A New Record Crab of *Parasesarma lepidum* (Decapoda: Brachyura: Sesarmidae) from Southern Taiwan

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Abstract. A newly recorded species, *Parasesarma lepidum* (Tweedie, 1950), is reported from mudflats around woods of an estuary in southern Taiwan. The species can be distinguished from others by its small size, the number of transverse pectinated crests, and the form of granules on the inner surface of the male palm. In this study, specimens from Taiwan are described and compared to those from the Ryukyus, with the inclusion of drawings and photos.

Key words: sesarmid crab, *Parasesarma lepidum*, southern Taiwan, new record.

INTRODUCTION

Parasesarma De Man, 1895 is the most diverse genus of the family Sesarmidae Dana, 1851 (Ng *et al*. 2008; Shahdadi and Schubart 2017). De Man (1895) established *Parasesarma*, mainly based on the lateral margins of the carapace which lack a tooth, and the male chelipeds with two or more transverse pectinated crests on the upper surface of the palm. Shahdadi and Schubart (2017) synonymized most species of *Perisesarma* De Man, 1895 under *Parasesarma* which has 56 nominal species, except *Sesarma dussumieri* H. Milne Edwards, 1853, which is kept under *Perisesarma*. Accordingly, *Parasesarma* is revised as the lateral margins of carapace lacking a tooth, with a shallow indentation, or an epibranchial tooth of varying sizes, and the male chelipeds being robust with one to three transverse pectinated crests on the upper surface of the palm (Shahdadi and Schubart 2017).

In Taiwan, there are eight species of *Parasesarma* reported (Ng *et al*. 2017). From a recent survey of crab fauna of southern Taiwan, a new record of *Parasesarma lepidum* (Tweedie, 1950) from the Baoli River estuary is confirmed and is described herein. The carapace width (CW), carapace length (CL), merus length (MerL), merus width (MerW), propodus length (ProL), propodus width (ProW), and dactylus length (DacL) of specimens were measured (Fig. 1; Maenosono and Naruse 2015). Specimens have been deposited in the Zoological Collections of the Department of Life Science, National Chung Hsing University, Taichung, Taiwan (NCHUZOOL). Specimens deposited in Ryukyus University Museum, Fujukan, University of the Ryukyus, Okinawa, Japan (RUMF) were also compared. The abbreviation P4 is used for the third ambulatory legs, and G1 is for the male first gonopod.

Taxonomy

Family Sesarmidae Dana, 1851

***Parasesarma lepidum* (Tweedie, 1950)**

(Figs. 2-4)

Sesarma lepida Tweedie, 1950: 351, figs. 2e, 5 (type locality Labuan, Malaysia).

Sesarma (*Parasesarma*) *lepidum* – Serène 1968: 108 (list).

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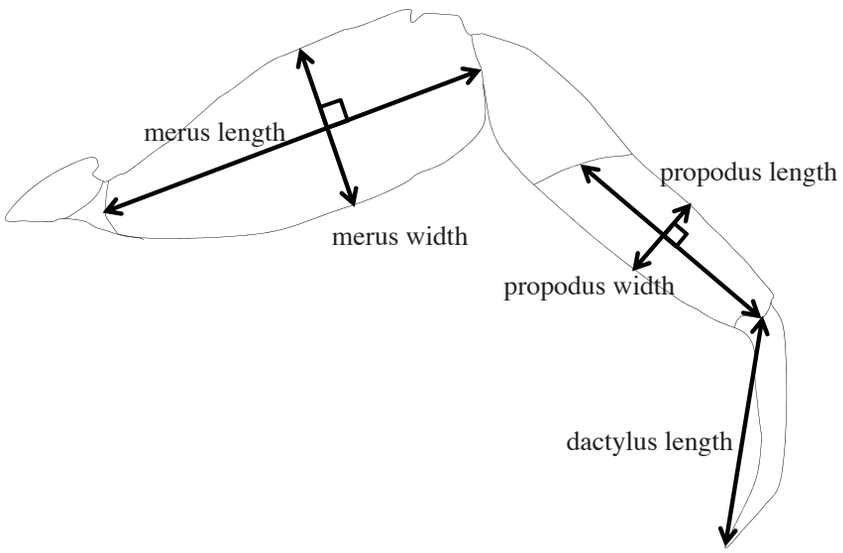

Fig. 1. Schematic drawings of *Parasesarma lepidum* showing measurements of the right ambulatory leg used in this study.

