

Report on Four Species of Crabs (Crustacea: Decapoda: Brachyura) from Korea

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ABSTRACT

One pilumnoid, *Neoactumnus convexus* Sakai, 1965, and three xanthoids, *Lybia caestifera* (Alcock, 1898), *Atergatopsis germaini* A. Milne-Edwards, 1865, and *Platypodia tomentosa* (De Man, 1902), are newly recorded in Korean fauna. Korean pilumnoids and xanthoids now consist of fifteen species and twenty species, respectively.

Key words: New record, *Neoactumnus convexus*, *Lybia caestifera*, *Atergatopsis germaini*, *Platypodia tomentosa*, Decapoda, Korean fauna

INTRODUCTION

Pilumnids are small cryptic crabs living under the rocks, in the crevices or in coral. Most members have the dense grooves and fringes of hair on the carapace and legs. Seven genera of Pilumnidae, *Actumnus* Dana, 1851, *Benthopanope* Davie, 1989, *Echinoecus* Rathbun, 1894, *Harrovia* Adams and White, 1849, *Heteropilumnus* De Man, 1989, *Pilumnopus* A. Milne-Edwards, 1867, and *Pilumnus* Leach, 1815, have been recorded in Korean fauna. Genus *Neoactumnus* consists of *Neoactumnus convexus* Sakai, 1965 and *N. unispina* Garth and Kim, 1983 in the world. *Neoactumnus convexus* has been only reported from southern coast of Japan so far (Sakai, 2004). *Neoactumnus convexus* is newly reported from Korean fauna.

Many members of xanthids are compact and have the black coloured fingers. More species appear in the Indo-West Pacific than any other sea areas and are found intertidal or subtidal zone. They hide under the rocks or in the sponges and other sessile invertebrates and graze on algae or on detritus. In Korean fauna, sixteen genera of family Xanthidae, *Actaea* De Haan, 1833, *Atergatis* De Haan, 1833, *Banareia* A. Milne-Edwards, 1869, *Calvactaea* Ward, 1933, *Cyclo-xanthops* Rathbun, 1897, *Forestia* Guinot, 1976, *Gaillardielus* Guinot, 1976, *Leptodius* A. Milne-Edwards, 1834, *Macromedaeus* Ward, 1942, *Medaeops* Guinot, 1967, *Microcassiope* Guinot, 1967, *Nanocassiope* Guinot, 1967, *Neoliomera* Odhner, 1925, *Novactaea* Guinot, 1976, *Palapedia* Ng, 1993,

and *Pilodius* Dana, 1851, have been recorded. Three xanthid crabs, *Lybia caestifera* (Alcock, 1898), *Atergatopsis germaini* A. Milne-Edwards, 1865, and *Platypodia tomentosa* (De Man, 1902), is newly recorded in Korean fauna.

Materials examined in this study are deposited in "Depository Bank of Marine Arthropods", Seoul National University. The abbreviation "cl" and "cw" refer to the carapace length from the front to the posterior dorsal margin of the carapace and to the width of the carapace measured at the widest part, respectively. The abbreviated terminology used for carapace regions mostly follows those of Serène (1984).

SYSTEMATIC ACCOUNTS

Superfamily Pilumnoidea Samouelle, 1819

Family Pilumnidae Samouelle, 1819

Subfamily Pilumninae Samouelle, 1819

Genus ^{1*}*Neoactumnus* Sakai, 1965

^{2*}*Neoactumnus convexus* Sakai, 1965 (Fig. 1)

Neoactumnus convexus Sakai, 1965a, p. 105, fig. 4; Sakai, 1965b, p. 153, fig. 18; Takeda and Koyama, 1974, p. 114, pl. 11D; Sakai, 1976, p. 498, figs. 267a-c; Miyake, 1983, p. 133, fig. 3; Muraoka, 1998, p. 45.

Material examined. 1 ♀ (cl 9.4 mm, cw 12.6 mm), Munseum (Jejudo Is.), 19 Sept. 1995 (H.S. Kim).

