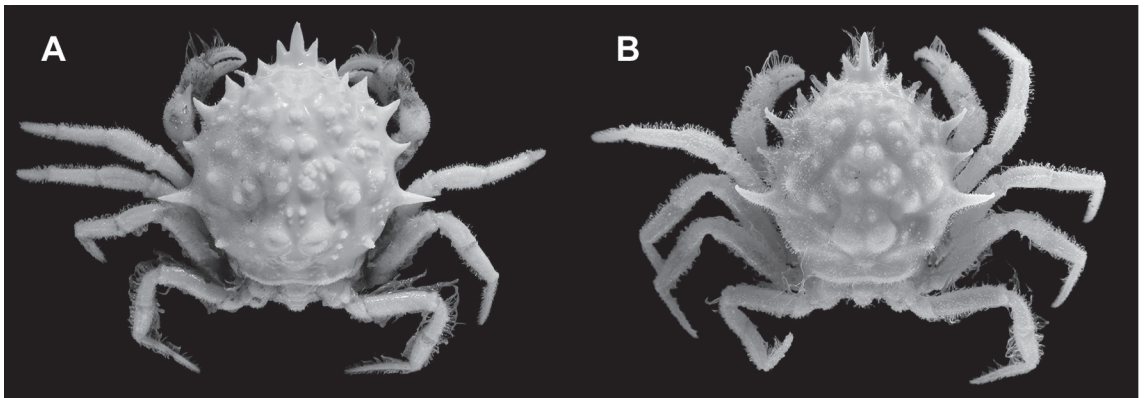


FIGURE 21: *Trichopeltarion moosai* (Guinot, 1989) comb. nov. **A**, Female 25.0 x 26.5 mm (MNHN-B28771). **B**, Female 13.5 x 14.0 mm (MNHN-B28770).

24.5 x 23.0 mm (ZRC 1999-0042); Central Japan, Chiba, off Choshi, 200-300 m, sand-mud bottom, 1990, 2 ♂♂ 23.3 x 20.6 and 20.3 x 17.5 mm (CB-MZC 2886).

Type locality: Philippines, Visayas, Bohol, Panglao, Balicasag Island, between 200 and 300 meters depth.

Description of the holotype: Small *Trichopeltarion*. Carapace elongate oval, distinctly longer than wide, moderately arched transversally and longitudinally, entirely and densely covered with strong, acute, well individualized tubercles and short tomentum. Front cut into three prominent, forward directed, acute teeth, bordered with setae and few barbs; central tooth slightly longer than laterals. Orbits large, directed laterally; ocular peduncles slender, freely movable, fully retractable into orbital cavity; cornea small, scantily pigmented. Orbital teeth strong, armed with acute barbs. Innerorbital tooth swollen, separated from lateral rostral tooth by deep, U-shaped gap; innerorbital and second supraorbital teeth separated from each other by V-shaped, deep

gap, distinctly narrower than preceding one, second supraorbital tooth distinctly shorter and thinner than innerorbital tooth; exorbital tooth slightly shorter than second supraorbital one, acute, slightly directed outward. Hepatic, first, and second epibranchial teeth discrete but well recognizable, progressively decreasing in size from front to back. Hepatic tooth slightly smaller than exorbital tooth, acute, armed with barbs; first epibranchial tooth raising from discrete swollen base, little longer than neighboring tubercles, armed with barbs; second epibranchial tooth shortest, raising from discrete swollen base, similar to neighboring tubercles, armed with barbs. Posterolateral margin extending gently rounded into posterior margin, ornamented with acute tubercles. Posterior margin almost straight, only slightly concave axially, bordered with row of rounded granules, all about same size; minute acute granules below posterior border. Carapace grooves well distinct, wide, smooth inside; branchiocardiac groove deepest, sinuous. Gastric, mesogastric, and protogastric regions gently swollen, crested with individualized, strong, acute tubercles.

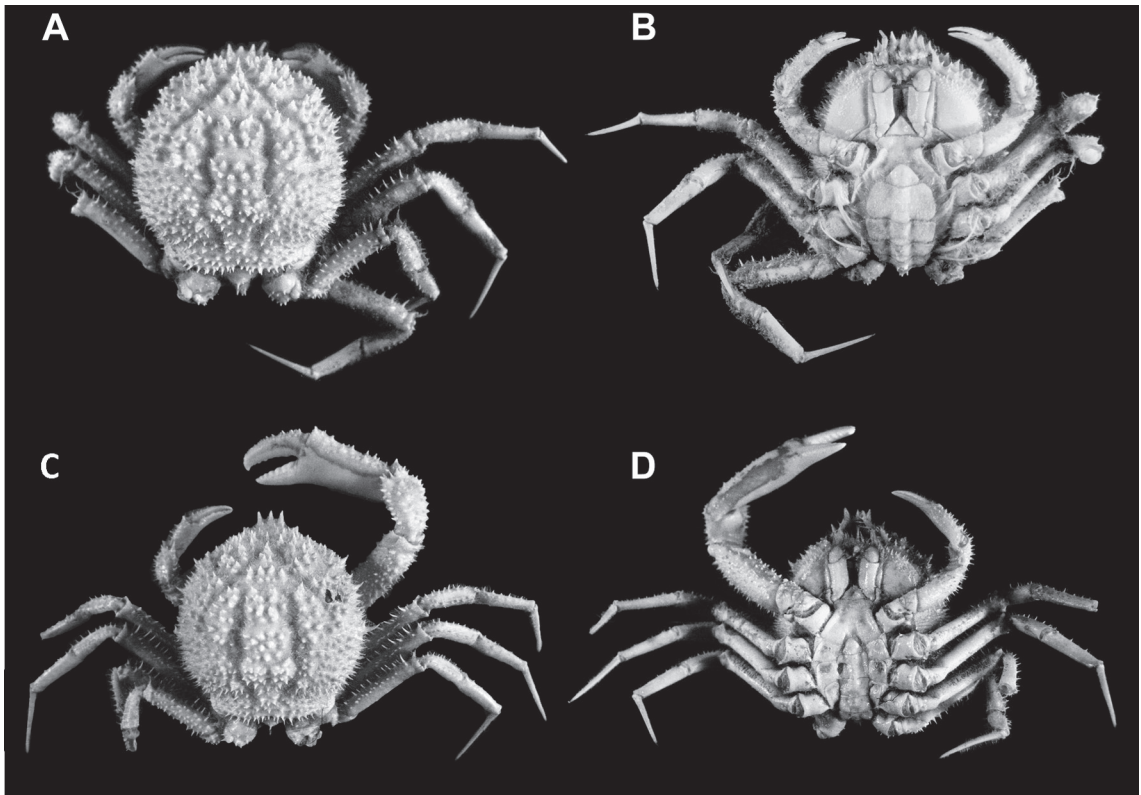


FIGURE 22: *Trichopeltarion ovale* Anderson, 1896. **A-B,** Holotype female 64.0 x 55.5 mm (cf. Anderson, 1896). **C-D,** Male nearly 56.0 x 52.0 mm (measurements taken from Alcock & MacGilchrist, 1905: plate 75) (ZSC).

Thoracic sternum smooth, densely pilose. Pair of tubercles of abdominal locking system placed near sternal suture 5/6.

Right cheliped extremely developed, massive. Dactylus crested with patches of small, acute tubercles

proximally; minute, rounded, granules along its entire superior border, decreasing in size towards distal end; otherwise smooth. Dactylus noticeably curved downward terminally, little longer than fixed finger; cutting edge with very low, polished, molariform teeth. Fixed

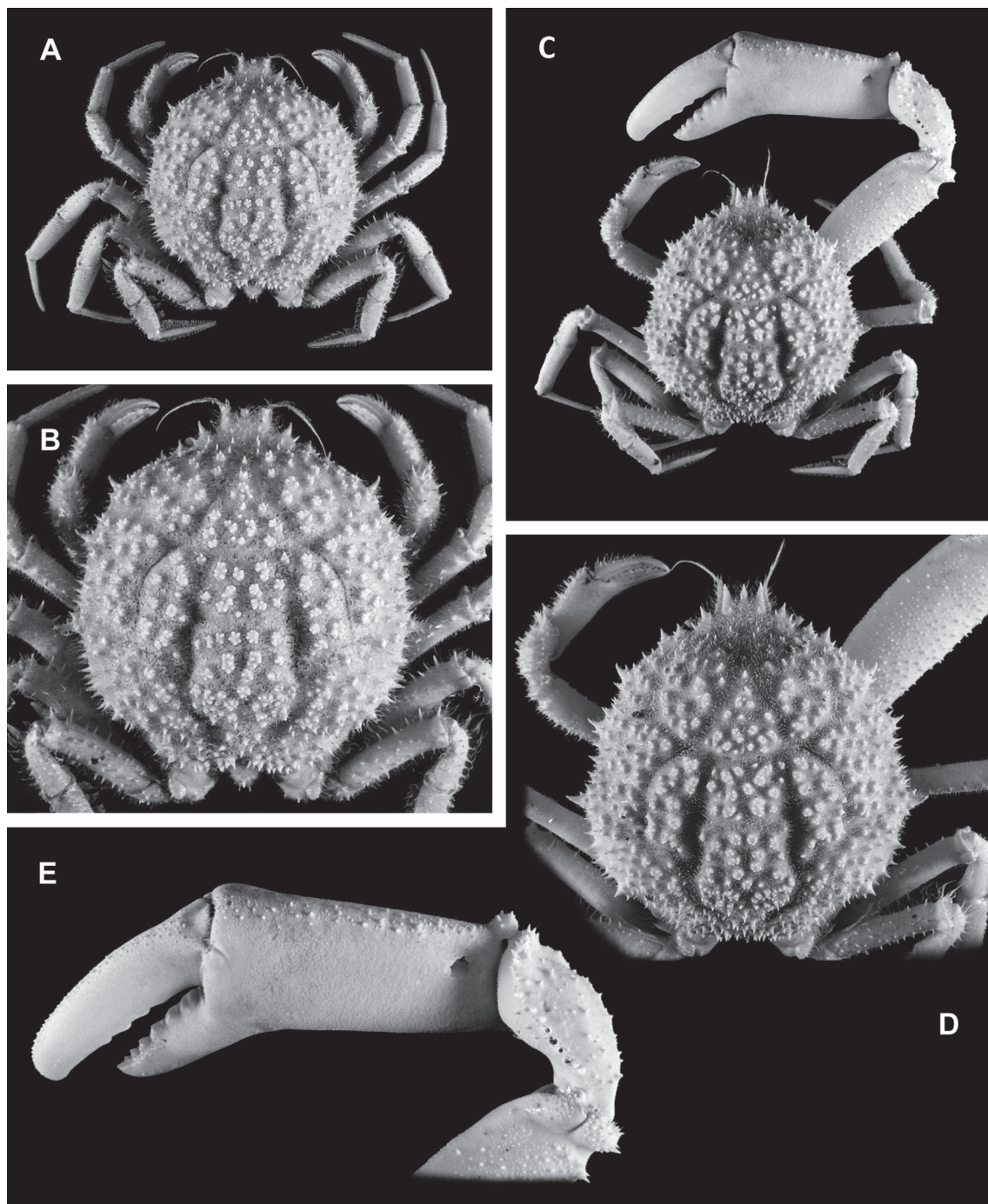


FIGURE 23: *Trichopeltarion ovale* Anderson, 1896. **A-B**, Female 64.0 x 65.3 mm (MNHN-B 28810). **C-E**, Male 80.5 x 80.5 mm (MNHN-B28811). **A, C**, General dorsal view. **B, D**, Carapace in dorsal view. **E**, Right P1 in dorso-mesial view.

finger with minute, rounded, granules along its entire inferior border, otherwise smooth; cutting edge teeth very low, polished, molariform. Propodus extremely massive, its dorsal face densely covered with strong, acute tubercles; its upper lateral and mesial sides with sparse, smaller tubercles and granules; propodus otherwise smooth. Upper and lateral faces of carpus with spiny tubercles of different sizes and granules; mesial face smooth; inner anterolateral angle with strong tooth, covered with acute tubercles. Merus dorsal face with patches of strong, acute tubercles; upper parts of lateral and mesial sides of merus with sparse, small, acute tubercles and granules, lower parts smooth with a tendency toward smooth; merus ventral with few acute tubercles. Small cheliped densely setose; dactylus delicate, regularly and gently curved downward; densely setose and sparsely tuberculated dorsally; sulcated along lateral and mesial sides, sulci densely setose; cutting edge with low teeth. Fixed finger almost straight, curved upwards distally; sulcated along lateral and mesial sides, sulci densely setose. Carpus dorsal surface with sparse, strong, acute tubercles. P2-5 densely setose; dactili markedly longer than propodi; P5 merus-carp articulation far from reaching second epibranchial tooth.

