

Distinction between Two Hinge-beak Shrimps, *Rhynchocinetes durbanensis* Gordon and *R. uritai* Kubo (Family Rhynchocinetidae)

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Abstract

Rhynchocinetes durbanensis Gordon reliably known only from South Africa is reported on the basis of specimens from the Philippines. This species has been sometimes recorded under the incorrect identification as *R. uritai* Kubo, to which the general color pattern is strongly similar, but some morphological characters and detailed color pattern are different from those of *R. uritai* from Japanese waters.

Introduction

In the course of study on the rhynchocinetid shrimps, we obtained some specimens of an unidentified species from the Philippines through the aquarium traders in Japan. The general color pattern is very close to that of *Rhynchocinetes uritai* Kubo, 1942, the commonest hinge-beak shrimp in Japanese waters. A close examination of all the specimens at hand revealed that both species in question are distinguished from each other not only by the coloration, but also by some morphological characters. On consultation with literature the Philippine species was tentatively identified with *R. durbanensis* Gordon, 1936, and then this identification was confirmed by direct comparison with the specimens from the type locality, Durban, northeastern coast of South Africa. In some popular publications, *R. durbanensis* has sometimes appeared under the incorrect identification as *R. uritai*. In the following lines, therefore, the differences of the two species are to be described in detail.

All the specimens from the Philippines are preserved in the National Science Museum, Tokyo (NSMT). The comparative materials from South Africa were kindly sent on loan by Ms. **Hoenson** of South African Museum (SAM).

Rhynchocinetes durbanensis Gordon, 1936
(Figs 1, 3-7, and Tab. 1)

Rhynchocinetes typus: Stebbing, 1917, p. 27, pl. 6.

Rhynchocinetes durbanensis Gordon, 1936, p. 83, figs 5 (b.c.), 7 (c.d.); Barnard, 1950, p. 763, fig. 145; Kensley, 1972, p. 34, fig. 15(m).

Rhynchocinetes n.sp.: George & George, 1979, p. 79, pl. 67, fig. 7.

Rhynchocinetes uritai: Debelius, 1983, pp. 71, 77; Debelius, 1984, pp. 71, 77.

Rhynchocinetes rugulosus: Spies, 1983, p. 88/688.

Rhynchocinetes sp.: Takeda, 1986, p. 105.

Rhynchocinetes uritai (sic): Steene, 1990, pp. 77, 314.

Material examined

Philippines. 10 exs. - 2 males (NSMT-Cr 10962, carapace length (cl) 8.3 and 10.0 mm); 1 male (NSMT-Cr 10963, cl 13.0 mm); 1 male, 1 ovig. female (NSMT-Cr 11085, cl 8.8 and 7.9 mm); 1 male, 1 female (NSMT-Cr 11107, cl 12.7 and 9.0 mm); 1 male (NSMT-Cr 11108, cl 12.7 mm); 1 male (NSMT-Cr 11109, cl 10.1 mm); 1 male (NSMT-Cr 11120, cl 8.9 mm).

Durban, South Africa. 2 exs. - 2 males (SAM-A, cl 13.4 and 16.0 mm).



Fig. 1. - *Rhynchocinetes durbanensis* Gordon. Male (8.7 mm cl, NSMT-Cr 11120), in aquarium. **J. Okuno**
Rhynchocinetes durbanensis Gordon. Mâle (8,7 mm cl, NSMT-Cr 11120), en aquarium.



Fig. 2. - *Rhynchocinetes uritai* Kubo. Female (8.6 mm cl, NSMT-Cr 11106), in aquarium. **J. Okuno**
Rhynchocinetes uritai Kubo. Femelle (8,6 mm cl, NSMT-Cr 11106), en aquarium.