Diagnosis. Carapace (Fig. 1A) nearly as long as wide; dorsal surface strikingly convex in middle, smooth, with indistinct grooves, and covered with velvety tomentums; front (Fig. 1C) wide without median emargination and lateral

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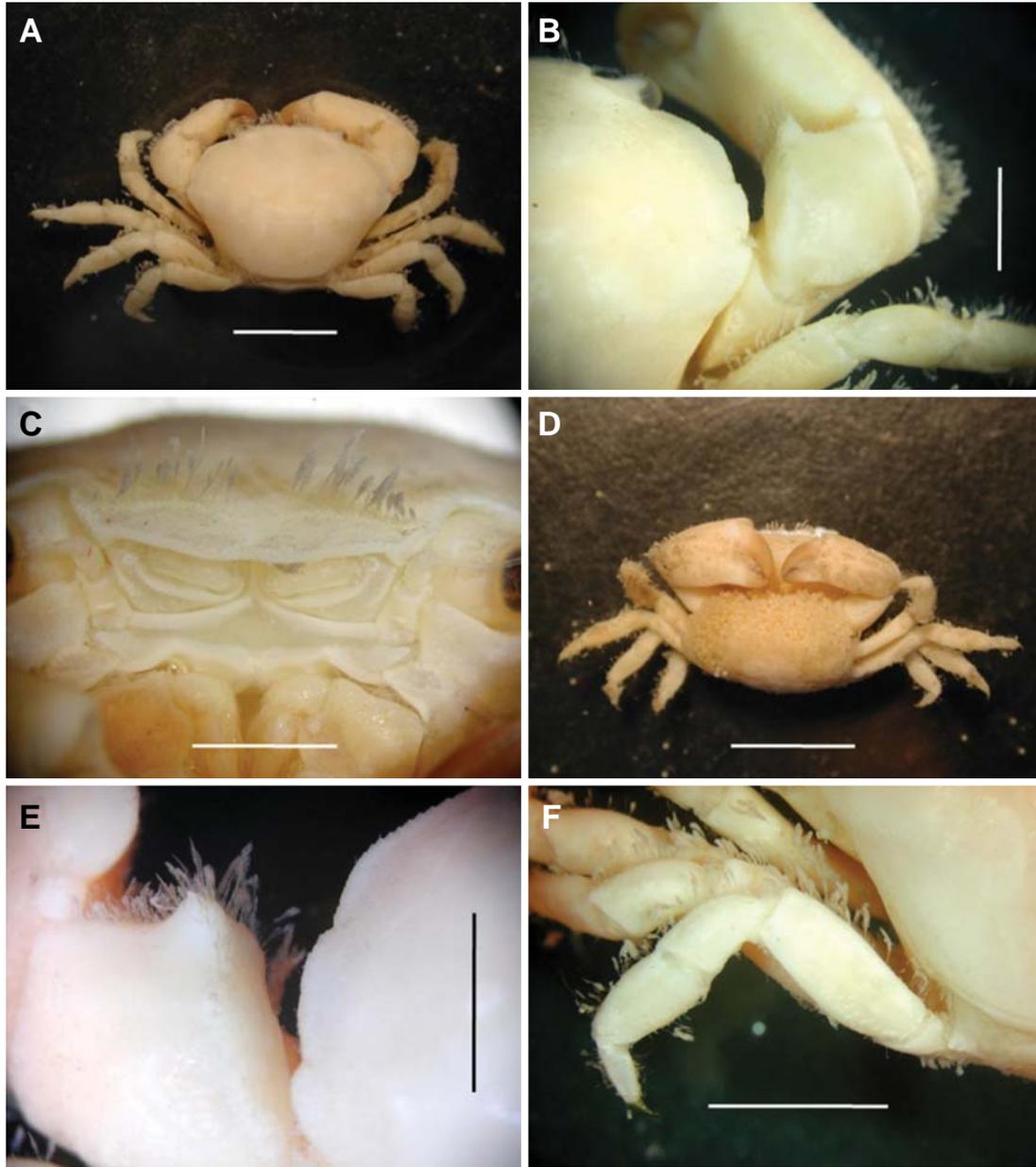


