

Two New Records of Shallow-Water and Mangrove Crabs (Crustacea: Decapoda: Brachyura) from Taiwan

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Abstract. Two new records of crabs, *Pseudactea corallina* (Alcock, 1898) and *Neosarmatium smithi* (H. Milne Edwards, 1853), are reported from a shallow-water and intertidal mangrove area, respectively, from southwestern Taiwan. The former is also a new record of the genus to the crab fauna of Taiwan. The present study provides taxonomic and distributional information as well as selected synonymies for the newly recorded species.

Key words: Brachyura, *Neosarmatium smithi*, new records, *Pseudactea corallina*, Sesarmidae, Xanthidae.

INTRODUCTION

The checklist of the brachyuran fauna of Taiwan was studied by Ng *et al.* (2001) and there are 548 species reported from Taiwan and its adjacent islands. Since then, several additional species have also been reported (e.g., Hsueh and Huang, 2002; Huang *et al.*, 2002; Ng and Ho, 2003; Ho *et al.*, 2004; Yen *et al.*, in press) which reveals the speciose biodiversity of crabs of this island.

The species richness of the family Xanthidae is highest, accounting for nearly 20% of species in Taiwan (Ng *et al.*, 2001; Ho *et al.*, 2004; Yen *et al.*, 2006; Chen and Hsueh, accepted). From a trawling study of the shallow waters around Kaohsiung City, a new xanthid record of species and genus, *Pseudactea corallina* (Alcock, 1898), was collected.

Ng *et al.* (1997) reported five species of the genus *Neosarmatium* from southern Taiwan: *N. fourmanoiri* Serène, 1973, *N. indicum* (A. Milne Edwards, 1868), *N. meinerti* (de Man, 1887), *N. punctatum* (A. Milne Edwards, 1873), and *N.*

rotundifrons (A. Milne Edwards, 1869). The sixth species, *N. smithi* (H. Milne Edwards, 1853), was found in mangroves of southwestern Taiwan in the present study.

The present study provides taxonomic and distributional information as well as selected synonymies for the newly recorded species from Taiwan. The specimens used are deposited in the Department of Life Science, National Chung Hsing University (NCHUZOO) and the Ryukyu University Museum, Fujukan, Okinawa, Japan (RUMF). The abbreviations of CL is used for carapace length. Specimens were measured using a digital slide-caliper (Mitsutoyo CD-20PM) to the nearest 0.1 mm.

TAXONOMY

Family Xanthidae

Genus *Pseudactea* Serène, 1962

Pseudactea corallina (Alcock, 1898)

(Fig. 1A)

Lophoactaea corallina Alcock, 1898: 102.

Pseudactea corallina- Serène, 1962 (for 1961): 679; Takeda and Koyama, 1974: 113, pl. 11A, B; Takeda and Marumura, 2002: 102, fig. 1A, B.

Pseudactaea corallina- Guinot, 1971 (for 1970):

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1072; Sakai, 1976: 454, pl. 160(4); Serène and Vadon, 1981: 122; Serène, 1984: 131, fig. 77, pl. 19B.

Material examined: 1 female, CL 10.5 mm, NCHUZOO 13082, trawling on sandy bottom at a depth of 30 m, Zuoying, Kaohsiung City, 13 Aug. 1997.

Diagnosis: Carapace vault, dorsal surface regions ill-defined, ginkgo leaf-shaped, with concave posterolateral margin, frontal to anterolateral margins crested, anterolateral margin composed of 4 lobes. Cheliped with swollen outer surfaces, covered by petaloid elevations, especially on carpus to upper 1/2 of manus, fingers relatively flat, short, blade-like, tip pointed. Ambulatory legs with markedly armed outer surface, carpi with 2 longitudinal petaloid granules, propodus with rounded, petaloid granules.

Coloration: Carapace orange; chelipeds and legs paler.

Distribution: Widely distributed in the Indo-West Pacific: Kenya, Madagascar, Sri Lanka (type locality), the Philippines (Gulf of Davao, Mindanao I.; north of Lubang I.), Taiwan, and Japan (Kii Peninsula) (Alcock, 1898; Takeda and Koyama, 1974; Garth and Kim, 1983; Serène, 1984; this study).

Remarks: *Pseudactea* currently contains 3 species from the Indo-West Pacific. *Pseudactea corallina* (Alcock, 1898) can be clearly distinguished from the other 2 congeners, *P. multicristata* (Zehntner, 1894) and *P. multiareolata* Takeda and Marumura, 2002, by the absence of clear demarcations on the dorsal regions of the carapace. This genus is also new to the brachyuran fauna of Taiwan.

The habitat of *P. corallina* from this study is sandy bottom, which differs from the record of rocky bottom in Sakai (1976: 454). The species should be very rare in this area because only 1 specimen was obtained from regular trawling surveys at 10~, 20~, and 30~ m depths during the period from 1996 to 2001, by a project of Prof. Houngh-Yung Chen of the Institute of Marine Biology, National Sun Yat-sen University, Kaohsiung, Taiwan.

Family Sesarmidae

Genus *Neosarmatium* Serène and Soh, 1970

Neosarmatium smithi (H. Milne Edwards, 1853) (Fig. 1B-D)

Sesarma smithi H. Milne Edwards, 1853: 187.

Neosarma smithi- Serène and Soh, 1970: 398, 405, pl. 5A, B; Sakai, 1976: 665, text-fig. 364; Hirata *et al.*, 1988: 26; Shokita, 1990: 313.