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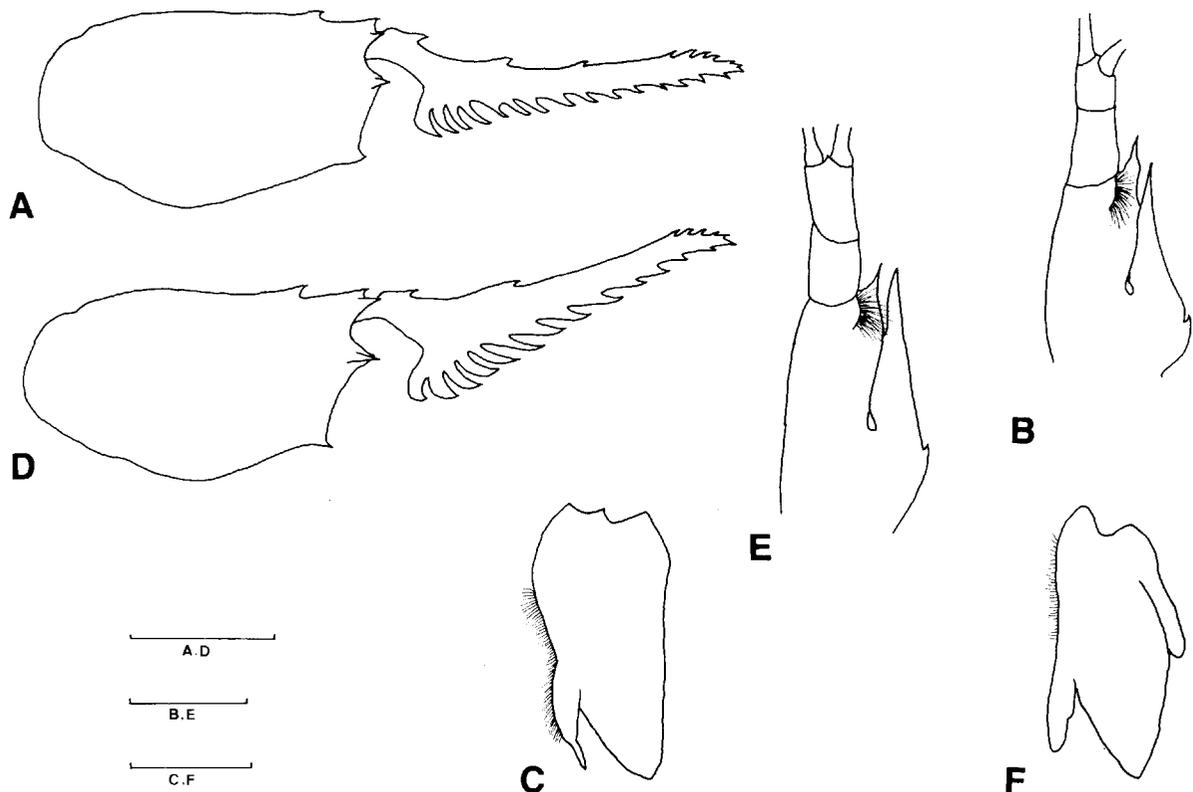


Fig. 3. - *Rhynchocinetes durbanensis* Gordon. Male (8.7 mm cl, NSMT-Cr 11120) (A,B); male (8.8 mm cl, NSMT-Cr 11085) (C). *Rhynchocinetes uritai* Kubo. Male (9.2 mm cl, NSMT-Cr 1505) (D,E); male (6.4 mm cl, NSMT-Cr 10961) (F). Scales for A,D = 5 mm, B,E = 2 mm, and C,F = 1 mm. A,D, carapace with rostrum; B,E, antennular peduncle; C,F, endopod of first pleopod. *Rhynchocinetes durbanensis* Gordon. Mâle (8.7 mm cl, NSMT-Cr 11120) (A,B); mâle (8.8 mm cl, NSMT-Cr 11085) (C). *Rhynchocinetes uritai* Kubo. Mâle (9.2 mm cl, NSMT-Cr 1505) (D,E); mâle (6.4 mm cl, NSMT-Cr 10961) (F). Echelles pour A,D = 5 mm, B,E = 2 mm, et C,F = 1 mm. A,D, carapace avec le rostre ; B,E, pédoncule antennulaire ; C,F, endopodite du premier pléopode.

