

ADDITIONAL PANDALOID SHRIMPS FROM THE SOUTH CHINA SEA (CRUSTACEA: DECAPODA: CARIDEA), WITH DESCRIPTION OF ONE NEW SPECIES

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ABSTRACT. – The present paper reports 22 pandaloid shrimp species from the South China Sea and its adjacent area, including two new records of the South China Sea, 14 new records of the Nanshan Islands, and one new species. *Heterocarpus chani*, new species, type localities from the Philippines and Nansha Islands, is distinguished from its allied species, *H. gibbosus* Bate, 1888, *H. tricarinatus* Alcock & Anderson, 1894 and *H. lepidus* De Man, 1917, by the third maxilliped with a short rudimentary exopod.

KEY WORDS. – Pandaloidea, South China Sea, *Heterocarpus chani*, new species.

INTRODUCTION

Since the publication of the monograph on the Philippines pandalooids by Chace (1985), many workers have been actively working on shrimps of this superfamily in the western Pacific (Hayashi, 1986; Crosnier, 1988; Chan & Yu, 2000; Komai & Chan, 2002; Li & Komai, 2003; Chan, 2004; Li, 2004). Li & Komai (2003) and Li (2004) reported 21 species of pandalooids from the northern South China Sea. Recently the collection in the Marine Biological Museum of the Institute of Oceanology, Chinese Academy of Sciences (IOCAS), was moved to a new building. Some unsorted samples belong to the Pandaloidea from the South China Sea, including the Nansha Islands (Spratly Islands), were found during the relocation of the collection. This additional pandaloid material consists of 22 species in two families and 8 genera. Amongst them, two species are new records of the South China Sea, 14 are new records of the Nansha Islands, and one is an undescribed species.

A visit to the Raffles Museum of Biodiversity Research, Singapore (ZRC) to examine the recent collected *Heterocarpus* material from the Philippines “Panglao 2005” expedition revealed that many specimens of the undescribed species found in the South China Sea. As only three juveniles of this undescribed species were present in the South China Sea material, whereas a good series of this undescribed specimens were obtained from the “Panglao 2005” expedition accompanied with color photographs, the Philippines material is included as the type series of this undescribed species.

The following abbreviations are used in the text: “CN”,

preliminary registration number when the specimen(s) were collected; AT, Agassiz trawl; BT and CP, beam trawl; coll., collector(s); cl, postorbital carapace length; spec(s), specimen(s); NTOU, National Taiwan Ocean University, Keelung; IOCAS, Institute of Oceanology, Chinese Academy of Sciences, Qingdao; MNHN, Muséum national d’Histoire naturelle, Paris; NHM, the Natural History Museum, London; ZRC, Raffles Museum of Biodiversity Research, Singapore; PNM, Philippines National Museum, Manila. Except otherwise stated, the material are deposited in the IOCAS. The synonymy provided is restricted to important works and previous reports from the South China Sea.

TAXONOMY

THALASSOCARIDIDAE BATE, 1888

Chlorotocoides spinicauda (de Man, 1902)

Chlorotocoides spinicauda De Man, 1902: 856, Pl. 26 fig. 59-59h [type locality: Ternate, Indonesia]; Chace, 1985: 4, Fig. 2; Li & Komai, 2003: 258.

Material examined. – 1 ovigerous female, CN 55D-332D, Xinying, Hainan Island, 23 May. 1955; 3 males, 5 females (3 ovigerous), CN N219B-178, South China Sea, 18°15'N 108°30'E, 54 m, muddy with coarse sand and broken shells, AT, coll. Jixing Liu & Xiubin Fang, 16 May. 1960.

Distribution. – Maldives Islands, Andaman Islands, South China Sea, Indonesia, and Philippines; at depths of 15-141 m.

***Thalassocaris crinita* (Dana, 1852)**

Regulus crinitus Dana, 1852: 27 [type locality: Sulu Sea].
Thalassocaris crinita. – De Man, 1920: 95, 100, Pl. 9 fig. 22-22o,
 Pl. 10 fig. 23-23c; Chace, 1985: 7, Figs. 3-5; Li & Komai, 2003:
 258.

Material examined. – 1 male, 3 ovigerous females, CN SSBIII3-15, Nansha Islands (Zengmuansha), 3°54.81'N 112°14.86'E, 36 m, coral reef, 0.25 m² grabber, coll. Chen, 26 Apr. 1986.

Distribution. – Red Sea, Indian Ocean to Indonesia, Philippines, South China Sea, Japan, Marshall Islands; shallow waters to 100 m.

Remarks. – Not previously reported from the Nansha Islands.

PANDALIDAE HAWORTH, 1825

***Chlorotocella gracilis* Balss, 1914**

Chlorotocella gracilis Balss, 1914a: 33, Figs. 16-22 [type locality: Sagami Bay, Japan]; Chace, 1985: 11; Li & Komai, 2003: 258; Li, 2004: 821.

Material examined. – 1 male, 14 females (12 ovigerous), CN 55-K0209, Qinglan fishery market, Hainan Island, coll. Wang, 24 Mar. 1955; 1 ovigerous female, CN 21-7, South China Sea, 20°30'N 111°00'E, 31 m, sandy mud, BT, coll. Guansheng Liang, 28 Jan. 1959; 1 female, CN SSEII2-20, Nansha Islands, 6°00.27'N 107°41.63'E, 73 m, sand with broken shells, fishery net, 28 May. 1985.

Distribution. – Andaman and Nicobar Islands, Singapore, Indonesia, Philippines, East and South China Seas, Japan; littoral to 91 m.

Remarks. – Not previously reported from the Nansha Islands.

***Chlorotocetus crassicornis* (Costa, 1871)**

Pandalus crassicornis Costa, 1871: 89, 90, Pl. 2 fig. 2 [type locality: Gulf of Napoli].

Chlorotocetus crassicornis - Chace, 1985: 12, Figs. 7, 8; Li & Komai, 2003: 259.

Material examined. – 1 ovigerous female, CN 6-38A, South China Sea, 19°30'N 112°30'E, 219 m, muddy sand, AT, coll. Zhican Tang, 17 Feb. 1959; 2 males, CN SSBIII13-24, Nansha Islands, 5°07.26'N 110°02.08'E, 137 m, soft mud, AT, coll. Chen, 4 May. 1986.

Distribution. – Africa, Andaman Sea, Indonesia, Philippines, South and East China Seas, Korea Strait; eastern Atlantic and Mediterranean; at depths of 3-597 m.

Remarks. – Not previously reported from the Nansha Islands.

***Heterocarpus chani*, new species**

(Figs. 1-5)

Material examined. – Holotype, female (cl 24.8 mm) (PNM), Philippines, “Panglao 2005”, stn. CP2358, 8°52.1'N 123°37.1'E, 569-597 m, sandy, 26 May. 2005.

