

## A New Stenopodidean Shrimp (Decapoda, Natantia) from the Chatham Rise, New Zealand<sup>1</sup>

KEIJI BABA<sup>2</sup>

**ABSTRACT:** A new stenopodidean shrimp, *Spongicoloides novaezelandiae* sp. nov., taken in a depth of about 1000 m in the Chatham Rise, is described and illustrated. It is somewhat similar to the east Atlantic *Spongicoloides evolutus* (Bouvier), from which it is readily distinguished by the number of gills on the maxillipeds. The genus *Spongicoloides* Hansen, previously known only from the Atlantic, is recorded for the first time from New Zealand waters as well as from the Pacific.

DURING THE TRAWLING OPERATIONS conducted by the Japanese R/V *Kaiyo Maru* in 1968 in the Chatham Rise, off the east coast of South Island, New Zealand, a single specimen of an unusual stenopodidean shrimp was taken in a haul on muddy bottom in about 1000 m. Its color was carefully recorded, and subsequent closer examination disclosed that it belonged to the genus *Spongicoloides* but it did not fit any diagnoses of the described species. This genus contains only four species at the present time, all having been recorded in the Atlantic, with considerable rarity. Therefore, its new occurrence in the Pacific is of particular interest.

The type specimen will be deposited in the collection of the National Museum of New Zealand, Wellington (NMNZ).

### *Spongicoloides novaezelandiae* sp. nov.

Figures 1 and 2

#### Material

*Kaiyo Maru* Sta. 36. 44°44.0' S, 175°42.0' E; 990–1110 m deep; mud; 16 July 1968; 1830–1935 hr; 1 sp., holotype, NMNZ, reg. no. Z. Cr. 1889.

<sup>1</sup> Manuscript accepted 1 December 1978.

<sup>2</sup> Kumamoto University, Biological Laboratory, Faculty of Education, Kumamoto 860, Japan.

#### Description

Rostrum nearly horizontal, slightly overreaching basal segment of antennular peduncle; dorsal margin armed with 11 small, low teeth, posteriormost placed on carapace posterior to level of orbital margin; distoventral margin with two small teeth; no distinct lateral rib.

Carapace 3.4 times as long as rostrum; cervical and branchiostegal grooves distinct. Antennal and hepatic spines absent. Anterior pterygostomian angle with three small spines; several spinules just behind them. Group of similar spinules also placed on lateral portion of gastric region.

Abdomen glabrous, feeble groove on second and third abdominal terga; pleura of second to fourth segments broadly rounded. Telson quadrangular, twice as long as broad, slightly constricted near base; dorsal surface with two longitudinal ridges, each armed with eight posteriorly directed spines; distal two spines of right ridge nearer posterolateral margin, distinctly separated from ordinary row. Six lateral marginal spines distinct. Setiferous posterior margin with median two denticles equidistant between lateral groups of three similar denticles. Endopod and exopod both with weak dorsal ridge; outer margin of exopod serrated.

Eye moderate in size; cornea broader than, but shorter than, eyestalk.

Antennular peduncle simply elongate;