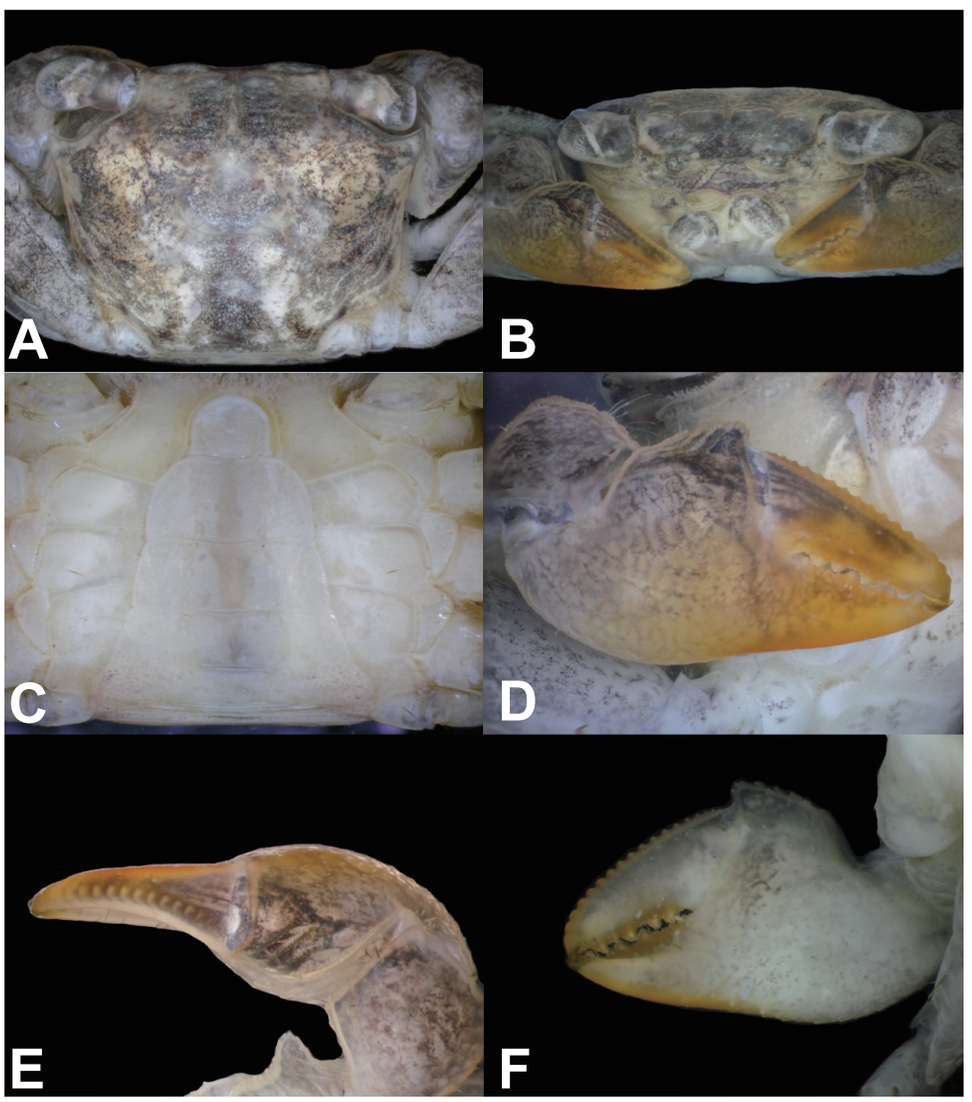

Fig. 2. *Parasesarma lepidum* (Tweedie, 1950), preserved male (8.1 × 6.1 mm), NCHUZOOL 15001, Pingtung, Taiwan. A. Dorsal view of carapace. B. Frontal view of carapace. C. Pleon. D. Outer view of right chela. E. Upper view of right chela. F. Inner view of right chela.

