

ON THE DEEP-WATER DORIPPID CRABS OF THE GENUS *ETHUSINA* SMITH, 1884 (CRUSTACEA: DECAPODA: BRACHYURA) FROM TAIWAN

Peter K. L. Ng

*Department of Biological Sciences, National University of Singapore, Kent Ridge,
Singapore 119260, Republic of Singapore
Email: peterng@nus.edu.sg*

P.-H. Ho

*National Museum of Marine Biology and Aquarium, 2 Houwan Road,
Checheng, Pingtung, Taiwan 944, Republic of China
Email: phho@nmmba.gov.tw*

ABSTRACT. – Seven species of deep-water porter crabs of the dorippid genus *Ethusina* are recorded from Taiwan. *Ethusina dilobatus* Chen, 1993, is a new record for the island. The other six species are all new, viz., *E. taiwanensis*, *E. alcocki*, *E. chenae*, *E. macrospina*, *E. insolita* and *E. saltator*. They are distinguished from congeners by the form of the carapace teeth, proportions of the second and third pereopods, as well as structure of the male abdomens and male first pleopods.

KEY WORDS. – Deep water, porter crabs, *Ethusina*, Ethusinae, Dorippidae, new species, new record, Taiwan.

INTRODUCTION

The porter crabs of the family Dorippidae MacLeay, 1838, are not well represented in Taiwan, with only six species known thus far (Ng et al., 2001). Five species are in the Dorippinae MacLeay, 1838, all of which occur in relatively shallow waters, viz., *Dorippe quadridens* (Fabricius, 1793), *Dorippe sinica* Chen, 1980, *Heikea arachnoides* (Manning & Holthuis, 1986), *Heikea japonicum* (Von Siebold, 1824), and *Paradorippe granulata* (De Haan, 1841). In the subfamily Ethusinae Guinot, 1977, only one species has been reliably reported from relatively deeper waters in Taiwan thus far, *Ethusa sexdentata* (Stimpson, 1858).

Recently, the joint Taiwan-France deep-sea expeditions of “TAIWAN 2000” and “TAIWAN 2001” (Richer de Forges et al., in prep), using the Beam Trawl (CP) and Otter Trawl Le Drézén type JUNEUX (CD), sampled at depths much deeper than previously possible using commercial trawlers. These cruises obtained a number of specimens of *Ethusa* Roux, 1930, and *Ethusina* Smith, 1884, which included representatives of eight species, six of which are here regarded as new. Of these, one species of *Ethusa*, *E. sexdentata* (Stimpson, 1858), had previously been reported from the island by Ng & Huang (1997). Of the seven species of *Ethusina*, only one can be referred to a known species.

The present paper treats the seven species of *Ethusina*

obtained from the cruises. The new species are characterised, diagnosed and compared to allied species. Specimens studied are deposited in the National Taiwan Ocean University, Keelung, Taiwan (NTOU); Institute of Oceanology, Chinese Academy of Sciences, Qingdao, China (IOCAS); and Zoological Reference Collection of the Raffles Museum of Biodiversity Research, National University of Singapore (ZRC). Some NTOU vouchers will eventually be deposited in the Muséum national d’Histoire naturelle, Paris, after all the surveys and reports are completed. The measurements provided are of the carapace width and carapace length respectively. The abbreviations G1 and G2 are used for the male first and second pleopods respectively. P2, P3, P4 and P5 refer to their respective pereopods, with P1 been the chelipeds.

TAXONOMY

Ethusina Smith, 1884

Remarks. – The genus *Ethusina* Smith, 1884 (type species *Ethusina abyssicola* Smith, 1884) currently contains 21 recognised species from the Atlantic and Indo-Pacific regions, and is characterised by their relatively small eyes which are immovable in the orbit and the large basal antennular segment. Otherwise, they are very close to members of the *Ethusa* Roux, 1830. Although there had been

some early uncertainty with the validity of *Ethusina*, the above-mentioned characters, however, appear to work (at least for the time being) and we continue to use them to distinguish the two genera.

Thirteen *Ethusina* species are presently known from the Indo-West Pacific, viz., *E. bicornuta* Chen, 1997, *E. brevidentata* Chen, 1993, *E. challenger* (Miers, 1886), *E. desciscens* Alcock, 1896, *E. dilobatus* Chen, 1993, *E. gracilipes* (Miers, 1886), *E. investigatoris* Alcock, 1896, *E. longipes* Chen, 1987, *E. microspina* Chen, 2000, *E. paralongipes* Chen, 1993, *E. pubescens* Chen, 1993, *E. robusta* (Miers, 1886), and *E. vanuatuensis* Chen, 2000. The present paper adds six more new species. More than half of the currently recognised *Ethusina* species have been described only in the last decade or so, testimonial to their diversity in the deep-sea environment. More new species of *Ethusina* are also present in Australia and will be described in the near future (see Davie, 2002). Despite this, the Ethusinae is in urgent need of a worldwide revision, and there are still a good number of misidentifications and new species to be resolved. Nevertheless, a complete revision of the subfamily Ethusinae which has only three genera but some 62 recognised species and almost 70 available names worldwide, will be a massive task and cannot be finished in the near future. On the basis of the published literature at least, the new taxa described here seem to be distinct and it is on this belief that we formally name them.



Fig. 1. *Ethusina dilobatus* Chen, 1993. Male, 8.0 by 8.2 mm (NTOU). A, overall view; B, carapace.

Ethusina dilobatus Chen, 1993

(Fig. 1)

Material examined. – 1 male, 8.0 by 8.2 mm (NTOU), Station CD 129, 22°5.89'N, 121°5.21'E, 1271-1275 m, coll. TAIWAN 2001, R.V. "Ocean Researcher 1", 21 Aug.2001.

Remarks. – The present male specimen (especially the pereopod proportions and form of the G1) agree best with the description and figures of *E. dilobatus* by Chen (1993: 338, Fig. 17), although it was described (and only known) on the basis of one specimen from New Caledonia. The carapace of the present specimen, however, seems to have the lateral carapace margin less distinctly convex compared to that figured by Chen (1993: Fig. 17a) and the median frontal tooth also appears to be relatively stronger. The significance of these differences is difficult to assess; and will require more material.

Ethusina taiwanensis, new species

(Figs. 2, 3)

Material examined. – Holotype - male, 7.7 by 9.5 mm (NTOU), Station CP 61, 24°47.5'N, 122°17.4'E, 1134 m, coll. TAIWAN 2000, R.V. "Fishery Researcher 1", 4 Aug.2000.



Fig. 2. *Ethusina taiwanensis*, new species. A, B, holotype male, 7.7 by 9.5 mm (NTOU); C, paratype male, 7.7 by 8.7 mm (ZRC). A, overall view; B, C, carapace.

