MINISTERIE VAN ONDERWIJS, KUNSTEN EN WETENSCHAPPEN

ZOOLOGISCHE MEDEDELINGEN

UITGEGEVEN DOOR HET

RIJKSMUSEUM VAN NATUURLIJKE HISTORIE TE LEIDEN

Deel 40, no. 31 11 november 1965

ON THE PORTUNID CRAB PODOPHTHALMUS MINABENSIS SAKAI, 1962 [1])

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With 2 text-figures

The genus *Podophthalmus* Lamarck, 1801, includes only three species, one of which, *Podophthalmus minabensis,* has only recently been described by Sakai (1962) from a single damaged specimen collected from the coast of Japan. A second specimen, collected by the R.V. "Cape St. Mary" of the Fisheries Research Station, Hong Kong, from off the coast of Sarawak enables the description of the species to be completed and adds to the knowledge of its distribution. The specimen has been deposited at the British Museum (Natural History), London.

Podophthalmus minabensis Sakai (fig. 1-2)

Podophthalmus minabensis Sakai, 1962: 144, text-fig. 2e, pl. 3 fig. 1.

Material examined. — 1 ♀, non-ovigerous, lacking left first pereiopod. Off Sarawak, Borneo, 2° 51.5′ N 110° 16.8′ E to 2° 51.0′ N 110° 17.0′ E, Granton Trawl, 26-27 fms, bottom sandy mud; R. V. "Cape St. Mary", Cr. 7/64, Stn. 86, Trawl T./267, 16 November 1964; coll. R. J. G. Lester.

Description. — The specimen agrees almost exactly with Sakai's description. A few small additional points or differences may be noted. The antero-lateral border of the carapace is denticulated along the lateral two-thirds and the inner third is feebly granular and almost smooth. The posterior margin of the antero-lateral tooth is almost straight and not convex as in the holotype. The postero-lateral angle of the carapace is gently rounded. The anterior third of the inferior orbital margin is convex and finely granulated and ends medially in a small tooth. The middle third is almost straight and smooth and the lateral third is strongly concave and hirsute, and curves

1) Contribution Number 10 from the Fisheries Research Station, Hong Kong.

anteriorly to blend with the ventral aspect of the antero-lateral spine. The pterygostomial region is smooth and there is a small process situated close to the lateral end of the inhalent aperture, which is widened transversely.

The basal antennular segment bears a low transverse ridge separating its anterior and ventral aspects. The short basal antennal segment projects into the orbit and possesses a small disto-lateral ridged process. The meropodite

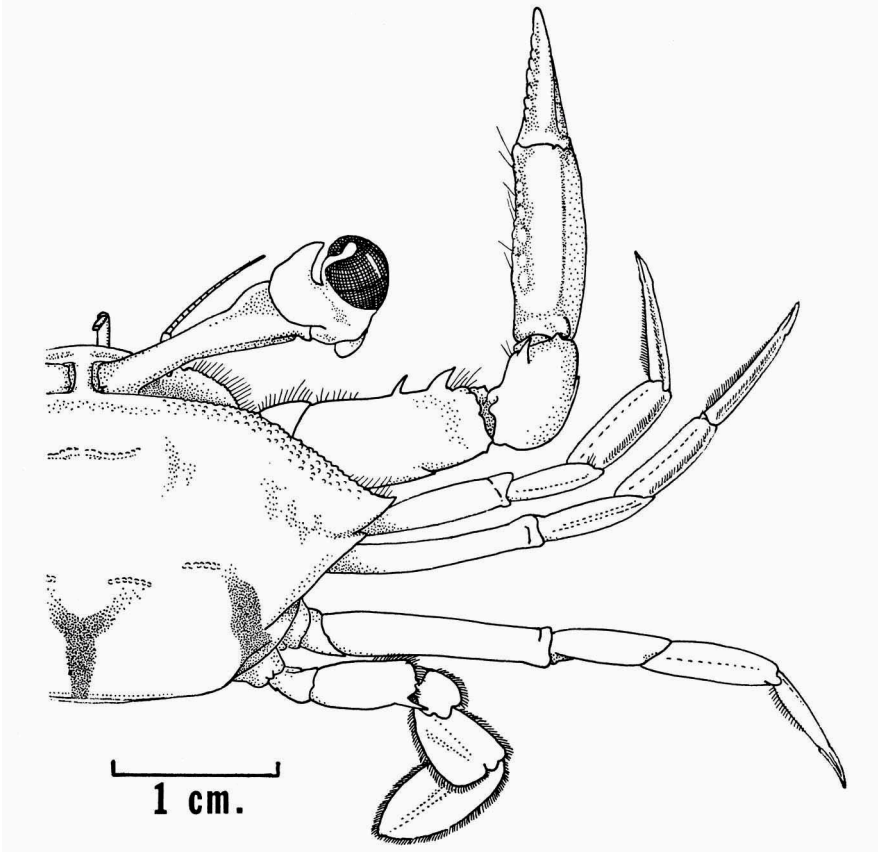

Fig. 1. *Podophthalmus minabensis* Sakai, female, dorsal view of right side.

