Seiitaoides sandyi n. sp., a new species of spider crab (Decapoda, Brachyura, Majidae) from New Caledonia

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Abstract :

Four species of Seiitaoides Griffin & Tranter, 1986 (Majoidea: Majidae) are now known from the Indo-West Pacific. A fifth species, Seiitaoides sandyi n. sp., is described here from deeper waters in New Caledonia. This tiny species is most similar to S. orientalis (Sakai, 1961) from the western Pacific, but differs markedly by the shape and armature of the supraorbital eave, carapace regions and plates, as well as structure and proportions of the male thoracic sternum, ambulatory legs and male first gonopod.

Résumé :

Une nouvelle espèce de crabe Majidae, Seiitaoides sandyi n. sp. est décrite des eaux profondes de Nouvelle-Calédonie. Cette petite espèce est similaire à S. orientalis (Sakai, 1961) du Pacifique ouest, mais en diffère nettement par la forme et la structure du rebord supraorbital, par les zones de la carapace et ses plaques, également par la structure et les proportions du sternum thoracique mâle, les pattes marcheuses et le premier pléopode. Cinq espèces de Seiitaoides sont maintenant connues de l'Indoouest Pacifique.

Keywords : Taxonomy, Majoidea, spider crab, Seiitaoides, south Pacific, new species, character states

INTRODUCTION

Seiitaoides Griffin & Tranter, 1986 (Majoidea, Majidae), was established for S. orientalis (Sakai, 1961) (from Japan, Philippines, and Indonesia) and S. stimpsoni (Miers, 1884) (from the Sevchelles). Richer de Forges et al. (2021) subsequently described two more species, S. mirabilis and S. kabuto, from the Indian Ocean. Here, a fifth species of *Seiitaoides* is described from New Caledonia from recent material.

The terminology used here follows that used by Griffin (1966a, b), Griffin & Tranter (1986), Ng & Richer de Forges (2015) and Davie et al. (2015). The measurements provided, in millimetres, are of the maximum carapace length (cl) which is the maximum distance between the tips of the pseudorostral and posteriormost edge of the carapace, and the maximum carapace width (cw) which is the maximum distance between the edges of the branchial regions. The post-pseudorostral carapace length (pcl) is measured from the base of the pseudorostral spines to the posterior margin of the carapace. The following abbreviations are used: coll., collected by: G1, male first gonopod: G2, male second gonopod: P2-P5, pereiopods 2-5 (first to fourth ambulatory legs), respectively. Specimens are deposited in the Muséum national d'Histoire naturelle (MNHN), Paris, France; and Zoological Reference Collection (ZRC), Lee Kong Chian Natural History Museum, National University of Singapore, Singapore.

TAXONOMY

Family MAJIDAE Samouelle, 1819

Genus Seiitaoides Griffin & Tranter, 1986

Seiitaoides sandyi n. sp. (figs. 1-4)

- Eurynome orientalis Sakai, 1961, by original designation.

Type species.-

Material examined.— Holotype: male (cl 6.5 mm, pcl 5.5 mm, cw 4.1 mm) (MNHN-IU-2022-145), station DW5171, d'Entrecasteaux Island, south Atoll Pelotas, New Caledonia, 19°01.4'S 163°26.8'E, 262-272 m, dredge, coll. SPANBIOS cruise, N.O."Alis", 8 July 2021. Paratypes: 1 male (cl 5.3 mm, pcl 4.3 mm, cw 3.1 mm), 1 female (cl 6.1 mm, pcl 5.6 mm, cw 3.8 mm) (MNHN), 1 male (cl 5.8 mm, pcl 5.0 mm, cw 3.5 mm) (ZRC 2022.0823), same data as holotype. For comparative material of congeners, see Richer de Forges et al. (2021).