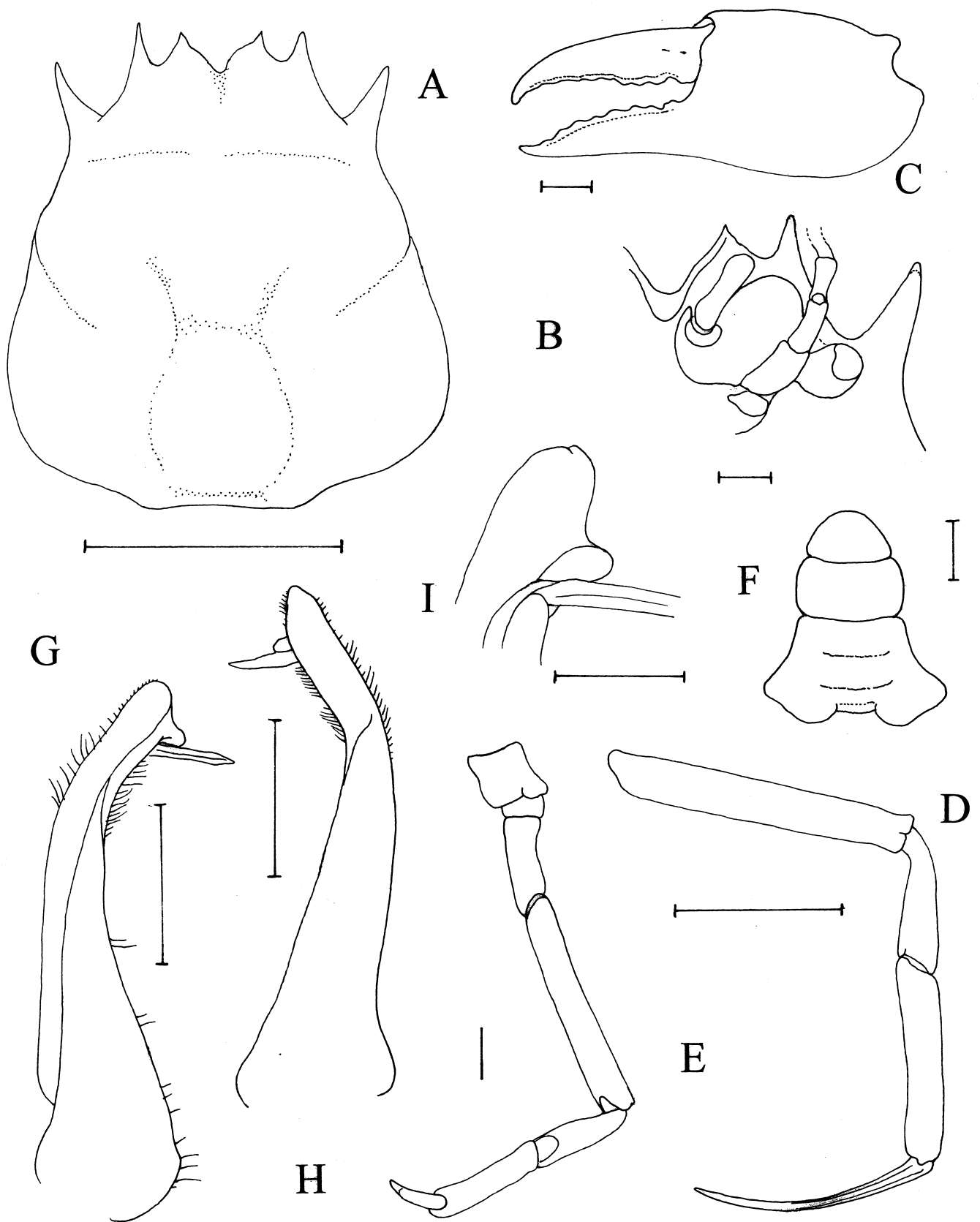


Fig. 3. *Ethusina taiwanensis*, new species. Holotype male, 7.7 by 9.5 mm (NTOU). A, carapace; B, left orbit, antenna and antennule; C, left chela; D, right P2; E, right P5; F, male abdominal segments 3-6 and telson (3-5 fused); G, H, left G1 (tip of G2 protruding from subdistal opening); I, distal part of left G1 with G2 distal segment protruding from G1 opening. Scales: A, D = 5.0 mm; B, C, E-H = 1.0 mm; I = 0.5 mm.

Paratype – 1 male, 7.7 by 8.7 mm (ZRC), Station CD 129, 22°5.89'N, 121°5.21'E, 1271-1275 m, coll. TAIWAN 2001, R.V. "Ocean Researcher 1", 21 Aug.2001.

Diagnosis. – Carapace longer than broad; dorsal surface gently convex, appearing smooth without magnification, regions not well defined. Front not prominently projecting anteriorly, with 4 teeth; median teeth not reaching tips of lateral teeth, directed obliquely outwards, separated by prominent concavity; lateral teeth directed anteriorly, separated from median teeth by deep concavity. External orbital spine acutely triangular, directed obliquely outwards, tip not or just reaching bases of median frontal teeth. Lateral carapace margins gently sinuous, with posterior part distinctly convex. Posterior carapace margin gently concave. Chelipeds subequal; fingers slightly longer than palm; cutting edges with low teeth. P2 and P3 smooth, glabrous; P3 longest, merus 7.0-7.1 times as long as wide, propodus 5.3-5.4 times as long as wide; dactylus elongate. Male abdomen with segments 3-5 completely fused, only traces of median sutures just visible; segment 6 rectangular, broader than long, lateral margins distinctly convex; telson semicircular, lateral margins gently convex. G1 gently curved, inner subdistal margin with short perpendicular projection.

Etymology. – The species is named after the island of Taiwan.

Remarks. – With regards to the carapace form, the present specimens seem to be close to *E. desciscens* Alcock, 1896 (type locality Laccadives, Indian Ocean). That species has since been reported from other parts of the Indian Ocean, Philippines, Indonesia, China and Vanuatu (see Chen, 1986a, b, 1987, 1993, 1997, 2000). The two present specimens from Taiwan, however, differ from *E. desciscens* s. str. in having relatively shorter P2 and P3, the frontal region protrudes anteriorly less prominently, the male telson is semicircular in shape (vs. triangular), the lateral margins of male abdominal segment 6 are prominently convex (vs. gently concave) and the G1 is relatively more slender and gently curved, with a distinct subdistal projection (vs. straighter, stouter and entire) (cf. Alcock, 1896; Alcock & MacGilchrist, 1905: Pl. 72 fig. 2; Chen, 1987: 689, Fig. 7, Pl. 2 fig. F). As such, it seems best to refer these specimens to a new species, here named *E. taiwanensis*. The carapace features of *E. taiwanensis* actually agree well with what Chen (1986b: 136, Fig. 15.71-73) identified as "*E. desciscens*" from China, and they may well be conspecific. In fact, the identity of all the specimens from the Pacific that had been identified as *E. desciscens* by previous reports should be redetermined; some may well be *E. taiwanensis* instead.

***Ethusina alcocki*, new species**

(Figs. 4, 5)

Ethusina investigatoris – Chen & Xu, 1991: 60, Fig. 9 (not *E. investigatoris* Alcock, 1896)

Material examined. – Holotype - female, 8.2 by 9.8 mm (NTOU), Station CP 32, 22°01.7'N, 120°11.1'E, 910-1129 m, coll. TAIWAN 2000, R.V. "Fishery Researcher 1", 30 Jul.2000.

Other material – 1 female, 8.8 by 9.5 mm (IOCAS), Station 16, Spratly Islands (Nansha Islands), South China Sea, 1080 m, coll. 21 Apr.1999.