of the third maxilliped is of similar length to the exopodite and its disto-lateral angle is broadly rounded.

The ischium of the first cheliped has a smooth convex setose anterior border. The merus is armed with two strong spines on the sharp anterior border, a stronger laterally curved spine, at about a quarter of its length from the distal end and a weaker spine at its midpoint. The posterior border bears a smooth distal prominence and a strong spine, intermediate in size between the two anterior spines, at the end of its proximal two-thirds. The

ventral border bears a small acute distal process only. The carpus is smooth and bears a strong spine on the middle of its inner border. The lower external border bears a carina which terminates distally in an acute tooth. The chela is strongly compressed and its maximum length is about two and one-fifth times its maximum depth. The dactyl is about four-fifths of the length of the palm and is similarly compressed. The inner dorsal margin of the palm bears a row of 7 or 8 coarse tubercles with a few smaller tubercles on its medial aspect. The tubercles increase in size distally. The outer margin of the dorsal surface of the palm bears a longitudinal carina that runs from the tubercle at the carpo-propodal joint to the tubercle present at the dactylo-

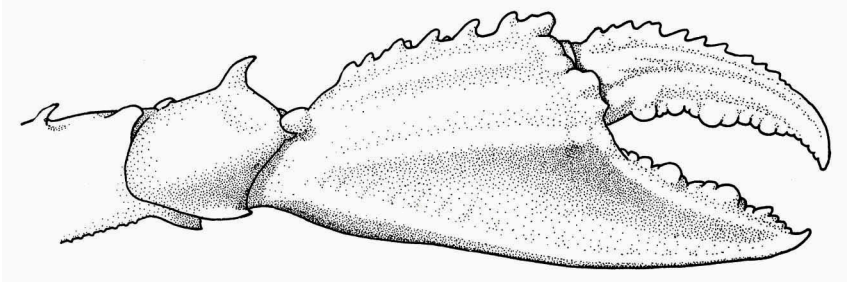

Fig. 2. *Podophthalmus minabensis* Sakai, female, carpus and chela of right cheliped.

propodal joint. The lateral aspect of the palm bears a similar carina extending anteriorly across its middle and subparallel to the upper carina. The surface between the two carinae is finely pitted. A ventral marginal carina is present and extends along the ventral margin of the fixed finger. The expanded proximal ventral part of the palm is feebly granulated. The lateral surface of the fixed finger is slightly concave. The inner border of the palm bears a single feeble longitudinal ridge. The fixed finger bears three groups of rounded, bilaterally compressed teeth which decrease in size distally. The dactyl is strongly curved and has a row of tubercles along the proximal two-thirds of its dorsal margin similar to those of the palm but smaller, and decreasing in size distally. A dorso-lateral carina continuous with that of the palm is also present. Its inner border bears a central curved row of small pits only. The teeth are similar to those of the fixed finger but smaller and in less distinct groups.

The fifth pereiopod has a merus with a well-developed posterior distal marginal spine. The merus is two and two-thirds longer than wide with a feebly setose anterior border and non-setose posterior border. Its distal margin, medial to the distal spine, is strongly setose. The remaining segments are smooth and devoid of carinae except for a feeble central carina on the dactylopodite. All have strongly setose borders. The maximum width of the

propodite is 0.6 times its length and the maximum width of the dactylopodite is 0.5 times its length.

Colour pattern. — Generally very pale yellow brown. The posterior half of the carapace bears a Y-shaped median streak of red brown and tapering streaks of similar colour extend anteriorly from the margins of the carapace above the fifth pereiopodites. The margins of the three laminae of the eyestalks are similar in colour, as are the borders of the dactylopodite and propodite of the fifth pereiopodites. The setae of the anterior borders of the dactylopodites and propodites of the second to fifth pereiopods are bright red in colour. The ventral surfaces are white. The cornea is dark brown.

Measurements. — Carapace width, 36 mm; carapace length, 23 mm; length of chela, 23.5 mm.

