

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

BY Dr. J. G. DE MAN.

Family STYLODACTYLIDAE.

*Stylodactylus* A. M.-Edw.

*Stylodactylus Sibogae* n. sp.

Stat. 95. 5° 43'.5 N., 119° 40' E. Sulu Sea. 522 m. Stony bottom. 1 female.

Distinguished from all the other species of the genus by the lower margin of the rostrum being smooth and glabrous. Rostrum horizontally projecting to about the middle of 2<sup>nd</sup> joint of antennular peduncle, armed above with 16 subequal teeth, of which the first six stand on the carapace; these proximal teeth are separated by very short distances, but the rest are contiguous; anterior tooth at one-fifth the length of the rostrum from the acuminate tip. Carapace with small supraorbital, antennal and branchiostegal spine.

Abdomen 6-times as long as the rostrum, 4-times as long as the carapace and a little more than twice as long as carapace and rostrum taken together. The abdomen resembles that of *Stylod. amarynthi* de Man, but the pleura are smooth, quite unarmed, devoid of spines.

Eyestalks cylindrical, almost half as long as carapace, cornea semi-globular, measuring two-thirds the length of the rest of the stalk, distinctly faceted, of a pale grayish colour, blackish near the posterior margin. Antennular peduncle little shorter than carapace, very slender, 10 to 11-times as long as thick, basal joint more than twice as long as the two following combined, 2<sup>nd</sup> one and a half as long as 3<sup>rd</sup>. Antennal scale reaching by one-fourth its length beyond the antennular peduncle, narrow, the greatest width, proximally, being one-sixth the length; outer margin concave, terminal spine reaching beyond the truncate tip of the lamellar portion.

Second and third maxillipeds, like also the peraeopods of the 1<sup>st</sup> and 2<sup>nd</sup> pair, resembling those of *Stylod. amarynthi*, but not armed with small spines. The three posterior legs are of a more slender shape than those of *Stylod. amarynthi*, so e. g. are the merus of 3<sup>rd</sup> pair 11-times, the carpus 4-times and the propodus 11-times as long as broad; dactylus

measuring one-fifth the length of propodus,  $2\frac{1}{2}$ -times as long as broad, with 3 spines posterior to the terminal claw.

Length of rostrum 1,38 mm., of carapace 2,16 mm., of abdomen 8,24 mm., entire length 11,78 mm.

Family PROCESSIDAE.

*Nikoides* Paulson.

*Nikoides Sibogae* n. sp.

Stat. 71. Makassar and surroundings. Up to 32 m. Bottom mud. Sand with mud. 1 young specimen.

Stat. 274.  $5^{\circ}28'.2$  S.,  $134^{\circ}53'.9$  E. East coast of Aru-islands. 57 m. 2 females without eggs.

Stat. 282.  $8^{\circ}25'.2$  S.,  $127^{\circ}18'.4$  E. Anchorage between Nusa Besi and the N. E.-point of Timor. 27—54 m. Bottom sand, coral and Lithothamnion. 1 young specimen.

Closely related to *Nikoides Danae* Paulson from the Red Sea, but probably different, when the figures of the rostrum and of the left simple peraeopod of the 1<sup>st</sup> pair in Nobili's paper (Annal. des Sc. Nat. 9<sup>e</sup> Série, Zool. T. IV, 1906, p. 79, Pl. 5, fig. 1 and 1 f) are indeed accurate.

Rostrum slender, as long as or but little shorter than the eyes, measuring one-third the length of the rest of the carapace; the rostrum is laterally compressed, the lower border appears in a lateral view slightly convex proximally, slightly concave in its anterior half and the height proximally is not yet one-sixth the length; the rostrum ends in two very small teeth, that are comparatively much smaller than in *Nik. Danae*, according to Paulson's and Nobili's figures. The carapace, rostrum included, appears nearly twice as long as high and nearly half as long as the abdomen. Abdomen, without the telson, 4-times as long as the 3<sup>rd</sup> somite is high, resembling that of *Processa canaliculata* Leach, except the telson, that tapers more considerably, the width of the tip being only one-third the width proximally.

Second joint of antennular peduncle 3-times as long as thick and one and a half as long as 3<sup>rd</sup>; stylocerite very short, truncate.

The two last joints of the external maxillipeds are of subequal length and measure together two-thirds of the antepenultimate; the ultimate and four-fifths of the penultimate joint project beyond the antennal scale.