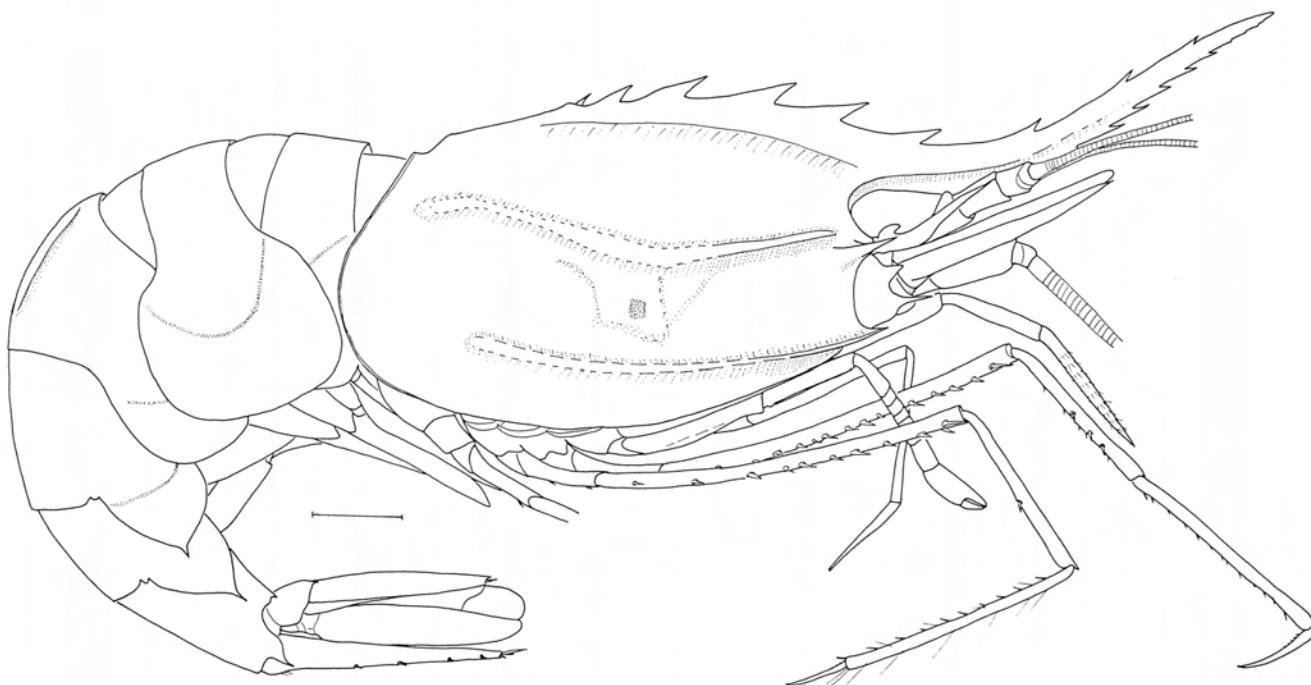


Fig. 1. *Heterocarpus chani*, new species, female, holotype (cl 24.4 mm), Philippines, body, right lateral view. Scale bar = 5 mm.

Paratypes: South China Sea: 1 female (cl 18.2 mm), CN 5, 1 male (cl 18.5 mm), CN 8, 1 male (cl 19.6 mm) (IOCAS), Nansha Islands, 7°18.83'N 116°12.29'E, 382 m, soft mud, AT, 27 Jul.1988.

Philippines: "Panglao 2005": 1 ovigerous female (cl 33.2 mm) (ZRC), stn. CP2332, 9°38.8'N 123°45.9'E, 418-477 m, muddy, 22 May.2005; 1 ovigerous female (cl 32.2 mm) (IOCAS), stn. CP2332, 9°38.8'N 123°45.9'E, 418-477 m, muddy, 22 May.2005; 2 males (cl 18.8, 20.3 mm), 8 females (cl 21.8-35.4 mm), 3 ovigerous females (cl 26.4, 27.1, 27.9 mm) (NTOU), stn. CP2333, 9°38.2'N 123°43.5'E, 565.5-596 m, muddy, 22 May.2005; 3 females (cl 21.5, 27.4, 29.5 mm) (ZRC), stn. CP2334, 9°37.8'N 123°41.1'E, 606.2 m, sandy, 22 May.2005; 5 males (cl 17.1-25.6 mm), 3 females (cl 24.4, 29.2, 29.4 mm), 1 juv. (cl 9.9 mm) (IOCAS), stn. CP2341, 9°24.5'N 123°49.7'E, 712-888 m, sandy/muddy, 23 May.2005; 7 males (cl 16.4-23.6 mm), 12 females (cl 19.2-28.2 mm), 5 juveniles (cl 8.4-14.6 mm) (NTOU), collection data same as the holotype; 8 males [cl 16.2-28.5 mm, 1 (cl 21.6 mm) for DNA research], 8 females [cl 20.2-34.1 mm, 1 (cl 29.1 mm) for DNA research] (NTOU), stn. CP2359, 8°49.9'N 123°34.9'E, 437-443 m, sandy, 26 May.2005; 4

males (cl 21.2-26.7 mm), 7 females (cl 20.5-29.9 mm), 2 ovigerous females (cl 26.9, 27.4 mm) (MNHN), stn. CP2360, 8°48.9'N 123°37.6'E, 357-364 m, sandy, 26 May.2005; 10 juveniles (cl 8.5-11.9 mm) (MNHN), stn. CP2362, 8°56.5'N 123°32.7'E, 679-684 m, sandy, 26 May.2005; 3 males (cl 18.3, 18.5, 20.4 mm), 10 juveniles (cl 7.9-11.6 mm) (NTOU), stn. CP2389, 9°26.8'N 123°36.1'E, 780-786 m, sandy, 30 May.2005; 1 juvenile (cl 11.7 mm) (ZRC), stn. CP2394, 9°29.9'N 123°41.6'E, 403-787 m, sandy/muddy, 30 May.2005.

Diagnosis. – Rostrum far overreaching scaphocerite, curved upwards above antennular peduncle, distal part anterior to curvation straight, dorsoanterior pointed, dorsally armed with 8 or 9 teeth including 4-5 teeth on carapace posterior to orbital margin, distal 0.33-0.25 unarmed, ventrally armed with 13-16 teeth along entire length, tooth size progressively reduced distally, subapical ones very small; carapace with postorbital longitudinal carina rounded, extending posteriorly almost to

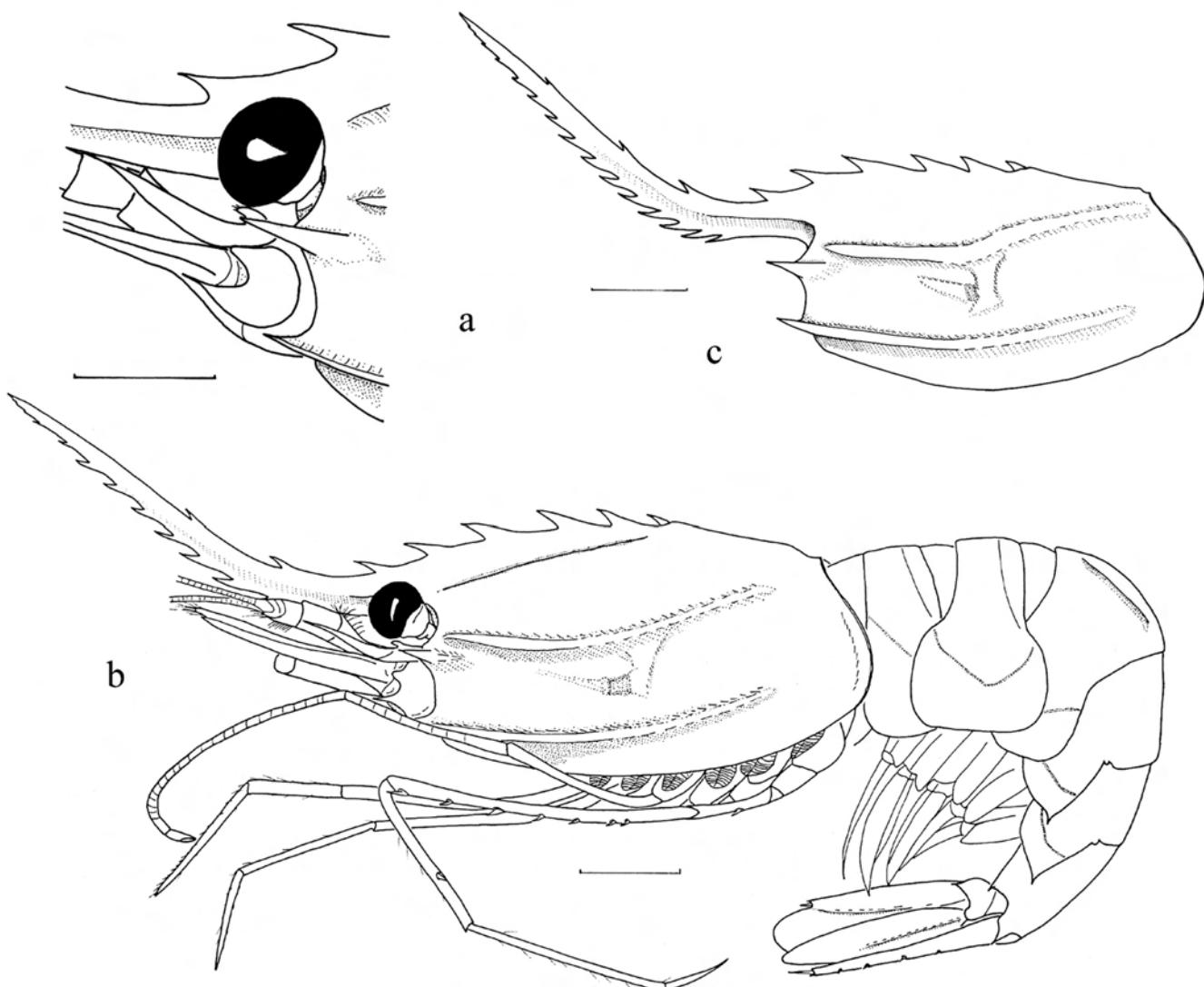


Fig. 2. *Heterocarpus chani*, new species: a, eye and anterior carapace, left lateral view; b, body, left lateral view; c, rostrum and carapace, left lateral view. Female, holotype (cl 24.4 mm), Philippines: a; male, paratype (cl 18.5 mm), South China Sea: b; male, paratype (cl 19.6 mm), South China Sea: c. Scale bar = 5 mm.