Ecological data. — The single specimen was obtained from a depth of 26-27 fms on a sandy-mud bottom. The bottom water temperature was 25.6° C. The salinity was 32.43‰, and the oxygen concentration 3.12 cc./ litre (67% saturated).

An interesting associated decapod and stomatopod fauna was obtained and included the following species: *Solenocera pectinata* (Bate), *Trachypenaeus pescadoreensis* Schmitt, *Metapenaeopsis toloensis* Hall, *Sicyonia lancifer* (Olivier), *Alpheus* sp., *Spiropagurus spiriger* (De Haan), *Scyllarus martensii* Pfeffer, *Thenus orientalis* (Lund), *Calappa gallus capellonis* Laurie, *Calappa terrareginae* Ward, *Oreophorus* sp., *Nursilia dentata* Bell, *Randallia eburnea* Alcock, *Iphiculus spongiosus* Adams & White, *Myra fugax* (Fabricius), *Myrodes eudactylus* Bell, *Arcania quinquespinosa* Alcock & Anderson, *Arcania undecimspinosa* De Haan, *Ixa investigatoris* Chopra [1]), *Ixiodes cornutus* McGilchrist, *Leucosia* sp., *Cryptopodia spatulifrons* var. *laevimana* Miers, *Portunus gracilimanus* (Stimpson), *Portunus hastatoides* Fabricius, *Portunus tuberculosus* (A. Milne Edwards), *Charybdis cruciata* (Herbst), *Charybdis miles* De Haan, *Pilumnus sinensis* Gordon, *Hyastenus diacanthus* (De Haan), *Naxiodes hystrix* Miers, *Phalangipus* sp., *Squilla microphthalma* H. Milne Edwards, *Squilla lirata* Kemp & Chopra, *Squilla gonypetes* Kemp, *Squilla quinquedentata* Brooks.

No other invertebrates were recorded. The fish fauna included the following species: *Chiloscyllium indicum* (Gmelin), *Temera hardwickii* Gray, *Synodus hoshinonsis* Tanaka, *Saurida tumbil* (Bloch), *Fistularia petimba* Lacépède, *Epinephelus chlorostigma* (Valenciennes), *Caranx malabaricus* (Bloch & Schneider), *Apogon kiensis* Jordan & Snyder, *Apogonichthys ellioti* (Day), *Siphamia* sp., *Nemipterus* sp., *Dipterygonotus leucogrammicus*

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[1]) It may be noted that this is only the second record of *Ixa investigatoris*.

Bleeker, *Pentaprion longimanus* (Cantor), *Leiognathus bindus* (Cuvier & Valenciennes), *Chromis* sp., *Upeneus bensasi* (Schlegel), *Parupeneus cinnabarinus* (Cuvier), *Arnoglossus tapeinosoma* (Bleeker), *Arnoglossus* sp., *Grammatobothus polyophthalmus* (Bleeker), *Engyprosopon grandisquama* (Temminck & Schlegel), *Cynoglossus* sp., *Champsodon capensis* Regan, *Pterois volitans* Linn, *Monacanthus* sp., *Triacanthus strigilifer* Cantor, and *Diodon maculifer* Kaup.

Discussion

The further discovery of a second specimen of *Podophthalmus minabensis* Sakai in the southern South China Sea indicates that the distribution of the species is not limited to the region of Japan and that it extends almost to the equator. The species appears to occur in deeper water than *P. vigil* (Fabr.) which has been reported from 5 to 10 fms (Stephenson & Campbell, 1960) and 5 to 15 metres (Crosnier, 1962).

The general form of the cheliped shows numerous differences from that of *P. vigil.* The depth of the palm is much greater and the tuberculate carina along the inner dorsal border of palm and dactylopodite is quite distinct from the form in *P. vigil,* in which it is simple. The number of spines is reduced in *P. minabensis* and both the palmar spines found laterally at the articulation with the carpus, and internally, proximally to the dactylar hinge in *P. vigil,* are absent. The distal inner meral spine found in *P. vigil* is also lacking and the distal outer spine is much reduced. The ratio of carapace breadth to length is 2.0 : 1 or more in *P. vigil* and *P. nacreus* Alcock, the only other species of the genus, whereas in *P. minabensis* it is 1.5 : 1. It would appear, therefore, that *P. vigil* (Fabr.) and *P. nacreus* Alcock, are more closely related to each other than to *P. minabensis* Sakai.

Acknowledgment

W. L. Chan, of the Fisheries Research Station, Hong Kong, kindly identified the ichthyofauna.

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