

A new record for *Protosquilla guerini* (White) from the Tosa Bay, Japan (Crustacea, Stomatopoda)

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A new record for *Protosquilla guerini* (White)
from the Tosa Bay, Japan
(Crustacea, Stomatopoda)*

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Examining the stomatopod crustaceans in the collection of the Zoological Laboratory, Faculty of Agriculture, Kyushu University, the authors found a rare species, *Protosquilla guerini* (White) which seems to be new to the fauna of Japan, so far as is known. These specimens were collected at the tidal zone of coral reef, Tosa-Shimizu, Tosa Bay, Kochi Prefecture by Mr. Kazuo Kurohara, to whom the authors wish to express their hearty thanks for sending the materials.

Protosquilla guerini (White)

Gonodactylus Guerinii White, 1861a, p. 43, pl. 7—Matuka, Fiji Is. (not read).

Gonodactylus Guerinii: White, 1861b, p. 480 (no new locality).

Gonodactylus Guerinii: Miers, 1880, p. 121 (no new locality).

Protosquilla guerinii: Brooks, 1886, p. 75—Honolulu, Hawaii.

Description.—The carapace is nearly as long as broad exclusive of the rostrum. The central plate extends beyond the lateral plate over the base of the rostral plate. The anterolateral margin of the lateral plate is subquadrate, the posterolateral one being subquadrate. The lateral plate of the carapace is very soft and leathery. The rostral plate is about three times as broad as long, with three strong and sharp spines in front. The central spine is the longest but not so long as the eye-stalk, the other two lateral spines come out obliquely

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on each side of the rostral plate. The gastric area is slightly convex and its lateral sutures are sharply defined, while the transverse cervical suture is almost obsolete. The carapace is wider than the exposed thoracic region, and as wide as the abdominal region.

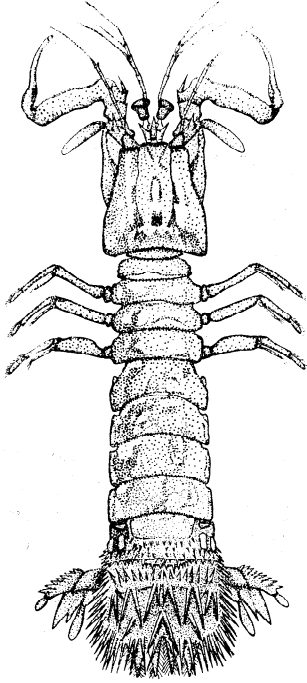


Fig. 1. *Protosquilla guerini*
(White) in dorsal view,
natural size.

The fourth thoracic segment is exposed, the fifth one being subacute at the lateral edge. The sixth and the seventh thoracic segments are obliquely truncated converging posteriorly, with rounded angles. The lateral edge of eighth thoracic segment is subacute.

The abdomen slightly increases in width from the first to sixth segments. The abdominal segments have faintly marked marginal carinae or ridges, the first four segments of which the dorsal surfaces are smooth and furnished with a small sharp indentation on each side at about one-third of the distance from the lateral edge to the middle line. The anterior half of the fifth abdominal segment is separated from the posterior half by a transverse row of numerous spinules which increase in length as they approach the posterior margin of the segment, the anterior half carries

six smaller and a single larger ridge on the surface of the segment.

The dorsal surface of the sixth abdominal segment is armed with very numerous (fifty-nine in female and forty-nine in male), strong spines. These spines are smaller and more crowded towards the lateral margins of the segment. The sixth abdominal segment is immovably fused to the telson, although the sutures are distinctly visible. There is a movable somite-like joint between the fifth and sixth segment, which bears thirteen spinules on its posterior margin and a single process on its central portion.

The dorsal surface of the telson is armed with twenty-two (in male), twenty-four (in female) long spines and two rows of marginal spines projecting backwards on the lateral tooth which has twenty-three (in male) and twenty-nine (in female) spines. These numerous spines converge along the outer margin and meet at the extremity of the lateral tooth of the telson. The posterior margin of the tel-

son has three notches in which the middle one is the deepest. The submedian tooth with a row of spines has eleven crowded spines on its inner side and nine spines on its outer side. The lateral tooth with a single row on the inner edge has six acute and long spines.

The uropod consists of basal prolongation (basis) ending in two spines, the endopod and the exopod with a paddle respectively. Two or four spines on the dorsal surface of the basal prolongation of the uropod are short and acute, especially the outer one is very much shorter than the others. The paddle (the second segment) of the

