

1942

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INVERTEBRATE
ZOOLOGY
Crustacea

DIVISION MARINE
INVERTEBRATES

CARDED 1968

ANNOTATIONES ZOOLOGICAE JAPONENSES

Volume 21, No. 2—June 1942

Published by the Zoological Society of Japan

A New Commensal Shrimp, *Spongicola japonica*, n. sp.

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In the present paper I propose to erect a new species in the genus *Spongicola*, viz., *S. japonica*, on the basis of three specimens found commensal with a deep-sea sponge, *Euplectella marshallii* Ijima.

It is my pleasure to record here a debt of gratitude to Professor Arata Terao for his kindness in supervising the present study. My sincere thanks are due to Dr. Sanji Hôzawa, of the Tôhoku Imperial University, for the identification of the sponge in which the shrimps were found. I am also greatly indebted to Mr. Sadayosi Miyake, of the Kyûsyû Imperial University, for his kindness rendered in various ways and Mr. Genkiti Abe for the collection of the material.

Spongicola japonica sp. nov.

Shell smooth but rather ill-calcified. Rostrum rather short, somewhat less than one-third the length of carapace, extending slightly beyond distal margin of basal joint of antennular peduncle; upper border almost horizontally straight, armed with 6 teeth; lower one with 2 teeth near apex (fig. 2). Carapace with minute antennal spine and inconspicuous cervical groove; pterygostomian angle rounded but provided with two spinules; antero-lateral region with many spinules. Abdomen without carina along dorsal median line; second and third somites armed with many spinules arranged in a transverse row near each anterior margin; sixth somite a little longer than fifth, about one-fourth as long as carapace; first four pleura rounded on lower margin, but fifth minutely pointed at postero-inferior angle. Telson as long as uropods, somewhat longer than half of carapace, about twice as long as wide measured at middle; lateral margin fringed with 4 spinules from middle posterad, posterior margin convex, with a spinule at middle; each dorso-lateral margin armed

with many spinules; a rather stout spine present near proximal, lateral angle (fig. 1, A). Eye rather small, cornea without pigment in alcoholic specimens. Antennular peduncle 3-segmented; basal segment long, about one-third times as long as carapace, last two segments subequal in size, and about one-fifth times as long as basal one, last segment provided with inner shorter and outer longer flagella, the latter being as long as carapace. Antennal scale rather broad, about twice as long as wide; nearly straight outer margin provided with 5 spines and tipped with an acute spine extending as far as distal margin of lamella (fig. 1, B). Carpocerite stretches slightly beyond distal margin of antennular peduncle. Mandible made up of molar and incisor processes and palp; molar process inconspicuous and ill-defined from incisor one, which is armed with 8 irregular teeth along distal margin; palp 3-segmented, distal one ca. 2.1 times as long as basal one (fig. 1, C). Maxillula with broad inner lacinia and still broader outer one; endopodite slender, bluntly pointed, without apical lobe (fig. 1, D). Maxilla with rather slender endopodite which is unsegmented and bluntly pointed at apex, and provided with two bifid subequal lobes on inner margin; exopodite ear-shaped (fig. 1, E). First maxilliped with well developed exopodite and bilobate mastigobranchia; endopodite segmented into two or vestigially three, slender and bluntly pointed; inner margin carries a remarkably broad distal and two rather vestigial proximal lobes (fig. 1, F.) Second maxilliped slender and 7-jointed, provided with rather vestigial exopodite and both podobranchia and mastigobranchia; proportions against dactylopodite: propodus 1.2, carpus 0.9, merus 2.1, and ischium 0.5 (fig. 1, G). Third maxilliped pedi-form; provided with exopodite, which is tubercular in shape; ratios against dactylus: propodus 1.2, carpus 1.8, merus 2.2, and ischium 2.0; merus about 3.1 times as long as wide measured at middle (fig. 1, H). First cheliped small, about 0.7 times as long as carapace. Second cheliped

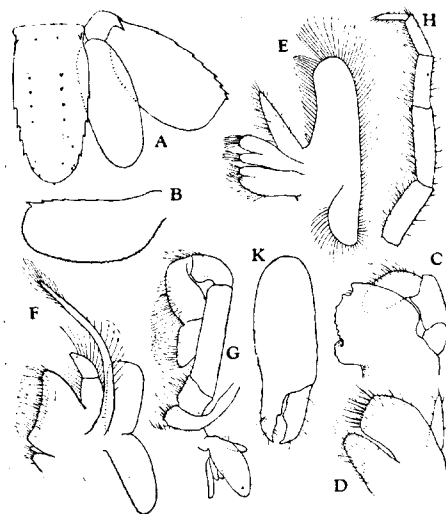


Fig. 1. *Spongiicola japonica* sp. nov. A, a part of tail-fan, $\times 6$; B, antennal scale, $\times 6$; C, mandible, \times ca. 21; D, maxillula, \times ca. 21; E, maxilla, \times ca. 12; F, first maxilliped, \times ca. 12; G, second maxilliped, \times ca. 12; H, third maxilliped, $\times 6$; K, chela of third pereiopod of male, $\times 4$.

rather large, a little more than one and half times as long as carapace; proportions against movable finger: palm 1.8, carpus 3.0, merus 2.8, and ischium 1.6; palm ca. 3 times as long as wide. Third cheliped large, slightly unequal in length; longer leg about 2.3 times as long as carapace, proportions against movable finger: palm 2.5, carpus 1.0, merus 2.0, and ischium 1.2; palm oval in cross-section, provided with a low ridge along each anterior and posterior margin, about 3.1 times as long as wide measured at middle; but in shorter leg, palm ca. 2, carpus 0.8 in proportion to movable finger; palm about 2.8 times as long as wide. Fourth limb slender, about twice as long as carapace; ratios to propodus: carpus