Male abdomen of six free segments and telson; telson and segments densely covered with fine, long, setae; segments 1-2 with few, sparse tubercles, remaining segments smooth. Male abdominal segment 6 longer than preceding ones, nearly squarish, its anterolateral angles only distinctly protruded and swollen; complementary parts of abdominal locking system present and functional. G2 styliform, only little longer than G1, crossing near tip.

Etymology: The specific name is derived from a combination of the Latin words *para* close to, near, and *dexter*, right (as opposed to left), in allusion to the resemblance with *Trichopeltarion dextrum*.

Remarks: *Trichopeltarion paradextrum* sp. nov. resembles *T. balssi* (figure 26A-D) and *T. dextrum* (figure 18A-D) in having the carapace elongate oval, distinctly longer than wide; discrete hepatic, first and second epibranchial teeth; and central rostral tooth longer than lateral ones. *Trichopeltarion paradextrum* sp. nov. can be readily distinguished from both *T. balssi* and *T. dextrum* by its strong orbital teeth (orbital teeth lobe-like in *T. balssi* and *T. dextrum*); innerorbital tooth separated from lateral rostral tooth front by deep, U-shaped gap (separated by a shallow gap in *T. balssi* and *T. dextrum*); innerorbital and second supraorbital teeth separated from each other by V-shaped, shallow gap; second supraorbital shortest, showing as a boss dorsally,

other by a narrow, V-shaped, deep gap (separated by a shallow and wide gap in *T. balssi* and *T. dextrum*). *Trichopeltarion paradextrum* sp. nov. additionally differs from *T. balssi* on the basis of the dorsal surface of the carapace entirely covered with strong, acute, well individualized tubercles (metagastric, mesobranchial, cardiac, and intestinal regions of the carapace with clusters of coalescent, large, rounded, sometimes blunt tubercles in *T. balssi*); G2 tip far from reaching to the thoracic sternal suture 4/5 (G2 tip reaching to the sternal suture 4/5 in *T. balssi*). The central rostral tooth slightly longer than the lateral ones further differentiates *Trichopeltarion paradextrum* sp. nov. from *Trichopeltarion dextrum*, whose central rostral tooth is much longer than the lateral rostral teeth.

Distribution: Known only from the type locality so far.

***Trichopeltarion parvum* sp. nov.**
(Figures 27A-F; 28A-B)

Material examined: Solomon Islands, SALOMON 2, *Alis*, stn CP 2228, 06°34.7'S-156°10.5'E, 609-625 m, Bouchet *et al.* coll. Nov 2004: holotype ♀ 11.5 x 10.5 mm (MNHN-B31972); Solomon Islands, SALOMONBOA 3, stn CP 2825, 10°25'S-162°02'E, 532-883 m, Richer de Forges & Boisselier coll., 20 Sep 2007, 1 ♀ 21.5 x 19.9 mm (MNHN-B32398).

Type locality: Solomon Islands, 06°34.7'S-156°10.5'E, 609-625 m.

Description of the holotype: Small *Trichopeltarion*. Carapace pentagonal, distinctly longer than wide, slightly arched transversally, moderately arched longitudinally, entirely covered with serrate setae. Front cut into three prominent, forward directed, slightly curved downward teeth. Frontal teeth bordered with setae, devoid of barbs; central tooth spatuliform in dorsal view, tip rounded, longer than laterals; lateral rostral teeth acute, reaching to little more than two-thirds of central tooth length. Orbits small, directed laterally; ocular peduncles short, freely movable, not fully retractable into orbital cavity; cornea small, nearly unpigmented. Orbital teeth weak, lobe-like, barbs lacking. Innerorbital low, triangular in dorsal view, separated from lateral rostral tooth by shallow, U-shaped gap; innerorbital and second supraorbital teeth separated from each other by V-shaped, shallow gap; second supraorbital shortest, showing as a boss dorsally,

almost entirely fused to the exorbital tooth; exorbital tooth wide triangular in dorsal view, ending in small acute tubercle, with distinct dorsal bump. Hepatic, first, and second epibranchial, and first metabranchial teeth distinct, progressively decreasing in size from

front to back, barbs lacking. Hepatic tooth strongest, curved forward, ending in small, rounded tubercle; first epibranchial tooth directed outwards, ending in two, small, rounded tubercles; second epibranchial tooth showing as large boss crested with one small,

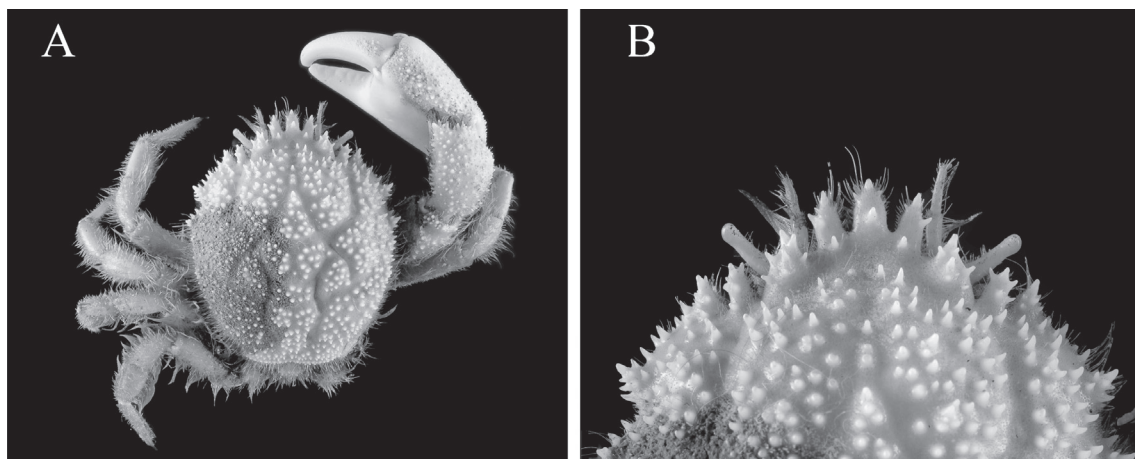


FIGURE 24: *Trichopeltarion paradextrum* sp. nov. **A-B**, Holotype male 29.2 x 25.0 mm (ZRC 2002-0635). **A**, General dorsal view. **B**, Anterior region of carapace in dorsal view.



FIGURE 25: *Trichopeltarion paradextrum* sp. nov., paratype male 22.0 x 18.8 mm (ZRC 2001-0501).

rounded tubercle; first metabranchial showing as smooth, small boss. Posterior margin only slightly concave axially, smooth except for row of minute granules, more developed laterally. Carapace grooves shallow, little distinct. Hepatic, gastric, and epibranchial regions swollen, smooth.

Thoracic sternum smooth, sparsely pilose. Pair of tubercles of abdominal locking system distinct, placed near sternal suture 5/6.

Chelipeds equal in size and shape, densely pilose. Dactylus delicate, regularly and gently curved downward; densely setose dorsally, smooth, except for few, sparse tubercles; sulcated along lateral and mesial sides, sulci densely setose; cutting edge with low teeth. Fixed finger almost straight, curved upwards distally; sulcated along lateral and mesial sides, sulci densely setose. Carpus smooth dorsally, lateral surface with sparse tubercles; inner anterolateral angle with acute tooth. P2-5 densely setose; dactili markedly longer than propodi; P5 merus-carp articulation reaching to second epibranchial tooth.

Female abdomen of six free segments and telson; telson and segments sparsely setose, smooth.

Complementary parts of abdominal locking system present, functional.

Etymology: The specific name comes from the Latin, neuter adjective *parvum*, meaning small.

Remarks: *Trichopeltarion parvum* sp. nov. is most different from the remaining species in the genus. It is distinguished from its congeners by a unique suite of characters which include carapace pentagonal, almost completely smooth; carapace grooves shallow, little distinct; hepatic, gastric, and epibranchial regions swollen; orbital teeth weak, lobe-like; innerorbital low, separated from lateral rostral tooth by shallow, U-shaped gap; innerorbital and second supraorbital teeth separated from each other by V-shaped, shallow gap; second supraorbital shortest, almost entirely fused to the exorbital tooth; hepatic, first, and second epibranchial, and first metabranchial teeth distinct, progressively decreasing in size from front to back, barbs lacking.

Distribution: Known only from the Solomon Islands, between 532 and 883 meters depth.

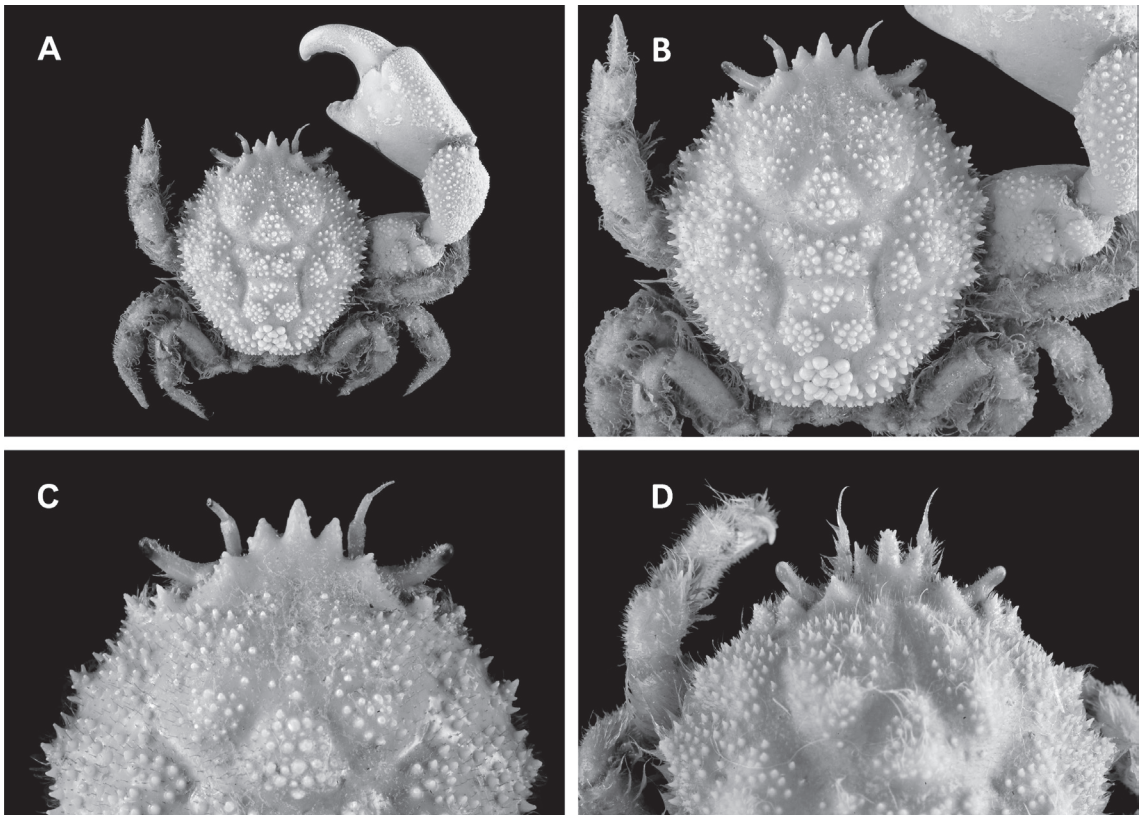


FIGURE 26: *Trichopeltarion balsi* (Rathbun, 1932). **A-C**, Male 23.3 x 20.6 mm (CBMZC 2886). **D**, Female 24.5 x 23.0 mm (ZRC 1999-0042). **A**, General dorsal view. **B**, Carapace in dorsal view. **C-D**, Anterior region of carapace in dorsal view.

Trichopeltarion spinulifer (Rathbun, 1898)
(Figures 29A-D)

Trachycarcinus spinulifer Rathbun, 1898a:278, pl. 6, fig. 1.

Trachycarcinus spinulifer – Rathbun, 1930:166, pls. 70-71.
Trichopeltarion nobile – Pequegnat, 1970:185-186, figs. 6-4, 6-5; Salva & Feldmann, 2001:35-36, figs. 17-18; Tavares & Melo, 2005:236 (part) [non *Trichopeltarion nobile* A. Milne-Edwards, 1880].