Chelate leg of 1<sup>st</sup> pair like in *Nik. Danae* Paulson. Merus of the simple leg of 1<sup>st</sup> pair more than 8-times as long as broad in the middle, carpus

slender, 4,5-times as long as thick, measuring two-fifths the length of the merus; propodus not yet half as long as merus. [In Nobili's figure of this leg the merus appears only 5-times as long as broad and but little longer than the propodus, the carpus  $2\frac{1}{3}$ -times as long as thick distally and more than half as long as the merus. This leg was not figured by Paulson]. For the rest probably like *Nikoides Danae* Paulson.

Largest specimen 25,2 mm. long, probably not yet full-grown.

Family CRANGONIDAE.

*Pontophilus* Leach.

*Pontophilus occidentalis* Fax., var. *indica* n.

*Pontophilus occidentalis*, W. Faxon, in: Memoirs Museum Comp. Zoology, Vol. XVIII, Cambridge 1895, p. 131, Pl. D, figs. 2—2d.

Stat. 45.  $7^{\circ}24'S.$ ,  $118^{\circ}15.2E.$  Flores Sea. 794 m. Bottom fine grey mud, with some radiolariae and diatoms. 1 young and 2 adult, ova-bearing females.

Stat. 88.  $0^{\circ}34.6N.$ ,  $119^{\circ}8.5E.$  Northern part of the Strait of Makassar. 1301 m. Bottom fine grey mud. 2 females.

Stat. 178.  $2^{\circ}40'S.$ ,  $128^{\circ}37.5E.$  Ceram Sea. 835 m. Bottom blue mud. 1 young female.

Stat. 211.  $5^{\circ}40.7S.$ ,  $120^{\circ}45.5E.$  East of Saleyer Island. 1158 m. Bottom coarse grey mud, superficial layer more liquid and brown. 1 young female.

Stat. 300.  $10^{\circ}48.6S.$ ,  $123^{\circ}23.1E.$  South of Rotti island. 918 m. Bottom fine grey mud. 1 male.

Stat. 316.  $7^{\circ}19.4S.$ ,  $116^{\circ}49.5E.$  Bali Sea. 538 m. Bottom fine, dark brown sandy mud. 2 young and 4 adult, ova-bearing females.

Closely related to *Pont. occidentalis* Fax. from the West coast and to *Pont. gracilis* Smith from the East coast of America.

The typical *Pont. occidentalis* differs by its much larger size, by the abdomen being  $2\frac{1}{2}$ -times as long as the carapace, rostrum included, in the variety *indica* 3-times, and by the anterior of the two gastric spines, on the mid-dorsal line of the carapace, being as large as the posterior, whereas in the variety *indica* the anterior spine is considerably smaller, hardly perceptible by means of an ordinary magnifying glass. Rostrum more or less obliquely turned upward, as long as the eyes or a little shorter, armed with 2, rarely 3, pairs of marginal spines (in *Pont. gracilis* Smith only one pair): the shape of the rostrum is somewhat variable, the

rostrum appearing e. g. in the specimens from Stat. 316 rather narrow, 4,5—6-times as long as broad, in other ones a little broader, less than 4-times as long as broad.

Propodus of anterior legs 4-times as long as wide in the middle. Peraeopods of 2<sup>nd</sup> pair reaching to the middle of the merus of 1<sup>st</sup> pair: chela 2,5—2,7-times as long as the carpus, which is distinctly shorter than the palm; fingers as long as palm, gaping, chela 6-times as long as broad at the articulation of the fingers.

Eyes as large as those of *Pont. gracilis*, the length of the carapace, including the rostrum, being 5,1—5,8-times as long as the greatest diameter of the eye. For the rest this form seems to agree with *Pont. gracilis* Smith, of which it should perhaps with more right be considered as a variety.

Length of the male 35,5 mm., of the adult, egg-laden female 48 mm.

*Pontophilus modestus* n. sp.

Stat. 253. 5° 48' 2 S., 132° 13' E. West of Kei-islands. 304 m. Bottom grey clay, hard and crumbly. 2 specimens.

The specimens are of unequal size and do not fully agree with one another, so that the larger is described as the type.

This specimen is 21,35 mm. long, carapace 5,2 mm., abdomen 16,15 mm. Carapace and abdomen smooth, the carapace 1,6-times as long as broad, rostrum included. Rostrum  $\frac{1}{3}$  the length of the rest of the carapace, reaching to the middle of the eyes; it is narrow, 3,75-times as long as wide in the middle, anterior margin straight, truncate, measuring one-third the length; the rostrum is hollowed dorsally. Orbital spine small, antennal spine reaching beyond the eyes, slightly divergent, buttressed by a long, sharp carina. One spine in the mid-dorsal line of the carapace at one-sixth its length from the base of the rostrum; posterior to it the carapace is rounded. At either side of the middle the carapace is armed with three acute spines. First or uppermost a little smaller than the dorsal spine, situated just behind the level of it, posterior to the orbital spine and buttressed by a short obtuse carina. Second spine as large as the spine in the middle line, situated in a level with the antennal spine, half as far distant from the 1<sup>st</sup> as the 1<sup>st</sup> from the dorsal spine, which is placed a little behind the level of the 2<sup>nd</sup>. Third spine as large as the second or hepatic spine, situated midway between the latter and the antennal spine.