Diagnosis. – Carapace longer than broad; dorsal surface gently convex, with scattered low granules visible without magnification, regions not well defined. Front not prominently projecting anteriorly, with 4 teeth; median teeth short, reaching only to about half length of lateral teeth, directed anteriorly, separated by distinct concavity; lateral teeth directed slightly obliquely outwards, separated from median teeth by concavity. External orbital spine very slender, acutely triangular, directed obliquely outwards, tip reaching beyond tips of median frontal teeth. Lateral carapace margins gently sinuous, with posterior part distinctly convex. Posterior carapace margin gently concave. Chelipeds subequal; fingers slightly longer than palm; cutting edges cutting edges with low teeth. P2 and P3 smooth, glabrous; P3 longest, merus 9.7 times as long as wide, propodus 7.5 times as long as wide; dactylus very slender, very elongate. Male not known.



Fig. 4. *Ethusina alcocki*, new species. A, B, holotype female, 8.2 by 9.8 mm (NTOU); C, female, 8.8 by 9.5 mm (IOCAS). A, C, overall view; B, carapace.

Etymology. – This species is named after A. Alcock, whose contributions to Indian carcinology have not been rivalled.

Remarks. – *Ethusina alcocki*, new species, is rather close to *E. investigatoris* Alcock, 1896, but three characters argue against its inclusion there. In *E. investigatoris*, the median frontal teeth are more prominent, with the inner margin more convex, the supraorbital margin is relatively narrower, and the dactylus of the P2 and P3 is about one-third shorter and relatively broader (cf. Alcock, 1896: 295; Alcock & MacGilchrist, 1905: Pl. 72 fig. 3). Chen (1986b: 135, Fig. 14) referred a male specimen from China to *E. investigatoris*, and this seems to be correct. Chen & Xu (1991: 60, Fig. 9) subsequently reported *E. investigatoris* from the South China Sea, but the external orbital spine of the male specimen she figured is relatively shorter with the median frontal teeth subequal in length (rather than with the outer tooth longer). Recently, through the courtesy of H.-L. Chen, the first author had an opportunity to examine a second specimen from the South China Sea which had been identified as “*E. investigatoris*” and is almost identical to that described by Chen & Xu (1991). We have no doubt that this specimen is conspecific with what is here identified as *E. alcocki*. Unfortunately, the original specimens described in Chen (1986) and Chen & Xu (1991) could not be located for direct

comparisons as the IOCAS is currently moving its catalogued collections to a new building and the material is not available for study (H.-L. Chen, pers. comm., September 2002).

Alcock (1896: 285) described *E. investigatoris* from the Laccadive Sea and Bay of Bengal, in the Indian Ocean, noting that the elongated external orbital spine is “needle-like” but “falls considerably short of the tips of the rather long acute frontal spines” (see also Alcock & MacGilchrist, 1905: Pl. 72 fig. 3), and felt that it was very close to *E. gracilipes* (Miers, 1886). *Ethusina alcocki*, however, differs from *E. gracilipes* in having the external orbital spine relatively longer, reaching to the tip of the frontal spines (not falling short of it), and the inner median teeth are also lower and are not spiniform.

***Ethusina chenae*, new species**

(Figs. 6, 7)

Material examined. – Holotype – female, 11.0 by 10.5 mm (NTOU), Station CP 39, 21°57.5'N, 121°03.2'E, 1316-1317 m, coll. TAIWAN 2000, R.V. “Fishery Researcher 1”, 1 Aug. 2000.

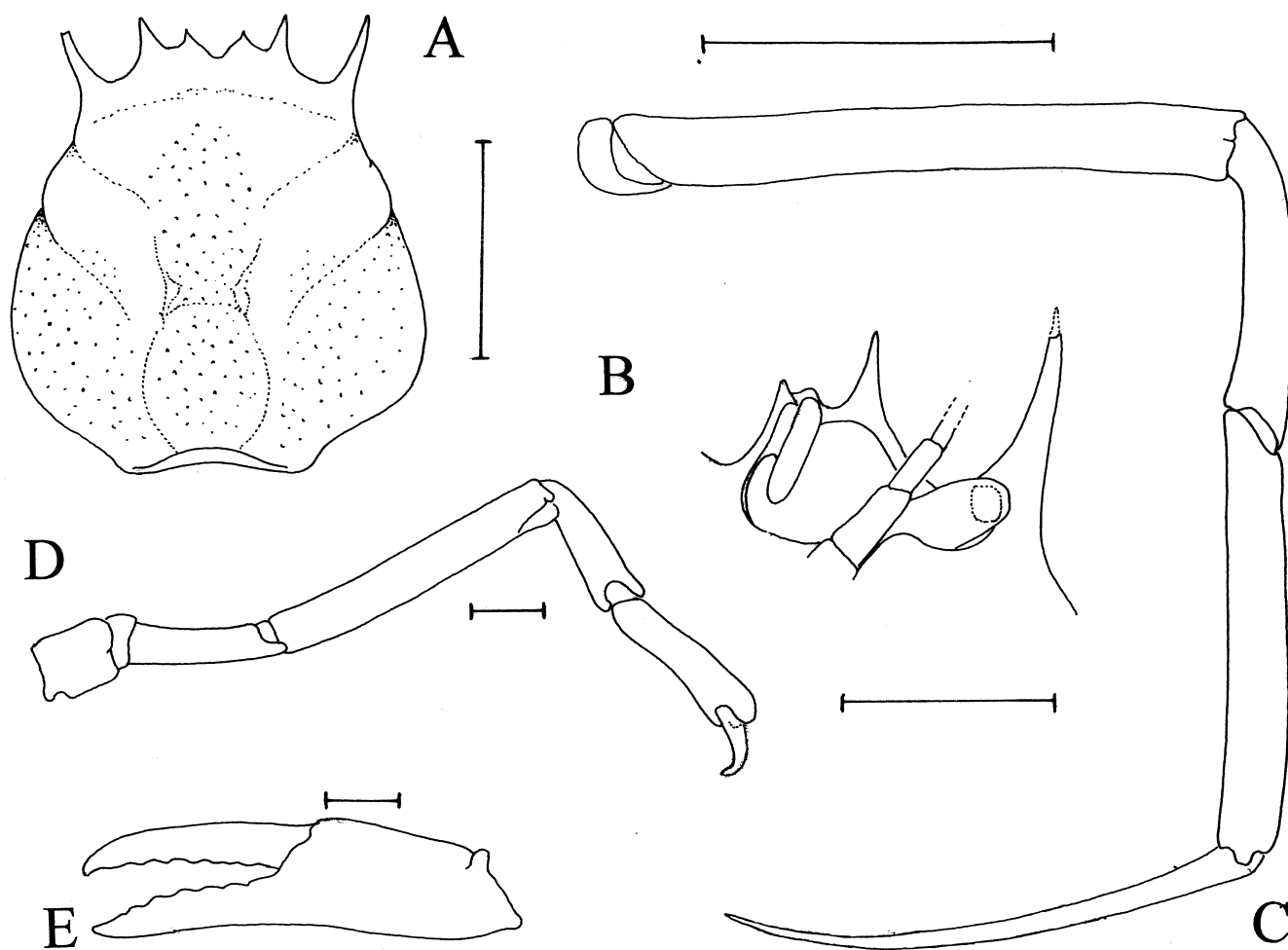


Fig. 5. *Ethusina alcocki*, new species. Holotype female, 8.2 by 9.8 mm (NTOU). A, carapace; B, left orbit, antenna and antennule; C, right P2; D, right P5; E, left chela. Scales: A-C = 5.0 mm; D, E = 1.0 mm.



Fig. 6. *Ethusina chenaе*, new species. Holotype female, 11.0 by 10.5 mm (NTOU). A, overall view; B, carapace.

