

IX. — DIAGNOSES OF NEW SPECIES OF MACRUROUS DECAPOD CRUSTACEA FROM THE SIBOGA-EXPEDITION.

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Nematocarcinus tenuirostris Sp. Bate, var. *sibogae* n.

Stat. 300. January 30, 1900. 10° 48'.6 S., 123° 23'.1 E. 918 m. Bottom fine grey mud. 4 adult females, 3 of which are laden with eggs.

In the typical *Nemat. tenuirostris*, as described by Spence Bate (Report Challenger Macrura) and Miss Rathbun (The Brachyura and Macrura of the Hawaiian Islands. Wash. 1906, p. 926, Pl. XXIII, fig. 6), the rostrum is from two-thirds to one-half as long as the rest of the carapace, projecting horizontally forwards, the upper margin is slightly convex and it bears 9—13 dorsal and 1 or 2 ventral teeth. In the adult specimens, collected by the „Siboga” off the south coast of Rotti, the rostrum measures, however, somewhat more than two-thirds the length of the carapace proper and is more or less obliquely turned upward from the orbital margin to the tip; it is styliiform, tapering, quite straight, not at all convex in front of the eyes and armed above with 8—10 teeth, beneath with one and of the dorsal teeth 3 or 4 stand on the carapace, posterior to the orbital margin. Length 146 mm.

Plesionika longipes A. M.-Edw., var. *indica* n.

Pandalus longipes, A. Milne-Edwards, Recueil de Figures de Crustacés nouveaux ou peu connus, Avril 1883, Pl. 20.

Stat. 254. December 10. 5° 40' S., 132° 26' E. Near the Kei-islands. 310 m. Bottom fine, grey mud. 1 male and 8 ova-bearing females.

When the figures in the quoted „Recueil” are indeed correct and accurate, the specimens, collected by the „Siboga”, differ from the typical species that occurs in the West Indies, by the somewhat shorter rostrum, which is less strongly upturned and armed both dorsally and ventrally with a much smaller number of teeth, and by the 1st tooth of the upper margin being only planted at one-ninth to one-tenth the length of the carapace from the orbital margin: they are therefore regarded as a new variety.

Rostrum sometimes almost one and a half as long as the carapace, sometimes the difference is smaller. Postrostral carina obtuse, rising rather suddenly from the middle of the carapace, rostrum at first somewhat depressed, afterwards ascendant, the apex situated at the same level as

the postrostral carina; it is armed dorsally with 27—33 fixed teeth, of which 5, rarely 4 or 6, are planted on the carapace. Orbital spine small, branchiostegal spine still smaller.

Abdomen little longer than carapace and rostrum combined. Posterior border of 3rd tergum convex, little prominent. Sixth abdominal somite about one and a half to almost twice as long as fifth. Telson almost as long as or slightly longer than the two preceding somites combined.

Antennal scale a little longer than two-thirds the length of the carapace, 4-times as long as wide.

Posterior lobe of exopodite of 2nd maxilla rounded. Seventh joint of 2nd maxillipeds applied as a strip to the 6th, six times as broad as long. Exopodite of external maxillipeds well developed.

Legs of 2nd pair slender, equal. Of the three posterior legs the meri gradually diminish a little in length, the carpi and propodi on the contrary increase in length from the 3rd to the 5th; the 5th legs show therefore the greatest length, though they extend a little less forward than the preceding.

Plesionika assimilis n. sp.

Stat. 51. April 19. Madura-bay and other localities in the southern part of Molo-strait. 54—90 m. Bottom fine grey sand; coarse sand with shells. 12 specimens, viz. 3 males, 8 females, 7 of which are egg-laden, and 1 young specimen.

A new species closely related to *Plesion. rostricrescentis* (Sp. Bate), *Plesion. binoculus* (Sp. Bate) and *Plesion. exigua* (Rathbun).

Dorsal crest beginning at the anterior third of carapace, low, not so much elevated as in *Plesion. binoculus* and not so strongly arched as in *Plesion. rostricrescentis*; the rostrum, which is about one and two-thirds to one and three-fourths as long as the carapace, runs at first almost horizontally forward, being but little depressed, as far as the distal extremity of 2nd antennular article and hence it is strongly upturned. The rostrum, which is slender, tapering and not widened at base, is armed dorsally with 7 or 8 proximal and 3 or 4, rarely 2, teeth near the tip, the proximal and the distal teeth being separated by a more or less long, smooth and unarmed interspace; the first five teeth are movable and of these the 5th stands above the orbital margin or just beyond it; the lower margin is armed with 11, rarely 10 or 12, teeth that stand to near the tip. Antennal spine small, branchiostegal spine minute.

Abdomen, telson included, 3-times as long as carapace (in *Plesion. exigua* nearly 4-times). Posterior margin of 3rd tergum a little convex. Sixth somite in the adult one and a half as long as fifth, telson one

and a half as long as 6th and almost as long as 5th and 6th combined.

