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Short Paper

First Records of Two Penaeid Shrimps, *Metapenaeopsis mogiensis* and *Trachypenaeopsis richtersii* from Tosa Bay, Southern Japan, with Special Reference to Their Color Patterns

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Key words: Penaeidae, *Metapenaeopsis mogiensis*, *Trachypenaeopsis richtersii*, Tosa Bay

From Tosa Bay which is affected by the warm and strong Kuroshio current, eight genera and twenty-six species of Penaeidae have been reported (Toriyama and Hayashi 1982). Through monthly samplings of the shallow area of Tosa Bay in 1994, we have collected some specimens of *Metapenaeopsis mogiensis* (Rathbun, 1902) and *Trachypenaeopsis richtersii* (Miers, 1884) with many specimens of other *Metapenaeopsis* and *Trachypenaeus* (Table 1).

We describe the first records of both these species from Tosa Bay and their coloration with color photographs. Thus, nine genera and twenty-eight species have been reported from the Tosa Bay. The specimens have been deposited at the Kochi Station of the Nansei National Fisheries Research Institute.

Method

The research area ranged from 5 m to 55 m depth and was located off Kochi City (33°30' N, 133°30' E), south Japan. We collected specimens with the beam trawl net (the mesh size of the cod end was 5 mm) towed by a commercial trawl boat, the "Guinyo-maru" (3.93 t, 15 HP) along an isobath after sunset. After bringing the samples to the laboratory with ice and sea water, we took color photographs of the fresh specimens before fixation.

Table 1. Number of specimens and carapace length ranges of the *Metapenaeopsis mogiensis* and *Trachypenaeopsis richtersii*.

species	date of catch	water depth	number of each sex carapace length		max.	min.
			male	female		
M. mogiensis	25 Apr. 1994	15 m	3	7	16.9	9.8
	19 May 1994	35 m	0	1	20.3	
	15 June 1994	15 m	1	1	16.1	15.6
	22 Aug. 1994	25 m	2	2	7.8	5.6
	22 Aug. 1994	35 m	3	0	9.0	6.0
T. richtersii	19 July 1994	8 m	1	1	9.3	6.3

Results and Discussion

***Metapenaeopsis mogiensis* (Rathbun, 1902)**

The specimens have a pair of dentiform processes behind the anterior thelycal plate. This characteristic agrees with the sketches of the thelycum in Rathbun (1902) and Hayashi (1992). The dorsal carina of the third abdominal somite is not sulcate, while Dall (1957), Muthu (1971) and Dall *et al.* (1990) describe it is sulcate. The body is mottled with irregular red patches. *M. mogiensis* morphologically resembles *M. dalei* (Rathbun, 1902),

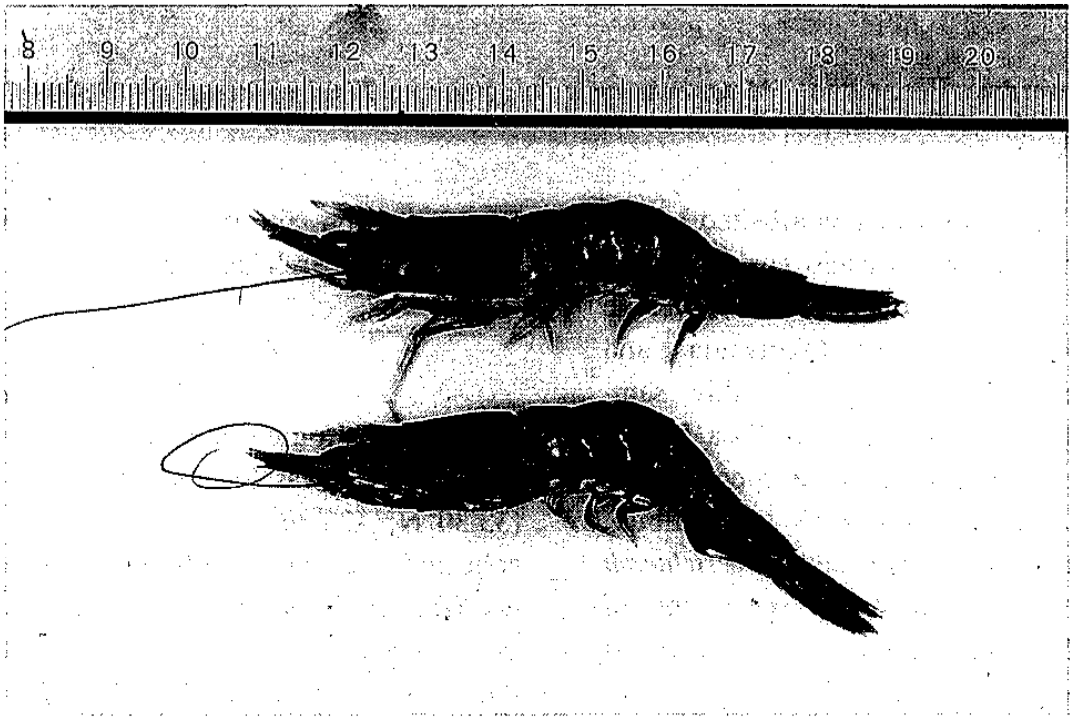

Fig. 1. Lateral views of *Metapenaeopsis mogiensis* (Rathbun, 1902) (above) and *M. dalei* (Rathbun, 1902) (below).

