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The "*Plesionika rostricrescentis* (Bate, 1888)" and "*P. lophotes* Chace, 1985" species groups of *Plesionika* Bate, 1888, with descriptions of five new species (Crustacea: Decapoda: Pandalidae)

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ABSTRACT

Before the present study, *Plesionika rostricrescentis* (Bate, 1888) and *P. lophotes* Chace, 1985 were the two *Plesionika* species unique in having a high basal rostral crest. A recently described species, *P. erythrocyclus* Chan & Crosnier, 1997 has a low basal rostral crest but is evidently related to *P. rostricrescentis*. Close examination of the abundant material collected during the MUSORSTOM expeditions and from Taiwan revealed that there are at least eight species in this "*P. rostricrescentis*-*P. lophotes*" species complex. These taxa are morphologically very similar but can be distinguished by their very distinctive colorations, which are often striking and consist of large circular spots. In the "*P. rostricrescentis*" group, which has the dorsal margin of the rostrum unarmed between the anteriormost tooth of the basal rostral crest and the subapical teeth, five species are recognized. *Plesionika rostricrescentis* is still known only by the holotype from the Kai Islands. Two new species, *P. hsuehyui* and *P. suffusa*, closely similar to *P. rostricrescentis*, are described. *Plesionika hsuehyui* is widely distributed from Taiwan to Fiji, while *P. suffusa* has only been found off New Caledonia. *Plesionika erythrocyclus*, previously known only from Taiwan and French Polynesia, occurs widely in the southern Pacific. Another new species, *P. bimaculata*, which closely resembles *P. erythrocyclus*, is distributed off New Caledonia and in adjacent areas. Three species are recognized in the "*P. lophotes*" group, which bear dorsal rostral teeth between the basal rostral crest and subapical teeth. *Plesionika lophotes* is restricted to the area between Japan and northwestern Australia. Two further closely similar new species, *P. rufomaculata* and *P. scopifera* are described, the former widely distributed from Okinawa to Futuna Island, the latter only off New Caledonia and Tonga. Although coloration is very important in distinguishing these species, species with similar color patterns do not necessarily belong to the same species group. Morphologically, these species are mainly separated by the height of the basal rostral crest, the number of rostral teeth, and the length of the stylocerite and the dactyli of the posterior three pereopods. However, there is sexual dimorphism in the development of the basal rostral crest in these species, sometimes making positive identification of males and young specimens difficult.

RÉSUMÉ

Les groupes d'espèces "*Plesionika rostricrescentis* (Bate, 1888)" et "*P. lophotes* Chace, 1985" de *Plesionika* Bate, 1888 avec les descriptions de cinq nouvelles espèces (Crustacea : Decapoda : Pandalidae).

Avant la présente étude, les deux seules espèces du genre *Plesionika* présentant une crête rostrale élevée étaient *Plesionika rostricrescentis* (Bate, 1888) et *P. lophotes* Chace, 1985. L'espèce récemment décrite, *P. erythrocyclus* Chan & Crosnier, 1997 a une crête rostrale basse mais est clairement affiliée à *P. rostricrescentis*. Une étude attentive d'un abondant matériel récolté par les campagnes MUSORSTOM et à Taiwan, a révélé qu'il y a au moins 8 espèces dans le complexe d'espèces "*P. rostricrescentis*-*P. lophotes*". Ces espèces sont morphologiquement très similaires mais peuvent être distinguées par leurs colorations remarquables qui sont souvent caractéristiques et se présentent comme de grandes taches circulaires. Dans le groupe "*P. rostricrescentis*", dont les espèces ont le bord dorsal du rostre inerme entre la dent la plus antérieure de la crête basale du rostre et les dents subapicales, on distingue cinq espèces. *P. rostricrescentis* demeure connue du seul holotype des îles Kai. Deux espèces nouvelles, *P. hsuehyui* n. sp. et *P. suffusa* n. sp., très proches de *P. rostricrescentis*, sont décrites. *P. hsuehyui* n. sp. est largement distribuée de Taiwan à Fidji, alors que *P. suffusa* n. sp. semble restreinte à la Nouvelle-Calédonie. *P. erythrocyclus*, connue auparavant de Taiwan et de Polynésie française, est maintenant largement retrouvée dans le Pacifique sud. Une autre espèce nouvelle, *P. bimaculata* n. sp., qui ressemble beaucoup à *P. erythrocyclus*, est distribuée en Nouvelle-Calédonie et dans ses environs. Dans le groupe de "*P. lophotes*", qui comprend des espèces ayant des dents sur la partie dorsale du rostre, entre la crête basale du rostre et les dents subapicales, trois espèces sont distinguées. *P. lophotes* est limitée aux régions comprises entre le Japon et l'Australie. Deux nouvelles espèces étroitement apparentées, *P. rufomaculata* n. sp. et *P. scopifera* n. sp. sont décrites. La première est largement répartie de Okinawa à Futuna, tandis que la dernière existe seulement autour de la Nouvelle-Calédonie et à Tonga. Bien que la coloration soit très importante pour reconnaître ces espèces, des espèces avec des patrons de couleurs similaires ne se rattachent pas nécessairement au même groupe. Morphologiquement, ces espèces sont principalement séparées par la hauteur de la crête basale du rostre, le nombre de dents rostrales, et la longueur du stylocerite et les dactyles des trois pattes postérieures. Cependant, il y a un dimorphisme sexuel dans le développement de la crête basale du rostre chez ces espèces et qui rend parfois difficile l'identification des mâles et des jeunes spécimens.

INTRODUCTION

Of about 80 species of *Plesionika* Bate, 1888 known to date, only two species, *P. rostricrescentis* (Bate, 1888) and *P. lophotes* Chace, 1985, have the basal part of the dorsal rostrum and the anterodorsal ridge of the carapace strongly compressed and highly elevated, such that the dorsobasal rostral and postrostral teeth form a high basal rostral crest. However, when describing *P. erythrocyclus* Chan & Crosnier, 1997, a species with a low basal rostral crest but clearly affiliated to *P. rostricrescentis*, it was noted that there were many undescribed forms similar to *P. rostricrescentis* and *P. lophotes* within the abundant material from the MUSORSTOM expeditions and from Taiwan. With the aid of color photographs and color notes, as well as direct observations of the color patterns of live and fresh specimens collected from Taiwan and during the NORFOLK 1 cruise in New Caledonia, the present study revealed the existence of at least eight species in the "*P. rostricrescentis*-*P. lophotes*" species complex, with five of them new to science. The colorations of these species are very constant and striking; most of them have large red circular spots on the abdomen but the position and configuration of these spots are very specific. Morphologically, these eight species can be separated into two groups, namely the "*P. rostricrescentis*" and "*P. lophotes*" groups. In the "*P. rostricrescentis*" group, the dorsal margin of the rostrum is unarmed between the subapical teeth and the anteriormost tooth of the basal rostral crest, the stylocerite is relatively long, and the dactyli of the posterior three pereopods are relatively short. On the other hand, in the "*P. lophotes*" group, there are teeth along the dorsal margin of the rostrum between the subapical teeth and the anteriormost tooth of the basal rostral crest, the stylocerite is relatively short, and the dactyli of the posterior three pereopods are relatively long. However, the species within each group are very similar and some of them can be distinguished from each other by only a few subtle differences. This situation recalls once again the importance of coloration in the taxonomy of *Plesionika* (see Chan & Yu 1991; Chan & Crosnier 1991, 1997).

In the "*P. rostricrescentis*" group, five species are recognized. *Plesionika rostricrescentis* is known only by the holotype from the Kai Islands and is unique in having a high number of ventral rostral teeth. Two of the new species in this group are closely similar to *P. rostricrescentis*. One is *P. hsuehyui*, which has a moderately high basal rostral crest and fewer ventral rostral teeth, and is found from Taiwan to Fiji. The other is *P. suffusa* from off New Caledonia, which is distinct in having

a very high basal rostral crest coupled with a very long stylocerite. *Plesionika erythrocyclus* has a low basal rostral crest and shorter stylocerite, and is now found to be widely distributed in the southern Pacific. The fifth member of this group, *P. bimaculata* n. sp., closely resembles *P. erythrocyclus*, but differs in having an even lower basal rostral crest and in having slightly more ventral rostral teeth. It is only known from New Caledonia and adjacent areas.

Three species are found in the "*P. lophotes*" group. *Plesionika lophotes*, known from Japan to northwestern Australia, is unique in having a very high basal rostral crest, many ventral rostral teeth and very long dactyli. The two other species are new and closely resemble each other: *P. rufomaculata* has a distinct basal rostral crest and fewer dorsal rostral teeth, and is widely distributed from Okinawa to Futuna Island; whilst *P. scopifera* n. sp., has a low basal rostral crest and slightly more dorsal rostral teeth, and is only found around New Caledonia and Tonga.

Since coloration is very important in distinguishing these morphologically very similar species, type specimens of the new species were selected from among specimens for which there were color photographs or other color information (including color markings that are still present on the preserved specimens). Conversely, in the absence of color information, it is only possible to give tentative identifications for damaged or young specimens. In the following descriptions of the species, particular attention is paid to characters that distinguish between closely similar species, and the characters themselves were chiefly derived from specimens with color information. For more details on the general characteristics of the "*P. rostricrescentis*-*P. lophotes*" species complex, the reader is referred to the original descriptions of *P. rostricrescentis* (Bate 1888), *P. lophotes* (Chace 1985) and *P. erythrocyclus* (Chan & Crosnier 1997). The number of teeth given for the dorsal rostrum proper excludes those teeth on the basal rostral crest (i.e. only those teeth before the anteriormost tooth of the basal rostral crest are counted). Also note that while pereopod II is generally longer on the left side, specimens with a longer right pereopod II are quite common among all these species (see also Chace 1985). Since these closely similar species have different body sizes, the relative lengths of the appendix masculina and appendix interna on pleopod II of the males are provided as additional information on the size of maturation of the species.

