

Description of a new spider crab, *Maja gracilipes*, from the South China Sea, with notes on the taxonomic validity of *M. brevispinosis* Dai, 1981 (Crustacea: Decapoda: Brachyura: Majidae)

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Abstract.—A new species of majid crab, *Maja gracilipes*, is described from the South China Sea. It is similar to *M. confragosa* Griffin & Tranter, 1986, described from the Kei Islands, Indonesia, but differs in proportions of the ambulatory legs, structure of the intercalated spine, third maxilliped, male abdomen, and male first pleopod. *Maja brevispinosis* Dai, 1981, is synonymised with *M. compressipes* (Miers, 1879).

Seventeen species of spider crabs of the genus *Maja* Lamarck, 1801, are known, of which 14 occur in the Indo-West Pacific (Griffin & Tranter 1986, Dai 1981). Dai et al. (1986) and Dai & Yang (1991:150) recorded five species from China, *M. japonica* Rathbun, 1932, *M. spinigera* de Haan, 1839, *M. gibba* Alcock, 1895, *M. sakaii* Takeda & Miyake, 1969, and *M. brevispinosis* Dai, 1981. A sixth species also known from China and previously placed in the genus *Leptomithrax*, *L. compressipes* Miers, 1879, originally described from China, was transferred to *Maja* by Griffin & Tranter (1986).

A new species of *Maja* is here described from the South China Sea. The species is similar to *M. confragosa* Griffin & Tranter, 1986, but can easily be distinguished by the structure of the intercalated spine (between orbital eave and postorbital spine), third maxilliped, ambulatory legs, male abdomen and male first pleopod. The identity of *M. brevispinosis* Dai, 1981, described from southern China, is re-appraised, and the species is here synonymised with *M. compressipes* (Miers, 1879).

The following abbreviations are used: male first pleopod (G1), male second ple-

opod (G2). The terminology used follows Griffin & Tranter (1986). The leg length is the combined maximum lengths of merus, carpus, propodus and dactylus (measured in a straight line point to point). The type specimen is in the Institute of Oceanology, Chinese Academy of Sciences (IOCAS) in Qingdao, China.

Maja gracilipes, new species
Figs. 1, 2

Material examined.—Holotype, male, carapace width 43.5 mm, carapace length 45.4 mm, rostral length 14.4 mm, IOCAS K33B-34, South China Sea, station 6080, 180 m, on gravel, 21 Apr 1959.

Description of male holotype.—Carapace longitudinally subovate, relatively broad, width subequal to postrostral length; dorsal surface densely covered with numerous granules of various sizes and strength; midline weakly but distinctly elevated, with 6 low spines anteriorly, 2–3 pairs of low, rounded submedian granules posteriorly. Rostrum with 2 long, slender spines, ca. 0.3 times postrostral length; spines gently curving outwards; outer margin with 1–2 small, submedian rounded granules; cleft between base of rostral spines deep.

Orbital eave strongly expanded, anteriorly rounded, posteriorly developed into long, sharp antorbital spine; intercalated spine subtruncate with proximal part much narrower than median part, much shorter than antorbital spine; preorbital spine absent. Eyestalks relatively narrow; cornea large, mostly ventral, ca. half length of entire eye.

Basal antennal segment longitudinally subrectangular; outer lateral spine large, directed obliquely outwards, anterior margin with 3–4 small granules; distal median spine short; anterolateral margin granular but without distinct spine or larger granule; median surface with 2–3 large rounded granules. Suborbital lobe separated from basal antennal segment by distinct fissure. Pterygostomial region relatively smooth; margin with 5 large rounded granules. Epistome smooth, unarmed.

Postorbital tooth reaching slightly but distinctly further anteriorly than antorbital spine, basally broad, partially excavated, narrow and acutely triangular distally, tooth directed anteriorly and obliquely outwards; basal part with several small granules. Hepatic spine much shorter, ca. 0.3 times length of postorbital tooth; base and area posterior to it covered with numerous large rounded granules.