Paratype – 1 female, 8.5 by 8.4 mm (ZRC), with sacculinid, same data as holotype.

Diagnosis. – Carapace slightly broader than long; dorsal surface gently convex, with scattered low granules visible without magnification, regions not well defined. Front not prominently projecting anteriorly, with 4 teeth; median teeth lower than lateral ones, directed obliquely outwards, separated by distinct broad concavity; lateral teeth directed anteriorly, separated from median teeth by shallow concavity. External orbital spine acutely triangular, directed anteriorly or almost so, tip reaching level of tips of median frontal teeth. Lateral carapace margins gently sinuous, with posterior part distinctly convex. Posterior carapace margin almost straight. Chelipeds subequal; fingers slightly longer than palm; cutting edges with low teeth. P2 and P3 smooth, glabrous; P3 longest, merus 6.2 times as long as wide, propodus 5.2 times as long as wide; dactylus not very elongate. Male not known.

Etymology. – This species is named after Chen Hui-Lian, whose studies have set the stage for the present one.

Remarks. – The present new species resembles *E. robusta* (Miers, 1886) in terms of the shape of the carapace, and to some degree, the form of the frontal teeth. However, the present two female specimens of *E. chenaе* differ from *E.*

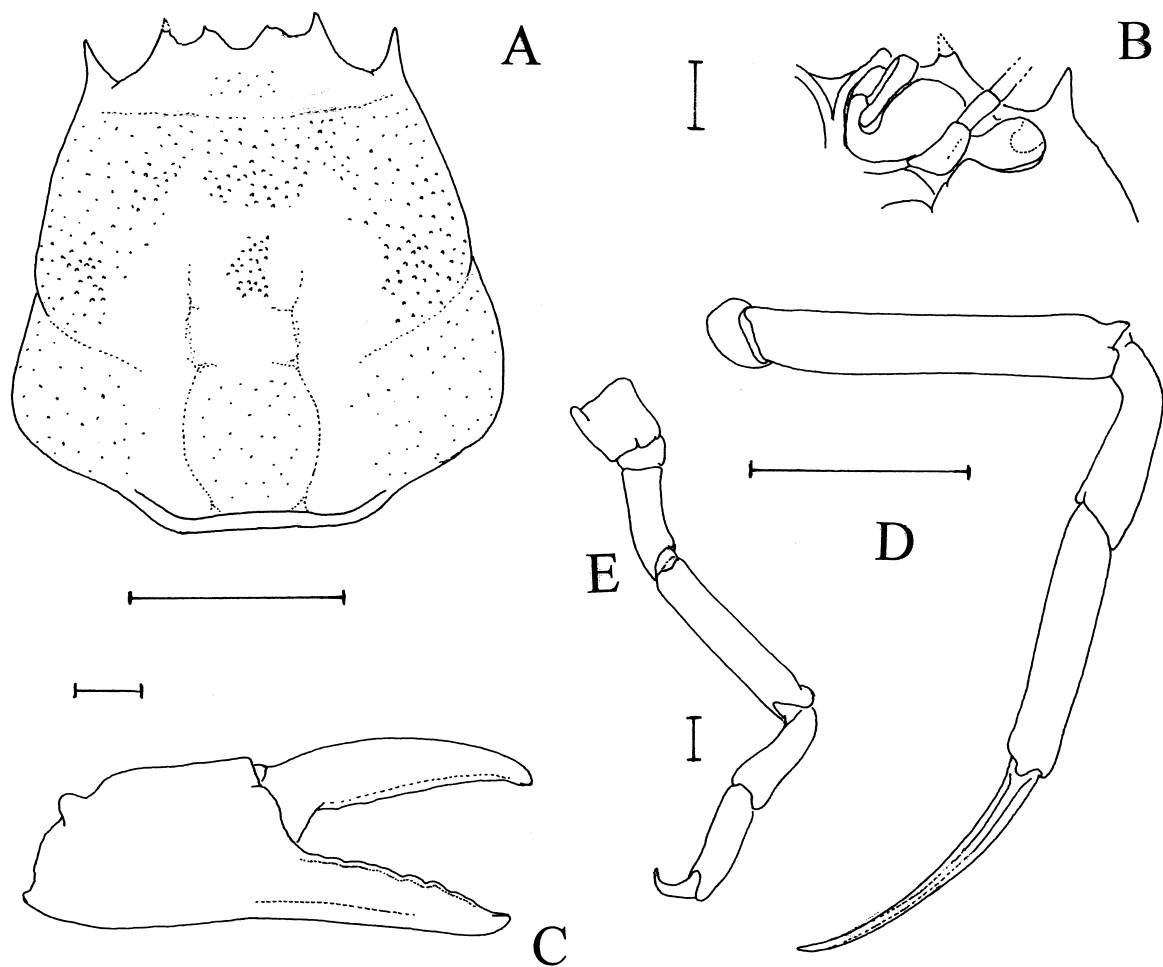


Fig. 7. *Ethusina chenaе*, new species. Holotype female, 11.0 by 10.5 mm (NTOU). A, carapace; B, left orbit, antenna and antennule; C, right P2; D, right P5; E, right chela. Scales: A, C = 5.0 mm; B, D, E = 1.0 mm.

robusta in having the median frontal teeth distinctly lower and blunter than the lateral teeth, the external orbital spine is directed only slightly obliquely outwards (vs. at an angle of about 45°), the meri of the P2 and P3 are distinctly shorter proportionately, and the dactyli of the P4 and P5 are also prominently shorter proportionately (cf. Miers, 1886: pl. 29 fig. 2, of a female specimen). The figure and description of *E. robusta* by Miers (1886: 332, pl. 29 fig. 2) differs somewhat from that of the species figured by Chen (1986b, 2000). Chen's (1986b: 133, figs. 62-66) figure of a female specimen from the East China Sea resembles that of Miers (1886), but the median frontal teeth are distinctly lower and broader, the external orbital teeth are not directed so obliquely outwards, and the dactyli of the P4 and P5 are prominently shorter. In her later study, Chen (2000: 430, Fig. 3) depicted a male which has somewhat straighter lateral carapace margins with more prominent and straighter external orbital teeth, and the dactyli of the P2-P5 are distinctly shorter than those figured by Miers (1886). It seems rather unlikely that there is sexual dimorphism in the proportions of the P2 and P3, and we have some doubts whether Chen's material is really *E. robusta* s. str. (type locality Arafura Sea). In any case, it is clear that the present Taiwanese material cannot be referred to the *E. robusta* of Miers and/or Chen, and should be regarded as undescribed. Clearly a revision of this group of species is warranted.

***Ethusina macrospina*, new species**

(Figs. 8-11)

Material examined. – Holotype – male, 7.2 by 7.3 mm (NTOU), Station CD 135, 22°17.21'N, 120°0.28'E, 961-1112 m, coll. TAIWAN 2000, R.V. "Fishery Researcher 1", 22 Nov.2001.

Paratypes – 2 females, 9.4 by 10.7 mm (NTOU), 8.6 by 9.2 mm (ZRC), same data as holotype; 1 female, 9.8 by 10.1 mm (NTOU), Station CD 134, 22°16.56'N, 120°06.11'E, 736-1040 m, coll. TAIWAN 2000, R.V. "Fishery Researcher 1", 22 Nov.2001; 1 male, 6.8 by 7.3 mm (ZRC), Station CD 141, 22°12.04'N, 119°59.96'E, 1110-985 m, 24 November 2001; 1 female, 10.7 by 11.2 mm (ZRC), Station CP 39, 21°57.5'N, 121°03.2'E, 1316-1317 m, coll. TAIWAN 2000, R.V. "Fishery Researcher 1", 1 Aug.2000.