Fig. 1. *Neoactumnus convexus*, Female. A, dorsal view; B, right anterolateral carapace; C, frontal view; D, ventral view; E, inner carpus of left cheliped; F, left 4th ambulatory leg. Scale bars=5 mm (A, D), 1.5 mm (B), 2.5 mm (C), 3 mm (E), 4 mm (F).

lobule; frontal margin with transverse row of sparse hairs interrupted medially; anterolateral border (Fig. 1B, E) with four lobes including postorbital one; these lobes low-triangular in shape, each separated by very shallow sinus; posterolateral border almost as long as anterolateral one, slightly concave, with no accommodate concavity for fourth ambulatory leg. Orbits circular; preobital and supraobital margin entirely continuous with frontal margin, without preorbital hiatus, bearing indistinct notch near outer orbital

tooth. Basal antennal segment not touching ventral prolongation from lateral front; antennal hiatus thin, loosely filling.

Chelipeds (Fig. 1A, D) slightly asymmetrical; carpus and propodus massive; inner corner of carpus armed with tooth and accessory lower tooth; propodus with longitudinal rows of tiny granules on upper and outer surfaces; fingers not gaping very much, not hallowed at tip.

Ambulatory legs (Fig. 1A, D, F) slender; merus, carpus and propodus not much depressed; dactylus sharply hooked