Diagnosis.— Pseudorostral spines subcylindrical in cross section, gently diverg-ing; margins with spinules (fig. 2A-E). Supraorbital eave broad, margin evenly convex, almost smooth or lined with small granules, with proximal angle slightly expanded, forming low tooth; postocular tooth slender, long, distal part subtrun-cate, lined with granules; separated from eave by U-shaped sinus, intercalated

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Fig. 1. *Seiitaoides sandyi* n. sp., holotype male (pcl 5.5 mm) (MNHN-IU-2022-145), New Caledonia. Colour in life. Photograph: Philippe Maestrati.

spine short, appressed against long postocular spine (figs. 2A-D). Hepatic spine short, flattened, lined with tubercles and granules, separated from postocular tooth by wide concavity (fig. 2A-D). Gastric region with 2 median rows of raised tuber-cles with spiniform tops, 1 median cordiform plate, margin of plate raised with median part gently concave, with cluster of approximately 3 sharp tubercles imme-diately anterior to plate; cardiac region with large, rounded plate with rimmed mar-gin, median part granuliform, posterior margin gently indented; branchial region with wide triangular plate, proximal part with slit-like hole; lateral margin with 2 large raised cordiform tubercles (fig. 2A-E). Intestinal region, posterior carapace margin and posterolateral margin distinctly raised, posterolateral margin granuli-form, with granules sharp on posterior part, intestinal region with prominently swollen, smooth, ball-like tubercle (figs. 1, 2A, B, E). Basal antennal article large, trapezoidal, fused with carapace, with 2 low distal teeth (fig. 3A); flagellum dis-tinctly longer than pseudorostral spines (figs. 1, 2A). Anterolateral flange of buccal cavity crenulated, not spiniform (fig. 3A). Ischium of third maxilliped short, with 2 large, sharp tubercles near outer margin; merus triangular with 3 submedian sharp tubercles, anteroexternal angle long, projecting laterally, distinctly auriculiform



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Fig. 3. Seiitaoides sandyi n. sp., holotype male (pcl 5.5 mm) (MNHN-IU-2022-145), New Caledonia. A, antennae, antennules and epistome; B, anterior thoracic sternum and pleon; C, D, posterior carapace margin and pleon; E, right chela (outer view); F, right cheliped (dorsal view); G, right P5; H, I, left G1; J, left G2.

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(fig. 2F). Adult male cheliped long; merus long, with numerous short spines and 37 37 granules; carpus with 2 or 3 short spines on outer surface; chela wider distally with 38 38 numerous sharp spines on outer face, fingers short, with serrulate cutting margins 39 39 (figs. 2A, 3D, E). Ambulatory legs short, setose; merus short, stout, slightly cari-40

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Fig. 4. Seiitaoides sandyi n. sp., holotype male (pcl 5.5 mm) (MNHN-IU-2022-145), New Caledonia.
A, left G1 (ventral view); B, distal part of left G1 (ventral view); C, distal part of left G1 (dorsal view); D, left G2. Scales: A, D = 0.1 mm; B, C, 0.05 mm.

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nate on dorsal margin, lined with large laterally flattened tubercles, outer surface of
P4 and 5 merus with long tubercle (figs. 2A, 3F). Anterior part of thoracic sternum
prominently depressed, forming distinct cavity surrounded by a rim and granules
(fig. 3B). Male pleon slender, with 6 free somites; male somite 1 with 2 lateral and
1 median low spines, telson much longer than wide with concave lateral margins
(fig. 2C, D). G1 long, distinctly sinuous with the distal third relatively wider than
median part (figs. 3H, I, 4A-C).

Variation and female.— The male holotype has a space between the intercalated 30 30 spine and postocular spines anomalous, and appears to have regenerated after 31 31 damage; the intercalated spine not being discernible (fig. 2B, C). In the paratype 32 32 specimens, however, the intercalated spine is present, short and appressed against 33 33 the postocular spine as with other congeners (fig. 2D). The single female specimen 34 34 is in poor condition, is a subadult with the sternopleonal cavity still ovate; the pleon 35 35 is missing. 36 36

Colour.— Fresh specimens are yellowish-grey overall, the gastric and cardiac plates with reddish hues (fig. 1). The eroded carapace morphology and colour is very effective camouflage on the shell and sediment substrate the species was collected from.

Etymology.— The species is named after our old friend Sandy Bruce; in his
 memory and for many contributions to carcinology.