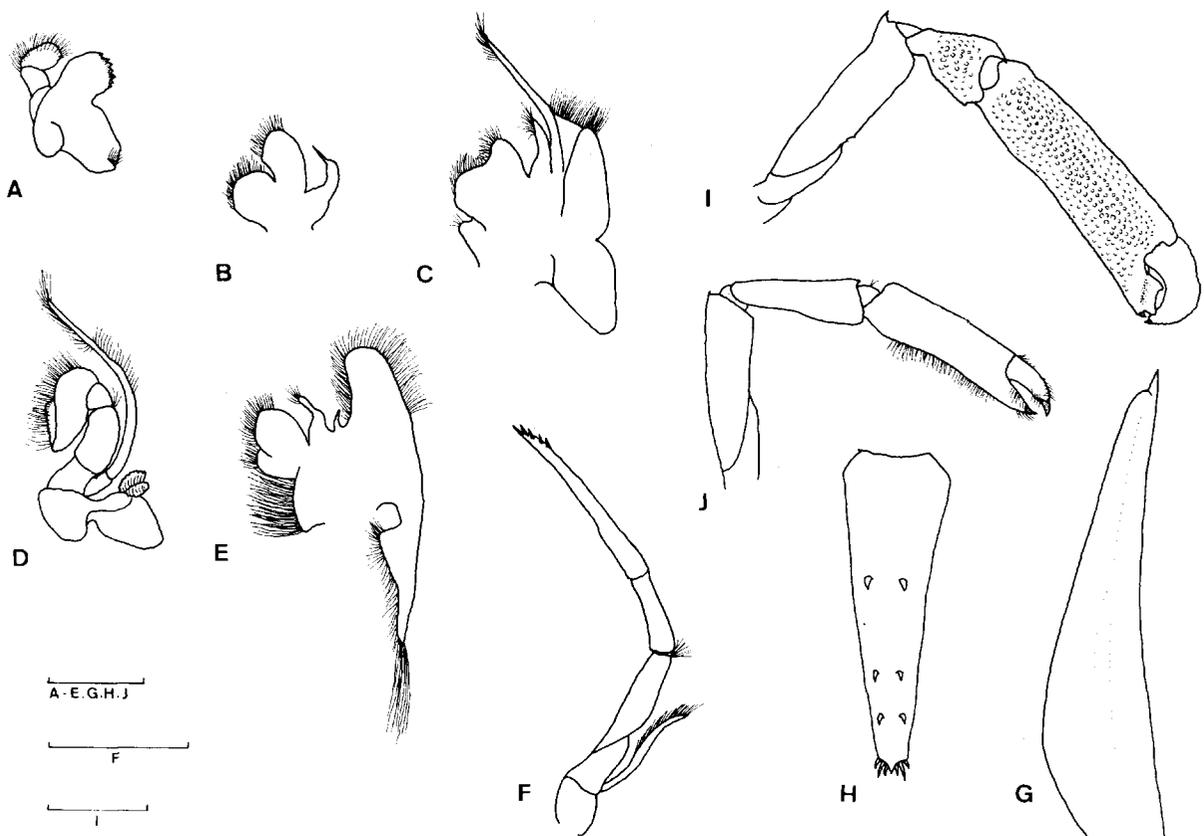


Fig. 4. - *Rhynchocinetes durbanensis* Gordon. Male (8.7 mm cl, NSMT-Cr 11120) (A-H); male (12.7 mm cl, NSMT-Cr 11108 (I); female (8.3 mm cl, NSMT-Cr 10962) (J). Scales for A-E,G,H,J = 2 mm and F,I = 5 mm. A, mandible; B, first maxilla; C, second maxilla; D, first maxilliped; E, second maxilliped; F, third maxilliped; G, antennal scale; H, telson; I, first pereopod of large male; J, first pereopod of female. *Rhynchocinetes durbanensis* Gordon. Mâle (8.7 mm cl, NSMT-Cr 11120) (A-H); mâle (12.7 mm cl, NSMT-Cr 11108 (I); femelle (8.3 mm cl, NSMT-Cr 10962) (J). Echelles pour A-E,G,H,J = 2 mm et F,I = 5 mm. A, mandibule ; B, première maxille ; C, seconde maxille ; D, premier maxillipède ; E, second maxillipède ; F, troisième maxillipède ; G, écaille de l'antenne ; H, telson ; I, premier péréopode d'un grand mâle ; J, premier péréopode d'une femelle.