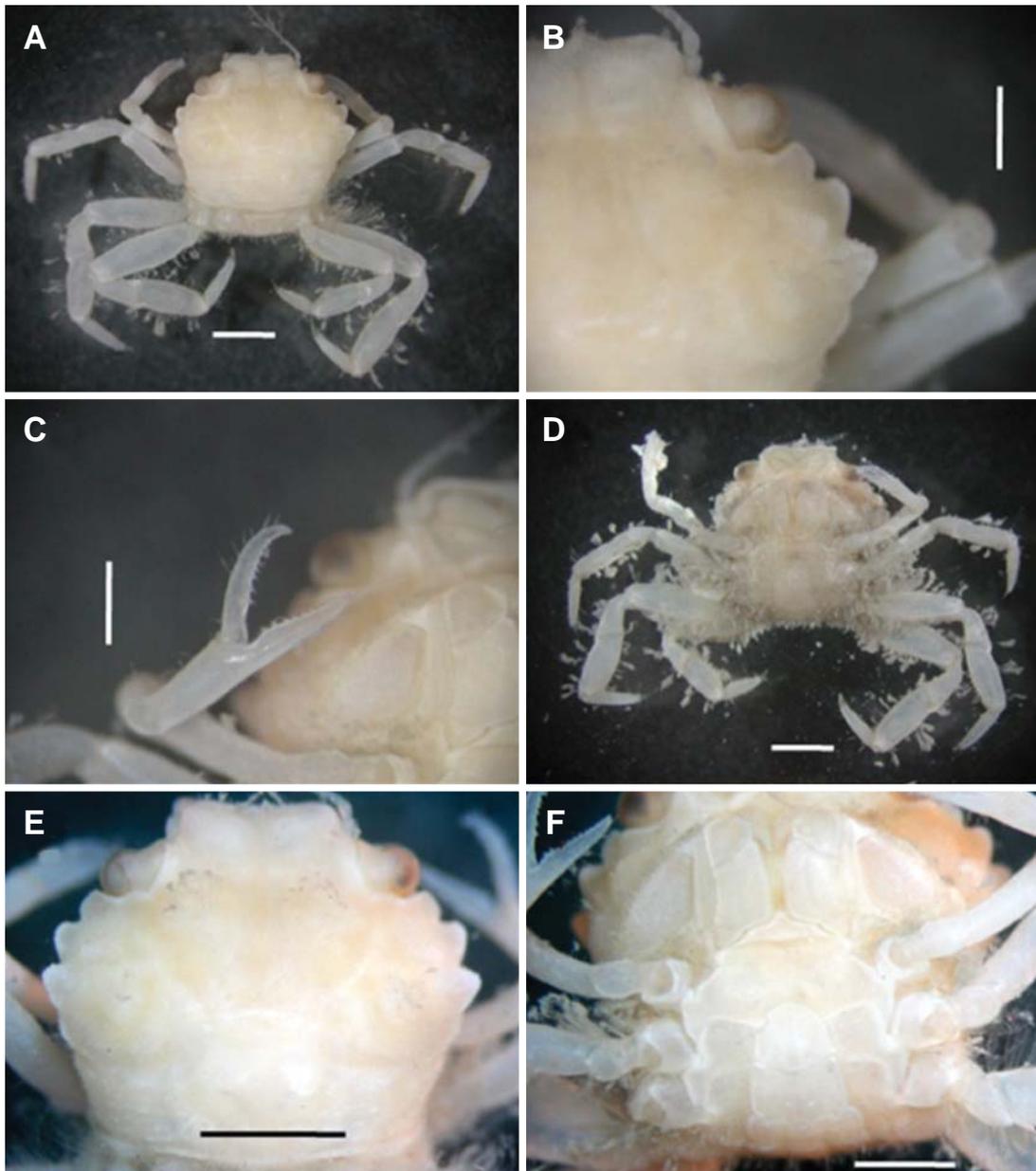


Fig. 2. *Lybia caestifera*, Female. A, dorsal view; B, right anterolateral carapace; C, right outer chelipe; D, ventral view; E, surface of carapace; F, abdominal view. Scale bars=2 mm (A, D), 1.5 mm (B, C, E), 0.6 mm (F).

at tip.

Remarks. The carapace of this species is smooth, convex and with no furrows. However, Korean specimen is strikingly convex with indistinct grooves in the middle. The teeth on anterolateral borders are very low triangular in shape so it looks like more circular. *Neoactumnus convexus* Sakai, 1965 is very similar to *N. unispira* Garth and Kim, 1983. However, *N. convexus* differs from *N. unispira* in having two fissures on supraorbital border and having a spine at the

inner angle of the carpus. *N. convexus* has been only recorded in southern coast of Japan (Sakai, 2004). This species is newly reported from Korean fauna and discovered outside the Japanese waters.

Habitat. Bottom of rocks or sand, and on a sea anemone, 25 to 45 m depth.

Distribution. Japan (Sagami Bay, Kii Nagashima and Kii Minabe), Korea (Munseum Is.).

