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(Crustacea: Decapoda: Brachyura: Ocypodidae)

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**Abstract** Five species of the *Macrophthalmus telescopicus* complex of the family Ocypodidae are alphabetically enumerated from Japanese waters: *M. ceratophorus* SAKAI, 1969, *M. milloti* CROSNIER, 1965, *M. philippinensis* SERÈNE, 1971, *M. serenei* nom. nov., and *M. telescopicus* (OWEN, 1839). Of them, *M. milloti* is a species newly added to the Japanese carcinological fauna, and *M. serenei* is a new name substituted for *M. kempi* SERÈNE, 1981, which is nomenclaturally homonymous with *M. convexus kempi* GRAVELY, 1927, a synonym of *M. parvimanus* GUÉRIN, 1834.

In preparing the revised list of the Japanese species of the family Ocypodidae based on the literature and specimens, the authors noticed that a male crab from Ishigaki-jima, one of the main islands of the Yaeyama Group in the southern Ryukyu Islands, is identified with *Macrophthalmus milloti* CROSNIER, 1965, which has been unrecorded from Japanese waters, and that *M. kempi* SERÈNE, 1981, substituted for *M. verreauxi* H. MILNE EDWARDS, 1848, which was synonymized with *M. telescopicus* (OWEN, 1839) by SERÈNE (1981) must be again renamed due to the unexpected homonymy.

Both of the above two species, *Macrophthalmus milloti* CROSNIER and *M. serenei* nom. nov., belong to the *Macrophthalmus telescopicus* complex defined by BARNES (1976) as a group in the subgenus *Macrophthalmus*, together with *M. ceratophorus* SAKAI, 1969, *M. dentatus* STIMPSON, 1858, *M. graeffei* A. MILNE EDWARDS, 1873, *M. latipes* BORRADAILE, 1903, *M. philippinensis* SERÈNE, 1971, and *M. telescopicus* (Owen). As noted below, in addition to the two species in question, three species, *M. ceratophorus*, *M. philippinensis* and *M. telescopicus*, are known from Japanese waters.

## Family Ocypodidae

Genus *Macrophthalmus* DESMAREST, 1823*Macrophthalmus ceratophorus* SAKAI, 1969

The original author (SAKAI, 1969) described this species from a male from Shimogusui, Gobo, Wakayama Prefecture, and mentioned the presence of photographs of a male from Gokasho Bay, Mie Prefecture. BARNES (1976: 140–143) re-examined the holotype (USNM 125879) and discussed in detail the relation to the other species of the *Macrophthalmus telescopicus* complex, particularly to *M. telescopicus* (OWEN) itself and to *M. graeffei* A. MILNE EDWARDS. This species is quite peculiar in having the stylophorous ocular peduncle and the heavily spinous and granular margins of the male cheliped. The male first pleopod has an elongate, slightly curved terminal process, as figured by BARNES (*op. cit.*: fig. 5D, E).

This species was enumerated by WADA (1978: 20) and NAGAI (1990: 117) as one of the crabs from Wakayama Prefecture, but in spite of their extensive effort to collect the additional specimens there is no subsequent record of occurrence since the original description in 1969. Known only from the coast of the Kii Peninsula, central Japan. Sublittoral inhabitant.

*Macrophthalmus milloti* CROSNIER, 1965

(Fig. 1)

The following diagnostic characters were depicted from a male (NSMT-Cr 4783; 9.5 mm in length of carapace and 14.7 mm in breadth of carapace) collected by Mr. Y. KOYAMA at Kabira, Ishigaki-jima Island, the Ryukyu Islands on July 8, 1973.

Carapace about 1.6 times as wide as long, almost devoid of granules, with feeble clumps of granules on branchial regions, greatest width being across first anterolateral (=external orbital) teeth of both sides (Fig. 1a). Front narrow, constricted at bases of ocular peduncles of both sides, with a shallow dorsal median furrow. Upper orbital margin curved and sloping weakly backward; lower orbital margin serrated with granules of moderate size. First anterolateral tooth projecting distinctly beyond well-defined second and third anterolateral teeth (Fig. 1b). Epistome with a prominent protuberance.

