

New Records of Three Xanthid Crabs (Decapoda: Brachyura: Xanthidae) in Korea

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ABSTRACT

Three xanthid crabs from Chejudo Island, viz., *Forestia depressa* (White, 1847), *Pilodius nigrocrinitus* Stimpson, 1858, and *Palapedia integra* (De Haan, 1835) are recorded as new to the Korean fauna. Up to date the Korean crabs of the family Xanthidae s. restr. consist of 15 species of 8 subfamilies.

Key words: new records, Xanthidae, Xanthid Crabs, *Forestia depressa*, *Pilodius nigrocrinitus*, *Palapedia integra*, Korea

INTRODUCTION

Kim (1973) reported that the Korean crabs consisted of 167 species of 18 families. Among these, the crabs of the family Xanthidae s. lato were described to 18 species and later, in the report of Kim and Kim (1997), 23 species of the xanthid crabs were recorded. In recent years, however, the Xanthidae s. lato is usually divided into the Xanthidae s. restr., Carpiliidae, Trapeziidae, Pilumnidae and Menippidae (see Serène, 1984). Twelve species of 6 subfamilies of the family Xanthidae s. restr. were known in Korean waters: one species in the Liomerinae, two in the Zosiminae, five in the Xanthinae, one in the Euxanthinae, two in the Actaeinae, and one in the Trichiinae.

The specimens dealt with in this work were collected from the intertidal region in Chejudo Island and deposited in Silla University, Pusan.

DESCRIPTION

Family Xanthidae Mac Leay, 1838

Subfamily Actaeinae Alcock, 1898

Genus *Forestia* Guinot, 1976

***Forestia depressa* (White, 1847) 편평부채게 (신칭) (Fig. 1)**

Xantho depressa White, 1847, p. 225.

Actaea parvula Alcock, 1898, p. 146.

Actaea depressa: Sakai, 1976, p. 446, fig. 237.

Forestia depressa: Guinot, 1976, p. 262, fig. 42B, 44A, 45B, 45b, 45b', pl. 18, fig.1; Takeda, 1982, p. 171, fig. 505; Serène, 1984, p. 106, fig. 64.

Description. Carapace about 1.4 times as broad as long, much depressed on posterior region; surface covered with short setae, areolated; protogastric region incompletely divided into two parts longitudinally, mesogastric region entire; lobules of regions developed on anterior half of carapace, posterior region being flat. Front notched in middle. Anterolateral margin (Fig. 1A) irregular, with acute tubercles.

Chelipeds asymmetrical; carpus and palm with conical granules on dorsal outer surfaces (Fig. 1B). Ambulatory legs (Fig. 1A) covered with short setae.

Female abdomen (Fig. 1C) 7-segmented; telson semicircular, slightly shorter than sixth segment. Color yellowish brown with red eye in life.

Material examined. 1 ♀, carapace length 16 mm, carapace breadth 23 mm, Chejudo Is. (Udo Is.), 9 July 1994, H. S. Ko.

Remarks. This species is, as suggested by the specific name, characteristic in having a markedly