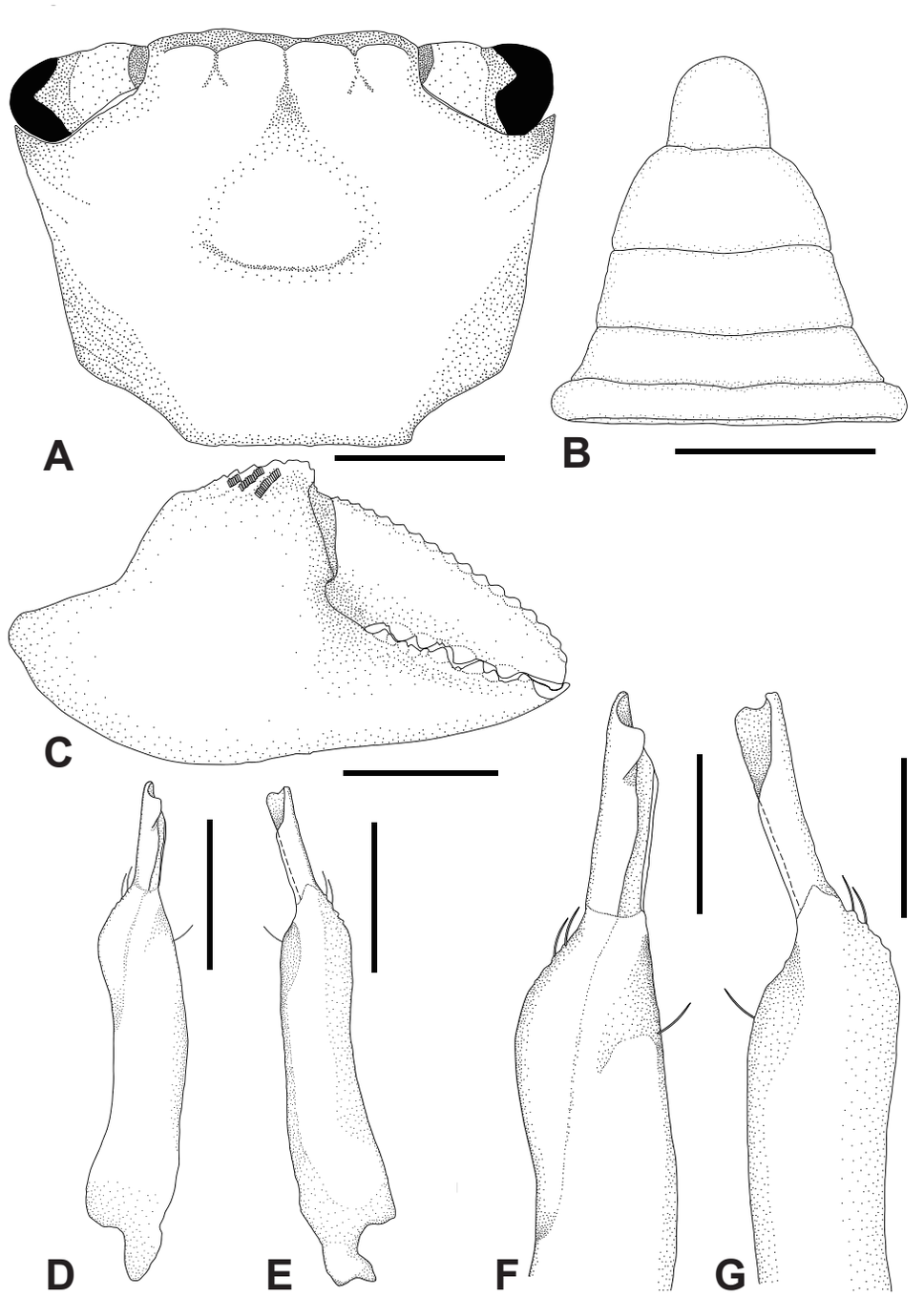

Fig. 3. *Parasesarma lepidum* (Tweedie, 1950), male (8.1 × 6.1 mm), NCHUZOOL 15001. A. Dorsal view of carapace. B. Pleon. C. Outer view of right chela. D, E. Dorsal and ventral views of right G1. F, G. Dorsal and ventral views of distal part of right G1. Scale bars: A, B = 2 mm; C, D, E = 1 mm; F, G = 0.5 mm.

Parasesarma lepidum – Serène and Moosa 1971: 12 (Ambon, Indonesia); Lundoer 1974: 9 (Phuket, Thailand); Nateewathana *et al*. 1981: 55 (list); Ng and Davie 2002: 379 (list); Ng *et al*. 2008: 222 (list); Maenosono and Naruse 2015: 10, figs. 2D, 5, 11C, D (Ryukyus, Japan); Shahdadi and Schubart 2017: 20 (list).