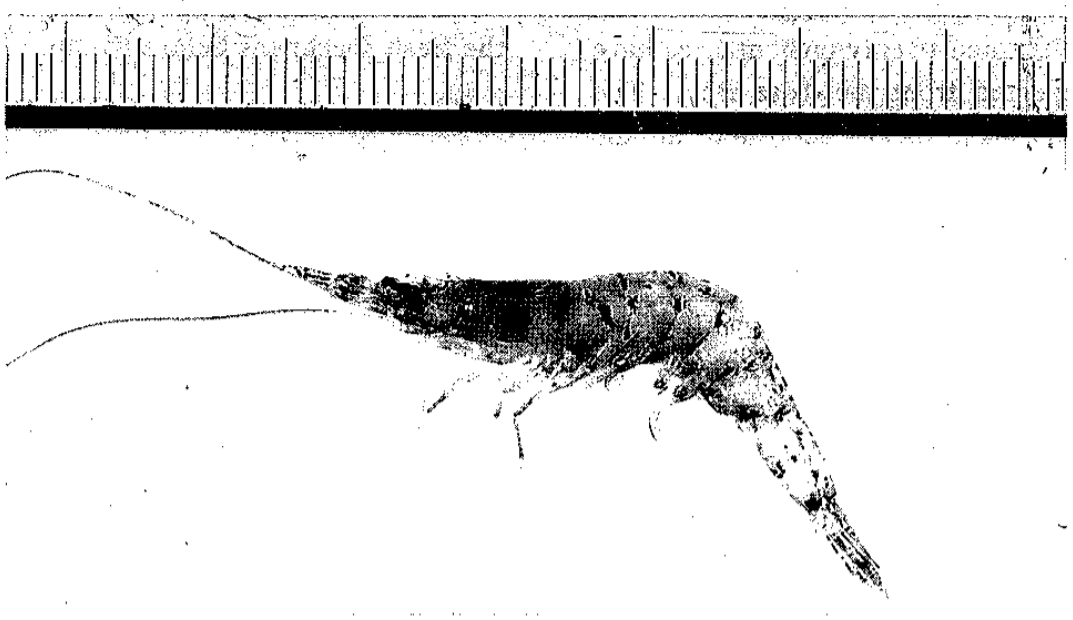

Fig. 2. Lateral view of *Trachypenaeopsis richtersii* (Mires, 1884).

which is common in Tosa Bay, except for their thelycum and petasma (Matsumiya and Oka 1977, Hayashi 1992). But each color pattern is quite different so that it is easy to distinguish specimens when they are fresh. Irregular red patches of *M. mogiensis* are much sparser than those of *M. dalei* (Fig. 1).

This species has been reported from Mogi of Nagasaki Prefecture (Rathbun 1902), Kagoshima Bay (Urita 1921), Suruga Bay (Yokoya 1933), Miho Bay (Harada 1968), Iki (Matsumiya and Oka 1977) and the Kii Channel (Hayashi 1992). In addition to these Japanese waters, it has been reported from Taiwan (Oshima 1921), Maraya (Hall 1961), northern Australia (Dall 1957, Racek and Dall 1965) and the east coast of India (Muthu 1971).

But the dorsal carina of third abdominal somite is described as sulcate in the Australian and Indian specimens (Dall 1957, Muthu 1971), while it is not sulcate in specimens collected from Tosa Bay. Thus, the present knowledge of the taxonomic status of *M. mogiensis* and related species is rather confused (Holthuis 1980).

Trachypenaeopsis richtersii (Miers, 1884)

The specimens have a pair of fixed subapical spines and two pairs of lateral movable spines on the telson. This characteristic agrees with the descriptions in Kubo (1949) and Dall *et al.* (1990) and the sketch in Hayashi (1992). Carapace, first pereiopod, petasma and thelycum of the specimens also agree with the sketches in Hayashi (1992). The specimens have some slender black bands on their whitish semitransparent body (Fig. 2).

Tosa Bay is the third locality reported for this species in Japan after Miya of Aichi Prefecture (Kubo 1949) and Izu-Ohshima (Hayashi 1992). Outside of Japanese waters, this species has been reported from Hawaii (Rathbun 1906) and Indonesia (De Man 1911). Though *Trachypenaeopsis* includes two species found in the Indo-West Pacific and one in the Atlantic, it is suggested that this genus is monospecific because of the similarity of these three species (Dall *et al.* 1990). To confirm this suggestion by Dall *et al.* (1990), clear information about the color pattern is important.

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土佐湾におけるクルマエビ科2種モギエビ *Metapenaopsis mogiensis* とサルエビモドキ *Trachypenaeopsis richtersii* の新記録とその色彩的特徴

阪地英男・堀川博史

土佐湾では，これまで8属26種のクルマエビ科が報告されていた。著者らは，このうち浅海域に棲息するクルマエビ科の生態を調査する目的で，1994年から毎月一度，高知市沖合いの水深 5～55 m の海域で，日没後にビームトロールによる標本の採集を行っている。この際，これまで土佐湾からは報告されていなかったクルマエビ科2種が採集されたので，その固定前の色彩とともに報告する。モギエビは生殖器を除く形態がキシエビ *M. dalei* と酷似するとされてきたが，その色彩から両者の識別は容易であることが明らかとなった。土佐湾の標本はオーストラリアやインドで報告されているものとは異り，第3腹節背隆起上に溝が無いので，両者は別種である可能性もある。また，採集例が少ないため，これまで知られていなかったサルエビモドキの色彩が明らかとなった。この結果，土佐湾産のクルマエビ科は9属28種となった。

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