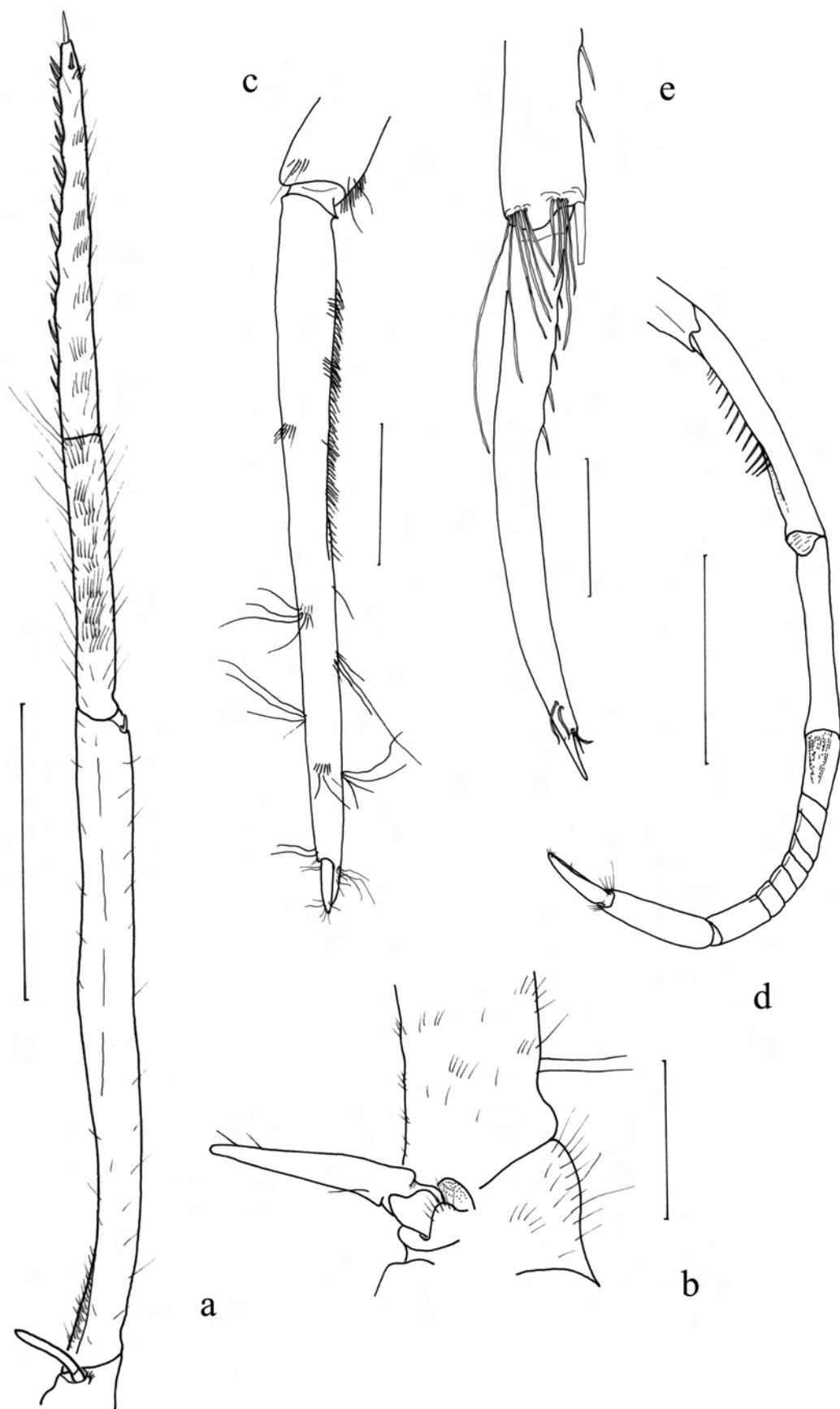


Fig. 3. *Heterocarpus chani*, new species: a, third maxilliped; b, same, antipenultimate segment and exopod; c, chela of first pereiopod; d, right second pereiopod; e, dactylus of third pereiopod. Male, paratype (cl 18.5 mm), South China Sea: a-d; Male, paratype (cl 19.6 mm), South China Sea: e. Scale bars: a, d, e = 5 mm; b, c = 1 mm.

posterior margin of carapace, curved ventrally at middle of carina length, branchiostegal carina extends posteriorly to 72-78% of carapace length, without intermediate carina, branchiostegal spine not overreaching antennal spine; abdomen unarmed posteriomedially on all somites, third somite with blunt longitudinal dorsomedian carina, of which 2.85-3.40 times longer than the maximum width, with lateral margins slightly convex; pleura of 4th and 5th somites with acute posteroventral tooth, telson with 4 pairs of dorsolateral and 3 pairs of posterior spines; stylocerite sharply acute, extending to 0.7-1.0 of second segment length; scaphocerite 0.52-0.57 times as long as carapace, 2.80-3.35 times as long as width, blade slightly overreaching distolateral spine; third maxilliped with short (less than 0.23 length of antipenultimate segment), apex usually nude exopod and strap-like epipod; anterior 4 pereiopods with strap-like epipods; second pereiopods markedly unequal, right one shorter and stouter, with 8 articles, left one longer and more slender, with 23 or 24 articles; third pereiopod overreaching scaphocerite by dactylus, propodus and distal 0.1-0.6 carpus; dactylus 0.36-0.39 times as long as propodus, accessory distal spine 0.36-0.52 times as long as main terminal spine, closely abutting main terminal spine; maximum carapace length more than 35.5 mm.

Description. – Rostrum far overreaching scaphocerite, 0.8 to 2.0 times as long as carapace, rostrum length shorter in larger individuals, curving upwards above antennular peduncle, becoming straight and directed anterodorsally; lateral carina gradually sharpened posterior to curvation but becoming round and indistinct anterior to curvation, postrostral carina extending to almost posterior margin of carapace; dorsally armed with 8-9 teeth including 4-5 teeth on carapace posterior to orbit, posteriormost tooth on carapace situated at proximal 0.37-0.45 of carapace length, with distinct basal suture, 0.25-0.33 of dorsal rostral margin unarmed; ventrally armed with 13-16 acute teeth along entire length, tooth size progressively larger from posteriormost tooth to 4th or 5th tooth, but reducing in size from 4th or 5th tooth to distal tooth, distal 2 or 3 teeth very small and obscure.

Carapace with dorsal profile distinctly convex; postorbital longitudinal carina rounded, extends posteriorly almost to posterior margin of carapace, curved ventrally at middle of carina length; branchiostegal carina sharp on anterior part, becoming broadly rounded posteriorly, extending posteriorly to 72-78% of lower carapace length (at level of branchiostegal carina); without intermediate carina; branchiostegal spine not overreaching antennal spine.

Abdomen unarmed posteriomedially on all somites, without sharp dorsal carina or tooth on any somite; third somite with blunt longitudinal dorsomedian carina, which disappearing on anterior 0.10-0.12 and posterior 0.09-0.14 of somite length, carina 2.85-3.40 times longer than maximum width and with lateral margins slightly convex. Fourth and 5th pleura with acute posteroventral tooth. Sixth somite 1.40-1.60 times as long as maximum height, armed with acute posteroventral tooth, posterolateral lobe elongate posteriorly, sharply spiniform. Telson 0.56-0.58 times as long as carapace length,

1.55-1.65 longer than 6th somite, usually with 4 pairs of dorsolateral spines at around 0.38, 0.56, 0.75 and 0.86 of telson length (holotype with only 3 dorsolateral spines on left side); posterior margin generally with 3 pairs of spines, lateral pair similar to dorsolateral spines, intermediate pair longest, about 0.11-0.13 as long as telson length, middle pair about half length of intermediate pair.