Eyes of moderate size, transverse diameter as long as or slightly longer than axial, ocellus large, elliptical, in contact at its anterior extremity with the cornea (in *Plesion. exigua* axial diameter longer than transverse, and in *Plesion. rostricrescentis* the ocellus has a circular form). Antennular peduncle reaching to the middle of the antennal scale, which is one-fifth shorter than the carapace, 4,4-times as long as wide and which distinctly narrows anteriorly; stylocerite reaching to the middle of 2nd antennular article (in *Plesion. rostricrescentis* it reaches to the distal extremity of the peduncle).

Legs of 2nd pair unequal, like in the mentioned species, and, like in *Plesion. binoculus*, also the merus and the anterior half of the ischium are annulated. Propodi of the three posterior legs once and a half as long as the carpi; dactyli short, measuring hardly more than one-fifth of the propodi and of a stout shape, 5-times as long as broad at base (in *Plesion. binoculus* the dactyli measure one-third of the propodi and are of a slender form).

Length of ova-bearing female 53 mm. from apex of rostrum to extremity of telson.

Peripandalus nov. gen.

Upon my request Professor E. Ehrenbaum of the „Fischerei-biologische Abteilung des Zoologischen Museums“ in Hamburg has been so kind to examine for me the single type specimen of *Pandalus serratus* from Upolu, which has been described in 1874 by A. Milne Edwards in: Journal des Museum Godeffroy, Heft IV, p. 11 and figured by the same author in the rare work, entitled „Recueil de Figures de Crustacés nouveaux ou peu connus, Avril 1883“, Plate 24. The examination proved that the external maxillipeds are not provided with an exopodite, that there are no epipods on the peraeopods, that the basal lobe (stylocerite) of antennules is rather pointed, though rounded at the tip, and fourthly that the upper edge of rostrum is armed with fixed teeth only. It appears therefore impossible to refer this rare form to any one of the known genera of Pandalidae, for, though agreeing with *Pandalus* Leach s. s. and *Pandalina* Calman in the lack of an exopodite on the external maxillipeds, it differs from both by the absence of epipods on the legs and by the teeth of the upper edge of the rostrum being all fixed, not movable. The stylocerite moreover is not broad, but rather pointed. Like in *Pandalus* and *Pandalina* the second pair of legs are unequal, one is multiarticulate, while the other shows in the figure 5

annulations, being composed of 6 joints. Peræopods rather stout. Antennular flagella of moderate length. Rostrum well developed.

Therefore for *Pandalus serratus* A. M.-Edw. the new genus *Peripandalus* is proposed.

Heterocarpus lepidus n. sp.

Stat. 215a. Octob. 29. West 1000 m. distant from North point of Kabia-island reef. Flores Sea. 500 m. Bottom stone. 1 female without eggs.

Stat. 262. Dec. 18. 5° 53'.8 S., 132° 48'.8 E. Kei-islands. 560 m. Bottom solid bluish grey mud, upper layer more liquid and brown mud. 1 male.

Closely resembling *Heteroc. tricarinatus* Alc. & Anders., but distinguished by the somewhat different toothing of the rostrum and the different form and length of the dactyli of the three posterior legs.

Rostrum strongly recurved, tapering, as long as the carapace, when measured in a straight line from the orbital margin to the apex: in the female it is $\frac{5+3}{10}$ toothed, the 1st tooth of the gastric carina a little behind the middle of the carapace, the 5th above the orbital margin, the 3rd tooth of the rostrum proper a little beyond the middle.

Carapace and abdomen resembling altogether those of *Heteroc. tricarinatus*, the 3rd abdominal tergum in the same manner „bluntly carinate” or rather gibbous, owing to a depression on either side of the middle, the „carina” rather broad, the width in the middle being one-fourth the length.

External maxillipeds reaching in the female by two-thirds, in the male by one-third their terminal joint beyond the tip of the antennal scale and provided with a well developed exopodite. Thoracic legs as in *Heteroc. tricarinatus*, but the dactyli of the 3 posterior legs of a stout shape and considerably shorter: the dactylus of the 3rd pair of legs, for instance, measures in the female one-eighth, in the male one-sixth of the propodus, in the adult male of *Heteroc. tricarinatus* from Stat. 208, however, one-third and the dactylus has here the same slender form as in *Heteroc. gibbosus* Sp. Bate. In the female the legs of 3rd pair project by the dactylus, the propodus and three-fifths of the carpus beyond the antennal scale.

Length of the female 137 mm., carapace 31,5 mm. long, rostrum 32 mm., abdomen 73,5 mm.; the male has the same size as the female.

Heterocarpus ensifer A. M.-Edw., var. *parvispina* n.

Stat. 38. April 1. 7° 35'.4 S., 117° 28'.6 E. Bali Sea. 521 m. Bottom coral. 1 young specimen.

Stat. 105. July 4. 6° 8' N., 121° 19' E. North of Sulu Island. 275 m. Coralbottom. 2 young specimens.