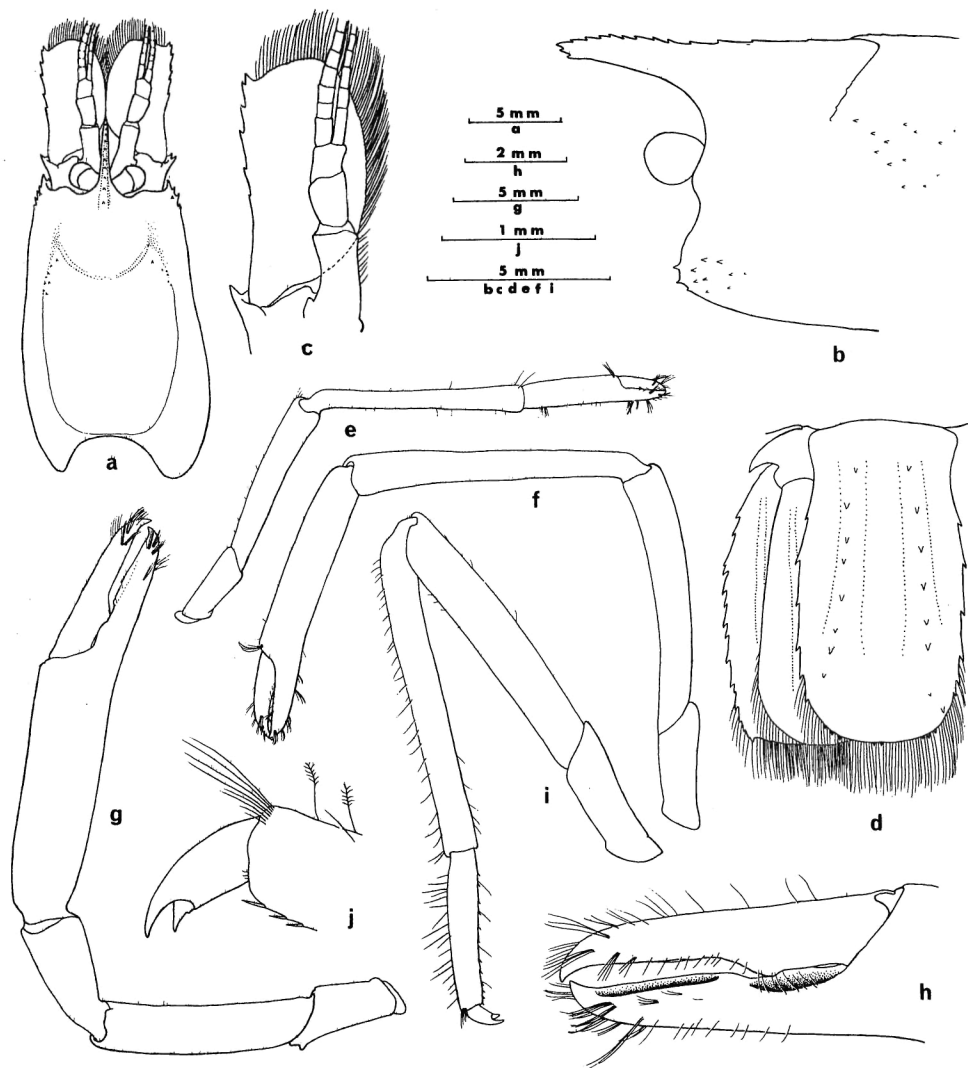


FIGURE 1. *Spongioloides novaezelandiae* sp. nov., holotype: a, carapace, dorsal view; b, anterior part of carapace, lateral view; c, left antennule and antennal scale; d, telson and left uropods; e, right first pereopod; f, left second pereopod; g, right third pereopod; h, fingers of right third pereopod; i, left fourth pereopod; j, distal part of left fourth pereopod.

basal segment fully twice as long as second segment; stylocerite small and blunt but distinct. Antennal scale broad; 1.4 times as long as rostrum, twice as long as broad; outer margin almost straight, not setiferous but with six or seven spines in distal half; inner margin convex, inner and distal margins with long setae. Basal segment of antennal peduncle armed with one (left) or two (right) outer terminal spines.

Mouthparts as figured (Figure 2); epipod of first maxilliped bilobed and well developed; exopod absent from second and third maxillipeds.

First pereopod slender, sparsely furnished with short setae; fingers unarmed, half as long as palm; carpus fully twice as long as palm, 1.4 times as long as merus. Second pereopod similar in shape to first but larger, only distally setose. Third (major) pereopod

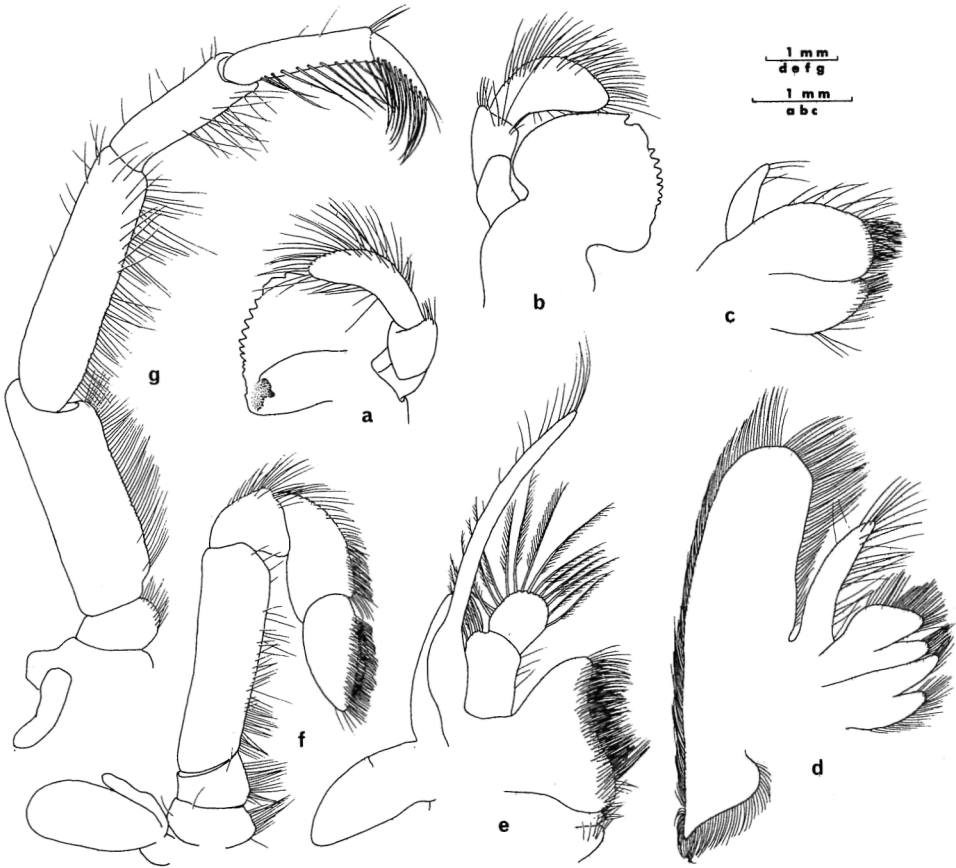


FIGURE 2. *Spongiocoloides novaezelandiae* sp. nov., holotype: a, right mandible, dorsal view; b, same, ventral view; c, right maxillule; d, right maxilla; e, right first maxilliped; f, right second maxilliped, two arthrobranches omitted; g, right third maxilliped, one pleurobranch and two arthrobranches omitted.