Eye subpyriform, maximum diameter 0.15-0.17 times carapace length; ocellus absent but cornea slightly protruded at position of supposed ocellus.

Antennular peduncle extending to proximal 0.60-0.70 of scaphocerite; stylocerite sharply acute, reaching proximal 0.7 or distal end of second segment; outer flagellum very long, more than 3 times carapace length.

Scaphocerite 0.52-0.57 times as long as carapace, 2.80-3.35 times as long as wide, blade slightly overreaching distolateral spine, lateral margin feebly convex; flagellum more than 5.6 times carapace length.

Third maxilliped stout, overreaching scaphocerite by at least distal 0.33 of distal segment, penultimate segment 0.22-0.25 as long as carapace, 0.63-0.73 as long as distal segment, 0.39-0.44 as long as antepenultimate segment; exopod reduced but distinct, short, apex nude, at most 0.23 of antipenultimate segment length; strap-like epipod present.

Pereiopods with strap-like epipods on 4 anterior pairs. First pereiopod slightly overreaching scaphocerite; fingers small but distinct; chela 0.23-0.27 times as long as carapace, 0.64-0.78 times as long as carpus. Second pereiopods markedly unequal, right one shorter and stouter, overreaching carpocerite by fingers or by entire chela; chela 0.23-0.24 times as long as carapace, fingers 0.68-0.82 times as long as palm; carpus 1.30-1.42 times as long as chela, subdivided into 8 articles, proximal article longest, distal article second longest, others articles similar and short; merus 0.97-1.04 times as long as chela, ischium compressed and produced ventrally, 1.34-1.51 times as long as chela; left second pereiopod overreaching scaphocerite by chela and distal 0.37-0.53 carpus, chela 0.10-0.13 times as long as carpus, fingers 0.75-



Fig. 4. *Heterocarpus chani*, new species, female, holotype (cl 24.4 mm), Philippines, color photo.

1.01 times as long palm; carpus 0.73-0.77 times as long as carapace, subdivided into 23 or 24 articles; merus 0.48-0.58 times as long as carpus, with 8-9 articles; ischium 0.49-0.64 times as long as carpus, with longitudinal carina along outer surface, proximal half of ventral margin slightly swollen forming compressed lobe. Third pereiopod overreaching scaphocerite by dactylus, propodus and distal 0.1-0.6 carpus; dactylus 0.38-0.39 as long as propodus, bearing 5 spines along proximal 0.35 of flexor margin, accessory distal spine 0.36-0.52 of main terminal spine, and strongly abutting latter, main terminal spine 0.07-0.10 of total dactylus length; propodus 0.52-0.58 as long as carapace, scattered with long setae, ventral margin with 13-15 spinules, distoventral spine accompanying with row of setae, distodorsal corner also with row of setae; carpus 0.73-0.77 as long as propodus, with 1-3 strong spines and 4-10 spinules on flexor margin; merus 1.54-1.58 as long as propodus, armed with 4-7 mesial and 8-20 lateral spines along flexor margin; ischium 0.34-0.39 as long as propodus, with 2 (seldom 3) spines on ventral margin. Fourth and fifth pereiopods similar to third, fourth overreaching scaphocerite by dactylus, propodus, and at most distal 0.4 carpus, carpus armed with 1 (seldom 2) spine(s), merus with 1 subdistomesial and 9-21 (avg 12) ventral spines, ischium with 2 ventral spines; fifth overreaching scaphocerite by dactylus and propodus, carpus with 0-2 (usually 1) spine, merus with 7-16 (avg 9) ventral spines, without distomesial spine; ischium unarmed or at most bearing 1 ventral tooth.

Endopod of first pleopod in males broadened at distal half, mesial margin sinuous, with short setae along proximal 0.75 of endopod length; lateral margin slightly sinuous, with long plumose and simple setae; distal margin with distinct sinus, resulting in endopod somewhat bifurca, mesial lobe smaller, with cluster of small hooked protuberances. Appendix

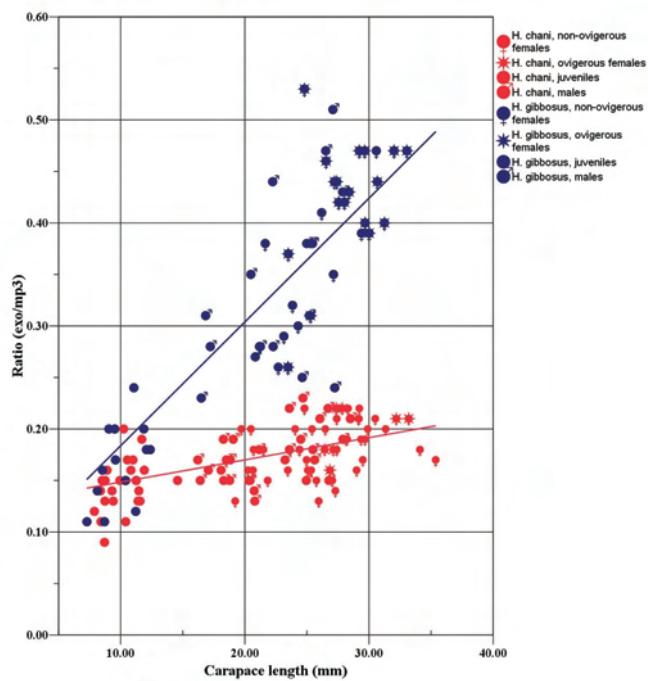


Fig. 5. Relationships between the postorbital carapace length and the ratio of exopod/antipenultimate segment of third maxilliped in *Heterocarpus chani*, new species, and *H. gibbosus* Bate, 1888.

masculine on second pereopod subequal to appendix interna, armed with 16-18 long spines on anteromesial and distal margins. Uropod distinctly overreaching telson, exopod bearing fixed distolateral spine that accompanied with strong movable spine inside.

Coloration. – Body orange-red to reddish, with dorsal parts proportionally more orange-red while ventral parts including pleopods and tailfan generally reddish. Eye black-brown with golden reflections. Flagella reddish. Mouth parts and anterior 2 pereiopods varied from reddish to pinkish. Posterior 3 pereiopods with dactyli and distal portion of propodi always reddish, carpi and distal portion of meri as well as proximal portion of propodus always pinkish to light pink, basal segment to medial part of meri reddish or pinkish. Eggs dark green.

Etymology. – It is a pleasure to name this species after Tin-Yam Chan, carcinologist of the National Taiwan Ocean University, who has had a series of works on the pandalid shrimps from the Indo-Pacific.

Distribution. – This species is known with certainty only from the Nansha Islands, southern South China Sea, and the Bohol and Sulu Seas, Philippines, at 382-888 m deep.

Remarks. – This new species is closely related to *Heterocarpus gibbosus* Bate, 1888, *H. tricarinatus* Alcock & Anderson, 1894, and *H. lepidus* de Man, 1917. Besides the exopod of the third maxilliped (rudimentary vs. well-developed), *H. chani* can be distinguished from *H. gibbosus* by having a broader dorsomedian carina on the third abdominal somite (0.29-0.34 vs. 0.15-0.20 as carina length); from *H. tricarinatus* and *H. lepidus* by the longer branchiostegal carina (about 70% lower carapace length vs. about 50% in *H. tricarinatus* and about 60% in *H. lepidus*, also see Crosnier, 1988).

There were many specimens of this species collected by the “Panglao 2005” expedition to the Philippines and there are color photographs of the “Panglao 2005” specimens. It seems that the coloration of *H. chani* (Fig. 4) and *H. gibbosus* (Fig.



Fig. 6. *Heterocarpus gibbosus* Bate, 1888, ovigerous female (cl 30.7 mm), Philippines, Bohol Sea, Panglao 2005 Expedition, station CA2337, 9°31.5'N 123°41.7'E, 336 m depth, 22 May 2005, color photo.