Stat. 254. Dec. 10. 5° 40' S., 132° 26' E. Off the Kei-islands. 310 m. Bottom fine, grey mud. 2 adult males.

In the typical *Heterocarpus ensifer* A. M.-Edw. (vide: M. J. Rathbun, in: U. S. Fish Commission Bulletin for 1903, Part III, Wash. 1906, Pl. XXI, fig. 7) the spine, into which the carina of the 4th abdominal tergum is produced, is but little shorter, when measured from the posterior margin of the somite, than that of the 3rd: in the variety *parvispina*, however, the spine of the 4th somite is considerably shorter and measures only one-fourth of the length of the preceding spine.

In the typical *Heteroc. ensifer* A. M.-Edw., like also in this variety, the carapace appears slightly less high in proportion to its length than in *Heteroc. sibogae* and the first tooth of the postrostral crest is constantly planted a little anterior to the middle of the carapace. The first and the second abdominal terga are not carinate; nevertheless, in the adult species, the first tergum appears slightly angular dorsally, when looked at from behind, but the angle is rounded and smooth. On the 2nd tergum even this angle is rather inconspicuous, so that this tergum appears almost regularly rounded.

Heterocarpus sibogae n. sp.

Stat. 12. March 14. 7° 15' S., 115° 15'.6 E. Bali Sea. 289 m. Bottom mud and broken shells. 10 adult specimens, viz. 4 males and 6 females, 5 of which are ova-bearing.

Stat. 38. April 1. 7° 35'.4 S., 117° 28'.6 E. Bali Sea. 521 m. Bottom coral. 9 young specimens.

Stat. 74. June 8. 5° 3'.5 S., 119° 0' E. Southern entrance of Strait of Makassar. 450 m. (Chart.). Bottom Globigerina ooze. 6 specimens, viz. 1 adult male, 1 ova-bearing female and 4 young individuals.

Stat. 139. Aug. 4. 0° 11' S., 127° 25' E. North of Batjan. 397 m. Bottom mud, stones and coral. 3 adult males and 2 ova-bearing females.

Stat. 212. Sept. 26. 5° 54'.5 S., 120° 19'.2 E. West of Saleyer. 462 m. 2 adult females, one of which with eggs.

Stat. 256. Dec. 11. 5° 26'.6 S., 132° 32'.5 E. Kei-islands. 397 m. Bottom greyish green mud. 7 adult specimens, viz. 2 males and 5 females, 3 of which are egg-bearing.

Stat. 262. Dec. 18. 5° 53'.8 S., 132° 48'.8 E. Kei-islands. 560 m. Bottom solid bluish grey mud, upper layer more liquid and brown mud. 2 adult ova-bearing females.

Stat. 316. Febr. 19, 1900. 7° 19'.4 S., 116° 49'.5 E. Bali Sea. 538 m.
1 ova-bearing female.

A new species closely related to *Heteroc. ensifer* A. M.-Edw. Carapace and rostrum combined little shorter than abdomen. Rostrum, measured in a straight line from the orbital margin to the apex, in adult specimens one-fifth to almost one-third shorter than the carapace, in young individuals longer than it, more or less recurved. Postrostral crest more or less arched and armed together with the upper margin of the rostrum with 15—19, usually 16, teeth, lower margin with 10—12 teeth; first tooth of postrostral crest constantly placed a little posterior to the middle of the carapace. Lateral carinae of carapace precisely as in *Heteroc. ensifer* A. M.-Edw.

First abdominal tergum with a rather high, prominent and sharp carina, that ends abruptly, while its anterior margin is sloping and oblique. Second tergum likewise with a high, prominent and sharp carina, the posterior extremity of which appears more or less acute, the anterior usually abrupt. Third and fourth terga also sharply carinate, the carina, in each, produced posteriorly into a sharp spine; the two spines are equal, rather large, that of the 3rd tergum reaching to the middle of the 4th, that of the 4th to the posterior margin of the 5th, in adult individuals. Abdomen for the rest resembling that of *Heteroc. ensifer* A. M.-Edw.

Appendages also resembling those of this species, but the dactyli of the three posterior legs a little longer. Legs of 3rd pair as long as the antennal scale, 4th and 5th gradually a little shorter; dactyli of 3rd pair in adult specimens a little more than one-third of the propodi.

Length of adult male and female 140 mm.

Heterocarpoides nov. subg.

A new subgenus of the genus *Heterocarpus* A. M.-Edw., proposed for *Dorodotes levicarina* Sp. Bate. This species indeed has all the characters of the genus *Heterocarpus*, excepting the legs of the 2nd pair, that are equal and the carpus of which is composed of 6 joints, of which the 1st is nearly as long as the following taken together, the 2nd—5th equal and very short; it differs moreover from all the known species of *Heterocarpus* by a different carination, the post-antennular carina running uninterruptedly from near the posterior margin of the carapace into the orbital spine, by the post-antennal carina wanting entirely and by the posterior half of the postocular being developed.