***Material examined*:** 2 males (CW 6.1~8.1 mm), NCHUZOOL 15001, Baoli River estuary, Pingtung, Taiwan, coll. P.-Y. Hsu, 3 Sep. 2017; 3 males (9.5~11.6 mm), 1 ovig. female (11.0 mm), RUMF-ZC-2932, Shirahama, Iriomote, Ryukyus, Japan, coll. M. Tadafumi, 15 May 2014; 1 male (9.7 mm), 1 female (9.1 mm), RUMF-ZC-2948, Teima River, Nago, Okinawa, Ryukyus, Japan,

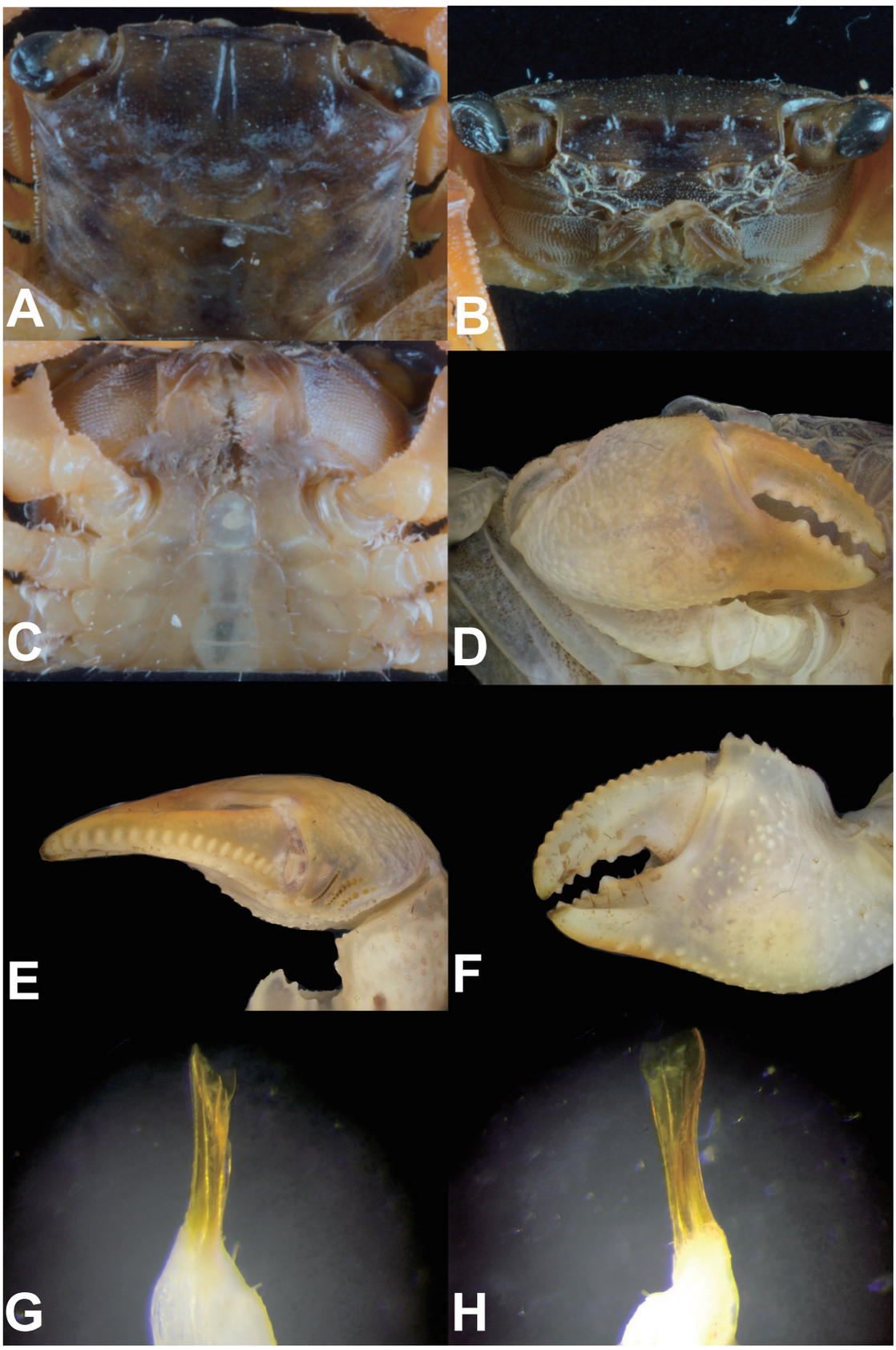

Fig. 4. *Parasesarma lepidum* (Tweedie, 1950), male (10.7 × 8.4 mm), RUMF-ZC-2950. A. Dorsal view of carapace. B. Frontal view of carapace. C. Pleon. D. Outer view of right chela. E. Upper view of right chela. F. Inner view of right chela. G. Dorsal view of right G1. H. Ventral view of right G1.

coll. M. Tadafumi, 12 Dec. 2014; 1 male (10.7 mm), 1 female (9.9 mm), RUMF-ZC-2950, Kawamitsu, Miyako, Ryukyus, Japan, coll. M. Tadafumi, 27 Jan. 2014.