6) are very similar, but there are consistent differences. *Heterocarpus gibbosus* has a distinct red ring at the subdistal part of the meri of the posterior three pereiopods. In *H. chani* the posterior three pereiopods never show distinct red rings on the meri. Furthermore, in freshly preserved material of *H. chani*, the dorsal margin of the basal rostral teeth and the dactyli of the posterior pereiopods are reddish. On the other hand, preserved specimens of *H. gibbosus* have the dorsal margin of the basal rostral teeth not red in color but with almost the entire posterior pereiopods being reddish. The third maxilliped exopod tends to be shorter in smaller specimens of *Heterocarpus*. Nevertheless, of the 160 "Panglao 2005" specimens examined, there is a clear separation of the exopod/antipenultimate segment of third maxilliped ratio in the two forms for those with a carapace length longer than 15 mm (Fig. 5). In the 75 larger specimens (i.e. cl longer than 15 mm) of the short exopod form the exopod/antipenultimate segment of third maxilliped ratio is 0.13-0.23 (avg 0.18). On the other hand, the 45 larger specimens (cl > 15 mm) of the long exopod form have the ratio ranging from 0.23-0.53 (avg 0.37) (fig. 7a). The

separation of the two forms is very distinct for ovigerous females, with an average ratio of 0.20 for the short exopod form (n=7) and 0.42 for the long exopod form (n=18). In small juveniles (cl < 15 mm), there is still a slight difference in the average ratio (0.15 (0.09-0.20, n=26) vs. 0.17 (0.11-0.24, n=13)).

These two forms occur in similar depths (382-888 m for the short exopod form and 231-888 m for the long exopod form) and collected together in 6 stations (i.e. CP2332, CP 2333, CP2341, CP 2359, CP 2360, CP 2362).

Heterocarpus gibbosus is generally believed to have a long exopod at the third maxilliped (Crosnier, 1988; Tavares, 1999) and widely distributed from eastern Africa to Japan and Tonga (Chace, 1985; Chan & Yu, 1987). However, it appears that there are actually two distinct forms, at least in the specimens obtained from the Philippines. The original description and figures given by Bate (1888) was based on a single juvenile type specimen (cl 16 mm, "Challenger" Expedition, station 207, off Tables Island, Philippines,

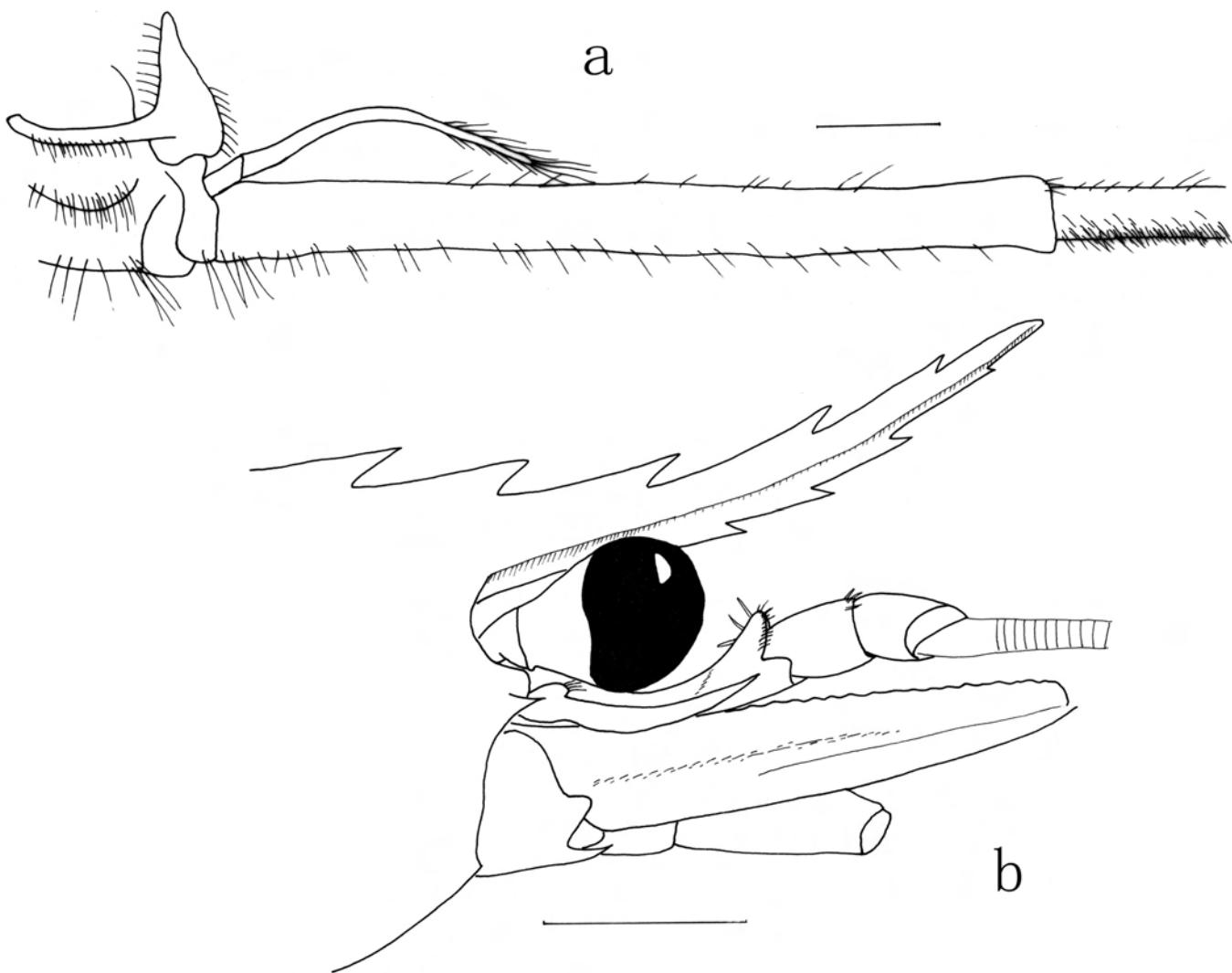


Fig. 7. *Heterocarpus gibbosus* Bate, 1888, ovigerous female (cl 24.8 mm), Philippines, Sulu Sea, Panglao 2005 Expedition, station CP2372, 8°38.7'N 123°16.0'E, 231-255 m depth, 27 May.2005: a, third maxilliped; b, *Plesionika bifurca* Alcock and Anderson, 1894, male, South China Sea, anterior carapace and appendages. Scale bar = 2 mm.

12°21'N 122°15'E, 700 fathoms, 16 Jan.1875) and has no information on the status of the exopod of the third maxilliped. The type has been re-examined (NHM 88.22, The Natural History Museum, London) and was found to be badly damaged, soft and decalcified (including the abdomen). In fact, both the third maxillipeds are missing (also see Calman, 1939; Chace, 1985). The holotype of *H. gibbosus* is now of no use in deciding whether the short or long exopod form should bear Bate's (1888) name. In order to fix the identity of *H. gibbosus*, an application to the International Code of Zoological Nomenclature has been made to replace the holotype with a neotype selected from the "Panglao 2005" material with a long exopod on the third maxilliped (Li et al., in press). The short exopod form is here treated as a new species. Records of *H. gibbosus* by previous workers (e.g. Chace, 1985) will need to be re-examined in order to establish the exact distribution of these two closely related species.

Heterocarpus dorsalis Bate, 1888

Heterocarpus dorsalis Bate, 1888: 630, Pl. 111 [type locality: off Kepulauan Banda, Indonesia]; Chace, 1985: 22, Figs. 13d.

Material examined. – 1 male, CN 14, Nansha Islands, 6°39.96'N 115°17.03'E, 740-1178 m, AT, 27 Jul.1988; 2 males, 2 females, CN 10, Nansha Islands, 5°02.42'N 113°42.29'E, 709-842 m, soft mud, AT, 29 Jul.1988; 1 juvenile, CN 35, Nansha Islands, 9°49.82'N 117°47.98'E, 1241 m, AT, 9 Aug.1988.

Distribution. – Eastern Africa to Indonesia, Philippines, South China Sea, Japan, New Caledonia, Western Samoa; 185-1400 m.

Remarks. – Not previously reported from the Nansha Islands.

Heterocarpus hayashii Crosnier, 1988

Heterocarpus sibogae – Chace, 1985: 11 (part), Fig. 20; Chan & Yu, 1987: 57 (part), Pl. 2 fig. c.

Heterocarpus hayashii Crosnier, 1988: 67, Fig. 4b, Pl. 1d, 3c-e [type locality: Chesterfield Islands]; Li & Komai, 2003: 259.