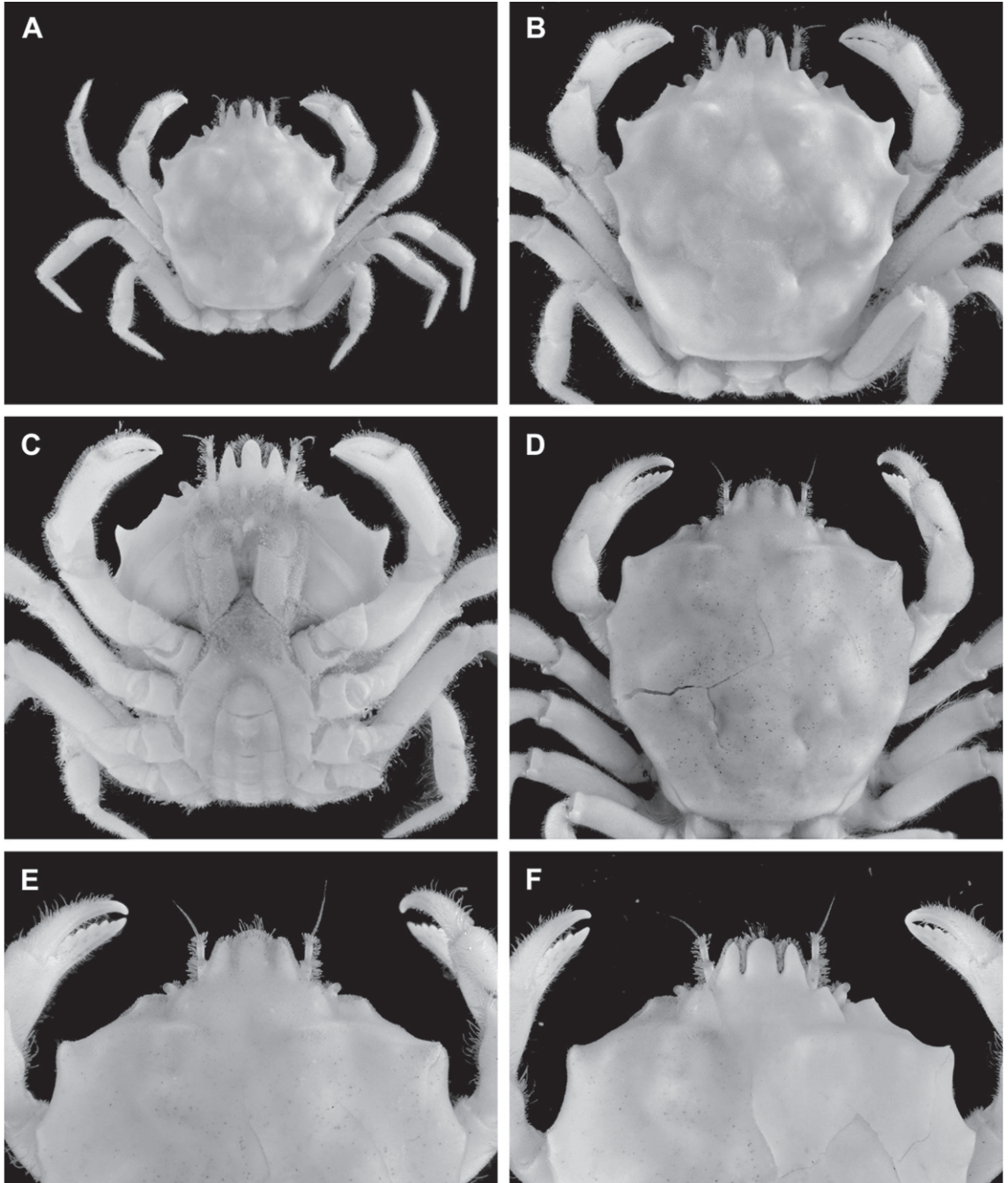


FIGURE 27: *Trichopeltarion parvum* sp. nov. A-C, Paratype female 11.5 x 10.5 mm (MNHN-B31972). D-F, Holotype female 21.5 x 19.9 mm (MNHN-B32398). A, General dorsal view. B, D, Carapace in dorsal view. Note tomentum. C, Cephalothorax in ventral view. E-F, Anterior region of carapace in dorsal view (tomentum of right half removed in F).

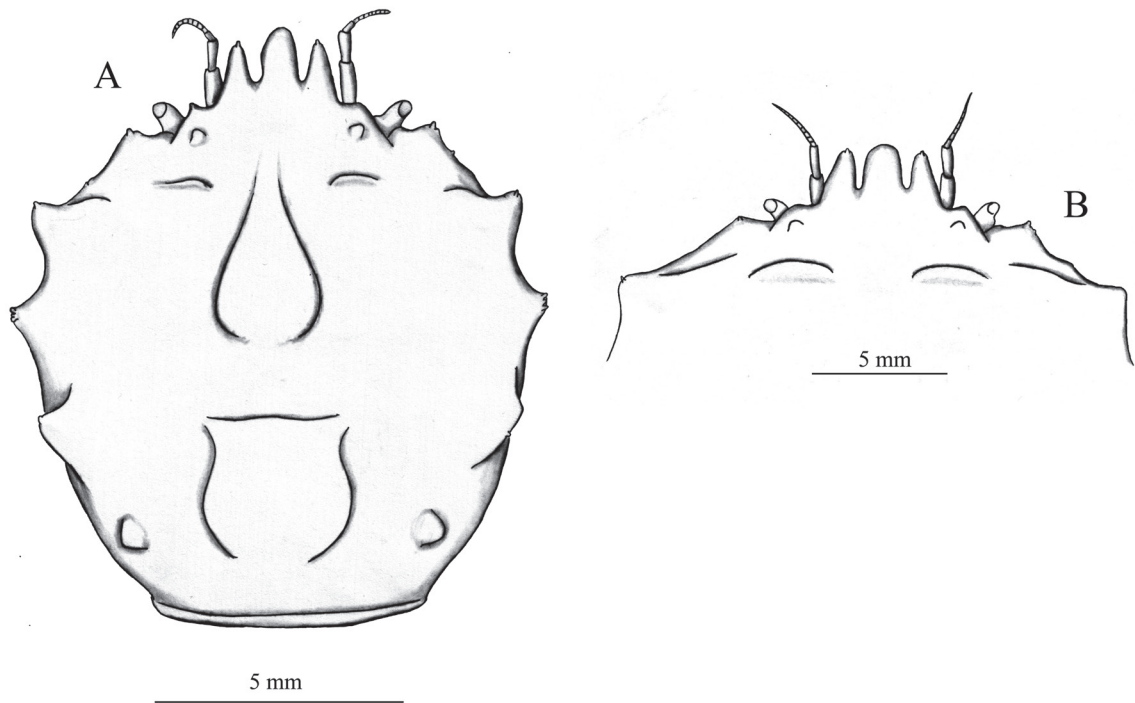


FIGURE 28: *Trichopeltarion parvum* sp. nov. **A**, paratype female 11.5 x 10.5 mm (MNHN-B31972); **B**, holotype female 21.5 x 19.9 mm (MNHN-B32398). **A**, Outline of carapace; **B**, Outline of anterior part of carapace.

Material examined: Gulf of Mexico, off Delta of the Mississippi, "Albatross", stn 2376, 29°03'15"N-88°16'00"W, 324 fathoms (592 m), 11 Feb 1885, holotype ♂ 27.3 (rostrum blunt) x 33.1 mm (USNM 9639); USA, Texas, off Corpus Cristi, 27°23'N-95°50'W, 320-360 fms, 29 Jul 1969, H.B. Roberts det. [*nec T. nobile* A. Milne-Edwards], 1 ♂ 68.2 x 80.3 mm (USNM 128427); Gulf of Mexico, Texas, off Padre Island, "Oregon II", stn 10456, 26°50'N-96°16'W, 501 m, 21 Mar 1969, A. Bermudez det. [*nec T. nobile* A. Milne-Edwards], 1 ♂ 77.7 x 95.0 mm (USNM 1101003); Gulf of Mexico, "Oregon", 1952, F.A. Chace Jr. det. *Trachycarcinus spinulifer* Rathbun [*nec T. nobile* A. Milne-Edwards], 1 ♂ 69.4 x 78.2 mm, 1 ♀ 71.0 x 88.2 mm (USNM 93674); Gulf of Mexico, USA, off Louisiana, "Citation", stn CO2, 27°54'18"N-90°07'32"W, 632 m, 13 Nov 1984, W. & L. Pequegnat det. 13 Apr 1985 [*nec T. nobile* A. Milne-Edwards], 10 ♂♂ 13.5 x 15.0 mm to 64.4 x 77.4 mm, 3 ♀♀ 12.7 x 14.6 mm to 40.0 x 48.5 mm (USNM 309657); Gulf of Mexico, "Gyre", stn S 35, 29°20'45"N-87°02'15"W, trawl, 645-695 m, 12 Jun 2000, M. Wicksten det. [*nec T. nobile* A. Milne-Edwards] 2 ♀♀ 22.2 x 26.6 mm and 39.8 x 46.7 mm (USNM 1022065); Gulf of Mexico,

USA, Florida, Panama City, "Citation", stn E02A, 28°35'01"N-86°45'44"W, 625 m, 13 May 1985, W. Pequegnat det. 14 Aug 1986 [*nec T. nobile* A. Milne-Edwards] 2 juveniles ♀♀ 12.8 x 15.2 and 16.7 x 20.2 mm, 2 juveniles, 1 carapace (USNM 1000621); Gulf of Mexico, "Oregon", stn 319, 29°20'N-87°25'W, 315 fms (576 m), 28 Apr 1951, F.A. Chace Jr. det. *Trachycarcinus spinulifer* Rathbun, 1 ♂ 75.0 x 90.3 mm, 1 ♀ 72.0 x 88.7 mm (MNHN-B5414, ex-USNM 92356).

Comparative Material

Trichopeltarion nobile – A. Milne-Edwards, 1880: Caribbean Sea, off Saint Lucia, Blake, stn 219, 13°59'50"N-61°03'50"W, 15 Feb 1879, 276.1 m, holotype ♂ 76.0 x 65.0 mm (MCZ 3054); Lesser Antilles, Guadeloupe, West coast of Basse Terre, Mission ORSTOM-IRPM-SMCB, "Polka", trap, 500 m, G. Leblond & J. Poupin coll., Jan to May 1993, 4 ♂♂ 69.2 x 82.5, 72.5 x 86.0, 73.0 x 85.4 & 76.4 x 90.0 mm (MNHN-B29897); Lesser Antilles, Guadeloupe, Basse Terre, Vieux Habitants, "Polka", trap, 300-600 m, D. Lamy coll., 1 ♂ 76.5 x 89.0 mm,

1 ♀ 66.5 x 79.5 mm (both specimens with central rostral tooth blunted), 1 ♂ 63.3 x 76.4 mm (dissected) (MNHN-B29898); Caribbean Sea, Colombia, Santa Marta, 11°27'04"N-73°42'12"W, A. Bermudez det., 1 ♀ 83.5 x 93.3 mm (USNM 290255).

Trichopeltarion pezzutoi – Tavares & Melo, 2005. Brazil: Bahia, REVIZEE, RV “Thalassa”, stn D-0538, 13°40'741”S, 38°71'601”W, 450-500 m, mature ♀ paratype cl 81.2 mm, cw 85.4 mm (MNRJ 14086); São Paulo, FV “Belem”, stn 29, 24°56'21”S, 44°43'11”W, 333 m, E. Lerchiari coll., 23 Jul 2002, juvenile ♀ paratype cl 46 mm, cw 48 mm (MZUSP 16715); Cabo de Santa Marta, Santa Catarina, Fishing boat, 400-500 m, C. Magenta leg. Oct 2004, mature ♂ holotype cl 69 mm, cw 71 mm (MZUSP 16714).

Type locality: Gulf of Mexico, off Delta of the Mississippi, 592 meters.

Remarks: Rathbun (1898a) described *Trachycarcinus spinulifer* Rathbun, 1898, based on one immature male (cl 28 mm) and a broken carapace, both obtained off the delta of the Mississippi River between 592 and 635 meters depth. Pequegnat (1970:184) argued that the morphological differences between *T. spinulifer* and *T. nobile* (Rathbun, 1898a:278-279; 1930:166-167) are referable to the age and size of the specimens and, accordingly, placed *T. spinulifer* in the synonymy of *T. nobile*. Salva & Feldmann (2001:34) followed Pequegnat (1970) in considering *T. spinulifer* a more recent synonym of *T. nobile*. Upon examination of the holotype of *T. spinulifer* alone, Tavares & Melo (2005:240) subscribed to the synonymy between the two species. However, for the present study several additional specimens of both *T. spinulifer* and *T. nobile* have been obtained, including the adult male holotype of *T. nobile*. The study of adult males and females prompted us to remove *T. spinulifer* from the synonymy of the later species. Differences between *T. spinulifer* and *T. nobile* are as follows: (i) P5 merus-carpus articulation almost reaching the proximal end of the second epibranchial tooth (whilst in *T. nobile* the P5 merus-carpus articulation lies well before the second epibranchial tooth, figure 30A); (ii) P4 the merus-carpus articulation reaching well beyond the second epibranchial tooth (whilst in *T. nobile* the merus-carpus articulation do not reach the second epibranchial tooth); (iii) the carapace is entirely and regularly covered with sparse fine hairs of two different sizes, easily recognizable in profile view (while in *T. nobile*

the carapace is covered by a thick coat of velvet (figure 30A), see also A. Milne-Edwards, 1880:20-21; Rathbun, 1930; Salva & Feldmann, 2001:34; Tavares & Melo, 2005:240); (iv) carapace distinctly and regularly humped over its entire dorsal surface, humps from the meta-gastric, cardiac, branchial, and intestinal regions of the carapace crested with granules or spiny tubercles (whereas in *T. nobile* the carapace is ornamented with small spiny tubercles or granules near the margins while its central parts are smooth).

