

## New Records of Two Interesting Deep Water Crabs, *Homolochunia gadaletae* Guinot and Richer de Forges, 1995 (Homolidae) and *Rochinia sagamiensis* (Gordon, 1931) (Majidae) (Crustacea: Decapoda: Brachyura), from Taiwan

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**Jung-Fu Huang and Pan-Wen Hsueh (1998)** New records of two interesting deep water crabs, *Homolochunia gadaletae* Guinot and Richer de Forges, 1995 (Homolidae) and *Rochinia sagamiensis* (Gordon, 1931) (Majidae) (Crustacea: Decapoda: Brachyura), from Taiwan. *Zoological Studies* 37(3): 222-225. The present note records the presence of 2 interesting species of deep water brachyuran crabs from Taiwan. *Homolochunia gadaletae* Guinot and Richer de Forges, 1995 (Homolidae) and *Rochinia sagamiensis* (Gordon, 1931) (Majidae) were both previously regarded as Japanese endemics, and their presence in Taiwan is of biogeographical interest. Notes on the egg size and fecundity of *R. sagamiensis* are also presented.

**Key words:** New records, *Homolochunia gadaletae*, *Rochinia sagamiensis*.

Two uncommon deep water crabs, *Homolochunia gadaletae* Guinot and Richer de Forges, 1995 (Homolidae) and *Rochinia sagamiensis* (Gordon, 1931) (Majidae) were collected from catches of deep water trawls near the northeastern coast of Taiwan. The present note documents these 2 interesting species for Taiwan. The genus *Homolochunia* Doflein, 1904, is represented by 3 species, *H. valdiviae* Doflein, 1904; *H. kullar* Griffin and Brown, 1976; and *H. gadaletae* Guinot and Richer de Forges, 1995. The former species is only known from the Indian Ocean (the east coast of Africa, Madagascar, Comoros, Indonesia, and Makassar Strait), whereas the distributions of the latter 2 species are restricted to Australian and New Caledonian, and Japanese waters, respectively (Guinot and Richer de Forges 1995). Likewise, *R. sagamiensis* was previously recorded from only a few localities (Sagami Bay, Mikawa Bay, Kii Minabe, and Tosa Bay) in Japanese waters (Sakai 1976).

The deep water brachyuran fauna of Taiwan

is still not well studied and new records for the island are still regularly reported (see Ng and Huang 1997). This is especially so for the families Homolidae and Majidae (see Ng and Huang 1997). Moreover, the 2 collected female specimens of *Rochinia sagamiensis* carried a batch of exceptionally large eggs. Measurements of the egg size and fecundity of the female of this species are given. Specimens examined in the study are deposited at the National Museum of Natural Science (NMNS) and National Taiwan Ocean University (NTOU), Taiwan, ROC. Measurements provided are of carapace lengths and widths, respectively.

### Family Homolidae

#### *Homolochunia gadaletae* Guinot and Richer de Forges, 1995 (Fig. 1A-D)

*Homolochunia valdiviae* Sakai, 1955: 106; 1976: 42 pl. 14; Miyake, 1983: 197 (cit.); Nagai, 1994: 50, pl. 1, fig. 4. (not