Material examined. – 42 ex., CN L33B-45, South China Sea, 19°00'N 113°00'E, 465 m, coarse sand, AT, coll. Huanlin Li, 17 Feb.1959; 10 females, CN 7-12, South China Sea, 19°00'N 112°30'E, 472 m, AT, coll. Zhican Tang, 17 Feb.1959; 6 females, CN K122B-40, South China Sea, 19°00'N 112°30'E, 300 m, fine sand, AT, coll. Shoupeng Shen, 8 Feb.1960; 1 male, 1 ovigerous female, CN 13, Nansha Islands, 7°18.83'N 116°12.29'E, 382 m, soft mud, AT, 27 Jul.1988.

Distribution. – Japan, East and South China Seas, Philippines, New Caledonia, Samoa, Australia; at depths of 200-700 m.

Remarks. – The illustration of Dong (1988: Fig. 38) shows that his material should belong to this species. The posteriormost postrostral tooth situated behind half of carapace length and the posteromedial spine of the third abdominal somite is longer than that of fourth. Not previously reported from the Nansha Islands.

Heterocarpus tricarinatus Alcock & Anderson, 1894

Heterocarpus tricarinatus Alcock & Anderson, 1894: 154 [type locality: Arabian Sea off Byramgore Reef, Laccadive Islands]; Chace, 1985: 41, Fig. 13o.

Material examined. – 2 females, CN K69B-33, South China Sea, 19°00'N 113°30'E, 1100 m, soft mud, AT, coll. Xiutong Ma, 13 Jul.1959; 1 female, CN 40, Nansha Islands, 9°49.82'N 117°47.98'E, 1241 m, AT, 9 Aug.1988.

Distribution. – South Africa to Indonesia, South China Sea, Philippines; at depths of 1046-2000 m.

Remarks. – Although the width of dorsomedian carina on the third abdominal somite is about 0.35 of the carina length, between 0.30 and 0.40 that Crosnier (1988) used to distinguished the two subspecies of *H. tricarinatus*, the lateral margins of the carina are distinct and therefore can be referred to the subspecies *H. tricarinatus angustus* Crosnier, 1988. Not previously reported from the South China Sea.

Heterocarpus woodmasoni Alcock, 1901

Heterocarpus Wood-masoni Alcock, 1901: 108 [type locality: Andaman Sea, 485 m].

Heterocarpus woodmasoni – Chace, 1985: 42, Fig. 13q.

Material examined. – 1 female, CN L33B-47, South China Sea, 19°00'N 113°00'E, 465 m, coarse sand, AT, coll. Huanlin Li, 17 Feb.1959.

Distribution. – Indian Ocean, Andaman Sea to Indonesia, Philippines, East and South China Seas, 291-655 m.

Plesionika bifurca Alcock and Anderson, 1894 (Fig. 7b)

Pandalus bifurca Alcock & Andersen, 1894: 155 [type locality: Arabian Sea].

Plesionika bifurca. – De Man, 1920: 105, 136, Pl. 12 fig. 31-31b; Chace, 1985: 56, Fig. 24; Li & Komai, 2003: 260.

Material examined. – 1 male, CN SSB1-1C, Nansha Islands, 10°20.40'N 109°41.27'E, 332-410 m, coll. Zhican Tang & Baolin Zhang, 12 Sep.1994.

Distribution. – Eastern Africa to Indonesia, Philippines, South China Sea, and southern Japan; at depths of 220-1412 m.

Remarks. – The only specimen is damaged with most of telson lost. However, the characteristic up-curved and short rostrum, armature on the rostrum, as well as other characters such as the orbital margin being strongly convex, fourth and fifth abdominal pleura bearing posteroventral tooth, eye without ocellus, third pereiopod with combined lengths of three distal segments exceeding carapace length and the dactylus almost as long as half propodus, agree well with the definition of *P. bifurca*. Nevertheless, the present specimen is slightly different from the diagnosis given by Chace (1985)

in that the stylocerite is just reaching the dorsal arc at distal margin of the first antennular segment and the left second pereiopod with only 14 carpal articles (the right one lost). Not previously reported from the Nansha Islands.

Plesionika aff. binoculus(Bate, 1888)

Plesionika aff. binoculus Li & Komai, 2003: 270, Fig. 8.

Material examined. – 1 ovigerous female (cl 12.4 mm) (IOCAS), CN N139B-21, 18°30'N 110°30'E, 101 m, sandy mud, AT, coll. J. Liu, 9 Mar.1960; 5 males, 4 females (3 ovigerous), CN L12B-37, South China Sea, 18°30'N 111°00'E, 140 m, muddy with coarse sand, BT, coll. Xiutong Ma, 27 Dec.1959.

Distribution. – *P. binoculus* has only been reported from the Arafura Sea at 90 m (Chace, 1985). The present form is collected from the northern South China Sea at 101-140 meters depth.

Remarks. – More details of the present form can be referred to Li & Komai (2003).

Plesionika grandis Doflein, 1902

Plesionika spinipes var. *grandis* Doflein, 1902: 618, Pl. 3 figs. 3-5 [type locality: Sagami Bay, Japan].

Plesionika grandis – Chace, 1985: 66, Figs. 28, 29; Chan & Crosnier, 1991: 423, Figs. 3f, 22; Li & Komai, 2003: 260.

Material examined. – 9 ex., CN K135B-30, South China Sea, 19°30'N 113°00'E, 210 m, coarse sand, AT, coll. Shoupeng Shen, 10 Feb.1960; 1 male, CN 90C-0047, Haikou fishery market, Hainan Island, 4 Nov.1990; 13 males, 12 females, CN 90C-0116, Qinglan fishery market, Hainan Island, 5 Nov.1990; 2 males, CN SSB2-9E, Nansha Islands, 8°29.67'N 109°00.42'E, 143 m, coll. Zhican Tang & Baolin Zhang, 17 Sep.1994; 4 ovigerous females, CN SSB8-6B, Nansha Islands, 5°30.70'N 110°30.76'E, 224 m, coll. Zhican Tang & Baolin Zhang, 22 Sep.1994.

Distribution. – Widely distributed in the Indo-West Pacific, but known with certainty from Japan, East and South China Seas, Philippines, Indonesia, northwestern Australia, Zanzibar area of eastern Africa and Madagascar, at depths of 110-375 m.

Remarks. – Not previously reported from the Nansha Islands.

Plesionika izumiae Omori, 1971

Plesionika izumiae Omori, 1971: 242, Figs. 1, 2. [type locality: Suruga Bay, Japan]; Li & Komai, 2003: 261; Li, 2004: 821.

Plesionika izumiae? – Chace, 1985: 75, Fig. 34.

Material examined. – 1 female, CN 56-K187, off Zhelang, Shanwei, Guangdong Province, China, 10 Mar.1956; 50 ex., CN 56K-237, Haimen fishery harbor, Zhejiang Province, China, coll. Liu, 12 Mar.1956; 1 male, CN S57B-35B, South China Sea, 21°30'N 115°30'E, 115 m, AT, coll. Weiquan Zhang, 5 Apr.1959; 1 male, CN Q33B-6, South China Sea, 17°45'N 110°30'E, 170 m, soft mud,

BT, coll. Zhengang Fan, 6 Apr.1959; 1 male, CN Q86B-5, South China Sea, 17°00'N 109°30'E, 121.5 m, muddy sand, AT, coll. Li, 22 Nov.1959; 1 female, CN K122B-59, South China Sea, 19°00'N 112°30'E, 300 m, coarse sand, AT, coll. Shoupeng Shen, 8 Feb.1960; 17 males, 19 females (18 ovigerous), CN S236B-9, South China Sea, 23°15'N 117°00'E, 23 m, muddy sand, AT, coll. Jingzuo Qu, 24 Apr.1960; 1 male, CN N196B-54, South China Sea, 18°30'N 110°30'E, 93 m, muddy sand, AT, coll. Jixing Liu, 7 May.1960.

Distribution. – Philippines, South and East China Seas, Japan, at depths of 22-300 m.