Branchial region with 4 low but distinct spines (or large sharp granules), 3 clearly marginal and 1 submarginal in position; dorsal surface with 1 large, rounded granule which is smaller than marginal ones, adjacent to median cardiac spine. Mesogastric region with 4 low, large, rounded median granules, not spiniform; urogastric region with 1 low, large median granule. Cardiac region with 1 median and 1 anterior low, large, rounded median granules; posterior surface with 2 sharper granules. Anterior surface of intestinal region with 2 large submedian granules; posterior surface with 2 small sharp spines.

Merus of third maxilliped with postero-median margin raised, not distinctly granulated, anteroexternal angle rounded, su-

bauriculiform; inner posterolateral angle triangular, strongly produced. Ischium with broad, shallow oblique median depression; margins of depression with low rounded granules. Exopod relatively broad, medially with low longitudinal ridge, not distinctly granular.

Chelipeds elongate, subequal, ca. subequal postrostral carapace length. Chelae not swollen, surfaces smooth; fingers 0.7–0.8 times length of palm; cutting edges unarmed, not pigmented. Carpus relatively short, dorsal surface with distinct sulcus; dorsal margin with very low crest, more prominent on proximal part, crest with 2 low sharp teeth. Merus with one very low submedian granule on dorsal margin, otherwise smooth. Basis-ischium smooth, unarmed.

Surfaces of ambulatory legs smooth, first leg ca. subequal in length to postrostral carapace length; second to fourth legs 1.6, 1.5–1.6, 1.4 and 1.1–1.2 times postrostral carapace length respectively. Merus of first leg slender, ca. 7.5 times longer than high; dorsal margin with low, rounded distal tooth, otherwise unarmed, inner surfaces with scattered long stiff setae. Carpus on all legs with median sulcus, inner surface (especially of first leg) with numerous long, stiff setae; propodus laterally flattened, slender. Second to fourth legs with merus ca. 7.5, 7.0, 5.8 times longer than high respectively; dorsal margin of merus smooth, without distinct distal tooth; inner surfaces of merus and carpus with scattered long, stiff setae. Dactylus of all legs gently curved, unarmed, ventral margin with numerous short, stiff setae.

Thoracic sternites 1 and 2 fused, demarcated by granular ridge; sternites 2–4 completely fused, without trace of sutures, surface smooth, lateral margins cristate; surfaces of sternites 5–8 covered with numerous small granules. Telson semicircular; segments 4–6 longitudinally rectangular, lateral margins of each segment gently concave; segment 3 trapezoidal, anterolateral margin gently concave, posterolateral mar-