Diagnosis. – Carapace slightly longer than broad; dorsal surface gently convex, appears almost smooth without magnification, regions not well defined. Front not prominently projecting anteriorly, with 4 teeth; median teeth low, reaching only to about half length of relatively short lateral teeth, directed anteriorly, separated by distinct concavity; lateral teeth directed slightly obliquely inwards, separated from median teeth by shallow concavity. External orbital spine very slender, acutely triangular, directed obliquely outwards, tip reaching beyond tips of median frontal teeth. Lateral carapace margins gently sinuous, with posterior part distinctly convex. Posterior carapace margin almost straight. Chelipeds subequal; fingers slightly longer than palm; cutting edges with low teeth. P2 and P3 smooth, glabrous; P3 longest, merus 6.9-7.5 times as long as wide, propodus 5.2-5.7 times as long as wide; dactylus not very elongate. Male abdomen with segments 3-5 completely

fused; segment 6 subrectangular, broader than long, lateral margins almost straight; telson triangular. G1 broadly C-shaped, distal part conical, G2 opening subterminal.

Etymology. – The name alludes to the large external orbital spine of the species. The name is used as a noun in apposition.

Remarks. – The present species bears a remarkable resemblance to *Ethusa indica* Alcock, 1894, in carapace form, but the immovable eye and large basal antennular segment clearly identifies it as a species of *Ethusina*. The length of the slender external orbital spine, which extends well beyond the tip of the frontal tooth, is diagnostic for this *Ethusina* species. The length of this tooth is reminiscent of those in *E. challengerii* (Miers, 1886) (34°37'N 140°32'E), *E. gracilipes* (Miers, 1886) (Philippines, Japan), *E. investigatoris* Alcock, 1896 (Philippines, China), *E. serenei* (Sakai, 1983) (South China Sea), *E. longipes* Chen, 1987 (Madagascar), and *E. paralongipes* Chen, 1993 (New Caledonia), but in none of these species does the external



Fig. 8. *Ethusina macrospina*, new species. A, B, holotype male, 7.2 by 7.3 mm (NTOU); C, paratype male, 6.8 by 7.3 mm (ZRC). A, overall view; B, C, carapace.

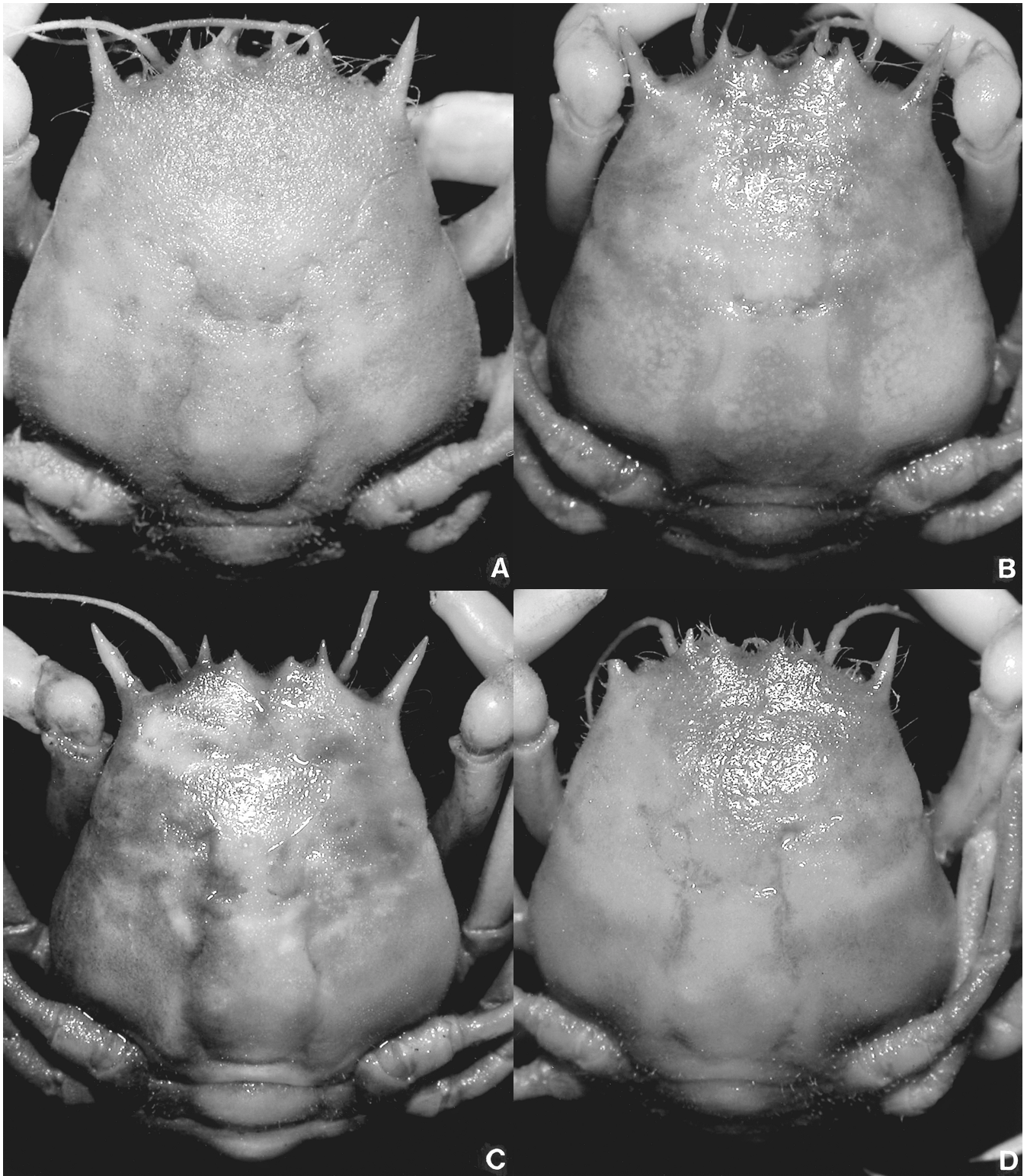


Fig. 9. *Ethusina macrospina*, new species. A, paratype female, 8.6 by 9.2 mm (ZRC); paratype female, 9.4 by 10.7 mm (NTOU); C, paratype female, 10.7 by 11.2 mm (ZRC); D, paratype female, 9.8 by 10.1 mm (NTOU).