Remarks. – A very common pandalid species in the East China Sea, southern Japanese coast and the northern South China Sea. When it was described from the Suruga Bay, it was mentioned to be abundant (Omori, 1971). Since then, the species has been reported as a common pandalid shrimp from southern Japanese coasts (Hayashi & Koike, 1976), the East China Sea (Jiang et. al., 1985; Wang, 1987), and the northern South China Sea off Guangdong Province and Beibu Gulf (Tokin Gulf) (Li & Komai, 2003; Li, 2004). However *P. izumiae* seems to be uncommon in the Sulu Archipelago (Chace, 1985). The present record extends the bathymetric range from 209 m to 300 m depth.

Plesionika kensleyi Chace, 1985

Plesionika kensleyi Chace, 1985: 77, Figs. 35, 36 [type locality: Mindanao Sea off Murcielagos Bay, Mindanao, Philippines]; Li & Komai, 2003: 262.

Material examined. – 2 males, 1 ovigerous female, 1 damaged spec, CN L43B-5, South China Sea, 18°30'N 111°30'E, 182 m, sandy mud, AT, coll. Xiutong Ma, 11 Apr.1959; 7 males, 12 females (11 ovigerous), CN K33B-52, South China Sea, 19°30'N 113°00'E, 180 m, muddy sand, AT, coll. Fuzeng Sun, 21 Apr.1959; 1 male, 1 ovigerous female, CN L62B-7, South China Sea, 18°30'N 111°00'E, 148m, soft mud, AT, coll. Xiutong Ma, 22 Apr.1959; 1 female, CN N114B-5, South China Sea, 19°00'N 111°30'E, 159 m, soft mud, AT, coll. Jixing Liu, 8 Feb.1960.

Distribution. – South China Sea, Philippines and off Durban, South Africa, at 118-333 m.

Plesionika longidactylus Li & Komai, 2003

Plesionika longidactylus Li & Komai, 2003: 262, Figs. 2-5 [type locality: northern South China Sea]; Li, 2004: 821.

Material examined. – 1 ovigerous female, CN L44B-63, South China Sea, 19°00'N 111°30'E, 144 m, sandy mud, AT, coll. Yongliang Wang, 11 Apr.1959; 2 males, 2 females (1 ovigerous), CN SII15B-24, South China Sea, 22°00'N 115°00'E, 67.1 m, soft mud, AT, coll. Weiquan Zhang, 13 Jul.1959; 1 female, CN K220A-3, South China Sea, 19°00'N 108°00'E, 58.9 m, sandy mud, 0.1 m² grabber, coll. Shoupeng Shen, 8 Jul.1960; 1 male, CN SSBIII10-67, Nansha Islands, 4°23.41'N 111°14.41'E, 87 m, mud with broken shells, AT, 3 May.1986.

Distribution. – South China Sea, at depths of 55-144 m.

Remarks. – This is the first time this species being recorded from the Nansha Islands, the southern South China Sea. The present record also extends the bathymetric range from 118 to 144 m depth.

Plesionika narval (Fabricius, 1787)

Astacus Narval Fabricius, 1787: 331 [type locality: probably Nice, Mediterranean].

Plesionika narval – Lemaitre & Gore, 1988: 385, Fig. 3k-m, 4; Chan & Crosnier, 1991: 443, Figs. 12a-c, 13a, 14a-c, 15a-e, 34-36; Li & Komai, 2003: 265.

Material examined. – 2 males, 2 females, CN 6-1, South China Sea, 18°30'N 110°30'E, 112 m, sandy mud, AT, coll. Jixing Liu, 27 Jan.1959; 1 male, CN K66B-47, South China Sea, 20°00'N 113°00'E, 117 m, muddy sand, AT, coll. Xiutong Ma, 11 Jul.1959; 1 juvenile, CN N138B-21B, South China Sea, 18°30'N 110°15'E, 51.3 m, soft mud, BT, coll. Shoupeng Shen, 9 Mar.1960; 5 males, 9 ovigerous females, CN SSBIII17-57, Nansha Islands, 6°29.50'N 108°15.77'E, 94 m, muddy sand, AT, 7 May.1986; 1 ovigerous female, CN SSIVB46-33, Nansha Islands, 4°00.00'N 109°59.70'E, 99 m, muddy sand, AT, 15 May.1987; 1 male, 1 female, CN 8, Nansha Islands, 5°19.68'N 112°05.54'E, 127 m, muddy sand, AT, coll. Zhican Tang, 31 Jul.1988; 1 ovigerous female, CN 90C-0116B, Qinglan, Hainan Island, trawling, 5 Nov.1990; 50 ex., CN 93NS12-1, Nansha Islands, no detailed locality data, 107 m, fishing net, coll. Shaowu Wang, 2 May.1993; 3 males, 2 ovigerous females, CN 93NS17-2, Nansha Islands, Nansha Islands, no detailed locality data, 106 m, fishing net, coll. Shaowu Wang, 4 May.1993; 1 male, CN CJ97C-433, Sanya fishing harbor, Hainan Island, coll. Xinzhen Li, 28 Nov.1997.

Distribution. – Mediterranean, eastern Atlantic from Gibraltar to Cape Verde Islands, South Atlantic, Red Sea, Indo-West Pacific from Madagascar to French Polynesia and northward to Japan, at depths of 35-400 m.

Remarks. – Not previously reported from the Nansha Islands.

Plesionika ortmanni Doflein, 1902

Plesionika ortmanni Doflein, 1902: 616, Pl. III fig. 2 [type locality: south coast of Japan]; Chace, 1985: 92, Fig. 41; Li & Komai, 2003: 267; Li, 2004: 822.

Material examined. – 1 ovigerous female, CN 55-K411, Sanya fishing harbor, Hainan Island, 2 Dec.1955; 1 ovigerous female, CN 17-7, Beibu Bay, 17°30'N 108°30'E, 96.5 m, muddy sand, BT, coll. Zhengang Fan, 28 Jan.1959; 1 male, CN 31-24, 20°00'N 113°00'E, 114 m, muddy sand, AT, coll. Shaowu Wang, 17 Feb.1959; 1 female, CN Q42B-1, 17°00'N 109°30'E, 158 m, soft mud, BT, coll. Zhengang Fan, 10 Apr.1959; 1 ovigerous female, CN L65B-33, 19°15'N 111°00'E, 78 m, sandy mud, AT, coll. Xiutong Ma, 25 Apr.1959; 1 male, CN N151B-27, 19°15'N 111°00'E, 164 m, soft mud, BT, coll. Jixing Liu, 11 Mar.1960; 1 ovigerous female, CN K152B-14, South China Sea, 20°00'N 112°30'E, 101 m, muddy sand, AT, coll. Zhican Tang, 1 Apr.1960; 1 male, 1 ovigerous female, CN 33, Nansha Islands, 4°53.05'N 113°20.29'E, 102 m, muddy sand with broken shells, AT, 1 Aug.1988.

Distribution. – Western Pacific from Indonesia to Japan, at depths of 29-400 m.

Remarks. – Not previously reported from the Nansha Islands.

Plesionika semilaevis Bate, 1888

Plesionika semilaevis Bate, 1888: 644, Pl. 68 fig. 3 [type locality (restricted by lectotype selection by Chace, 1985): Moro Gulf east of Basilan Strait, Philippines]; Chace, 1985: 113, Figs. 51-54; Li & Komai, 2003: 268.

Material examined. – 86 ex. (3 ovigerous female), CN L33B-44, South China Sea, 19°00'N 113°00'E, 465 m, coarse sand, AT, coll. Huanlin Li, 17 Feb.1959; 2 males, CN 15, Nansha Islands, 7°18.83'N 116°12.29'E, 382 m, soft mud, AT, 27 Jul.1988.

Distribution. – Indonesia, Philippines, South and East China Seas, Japan; 176-700 m.

Remarks. – Not previously reported from the Nansha Islands.

Plesionika spinensis Chace, 1985

Plesionika spinensis Chace, 1985: 129, Figs. 58, 59 [type locality: western Mindanao Sea off Murcielagos Bay, Philippines]; Li & Komai, 2003: 269.

Material examined. – 1 male, CN 31B, Nansha Islands, 6°30.24'N 115°28.19'E, 145-185 m, muddy sand, AT, 27 Jul.1988.

Distribution. – South China Sea, Philippines; 199-472 m.

Remarks. – Not previously reported from the Nansha Islands.

Plesionika spinidorsalis (Rathbun, 1906)

Pandalus spinidorsalis Rathbun, 1906: 917, Pl. 21 fig.5 [type locality: Hawaii]

Plesionika spinidorsalis. - De Man, 1920: 107; Chace, 1985: 132, Figs. 60, 61; Chan & Crosnier, 1997: 226, Fig. 41.