Ocular peduncle about 0.9 times as long as carapace, extending beyond first anterolateral tooth by length of cornea (Fig. 1a).

Merus of cheliped thickly covered with setae on inner surface, lacking tooth or spine; inner surface of carpus only with some granules; palm stout, not markedly elongate, with a row of minute granules on outer surface along inferior margin; inner surface of palm with a mat of setae at base of immovable finger; immovable finger not deflexed, with a strong, subacute tooth on prehensile edge; movable finger curved, with a strong, truncated tooth on proximal part of prehensile edge (Fig. 1c).

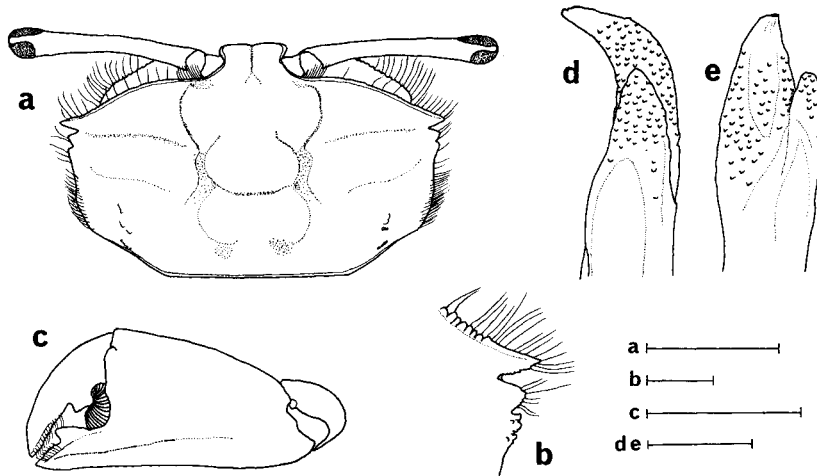


Fig. 1. *Macrophthalmus milloti* CROSNIER, ♂ from Ishigaki-jima Island. a, Carapace, with ocular peduncles, in dorsal view; b, anterolateral teeth of right side; c, left chela in outer view; d and e, tip of male first pleopod of left side, with removal of setae, in dorsal and inner view, respectively. (Scales: 5 mm in a and c; 1 mm in b; 0.5 mm in d and e)

Terminal process of male first pleopod relatively short, stout, strongly curved outward; thumb well developed (Fig. 1d, e).

The male at hand is referable with confidence to *Macrophthalmus milloti* described by CROSNIER (1965: 124–126) and later annotated by SERÈNE (1973: 112–114), CROSNIER (1975: 737) and BARNES (1976: 135, 137). The following three features are most important to warrant the validity of this species: 1) The ocular peduncle projects beyond the first anterolateral angle by the length of cornea; 2) The first anterolateral tooth projects beyond the following anterolateral teeth; 3) The male first pleopod has the relatively short, strongly curved terminal process.

Widely distributed from the east coast of Africa and Madagascar to Queensland and Fiji, and also to the Philippines. The present record extends the geographical range further north to the Ryukyu Islands. Littoral inhabitant.

#### *Macrophthalmus philippinensis* SERÈNE, 1971

(Fig. 2)

This species is very characteristic in its small size, the long ocular peduncle, four anterolateral teeth, and the elongate chelipeds of male.