strongest, glabrous excepting fingers, 1.7 times as long as carapace inclusive of rostrum. Fingers as illustrated (Figure 1g, h); immovable finger with deep longitudinal concavities both distally and proximally just inside of opposable margin; opposable margin of movable finger produced at proximal 1/3 of length, with similar concavity inside of distal half portion; tips curving inward, crossing, ending in sharp point; palm rather massive, moderately compressed, 1.5 times as long as finger, 3.4 times as long as broad; carpus with knoblike process at anterior end of inner surface; ischium with distinct dorsal process.

Fourth and fifth pereopods similar, long, slender, sparsely setose; dactylus short, biun-

guiculate; propodus about 4 times as long as dactylus, less than half as long as carpus; posterior margin with 12 spinelets; arm 0.8 as long as, but broader than, carpus.

Branchial formula as shown below:

	MAXILLIPEDS			PEREPODS				
	I	II	III	I	II	III	IV	V
Pleurobranches	—	—	1	1	1	1	1	1
Arthrobranches	1	2	2	2	2	2	2	—
Podobranchs	—	1	—	—	—	—	—	—
Epipods	1	1	1	—	—	—	—	—
Exopods	1	—	—	—	—	—	—	—

*Color in Life*

Body almost colorless; cornea yellow.

*Measurements of Holotype*

Total carapace length including rostrum, 19.5 mm; length of major pereopod (right), 33.6 mm.

*Remarks*

In this genus four species are known only from the eastern and western Atlantic between Iceland and the Antilles (Bouvier 1905a, 1905b, Caullery 1896, Hansen 1908, Holthuis 1946). According to Holthuis, who referred to all the known species and provided a key to the species, the gill formulas of these species are largely different from one another. *Spongiocoloides profundus* Hansen and *S. inermis* (Bouvier) differ from this new species in having single, unpaired arthrobranchs on the third maxilliped and following four pereopods. *Spongiocoloides koehleri* (Caullery) has epipods through all thoracic appendages except the last one. The new species somewhat resembles *S. evolutus* (Bouvier) in the number of gills, but the gill formula is not exactly the same. The pleurobranch is absent from the second maxilliped; and the arthrobranchs are present, being unpaired in the first maxilliped and paired in the following two appendages.

It is only recently that a stenopodidean shrimp was recorded for the first time from New Zealand waters (Bruce and Baba 1973). That species, *Spongiocaris yaldwyni* Bruce & Baba, was found in the cavity of a hexactinellid sponge taken in the Bay of Plenty off the northeast coast of the North Island, in 320–340 fathoms. *Spongiocoloides novaezelandiae* therefore constitutes the second record of the Stenopodidea for the New Zealand fauna. Due to the general paucity of the species and the extremely small populations of the Stenopodidae the chance of meeting these shrimps may be scant, but we expect future findings of more stenopodids.

## ACKNOWLEDGMENT

I thank L. B. Holthuis of the Rijksmuseum van Natuurlijke Historie, Leiden, for his critical review of the manuscript.

## LITERATURE CITED

- BOUVIER, E. L. 1905a. Sur les Pénéides et les Sténopides recueillis par les expéditions françaises et monégasques dans l'Atlantique orientale. C. R. Acad. Sci. Paris 140:980–983.
- . 1905b. Sur les macroures nageurs (abstraction faite des Carides), recueillis par les expéditions américaines du Hassler et du Blake. C. R. Acad. Sci. Paris 141:746–749.
- BRUCE, A. J., and K. BABA. 1973. *Spongiocaris*, a new genus of stenopodidean shrimp from New Zealand and South African waters, with a description of two new species (Decapoda Natantia, Stenopodidea). Crustaceana 25:153–170.
- CAULLERY, M. 1896. Crustacés Schizopodes et Décapodes. In: R. Koehler, Resultats scientifiques de la Campagne du "Caudan" dans le Golfe de Gascogne, aout-septembre 1895. Ann. Univ. Lyon 26:365–419, pls. 13–17.
- HANSEN, H. J. 1908. Crustacea Malacostraca. I. Danish Ingolf Exped. 3:1–120, pls. 1–5.
- HOLTHUIS, L. B. 1946. The Decapoda Macrura of the Snellius Expedition. I. The Stenopodidae, Nephropsidae, Scyllaridae and Palinuridae (Biological results of the Snellius Expedition XIV). Temminckia 7:1–178, pls. 1–11.