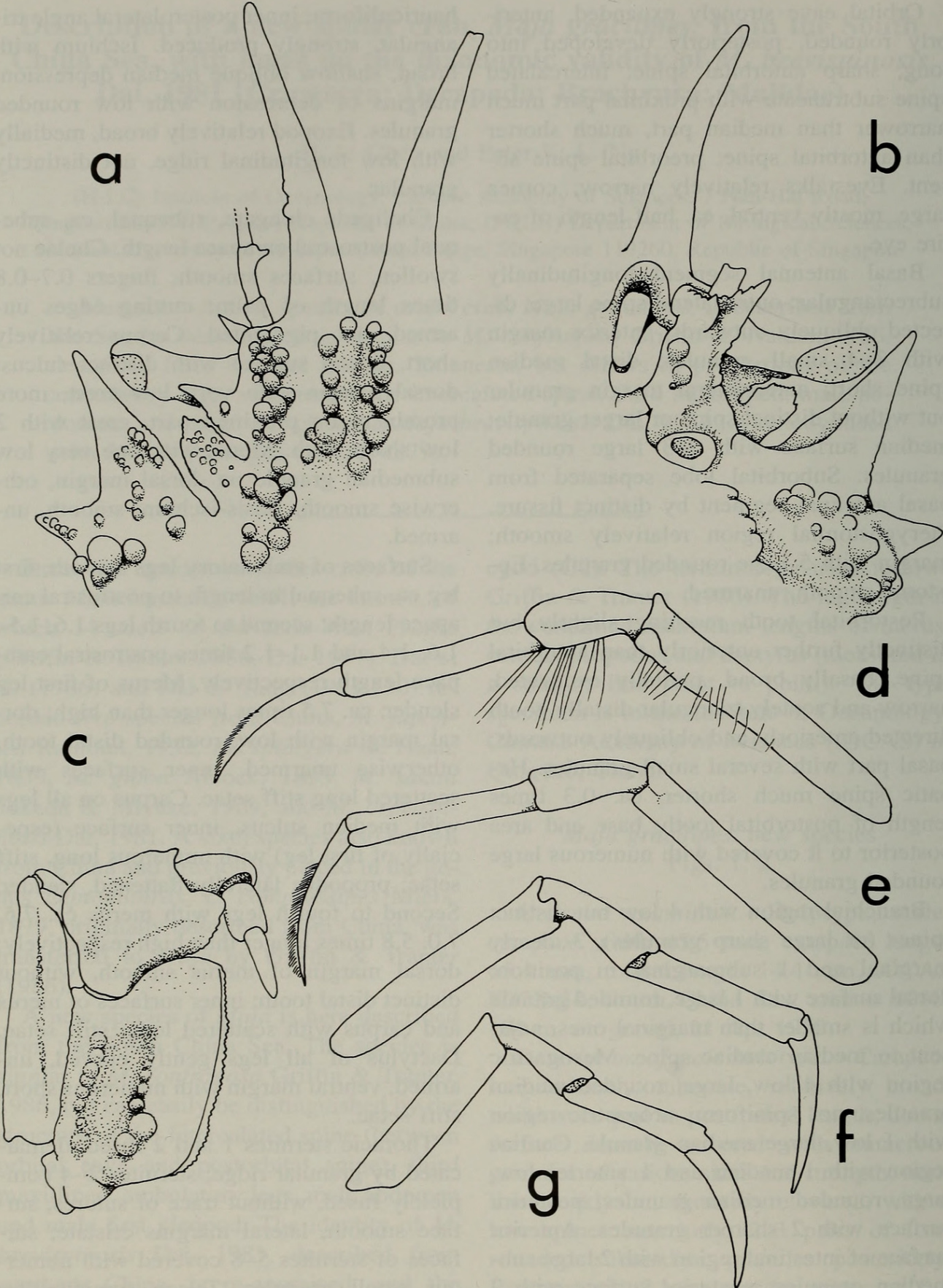


Fig. 1. *Maja gracilipes*, new species. Holotype male, carapace width 43.5 mm, IOCAS K33B-34. a, left frontal part of carapace (dorsal view); b, left frontal part of carapace (ventral view); c, right third maxilliped; d, left first ambulatory leg; e, left second ambulatory leg; f, right third ambulatory leg; g, right fourth ambulatory leg.

