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A NEW GENUS AND SOME NEW SPECIES
OF CRABS FROM SIMODA

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A New Genus and Some New Species of Crabs from Simoda

By

Tune SAKAI

[With Plate XIII, and 3 Text-figures]

(Received March 16, 1933)

The new forms of crabs here described were obtained in Simoda Marine Biological Station* of Tokyo Bunrika Daigaku, and its adjacent coast. They form an important addition to the Japanese carcinological fauna. The new genus "*Schizophroidea*" is founded on an old Hawaiian species which had been referred to the genus "*Schizophrys*." The genus "*Caphyra*" ranges in Indo-pacific in about 14 species, but the record of its occurrence in the Far East is new. The genus "*Parapinnixa*" was hitherto confined to America and contains 5 species, but one of these, *Parapinnixa affinis* Holmes, is now known from Aomori Bay** ; our new species is very small and free living in habit.

The new species are as follows :

Fam. Majidae.

Schizophroidea simodaensis n. g. n. sp.

Schizophroidea manazuruana n. g. n. sp.

Fam. Portunidae.

Caphyra yo-okadai n. sp.

Fam. Pinnotheridae.

Parapinnixa asiatica n. sp.

SCHIZOPHROIDA n. gen.

Carapace elongate triangular, smooth and nongranulose. Rostral horns straight, slender; no accessory spines. Supraocular eave

* Established in 1932 at Simoda, Izu Peninsula, central Japan.

** Yokoya, Y. 1928. Report on the Biological Survey of Mutu Bay, 10, *Brachyura* etc. p. 773.

moderately prominent, ends in an acute spine at the posterior angle; postocular spine simple, and a sharp spine intercalated between the two. Five marginal spines behind the postocular spine, and two on the posterior margin in a pair.

Chelipeds slender and smooth, carpus long, spinous or nonspinous; fingers not exavated at the tip. Ambulatory legs stout, each segment cylindrical, and decrease gradually in length. Inner border of the outer maxillipeds strongly serrated. Eyes and basal antennal joints as in "*Schizophrys*."

I propose to create this new genus for two new species in hands to distinguish them from "*Schizophrys*." Dr. Rathbun's *Schizophrys hilensis** may properly be referred to the present genus. The new genus shows transition to "*Leptomithrax*," but is distinguished by the shape of eyestalk and cornea, and also by the absence of granules upon the carapace.

Key to species of both genera, *Schizophrys*
and *Schizophroida*.

- A. Accessory spines on rostrum and postocular spine.
 - B. Upper surface of the carapace tuberculate, and spinulose as well as merus and carpus of chelipeds.
 - C. One accessory spine on each outer border of rostral horns, carapace rather orbicular in shape.
 -*Schizophrys aspera* (M. Edw.).
 - CC. Two accessory spines on each outer border of rostral horns, carapace much more elongate.
 -*Schizophrys dama* (Herbst).
 - AA. No accessory spines on rostrum and postocular spine. Carapace elongate, not tuberculate.
 - B. Chelipeds smooth, ambulatory legs densely hairy. Rostral horns less than one fourth of the carapace in length.
 - C. Carapace hairy, three gastric spinules in a narrow triangle and a branchial spine is present.
 -*Schizophroida hilensis* (Rathbun).

* Rathbun M. J. 1906. *Brachyura and Macrura of the Hawaiian Islands*, P. 882, fig. 38.

CC. Carapace smooth, no tubercles or spines on the carapace.

.....*Schizophroidea manazuruana* n. g. n. sp.

BB. Carpus of chelipeds spinous, legs sparsely hairy. Rostral horns more than one fourth of the carapace length proper.

.....*Schizophroidea simodaensis* n. g. n. sp.

Schizophroidea simodaensis n. g. n. sp. (Pl. XIII, fig. 1).

* Carapace elongate triangular, smooth, no spines or granules upon it. Five marginal spines are on the lateral margin behind the postocular spine, of which one on the hepatic margin is the most prominent, and the last one is deviated inwards upon the carapace. One small spine is on the intestinal slope and two spines on the posterior margin in a pair; they form a triangle with the base backwards. Postocular spine is simple and acute, supraocular eave is armed with a spine at the posterior end and an intermediate spine between the two. Rostral spines are long, slender and simple, one third as long as the carapace length proper.

Basal antennal article is stout, curved outwards, armed with two acute terminal spines, and also with a stout tooth at the base near the postocular spine; moving part very long and exceeds the length of the rostral horns. Eye-stalks are stout, cornea terminal, not ventral in position. There are two or three spinules on the posterior part of the oblique ridge separating pterygostomian from sub-hepatic region, four or more also on the latter region, the outermost of which are seen from above on the sides of the hepatic spine.