T. spinulifer can be easily split from its Southwestern Atlantic congener, *Trichopeltarion pezzutoi*, by the ornamentation of the dorsal surface of the carapace distinctly and regularly humped over its entire surface (regularly covered with rounded tubercles in *T. pezzutoi*) and the posterior region of the carapace sparsely tuberculated (heavily tuberculated in *T. pezzutoi*). Additionally, *T. pezzutoi* (figure 30B) shares with *T. nobile* the P5 merus-carpus articulation lying well before the second epibranchial tooth (merus-carpus articulation almost reaching the epibranchial tooth in *T. spinulifer*) and the P4 merus-carpus articulation not reaching the second epibranchial tooth (merus-carpus articulation reaching well beyond the second epibranchial tooth in *T. spinulifer*).

Distribution: *T. spinulifer* is known so far from the Gulf of Mexico, between 501 and 695 meters depth. Three additional species are known from the Atlantic Ocean to date, *T. nobile* (Caribbean Sea, between 276 and 600 meters depth), *T. intesi* (Crosnier, 1981), from West Africa (Ivory Coast, 600 meters depth), and *T. pezzutoi* from the Southwestern Brazilian coast between 333 and 500 meters depth.

Trichopeltarion timorensis (Števcíć, 1993)

comb. nov.

(Figures 10D-F; 31A-D)

Krunopeltarion timorensis Števcíć, 1993:1097-1102, figs. 1, 2.

Krunopeltarion timorensis – Davie, 2002:121.

Trichopeltarion timorensis – Ng *et al.*, 2008:52 [list].

Material examined: Timor Sea, Endeavor Pearl, 09°46'S-130°14'E, trawl, 270-300 m, holotype ♀ 49.0 x 54.0 mm; Indonesia, KARUBAR, Kai and Tanimbar Islands area, no station number, 1 ♂ 48.5 x 54.5 mm, 2 ♀♀ 49.0 x 55.5 and 49.0 x 53.0 mm (MNHN-B 28795).

Description of the male: Carapace subcircular, distinctly arched transversally and longitudinally, heavily ornamented with large clusters of rounded tubercles crested with rounded, large granules. Front cut into three prominent teeth. Central rostral tooth forward directed, distinctly wider than lateral teeth, with very few, sparse barbs distally; lateral teeth about same size as central tooth, slightly directed outwards, with very few, sparse barbs distally. Orbits large, directed laterally; ocular peduncles slender, freely movable, fully retractable into orbital cavity; cornea small, scantily pigmented. Orbital teeth strong, armed with few, acute barbs. Innerorbital tooth swollen, ending in sharp tip, separated from lateral rostral tooth by deep, U-shaped gap; innerorbital and second supraorbital teeth separated from each other by V-shaped, deep gap; exorbital tooth distinctly shorter than innerorbital tooth, separated from second supraorbital by V-shaped, deep gap. Hepatic, first and second epibranchial, and first and second metabranchial teeth strong, armed with barbs. Hepatic tooth lobe-like, much stronger than exorbital tooth; first epibranchial lobe-like, stronger than hepatic tooth; second epibranchial tooth strongest, ending in sharp tip; second metabranchial tooth

stronger than first. Carapace posterior margin slightly concave axially, bordered with rows of rounded tubercles of different sizes. Carapace grooves well distinct, wide, smooth inside; branchiocardiac groove deepest, sinuous. Gastric, cardiac, and intestinal regions swollen, with large cluster of rounded tubercles.

Thoracic sternum with short tomentum and sparse, rounded granules. Pair of tubercles of abdominal locking system placed near sternal suture 5/6.

Right cheliped extremely developed, massive, smooth, polished. Dactylus longer than fixed finger, smooth, straight, curving downward terminally; cutting edge with very low, molariform teeth. Fixed finger smooth; cutting edge with very low, molariform teeth. Palm extremely massive, smooth, polished, except for few minute granules on upper surface. Carp upper surface with rounded, well individualized granules; inner anterolateral angle with strong, blunt, tooth. Merus smooth, polished. Small cheliped densely setose; dactylus delicate, regularly and gently curved downward; densely setose dorsally; sulcated along lateral and mesial sides, sulci shallow, densely setose; cutting edge with almost imperceptible, molariform teeth proximally. Fixed finger almost straight, curved

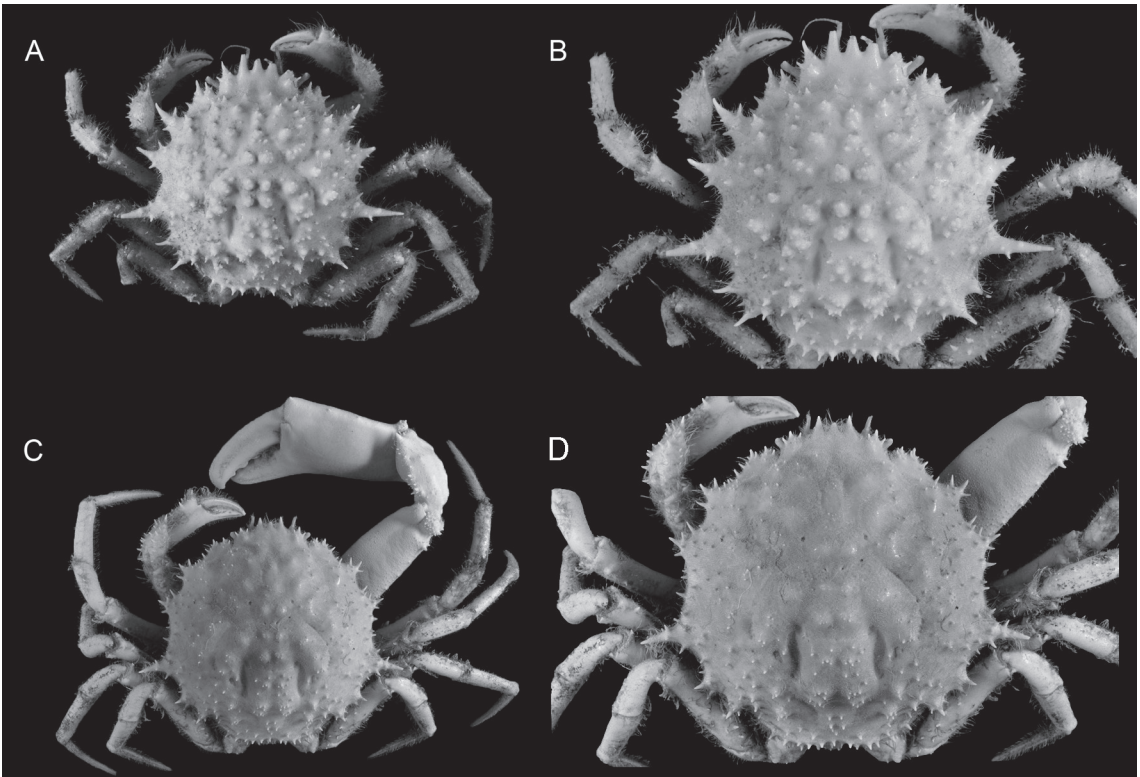


FIGURE 29: *Trichopeltarion spinulifer* (Rathbun, 1898). **A-B,** Holotype male 27.3 x 33.1 mm (USNM 9639). **C-D,** Male 75.0 x 90.3 mm (MNHN-B5414). **A, C,** General dorsal view. **B, D,** Carapace in dorsal view.

upwards distally; sulcated along lateral and mesial sides, sulci shallow, densely setose; cutting edge with almost imperceptible, molariform teeth proximally. Carpus dorsal surface with sparse, strong, acute tubercles; inner anterolateral angle with strong, acute tooth. P2-5 densely setose; dactili markedly longer than propodi; P5 merus-carp articulation far from reaching second epibranchial tooth.

Male abdomen of six free segments and telson; telson and segments with short tomentum; segments 1-2 with few, sparse tubercles, remaining segments smooth. Abdominal segment 6 only slightly longer than 5 axially, nearly squarish, its anterolateral angles slightly protruded, swollen; complementary parts of abdominal locking system present and functional. G2 styliform, short, not reaching to thoracic sterna suture 5/6.

Type locality: Timor Sea, 09°46'S-130°14'E, between 270-300 meters depth.

Remarks: *Trichopeltarion timorensense* resembles both *Trichopeltarion wardi* Dell, 1968, and *Trichopeltarion fantasticum* Richardson & Dell, 1964. It promptly differs from *T. wardi* in having both first and second metabranchial teeth well developed and spiniform (both teeth absent in *T. wardi*); the innerorbital, second supraorbital, and the exorbital teeth closer to one another, separated by only a V-shaped, narrow

notch (supraorbital teeth wide apart from each other). *Trichopeltarion timorensense* can be easily split from *T. fantasticum* by having the dorsal surface of the carapace heavily ornamented, with large clusters of coalescent, rounded tubercles, crested with large, rounded granules (carapace with widely spaced, rounded tubercles in *T. fantasticum*).

Distribution: Known so far only from Indonesia (Timor Sea and Tanimbar Islands), between 270 and 300 meters depth.

***Trichopeltarion vanuatuensis* sp. nov.**
(Figures 32A-B; 33)

Material examined: Vanuatu: BOA0, *Alis*, stn CP 2304, 16°35'06"S-167°59'34"E, trawl, 564-582 m, Samadi *et al.* coll., 14 Nov 2004, ♀ holotype 23.3 x 24.0 mm (MNHN-B30511); same cruise, stn CP 2319, 15°03'33"S-166°52'76"E, trawl, 482-540 m, Samadi *et al.* coll. 16 Nov 2004, 1 ♀ paratype 16.4 x 15.5 mm (MNHN-B30512); BOA1, *Alis*, stn CP 2432, 14°59'70"S-166°55'00"E, trawl, 630-705 m, Samadi *et al.* coll. 08 Sep 2005, 1 ♀ paratype 18.0 x 17.8 mm (MNHN-B30513); New Caledonia, *Vauban*, stn D 38, dredge, 22°29.3'S-166°22.0'E, 475-550 m, 07 Jun 1979, 1 ♂ paratype 11.5 x 11.4 mm (MNHN-B31973).

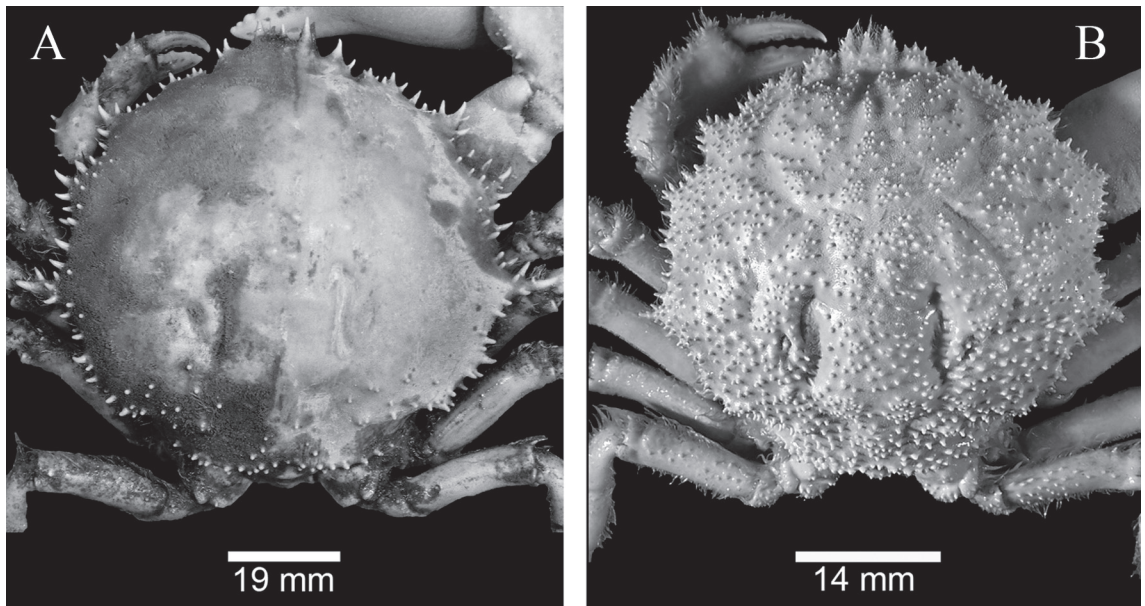


FIGURE 30: Carapace in dorsal view. **A**, *Trichopeltarion nobile* A. Milne-Edwards, 1880, holotype male 65.0 x 76.0 mm (MCZ 3054), **B**, *Trichopeltarion pezzutoi* Tavares & Melo, 2005, holotype male 69.0 x 71.0 mm (MZUSP 16714).