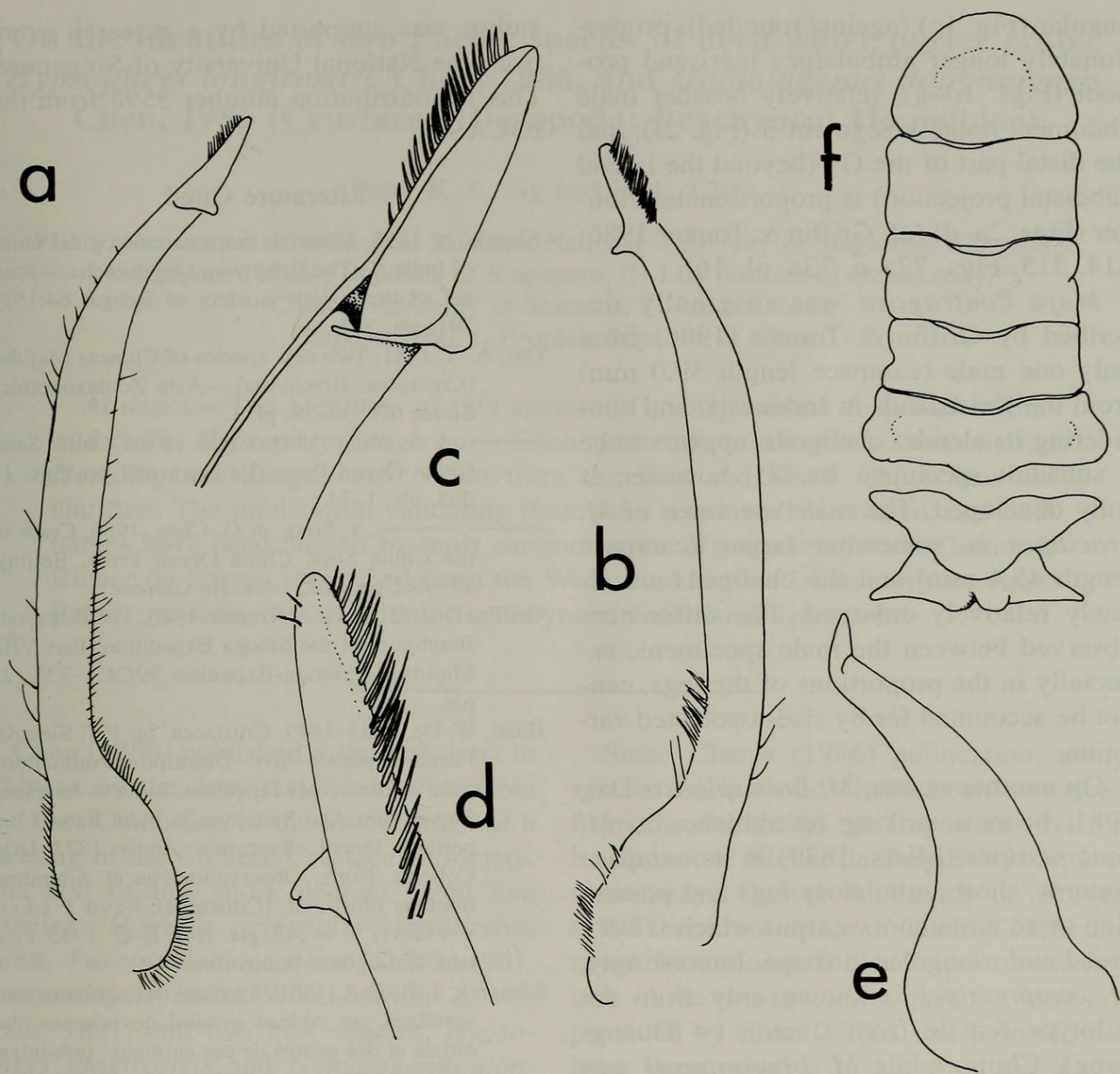


Fig. 2. *Maja gracilipes*, new species. Holotype male, carapace width 43.5 mm, IOCAS K33B-34. a, b, left G1; c, d, distal part of G1; e, left G2; f, abdomen (schematic outline only).

gin rounded; surfaces with scattered granules.

G1 relatively long; basal part dilated; median part almost straight from ventral view but gently curving when viewed in situ; distal part with one perpendicular tooth-like projection, dorsal margin with numerous stiff setae. Male second pleopod very short.

Etymology.—The name is derived from the Latin *gracilis* (for slender) and *pes* (for leg), alluding to the relatively long ambulatory legs of the species. Used as a noun in apposition.

Remarks.—*Maja gracilipes*, new species, is closest to *M. confragosa*, especially with regards to the general carapace morphology, presence of a large spine on the lateral margin of the basal antennal segment, and general structure of the G1 (Griffin & Tranter 1996:210). *Maja gracilipes* can easily be separated from *M. confragosa* by the presence of a subtruncate intercalated tooth with the median part broader than the proximal part (Fig. 1a) (against acutely triangular with the median part distinctly narrower than the proximal part); anteroexternal angle of the third maxilliped ischium is

angular (Fig. 1c) (against rounded); proportionately longer ambulatory meri and propodi (Figs. 1d–g); relatively broader male abdomen, notably segment 3 (Fig. 2f); and the distal part of the G1 (beyond the lateral subdistal projection) is proportionately longer (Figs. 2a–d) (cf. Griffin & Tranter 1986: 214, 215, Figs. 72a–c, 73a, pl. 16).