Unless otherwise stated, all specimens are at Muséum national d'Histoire naturelle, Paris (MNHN). Most material was collected either by "CP" = beam trawl or "DW" = Warén dredge. Some specimens are also deposited at National Taiwan Ocean University, Keelung (NTOU); National Museum of Natural Science, Taichung (NMNS); Natural History Museum, London (BMNH); National Museum of Natural History, Washington, D. C. (USNM); National Science Museum, Tokyo (NSMT); Natural History Museum and Institute, Chiba (CBM); and Pukyong National University, South Korea. The specimens collected from Taiwan and from the NORFOLK I cruise all have color information. The abbreviations used are "cl" = carapace length (measured dorsally from the orbital margin to the posterior margin of the carapace), "cn" = specimens with color notes, "cm" = color markings still present on the preserved specimens, "am" = appendix masculina of pleopod II, "ai" = appendix interna of pleopod II. When provided, the size of the eggs refers only to uneyed eggs.

SYSTEMATIC ACCOUNT

"*Plesionika rostricrescentis* (Bate, 1888)" group

Plesionika bimaculata n. sp.

Figs 1, 10

TYPE MATERIAL. — Vanuatu (holotype). MUSORSTOM 8: stn CP 971, 20°18.87'S, 169°53.12'E, 250-315 m, 21.09.1994, holotype ovig. ♀ cl 11.0 mm (photograph) (MNHN Na 14112).

New Caledonia (paratypes). CHALCAI. 2: stn CP 18, 24°47'S, 168°9.43'E, 274 m, 27.10.1986, 1 ♂ cl 10.0 mm (photograph) (MNHN Na 14113); stn CP 19, 24°42.85'S, 168°9.73'E, 271 m, 27.10.1986, 1 ♂ cl 9.3 mm (photograph), 3 ♂ cl 7.6-8.5 mm, 5 ovig. ♀ cl 6.6-8.9 mm (cm & cn) (MNHN Na 14114). — SMIB 3: stn CP 15, 23°41'S, 168°E, 280 m,

23.05.1987, 1 ovig. ♀ cl 7.6 mm (photograph) (MNHN Na 14115). — SMIB 5: stn DW 84, 22°20.8'S, 168°43.1'E, 290 m. 13.09.1989, 1 ovig. ♀ cl 7.9 mm (photograph) (MNHN Na 14116); stn DW 104, 23°15.7'S, 168°4.4'E, 335 m. 14.09.1989, 1 ♂ cl 8.7 mm (cm) (MNHN Na 14117). — SMIB 8: stn CP 162, 24°47'S, 168°8.7'E, 254-264 m. 28.01.1993, 1 ovig. ♀ cl 10.3 mm (photograph) (MNHN Na 14118). — BATHUS 3: stn CP 835, 23°02'S, 166°58'E, 350 m, 30.11.1993, 1 ovig. ♀ cl 11.1 mm (photograph) (MNHN Na 14119). — BATHUS 4: stn CP 936, 19°3.67'S, 163°28.5'E, 258-252 m, 8.08.1994, 2 ♂ cl 8.5 and 8.6 mm, 1 ovig. ♀ cl 8.6 mm (cm) (NTOU P-B-936, from MNHN exchange). — HALICAL 1: stn DW 02, 18°54'S, 163°24'E, 352-397 m, 23.11.1994, 1 ovig. ♀ cl 12.3 mm (cm) (MNHN Na 14120). — NORFOLK 1: stn CP 1668, 23°40.44'S, 168°0.54'E, 234-261 m, 21.06.2001, 4 ovig. ♀ cl 5.3-7.6 mm (photograph) (NTOU P-N-1668); stn CP 1716, 23°21.53'S, 168°2.60'E, 276-266 m, 26.06.2001, 1 ♂ cl 7.4 mm, 1 ovig. ♀ cl 11.1 mm (cm) (NTOU P-N-1716).

Loyalty Islands (paratype). MUSORSTOM 6: stn DW 472, 21°8.6'S, 167°54.7'E, 300 m, 22.02.1989, 1 ♂ cl 8.3 mm (photograph) (MNHN Na 14121).

OTHER MATERIAL EXAMINED. — Chesterfield Islands. MUSORSTOM 5: stn 254, 25°10.29'S, 159°53.07'E, 280-290 m, 7.10.1986, 1 ovig. ♀ cl 8.9 mm; stn 287, 25°5.4'S, 159°36.3'E, 270 m, 10.10.1986, 1 ♂ cl 6.9 mm; stn 288, 24°4.8'S, 159°36.8'E, 270 m, 10.10.1986, 1 ♂ cl 8.3 mm; stn DW 304, 385-420 m, 12.10.1986, 1 ovig. ♀ cl 7.7 mm; stn 309, 22°10.2'S, 159°22.8'E, 340 m, 12.10.1986, 1 ♂ cl 8.8 mm, 4 ovig. ♀ cl 8.7-9.6 mm; stn 311, 22°13.6'S, 159°23.9'E, 320 m, 12.10.1986, 1 ovig. ♀ cl 12.2 mm; stn 312, 22°17.2'S, 159°24.8'E, 315-320 m, 12.10.1986, 1 ovig. ♀ cl 8.2 mm; stn 348, 19°36'S, 158°31.7'E, 260 m, 17.10.1986, 1 ♂ cl 7.8 mm; stn 377, 19°48.6'S, 158°29.1'E, 260-270 m, 20.10.1986, 2 ovig. ♀ cl 6.4 and 7.5 mm (cm).

New Caledonia. S Île des Pins, 300 m, 20.10.1976, 1 ♂ cl 10.0 mm, 2 ovig. ♀ cl 10.8 and 11.3 mm. — LAGON: stn 380, Grand Récif Sud, 22°30'S, 167°12'E, 60 m, 22.01.1985, 1 ovig. ♀ cl 9.5 mm; stn 444, Atoll de Surprise, 18°15'S, 162°59'E, 300-350 m, 28.02.1985, 1 spec 5.6 mm (damaged); stn 490, Lagon Nord, 18°55'S, 163°24'E, 230 m, 3.03.1985, 1 ♀ cl 6.0 mm and 1 abdomen. — BIOCAL: stn CP 110, 22°13'S, 167°8'E, 275-320 m, 9.09.1985, 1 ♂ cl 9.0 mm, 1 ♀ cl 10.0 mm (cm & cn). — MUSORSTOM 4: stn 227, 22°46'S, 167°20'E, 300 m, 30.09.1986, 1 ♀ cl 6.3 mm. — CHALCAL 2: stn CP 20, 24°44.6'S, 168°9.3'E, 230 m, 27.10.1986, 1 ♂ cl 7.5 mm, 3 ovig. ♀ cl 7.4-9.5 mm (cm), stn CP 26, 23°18.15'S, 168°3.58'E, 296 m, 31.10.1986, 3 ♂ cl 8.4-10.2 mm, 4 ovig. ♀ cl 7.3-10.7 mm, 1 ♀ cl 8.7 mm (cm & cn); stn CP 27, 23°15.29'S, 168°4.55'E, 289 m, 31.10.1986, 4 ovig. ♀ cl 6.6-8.1 mm, 2 ♀ cl 7.5 and 12.0 mm (cm); stn DW 71, 24°42.26'S, 168°9.52'E, 230 m, 27.10.1986, 1 ovig. ♀ cl 6.4 mm; stn DW 78, 23°41.3'S, 167°59.6'E, 233 m, 30.10.1986, 4 ♂ cl 6.1-7.5 mm, 2 ovig. ♀ cl 6.1 and 6.6 mm, 3 ♀ cl 4.5-6.0 mm (cm). — SMIB 4: stn DW 55, 23°21.4'S, 168°4.5'E, 260 m, 9.03.1989, 1 ovig. ♀ cl 7.5 mm (cm); stn DW 56, 23°20.6'S, 168°5.2'E, 260 m, 9.03.1989, 2 ovig. ♀ cl 9.6 and 12.7 mm (cm). — SMIB 5: stn DW 87, 22°18.7'S, 168°41.5'E, 13.09.1989, 1 ♂ cl 7.6 mm; stn DW 93, 22°20.0'S, 168°42.3'E, 255 m, 19.09.1989, 1 ovig. ♀ cl about 8.7 mm (cm, badly damaged); stn DW 94, 22°19.6'S, 168°42.8'E, 275 m, 13.09.1989, 3 ovig. ♀ cl 8.0-9.6 mm (cm); stn DW 97, 23°01.1'S, 168°18.0'E, 300 m, 14.09.1989, 1 ovig. ♀ cl 9.4 mm (cm); stn DW 98, 23°1.7'S,