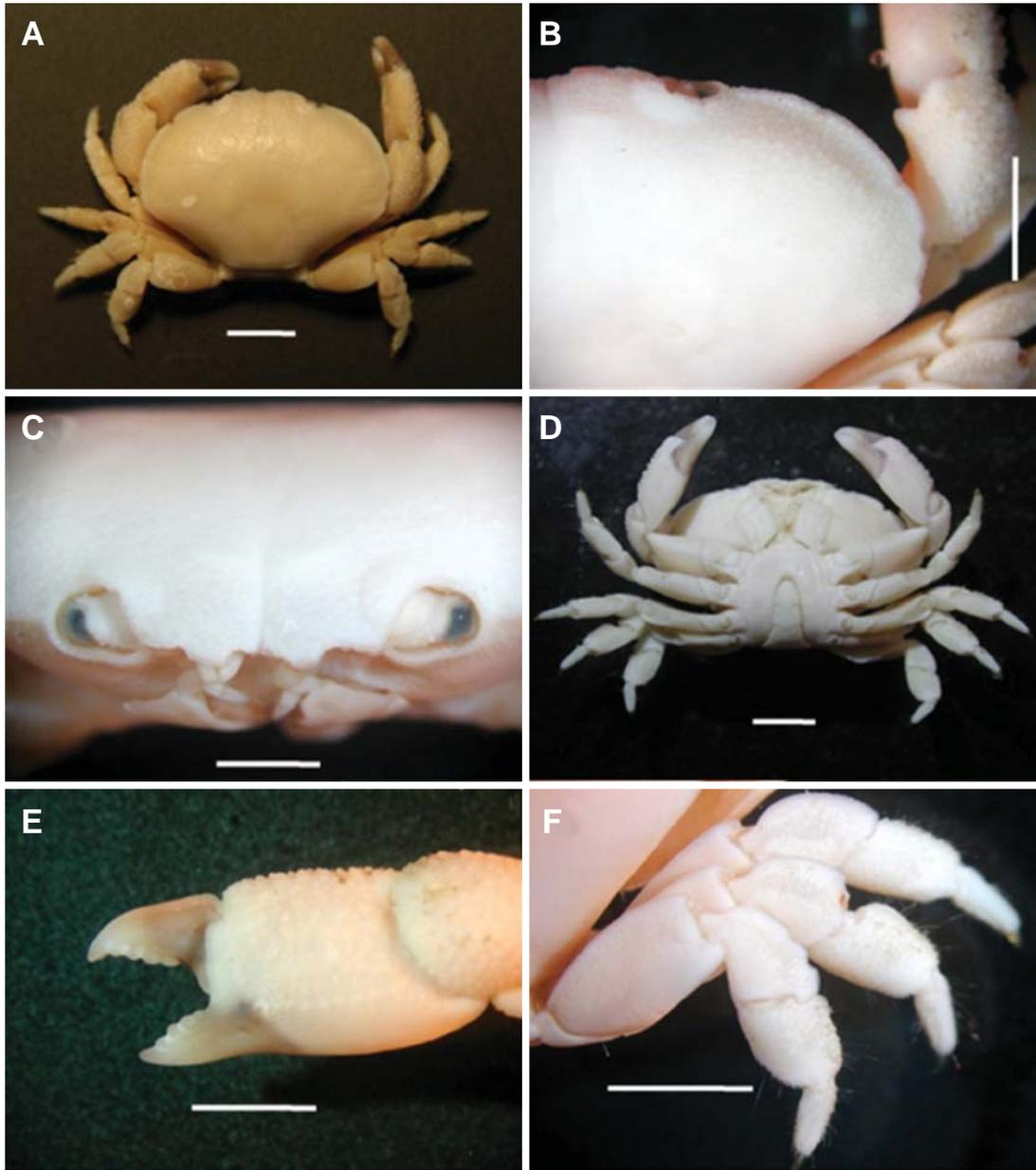


Fig. 3. *Atergatopsis germaini*, 1865, Male. A, dorsal view; B, right anterolateral carapace; C, frontal view; D, whole animal ventral view; E, outer view of left cheliped; F, right 4th ambulatory leg. Scale bars=5 mm (A, D), 3 mm (B, E), 2 mm (C), 4 mm (F).

Superfamily Xanthoidea MacLeay, 1938

Family Xanthidae MacLeay, 1838

Subfamily Polydectinae Dana, 1851

Genus ¹**Lybia* H. Milne Edwards, 1834

²**Lybia caestifera* (Alcock, 1898) (Fig. 2)

Melia caesifer Alcock, 1898, p. 231.

Lybia caestifera: Sakai, 1976, p. 504, pl. 180, fig. 2; Guinot,

1976, p. 75, pl. 19, fig. 5; Miyake, 1983, p. 128, pl. 43,

fig. 6; Serène, 1984, p. 25 (list); Takeda, 1989, p. 161; Dai and Yang, 1991, p. 379, pl. 51 (2).

Material examined. 1 ♀ (cl 3.6 mm, cw 4.0 mm), Munseum (Jejudo Is.), 6 June 2001 (S.H. Kim).

Diagnosis. Carapce (Fig. 2A, E) subhexangular, uneven, and less areolated; front broad, relatively straight anterior margin without median notch, cutting into 2 lobes by longitudinal