Neosarmatium trispinosum- Islam *et al.*, 2002: 356; Islam *et al.*, 2004: 310.

Material examined: 1 male, CL 33.2 mm, 3 females, CL 19.6~33.9 mm, 1 ovigerous female, CL 31.2 mm, NCHUZOO 13080, Dajhong Temple, Sihcao, Tainan City, coll. J.-H. Lee and W.-J. Wang, 25 July 2004; 1 male, CL 32.83 mm, NCHUZOO 13081, Dajhong Temple, Sihcao, Tainan City, coll. J.-H. Lee, 6 Sep 2006.

Comparative material: *Neosarmatium smithi* from the Ryukyu Is.: 1 male, CL 33.6 mm, 1 female, CL 26.0 mm, RUMF-ZC-280, Fukari R., Iriomote I., coll. T. Naruse, 18 July 2004.

Diagnosis: Carapace with very high side walls (Fig. 7); dorsal surface smooth, with numerous tufts and a few lines of soft setae on gastric-epibranchial and mesobranchial regions, respectively. Anterolateral margin cristate, with 2 distinct teeth behind external orbital angle; latter anterolateral tooth and posterolateral margin forming concave line. Male chelipeds equal; palm high, inner surface with transverse granulated crista from along base of movable finger to upper inner margin of immovable finger; fingers with a wide gape when closed, tips corneous, slightly hoof-like; movable finger with 3 corneous teeth on proximal 1/2 of dorsal surface (Fig. 1C, D), proximal tooth rudimentary, median higher, shorter, distal lower, longer, all teeth evenly separated, tip of median placed slightly closer to that of proximal tooth, female with traces of these teeth. G1 very slender, straight, corneous process directed slightly outwardly.

Coloration: Carapace and ambulatory legs dark purple, chelae red (Fig. 1B-D).

Habitat: The habitat is under dense growth of mangroves. Some individuals dig deep burrows with some mounds above the surface. Sympatric species include *N. meinerti*, *N. fourmanoiri*, and *N. indicum*. The burrow of *N. smithi* is oblique and ladder-shaped at depths of 30~100 cm. Some individual burrows with a chimney (20~30 cm high) and a mud mound (20~30 cm high) around the entrance were found above the surface. The mangrove leaf litter is eaten by this species.

Distribution: Widely distributed in the Indo-West Pacific: South Africa (Port Natal), Madagascar (Nossi-Faly), Aldabra Is., Somalia (Giuba River),

India (Bombay), Sri Lanka, Thailand (Lem Ngob), Malaysia (Kuala Selangor), Singapore, China (Hainan I.), the Philippines (Mactan I., Manila), Taiwan, and the Ryukyu Is. (Iriomote I., Miyako I., Okinawa I.) (Vannini and Valmori, 1981; Shokita, 1990; Davie, 1994; this study).

Remarks: *Neosarmatium smithi* is closest to *N. trispinosum* Davie, 1994 by the presence of 2 epibranchial teeth and 3 corneous teeth on the dorsal margin of the cheliped dactylus. *Neosarmatium smithi*, however, can be differentiated from *N. trispinosum* by the arrangement of the 3 corneous teeth of the cheliped dactylus being evenly spaced on the proximal 1/2 (vs. set close together on the proximal 2/5 in *N. trispinosum*).

Neosarmatium smithi is widely distributed from South Africa to the Ryukyu Islands, and it is thus not surprising that the species is recoded from Taiwan. Islam *et al.* (2002, 2004) referred to their material from Okinawa, Miyako, and the Iriomote Is. as *N. trispinosum*, but the specimen collected

from Iriomote I. (RUMF-ZC-280) is indeed *N. smithi*. As Davie (1994) mentioned, the distribution of *N. trispinosum* is limited to the southwestern Pacific region, and the records from the Ryukyu Is. are most probably due to misidentifications.

Although the present specimens were collected from southwestern Taiwan, several individuals of *N. smithi* were also found during daytime in the mangrove area of Danshuei (=Tanshui), northern Taiwan (J.-H. Lee pers. obs.). It is possible that this species is indeed widely distributed in mangrove areas of western Taiwan.

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Fig. 1. Coloration of *Pseudactaea corallina* (Alcock, 1898) and *Neosarmatium smithi* (H. Milne Edwards, 1853). A. *Pseudactaea corallina* from Kaohsiung City, southwestern Taiwan (NCHUZOO 13082, female, CL 10.5 mm); B-D. *Neosarmatium smithi* from Tainan City, southwestern Taiwan (B, C. NCHUZOO 13081 CL 32.83 mm; D, NCHUZOO 13080, male, CL 33.2 mm).

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臺灣淺海與紅樹林蟹類 (甲殼類：十足類：短尾類) 之兩新紀錄種

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報導兩種採自西南臺灣淺海與紅樹林潮間帶之新紀錄種蟹類，分別是 *Pseudactea corallina* (Alcock, 1898) (珊瑚假銀杏蟹) 與 *Neosarmatium smithi* (H. Milne Edwards, 1853) (斯氏新脹蟹)。前者也是臺灣蟹類相之新紀錄屬。本文提供此兩種之分類與分布訊息，以及部份的同物異名。

關鍵詞：短尾類，斯氏新脹蟹，新紀錄種，珊瑚假銀杏蟹，相手蟹科，扇蟹科。