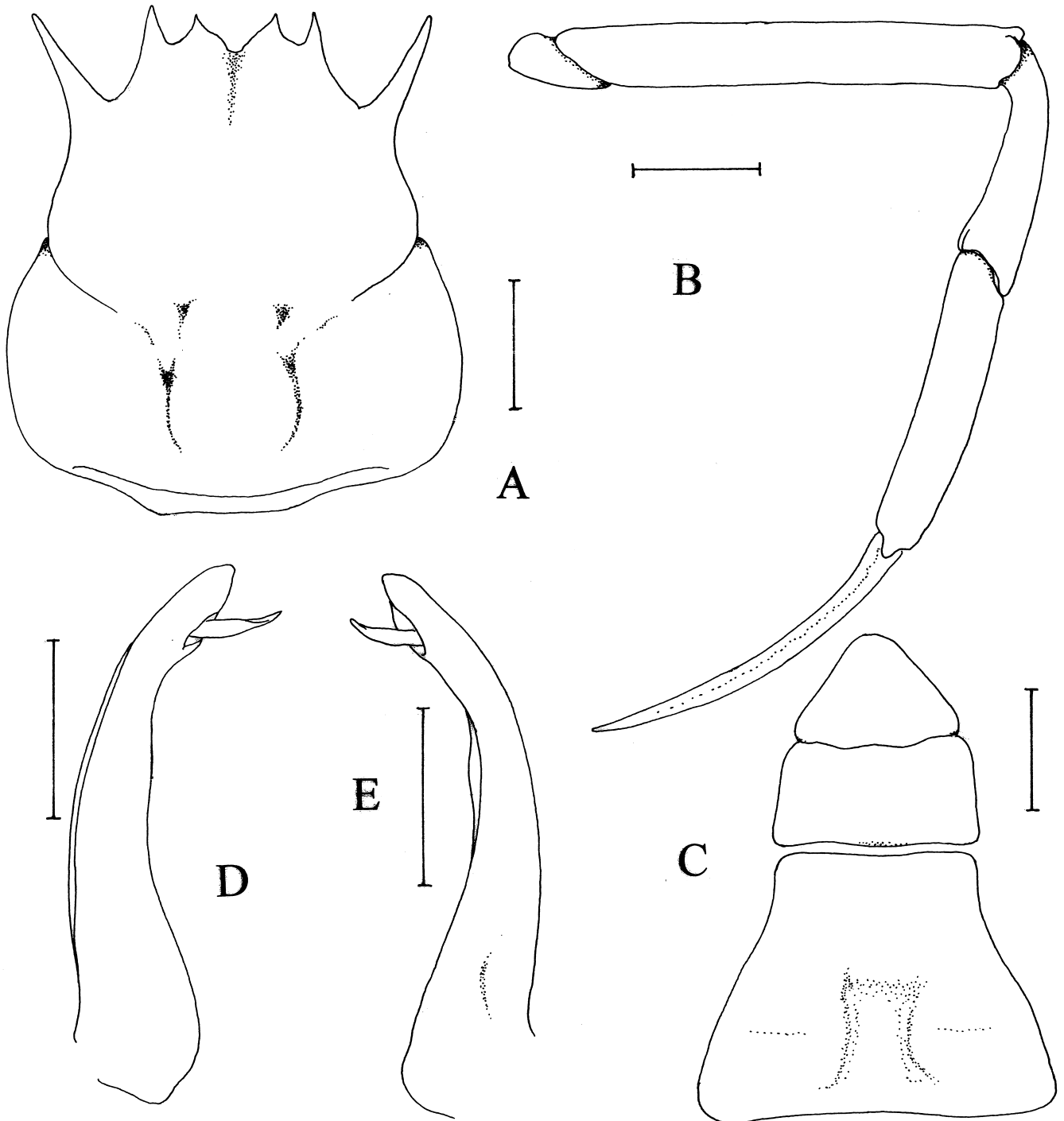


Fig. 10. *Ethusina macrospina*, new species. Holotype male, 7.2 by 7.3 mm (NTOU), A, carapace; B, right P2; C, male abdominal segments 3-6 and telson (3-5 fused); D, E, left G1 (tip of G2 protruding from subdistal opening). Scales: A, B = 2.0 mm; C-E = 1.0 mm.

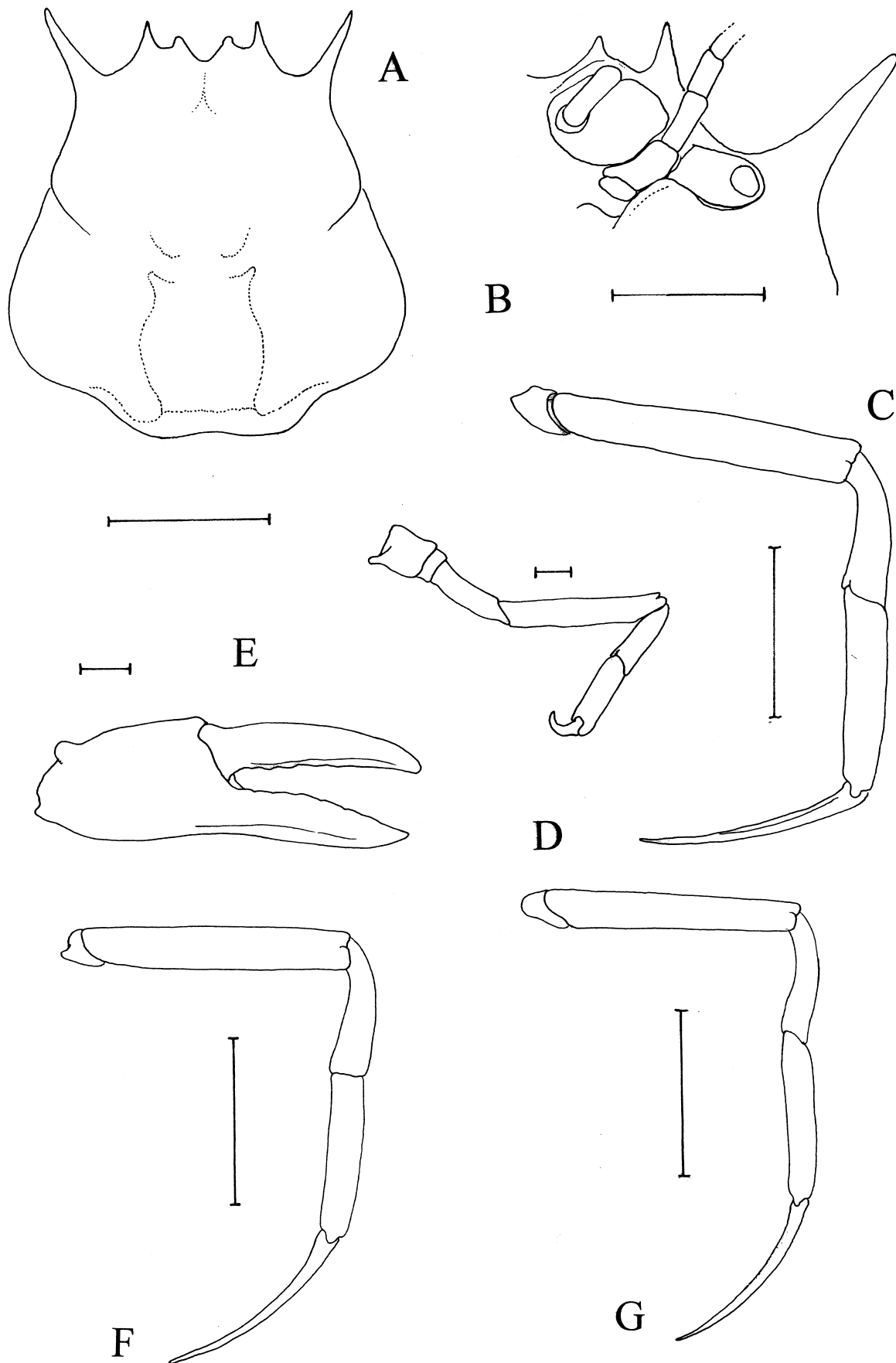


Fig. 11. *Ethusina macrospina*, new species. A-E, paratype female, 10.7 by 11.2 mm (ZRC); F, paratype female, 8.6 by 9.2 mm (ZRC); G, paratype male, 6.8 by 7.3 mm (ZRC). A, carapace; B, left orbit, antenna and antennule; C, F, G, right P2; D, right P5; E, right chela. Scales: A, C, F, G = 5.0 mm; B = 2.0 mm; D, E = 1.0 mm.

orbital spine project so far forwards. The P2 and P3 of all these four species, however, are also much longer and more slender than those of *E. macrospina*, and easily distinguishes the latter, with those of *E. challengerii* exceptionally long (cf. Miers, 1886). The regions just behind the frontal teeth of *E. gracilipes*, *E. serenei*, *E. longipes* and *E. paralongipes* appear to be distinctly swollen, but in *E. macrospina*, this area is not prominently inflated. The median frontal teeth of these four species are also much more well developed, longer and more spiniform than those of *E. macrospina* (see Miers, 1886; Serène & Lohavanijaya, 1973; Sakai, 1983; Chen, 1987, 1993).