168°16.1'E, 335 m, 14.09.1989, 1 ♂ cl 8.8 mm (cm); stn DW 101, 23°21.2'S, 168°4.9'E, 270 m, 14.09.1989, 1 ♂ 7.3 mm, 2 ovig. ♀ cl 7.9 and 8.5 mm (cm); stn DW 103, 23°17.4'S, 168°4.8'E, 315 m, 14.09.1989, 1 ovig. ♀ cl 9.3 mm (cm); stn DW 104, 23°15.7'S, 168°4.4'E, 335 m, 14.09.1989, 1 ovig. ♀ cl 8.6 mm (cm). — SMIB 6: stn DW 120, 18°58.5'S, 163°25.6'E, 310-325 m, 3.03.1990, 1 ♂ cl 6.3 mm, 1 ♀ cl 7.0 mm. — BERYX 11: stn CP 23, 24°43'S, 168°8'E, 270-290 m, 17.10.1992, 1 ♂ cl 8.1 mm; stn CP 25, 24°44'S, 168°9'E, 230-235 m, 17.10.1992, 1 ♂ cl 7.0 mm, 1 ovig. ♀ cl 6.5 mm (cm); stn CP 46, 23°42'S, 168°1'E, 300-350 m, 20.10.1992, 1 ♂ cl 8.4 mm, 1 ovig. ♀ cl 9.2 mm, 1 ♀ cl 6.4 mm. — SMIB 8: stn DW 158, 24°46.1'S, 168°2.2'E, 262-290 m, 28.01.1993, 1 ♂ cl 7.2 mm, 1 ♀ cl 5.7 mm; stn CP 161, 24°46.7'S, 168°9'E, 232-251 m, 28.01.1993, 1 ovig. ♀ cl 9.0 mm; stn DW 163, 24°49.1'S, 168°8.9'E, 310-460 m, 28.01.1993, 2 ♂ cl 5.8 and 7.1 mm, 1 ovig. ♀ cl 8.36 mm, 4 ♀ cl 5.4-5.7 mm, 1 juvenile (pleopod II missing) 5.1 mm; stn DW 170, 23°41.2'S, 168°0.5'E, 241-244 m, 29.01.1993, 1 ovig. ♀ cl 5.6 mm, 2 ♀ cl 4.5 and 6.4 mm; stn DW 181, 23°17.7'S, 168°4.8'E, 311-330 m, 31.01.1993, 1 ♀ cl 5.1 mm; stn DW 182, 23°19.3'S, 168°4.8'E, 314-340 m, 31.01.1993, 1 ♂ cl 7.0 mm, 3 ovig. ♀ cl 7.6-10.9 mm, 2 ♀ cl 7.8 and 8.3 mm; stn DW 183, 23°18.3'S, 168°4.9'E, 330-367 m, 31.01.1993, 3 ♂ cl 6.4-9.6 mm, 1 ♀ cl 5.7 mm; stn DW 184, 23°18.3'S, 168°4.8'E, 305-320 m, 31.01.1994, 2 ♂ cl 6.6 and 6.8 mm, 1 ovig. ♀ cl 7.4 mm; stn DW 190, 23°18.5'S, 168°4.9'E, 305-310 m, 31.01.1993, 2 ♀ cl 6.0 and 6.9 mm. — BATHUS 3: stn CP 804, 23°41.4'S, 168°00.42'E, 244-278 m, 27.11.1993, 1 ovig. ♀ cl 11.2 mm; stn CP 805, 23°41.3'S, 168°1.08'E, 278-310 m, 27.11.1993, 1 ♂ cl 7.1 mm. — BATHUS 4: stn CP 905, 19°02.45'S, 163°15.65'E, 294-296 m, 4.08.1994, 1 ovig. ♀ cl 12.2 mm; stn DW 931, 18°55.38'S, 163°24.36'E, 360-377 m, 7.08.1994, 1 ♂ cl 10.1 mm (cm). — LITHIST: stn CP 10, 24°48.4'S, 168°9.0'E, 245-261 m, 1.08.1999, 1 ♂ cl 5.9 mm, 2 ovig. ♀ cl 5.8 and 6.2 mm.

Vanuatu. MUSORSTOM 8: stn CP 1031, 17°52.95'S, 168°33.11'E, 310 m, 29.09.1994, 1 ♂ cl 9.6 mm (cm).

Loyalty Islands. MUSORSTOM 6: stn DW 473, 21°8.8'S, 167°55.3'E, 236 m, 22.02.1989, 1 ♂ cl 6.5 mm, 1 ♀ cl 10.7 mm; stn DW 476, 21°9.36'S, 167°56.4'E, 300 m, 22.02.1989, 2 ♀ cl

4.8 and 6.0 mm; stn DW 480, 21°8.5'S, 167°55.98'E, 380 m, Hunter Islands, VOI.SMAR: stn DW 7, 22°26'S, 171°44.1'E, 22.02.1989, 1 ♂ cl 7.3 mm, 1 ovig. ♀ cl 10.4 mm, 5 ♀ cl 400 m, 1.06.1989, 1 ♂ cl 9.8 mm (cm); stn DW 41, 22°17.7'S, 5.2-7.3 mm. 168°41.2'S, 250 m, 8.06.1989, 1 ♂ cl 8.7 mm.

DESCRIPTION. — Largest male cl 10.2 mm, largest female 12.7 mm, smallest ovigerous female 5.3 mm, smallest male with am longer than ai 7.0 mm, some males of 6.6-8.8 mm with am as long as ai, largest male with am shorter than ai 7.3 mm. Rostrum bending downwards near base but recurved upwards after passing eyes, 1.1-1.8 x (mean 1.34, $n = 9$) as long as carapace, that of males generally longer and less curved, sometimes even rather horizontal; basal rostral crest very low, sometimes nearly level with dorsal surface of carapace in males and juveniles, bearing 1 (rarely 2, very rarely 0) fixed and 6 (rarely 7, very rarely 5) movable teeth, with posterior 5 (rarely 6) teeth situated posterior to orbital margin; dorsal rostrum proper unarmed except for 2 (very rarely 3) subapical teeth; 10 or 11 (rarely 9, very rarely 13) teeth distributed on ventral rostrum. Stylocerite tapered anteriorly, more or less extending to base of distal segment of antennular peduncle. Scaphocerite 3.9-5.5 x (mean 4.7, $n = 8$) as long as broad.

Maxilliped III slightly overreaching scaphocerite, with distal segment 1.3-1.7 x (mean 1.5, $n = 8$) as long as penultimate segment. Pereiopod I more or less extending to tip of scaphocerite. Pereiopod II bearing 13-18 carpal articles on right side and 58-65 carpal articles on left side, the shorter one exceeding the scaphocerite by about half a chela. Pereiopod III overreaching scaphocerite by up to 1/3 length of propodus and entire dactylus; propodus 0.44-0.87 x (mean 0.54, $n = 8$) as long as carapace; dactylus elongate conical, 0.13-0.23 x (mean 0.20, $n = 8$) as long as propodus, posterior margin bearing 4 (sometimes 3) spinules, accessory spine abutting and half to almost as long as terminal spine. Pereiopods IV and V similar to pereiopod III, former overreaching scaphocerite more or less by entire dactylus, latter exceeding scaphocerite by half to nearly entire length of dactylus.

Abdominal somite III slightly arched dorsally. Telson 1.2-1.4 x longer than abdominal somite VI, latter 1.7-1.9 x as long as deep.

Eggs about 0.4 mm in diameter.

Color: Body translucent and slightly reddish, covered with golden reticular mesh except for abdominal somite VI and tailfan. Abdominal pleuron I with large red circle; dorsolateral part of abdominal tergite III with small red-margined golden spot encircled by thick white ring. Eyes dark brown. Rostrum transparent with distal 1/3 banded with red and white. Antennular and antennal flagella also banded with red and white. Pereiopods faintly banded with red and white (bands on proximal segments slightly more distinct). Pleopods same color as body and with outer border often whitish. Eggs light green to light blue.

DISTRIBUTION. — Chesterfield Islands, New Caledonia, Loyalty Islands, Vanuatu and Hunter Islands, 230-460 m (one record from 60 m, LAGON stn 380).

REMARKS. — The largely unarmed dorsal margin of the rostrum aligns this new species with the "*P. rostricrescentis*" group. Nevertheless, the presence of the characteristic two spots (one large and one small) on the abdomen readily distinguishes it from the other members in this group. Even in preserved specimens, these spots can often be traced. Morphologically, *P. bimaculata* is very similar to the recently described *P. erythrocyclus* in having smaller body size, a low (sometimes indistinct) basal rostral crest and a shorter stylocerite. The two species can only be separated by the subtle differences in the rostrum, which is generally longer in *P. bimaculata* than in *P. erythrocyclus* (1.1-1.8 x longer than the carapace, mean 1.34; versus < 1.3 x longer than carapace). The ventral rostral teeth are usually more numerous in *P. bimaculata* than in *P. erythrocyclus* (usually 10 or 11, versus 6-9). There were nine ventral rostral teeth in only seven (4.6%) of the 153 *P. bimaculata* specimens examined. Moreover, it seems that the body size is somewhat larger and pereiopod II bears more carpal articles in *P. erythrocyclus* than in *P. bimaculata* (see "description" of these two species). The dactyli of the posterior three pereiopods also appear to be somewhat longer in *P. bimaculata* than in *P. erythrocyclus*, but there are considerable overlaps in this character.