This species was reported from Palawan Island, the Philippines by the original author (1971: 917), Nhatrang Bay, Vietnam by BARNES (1977: 271–273), and Kabira Bay, Ishigaki-jima Island, the Ryukyu Islands by TAKEDA (1981: 70–71). They showed that the juvenile specimen is, without doubt, extremely similar to *Macrophthalmus*

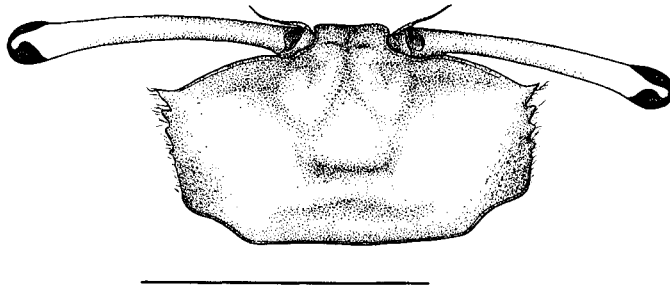


Fig. 2. *Macrophthalmus philippinensis* SERÈNE, ♀ from Ishigaki-jima Island. Carapace, with ocular peduncles, in dorsal view. (Scale: 5 mm) (After TAKEDA, 1981)

*latipes* BORRADAILE which is known only from a single juvenile male dredged from 36 fathoms deep at South Nilandu Atoll in the Maldive Islands. BARNES (1977) mentioned that the eventual discovery of adult material at the latter locality may lead to the synonymy of *M. philippinensis* with that species. On the other hand, TAKEDA (*op. cit.*) was of opinion that the juvenile specimen at his hand differs from the original description of *M. latipes*, and also from the additional notes of BARNES (1973) who examined the type specimen, in having the lanceolate dactylus of the last ambulatory leg instead of the flattened segment similar to the natatory leg, and in having the small, but distinct fourth anterolateral tooth instead of the anterolateral margin only with a distinct notch behind the first anterolateral tooth. Sublittoral inhabitant.

#### *Macrophthalmus serenei* nom. nov.

(Fig. 3)

After a long discussion, SERÈNE (1973: 106–115) definitely distinguished three sibling species, *Macrophthalmus telescopicus* (Owen), *M. verreauxi* H. MILNE EDWARDS and *M. milloti* CROSNIER, and was basically followed, with evaluation of some distinguishing characters, by BARNES (1976: 133–140) who accepted only four characters, 1) length of ocular peduncle, 2) shape of terminal process of first male pleopod, 3) relative size of anterolateral carapace teeth, and 4) overall size.

However, *Macrophthalmus verreauxi* was reduced to a synonym of *M. telescopicus* by SERÈNE (1981: 1139–1140) who examined the type specimen of *M. verreauxi* preserved in the Museum National d'Histoire Naturelle, Paris. Accordingly, the species distinct from true *M. verreauxi* (= *M. telescopicus*) was named *M. kempi* by him. It is unfortunate that this name caused the unexpected problem of homonymy, because there is a subspecies name, *M. convexus kempi* proposed by GRAVELY (1927: 150). According to BARNES (1970: 214), this subspecies is without doubt a synonym of *M. parvimanus* GUÉRIN, 1834. At present, therefore, the substitute name, *M. serenei*, is proposed in conformity with Article 60 (c) of the International Code of Zoological Nomenclature.