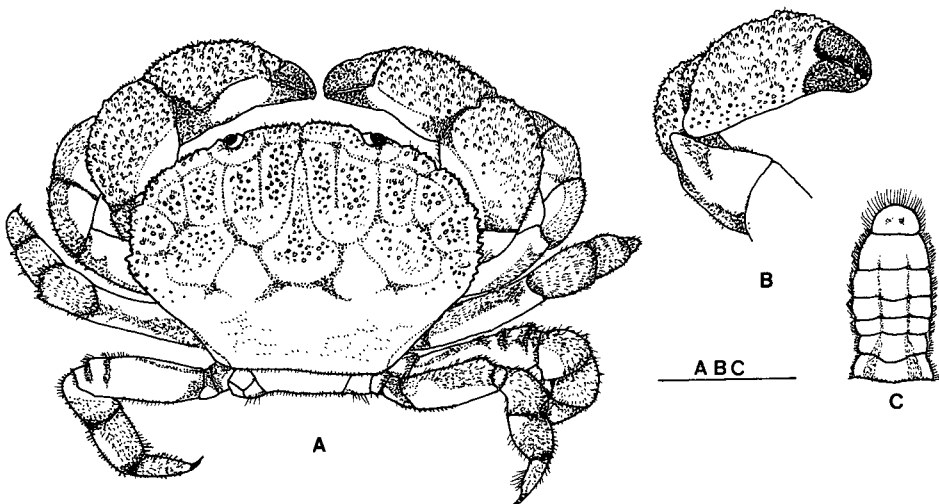


Fig. 1. *Forestia depressa* (White, 1847), female. A: dorsal view; B: right cheliped; C: abdomen. Scales for A, B, and C are 10 mm.

flattened dorsum of the carapace. The figures useful for identification have been given by Odhner (1925), Sakai (1939, 1976), Barnard (1950), Guinot (1976) and Serène (1984)

In 1980, the junior author examined the holotype and numerous additional specimens of *Pilumnus planus* Edmondson from the Hawaiian Islands, and concluded that it was a junior synonym of *Actaea depressa* (White), the type species of the genus *Forestia* erected by Guinot (1976).

Distribution. This species is widely distributed in the Indo-West Pacific, ranging from the Japan and the Hawaiian Islands through the Philippines, the Andaman Sea, and the Mergui Archipelago to South Africa.

Subfamily Chlorodiinae Alcock, 1898

Genus *Pilodius* Dana, 1852

***Pilodius nigrocrinitus* Stimpson, 1858** 털가시부채게 (신칭) (Fig. 2)

Pilodius nigrocrinitus Stimpson, 1858, p. 34; Sakai, 1976, p. 461, fig. 248; Takeda, 1982, p. 175, fig. 518; Miyake, 1983, p. 121, pl. 41, fig. 4; Serène, 1984, p. 235; Dai and Yang, 1991, p. 330, pl. 43, fig. 166.

Chlorodopsis melanochirus: Alcock, 1898, p. 168

Chlorodopsis nigrocrinitus: Alcock, 1898, p. 168

Description. Carapace about 1.6 times as broad as long. Surface covered with black short setae and yellow long hairs, clearly areolated, each marked with acute and conical granules. Front broad, with 2 lobes, and U-shaped median notch. Anterolateral margin (Fig. 2A) composed of four lobes except for external outerorbital angle; tip of each lobe with 2-4 short spines.

Chelipeds (Fig. 2A) asymmetrical; carpus and palm with spines on dorsal outer surfaces. Basal half of outer surface of movable finger armed with two rows of spines; black pigmentation of immovable finger extending onto palm; tips of fingers deeply excavated, white. Ambulatory legs (Fig. 2A) serrated on anterior margins of meri, propodi and carpi, thickly armed with long hairs,

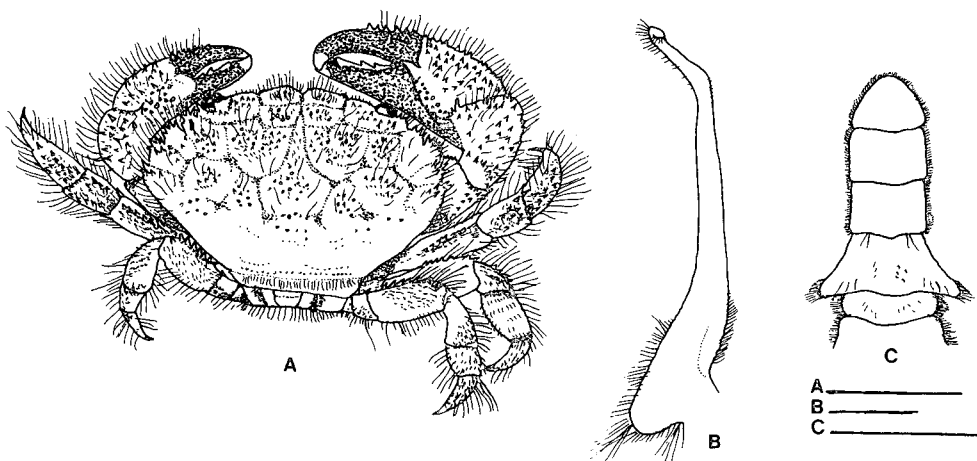


Fig. 2. *Pilodius nigrocrinitus* Stimpson, 1858, male. A: dorsal view; B: pleopod; C: abdomen. Scales for A, B and C are 10, 0.1 and 0.5 mm, respectively.

black short setae, and acute granules.