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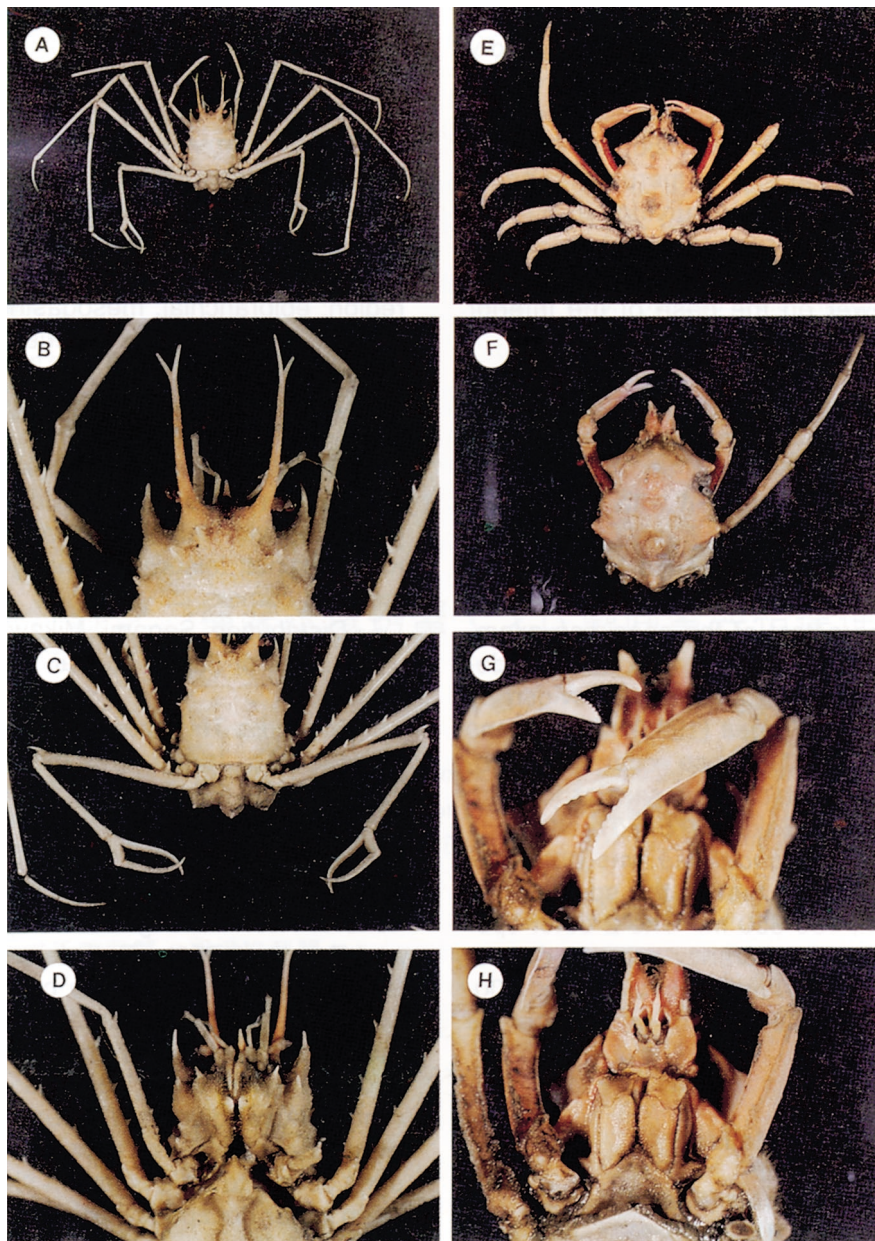
Doflein, 1904).

*Homolochunia gadaletae* Guinot and Richer de Forges, 1995: 434, figs. 50 e-f, 51 d-f.

**Material examined:** 1 female [39.4 (including median rostrum spine) × 31.4 (including lateral spine) mm] (NMNS2677-1), port at Nanfangau, Ilan Co., northeastern Taiwan, sandy or muddy bottom

at 150-250 m depth, 4 July, 1997, coll. P.-W. Hsueh.

**Diagnosis:** Carapace quadrate, longer than broad, with pubescence; lateral margins with 3 unequal spines, including 1 strong and downward-curving postorbital spine; mesogastric, meso- and metabranchial, and intestinal regions with 1 spine



**Fig. 1.** (A-D) *Homolochunia gadaletae* Guinot and Richer de Forges, 1995, female (NMNS2677-1). (A) dorsal view of the entire animal; (B) dorsal view of the spination at the front region; (C) dorsal view of the 4th ambulatory leg; (D) ventral view of the spination at the front region; (E-H) *Rochinia sagamiensis* (Gordon, 1931). (E) dorsal view of the entire animal, female (NTOU9103-01-25); (F) dorsal view of the entire animal, female (NMNS2678-1); (G) ventral view of the chela, female (NMNS2678-1); (H) ventral view of the front and mouth regions, female (NMNS2678-1).

each; protogastric region with 2 strong spines; front with 3 spines, median rostrum spine distinctively curving downwards, shorter than lateral spines; lateral spines long, tip bifid, with 2-3 accessory spines dorsally. Eyestalk long, with 2 movable joints. Subhepatic regions and upper margin of buccal frame with 1 spine each. Pterygostomian region low, with 2 spines. Merus of external maxillipeds wider than ischium, dorsal surface with 1 strong basal spine.

Chelipeds symmetrical, cylindrical in cross-section; merus longest segment, with 2 accessory spines. Third ambulatory leg longest; meri of first 3 ambulatory legs with 5 (sometimes 4) dorsal spines and 1 distal spine or tubercle; 4th ambulatory leg smallest, distal end of merus with acute spine, propodus with long and curving basal spine forming pincer-like structure at dactylus. Entire inferior borders of carpus with soft, transparent globules, with fewer on the base of the inferior borders of propodus and dactylus.

Abdomen of female triangular, with distinct keel; 4th and 5th abdominal segments healed, but with ridge; 2nd to 4th abdominal segments with median spine basally, 3rd and 4th with 2 lateral spines; 5th abdominal segment with median tubercle on distal part.