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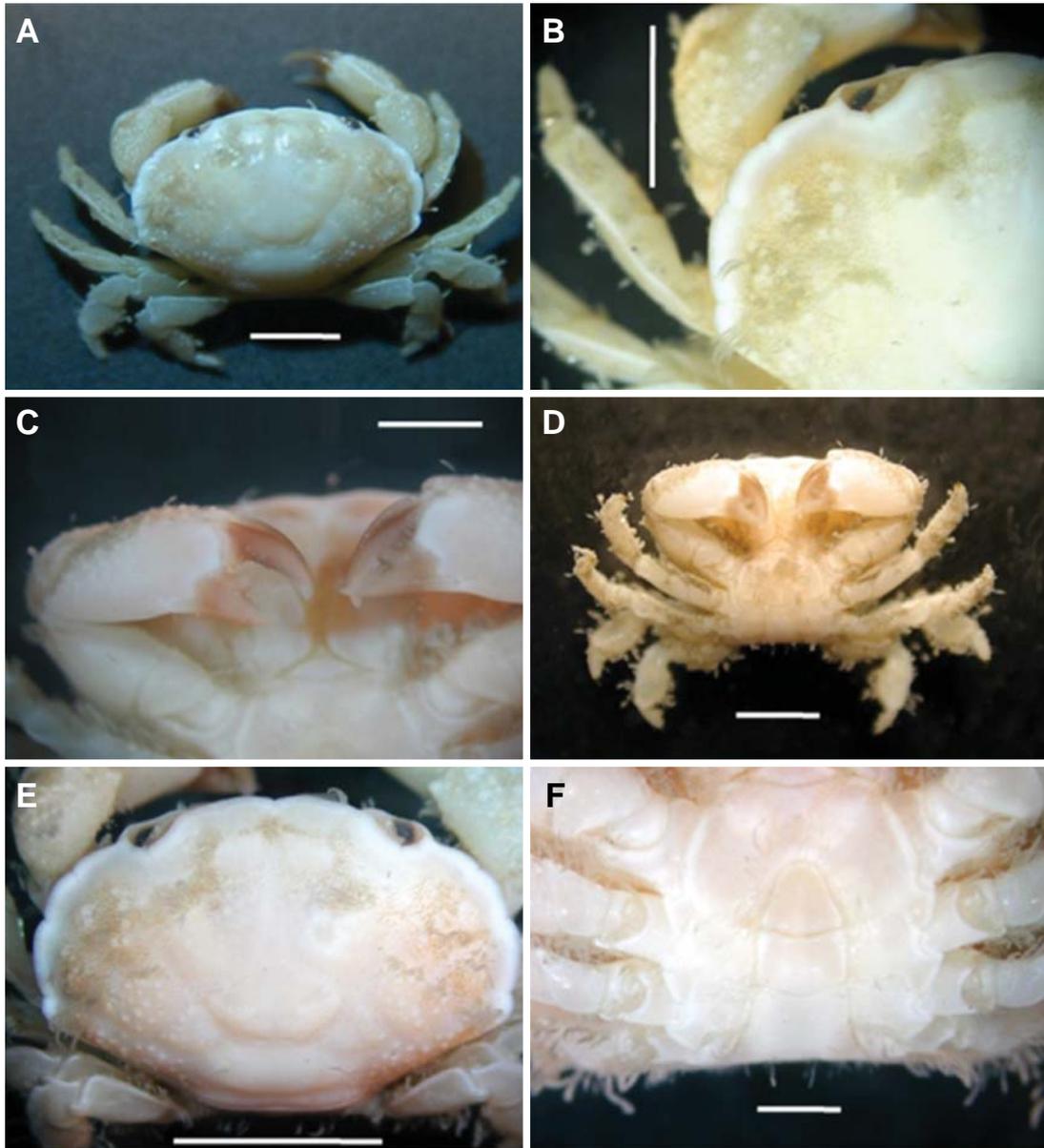


Fig. 4. *Platytopodia tomentosa*, Male. A, whole animal dorsal view; B, left anterolateral carapace; C, outer chelipeds; D, ventral view; E, surface of carapace; F, abdominal view. Scale bars=3 mm (A, D, E), 2 mm (B), 1.5 mm (C), 1 mm (F).

median trace with each lobes separated from innerorbital tooth by slanting mark; anterolateral border (Fig. 2B) armed with no serrated, triangular three teeth; third tooth rudimentary. Both sides of 1F, 2M, and 4L of carapace with small bundles of setae.

Chelipeds (Fig. 2C) very slender and small; fingers quite slim with tip curved and claw-shaped, bearing acute on teeth both inner margins.

Ambulatory legs (Fig. 2A, D) relatively stouter than chelipeds, with few setae on upper and inner borders; dactyli

with small, few teeth, and quite sharp at tip. Forth pair of ambulatory leg shorter and smaller than others.