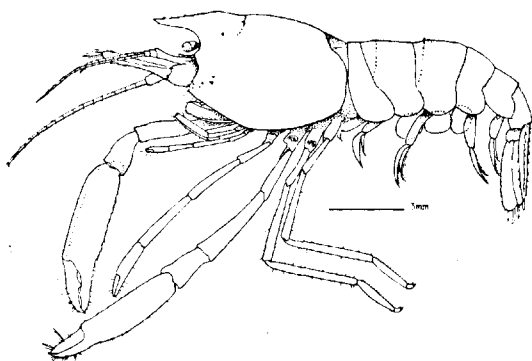


Fig. 2. *Spongiicola japonica*, sp. nov., female with eggs.

2, merus 1.8, and ischium 0.9; dactylus biunguiculate, about a quarter of propodus in length; propodus slightly swollen, ca. 5 times as long as wide measured at middle, posterior margin armed with many setae; carpus unarmed, about 12 times as long as wide; merus and ischium subequal in size. Fifth leg closely resembles fourth one in configuration, but somewhat shorter. Endopodite of first pleopod rather small, simply

leaf-shaped, and that of second one with no appendix in both sexes.

Egg subglobular, 1.2 mm in shorter and 1.5 mm in longer diameters in alcoholic specimens.

Sexual dimorphism: A pair of small male and large female were found within one specimen of the sponge. Therefore, there is no room for doubt that there exists sexual dimorphism in size. This small male has the chela of third limb larger than that of large female, with proportions against movable finger: palm ca. 2, depth of the same joint ca. 1 (fig. 1, K).

Holotype: Ovigerous female, 20.0 mm long (8.2 mm in length of carapace).

Paratypes: A male, 16.8 mm long (7.3 mm in carapace-length) found in pair with the above-mentioned female and one male, 14.6 mm long (5.8 mm in carapace-length) found left in a much mutilated specimen of the sponge.

Type locality: Kumanonada, off Mie Prefecture, about 300 m in depth.

Note: The mouth-parts of this new form mostly agree with those of de Haan's figures of *Spongicola venusta*. But the inner margin of the first maxilliped of the present species carries one distal broad and two proximal vestigial lobes instead of one distal broad and one proximal rather vestigial lobes.

It is remarkable to find close resemblance of the oral appendages between the present species and *Stenops hispidus* Olivier⁽⁶⁾ except that the mandible of the former is provided with molar and incisor processes separated by a narrow notch while those of the latter are not defined at all.

The present form is separable from all other Indo-pacific species hitherto recorded as shown in the following key:—

- A. Abdominal pleura excluding that of fifth acuminate on lower margin; palm of third cheliped nearly as broad as long and about 1.7 times as long as movable finger, anterior margin serrated with prominent spines
S. venusta de Haan.
- A'. Abdominal pleura excluding that of fifth rounded on inferior margin.
- B. First cheliped about 0.9 times as long as carapace; second cheliped ca. 1.8 times as long as carapace, palm ca. 3 times as long as wide at middle. third cheliped subequal, palm ca. 2.9 times as long as wide at middle. unarmed with prominent spines along anterior margin, carpus ca. 1.6 times as long as wide measured along distal margin, merus without spines on posterior margin, ischium armed with no spine *S. japonica* sp. nov.
- B'. First cheliped ca. 1.6 times as long as carapace; second one ca. 2.8 times as long as carapace, palm ca. 2.1 times as long as wide at middle; third one unequal in size, palm ca. 1.5 times as long as wide at middle, serrated with many prominent spines along anterior margin, carpus ca. 0.9 times as long as wide measured along distal margin, merus with 2 spines on posterior margin, ischium with a spine near distal margin of upper border
S. andamanica Alcock.
- C. Third leg asymmetrical; ischium with distal spine; merus spinulose and a spine near distal end on upper and on outer side; carpus not much longer than broad, distally spinulose above; palm compressed, about twice as long as wide and slightly longer than movable finger.....*S. henshawi* Rathbun.

LITERATURE

- Alcock, A. 1901 A descriptive catalogue of the Indian deepsea Crustacea. Decapoda Macrura and Anomala in the Indian Museum, Calcutta.
- Balss, H. 1914 Ostasiatische Decapoden I. Die Natantia und Reptantia. Abhandlungen der math.-phys. Klasse der K. Bayer. Akad. der Wiss., II, Suppl. 10.
- Bate, S. 1888 Report on the Macrura of H. M. S. Challenger, 24.
- De Haan, W. 1850 Fauna Japonica (Crustacea).
- Doflein, F. 1902 Ostasiatische Decapoden. Abhandlungen der K. Bayer. Akademie der Wiss., II. Cl. 21, 111. Abth.
- Kube, I. 1940 On some littoral shrimps collected from Micronesia. Jour. Imp. Fish. Inst., 34(1).
- Miers, E. J. 1877 On species of Crustacea living within the venus flower basket (*Euplectella*) and in *Meyerina claviformis*. Jour. Linn. Soc. London, 13.
- Ortmann, A. 1890 Die Decapoden Krebse des Strassburger Museums. Zoologische Jahrbücher (Abteil. für Syst.), 5.
- Rathbun, M. J. 1906 The Brachyura and Macrura of the Hawaiian Islands. Bull. U. S. Fish Commission, 23. Part 3.
- Stebbing, T. R. R. 1893 A history of Crustacea. International Scientific Series, 74.
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