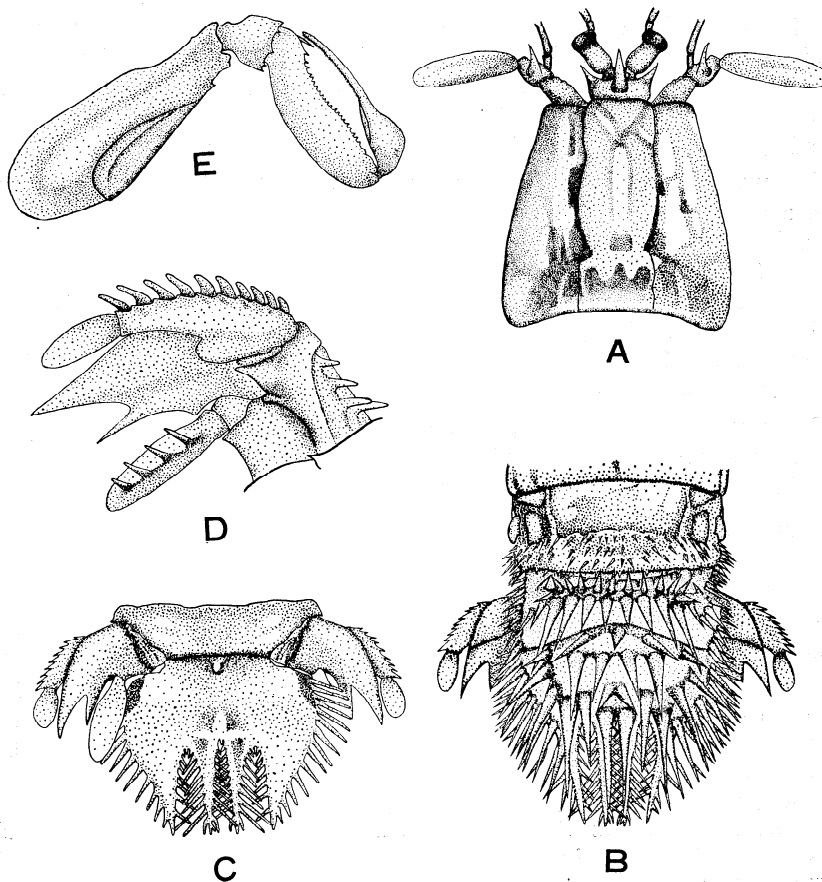


Fig. 2. *Protosquilla guerini* (White). A. carapace in dorsal view, $\times 2$, B. fifth, sixth abdominal segments and telson in dorsal view, $\times 2$, C. sixth abdominal segment and telson in ventral view, $\times 2$, D. left uropod in lateral view, $\times 4$ E. right raptorial limb in lateral view, $\times 2$.

endopod with four spines on the dorsal surface in female, while there are five spines on its right dorsal surface and four on the left in male. The first segment of the exopod which has nine or ten stouter spines on its outer edge, being nearly twice as long as the paddle.

The basal enlargement of the raptorial dactylus is not notched, its outer border is truncated, and at its distal edge the transition is abrupt to the long slender gently curved acute tooth, which is barbed minute serration on its inner edge. There is a single, long tooth on the basal portion of the propodus with very numerous (about twenty-one) minute notches on the inside of it. The eyes are subcylindrical, with the cornea being a little wider than the base.

The penis of the eighth thoracic segment consists of two segments and its distal segment is longer than the proximal one. The distal segment gradually diverges from its base to the end on which the smaller process protrudes. The petasma of the first abdominal appendage connects with each other in male specimen.

Colour.—In the alcoholic male specimen, the posterior region behind the cervical grooves, the thoracic and the abdominal segments are deep brownish colour patched with pale yellow, except a transverse strip of light yellowish brown across the carapace. The anterior region of carapace, the ambulatory legs and the uropods are pale brown colour patched with pale yellow. The telson is pale yellowish and the raptorial limbs are also the same colour, except the brownish patches on the merus. The eyes are light brown.

Materials examined.—1♂, 1♀, Cat. No. 423, Zoological Laboratory, Kyushu University, at the tidal zone of the coral reef, Tosa-Shimizu, Kochi Prefecture, Shikoku, Japan, Mar. 24, 1960, Kazuo Kurohara leg.

Measurements (mm).

	♂	♀
Length of the body including central spine of rostrum	55.3	75.3
Length of rostral plate.....	1.0	1.0
Length of central spine of rostral plate	1.8	2.0
Length of outer spine of rostral plate	1.1	1.6
Length of carapace	10.1	14.2
Width of carapace between anterolateral angles	7.0	9.0
Greatest width of carapace.....	1.2	1.3
Length from the posterior margin of carapace to posterior margin of eighth thoracic segment	12.0	16.6
Width of fifth thoracic segment	4.9	6.4
Width of sixth thoracic segment.....	7.8	9.4
Width of seventh thoracic segment	9.2	11.8
Width of eighth thoracic segment	9.9	12.8
Length from first to sixth abdominal segment	18.1	27.8

Width of first abdominal segment	10.7	12.8
Width of sixth abdominal segment	11.1	14.6
Length of telson in the middle line	13.2	16.1
Width of telson exclusive of spines	9.6	12.6

Remarks.—Brooks (1886) gave to the specimen of these kinds the generic name *Protosquilla*, chiefly based upon the larval development and upon the fusion of the sixth abdominal segment and the telson, the specimens in the authors' hand are also distinguished from the genus *Gonodactylus* Berthold, 1827 by the characters, such as the small size of their antennal scales and uropods, the great length of the acutely pointed rostral spines, and the fusion of the sixth abdominal segment with the telson. These specimens agreed in general with the description of the species reported by White, Miers and Brooks, though these show some differences in the following respects.

1. The sixth, seventh and eighth thoracic segments are not so articulated as to form a convex dorsal protuberance as in Brooks' figure.

2. The numbers of the spines in the telson and the uropods slightly differ from the description given by the above-mentioned authors.

Distribution.—Matuka, Fiji Is.; Honolulu, Hawaii; Tosa-Shimizu, Kochi Prefecture, Japan.

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