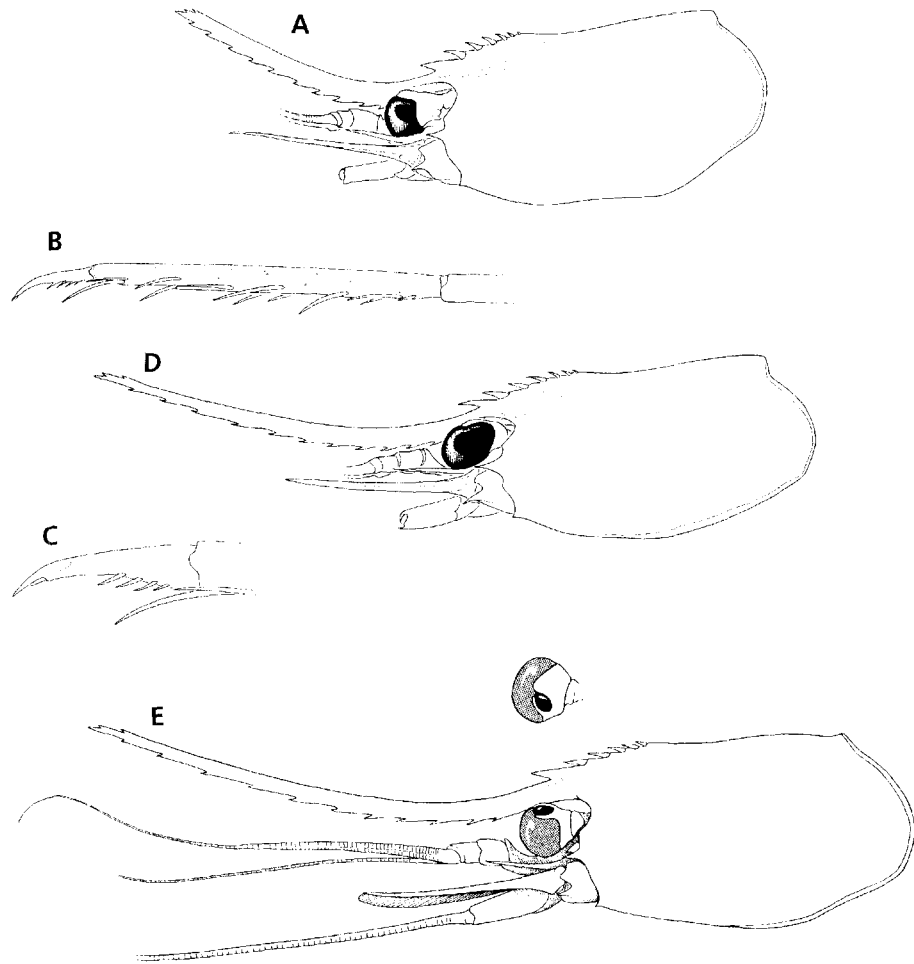


FIG. 1. *Plesionika bimaculata* n. sp. A-C, holotype, ovig. female, cl 11.0 mm, MUSORSTOM 8 stn CP 971, New Caledonia, 250-315 m (MNHN Na 14112): A, lateral view of carapace; B-C, propodus and dactylus of pereopod III. — D, paratype, male, cl 9.3 mm, CHALCAL 2 stn CP 19, New Caledonia, 271 m (MNHN Na 14114): lateral view of carapace. — E, male, cl 10.0 mm, New Caledonia, S île des Pins, 300 m: lateral view of carapace.

FIG. 1. *Plesionika bimaculata* n. sp. A-C, holotype, femelle ovigère, cl 11,0 mm, MUSORSTOM 8 stn CP 971, Nouvelle-Calédonie, 250-315 m (MNHN Na 14112): A, vue latérale de la carapace; B-C, propode et dactyle du péréiopode III. — D, paratype, mâle, cl 9,3 mm, CHALCAL 2 stn CP 19, Nouvelle-Calédonie, 271 m (MNHN Na 14114): vue latérale de la carapace. — E, mâle, cl 10,0 mm, Nouvelle-Calédonie, Sud île des Pins, 300 m: vue latérale de la carapace.

The basal rostral crest of *P. bimaculata* is the lowest in the *P. rostricrescentis* group, with the base of the postrostral teeth hardly raised from the dorsal surface of the carapace in males and juveniles. The length of the stylocerite varies considerably in this new species. It usually extends to the base of the distal antennular segment, but it can nearly reach the tip of the antennular peduncle or fall short of the distal end of the second antennular segment.

This new species superficially resembles *P. assimilis* de Man, 1917, which is relatively small, and has no basal rostral crest, a long portion of the dorsal rostrum unarmed and the posterior three pereopods with short dactyli. The armature of the rostrum is quite different, *P. assimilis* having only four or five movable postrostral teeth, with the dorsal margin of rostrum having two or three basal teeth and three or four (rarely two) subapical teeth. Moreover, the ventral rostral teeth become noticeably larger posteriorly. As discussed by Chace (1985), *P. assimilis* is probably closely related to, if not identical with, *P. binoculus* (Bate, 1888).

ETYMOLOGY. — The specific name *bimaculata* refers to the two distinctive spots on abdominal somites I and III.

Plesionika erythrocyclus Chan & Crosnier, 1997

Figs 2, 11

Plesionika erythrocyclus Chan & Crosnier, 1997: 214, figs 16, 34, 35.*Plesionika rostricrescentis* - King 1984: 178, fig. Pr (not Bate, 1888).*Plesionika* n. sp. - Poupin 1996: pl. 4a.

TYPE MATERIAL. — Mururoa. 350-600 m, 1984, holotype ovig. ♀ cl 10.7 mm (MNHN Na 13123); stn 499, 21°47.6'S, 138°55.7'W, 200 m, 5.05.1996, 1 paratype ovig. ♀ cl 11.6 mm (photograph) (NTOU P-SP-499, from MNHN exchange).

OTHER MATERIAL EXAMINED. — Taiwan (all with color information). Su-Aou fishing port, NE coast, I-Lan County, commercial trawler, about 300 m, 22.05.1990, 1 ♀ cl 10.3 mm (NTOU); -10.1999, 1 ♂ cl 14.3 mm (NTOU). TAIWAN 2000: stn CP 77, 24°54.18'N, 122°2.46'E, 360 m, 07.05.2001, 1 ovig. ♀ cl 14.2 mm (NTOU). — TAIWAN 2002: stn DW 148, 22°18.59'N, 121°28.39'S, 267 m, 20.05.2002, 1 ♀ cl 6.6 mm (NTOU); stn DW 151, 22°18.34'N, 121°30.04'S, 301 m, 20.05.2002, 1 ♀ cl 8.3 mm (NTOU).

Futuna Island. MUSORSTOM 7: stn DW 516, 14°13'S, 178°12'W, 441-550 m, 12.02.1992, 1 ♂ cl 7.7 mm (photograph).

New Caledonia. MUSORSTOM 4: stn 193, 18°56.3'S, 163°23.2'E, 415 m, 19.09.1985, 2 ♀ cl 5.9 and 11.4 mm. — LAGON: stn DW 1153, Lagon Nord, 18°58.4'S, 163°23'E, 330 m, 29.09.1989, 1 ♀ 10.3 mm. — SMIB 6: stn DW 125, 18°57.4'S, 163°23.5'E, 335-350 m, 3.03.1990, 1 ♀ 7.7 mm. — SMIB 8: stn DW 178, 23°45.1'S, 168°17'E, 30.01.1993, 1 ovig. ♀ cl 11.3 mm; stn DW 179, 23°45.9'S, 168°17'E, 30.01.1993, 2 ♂ cl 10.2 and 11.3 mm; stn DW 184, 23°18.3'S, 168°4.8'E, 305-320 m, 31.01.1993, 1 ♂ cl 9.7 mm, 3 ovig. ♀ cl 10.8-12.6 mm. — BERYX 11: stn CP 07, 24°55'S, 168°21'E, 510-550 m, 15.10.1992, 1 ♀ cl 10.3 mm (damaged); stn CP 31, 23°39'S, 167°44'E, 430-440 m, 18.10.1992, 1 ♀ cl 12.3 mm. — BATHUS

4: stn DW 925, 18°54.5'S, 163°23.75'E, 370-405 m, 7.08.1994, 1 ♀ cl 7.1 mm. — NORFOLK 1: stn CP 1718, 23°23.73'S, 168°1.39'E, 260-373 m, 26.06.2001, 1 ♂ cl 10.5 mm, 1 ♀ cl 7.1 mm (photograph) (NTOU); stn CP 1719, 23°22.35'S, 168°1.24'E, 391-407 m, 26.06.2001, 1 ovig. ♀ cl 16.0 mm (cn) (NTOU); stn CP 1722, 23°17.6'S, 168°1.0'E, 540 m, 26.06.2001, 1 ♀ cl 7.81 mm (cn) (NTOU).

Tonga. BORDAU 2: stn DW 1595, 19°03'S, 174°19'W, 523-806 m, 14.06.2000, 2 ♀ cl 6.3 and 7.3 mm.

Loyalty Islands. MUSORSTOM 6: stn CP 408, 20°41.1'S, 167°7.8'E, 380 m, 15.02.1989, 1 ♀ cl 9.0 mm (photograph); stn DW 457, 21°0.42'S, 167°28.71'E, 353 m, 20.02.1989, 1 ♀ cl 8.7 mm; stn DW 479, 21°9.13'S, 167°54.95'E, 310 m, 22.02.1989, 1 ♀ cl 11.5 mm.

Vanuatu. MUSORSTOM 8: stn CP 982, 19°21.8'S, 169°26.47'E, 408-410 m, 23.09.1994, 1 ♀ cl 9.2 mm (rostrum broken).

Chesterfield Islands. MUSORSTOM 5: stn 301, 22°06.9'S, 159°24.6'E, 487-610 m, 12.10.1986, 1 ovig. ♀ cl 10.7 mm (photograph).

Matthew Islands. VOLSMAR: stn DW 41, 22°17.7'S, 168°41.2'S, 250 m, 8.06.1989, 1 ♀ cl 6.3 mm.