The relatively good series of specimens of *E. macrospina* allow some insight into variation in the species. The proportions of the P2 do vary a bit, but not very substantially (merus and propodus 6.9-7.5 and 5.2-5.7 times as long as wide respectively), and does not affect the comparisons with other taxa. The strength of the external orbital spine varies a bit in strength and orientation. In the holotype male and some paratype females (e.g. 9.8 by 10.1 mm, Station CP 38) (Figs. 8A, B, 9C, 10A, 11A), the external orbital spine is very long and slender, and directed obliquely outwards at an angle of almost 45°. In the paratype male and other females, the spine is relatively shorter, and directed more anteriorly (Figs. 8C, 9A, B, D).

***Ethusina insolita*, new species**

(Figs. 12, 13)

Material examined. – Holotype – male, 8.8 by 10.4 mm (NTOU), Station CP 53, 24°15.7'N, 122°11.6'E, 2947-2903 m, coll. TAIWAN 2000, R.V. "Fishery Researcher 1", 3 Aug.2000.

Diagnosis. – Carapace longer than broad; dorsal surface gently convex, with scattered low granules visible without magnification, regions not well defined. Front projecting anteriorly, with 4 teeth; median teeth low, rounded, lobiform, separated by shallow, broad concavity; lateral teeth low, directed obliquely outwards, separated from median teeth by shallow concavity. External orbital spine relatively short, triangular, directed anteriorly or almost so, tip not reaching bases of median frontal teeth. Lateral carapace margins gently sinuous, with posterior part convex. Posterior carapace margin gently concave. Chelipeds subequal; fingers slightly longer than palm; cutting edges with low teeth. P2 and P3 smooth, glabrous; P3 longest, merus 9.6 times as long as wide, propodus 7.7 times as long as wide; dactylus very elongate. Male abdomen with segments 3-5 completely fused, only traces of median sutures visible, segment 5 with prominent transverse ridge; segment 6 rectangular, broader than long, lateral margins convex; telson triangular, lateral margins almost straight. G1 stout, distal part subtruncate.

Etymology. – The name is derived from the Latin for uncertain, alluding to the systematic status of the species.

Remarks. – This new species is rather problematic even though it is represented by a good male specimen. With regards to its carapace form and pereopodal proportions, it



Fig. 12. *Ethusina insolita*, new species. Holotype male, 8.8 by 10.4 mm (NTOU). A, overall view; B, carapace.

is remarkably close to *E. dilobotus* Chen, 1993. Nevertheless, the external orbital spine of *E. insolita*, new species, is directed distinctly anteriorly rather than slightly obliquely, the male telson is relatively more elongate, and the G1 is relatively shorter and stouter. These differences by themselves can be regarded as variation, especially since *E. dilobotus* is known only from the type specimen from New Caledonia. The male abdominal segment five of *E. insolita*, however, has a prominent transverse ridge that spans much of its width, a feature that is absent on *E. dilobotus* (cf. Chen, 1993: fig. 19c). This character, together with the other differences observed earlier, strongly suggest that we are dealing with a different species here.

***Ethusina saltator*, new species**

(Figs. 14, 15)

Material examined. – Holotype – male, 5.9 by 6.8 mm (NTOU), Station CD 139, 22°10.73'N, 120°14.1'E, 852-718 m, coll. TAIWAN 2000, R.V. "Fishery Researcher 1", 23 Nov.2001.

Diagnosis. – Carapace longer than broad; dorsal surface gently convex, appearing almost smooth without magnification, regions poorly defined. Front not prominently projecting anteriorly, with 4 sharp teeth; median teeth short, about half length of lateral teeth, separated by distinct concavity; lateral teeth directed slightly obliquely outwards, separated from median teeth by concavity. External orbital spine acutely triangular, directed obliquely outwards, tip