***Diagnosis*:** Carapace 1.3-times broader than long; anterolateral margin with 1 triangular tooth; frontal margin bilobed in dorsal view, each lobe broadly convex; exorbital tooth directed forward; regions poorly defined; postfrontal region separated into 4 lobes by deep, narrow grooves; eyes extending beyond tip of exorbital tooth (Figs. 2A, 3A). Upper surface of cheliped palm with 3 transverse pectinated crests (first crest with 8~15 corneous teeth, second crest with 9~13 teeth, third crest with 6~8 teeth; Figs. 2D, E, 3C); inner and outer surfaces with scattered indistinct granules (Figs. 2D, F, 3C); dorsal surface of dactylus with 16~20 tubercles (Figs. 2D~F, 3C). Ambulatory legs relatively broad; merus of P4 2.2~2.4-times as long as broad, propodus 2.7~3.0-times as long as broad, dactylus 0.9~1.2-times length of propodus. Male pleon with semicircular telson, evenly rounded, slightly equal to somite 6 (Figs. 2C, 3B); G1 straight; apical process corneous, slightly bent at an angle of 15°, long, distal end strongly flared (Fig. 3D-G).

***Ecological notes*:** This species is usually found on mudflats around woods of riverbanks, about 50~200 m upstream from the river mouth.

Distribution: Southern Taiwan; Labuan, Malaysia; Ambon, Indonesia; Phuket, Thailand; Ryukyus, Japan.

***Remarks*:** *Parasesarma lepidum* is a small-sized species. Specimens from Taiwan resemble those from the Ryukyus in the carapace, cheliped, and G1. The numbers of tubercles on the dorsal surface of the dactylus of chelipeds in specimens from Taiwan (Figs. 2D, E, 3C) and the Ryukyus (Fig. 4; Maenosono and Naruse 2015) are of the same range (16~20), and both have a palm with 3 transverse pectinated crests (first crest with 8~15 vs. 14~19; second crest with 9~13 vs. 10~14; third crest with 6~8 vs. 5~11; Maenosono and Naruse 2015). Specimens from Taiwan however slightly differ from those from the Ryukyus (Maenosono and Naruse 2015: RUMF-ZC-2950; Fig. 4), e.g., scattered granules on the inner and outer surfaces of the chela (indistinct vs. distinct) and the bending angle of G1 (15° vs. 20°~30°), which may have been due to the smaller specimens from Taiwan.

In addition, 2 small-sized species of *Parasesarma* from Taiwan, *P. tripectinis* (Shen, 1940) and *P. corallicum* Ng, Davie and Li, 2016, are similar to *P. lepidum*. However, they can be separated by the number of transverse pectinated crests on the male palm, viz. 3, 3, and 2, respectively (Maenosono and Naruse 2015: fig. 10D; Ng *et al*. 2016: fig. 4E; Figs. 2E, 4E), as well as the form of granules on the inner surface of the male palm, viz. scattered, 1 almost-vertical row, and 1 obliquely transverse ridge, respectively (Maenosono and Naruse 2015: fig. 10E; Ng *et al*. 2016: fig. 4I; Figs. 2F, 4F).

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南臺灣一新紀錄種鱗紋擬相手蟹 (十足目: 短尾類: 相手蟹科)

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本研究報導一新紀錄種的蟹類，*Parasesarma lepidum* (Tweedie, 1950) (鱗紋擬相手蟹)，地點位於南台灣河口樹叢附近之泥灘地。本種可由以下特徵與其他種類區分，包括小體型，以及雄蟹大螯掌節內面之橫向梳狀櫛數量與顆粒型式。本研究描述產自台灣之標本，且與琉球標本進行比較，並包含線繪圖與照片。

關鍵詞：相手蟹、鱗紋擬相手蟹、南臺灣、新紀錄。