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BY

K. N. SANKOLLI

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ON A NEW SPECIES OF PORCELLANID CRAB (*DECAPODA, ANOMURA*) FROM INDIA

By K. N. SANKOLLI
Marine Biological Research Station, Ratnagiri

ALONG the Maharashtra Coast, Ratnagiri is fairly rich in anomuran fauna, especially the porcellanid crabs. Hence, it was decided to study the porcellanid forms of this area. In Ratnagiri, the family Porcellanidae is represented by two undescribed species and several other known species. Of the two new species, the one, *Polyonyx splendidus* sp.nov. is being published elsewhere and the other belonging to the genus *Porcellana* is dealt with here in the present paper.

Porcellana gravelei sp.nov.

Synonymy : *Pachycheles* sp. Gravely, 1927, p. 140, Krusadai Island, pl. xx, fig. 9.

Diagnosis : Carapace longer than broad, covered with minute horizontal plications, except on urogastric and cardiac regions and on the middle of posterior margin, protogastric and hepatic regions well differentiated but protogastric region not divided into two lobes, antennal margin minutely denticulate with four to five slightly larger denticles in the anterior half, about six denticles on hepatic curve and four to five on branchial border ; front minutely serrulate, broadly triangular, deflexed with a shallow median groove, when seen from dorsal ; chelipeds almost subequal, beautifully ornamented with rugae, tubercles, and crests, outer surface with delicate mat of hairs, merus with a large inner lobe whose anterior margin is armed with tubercle-like denticles, an accuminate tooth at the distal end of inner-lower margin ; inner margin of carpus forms a laminar rugose lobe with minute serrulations along the margin and near about its middle with two broad shallow teeth, two longitudinal crests on dorsal, posterior margin with a small distal spine, distal margin with a sort of crest-like elevation ; propodus with a broad shallow crest on the middle, the rugae on the outer one-third of dorsal surface become tubercle-like forming a narrow crest along minutely spinulose posterior margin ; fingers straight, not gaping, their tips cross each other, cutting edge with a large tooth ; merus of walking legs more rugose than other segments, propodus and dactylus each with four spinules.

Description : Carapace (Fig. 1, a) longer than broad, covered with minute horizontal plications or striae all over, except on urogastric and cardiac regions and on the middle of the posterior margin ; delicate mat of hairs on the anterior half ; regions indistinctly accentuated, only anterior regions are more or less clearly visible, protogastric region well differentiated but not divided into two lobes, hepatic region also well differentiated, tufts of hairs on the anterior margin of protogastrie and hepatic regions and along the lateral border of branchial region,

antennal margin minutely denticulate with four to five slightly larger denticles in the anterior half, about six denticles on the hepatic curve and four to five denticles

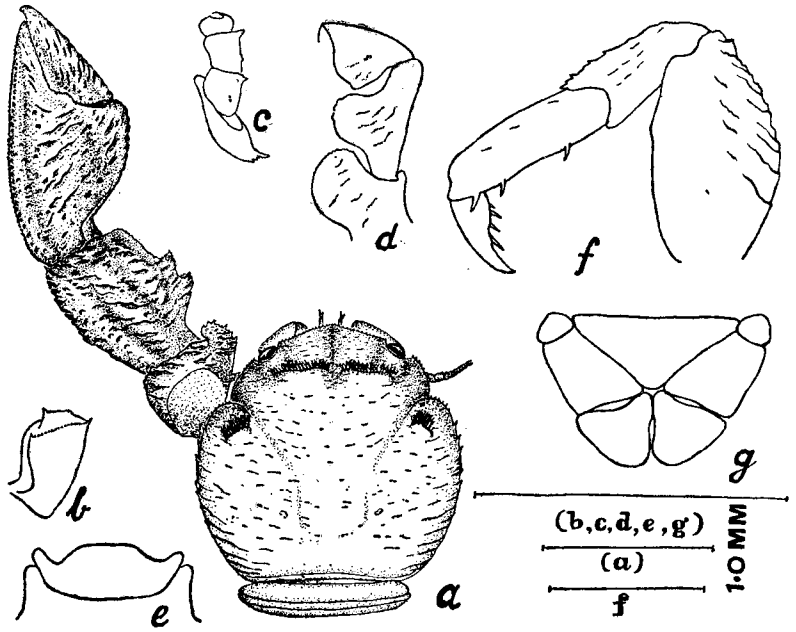

FIG. 1. *Porcellana gravelei* sp.nov. a. dorsal view of animal (right cheliped and legs etc. not shown); b. basal segment of antennule; c. antenna; d. third maxilliped; e. sternum of third maxilliped; f. walking leg; g. telson.

on the branchial border; front minutely serrulated, broadly triangular between the eyes when viewed dorsally and deflexed with a shallow median groove.

Antennule (Fig. 1, b): First segment with its ventral anterior margin minutely serrated, with a tooth on either extremities and a distinct tooth at the inner dorsal angle.