DESCRIPTION. — Largest male cl 14.3 mm, largest female 16.0 mm, smallest ovigerous female 10.7 mm, smallest male with am longer than ai 9.7 mm, largest male with am shorter than ai 7.7 mm. Rostrum bending downwards near base but strongly recurved upwards (sometimes less curved in males) after passing eyes, 0.9-1.3 x (longer in males) as long as carapace; basal rostral crest low, bearing 1 or 2 fixed and 6 (less frequently 5, rarely 7) movable teeth, posterior 5-7 (mostly 6) of them situated posterior to orbital margin; dorsal rostrum proper unarmed except for 2 (rarely 3) small subapical teeth; 6-9 teeth evenly distributed on ventral rostrum. Stylocerite tapered anteriorly, more or less extending to base of distal segment of antennular peduncle. Scaphocerite 3.9 to 4.6 x longer than broad.

Maxilliped III with distal segment 1.4-1.7 x as long as penultimate segment, overreaching scaphocerite by 1/2-1/3 length of distal segment. Pereiopod I overreaching scaphocerite by up to 2/3 length of chela. Pereiopod II bearing 18-30 carpal articles on right side and 76-90 carpal articles on left side, shorter one exceeding scaphocerite by less than 1/5 length of carpus and entire chela to only about half chela. Pereiopod III overreaching scaphocerite by 1/2-1/3 length of propodus and entire dactylus; propodus about half as long as carapace; dactylus elongate conical, 0.14-0.18 x as long as propodus, posterior margin bearing 2-5 spinules, accessory spine half to almost as long as and abutting terminal spine. Pereiopods IV and V similar to pereiopod III, former overreaching scaphocerite by less than 1/5 length of propodus and entire dactylus, latter exceeding scaphocerite by less than 1/5 length of dactylus.

Abdominal somite III slightly arched dorsally. Telson 1.3-1.5 x longer than abdominal somite VI, latter 1.6-1.7 x longer than deep.



FIG. 2. *Plesionika erythrocyclus* Chan & Crosnier, 1997, ovig. female, cl 10.7 mm, MUSORSTOM 5 stn 301, New Caledonia, 487-610 m (MNHN): lateral view of carapace.

FIG. 2. *Plesionika erythrocyclus* Chan & Crosnier, 1997, femelle ovigère, cl 10,7 mm, MUSORSTOM 5 stn 301, Nouvelle-Calédonie, 487-610 m (MNHN): vue latérale de la carapace.

transverse red band and/or large but faint red circle (these colors quickly become faded with decreasing freshness of the specimens). Eggs light blue to light green.

DISTRIBUTION. — Taiwan, Mururoa, Rurutu, Chesterfield Islands, New Caledonia, Loyalty Islands, Vanuatu, Matthew Island, Futuna Island, and Tonga, and possibly also Fiji (see Chan & Crosnier 1997), 200-806 m.

REMARKS. — Most of the specimens from New Caledonia and adjacent areas are very similar to the material from French Polynesia and Taiwan. Although it is now known that a faint red circle is occasionally present on abdominal pleuron I in *P. erythrocyclus*, it is still unique in the “*P. rostricrescentis*-*P. lophotes*” species complex by having two extra pairs of distinct red spots on abdominal somite VI and on the exopods of the uropods. Moreover, *P. erythrocyclus* can be readily separated from *P. bimaculata* by the size of the red circle on abdominal tergite III and the distinctly banded pereopods (Figs 10, 11), though morphologically the two species are very similar (see “remarks” under *P. bimaculata*). However, unlike *P. bimaculata*, the coloration of *P. erythrocyclus* fades quickly after preservation, making identification very difficult and sometimes merely provisional.

The basal rostral crest of *P. erythrocyclus* is low but still distinct in mature females, though it may be obscure in males and juveniles. Nevertheless, the rostrum of males and juveniles is generally shorter in *P. erythrocyclus* than in *P. bimaculata*. As in *P. bimaculata*, the length of the stylocerite also varies considerably in *P. erythrocyclus*, sometimes extending to the tip of the antennular peduncle or reaching only the middle of the second antennular segment.

Although more species are now known in the “*P. rostricrescentis*” group, *P. erythrocyclus* still most closely resembles King’s (1984), figure “Pr”. Moreover, the presence of *P. erythrocyclus* in Vanuatu and Tonga was confirmed during this study. Besides the specimens listed above, there is a photograph (MNHN) of a Tongan specimen from BORDAU 2 stn CP 1591, showing this species, the subject of which has yet to be seen.

Plesionika hsuehyui n. sp.

Figs 3, 12, 13

Plesionika rostricrescentis Chace 1985: 112 (in part not Bate, 1888).

TYPE MATERIAL. — Taiwan (holotype and paratypes, all with color information). Tai-Shi fishing port, NE coast, I-Lan County, commercial trawlers, about 300 m, 28.04.1989, ovig. ♀ holotype, cl 19.0 mm (cn) (NTOU H-1989-4-28). — Tai-Shi fishing port, NE coast, I-Lan County, commercial trawlers, about 300 m, 16.06.1985, 1 ovig. ♀ cl 15.4 mm (NTOU P-1985-6-16); 8.05.1988, 1 ♂ cl 14.9 mm (NTOU P-1988-5-8); 9.01.1989, 1 ♂ cl 13.2 mm (NTOU P-1989-

Eggs about 0.4 mm in diameter.

Color: Body somewhat orange-red and covered with yellowish to golden reticulate stripes, sometimes carapace also distributed with faint white spots. Eyes pale black. Tip of rostrum reddish. Thoracic appendages, antennal and antennular flagella with distinct red bands. Lateral surface of abdominal tergite III bearing large red-margined golden round spot encircled by thick white band (which is sometimes also red-margined). Abdominal tergite VI also with pair of small submedian red spots, exopods of uropods with pair of red dots adjacent to outer margin. Posterior border of each abdominal pleuron sometimes whitish and abdominal pleuron I also occasionally bearing broad

1-9). — 28.04.1989, 12 ♂ cl 7.8-15.5 mm, 13 ovig. ♀ cl 11.4-19.2 mm, 5 ♀ cl 10.6-13.3 mm (MNHN Na 14122, from NTOU exchange); 20.12.1988, 1 ♀ cl 17.3 mm (MNHN Na 14123, from NTOU exchange); 13.06.1995, 2 ♂ cl 14.1 and 15.7 mm, 9 ovig. ♀ cl 10.8-17.0 mm, 1 ♀ cl 13.3 mm (NTOU P-1995-6-13); 04.1997, 1 ovig. ♀ cl 16.9 mm (MNHN Na 14124, from NTOU exchange); 15.12.1997, 1 ♂ cl 13.0 mm (NTOU P1997-12-15, transferred to NMNS); 24.04.2001, 1 ovig. ♀ cl 16.7 mm (NTOU P-2001-4-24). — Su-Aou fishing port, NE coast, I-Lan County, commercial trawlers, about 300 m, 11.02.2000, 1 ♂ cl 13.4 mm, 1 ovig. ♀ cl 16.8 mm (NTOU P-2000-2-11, transferred to NMNS). — TAIWAN 2001: stn CP 75, 24°56.72'N, 122°1.81'E, 139 m, 07.05.2001, 1 cl, 14.3 mm, 3 ovig. ♀ cl 13.7-15.6 mm (NTOU P-2001-75); stn CP 76, 24°56.54'N, 122°1.51'E, 115-170 m, 07.05.2001, 2 ♂ cl 14.3 and 14.9 mm (NTOU P-2001-76).

OTHER MATERIAL EXAMINED. — Philippines *Albatross*: stn 5398, 11°35.12'N, 124°13.48'E, 209 m, 15.03.1909, 1 ♂ cl 10.7 mm, 1 ♀ cl 11.3 mm (USNM 205426).

Fiji. BORDAU 1: stn CP 1411, 16°5'S, 179°28'W, 390-403 m, 26.02.1999, 1 ♂ cl 16.1 mm (photograph).

New Caledonia. S île des Pins, 300 m, 20.10.1976, 1 ♂ cl 14.4 mm, 1 ovig. ♀ cl 14.5 mm. — BIOCAL: stn CP 67, 24°55'S, 168°22'E, 500-510 m, 3.09.1985, 1 ♂ cl 16.0 mm. — MUSORSTOM 4: stn 172, 19°1.2'S, 163°16'E, 275-330 m, 17.09.1985, 1 ♀ cl 7.33 mm. — CHALCAL 2: stn DW 78, 320-360 m, 30.10.1986, 1 ovig. ♀ cl 16.7 mm (photograph); stn DW 81, 23°19.6'S, 168°3.4'E, 311 m, 31.10.1986, 1 ♂ cl 13.2 mm. — SMIB 3: stn DW 14, 23°40'S, 168°0'E, 246 m, 22.05.1987, 1 ♀ cl 11.3 mm (photograph); stn DW 30, 22°58'S, 167°22'E, 648 m, 25.05.1987, 1 ♂ cl 15.9 mm. — SMIB 4: stn DW 50, 23°42.2'S, 168°0.8'E, 295 m, 9.03.1989, 2 ♂ cl 11.3 mm and similar size (badly damaged) (photograph). — SMIB 5 stn DW 85, 22°20'S, 168°42.9'E, 260 m, 13.09.1989, 1 ♂ cl 10.0 mm (photograph); stn DW 101, 23°21.2'S, 168°4.9'E, 270 m, 14.09.1989, 2 ♂ cl 7.2 and 8.1 mm, 1 ♀ cl 6.8 mm; stn DW 103, 23°17.4'S, 168°4.8'E, 315 m, 14.09.1989, 1 ♂ cl 15.5 mm (cm). — BERYX 11: stn CP 32, 23°28'S, 167°43'E, 420-460 m, 18.10.1992, 1 ovig. ♀ cl 13.9 mm; stn CP 45, 23°40'S, 168°1'E, 270-290 m, 20.10.1992, 1 ovig. ♀ cl 18.6 mm; stn CP 46, 23°42'S, 168°1'E, 300-350 m, 20.10.1992, 2 ♂ cl 12.4 and 15.2 mm, 1 ovig. ♀ cl 19.5 mm, 1 ♀ cl 13.2 mm; stn CP 52, 23°47'S, 168°17'E, 430-530 m, 21.10.1992, 2 ♂ cl 13.7 and 14.6 mm; stn CP 53, 23°48'S, 168°17'E, 540-950 m, 21.10.1992, 1 ovig. ♀ cl 15.7 mm. — SMIB 8: stn DW 169, 23°37.7'S, 167°42.5'E, 447-450 m,