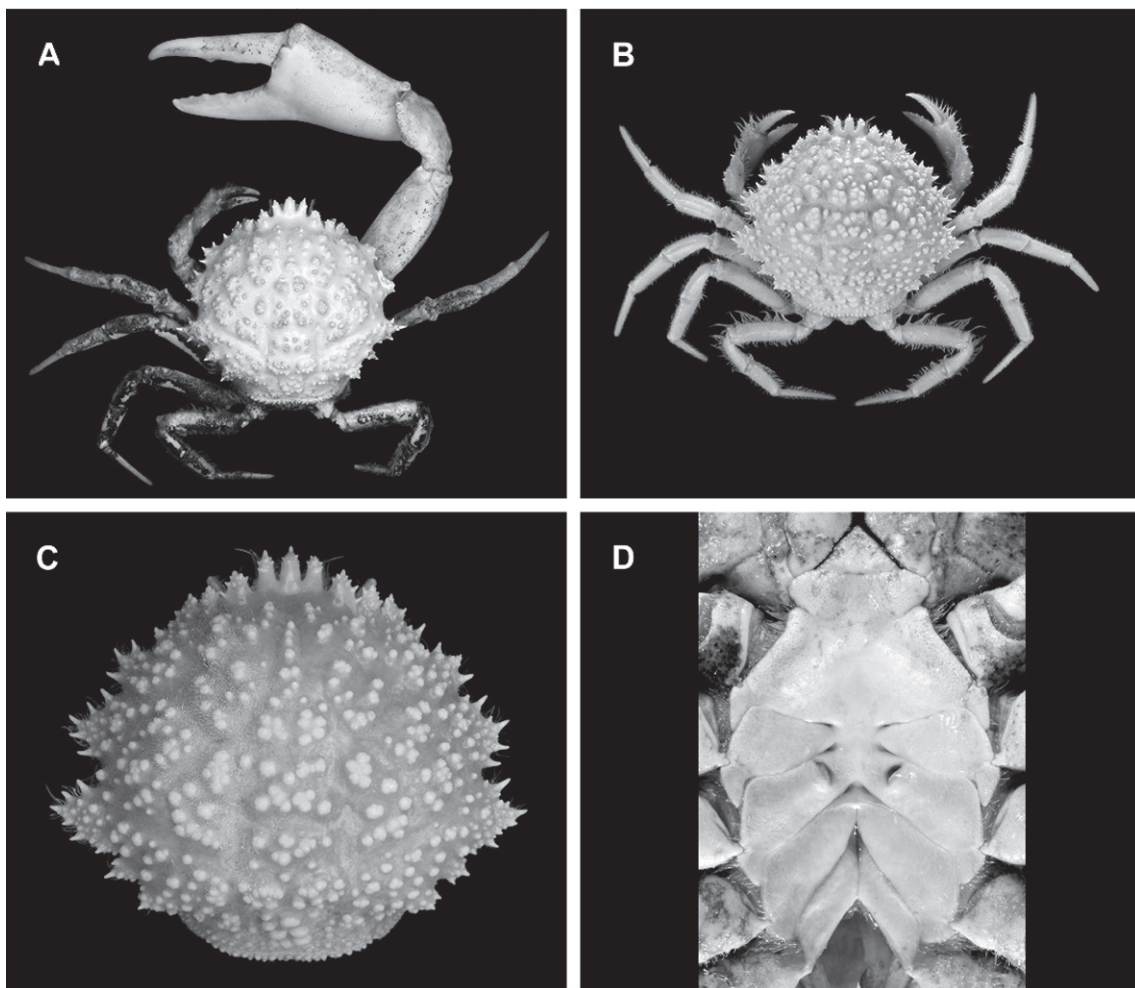


FIGURE 31: *Trichopeltarion timorensis* (Števcic, 1993) comb. nov. **A**, Male 48.5 x 54.5 mm (MNHN-B28795). **B-D**, Female 49 x 55.5 mm (MNHN-B28795). **A-B**, General dorsal view. **C**, carapace in dorsal view. **D**, Thoracic sternum.

Type locality: Vanuatu, 16°35'06"S-167°59'34"E, between 564-582 meters depth.

Description of the holotype: Carapace subcircular, only slightly wider than long, moderately arched transversally, strongly arched longitudinally. Front cut into three strong, forward directed, sharp rostral teeth; central tooth distinctly stronger and longer than laterals. Rostral teeth lacking barbs. Orbits large, directed laterally; ocular peduncle slender, cornea small with only scant traces of pigment. Orbital teeth acute, densely setose basally, naked terminally, barbs lacking. Innerorbital tooth separated from lateral rostral tooth front by deep, wide, V-shaped gap; innerorbital and second supraorbital teeth separated by narrow, deep gap, much narrower than preceding one, second supraorbital tooth shorter and much more slender than first; exorbital tooth longer than second

supraorbital tooth, narrower and as long as innerorbital, slightly directed outward. Anterolateral margin rounded, marked with three strong teeth, hepatic, post-hepatic, and epibranchial, minutely granulated basally, smooth terminally, directed forwards and upwards, barbs lacking. Hepatic tooth separated from exorbital tooth by wide deep depression; hepatic and post-hepatic teeth of about same size, acute, slightly curved inward; distance between exorbital, hepatic, post-hepatic and epibranchial teeth decreasing from back to front. Second epibranchial tooth longest, distinctly stronger than preceding teeth, directed outwards and slightly upwards. Posterolateral margin weakly convex, extending obliquely into posterior margin, ornamented with few, sparse, rounded granules. Posterior margin almost straight, only slightly convex laterally, bordered with rounded granules of different sizes. Dorsal surface of carapace densely

covered with short setae, paved with rounded granules, absent in depressions bounding elevated regions. Gastric region slightly swollen, densely crested with rounded granules, well delimited laterally by two, shallow, smooth grooves. Mesogastric region triangular in shape, low, densely covered with granules. Metagastric and urogastric regions swollen, crested with rounded granules. Cardiac region with two distinct humps, placed side by side, transversally in relation to the body axis, crested with rounded granules. Branchiocardiac grooves smooth, deeply excavated, sinuous. Intestinal and branchial regions sparsely covered with granules; metabranchial bump strong, crested with acute granules. Protogastric and hepatic regions sparsely covered with both acute and rounded granules of different sizes; pterygostomial region with minute granules. Buccal frame nearly rectangular, somewhat wider anteriorly. Insertions of mxp3 placed well apart.

Thoracic sternum ovoid, sparsely granulated, longer than wide; maximum width attained at segment 5. Segment 3 with two lateral expansions. Vulvae extremely large, operculated, subcircular in shape. Chelipeds missing. Female paratype (MNHN-B30512) with chelipeds densely covered with both small granules and long setae; right cheliped slightly larger than left. Dactylus slightly curved downward terminally, only little longer than fixed finger, ending in acute tip; teeth from cutting edge interfingering with teeth in fixed finger. Fixed finger rather straight, ending in acute, upturned tip. Propodus, carpus, and merus granulated. Pereiopods densely setose, finely granulated; dactyli of all pereiopods longer than propodus. Female abdomen of six free segments and telson, segments sparsely granulated.

Variations: In the smaller females (MNHN-B30512, B30513) the proto-gastric regions have two, spiny, distinct tubercles each; in the larger female the mesial proto-gastric tubercles are well recognizable, whereas the laterals are surrounded by similar tubercles and rather indistinct. In the smallest female (MNHN-B30512) the proto-gastric tubercles are almost aligned transversally in relation to the body axis, whilst in the slightly larger female (MNHN-B30513) the lateral tubercles are displaced forward. In the smaller females (MNHN-B30512, B30513) the post-hepatic tooth is slightly shorter than the hepatic one, whereas in the largest female (MNHN-B30511) the hepatic and post-hepatic spines are about the same size.

Etymology: Named after the type locality, Vanuatu; and *-ensis* Latin suffix denoting place.

Remarks: *Trichopeltarion vanuatuensis* sp. nov. resembles *T. alcocki* in having strong, sharp orbital teeth. Both species can be easily distinguished on the basis of the ornamentation of the carapace (covered with well individualized tubercles in *Trichopeltarion vanuatuensis*, whereas in *T. alcocki* the carapace is essentially covered with coalescent tubercles crested with few granules); spinulation of the dorsal face of the P2-5 merus (with minute spiniform granules in *Trichopeltarion vanuatuensis*, whilst in *T. alcocki* the dorsal face of the P2-5 merus carry a longitudinal row of strong, sharp spines).

Distribution: The species is so far known only from the Vanuatu, between 482 and 705 meters, and New Caledonia from 475 to 550 meters.

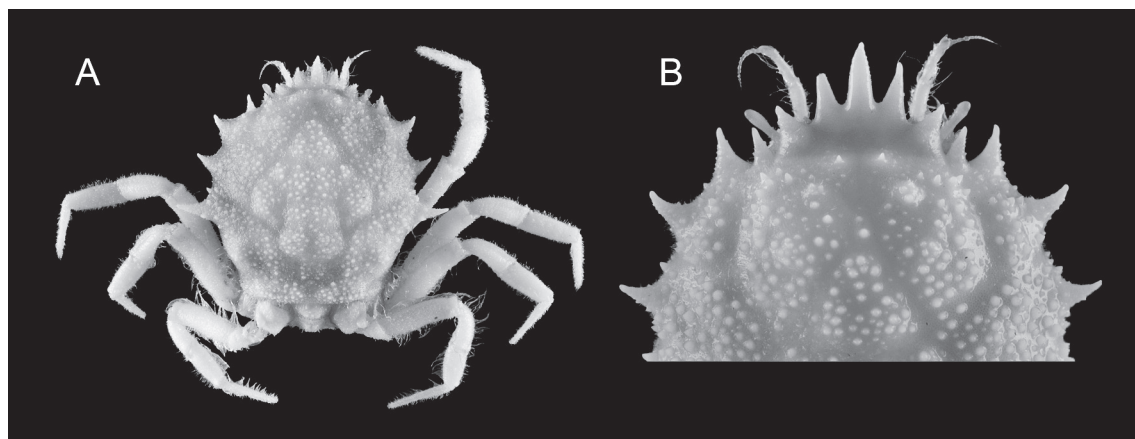


FIGURE 32: *Trichopeltarion vanuatuensis* sp. nov. holotype female 23.3 x 24.0 mm (MNHN-B30511). A, General dorsal view. B, Anterior region of carapace in dorsal view.

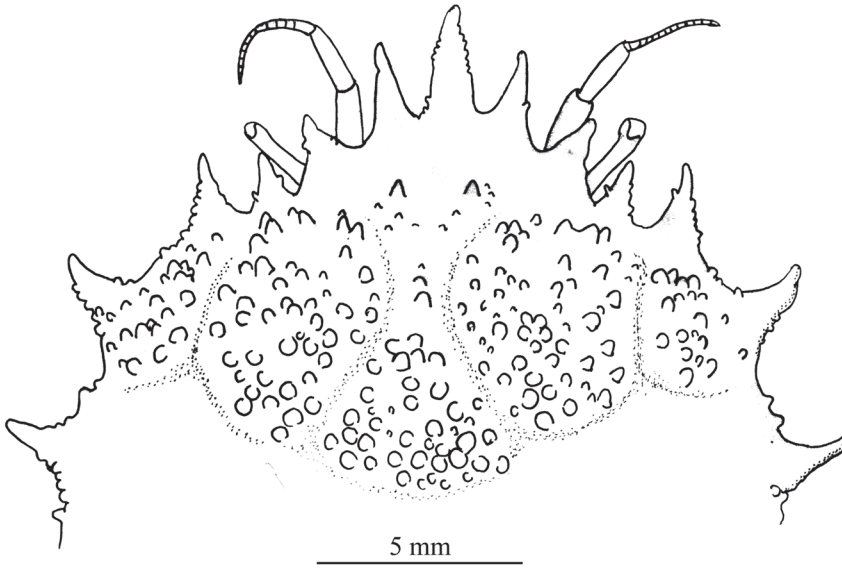


FIGURE 33: *Trichopeltarion vanuatuensis* sp. nov. holotype female 23.3 x 24.0 mm (MNHN-B30511): anterior region of carapace in dorsal view.

Sphaeropeltarion gen. nov.

Type species: Sphaeropeltarion edentatum sp. nov. by present designation and monotypy. Gender neuter.