In the external maxillipeds, the merus is rather broader than the ischium owing to its expansion at the antero-external angle, the palp is attached to the antero-internal angle and is stout. Chelipeds are longer than any of the ambulatory legs (σ), carpus nearly as long as merus and is armed with spinules on the upper surface; palm long, slightly inflated, fingers are acute, half as long as palm and leave a narrow hiatus at the base, which is interrupted by two teeth, each of which is situated at the base of the fixed and movable fingers.

Ambulatory legs are stout, hairy; merus is as strong as in cheliped, and each segment is banded with deep red and whitish yellow.

Measurements:—Carapace length 16.5, width 13, cheliped 30, first ambulatory leg 26, rostral horn 6.5 (mm).

Locality:—Akane, near Simoda 1 ♂ (littoral).

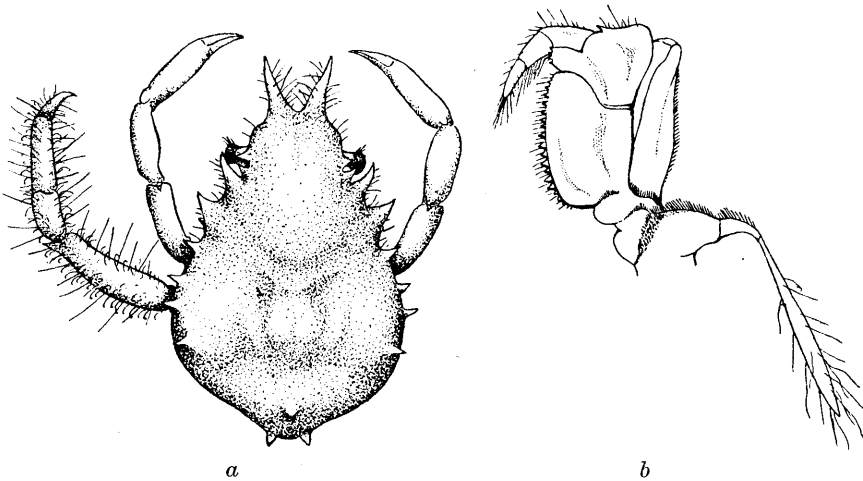
Schizophroida manazuruana n. g. n. sp.

This species is very near to *S. hilensis* (Rathbun), and is distinguished from *S. simodaensis* in the following particulars:

- (1) rostral horns are short, less than one fourth of the carapace length proper.
- (2) chelipeds are as in *S. hilensis*, each segment is smooth and has no granules or spines, total length not much exceeding the ambulatory legs.
- (3) ambulatory legs are more hairy than in *S. simodaensis*, hairs being of two kinds.....one long and sparse, the other short and hooked. Each pair is more stout than in *S. simodaensis*.

This species seems to be an intermediate form between *S. simodaensis* and *S. hilensis*.

Measurements:—Carapace length 14, rostral horn 3.1, carapace width 11, cheliped 16, first ambulatory leg 15.5 (mm).



Text-fig. 1. *Schizophroida manazuruana* n. g. n. sp.

- a. General view ($\times 3$).
- b. Outer maxilliped.

Locality:—Manazuru in Sagami Bay, 25 fms, 1 ♂ coll. by Mr. Yositaro Tuyuki.

Genus CAPHYRA Guérin.

Milne Edwards, A. 1873. Nouvelles Archives de Muséum d'histoire naturelle de Paris, vol. 9, p. 172.

Haswell W. A. 1882. Catalogue of the Australian stalk- and sessile-eyed crustacea, p. 82.

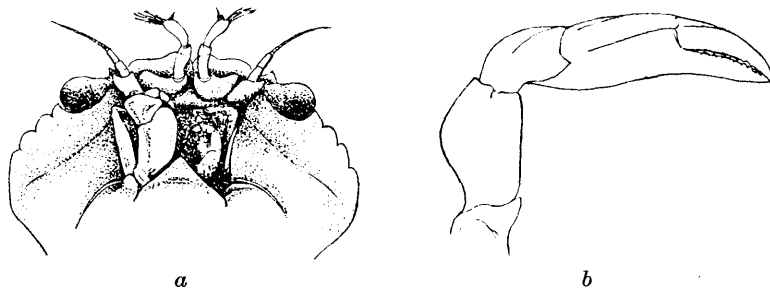
*Caphyra yo-okadai** n. sp. (Pl. XIII, fig. 3).