*Distribution:* Mikawa and Tosa Bays, Japan (Sakai 1976), and now, northeastern Taiwan.

*Remarks:* Characters of the specimen examined in the present note agree well with the description of *Homolochunia gadaletae* provided by Guinot and Richer de Forges (1995). Specimens of this species found in Japanese waters were previously regarded as *H. valdiviae*, a species found in the Indian Ocean (see Sakai 1976). The depth in Taiwan from which *H. gadaletae* was obtained, 150-250 m, is similar to that of the species collected from Japan, 150-350 m. The 2 other species of *Homolochunia* apparently occur in deeper waters, at more than 500 m for *H. kullar*, and 400-1000 m for *H. valdiviae* (Guinot and Richer de Forges 1995).

### Family Majidae

#### *Rochinia sagamiensis* (Gordon, 1931)

(Fig. 1E-H)

*Pugettia brevisrostris* Parisi, 1915: 287, pl. 7, fig. 1, text-fig. 2 (not *Hyastenus brevisrostris* Doflein, 1904, = *Rochinia brevisrostris* Doflein, 1904)

*Pugettia sagamiensis* Gordon, 1931: 557, figs. 35, 36c; Sakai, 1935: 87, fig. 36; 1938: 253, pl. 25, fig. 3; 1965: 73, pl. 33, fig. 2; 1976: 195, pl. 69, fig. 2; Takeda, 1982: 120; Baba

et al., 1986: 224.

*Goniopugettia sagamiensis* Miyake, 1983: 36, pl. 12.

*Rochinia sagamiensis*, Griffin and Tranter, 1986: 187, fig. 62 G, H.

*Materials examined:* 1 ovigerous female (42.5 x 27.9 mm) (NTOU9103-01-25), port at Nanfangau, Ilan County, northeastern Taiwan, 150-300 m deep, 5 Mar., 1991, coll. J.-F. Huang; 1 ovigerous female (41.4 x 27.0 mm) (NMNS2678-1), port at Nanfangau, Ilan Co., northeastern Taiwan, sandy or muddy bottom at 150-300 m depth, 4 July, 1997, coll. P.-W. Hsueh.

*Diagnosis:* Carapace pyriform, longer than broad, with short tomentum; anterolateral and posterolateral margins separated by a U-shaped hiatus; posterolateral margin with 2 wide cylindrical spines, posterior one more protruded and acute than anterior one; surface with a line of long setae from frontal region to lateral margin of protogastric region; epibranchial, mesogastric, cardiac, and intestinal regions strongly arcuate; 2 rostral spines divergent, margins lined with setae except distal.

Chelipeds symmetrical, merus triangular in cross-section, palm longer than dactylus, its dorsal and ventral margins with acute ridge. Meri of first 3 ambulatory legs triangular in cross-section, margins lined with setae. Abdominal segments of female distinct; telson low, triangular in shape with rounded corners.

*Distribution:* Sagami, Mikawa, Kii Minabe, and Tosa Bays of Japan (Sakai, 1976), northeastern Taiwan.

*Remarks:* This species, previously regarded as endemic to Japan and placed in the genus *Pugettia*, was transferred to *Rochinia* by Griffin and Tranter (1986) due to the characteristic shape of its 1st male pleopod. The diagnostic characters of the specimen examined agree well with the descriptions of *Rochinia sagamiensis* provided by Griffin and Tranter (1986). Both female specimens collected in this study carry a batch of exceptionally large eggs with an average ( $n = 50$ ) of  $1.05 \pm 0.06$  mm in diameter (preserved), indicating a possible short planktonic larval life stage which may serve to restrict larval dispersal and promote retention in waters near the parent population. Producing large eggs seems to be a common phenomenon among deep water decapods. Several deep water crabs, such as *Geryon fenneri* and *G. quinquedens* (Geryonidae), were reported to produce large eggs (Hines 1988). The fecundity of the ovigerous *Rochinia sagamiensis* is estimated to be 2000 eggs/brood for the specimen deposited in the NMNS.

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## 臺灣新記錄之二種深水域螃蟹（戈氏刺面蟹與相模椎刺蟹）

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本文記錄臺灣兩種深水域螃蟹，戈氏刺面蟹(*Homolochunia gadaletae* Guinot and Richer de Forges, 1995) (人面蟹科) 與相模椎刺蟹(*Rochinia sagamiensis* [Gordon, 1931]) (蜘蛛蟹科)。此兩種螃蟹以往被認為是日本的特有種，在臺灣水域的出現是生物地理學上一個有趣的問題。另外，本文亦一併報告相模椎刺蟹之抱卵數量與卵徑大小。

**關鍵詞：**新記錄，戈氏刺面蟹，相模椎刺蟹。

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