Diagnosis: Carapace subcircular, slightly oblong longitudinally, strongly arched transversally; its dorsal surface with sparse, fine granules, entirely coated with short velvet; branchio-cardiac groove poorly delimited; gastric pits shallow, close to each other. Hepatic, first and second epibranchial teeth reduced to minute, smooth, rounded tubercles, similar to each other. Posterolateral border of carapace poorly delimited, ornamented with few granules. Front cut into three, flat teeth; central and lateral rostral teeth of about same size. Orbit delimited superiorly by two supraorbital teeth; laterally by exorbital tooth, inferiorly by infraorbital tooth and antennal article 2+3. Exorbital and infraorbital teeth separated by deep, wide gap; infraorbital tooth and antennal article 2+3 separated by deep, wide gap. Orbital cavity deeply excavated. Ocular peduncle freely movable, fully retractable into the orbital cavity, noticeably long and slender (globulous proximally), strongly calcified. Cornea small, unpigmented; ommatidia hardly recognizable. Antennal article 1 slightly beaked laterally; articles 2-3 fused to one another with no trace of suture in between. Antennal article 2+3 hardly movable, in close contact but not fused to basal part of infraorbital tooth; a gap between antennal article 2+3 and lateral rostral tooth. Antennal articles 2+3-5 cylindrical, of about

same length; antennal flagellum short. Antennal setae dispersed all around antennal segments and flagellae (not fringed); setae of opposing sides forming incipient antennal conduit. Mandibular palp 2-articulated, articles 1-2 completely fused together, immovable in relation to each other; no line of suture between segments 1-2. Limit between endostome and epistome poorly recognizable. Pl8 gutter edge well developed (branchial formula unknown). Female abdomen of six somites and telson (male abdomen unknown). Female abdominal locking system functional.

Etymology: The name *Sphaeropeltarion* is a combination of the Greek words *sphair* (Latinized to *sphaer*, *sphaero*, for sphere) and *peltari* (diminutive of *pelte*, for shield or buckler), in allusion to the globular body.

Remarks: *Sphaeropeltarion* gen. nov. can be distinguished from other trichopeltariids by a unique combination of characters which include: (i) central and lateral rostral teeth flat, similar in size; (ii) subcircular, slightly oblong longitudinally, and strongly arched transversally carapace; (iii) carapace entirely coated with short velvet; (iv) hepatic, first, and second epibranchial teeth reduced to minute, smooth, rounded tubercles, similar to each other; (v) carapace posterolateral border poorly delimited; (vi) deeply excavated orbit; (vii) ocular peduncle freely movable and fully retractable; (viii) noticeable gap between antennal article 2+3 and lateral rostral tooth; (ix) antennal articles 2+3, 4, and 5 of about the same length;

(x) antennal flagellae comparatively short, articles small, little calcified, setae dispersed all around antennal flagellae; (xi) mandibular palp 2-articulated, articles 1-2 completely fused to each other with no line of suture in between; (xii) Pl 8 pleural gutter edge well developed.

***Sphaeropeltarion edentatum* sp. nov.**
(Figures 1D; 34A-F; 35A-F)

Material examined: Wallis and Futuna Islands, MUSORSTOM 7, stn DW 557, 11°48.1'S-178°18.2'W, 608-600 m, 19 May 1992, holotype, ♀ 44.2 x 39.4 mm (MNHN-B31974).

Description of the holotype: Carapace subcircular, slightly oblong axially, strongly arched both transversally and longitudinally, covered with both thin coat of velvet and sparse short setae. Front cut into three short, spatuliform, forward directed rostral teeth. Rostral teeth equal in length, tip-rounded, central slightly broader than laterals, each tooth ending in small, rounded granule; rounded granule followed by at least one additional smaller granule, barbs lacking. Orbits large, directed laterally; ocular peduncles slender, cornea very small, unpigmented. Orbital teeth lacking barbs, triangular in outline. First two supraorbital and exorbital teeth separated from one another and from lateral rostral tooth by deep, wide, V-shaped gap; distance between lateral rostral, first two supraorbital and exorbital teeth increasing from back to front. First supra-orbital tooth broadest, second supra-orbital and exorbital teeth small, about same size. Anterolateral margin rounded, hepatic, post-hepatic, and epibranchial teeth reduced to single tubercles; hepatic largest, well recognizable; post-hepatic and epibranchial hardly recognizable, sided by similar tubercles. Posterolateral margin smooth, indistinct, convex, extending obliquely into posterior margin. Posterior margin slightly concave axially, weakly convex laterally, bordered with row of small granules, all about same size. Dorsal surface of carapace smooth, except for few sparse granules. Regions of carapace poorly delimited, branchio-cardiac groove well recognizable, weakly excavated. Metabranial region smooth, except for few sparse granules. Buccal frame nearly rectangular, somewhat wider anteriorly. Insertions of mxp3 placed well apart.

Thoracic sternum ovoid, smooth, longer than wide; maximum width attained at segment 5; segment 3 with two lateral expansions, 4 traversed by strongly setose line at level of P1 coxa, setae noticeably long.

Vulvae large, subcircular, unoperculated, placed next to the sternal suture 5/6.

Chelipeds unequal in size, right slightly larger, homodonts. Dactylus, propodus, carpus, and merus smooth, except for few sparse granules, strongly setose, setae long. Cutting edges of fingers armed with low teeth, teeth interfingering. Pereiopods smooth, densely setose; dactyli much longer than propodus, densely velvet all over, that of P5 additionally with long setae ventrally; upper and lower margins of merus of P2 through P5 with long hairs on upper and lower margins.

Female abdomen of six free segments and telson, segments smooth, bordered by long setae.

Etymology: The specific name derives from the Latin *edentatus*, toothless, in allusion to the anterolateral teeth of the carapace reduced to single tubercles.

Remarks: The discovery of the male of *Sphaeropeltarion edentatum* sp. nov. will permit additional taxonomic details to be added to the original description and probably show additional differences between *Sphaeropeltarion* and other trichopeltariid genera.

Distribution: The species is so far known only from Wallis and Futuna Islands, 600-608 meters depth.

Superfamily Cancroidea Latreille, 1802

Family Atelecyclidae Ortmann, 1893

Type genus: *Atelecyclus* Leach, 1814.

Genera included: *Atelecyclus* Leach, 1814.

Emended diagnosis: Carapace semi-circular, moderately arched transversally; its dorsal surface ornamented with sparse granules; branchio-cardiac groove well recognizable. Gastric pits small, close to each other. Hepatic, first and second epibranchial teeth armed with small acute spines (barbs), similar in form and shape to remaining anterolateral teeth. Posterolateral margin of carapace bordered with sinuous row of granules. Orbit deeply excavated, delimited superiorly by two supraorbital teeth, by exorbital tooth laterally, by both infraorbital tooth and antennal article 2+3 inferiorly. Infraorbital intercalated piece absent. Exorbital and infraorbital teeth separated from each other and from antennal article 2+3 by deep, narrow notch.

Ocular peduncle freely movable, fully retractable into orbital cavity, thick, and moderately

calcified. Cornea large, little shorter than half length of peduncle, normally pigmented (dark brown), ommatidia well recognizable.

Antennal articles 2-3 fused to one another with no trace of suture in between and completely fused to both, lateral rostral tooth and infraorbital tooth. Antennal article 2+3, immovable, rather flattened,

largest antennal article by far. Antennal conduit present (in *Atelecyclus rotundatus* only). Articular condyles with antennal article 4 placed so that fourth antennal article moves inwards and downwards.

Mandibular palp 3-articulated, all articles freely movable. Endostome well delimited anteriorly by uninterrupted strong ridge, clearly demarcating

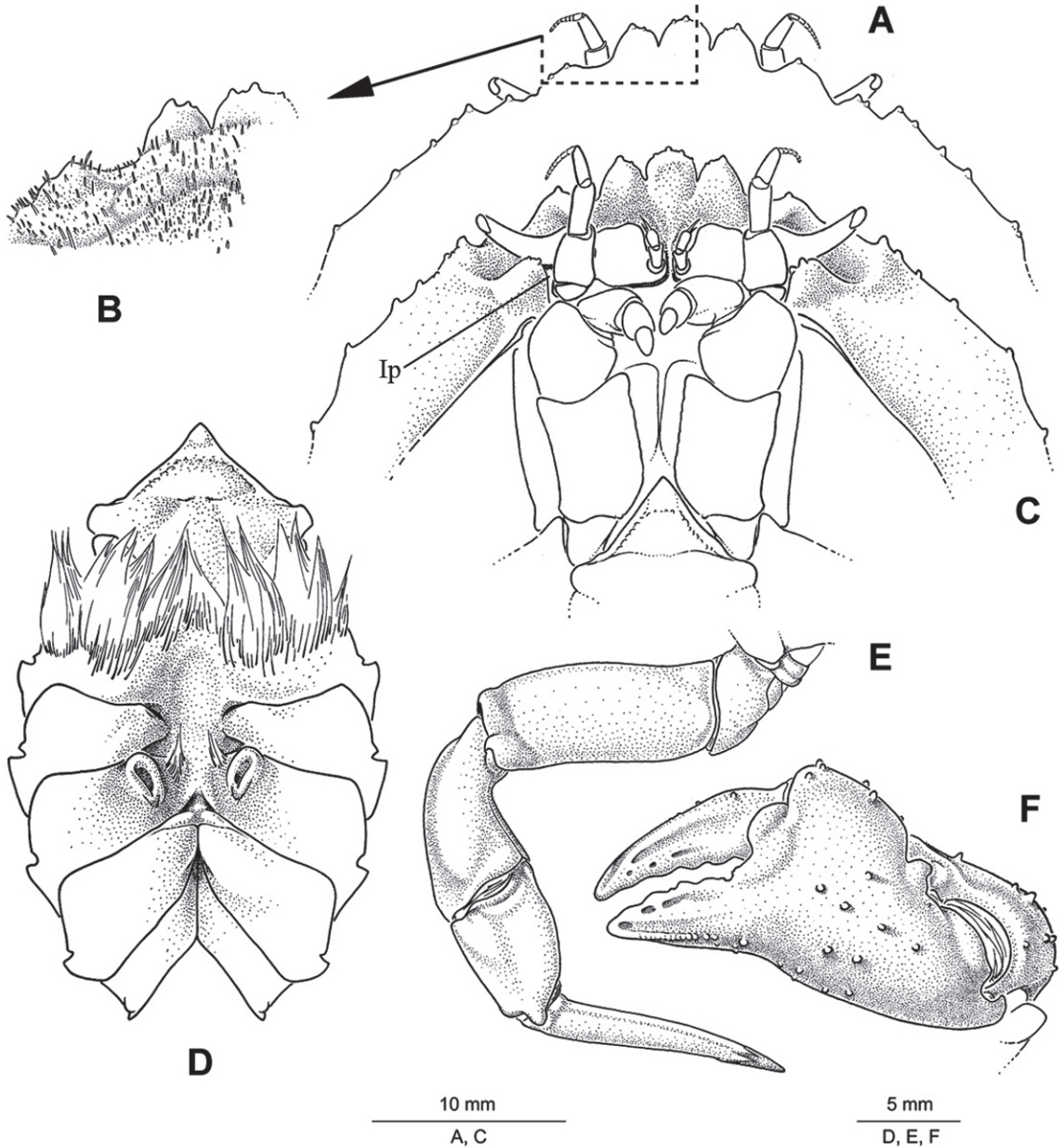


FIGURE 34: *Sphaeropeltarion edentatum* gen. nov., sp. nov., holotype female 44.2 x 39.4 mm (MNHN-B31974). **A**, Outline of anterior region of carapace in dorsal view. **B**, Detail of anterior region of carapace in dorsal view. **C**, Anterior region of body in ventral view (setae not represented). **D**, Thoracic sternum. **E**, Left P5 (setae not represented). **F**, Left cheliped (setae not represented). Ip, Infraorbital intercalated piece.