Carapace rounded hexagonal, smooth and shining, median part convex. The body is well calcified except the ambulatory legs. Colour in life is whitish pink, brown or white dots being visible under magnifying glass. Brown mottled speckles are on the upper and lower surface of the carapace in pairs: two are on protogastric regions and also a pair behind them on the median part; two are on each antero-lateral margin, sometimes joined with each other, and a small one inside of them; two pair of light coloured ones on the postero-lateral margins and a small one inside of them; and a pair on the cardiac region, sometimes fused together. On the ventral side, a pair is on the suborbital region and one or two on the sub-hepatic region.

Antero-lateral margins are divided into four broad teeth with three slight indentations, from the last of which, a fine transverse ridge is seen running inwards. Also a pair of short transverse ridges are found on the protogastric regions, but are not so distinct to the naked eye and are sometimes diminished. Front undulate in four lobes, median notch is quite distinct, and is separated on the sides from the orbital angles by a wide angular fissure.

Eye-stalk short and robust, cornea well pigmented. Basal joint of antenna is broadened distally and a small process is on its outer extremity, the flagellum being shut out from the orbit; basal article of antenule is exceedingly massive, and fits almost transversely in the antenular fossette, which is not bordered anteriorly and continues forward to the front.

* My hearty thanks are due to Dr. Yo Okada of the Kyoto Imperial University, to whom this dainty crab is dedicated, for his courtesy in sending me useful literature.



Text-fig. 2. *Caphyra yo-okadai* n. sp.

- a. Anterior region from below, left outer maxilliped is removed ($\times 7$).
 b. Cheliped ($\times 7$).

Male abdomen has 5 segments, 3rd to 5th being fused together, the third segment is widest and an obscure suture is left on the sides between it and the fourth. Female abdomen broad, seven-segmented, and covers the whole surface of the sternum. Chelipeds stout, no spines or teeth on each segment, besides a dull process on the inner extremity of carpus; propodus is carinate longitudinally on the upper surface; fingers are compressed, armed with minute denticles on the inner ridges, and a slight hiatus is left between them.

Ambulatory legs are thin and slender, subequal in lengths; the last pair is dorsal in position as in other species of this genus. Each pair has no armature on any segment; a row of feathered hairs are on the anterior border of propodus of the last pair. All dactyli are sickle-shaped.

Measurements:—Largest female, carapace length 7.5, width 9.5 (mm).

Locality:—Susaki, near Simoda, 1 ♂ coll. by Mr. Kumano; 3 ♀ by the author; they were all captured from a single colony of *Alcyonium* sp., among the branches of which they were symbiotically living.

Relationship:—

This species closely resembles *Caphyra alata* Richters*, but is distinguished by its broader carapace, and the four frontal lobes are subequal and wavy, arranged in one plane, only the median incision being more notable.

* Klunzinger, C. B. 1913. Die Rundkrabben (Cyclometopa) des Roten Meeres, p. 371.

Remarks:—The antero-lateral teeth of the carapace are not constant in shape and number; one female has three broad teeth, another female has the second of very small size. These facts seem applicable to Milne Edwards' *C. laevis*, as alluded to by the same author*.

Genus PARAPINNIXA Holmes.

Rathbun, M. J. 1918. The grapsoid crabs of America, p. 107.

Schmitt, W. L. 1921. The marine decapod crustacea of California, p. 255.

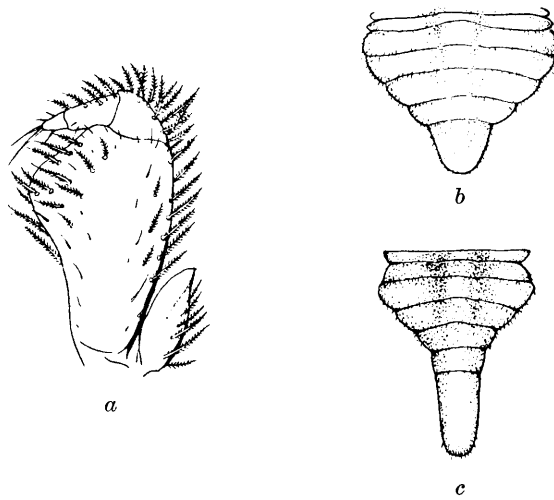
Parapinnixa asiatica n. sp. (Pl. XIII, fig. 2).