In Japan this species has been recorded under the name of *Macrophthalmus*

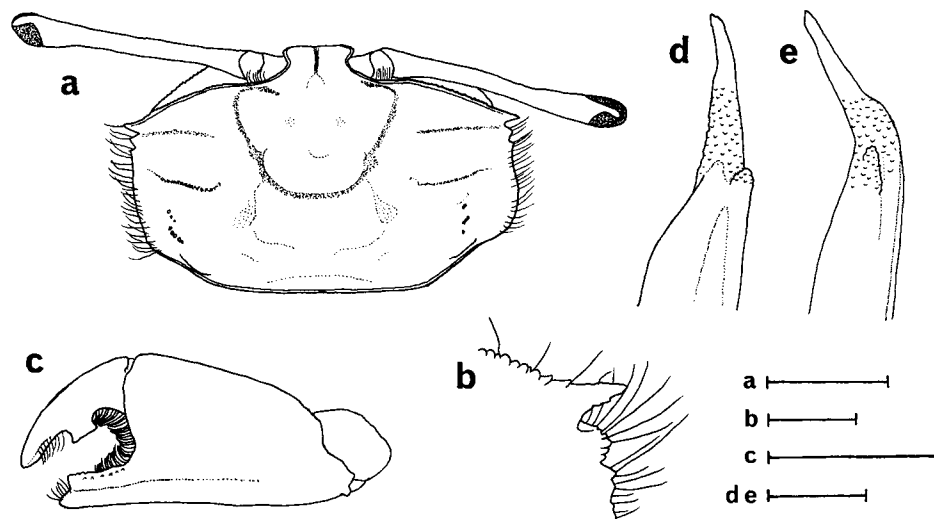


Fig. 3. *Macrophthalmus serenei* nom. nov., ♂ from Ishigaki-jima Island. a, Carapace, with ocular peduncles, in dorsal view; b, anterolateral teeth of right side; c, left chela in outer view; d and e, tip of male first pleopod of left side, with removal of setae, in dorsal and inner view, respectively. (Scales: 5 mm in a and c; 1 mm in b; 0.5 mm in d and e)

*telescopicus* (OWEN) by SAKAI (1934: 320, 1939: 623–624) or *M. verreauxi* H. MILNE EDWARDS by SAKAI (1976: 610–611; 378), ranging from the Izu Peninsula south to the Ryukyu Islands. In the National Science Museum, Tokyo, there is only a male from Ishigaki-jima Island collected with a male identified with *M. milloti*. The following diagnostic notes are taken from the male (NSMT-Cr 4782).

The formation of carapace is very close to that of *Macrophthalmus milloti*, with the first anterolateral (=external orbital) tooth projecting distinctly beyond the following anterolateral teeth (Fig. 3a, b). The ocular peduncle is considerably long, about 1.2 times as long as carapace, projecting beyond the first anterolateral tooth by about distal two-fifths. The chela is also very similar to that of *M. milloti*, with probably variable difference in the shape of immovable finger (Fig. 3c). The terminal process of the male first pleopod is markedly elongate and tubular, with short and stout thumb.

Distributed in the Indo-West Pacific from the western Indian Ocean and the Red Sea to Australia and Japan. Littoral inhabitant.

#### *Macrophthalmus telescopicus* (OWEN, 1839)

This species was first reported from Japanese waters by TAKEDA (1977: 133–134) who mentioned that SERÈNE (1973) and BARNES (1976) revised the status of three sibling species of the genus *Macrophthalmus*, *M. milloti* CROSNIER, *M. telescopicus*

(OWEN), *M. verreauxi* H. MILNE EDWARDS (now *M. serenei* nom. nov. through *M. kempfi* SERÈNE). Among them this species is most remarkably different from the other two species in having the first anterolateral (=external orbital) tooth not projecting beyond the following anterolateral teeth and in the absence of a long terminal process of the first male pleopod. EDMONDSON (1962: 20–21) and CROSNIER (1975: 737–739) gave an available description and fine figures, respectively.

BARNES (1976: fig. 4) figured the distribution map of this species: Hawaii, New Guinea, Torres Straits, Fiji and some other localities in the West Pacific, and also Zanzibar and Comoro Islands in the western Indian Ocean. In Japan this species is recorded from the Ogasawara Islands (TAKEDA, 1977), and Tanabe Bay (WADA, 1978) and Kushimoto (NAGAI, 1990) at the southern coast of the Kii Peninsula, central Japan. There are some specimens in the National Science Museum Tokyo: 1 ♂ (NSMT-Cr 2605) from unknown locality, 1 ♂, 2 ♀♀ (NSMT-Cr 5548) from the Ogasawara Islands reported by TAKEDA (*op. cit.*), and 1 ♂ (NSMT-Cr 6450) from Kushimoto dredged up by the R/V *Tansei Maru* of the Ocean Research Institute, University of Tokyo during her cruise KT-79-18 and offered by Mr. E. TSUCHIDA. Sublittoral inhabitant.

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