29.01.1993, 1 ovig. ♀ cl 12.2 mm (photograph); stn DW 170, 23°41.2'S, 168°0.5'E, 241-244 m, 29.01.1993, 3 ♂ cl 11.3-14.3 mm, 2 ovig. ♂ cl 13.1 and 15.6 mm; stn DW 180, 23°47.7'S, 168°18.1'E, 460-525 m, 30.01.1993, 1 ♂ cl 11.7 mm, 1 ovig. ♀ cl 12.8 mm; stn DW 182, 23°19.3'S, 168°4.8'E, 314-340 m, 31.01.1993, 2 ovig. ♀ cl 11.9 and 12.6 mm; stn DW 183, 23°18.3'S, 168°4.9'E, 330-367 m, 31.01.1993, 2 ♂ cl 11.1 and 12.8 mm, 2 ovig. ♀ cl 12.0 and 13.0 mm, 3 ♀ cl 7.9-11.6 mm; stn DW 184, 23°18.3'S, 168°4.8'E, 305-320 m, 31.01.1993, 1 ♂ cl 11.9 mm; stn DW 185, 23°16'S, 168°4.3'E, 305-355 m, 31.01.1993, 1 ovig. ♀ cl 14.2 mm; stn DW 190, 23°18.5'S, 168°4.9'E, 305-310 m, 31.01.1993, 1 ♂ cl 12.0 mm, 2 ♀ 9.5 and 10.1 mm. — BATHUS 3: stn CP 804, 23°41.4'S, 168°0.42'E, 244-278 m, 27.11.1993, 2 ♂ cl 11.6 and 12.5 mm, 1 ovig. ♀ cl 13.2 mm; stn CP 805, 23°41.3'S, 168°1.08'E, 278-310 m, 27.11.1993, 3 ♂ cl 11.5-12.5 mm, 1 ovig. ♀ cl 17.5 mm; stn CP 806, 23°42'S, 168°1'E, 308-312 m, 27.11.1993, 1 ovig. ♀ cl 12.1 mm (photograph); stn CP 814, 23°47.6'S, 168°17.1'E, 444-530 m, 28.11.1993, 1 ♀ 12.6 mm; stn CP 815, 23°47'S, 168°16.74'E, 460-470 m, 28.11.1993, 1 ♀ cl 8.2 mm. — NORFOLK 1: stn CP 1671, 23°41.46'S, 168°0.03'E, 397 m, 21.06.2001, 1 ♂ cl 14.9 mm, 1 ovig. ♀ cl 15.7 mm (photograph) (NTOU).

Loyalty Islands. MUSORSTOM 6: stn CP 401, 20°42.15'S, 167°0.35'E, 270 m, 14.02.1989, 1 ♂ cl 10.1 mm; stn DW 474, 21°8.8'S, 167°55.5'E, 260 m, 22.02.1989, 1 ovig. ♀ cl 9.9 mm.

Matthew Island. VOLSMAR: stn DW 41, 22°17.7'S, 168°41.2'E, 250 m, 8.06.1989, 1 ovig. ♀ cl 12.1 mm.

DESCRIPTION. — Largest male cl 16.1 mm, largest female 19.5 mm, smallest ovigerous female 9.9 mm, smallest male with am longer than ai 13.0 mm, largest male with am shorter than ai 12.0 mm, some males of 9.8-15.2 mm with am as long as ai. Rostrum, 1.3-2.0 x (mean 1.6, $n = 34$) as long as carapace, bending downwards near base but recurved upwards after passing eyes (strongly curved in females and young but sometimes rather horizontal in mature males). Basal rostral crest high in females but moderately high to low in males (in some juveniles even nearly level with dorsal surface of carapace), bearing 2 (less frequently 3, rarely 1) fixed and 5 (less frequently 6, rarely 4) movable teeth, with posterior 4 or 5 teeth situated posterior to orbital margin; dorsal rostrum proper unarmed except for 2 small subapical teeth, ventral rostrum generally bearing 9 or 10 (less frequently 8 or 11, rarely 7 or 12, very rarely 13) teeth. Stylocerite tapered distally and more or less extending to tip of antennular peduncle. Scaphocerite 3.9-4.8 x (mean 4.2, $n = 11$) longer than broad.

Maxilliped III overreaching scaphocerite by up to 2/3 length of distal segment, distal segment 1.4-1.8 x (mean 1.6, $n = 38$) as long as penultimate segment. Pereiopod I exceeding scaphocerite by about half chela. Pereiopod II bearing 15-22

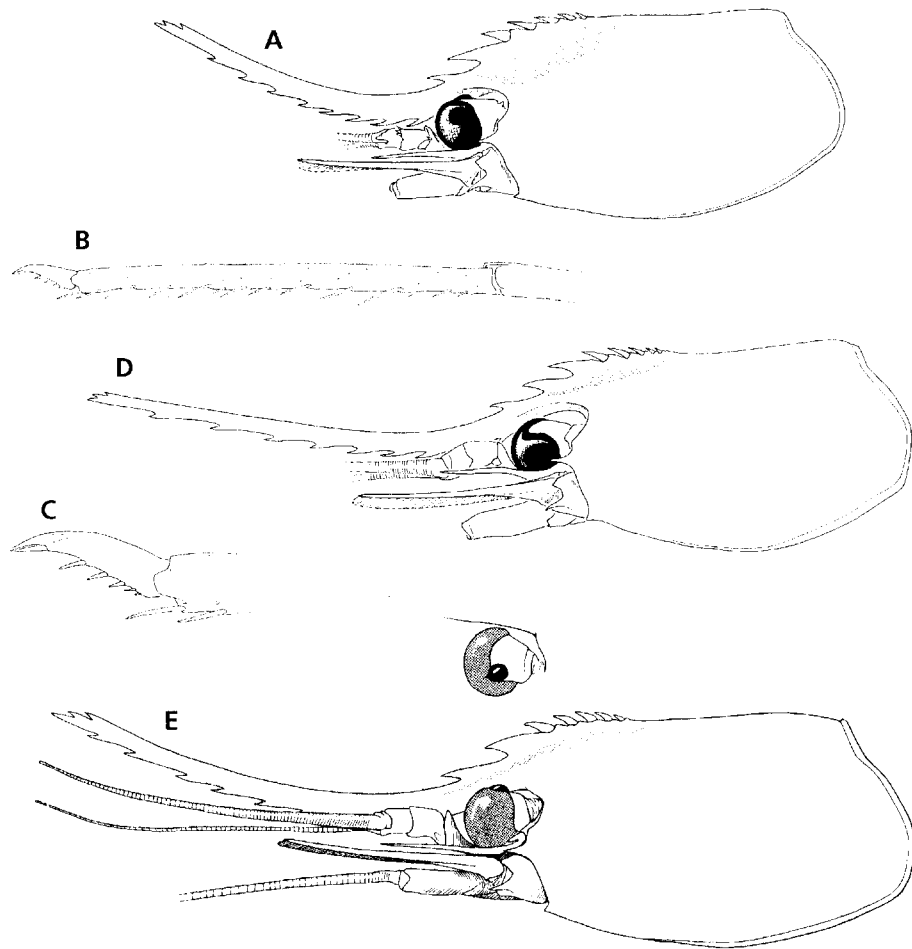


FIG. 3. *Plesionika hsuehyui* n. sp. A-C, holotype, ovig. female, cl 19.0 mm NE coast of Taiwan, about 300 m (NTOU H-1989-4-28): A, lateral view of carapace; B-C, propodus and dactylus of pereopod III. — D, paratype, male, cl 13.9 mm, NE coast of Taiwan, about 300 m (MNHN Na 14122): lateral view of carapace. — E, male, cl 14.4 mm, S île des Pins, New Caledonia, 300 m: lateral view of carapace.

FIG. 3. *Plesionika hsuehyui* n. sp. A-C, holotype, femelle ovigère, cl 19,0 mm, côte NE de Taiwan, environ 300 m (NTOU H-1989-4-28) : A, vue latérale de la carapace ; B-C, propode et dactyle du péréiopode III. — D, paratype, mâle, cl 13,9 mm, côte NE de Taiwan, environ 300 m (MNHN Na 14122) : vue latérale de la carapace. — E, mâle, cl 14,4 mm, Sud île des Pins, Nouvelle-Calédonie, 300 m : vue latérale de la carapace.

carpal articles on right side and 53-70 carpal articles on left side, shorter one exceeding scaphocerite by about half chela. Pereiopod III overreaching scaphocerite by up to $\frac{3}{5}$ length of propodus and entire dactylus; propodus 0.47-0.63 x (mean 0.57, $n = 10$) as long as carapace; dactylus elongate conical, 0.10-0.19 x (mean 0.15, $n = 10$) as long as propodus, posterior margin bearing 4-6 (mostly 5) spinules, accessory spine abutting and slightly shorter than terminal spine. Pereiopods IV and V similar to pereopod III, former overreaching scaphocerite by up to $\frac{1}{2}$ length of propodus and entire dactylus, latter exceeding scaphocerite by less than $\frac{1}{5}$ length of propodus and entire dactylus.