Description

Carapace (Fig. 3A) with transverse numerous grooves that are fine but distinct and almost parallel to each other. Two sharp teeth just behind rostral articulation; supraorbital and antennal spines strong, sharply pointed; pterygostomial spine indistinct, its apex being more or less rounded. Rostrum (Fig. 3A) laterally compressed, obliquely curved upward at its anterior half, 1.1-1.4 times as long as carapace; three large teeth on upper margin of rostrum with regular intervals between proximal and median parts; distal part of upper margin with 5-7 small teeth; lower margin with 16-18 strong teeth decreasing in size distally.

Abdominal surface also with fine grooves similar to those on carapace. Third segment strongly humped dorsally in lateral view. Posterior margins of fourth and fifth segments shallowly concave at each median part. Telson (Fig. 4H) with three short spines at each side of posterior two thirds of dorsal surface; median part of posterior margin with a sharp process, being armed with three spines at each side, the median of which is the longest of all.

Eye very large, rounded.

Antennular peduncle (Fig. 3B) 0.4-0.5 times as long as carapace, external margin of proximal part strongly convex. Stylocerite sharply pointed at distal end, usually reaching proximal margin of next segment, shorter than external distal spine of antennular basal segment.

Antennal scale (Fig. 4G) 0.8-0.9 times as long as carapace, external distal spine beyond tip of lamella.

Mouthparts normal (Fig. 4A-E), similar to those of *R. uritai* represented by **Kubo** (1942) and of *R. rugulosus* by **McCulloch** (1909).

Third maxilliped (Fig. 4F) reaches beyond rostral tip, having epipod and exopod; exopod extends to median part of merus; ultimate segment usually armed with five dark, small horny spines near its apex.

Gill formula as shown in Table 1.

First pereopod robust, distal end of each upper margin of merus and carpus with a sharp large spine; movable finger strongly curved and sickle-shaped, tip with three dark claws; tip of fixed finger also with three dark claws similar to those of movable one. In large male, chela and carpus uniformly covered with fine granules (Fig. 4I); palm about thrice as long as carpus; inner margin of fixed finger with board-like process. In female, palm as long as carpus, inner margin of palm with sparse short hairs (Fig. 4J).

Second pereopod slenderer than first pereopod, usually extending to median part of antennal scale in female, a little beyond median part of rostrum in male.

Third pereopod usually extends to tip of antennal scale; 3 or 4 sharp spines on outer surface of merus; 3-5 dark small spines just behind terminal claw of dactylus. Fourth and fifth pereopods similar to third one; fourth pereopod usually reaches apex of antennal scale, fifth one elongated to median part of antennal scale.

First male pleopod with a large appendix interna on internal margin of leaf-shaped endopod (Fig. 3C); external margin of endopod entire, and terminal end bluntly pointed.

Endopod of second male pleopod with appendices interna and masculina; appendix interna with dense fringe of hairs, shorter than appendix masculina.

Color in life

Ground color pale pink, rather translucent (Fig. 1); brilliant red labyrinth lines cover whole surface; white ocelli and lines in interspace of red lines; all of white ocelli on body smaller than eye. Dorsal surface of carapace with a white Y-shaped mark, accompanying with a longitudinal white line at each side (Fig. 5); posterior margin of carapace white. Upper margin of rostrum white, lower margin red. Cornea dark, and eyestalk red with longitudinal white line in median part.

A white band runs from fourth abdominal segment to end of telson. An oblique white line down forward from summit of hump of third segment to anterolateral distal margin of first segment.

Proximal part of third maxilliped mottled with red and white; meri, carpi and propodi of third to fifth pereopods red, and their upper margins white. Movable and fixed fingers of first pereopod white.

In large male, red parts of body become more or less blackish (Fig. 6).

Distribution

According to some literatures (**Barnard** 1950; **Debelius** 1983; **Takeda** 1986; **Steene** 1990), *R. durbanensis* is widely distributed in the tropical Indo-West Pacific, although the reliable exact locality is only Durban, South Africa.

Common name

Suzaku-sarasaebi (new Japanese name).

Tab. 1

Branchial formula of *Rhynchocinetes durbanensis*
Formule des branchies de *Rhynchocinetes durbanensis*

	I	II	III	I	II	III	IV	V
Pleurobranchies				1	1	1	1	1
Antibiobranchies			2	1	1	1		
Podobranche		1						
Epipods	1	1	1	1	1	1	1	
Exopods	1	1	1					