Material examined. – 1 male, CN SSB1-1B, Nansha Islands, 10°20.40'N 109°41.27'E, 332-410 m, coll. Zhican Tang & Baolin Zhang, 12 Sep.1994.

Distribution. – South China Sea, Philippines, Indonesia, Hawaii; 100-1250 m.

Remarks. – Not previously reported from the Nansha Islands.

Proctetes levicarina (Bate, 1888)

Dorodotes levicarina Bate, 1888: 680 [type locality: Arafura Sea west of Torres Strait].

Proctetes levicarina – Holthuis, 1993: 278, Fig. 277; Li & Komai, 2003: 271; Li, 2004: 823.

Material examined. – 2 males, 2 females (1 ovigerous), CN 54-K296A, Wushi, Leizhou, Guangdong, coll. Ruiyu Liu & Yongliang Wang, 8 Dec.1954; 1 female, CN 54-K296B, Wushi, Leizhou, Guangdong, coll. Ruiyu Liu & Yongliang Wang, 8 Dec.1954; 7

females, CN 54-K334, Beihai, Guangxi, 18 Dec.1954; 20 ex., CN 54-K353, Weizhou Island, Guangxi, 23 Dec.1954; 3 ex., CN 55-K404, Sanya, Hainan Island, coll. Ruiyu Liu, 1 Dec.1955; 50 ex., CN 55-K438, Yinghai, Hainan Island, coll. Ruiyu Liu, 7 Dec.1955; 4 females, CN 55-K438A, Yinghai, Hainan Island, 14 Dec.1955; 1 female, CN 55-K519, Xincun, Hainan Island, coll. Zhengang Fan, 21 Dec.1955; 4 females (2 ovigerous), CN 55-K534, Xincun, Hainan Island, coll. Zhengang Fan, 24 Dec.1955; 20 ex., CN 55-K173, off Zhelang, Shanwei, Guangdong Province, China, coll. Ruiyu Liu, 27 Feb.1956; 1 male, CN 56-K248, Haimen fishery harbor, Zhejiang, Province, China, coll. Liu, 12 Mar.1956; 1 ovigerous female, CN 57K-281, Yinggehai, Hainan Island, coll. Zhengang Fan & Jieshan Xu, 26 Jun.1957; 30 ex., CN 55-K438, Yinghai, Hainan Island, coll. Liu, 7 Dec.1959; 1 male, CN X86A-1, Beibu Gulf, 18°15'N 108°15'E, 87 m, muddy sand, 0.1 m² grab, coll. Zhengang Fan, 13 Feb.1960; 1 ovigerous female, CN X90A-8, Beibu Gulf, 17°30'N 107°00'E, 52 m, muddy sand, 0.1 m² grab, coll. Zhengang Fan, 14 Feb.1960; 1 male, 4 females (3 ovigerous), CN SSBII3-56, Nansha Islands, 5°31.14'N 108°49.92'E, 121 m, sandy mud, AT, 28 May.1985; 1 male, 1 female, CN SSBII10-84, Nansha Islands, coral reef, no detailed locality, 53 m, AT, 4 Jun.1985; 5 females (2 ovigerous), CN SSBII9-53, Nansha Islands, 5°21.74'N 112°04.87'E, 136 m, muddy sand, AT, 30 Apr.1986; 2 ovigerous females, CN SSBIV-23B, Nansha Islands, 5°44.85'N 114°36.53'E, 111 m, sandy mud, AT, 9 May.1987; 1 male, 3 ovigerous females, CN SSMIV-27, Nansha Islands, 4°29.30'N 112°14.43'E, 78 m, soft mud, fishing net, 11 May.1987; 1 male, 1 ovigerous female, CN SSMIV-28, Nansha Islands, 4°29.30'N 112°14.43'E, 78 m, soft mud, fishing net, 11 May.1987; 1 male, CN SSBIV-45, Nansha Islands, 4°55.00'N 111°15.00'E, 110 m, soft mud, AT, 14 May.1987; 1 ovigerous female, CN SSIVB45-27, Nansha Islands, 4°26.00'N 111°00.00'E, 107 m, AT, 15 May.1987; 1 ovigerous female, CN SSBV27-84, Nansha Islands, 3°59.81'N 112°05.16'E, 56 m, muddy sand, 1 Aug.1988; 1 ovigerous female, CN 36, Nansha Islands, 4°53.05'N 113°20.29'E, 102 m, muddy sand with broken shells, 1 Aug.1988; 3 females, CN SSBVIII 1-50, Nansha Islands, 4°43.00'N 109°16.00'E, 110 m, muddy sand, 4 Jun.1990; 2 females, CN B92-B6-3, Sanya Bay, Hainan Island, 11-30m, sand, 22 Mar.1992; 2 males, CN B92-B11-30, Sanya Bay, Hainan Island, 11-30m, sand, 23 Mar.1992; 1 female, CN B92-B11-64, Sanya Bay, Hainan Island, 11-30m, sand, 23 Mar.1992; 1 female, CN NS2B-3, Nansha Islands, 5°00'N 110°00'E, 176 m, coll. Baolin Zhang, 6 Dec.1993; 1 ex., CN NS5B-8C, Nansha Islands, 5°30'N 112°00'E, 146 m, coll. Baolin Zhang, 10 Dec.1993; 2 males, 3 ovigerous females, CN SSBS-9c, Nansha Islands, 5°30.42'N 108°29.29'E, 93 m, coll. Zhican Tang & Baolin Zhang, 17 Sep.1994; 1 male, CN SSB10-10c, Nansha Islands, 4°30.63'N 110°30.11'E, 100 m, coll. Zhican Tang & Baolin Zhang, 23 Sep.1994; 2 males, 4 females (3 ovigerous), CN SSB12-5, Nansha Islands, 4°59.54'N 110°00.73'E, 102 m, coll. Zhican Tang & Baolin Zhang, 23 Sep.1994; 2 females (1 ovigerous), CN SSB9-8A, Nansha Islands, no detailed locality, 108 m, 23 Sep.1994; 1 male, 2 ovigerous females, CN CJ97C-050, Sanya fishing harbor, Hainan Island, coll. Xinzhen Li, 27 Feb.1997; 1 male, CN CJ97C-386, Sanya fishing market, Hainan Island, coll. Xinzhen Li, 25 Nov.1997; 4 females, CN CJ97C-397, Sanya fishing harbor, Hainan Island, coll. Xinzhen Li, 27 Nov.1997; 1 male, 3 females (2 ovigerous), CN CJ97C-432, Sanya, Hainan Island, coll. Xinzhen Li, 28 Nov.1997; 1 ovigerous female, CN CJ97C-459, Sanya Bay, Hainan Island, 19 m, coll. Xinzhen Li, 29 Nov.1997; 6 females (3 ovigerous), CN 05H-29, Hongsha, Sanya, Hainan Island, coll. Wei Jiang & Qiang Ma, 4 Sep.2005.

Distribution. – Red Sea to Indonesia, South China Sea, Philippines, East China Sea and Japan; 14-393 m.

Remarks. – Not previously reported from the Nansha Islands.

Stylopandalus richardi (Coutiere, 1905)

Pandalus (Stylopandalus) Richardi Coutiere, 1905a: 1115 [type locality: E. Atlantic].

Stylopandalus richardi - Burukovsky, 1982: 45; Chace, 1985: 136, Fig. 62.

Material examined. – 3 females (2 ovigerous), CN SSIVB-7, Nansha Islands, 6°29.67'N 113°51.04'E, 2830 m, soft mud, AT, 8 May.1987; 1 male, CN 2, Nansha Islands, 6°05.25'N 113°00.31'E, 1655 m, mud, AT, 30 Jul.1988.

Distribution. – Probably occurs in all major tropical and temperate seas, from the surface to a mid-water depth of 3600 meters (Chace, 1985): western and eastern Atlantic, Indian Ocean from off Natal to Australia, Tasman Sea, Pacific from the Philippines, Indonesia, Banda Sea, Hawaii to Alaska.

Remarks. – As this species is a pelagic shrimp, it is possible that the present specimens were trapped when the trawl was retrieved and brought to the surface. Not previously reported from the South China Sea.

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