Abdominal somite III slightly arched dorsally. Telson 1.3-1.6 x longer than abdominal somite VI, the latter 1.5-1.9 x longer than deep.

Eggs about 0.4 mm in diameter.

Color: Body somewhat orange, with golden reticular stripes throughout except for abdominal somite VI and tailfan. Ventral carapace with row of prominent white spots, white spots sometimes also distributed on anterolateral part of carapace. Eyes pale black. Distal half of rostrum, antennular and antennal flagella banded with red and white. Thoracic

appendages also slightly banded with red and white. Abdominal pleuron I with large red circle, sometimes with diffuse white margins. Eggs light blue to light green.

DISTRIBUTION. — Taiwan to the Philippines, New Caledonia, Loyalty Islands, Matthew Island and Fiji, 115-648 m (one station at 540-950 m).

REMARKS. — *Plesionika hsuehyui* closely resembles *P. rostricrescentis* but has fewer ventral rostral teeth. None of the abundant specimens from Taiwan and New Caledonia (cl 6.8-19.5 mm) have more than 12 ventral rostral teeth (most only 9 or 10). Only one male from Fiji has 13 ventral rostral teeth. *Plesionika rostricrescentis* has 15 ventral rostral teeth and a re-examination of the holotype also reveals that the basal rostral crest is somewhat lower in *P. hsuehyui*. Accordingly, it seems clear that the present form is a distinct species.

Chace's (1985) description of the Albatross Philippines-Indonesian material that he identified as "*Plesionika rostricrescentis*" agrees well with the present new species. Re-examination of Chace's (1985) material, however, suggests that only the two small specimens from Albatross stn 5398 (USNM 205426) are *P. hsuehyui*. The badly damaged female from Indonesia (stn 5629, 0°50.0'S, 128°12.0'E, 375 m, 02.12.1909, cl 11.2 mm, USNM 205424) has a very high basal rostral crest and a strongly curved rostrum (with 9 ventral teeth), and as with KARUBAR material, identity is uncertain (see "general discussion" below). The three specimens in the other Philippines lot recorded by Chace (stn 5168, 4°56.3'N, 119°45.4'E, 146 m, 25.02.1908, USNM 205425) are *P. quasigrandis* Chace, 1985 and all are ovigerous females of large size (cl 22.5-25.7 mm). This is at variance with Chace's (1985) description of this particular lot (2 ♀ cl 9.1 and 10.8 mm, 1 ovig. ♀ cl 9.1 mm). Lemaitre failed to locate the original specimens at USNM, and suggested that for the time being it seems best to regard the specimens from Albatross stn 5168 as *P. quasigrandis* that were misidentified by Chace (1985).

The development of the basal rostral crest and the curvature of the rostrum show marked sexual dimorphism in the present species, with mature males often having a low basal rostral crest and somewhat horizontal rather than distinctly curved rostrum. Juvenile specimens also have a very low basal rostral crest but with the rostrum distinctly curved like that of mature females. Moreover, some juveniles (cl > 8 mm) may have the stylocerite only extending to the middle of the distal segment of the antennular peduncle.

The coloration of *P. hsuehyui* is unique in the "*P. rostricrescentis*" group in having only a red circle on abdominal pleuron I. This color pattern, however, is almost identical to that of *P. rufomaculata* in the "*P. lophotes*" group. Nevertheless, these two species can be readily separated from each other by the presence or absence of teeth on the dorsal border of the rostrum between the subapical teeth and the anteriormost tooth of the basal rostral crest, as well as the extension of the stylocerite.

ETYMOLOGY. — This species is named after my first son, whom I had to leave soon after he was born to do the present work.

Plesionika rostricrescentis (Bate, 1888)

Fig. 4

Nothocaris rostricrescentis Bate, 1888: 1888: 653, pl. 114, fig. 1.

Not *Plesionika rostricrescentis* – Yokoya 1933: 19 (= ?).

Not *Plesionika rostricrescentis* – Chace 1985: 112 (= *Plesionika quasigrandis* Chace, 1985, *P. hsuehyui* n. sp. and *Plesionika* sp.).

Not *Plesionika rostricrescentis* – King 1984: 178, fig. Pr (= *P. erythrocyus* Chan & Crosnier, 1997).

TYPE MATERIAL. — Kai Islands. *Challenger* stn 192, 5°49'15"S, 132°14'15"E, 256 m, 26.09.1874, ovig. ♀ holotype, cl 17.6 mm (BMNH 88.22).

MATERIAL EXAMINED. — The holotype (see above).

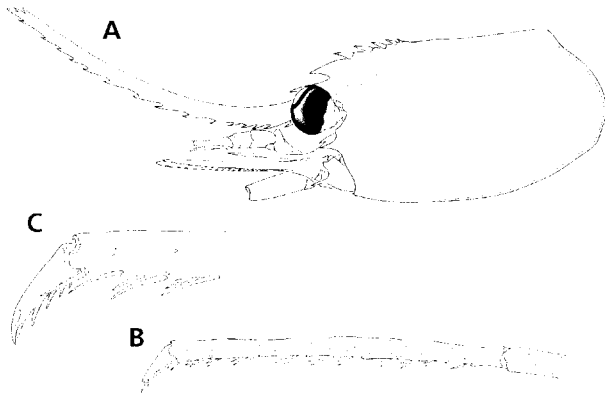


FIG. 4. *Plesionika rostricrescentis* (Bate, 1888), holotype, ovig. female, cl 17.6 mm, Challenger stn 192, 256 m, Kai Islands (BMNH 88.22): A, lateral view of carapace; B-C, propodus and dactylus of pereiopod III.

FIG. 4. *Plesionika rostricrescentis* (Bate, 1888), holotype, femelle ovigère, cl 17,6 mm, Challenger stn 192, 256 m, îles Kai (BMNH 88.22): A, vue latérale de la carapace; B-C, propode et dactyle du péréopode III.

pods IV and V similar to pereiopod III, former overreaching scaphocerite by 2/5 length of propodus and entire dactylus, latter exceeding scaphocerite by 1/3 length of propodus and entire dactylus.

Abdominal somite III slightly arched dorsally. Telson 1.4 x as long as abdominal somite VI, the latter 1.7 x longer than deep.

Eggs about 0.4 mm in diameter.

Color unknown.

DISTRIBUTION. — Off Kai Islands, Indonesia, 256 m.

REMARKS. — The holotype of *P. rostricrescentis* is in good condition apart from the right carapace, which was dissected for the drawings that accompanied the original description, and detachment of maxilliped III and pereiopod I. The specimen is unusual in having a higher number of ventral rostral teeth (15) than other members of the “*P. rostricrescentis*” group, none of which examined in the present study have more than 13 ventral rostral teeth. Other records of “*P. rostricrescentis*”, such as those of King (1984) and Chace (1985), actually represent other species (see “remarks” on *P. erythrocyclus* and *P. hsuehyui*). The ovigerous female reported by Yokoya (1933) as *P. rostricrescentis* from a much shallower depth (84 m) off Japan was not accompanied by any description and its true identity is thus uncertain. Actually there is yet no confirmed record of any member of the “*P. rostricrescentis*” group from Japan.

Unfortunately, there is no information on the coloration of the holotype of *P. rostricrescentis*. Although a few specimens probably belonging to the “*P. rostricrescentis*” group were collected during the KARUBAR Expedition around the Kai Islands, they are either very small or badly damaged (see “general discussion”). Moreover, there are no color photographs of the specimens and the maximum number of ventral rostral teeth found is only nine (including those that remained on a broken rostrum). Thus, the KARUBAR material is of no help in furnishing information on the specific characters of *P. rostricrescentis*.

For the time being, *P. rostricrescentis* is treated as a species having a very high number of ventral rostral teeth, and that is intermediate between the two closely similar species *P. hsuehyui* and *P. suffusa* in body size, height of the basal rostral crest and length of the stylocerite.

DESCRIPTION. — Carapace length (ovig. ♀ holotype) 17.6 mm. Rostrum 1.6 x as long as carapace, bending downwards near base but recurved upwards after passing eyes. Basal rostral crest high, bearing 2 fixed and 5 movable teeth, all movable teeth situated posterior to orbital margin; dorsal rostrum proper unarmed except for 2 small subapical teeth, ventral rostrum armed with 15 teeth. Stylocerite tapered distally and just overreaching antennular peduncle. Scaphocerite 4.3 x longer than broad.

Maxilliped III with distal segment 1.6 x as long as penultimate segment. Pereiopod II bearing 19 carpal articles on right side and 77 carpal articles on left side. Pereiopod III overreaching scaphocerite by half length of propodus and entire dactylus; propodus 0.65 x as long as carapace; dactylus elongate conical, 0.15 x as long as propodus, posterior margin bearing 4 or 6 spinules, accessory spine abutting and 3/4 as long as terminal spine. Pereio-

Plesionika suffusa n. sp.

Figs 5, 14

TYPE MATERIAL. — New Caledonia (holotype and paratypes). MUSORSTOM 4: stn CP 171, 18°57.8'S, 163°14'E, 425 m, 17.09.1985, holotype ♀ cl 18.7 mm (photograph) (MNHN Na 14125); stn 180, 18°56.8'S, 163°17.7'E, 440 m, 18.09.1985, 1 ♂ cl 19.7 mm, 1 ovig. ♀ cl 29.3 mm (cn) (NTOU P-M-180, from MNHN exchange). — SMIB 4: stn DW 65, 22°55.3'S, 167°14.5'E, 420 m, 10.03.1989, 1 ♂ cl 14.7 mm (photograph) (MNHN Na 14126). — SMIB 8: stn DW 169, 23°37.7'S, 167°42.5'E, 447-450 m, 29.01.1993, 1 ♀ cl 13.5 mm (photograph) (MNHN Na 14127). — NORFOLK 1: stn CP 1660, 23°36.64'S, 167°41.2'E, 470-463 m, 20.06.2001, 2 ♀ cl 8.9 and 10.4 mm (photograph) (NTOU P-N-1660); stn CP 1664, 23°40.34'S, 167°42.51'E, 456-478 m, 20.06.2001, 1 ♀ cl 16.1 mm (photograph) (NTOU P-N-1664); stn CP 1721, 23°19.25'S, 168°0.86'E, 443-416 m, 26.06.2001, 1 ♂ cl 20.4 mm (cn) (NTOU P-N-1721).