Abdomen 3-times as long as the carapace, rostrum included, perfectly smooth. Sixth somite one and a half as long as 5<sup>th</sup>, 4,3-times as long

as thick in the middle, rounded dorsally. Telson a little longer than 6<sup>th</sup> somite, with 2 pairs of dorso-lateral spinules, and with 3 spines at either side of the acute apex.

Eyes large, dark purplish, greatest diameter  $\frac{1}{6}$  the length of carapace.

Lateral process of antennular peduncle lamelliform, rounded, a little shorter than basal joint. Joints of upper flagellum all longer than broad. Antennal scale one-third the length of carapace, twice as long as broad, outer margin straight, unarmed, terminal spine not or hardly exceeding the moderately broad, distal border of the lamella, antero-internal angle obtuse.

First pair of peraeopods slender; propodus of subchela half as long as the carapace, rostrum included, slender, 4,8-times as long as wide in the middle. Carpus of 2<sup>nd</sup> legs a little shorter than chela, palm slightly broader than long, fingers 3-times as long as palm. Carpus of 4<sup>th</sup> pair 2,5-times as long as broad, propodus 1,7-times as long as carpus, dactylus half as long as propodus, slender, nearly straight.

Exopodite of 2<sup>nd</sup> pleopod 4,7-times as long as broad, endopodite little more than half as long and 5-times as long as broad, no stylamblys.

The other specimen is shorter, 14 mm. long, carapace 3,8 mm., abdomen 10,2 mm. In proportion to the carapace the abdomen, the 6<sup>th</sup> somite and the telson are a little shorter, the 6<sup>th</sup> somite a little thicker; it differs, however, more really by the 1<sup>st</sup> or uppermost lateral spine of the carapace wanting completely, by the stouter shape of the anterior peraeopods (propodus not yet half as long as carapace and  $3\frac{1}{3}$ -times as long as wide in the middle), by the anterior margin of the rostrum being slightly concave and by the gastric spine being produced backward in an obtuse carina, that reaches to just behind the middle of the carapace, though not prominent at all.

*Pontophilus angustirostris* n. sp.

Stat. 7. 7° 55'.5 S., 114° 26' E. Reef of Batjulmati (Java). 1 ova-bearing female.

Stat. 50. Bay of Badjo, West coast of Flores. Up to 40 m. Bottom mud, sand and shells, according to locality. 1 male.

Stat. 164. 1° 42'.5 S., 130° 47'.5 E. Between Misool and New Guinea. 32 m. Bottom sand, small stones and shells. 2 females without eggs.

Stat. 273. Anchorage of Pulu Jedan, East coast of Aru-islands. 13 m. Bottom sand and shells. 1 female without eggs.

Closely related to *Pont. sculptus* (Bell) and *Pont. incisus* Kemp. Rostrum one-fourth the length of the rest of the carapace, a little shorter than the eyes, very narrow, the breadth in the middle being only one-

fifth the length, terminating distally in two slightly divergent pointed spines. Antennal spine buttressed by a sharp carina, much longer than the orbital. Carapace depressed, as broad as long, the rostrum excluded; a shallow groove extends transversely across the base of the rostrum. At one-fifth the length of the carapace from the level of the orbital margin one observes in the mid-dorsal line a small sharp spine, directed horizontally forward and produced into the sharp, mid-dorsal carina, that runs to the posterior margin but that is interrupted or quite obscure a little before the middle of the carapace. Lateral sides of carapace with 5 sharp carinae situated on the middle longitudinal third; of these 5 carinae three end anteriorly in a sharp spine. The 1<sup>st</sup> that ends in a spine, placed just behind the level of the gastric spine, reaches to the middle of carapace; the 2<sup>nd</sup>, without a spine, runs behind the 1<sup>st</sup>, curves slightly inward and separates the cardiac from the branchial region; the 3<sup>rd</sup>, that terminates in the hepatic spine, is situated just above the level of the antennal spine and reaches as far backward as the 1<sup>st</sup>; the 4<sup>th</sup>, without a spine, runs, midway between the 5<sup>th</sup> and the posterior half of the 2<sup>nd</sup>, to near the posterior margin and is separated from the 3<sup>rd</sup> by a broad interspace. The 5<sup>th</sup> or undermost ends in a spine, is placed at the level of the antennal spine and the longest of all, extending from just before the middle of the carapace to near the posterior margin.