First pleopod (Fig. 2B) of male with hook-shaped end distally.

Fifth and sixth segments of male abdomen (Fig. 2C) rectangular; telson coniform.

Color dark brown in life.

Material examined. 1 ♂, carapace length 14 mm, carapace breadth 22 mm, Chejudo Is. (Mosulpo), 17 July 1998, S. M. Ko.

Remarks. The genus *Pilodius* was extensively revised by Clark and Galil (1993). According to them, most of the species are remarkably variable, with only 12 valid species of 43 species assigned to the genus. They described 3 new species, and thus the genus *Pilodius* is at present composed of 15 Indo-West Pacific species. As discussed by Crosnier (in Serène, 1984) and also by the above authors, the prolongation of the basal antennal segment into the orbital hiatus so as to exclude the antennal flagellum from the orbit develops with age and may not be useful for identifying the juveniles of the genus. There is, however, no doubt that the exclusion of the antennal flagellum from the orbit by the prolongation of the basal antennal segment is the most important and sole character for distinguishing the genus *Pilodius* from the related genera of the subfamily Chlorodiinae.

The male first pleopod is a very important criterion to distinguish the *Pilodius* species. In this species the distal beak is strongly recurved toward the base, with a row of strong setae like cockscomb, as clearly figured by Sakai (1939), Serène and Luom (1958, 1959), Dai and Yang (1991), Clark and Galil (1993), and also in this paper.

The validity of *Chlorodopsis melanochirus* described by A. Milne Edwards (1873) was doubted by Balss (1938) who dealt with the genus *Chlorodopsis* distinct from the genus *Pilodius*, but mentioned the possibility of synonymization with this species. All the recent researchers have no objection to the identity of this species and the genus *Pilodius*.

Distribution. This species ranges from Japan (type locality, Shimoda) to Hawaii, the Society Islands and eastern Australia in the Pacific Ocean, and to the Andaman and Nicobar Islands in the eastern Indian Ocean. Not recorded in the Indian Ocean west of 90° E.

Subfamily Kraussiinae Ng, 1993

Genus *Palapedia* Ng, 1993

***Palapedia integra* (De Haan, 1835) 접시부채게 (신칭) (Fig. 3)**

Cancer (Xantho) integer De Haan, 1835, p. 66, pl. 18, fig. 6.

Kraussia integra: Sakai, 1976, p. 308, fig. 172a; Takeda, 1982, fig. 409; Dai and Yang, 1991, pl. 23, fig. 103.

Palapedia integra: Ng, 1993, p. 141.

Description. Carapace (Fig. 3A) transversely elliptical, dorsal surface smooth, slightly convex; mesogastric region bearing small pits; frontal and orbital regions and lateral portion covered with acute small tubercles and yellow setae. Frontal margin (Fig. 3B) quadrilobate, divided by a median and two submedian notches; inner two lobes narrower and sometimes ill-defined, outer two lobes broader and rounded. Anterolateral margin (Fig. 3A) slightly serrated, bearing a shallow depression at anterior one third fringed with filiform setae.