Antenna (Fig. 1, c): First segment broader than long, inner margin terminating in an accuminate spine which is followed by a few minute teeth on the inner side; second segment produced into a prominent pointed lobe-like tubercle at the distal end of its anterior margin and armed with two granular tubercles proximally and one such distal tubercle along the ventro-anterior border; third segment slightly longer than broad and with an accuminate lobe-like spine at the distal end and two much smaller tubercles near the middle of the anterior margin; fourth segment, short and broad.

Third maxilliped (Fig. 1, d): Anterior margin of carpus symmetrical and with undulations, rugae present on the ventral surface of merus, carpus and propodus; sternum (Fig. 1, e) of third maxilliped smaller than that of thoracic, its lateral lobes broad, almost reaching the level of the median lobe whose anterior margin is straight, lateral lobes separated from the central lobe by a shallow broad cleft.

Chelipeds (Fig. 1, a): Almost subequal, left slightly larger than right, beautifully sculptured with rugae, tubercles and crests which are hidden beneath thin mat of hairs in an undenuded specimen, outer surface of merus, carpus and propodus hairy; merus with large inner lobe on the dorsal surface of which the rugae are small and crowded, its anterior margin distinctly armed with tubercle-like denticles, the rugae become larger and less crowded on the remaining portion of the dorsal surface, a prominent accuminate tooth at the distal end of inner lower margin, ventral surface smooth; inner margin of carpus forms a well developed laminar rugose lobe with minute serrulations all along the margin and near about the middle with shallow notches to form two broad teeth, dorsal surface with two longitudinal crests, the one near the inner lobe being less prominent proximally and continuing almost to the distal margin while the other on the middle just fades away towards the distal one-third, the rugae on these two crests are large, they become small and acute towards the posterior margin which distally terminates in a small but distinct spine; distal margin also slightly raised in the middle to form a sort of a small shallow crest-like elevation, the middle portion of propodus raised to form a broad longitudinal but comparatively shallow crest, on which the rugae are larger, the rugae become smaller and more crowded along the inner one-third whereas on the outer one-third they tend to become small, rounded anteriorly directed tubercle-like, especially along the posterior margin they become acute to form a sort of narrow crest along the minutely spinulose posterior margin, this crest continues almost beyond the proximal two-thirds of the fixed finger which is provided with minute rugae and punctae, ventral surface provided with minute punctae; movable finger longer than the fixed finger, armed with rugae almost to its distal end and the rest of area provided with minute punctae; cutting edge of fixed finger armed with three or four minute tubercle-like teeth in the proximal half and a large prominent tooth at the middle, that of movable finger with a large tooth at the base and a few minute tubercle-like teeth distally; finger tips slightly bent and cross each other leaving no gap between them.

Walking legs (Fig. 1, f): Merus more rugose than the remaining segments; propodus and dactylus, each with four spinules.

Telson (Fig. 1, g): Consists of seven plates, the central one being the largest and the anterior ones being the smallest.

Material examined: 18 specimens of varying sizes could be collected from Mirkarwada, Ratnagiri.

The holotype specimen will be, in due course, deposited in the collection of the Zoological Survey of India Museum, Calcutta.

Measurements: Of the material examined, in connection with the present study, males were found to be ranging from 2.00 to 2.5 mm.; females from 2.2 to 2.7 mm. and ovigerous females from 3.00 to 3.5 mm.

Colour in live condition: Majority of the specimens were yellowish-brown and a few were greyish-brown.

Ecology: The new species is generally found underneath the loose stones covered with sea-weeds and often encountered with *Porcellana ornata*. It is rather sluggish as far as its locomotion is considered and is well camouflaged to its brownish

surroundings of the underside of the stones where it generally inhabits. The species appears to prefer relatively much lower level in the intertidal zone.

So far, berried females could be collected from March to May.

Remarks : Gravely (1927) has given a figure of *Pachycheles* sp. in which the long basal segment of the antenna separates the movable segments from the orbit. This characteristic is indicative of the genus *Porcellana* and it may be, therefore, assumed that his *Pachycheles* is *Porcellana* and probably the new species.

Dr. (Miss) Janet Haig of Allan Hancock Foundation, California, feels that the morphological characters of the species are sufficiently diagnostic for warranting an eventual creation of a new genus, but for the time being she feels it best to place it in the genus *Porcellana* (Personal communication, 1962). I have, accordingly placed the new species in the genus *Porcellana.*

I am thankful to Dr. (Miss) Janet Haig of California and Dr. L. B. Holthuis of the Rijksmuseum van Natuurlijke Histoire, Leiden, for their opinions as regards the confirmation of the new species. I am also grateful to Dr. C. V. Kulkarni, Director of Fisheries, Bombay, and Dr. H. G. Kewalramani, Senior Scientific Officer, Bombay, for their constant encouragement and guidance during the course of the study.

Reference

Gravely, F. H. 1927. The littoral fauna of Krusadai Island in the Gulf of Manaar. Orders Decapoda (except Paguridea) and Stomatopoda. *Bull. Madras Govt. Mus.*, (*n.ser.*) (*nat. hist. sect.*) **1** (1) : 135-155.