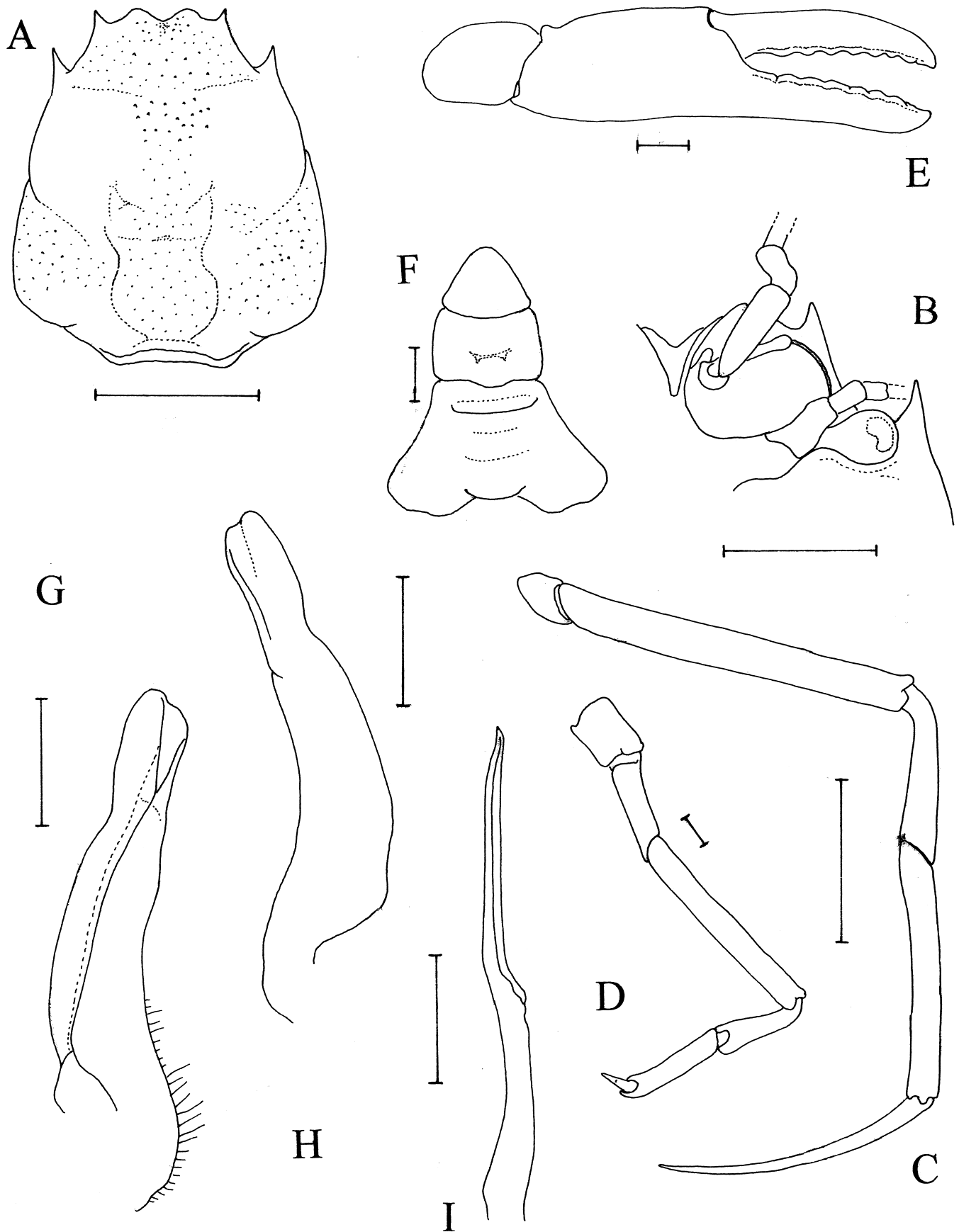


Fig. 13. *Ethusina insolita*, new species. Holotype male, 8.8 by 10.4 mm (NTOU). A, carapace; B, left orbit, antenna and antennule; C, right P2; D, right P5; E, left chela and carpus; F, male abdominal segments 3-6 and telson (3-5 fused); G, H, left G1 (setae denuded); I, left G2. Scales: A, C = 5.0 mm; B = 2.0 mm; D-I = 1.0 mm.

reaching just beyond bases of median frontal teeth. Lateral carapace margins gently sinuous, with posterior part distinctly convex. Posterior carapace margin gently concave. Chelipeds subequal; fingers slightly longer than palm; cutting edges with low teeth, outer surface of fingers with low carinae. P2 and P3 smooth, glabrous; P3 longest, merus 10.2 times as long as wide, propodus 8.3 times as long as wide; dactylus very elongate. Male abdomen with segments 3-5 completely fused; segment 6 rectangular, broader than long, lateral margins slightly sinuous; telson almost semicircular. G1 stout, medially twisted, terminal segment vaguely demarcated from subterminal part, tip prominently bifurcated; G2 with distal segment much longer than basal segment.

Etymology. – The name is derived from the Latin for dancer, alluding to the long legs of the species. The name is used as a noun in apposition.

Remarks. – With regards to the carapace form and long, slender P2 and P3, *E. saltator*, new species, resembles *E. desciscens* Alcock, 1896, *E. longipes* Chen, 1987, *E. paralongipes* Chen, 1993, *E. gracilipes* (Miers, 1886) and *E. taiwanensis*, new species. However, it can immediately be distinguished from these species by its inner median spine being much shorter than the lateral spine. In addition, the G1 of *E. saltator* is medially twisted, and the tip is prominently clefted medially.



Fig. 14. *Ethusina saltator*, new species. Holotype male, 5.9 by 6.8 mm (NTOU). A, overall view; B, carapace.

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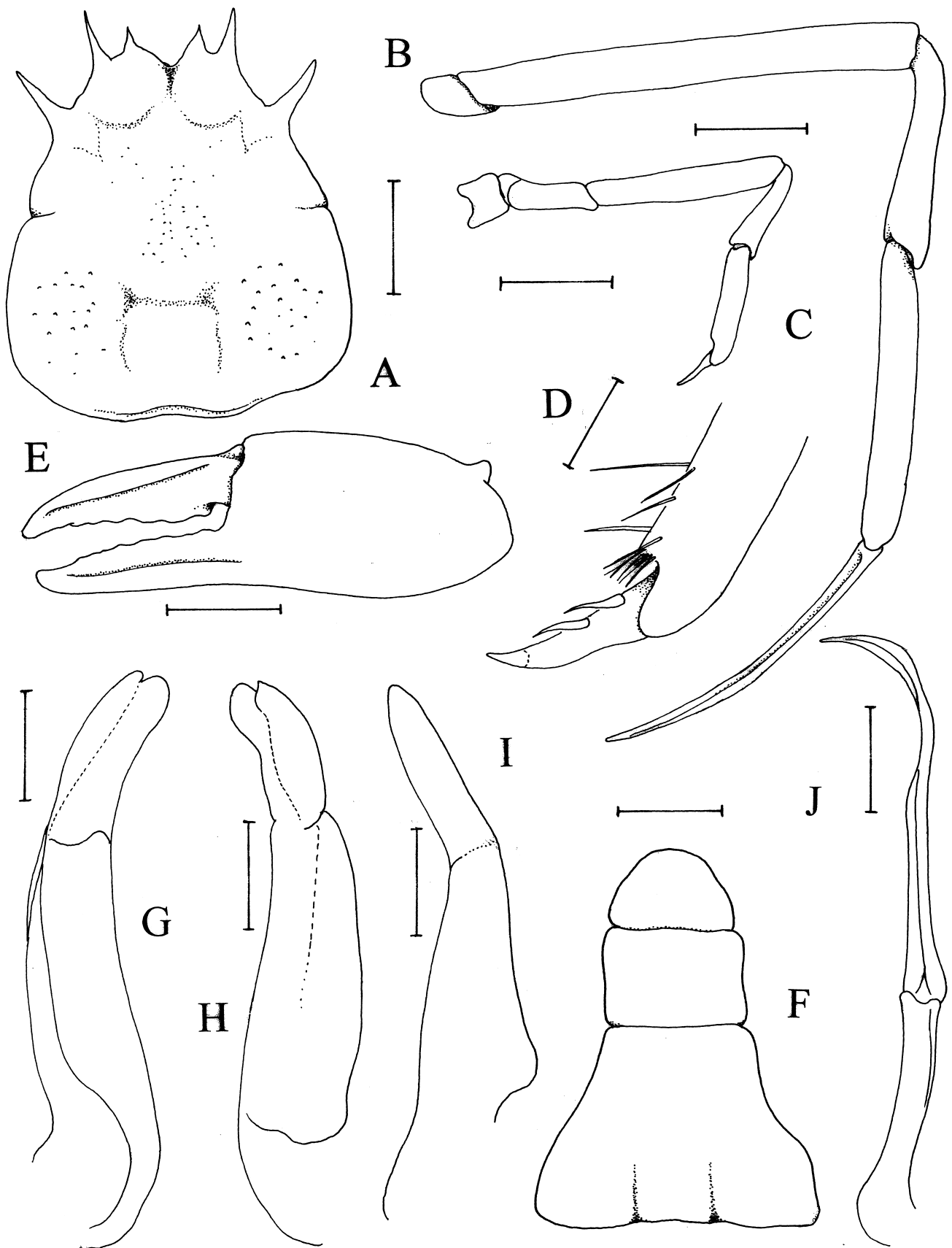


Fig. 15. *Ethusina saltator*, new species. Holotype male, 5.9 by 6.8 mm (NTOU). A, carapace; B, right P2; C, right P5; D, dactylus and propodus of right P5; E, left chela; F, male abdominal segments 3-6 and telson (3-5 fused); G, H, I left G1 (various views) (setae denuded); J, left G2. Scales: A-C, E = 2.0 mm; F = 1.0 mm; D, G-J = 0.5 mm.

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