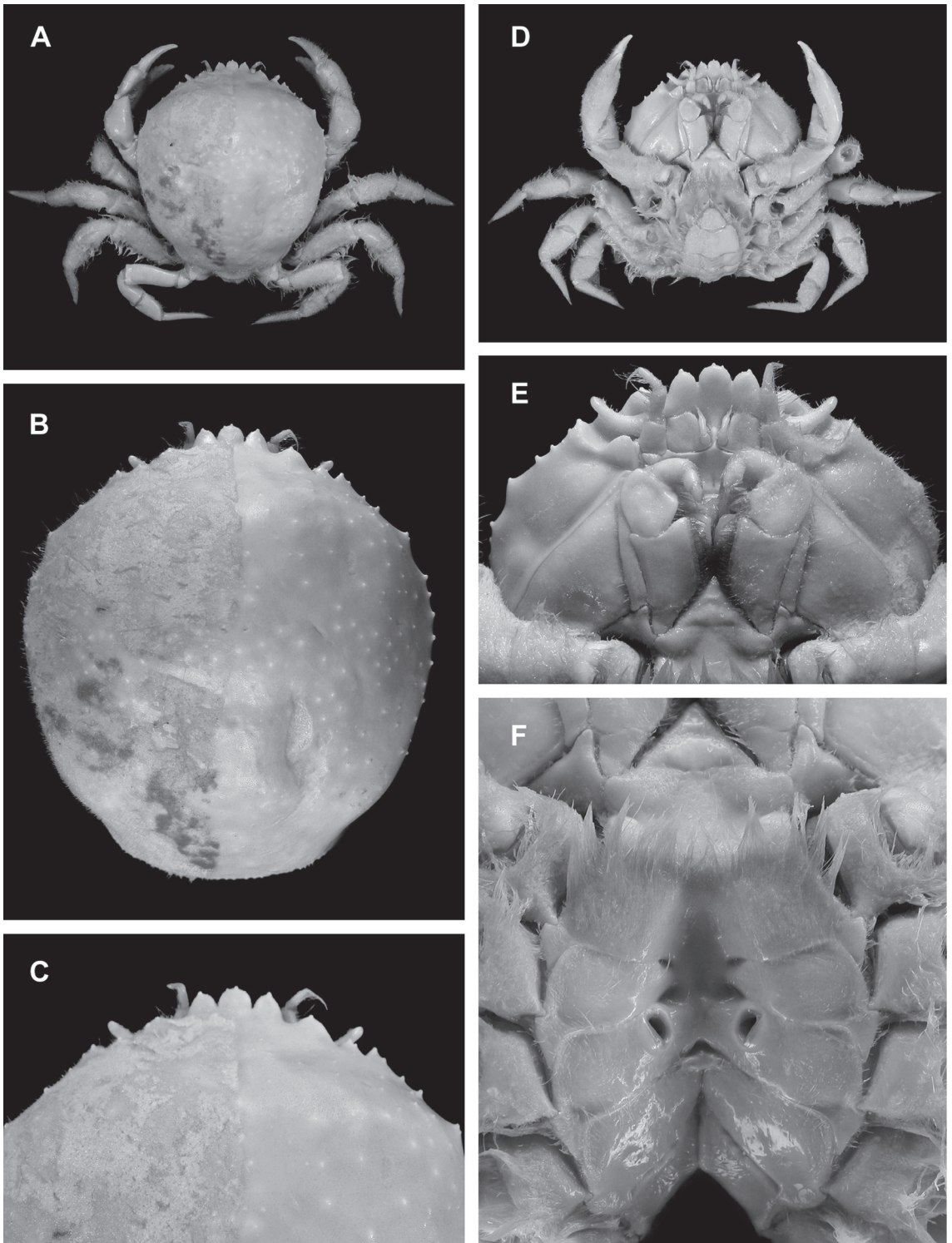


FIGURE 35: *Sphaeropeltarion edentatum* gen. nov., sp. nov., holotype female 44.2 x 39.4 mm (MNHN-B31974). **A**, General dorsal view. **B**, Carapace in dorsal view. **C**, Anterior region of carapace in dorsal view. **D**, Ventral view of body and legs. **E**, Detail of anterior region of body in ventral view. **F**, Thoracic sternum.

endostome and epistome. Endostomial ridges inward directed, aligned with antenna of opposite side. Merus of mxp3 elongated, much longer than wide, almost as long as ischium, its distal end reaching antennal article 2+3, completely closing the prostomial chamber.

Male and female sterno-abdominal cavity moderately excavated; lateral borders of thoracic sternite 4 subparallel; thoracic sternum extremely narrow, with subparallel borders, only narrow stretch of sternum visible at each side of abdomen; sternal sutures 4/5, 5/6, 6/7, and 7/8 all complete; male sternal sutures 5/6 and 6/7 parallel to each other (sutures 4/5, 5/6, 6/7, and 7/8 all parallel in the female). Male and female thoracic sternum divided longitudinally into two halves by median line stretching uninterruptedly from sternite 4 to 8. Male and female sterno-abdominal cavity narrow, V-shaped along its length from sternite 4 throughout sternite 8. Sternal suture 1/2 unrecognizable; suture 2/3 represented by narrow row of setae on center of shield, between level of arthroal cavities of mxp2 and mxp3; sternal suture 3/4 recognizable from side to side, weak.

Pleural gutter formed by both Pl7 and Pl8; lateral edges of Pl7 and Pl8 upturned, coalescent, forming narrow, shallow, triangular gutter. Pl7-8 pleurobranchiae lacking; Pl6 and Pl5 with one well developed pleurobranchia each; Pl4, Pl3 with two pleurobranchia each. Pl2 pleurobranchia well developed; mxp2 podobranchia reduced to few lamellae.

Female gonopores located about mid-width of sternite 6, between sternal median line and lateral border of sternite.

Chelipeds equal. Penis emerging far from P5 coxo-sternal condyle.

Telson long, acute. Male abdomen of four segments and telson, abdominal segments 3+4+5 fused together. Complementary parts of abdominal locking system present, always functional.

RESUMO

Uma nova família, Trichopeltariidae, é proposta para acomodar Sphaeropeltarion edentatum, novo gênero e espécie, além de quatro outros gêneros tradicionalmente incluídos na família Atelecyclidae: Trichopeltarion A. Milne-Edwards, 1880 (gênero-tipo); Peltarion Hombron & Jacquinot, 1846; Podocatactes Ortmann, 1893; e Pteropeltarion Dell, 1972. Adicionalmente, quatro novas espécies de Trichopeltarion são descritas e ilustradas. Trichopeltariidae fam. nov. apresenta caracteres que não são compartilhados com nenhuma das superfamílias de Eubrachyura e é designada em

uma superfamília própria, Trichopeltarioidea nov. São apresentadas chaves para os gêneros de Trichopeltariidae fam. nov. e para todas as espécies da família (exceto para as espécies de Trichopeltarion). Seis novas combinações são propostas ou confirmadas. O gênero Krunopeltarion Štević, 1993, é sinonimizado com Trichopeltarion. Um lectótipo foi designado para Trichopeltarion corallinum (Faxon, 1893).

PALAVRAS-CHAVE: Crustacea; Brachyura; Nova superfamília; Nova família; Novo gênero; Novas espécies; Oceano profundo.

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REFERENCES

- ALCOCK, A. 1899a. An Account of the Deep-Sea Brachyura collected by the Royal Indian Marine Survey Ship Investigator. Calcutta, 85 pp., 4 pl.
- ALCOCK, A. 1899b. Materials for a Carcinological Fauna of India. N° 4. The Brachyura Cyclometopa. Part II. The families Portunidae, Cancridae and Corystidae. *Journal of the Asiatic Society of Bengal*, 68(2):1-104.
- ALCOCK, A. & ANDERSON, A.R.S. 1896. *Illustrations of the Zoology of the Royal Indian Marine Surveying Steamer Investigator, under the command of Commander C.F. Oldham, R.N.* Crustacea. Part IV, pls. 16-27. Published under the Authority of Captain J. Hert, R.N., C.I.E., Director of the Royal Indian Marine. Calcutta: Printed and sold by the Superintendent of Government Printing.
- ALCOCK, A. & MACGILCHRIST, A.C. 1905. *Illustrations of the Zoology of the Royal Indian Marine Survey Ship Investigator, under the command of Captain T.H. Heming, R.N. (Retired).* Crustacea. Part XI, pls. 68-76. Published under the Authority of Captain G.H. Hewett, R.N., Director of the Royal Indian Marine. Calcutta: Office of the Superintendent of Government Printing, India.
- ANDERSON, A.R.S. 1896. Natural History Notes from the R.I.M. Survey Steamer 'Investigator', Commander C.F. Oldham, R.N. commanding. Series II, N° 21. An Account of the Deep Sea Crustacea collected during the season 1894-95. *Journal of the Asiatic Society of Bengal*, 65(2):88-106.
- BAHAMONDE, N. & BÁEZ, P. 1975. *Trachycarcinus hystricosus* Garth 1971, nuevo para la fauna carcinológica chilena (Crustacea, Decapoda, Brachyura, Atelecyclidae). *Noticiero Mensual, Museo Nacional de Historia Natural*, 226-227:3-8.
- ANDRADE, H. & BÁEZ, P. 1980. Crustaceos decapodos asociados a la pesquería de *Heterocarpus reedi* Bahamonde 1955 en la zona central de Chile. *Boletín del Museo Nacional de Historia Natural, Chile*, 37:261-267.
- BALSS, H. 1922. Ostasiatische Decapoden. IV. Die Brachyrhynchen (Cancridae). *Archiv für Naturgeschichte*, 88(11):94-166, pls. 1, 2.
- BALSS, H. 1957. Decapoda. VIII. Systematik. In: Dr. Bronn, H.G. (Ed.), *Klassen und Ordnungen des Tierreichs*. Fünfter Band, 1. Abteilung, 7. Buch, 12. Lieferung. Akademische Verlagsgesellschaft, Geest & Portig K.-G., Leipzig, pp. 1505-1672.
- BOSCHI, E.E. 2000. Species of decapod crustaceans and their distribution in the American marine zoogeographic provinces. *Revista de Investigación y Desarrollo Pesquero*, 13:7-136.
- BOSCHI, E.E.; FISCHBACH, C.E. & IORIO M.I. 1992. Catalogo ilustrado de los crustaceos estomatopodos y decapodos marinos de Argentina. *Frente Marítimo*, 10(A):7-94.
- BOUVIER, E.-L. 1942. Les crabes de la tribu des "Corystoidea". *Mémoires de l'Académie des Sciences de l'Institut de France*, 65(4) [1941], 1-52.
- CHUN, C. 1903. Aus den Tiefen des Weltmeeres. Schilderungen von der Deutschen Tiefsee- Expedition. I-IX, 1-592. *Jena*.
- CLARK, P.F. & CROSNIER, A. 2000. The zoology of the *Voyage au pôle sud et dans l'Océanie sur les corvettes l'Astrolabe et la Zélée exécuté par ordre du roi pendant les années 1837-1838-1839-1840 sous le commandement de M. Dumont-d'Urville* (1842-1854): titles, volumes, plates, text, contents, proposed dates and anecdotal history of the publication. *Archives of Natural History*, 27(3):407-435.
- CROSNIER, A. 1981. Découverte du genre *Trachycarcinus* dans l'Atlantique orientale. Description de *T. intesi* sp. nov. (Decapoda Brachyura). *Crustaceana*, 40(3):303-306.
- DAI, A. & YANG, S. 1991. Crabs of the China seas. *China Ocean Press*, Beijing: 1-608, pls. 1-74.
- DANA, J.D. 1852. Crustacea. United States Exploring Expedition during the years 1838, 1839, 1840, 1841, 1842 under the command of Charles Wilkes, U.S.N. Vol. 13, Part 1, VIII + 685 p.
- DAVIE, P.J.F. 2002. Crustacea: Malacostraca: Eucarida (Part 2): Decapoda-Anomura, Brachyura. In: Wells, A. & Houston, W.W.K. (Eds), *Zoological Catalogue of Australia*. Vol. 19.3B. Melbourne: CSIRO Publishing, Australia, XIV + 641 pp.
- DE GRAVE, S.; PONTCHEFF, N.D.; AHYONG, S.T.; CHAN, T.-Y.; CRANDALL, K.A.; DWORSCHAK, P.C.; FELDER, D.L.; FELDMANN, R.M.; FRANSEN, C.H.J.M.; GOULDING, L.Y.D.; LEMAITRE, R.; LOW, M.E.Y.; MARTIN, J.W.; NG, P.K.L.; SCHWEITZER, C.E.; TAN, S.H.; TSHUDY, D. & WETZER, R. 2009. A classification of living and fossil genera of decapod crustaceans. *Raffles Bulletin of Zoology*, Supplement, 21: 1-109.
- DELL, R.K. 1969. A new Pliocene fossil crab of the genus (*Trichopeltarion*) from New Zealand. *Records Canterbury Museum*, 8(4):367-370.
- DELL, R.K. 1972. A New Genus and Species of Atelecyclid Crab from New Zealand. *Journal of the Royal Society of New Zealand*, 2(1):55-59.
- DOFLEIN, F. 1904. Brachyura. In: Chun, C. *Wissenschaftliche Ergebnisse der Deutschen Tiefsee-Expedition auf dem Dampfer "Valdivia" 1898-1899*. Jena, 6:1-XIV, 1-314. Atlas, 58 pls.
- FAXON, W. 1893. Reports on the dredging operations off the West Coast of Central America to the Galapagos, to the West Coast of Mexico, and in the Gulf of California, in charge of Alexander Agassiz, carried on by the U.S. Fish Commission Steamer "Albatross", during 1891, Lieut. Commander Z.L. Tanner, U.S.N., commanding. VI. Preliminary descriptions of new species of Crustacea. *Bulletin of the Museum of Comparative Zoology*, Harvard, 24(7):149-220.
- FAXON, W. 1895. Reports on an exploration off the West Coasts of Mexico, Central and South America, and off the Galapagos Islands, in charge of Alexander Agassiz, by the U.S. Fish Commission Steamer "Albatross", during 1891, Lieut.-Commander Z.L. Tanner, U.S.N., commanding. XV. The stalk-eyed Crustacea. *Memoirs of the Museum of Comparative Zoology*, Harvard, 18:1-292, pl. A-K, 1-56.
- GARTH, J.S. 1957. The Crustacea Decapoda Brachyura of Chile. Reports of the Lund University Chile Expedition 1948-1949. No 29. *Lund Universitets Arsskrift*. N.F. 53(7):1-128.
- GARTH, J.S. & HAIG, J. 1971. Decapod Crustacea (Anomura and Brachyura) of the Peru-Chile Trench. In: Scientific Results of the Southeast Pacific Expedition. *Anton Bruun Report*, (6):1-20.
- GUINOT, D. 1978. Principes d'une classification évolutive des Crustacés Décapodes. Brachyours. *Bulletin Biologique de la France et de la Belgique*, 112(3):211-292.
- GUINOT, D. 1979. Données nouvelles sur la morphologie, la phylogénèse et la taxonomie des Crustacés Décapodes Brachyours. *Mémoires du Muséum national d'Histoire naturelle, Série A, Zoologie*, 112:1-354.
- GUINOT, D. 1986. Une nouvelle espèce du genre *Trachycarcinus*, *T. crosnieri* sp. nov., de Madagascar (Crustacea Decapoda