Maja confragosa was originally described by Griffin & Tranter (1986) from only one male (carapace length 39.0 mm) from the Kei Islands in Indonesia, and considering its slender chelipeds, appears to be a subadult specimen. Its G1, however, is fully developed. The male specimen of *M. gracilipes* is somewhat larger (carapace length 45.4 mm) and the chelipeds are already relatively enlarged. The differences observed between the male specimens, especially in the proportions of the legs, cannot be accounted for by size-associated variation.

On another matter, *M. brevispinosis* Dai, 1981, bears a striking resemblance to *M. compressipes* (Miers, 1879) in its carapace features, short ambulatory legs and possession of an ambulatory carpus which is very broad and triangular in shape. Interestingly, *M. compressipes* is known only from the holotype female from Canton (= Guangdong), China, while *M. brevispinosis* was described from two males and a female from the same area. From the descriptions and figures of the holotype female of *M. compressipes* (cf. Griffin & Tranter 1986: 211, pl. 16) and types of *M. brevispinosis* (see Dai 1981:37, figs. 1:6–10; Dai & Yang 1991:151, pl. 18(2), figs. 77(1–4)), we can find no reason to separate the two species. As such, *Maja brevispinosis* Dai, 1981, is here synonymised with *M. compressipes* (Miers, 1879).

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Literature Cited

- Alcock, A. 1895. Materials for a carcinological fauna of India, 1. The Brachyura Oxyrhyncha.—*Journal of the Asiatic Society of Bengal* 64:157–291, pls. 3–5.
- Dai, A.-Y. 1981. Two new species of Chinese Majidae (Crustacea: Brachyura).—*Acta Zootaxonomica Sinica* 6(1):36–38, pl. 1.
- , & S. Yang. 1991. Crabs of the China Seas. China Ocean Press (Beijing). 682 pp, figs. 1–295, pls. 1–74.
- , ———, Y. Song, & G. Chen, 1986. Crabs of the China Seas. China Ocean Press, Beijing. 17+642 pp., pls. 1–74. [In Chinese]
- Griffin, D. J. G., & H. A. Tranter. 1986. The Decapoda Brachyura of the Siboga Expedition. Part VIII. Majidae.—*Siboga-Expeditie* 39C4:1–335, 22 pls.
- Haan, W. De. 1833–1849. Crustacea. In: P. F. Siebold, Fauna Japonica sive Descriptio Animalium, quae in Itinere per Japoniam, Jussu et Auspiciis Superiorum, Qui Summum in India Batava Imperium Tenent, Suscepto, Annis 1823–1830 Collegit, Notis, Observationibus et Adumbrationibus Illustravit, (Crustacea): i–xvii + i–xxxi + i–ix–xvi + 1–243, pls. A–J, L–Q, 1–55, circ. tabl. 2. Lugduni-Batavorum.
- Lamarck, J. B. P. A. 1801. Système des animaux sans vertèbres, ou tableau général des classes, des ordres et des genres de ces animaux' présentant leurs caractères essentiels et leur distribution, d'après la considération de leurs rapports naturels et de leur organisation, et suivant l'arrangement établi dans les galeries du Muséum d'Hist. Naturelle, parmi leurs dépouilles conservées; précédé du discours d'ouverture du cours de zoologie, donné dans le Muséum national d'Histoire naturelle l'an 8 de la République. Paris, viii+432 pp.
- Miers, E. J. 1879. On a collection of Crustacea made by Capt. H. C. St. John, R. N. in the Korean and Japanese seas, 1. Podophthalmia.—*Proceedings of the Zoological Society of London* 1879:18–61, pls. 1–3.
- Rathbun, M. J. 1932. Preliminary descriptions of new species of Japanese crabs.—*Proceedings of the Biological Society of Washington* 45:29–38.
- Takeda, M., & S. Miyake. 1969. Crabs from the East China Sea. 3. Brachygnatha Oxyrhyncha.—*Journal of the Faculty of Agriculture, Kyushu University* 15:469–522.



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