Chelipeds (Fig. 3A, C) of female approximately symmetrical; carpus with spines in distal portion

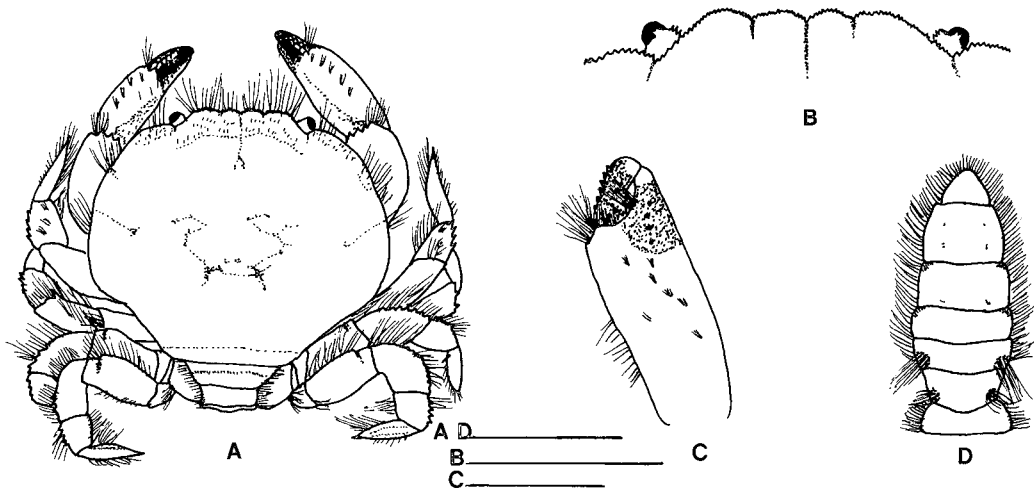


Fig 3. *Palapedia integra* (De Haan, 1835), female. A: dorsal view; B: anterior margin of carapace, with eyes; C: cheliped; D: abdomen. Scales for A and D are 10 mm, scales for B and C are 0.5 mm.

of dorsal surface; palm with a few small bundles of setae on inner and outer sides; movable finger with two rows of granules on outer surface, immovable finger with a bundle of setae on hollow surface, tips of both fingers white. Ambulatory legs (Fig. 3A) armed long setae, serrated on anterior margins of the propodi and carpi.

Female abdomen (Fig. 3D) narrow, elongate, 7-segmented; telson coniform, much shorter than sixth segment.

Color pale pink in life.

Material examined. 1 ♀, carapace length 15 mm, carapace breadth 18 mm, Chejudo Is. (Udo Is.), 9 July 1994, H. S. Ko.

Remarks. Ng (1993) restricted the genus *Kraussia* Dana to the monotypical representative, *Platyonichus regulosa* Krauss, 1843 and established a new genus *Palapedia* to accommodate 10 known species previously referred to *Kraussia* and 3 new species from the Indo-West Pacific. Differences between the two genera are extensively discussed, but the important criteria are the anterolateral margin with four distinct epibranchial spines and the tips of the fingers deeply excavated so as to be spoon-shaped. Although in this paper we adopted the new specific name for this species, the generic evaluation seems to be not always clear.

According to Rathbun (1906), *K. integra* recorded by Borradaile (1902) is really referable to *K. nitida* Stimpson, and also the records of *K. integra* by Alcock (1989) and Tweedie (1950) are corrected to be those of *K. rastroipes* Muller. Sakai (1976) treated in his synonymic list that *K. integra* recorded by Rathbun (1906) is not referred to this species, but to the species close to *K. truncatifrons* Sakai which was decidedly reduced to a synonym of *K. bongensis* Serène (now the species of *Palapedia*) by Ng (1993). *Actumnus integer* recorded by Richters (1880) is reidentified as *K. truncatifrons* Sakai by Türkay (1981).

This species is represented by De Haan (1835), Sakai (1939, 1965, 1976), Serène (1972), and

Dai and Yang (1991). The male first pleopod is referred to Sakai (1939), Buitendijk (1960) and Serène (1972).

Distribution. This species is recorded from Japan, China, the Sulu Archipelago, the Gilbert Islands, the Mollucas, Timor, Western Australia, and Maruitius.

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한국산 부채계과의 3미기록종

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요 약

제주도에서 채집된 부채계류에서 3종, 편평부채계 (*Forestia depressa*), 털가시부채계 (*Pilodius nigrocrinitus*), 접시부채계 (*Palapedia integra*)가 한국 미기록종으로 판명되어 재기재하고 보고한다. 지금까지 기록된 한국산 부채계과는 모두 8아과 15종이 된다.