Carapace much wider than long, the proportion being 1:1.6; well calcified, smooth, and steeply rounding downward fore and aft. Antero-lateral margins are moderately rounded, and fringed with short pubescence from the posterior margin of the orbit to the lateral angle; similar pubescence border the carapace and rostrum on the inter-orbital line, and is dilated forwards mesially, the front being divided into two naked, concave portions.

Buccal cavern is small and triangular. Outer maxillipeds are sparsely covered with feathered hairs; exognath small, foliaceous in shape, not exceeding one third the length of the endognath. Ischio-merus joint broad, dilated on the antero-internal angle, palp is moderately stout, terminal segment jointed at the tip of the penultimate joint and furnished with several setae at the tip. (Text-fig. 3a).

Abdomen has seven distinct segments in both sexes, with the third segment widest; terminal segment is oblong, especially in the male (text-fig. 3 b, c). Chelipeds stout, merus trigonal, with margins hairy; carpus and propodus rounded, moderately hairy; fingers trigonal in shape, slightly incurved at the tip. First two pairs of ambulatory legs are long and stout, nearly twice as long as the carapace width, and are subequal in total length or the second pair is a little smaller; the third pair is distinctly more slender and does not exceed the propodus of the preceding pair. These three pairs have dactyli of the same length and shape. The last pair is very small, not overreaching the merus joint of the third pair.

* Compare de Man 1887. Arch. f. Naturg. Bd. 53, p. 337.



Text-fig. 3. *Parapinnixa asiatica* n. sp.

- a. Outer maxilliped ($\times 90$),
 b. Female abdomen (enlarged).
 c. Male abdomen (enlarged).

Measurements:—Largest male, carapace length 1.8, width 2.8 (mm).

Relationship:—

Closely related to *P. bouvieri* Rathbun (loc. cit. p. 111, pl. 25, figs. 4-10); however, beside other points of difference, the new species is distinguished by having no lines of long hairs on the second and third ambulatory legs.

Locality:—Akane, near Simoda, 5-10 fms, attached to the seaweed (*Acanthopeltis japonica* Okamura). σ^{σ} , ♀ .

Explanation of the Plate XIII.

- Fig. 1. *Schizophroidea simodaensis* n. g. n. sp. ($\times 1.8$).
 Fig. 2. *Parapinnixa asiatica* n. sp. ($\times 8$).
 Fig. 3. *Caphyra yo-okadai* n. sp. ($\times 3$).

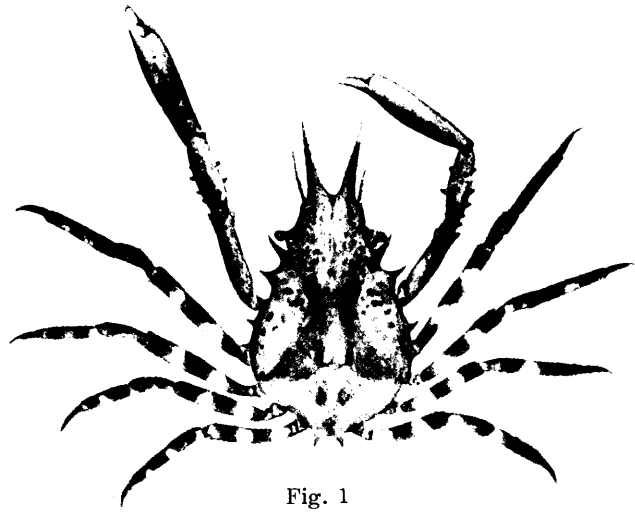


Fig. 1

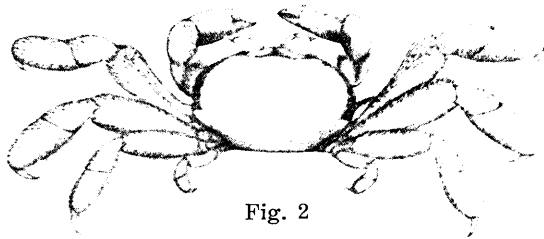


Fig. 2

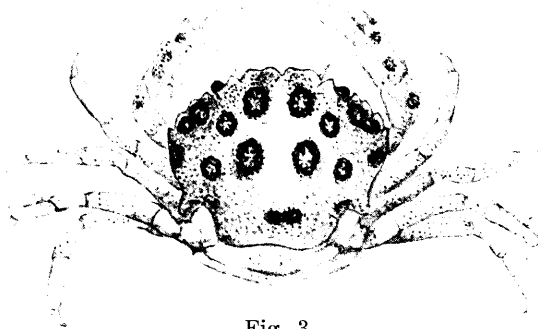


Fig. 3