Female abdomen (Fig. 2D, F) elongated.

Remarks. Korean specimen is agreed well with Dai and Yang (1991)'s description but carapace of Korean specimen has relatively small lobes on the frontal margin and no small bundles of setae on both sides 2P.

Habitat. Coral reefs in shallow waters.

Distribution. Red Sea, Indo-West pacific, Japan, Taiwan, Hawaii, Tahiti, Korea.

Subfamily Zosiminae Alcock, 1898

Genus ^{1*}*Atergatopsis* A. Milne-Edwards, 1862

^{2*}*Atergatopsis germaini* A. Milne-Edwards, 1865

(Fig. 3)

Atergatopsis germaini A. Milne-Edwards, 1865, p. 257, pl. 11, figs. 1a-b; Guinot, 1964, p. 16, figs. 3a-c; Sakai, 1976, p. 413, fig. 217; Miyake, 1983, p. 103, pl. 35, fig. 2; Serène, 1984, p. 141.

Material examined. 1♂ (cl 9.3 mm, cw 14.7 mm), Hongdo Is. (Gyeongsangnam-do), 20 May 1978 (H.S. Kim).

Diagnosis. Carapace (Fig. 3A) naked, carmine coloured, covered with fine granular surfaces, convex in middle, and hemispherical in outline; each region obscurely defined and markedly convex in 2F; anterolateral margin (Fig. 3B) conspicuously with three oblique teeth, lined with fine studded granules; anterolateral borders not crested; front (Fig. 3C) smooth, one third to carapace width, cutting into two lobes by longitudinal median trace.

Chelipeds (Fig. 3A, D, E) with relatively long fingers; fingers blunt, black coloured at their apices with one row of four oblique teeth, hardly projecting; upper part of palm granular and lower part smooth.

Ambulatory legs (Fig. 3A, D, F) granular at surface, little depressed, and subcylindrical.

First gonopods very slender, inner curved, with four bristles on distal end.

Remarks. *Atergatopsis germaini* has three teeth on the inner immovable fingers (Sakai, 1976) but the present specimen has four teeth. Upper part of movable fingers have two grooves due to longitudinal median crest, and dorsal surface of carapace has indistinct furrows.

Habitat. Coral reef, shallow waters.

Distribution. Japan, Taiwan, The Philippines, Vietnam, New Guinea, Korea.

Family Xanthidae Macleay, 1838

Subfamily Zosiminae Alcock, 1898

Genus ^{3*}*Platypodia* Bell, 1835

^{4*}*Platypodia tomentosa* (De Man, 1902) (Fig. 4)

Lophactaea tomentosa De Man, 1902, p. 585.

Platypodia tomentosa: Buitendijk, 1941, p. 309, fig. 3C; Sakai, 1983, p. 15, pl. 2, fig. 4; Serène, 1984, p. 157.

Material examined. 1♂ (cl 5.8 mm, cw 8.27 mm), Marado Is., 4 Nov. 2000 (S.H. Kim).

Diagnosis. Carapace (Fig. 4A, E) granular, covered with short brown tomentum and semicircular in outline; each hepatic region and protogastric region ornamented with

bundles of long hair; each regions of carapace separated by feeble furrow; 1F and 2F conjugated, 1M convex, and 2M not divided into two pars longitudinally; anterolateral borders (Fig. 4B) well crested, and divided into four blunt lobes with indistinct notch between them.

Chelipeds (Fig. 4C) well developed, black coloured at their apices; superior margin of palm with smooth crest along whole length; outer palm with small granules and few setae. Immobile fingers blade-like with strong trifid tooth proximally.

Ambulatory legs (Fig. 4A, D) very depressed, with few setae on upper and lower border; infra-border of merus with crest.

Remarks. In Korean specimen, the lobes of anterolateral margin are asymmetrical and the notches between lobes are irregular along outline of the carapace. This specimen has no bundle of long hair on the cardiac region and 2M region is not divided by furrow longitudinally.

Habitat. In the crevices and on the coral reef.

Distribution. Red sea, Madagascar, Japan, China, Taiwan, Australia, Hawaiian Islands, Korea.

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