- Brachyura). *Bulletin du Muséum national d'Histoire naturelle*, Paris, Série 4, 7, 1985 (1986), section A, (4):805-817.
- GUINOT, D. 1989. Les genres *Trachycarcinus* Faxon et *Trichopeltarion* A. Milne Edwards (Crustacea, Brachyura: Atelecyclidae). In: J. Forest (Ed.), Résultats des Campagnes MUSORSTOM, Volume 5. *Mémoires du Muséum national d'Histoire naturelle*, (A), 144:347-385.
- GUINOT, D. & SAKAI, T. 1970. Un nouveau *Trachycarcinus*, *T. elegans* sp. nov. (Crustacea Decapoda Brachyura). *Bulletin du Muséum national d'Histoire naturelle*, Paris, Série 2, 42(1):201-205.
- GUINOT, D. & BOUCHARD, J.-M. 1998. Evolution of the abdominal holding systems of brachyuran crabs (Crustacea, Decapoda, Brachyura). *Zoosystema*, 20(4):613-694.
- GUINOT, D.; DE ANGELI, A. & GARASSINO, A. 2008. Marocarcinidae, a new eubrachyuran family, and *Marocarcinus parinii* gen. nov., sp. nov. from the Upper Cretaceous (Cenomanian-Turonian) of Gara Sbaa, southeastern Morocco (Crustacea, Decapoda, Brachyura). *Atti della Società Italiana di Scienze Naturali e del Museo Civico di Storia Naturale di Milano*, 149(1):25-36.
- GUZMÁN, G.; BÁEZ, P. & SELLANES, J. 2009. Primer registro de *Trichopeltarioncorallinus* (Faxon, 1893) para el mar de Chile y nuevo registro de *T. hystericosus* (Garth, em Garth & Haig, 1971) (Decapoda: Brachyura: Atelecyclidae). *Latin American Journal of Aquatic Research*, 37(2):275-279.
- HOLTHUIS, L.B. 2002. A few notes on the authors and dates of the names of Crustacea collected by the "Voyage au Pôle Sud et dans l'Océanie sur les Corvettes l'Astrolabe et la Zélée". *Crustaceana*, 75(3-4):413-422, figs. 1-7.
- HOMBRON, J.B. & JACQUINOT, H. 1846. *Atlas d'Histoire Naturelle Zoologie par MM. Hombron et Jacquinot, chirurgiens de l'expédition*. In: *Voyage au pôle sud et dans l'Océanie sur les corvettes l'Astrolabe et La Zélée exécuté par ordre du roi pendant les années 1837-1838-1839-1840 sous le commandement de M. Dumont-d'Urville capitaine de vaisseau publié sous les auspices du département de la marine et sous la direction supérieure de M. Jacquinot, capitaine de Vaisseau, commandant de la Zélée*. Dix-neuvième Livraison: Oiseaux pl. 28; Crustacés pls. 5, 8; Insectes orthoptères pls. 1, 2. Paris: Gide et Cie.
- ICZN. 1999. *International Code of Zoological Nomenclature*. Fourth edition. The International Trust for Zoological Nomenclature, The Natural History Museum, London, xxix + 306 p.
- IKEDA, H. 1998. *The deep-sea crabs of Sagami Bay*. Hayama Shiosai Museum, 180 p.
- JACQUINOT, H. & LUCAS, H. 1854. Crustacés. In: Hombron, J.B. & Jacquinot, H. [1853]. *Zoologie. Voyage au Pôle Sud et dans l'Océanie sur les corvettes l'Astrolabe et La Zélée; exécuté par ordre du Roi pendant les années 1837-1838-1839-1840, sous le commandement de M.J. Dumont-d'Urville, Capitaine de vaisseau; publié par ordre du gouvernement, sous la direction supérieure de M. Jacquinot, capitaine de vaisseau, commandant de la Zélée*. Tome III(3):107 pp. Paris, Gide et J. Baudry, Paris.
- KOMATSU, H. & KOMAI, T. 2009. Thalassinidea, Anomura and Brachyura (Crustacea: Decapoda) from Northeastern Japan Collected during the "Research on Deep-sea Fauna and Pollutants off Pacific Coast of Northern Japan" Project. In: T. Fujita (Ed.), *Deep-sea Fauna and Pollutants off Pacific Coast of Northern Japan*. National Museum of Nature and Science Monographs, No. 39:581-613.
- MIERS, E.J. 1886. Report on the Brachyura collected by H.M.S. Challenger during the Years 1873-76. In: *Report of the Scientific Results of the exploring voyage of H.M.S. Challenger 1873-76*, *Zoology*, 17:1-L, 1-362, pls. 1-29.
- MILNE-EDWARDS, A. 1880. Études préliminaires sur les Crustacés, Ire Partie. In: Reports on the Results of Dredging under the Supervision of Alexander Agassiz, in the Gulf of Mexico, and in the Caribbean Sea, 1877,'78,'79, by the U.S. Coast Survey Steamer "Blake", Lieut.-Commander C.D. Sigsbee, U.S.N., and Commander J.R. Bartlett, U.S.N., Commanding. *Bulletin of the Museum of Comparative Zoology*, 8(1):1-68, pls. 1-2.
- MIYAKE, S. 1983. *Japanese Crustacean Decapods and Stomatopods in Color*. Vol. II, Brachyura (Crabs): I-VII + 1-277, plates 1-64.
- NG, P.K.L. & CHAN, T.-Y. 1997. Two newly recorded crab genera (Crustacea: Decapoda: Brachyura) from Taiwan: *Platypilumnus* (Goneplacidae) and *Trachycarcinus* (Atelecyclidae). *Journal of Taiwan Museum*, 50(2):107-112, 2 figs.
- NG, P.K.L.; GUINOT, D. & DAVIE, P.J.F. 2008. Systema Brachyurorum: Part I. An annotated checklist of extant brachyuran crabs of the world. *The Raffles Bulletin of Zoology*, Supplement 17:1-286.
- ORTMANN, A. 1893a. Die Decapoden-Krebse des Strassburger Museums. VI. Theil. Abtheilung: Brachyura (Brachyura genuina Boas) I. Unterabtheilung: Majoidea und Cancroidea, 1. Section Portuninea. *Zoologische Jahrbücher, Abteilung für Systematik, Geographie und Biologie der Thiere*, 23-88, pl. 3.
- ORTMANN, A. 1893b. Die Decapoden-Krebse des Strassburger Museums. VII. Theil. Abtheilung: Brachyura (Brachyura genuina Boas) II. Unterabtheilung: Cancroidea, 2. Section: Cancrinea, 1. Gruppe: *Cyclometopa*. *Zoologische Jahrbücher, Abteilung für Systematik, Geographie und Biologie der Thiere*, 411-495, pl. 17.
- PEQUEGNAT, W.E. 1970. Deep-water Brachyuran crabs. In: Pequegnat, W.E. & Chace, F.A. Jr. (Eds), *Contributions on the biology of the Gulf of Mexico*. Texas A & M University Oceanographic Studies, Gulf Publishing Co., Houston, Texas. Vol. 1:171-204.
- RATHBUN, M.J. 1898a. The Brachyura of the Biological Expedition to the Florida Keys and the Bahamas in 1893. *Bulletin from the Laboratories of Natural History of the State University of Iowa*, 4(3):250-294, pls. 1-9.
- RATHBUN, M.J. 1898b. The Brachyura collected by the U.S. Fish Commission Steamer Albatross on the voyage from Norfolk, Virginia, to San Francisco, California, 1887-1888. *Proceedings of the United States National Museum*, 21(1162):567-616, pls. 41-44.
- RATHBUN, M.J. 1930. The cancroid crabs of America of the families Euryalidae, Portunidae, Atelecyclidae, Cancridae and Xanthidae. *United States National Museum Bulletin*, 152:I-XVI, 1-609.
- RETAMAL, M.A. 1993. Decápodos abisales de la zona Arica-Iquique. Estudios Oceanológicos. Facultad de Recursos del Mar, Universidad de Antofagasta, 12:1-8.
- RICHARDSON, L.R. & DELL, R.K. 1964. A new crab of the genus *Trichopeltarion* from New Zealand. *Transactions of the Royal Society of New Zealand*, *Zoology*, 4(7):145-151.
- SAKAI, T. 1936. *Crabs of Japan*: 66 plates in life colors with descriptions. Sansendo, Tokyo (1935):1-239, figs. 1-122 (In Japanese).
- SAKAI, T. 1939. *Studies on the Crabs of Japan*. IV. Brachygnatha, Brachyrhyncha. Tokyo, Yokendo: 365-741, pls. 42-111.
- SAKAI, T. 1965. *The Crabs of Sagami Bay*. Tokyo, Maruzen Co., Ltd.: i-xvi, 1-206 (English text), 1-92 (Japanese text), 1-32, pls. 1-100, 1 map.
- SAKAI, T. 1976. *Crabs of Japan and the adjacent seas*. Tokyo, Kodansha Ltd., 3 vol.: pp. I-XXIX, 1-773, figs. 1-379 (English text); pp. 1-461 (Japanese text); 1-16, pls. 1-251 (plates).
- SALVA, E.W. & FELDMANN, R.M. 2001. Reevaluation of the family Atelecyclidae (Decapoda: Brachyura). *Kirtlandia*, 52:9-62.

- SOTO, L.A. 1979. Description of the female of *Peltarion dextrum* (Rathbun) (Decapoda, Ateocyidae) and extension of geographic range. *Crustaceana*, 37(2):165-172.
- ŠTEVČIĆ, Z. 1990. The status of the Family Cheiragonidae Ortmann, 1893. *Oebalia*, 14, n.s., 1987-1988(1990):33-41.
- ŠTEVČIĆ, Z. 1993. A new genus and species of atelecylid crab (Crustacea: Decapoda: Brachyura) from the Timor Sea. *Journal of Natural History*, 27:1097-1102.
- TAKEDA, M. 1973. Report on the Crabs from the Sea around the Tsushima Islands Collected by the Research Vessel "Genkai" for the Trustees of the National Science Museum, Tokyo. *Bulletin of the Liberal Arts & Science Course, Nihon University School of Medicine*, 1:17-68.
- TAKEDA, M. & MIYAKE, S. 1968. Crabs from the East China Sea, I. Corystoidea and Brachygnatha Brachyrhyncha. *Journal of the Faculty of Agriculture, Kyushu University*, 14(4):541-582, pl. 6.
- TAKEDA, M.; WATABE, H. & OHTA, S. 2005. Deep-Sea Crabs Collected by the R.V. *Hakuho Maru* during KH-05-01 Cruise off the Ryukyu Islands. *Bulletin of the National Science Museum, Tokyo, Series A*, 31(3):105-114.
- TAVARES, M. & MELO, G.A.S. DE. 2005. A new species of *Trichopeltarion* A. Milne-Edwards, 1880, from the Southwestern Atlantic (Crustacea: Brachyura: Ateocyidae). *Papéis Avulsos de Zoologia*, 45(18):235-242.
- YOKOYA, Y. 1933. On the Distribution of Decapod Crustaceans inhabiting the Continental Shelf around Japan, chiefly based upon the Materials collected by S.S. *Sôyô-Marû*, during the Year 1923-1930. *Journal of the College of Agriculture*, 12(1):1-226.

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