Remarks.— With regards to the overall carapace shape and features, Seiitaoides sandyi n. sp. is most similar to S. orientalis (Sakai, 1961). Seiitaoides sandyi, however, is distinguished as its carapace is proportionately more elongate (fig. 2A, B) (proportionately shorter in S. orientalis; cf. Richer de Forges et al., 2021, fig. 12C, D); the supraorbital eave is relatively wider with the margin gently convex and almost entire (fig. 2B-D) (with eave narrower, and margin almost straight and lined with small spines in S. orientalis; cf. Richer de Forges et al., 2021, fig. 12D); the postorbital spine is prominently produced with the distal part truncate and lined with granules (fig. 2B-D) (sharp, spiniform and relatively shorter in S. orientalis; cf. Richer de Forges et al., 2021, fig. 12D); the hepatic spine is straight, relatively short and subtruncate (fig. 2B-D) (gently curved in S. orientalis; cf. Richer de Forges et al., 2021, fig. 12D); the median gastric plate is larger, prominently raised, cordiform with the lateral margins raised (fig. 2B-E) (distinctly lower, subtriangular in shape and the surface is gently convex in S. orientalis; cf. Richer de Forges et al., 2021, fig. 12D); there is no obvious raised hepatic plate (fig. 2B-D) (hepatic plate ovate, small but distinct in S. orientalis; cf. Richer de Forges et al., 2021, fig. 12D); the cardiac plate is raised with the margins rim-like and the posterior margin indented (fig. 2B, E) (swollen but evenly convex without any rim in S. orientalis; cf. Richer de Forges et al., 2021, fig. 12D); the lateral branchial plate is made up of one contiguous broad triangular plate (fig. 2B) (plate cut separated into 2 distinct parts, separated by deep clefts in S. orientalis; cf. Richer de Forges et al., 2021, fig. 12D); the sub-branchial plate is large and cordiform with the margins raised (fig. 2B) (small, ovate and evenly convex in S. orientalis; cf. Richer de Forges et al., 2021, fig. 12D); the smooth ball-like swelling on the posterior carapace margin is relatively much larger (fig. 2A, B, E) (swelling smaller and more hemispherical in shape in S. orientalis; cf. Richer de Forges et al., 2021, fig. 12D); the basal antennal article is more quadrate and proportionately wider (fig. 3A) (more slender and less wide in S. orientalis; cf. Richer de Forges et al., 2021, fig. 12E); the anteroexternal angle of the merus of the third maxilliped is prominently elongated and auriculiform (fig. 2F) (relatively smaller and more triangular in S. orientalis; cf. Richer de Forges et al., 2021, fig. 12E); the ischium of the third maxilliped is relatively shorter (fig. 2F) (relatively longer in S. orientalis; cf. Richer de Forges et al., 2021, fig. 12E); the median part of male thoracic sternite 3 is distinctly depressed, smooth with the margin with the sternopleonal cavity lined with prominent rounded granules (fig. 3B) (surface of sternite 3 gently concave but not distinctly depressed with the margins smooth or covered with small granules only in S. orientalis; cf. Richer de Forges et al., 2021,

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fig. 12D); the ambulatory meri are short and stout, the dorsal margins are lined with stout teeth, with a median rounded granule on the outer surface of that on P5 (figs. 2A, 3F) (P2-P5 relatively longer with the meri slender and with margins and surfaces covered with numerous small sharp granules in S. orientalis; cf. Richer de Forges et al., 2021, fig. 12C); and the G1 is distinctly sinuous with the distal third relatively wider than the median part (figs. 3H, I, 4A-C) (almost straight with the structure gently tapering towards the tip; Sakai, 1961, fig. 1c, d; Griffin & Tranter, 1986, fig. 69e, f).

The structure of the large tubercle on the posterior part of the carapace requires discussion. For S. mirabilis and S. kabuto, Richer de Forges et al. (2021) described this tubercle as being part of pleonal somite 1 in both sexes. In these two species, the subovate and rugose tubercle is slightly mobile when somite 1 flexes. In S. orientalis and S. sandyi, however, the tubercle is proportionately larger, more rounded and smooth, and is part of the posterior margin of the carapace, being essentially an extension of the intestinal region, and is therefore completely fused. As such, it is completely immobile, being separated from somite 1 by a narrow but clear suture (fig. 3D). The condition in S. stimpsoni is not known, but from the original figures (Miers, 1884, pl. 47 fig. A), it closely resembles the condition in S. kabuto and it is similar in structure, that is, it is also slightly mobile. As such, while the large round tubercles of the five species are superficially similar, they appear to be independently derived. This suggests that the five species may need to separate into two genera; but as they are so similar in body form, they are, for the time being, all retained in Seiitaoides.

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