Abdomen as in *Pont. incisus* Kemp, telson with 3 spines at either side of the acute tip, outer spine very short, the two other ones very long, 3- to 4-times as long as the triangular tip and of equal length.

Antennal scale half as long as carapace, 2,9-times as long as broad, the outer edge armed just behind the middle, at four-ninths its length from the base, with a strong acute spine. Antennulae and antennae for the rest about as in *Pont. incisus*.

Propodus of 1<sup>st</sup> pair of peraeopods 3,2-times as long as wide in the middle. Carpus of 2<sup>nd</sup> pair two-thirds of the merus and a little longer than the chela; palm very short, just as broad as long, measuring one-fourth the length of the chela, fingers straight. Other legs like in *Pont. incisus* Kemp.

The four posterior pleopods bear each an appendix interna both in the male and in the female, in the male it is styliform with cincinnuli at the apex, in the female broader, without cincinnuli at the rounded tip; 2<sup>nd</sup> pleopod of the male presenting moreover on the middle of the inner margin of the endopodite a truncated prominence, the appendix masculina. Both in the male and in the female the endopodite is developed in the four posterior pleopods, but it gradually diminishes in size from the 2<sup>nd</sup> to the 5<sup>th</sup>.

The ova-bearing female from Stat. 7 is 12 mm. long, the full-grown female from Stat. 273 17,7 mm.

Ova 0,6 mm. long, 0,4 mm. thick.

*Pontophilus Kempii* n. sp.

Stat. 65a. Very near Station 65 (7° 0' S., 120° 34'.5 E.). Between the islands of Saleyer and Tanah Djampeah. 300—400 m. Bottom pale, grey mud, changing during haul into coral bottom. 1 male and 2 females without eggs.

Closely related to *Pont. angustirostris* n. sp.

Rostrum reaching in the female (in the male it is broken off) beyond the eyes to the far end of basal antennular article, very narrow, the breadth in the middle being one-fifth the length in the mid-dorsal line; the rostrum terminates in two slightly upturned lobes, that are truncate, and its margins are, like the orbital margin that is entire, fringed with long setae, concealing the eyes. There is in the mid-dorsal line a sharp prominent carina, running from the posterior margin to the anterior fifth and terminating, in the female, in a well developed spine; in the male the anterior extremity is blunt. On each side of it several carinae are observed, that are all prominent and sharp. A long sub-dorsal carina runs from nearly midway between the rostrum and the orbital spine backward and slightly outward to near the posterior margin of the carapace; between this carina and that of the mid-dorsal line, on the gastric region, two small prominences occur, situated behind one another, and on the cardiac region in the male four carinae are observed, arranged in two pairs, the carinae of each pair unarmed and situated behind one another; in the female there are here only three carinae, the two of the inner pair being substituted by a single one. Below the subdorsal carina, that ends in the female in a spine, but in the male bluntly, still three carinae occur. The anterior, situated distinctly farther distant from the subdorsal carina than from the posterior extremity of the antennal crest, runs backward to the cervical groove and ends in both sexes in a spine; the second, twice as long, is placed immediately behind the anterior, though just below it, runs to near the posterior margin of the carapace and terminates also in a spine, that is, however, smaller than that of the anterior; the third is unarmed and runs parallel with the second.

Abdomen resembling that of *Pont. angustirostris*, differing only in minute details.

Antennal scale presenting the same form in the male and in the

female; in the male it measures  $\frac{3}{5}$  the length of the carapace without the rostrum and is 3,6-times as long as broad, the inner margin slopes sharply away from the base of the distal tooth, that is slender and long, while the strongly concave outer margin is armed with a well developed spine at the proximal third.

First pair of peraeopods of a rather stout shape. Merus with a small spine at the far end of the upper border, distal margin of outer surface for the rest unarmed. Propodus of subchela in the male a little more than half the length of the carapace, without the rostrum, and 2,5-times as long as wide.

Second pleopod of the male with a well developed stylamblys bearing a cluster of cincinnuli at the tip and with an appendix masculina, that reaches to the distal fourth of the endopodite and that is 2,5-times as thick as the stylamblys. In the 2<sup>nd</sup> pleopod of the female the endopodite is rudimentary, hardly half as long as the outer branch, and without appendix interna.

Length of the male 18,5 mm., of the female 14,5 mm.

Ierseke, July 1918.

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