OTHER MATERIAL EXAMINED. — New Caledonia. LAGON: stn 44, Atoll de Surprise, 18°15'S, 162°59'E, 300-350 m, 28.02.1985, 1 ♂ cl 8.2 mm, 1 ♀ cl 7.6 mm. — MUSORSTOM 4: stn 214, 22°53.8'S, 167°13.9'E, 425-440 m, 28.09.1985, 7 ♂ cl 16.2-22.9 mm, 4 ovig. ♀ cl 17.9-20.6 mm, 2 ♀ cl 9.2 and 15.3 mm. — SMIB 2: stn DW 3, 22°56'S, 167°15'E, 412-428 m, 17.09.1986, 1 ♀ cl 13.6 mm; stn DW 7, 22°56'S, 167°14'E, 428 m, 17.09.1986, 3 ♀ cl 12.7-14.2 mm. — BERYX 11: stn CP 7, 24°55'S, 168°21'E, 510-550 m, 15.10.1992, 1 ♂ cl 19.8 mm; stn CP 31, 23°39'S, 167°44'E, 430-440 m, 18.10.1992, 1 ♀ cl 14.8 mm; stn CP 32, 23°38'S, 167°43'E, 420-460 m, 18.10.1992, 3 ♂ cl 14.7-18.3 mm, 8 ♀ cl 11.1-15.1 mm; stn CP 51, 23°44'S, 168°17'E, 390-400 m, 21.10.1992, 1 ♀ cl 18.6 mm; stn CP 52, 23°47'S, 168°17'E, 430-530 m, 21.10.1992, 2 ♂ cl 15.4 and 17.4 mm, 3 ovig. ♀ cl 15.6-22.5 mm, 2 ♀ cl 12.8 and 18.0 mm; stn CP 53, 23°48'S, 168°17'E, 540-950 m, 21.10.1992, 1 ♂ 16.3 mm. — SMIB 8: stn DW 167, 23°38.1'S, 168°43.1'E, 430-452 m, 29.01.1993, 1 ♂ cl 15.9 mm; stn DW 180, 23°47.7'S, 168°18.1'E, 460-525 m, 30.01.1993, 2 ♂ cl 16.3 and 18.9 mm, 2 ♀ cl 11.3 and 17.5 mm. — BATHUS 3: stn CP 811, 23°41.42'S, 168°15.5'E, 383-408 m, 28.11.1993, 1 ♀ cl 11.0 mm; stn CP 815, 23°47'S, 168°16.74'E, 460-470 m, 28.11.1993, 1 ♂ cl 20.1 mm. — BATHUS 4: stn CP 928, 18°54.72'S, 163°23.73'E, 452-420 m, 7.08.1994, 4 ♂ cl 9.3-15.8 mm.

DESCRIPTION. — Largest male cl 22.9 mm, largest female 29.3 mm, smallest ovigerous female 15.6 mm, smallest male with am longer than ai 17.4 mm, 1 male 18.6 mm with am as long as ai, largest male with am shorter than ai 16.9 mm. Rostrum 1.4-1.8 x (mean 1.6, $n = 5$) as long as carapace, bending downwards near base but strongly curving upwards after passing eyes (less curved in some males). Basal rostral crest very high in both sexes, bearing 2 (rarely 3) fixed and 5 (rarely 6) movable teeth, posterior 5 or 6 teeth situated posterior to orbital margin; dorsal rostrum proper unarmed except for 2 (rarely 3) small subapical teeth; 11 or 12 (less frequently 10) teeth distributed on ventral rostrum. Stylocerite tapered distally and very long, generally far overreaching antennular peduncle. Scaphocerite 3.7-4.1 x (mean 3.9, $n = 5$) longer than broad.

Maxilliped III overreaching scaphocerite by about 1/3 length of distal segment; distal segment 1.7-2.0 x (mean 1.8, $n = 5$) as long as penultimate segment. Pereiopod I exceeding scaphocerite by about 1/4 chela length. Pereiopod II bearing 20-22 carpal articles on right side and 58-91 carpal articles on left side, shorter one exceeding scaphocerite by about half chela. Pereiopod III overreaching scaphocerite by 1/2-1/4 length of propodus and entire dactylus; propodus 0.55-0.62 x (mean 0.58, $n = 5$) as long as carapace; dactylus elongate conical, 0.13-0.16 x (mean 0.14, $n = 5$) times as long as propodus, posterior margin bearing 4 spinules, accessory spine abutting and 1/2-1/3 as long as terminal spine. Pereiopods IV and V similar to pereiopod III, former overreaching scaphocerite by about 1/4 length of propodus and entire dactylus, latter just reaching tip of scaphocerite or exceeding scaphocerite by less than 1/5 length of propodus and entire dactylus.

Abdominal somite III distinctly arched dorsally. Telson 1.5-1.6 x longer than abdominal somite VI, latter 1.5-1.6 x longer than deep.

Eggs about 0.5 mm in diameter.

Color: Body pale pink and covered with oblique orange-yellow transverse bands. Eyes dark brown. Some white dots distributed on anterior carapace. Rostrum, antennular and antennal flagella somewhat banded with red and white. Thoracic appendages with basal segments faintly banded with red and white, distal segments of anterior appendages whitish and those of posterior pereiopods reddish. Abdominal tergite III bearing pair of large but diffuse submedian orange



FIG. 5. *Plesionika suffusa* n. sp. A, holotype, femelle, cl 18,7 mm, MUSORSTOM 4 stn CP 171, Nouvelle-Calédonie, 425 m (MNHN Na 14125): vue latérale de la carapace. — B-D, paratype, femelle ovigère, cl 29,3 mm, MUSORSTOM 4 stn 180, Nouvelle-Calédonie, 440 m (NTOU P-M-180): B, vue latérale de la carapace; C-D, propode et dactyle du péréiopode III. — E, paratype, mâle, cl 19,7 mm, MUSORSTOM 4 stn 180, Nouvelle-Calédonie, 440 m (NTOU P-M-180): vue latérale de la carapace.

FIG. 5. *Plesionika suffusa* n. sp. A, holotype, femelle, cl 18,7 mm, MUSORSTOM 4 stn CP 171, Nouvelle-Calédonie, 425 m (MNHN Na 14125): vue latérale de la carapace. — B-D, paratype, femelle ovigère, cl 29,3 mm, MUSORSTOM 4 stn 180, Nouvelle-Calédonie, 440 m (NTOU P-M-180): B, vue latérale de la carapace; C-D, propode et dactyle du péréiopode III. — E, paratype, mâle, cl 19,7 mm, MUSORSTOM 4 stn 180, Nouvelle-Calédonie, 440 m (NTOU P-M-180): vue latérale de la carapace.

spots without well-defined margin. A white longitudinal line running from lateral surface of abdominal somite VI to tailfan. Eggs pale blue.

DISTRIBUTION. —New Caledonia, 383-550 m (one station, 540-950 m; juveniles from one station 300-350 m).

REMARKS. — The coloration of *P. suffusa* differs from that of all other species treated in this study by the lack of well-defined red circles on the abdomen. Morphologically, it resembles *P. hsuehyui* but differs in having a higher basal rostral crest and a longer stylocerite, especially in males, in which the basal rostral crest is always strongly developed. The stylocerite typically extends far beyond the antennular peduncle in *P. suffusa* but only extends to the tip of the antennular

peduncle in *P. hsuehyui*. The number of ventral rostral teeth also appears to be somewhat higher in *P. suffusa* (mostly 11 or 12) than in *P. hsuehyui* (mostly 9 or 10). Moreover, *P. suffusa* attains distinctly larger size than *P. hsuehyui* (see “descriptions”) and abdominal somite III is more arched.

Plesionika suffusa is also very similar to the holotype of *P. rostricrescentis*, but none of the specimens from New Caledonia have more than 12 ventral rostral teeth, which is considerably fewer than in the holotype of *P. rostricrescentis*. Moreover, it appears that the basal rostral crest is somewhat higher and the stylocerite is longer in *P. suffusa* than in *P. rostricrescentis*.

Some juvenile specimens without color information (e.g. from LAGON stn 444 and BATHUS 4 stn CP 928) have a low basal rostral crest and/or a short stylocerite (extending only to distal or even only second antennular segment), and are tentatively identified as *P. suffusa* because of the strongly curved rostrum bearing 11 or 12 ventral teeth.

ETYMOLOGY. — The Latin *suffusa* refers to the diffuse rounded spot on abdominal tergite III.

“*Plesionika lophotes* Chace, 1985” group

Plesionika lophotes Chace, 1985

Figs 6, 15

Plesionika lophotes Chace, 1985: 81, fig. 37.

Plesionika binoculus – de Man 1920: 134, pl. 12, fig. 30. — Hayashi & Koike 1976: 47, fig. 1 a'-c' (not Bate, 1888).

Plesionika binoculis – Boone 1935: 113, pl. 30 (not Bate, 1888).

Plesionika binocula – Miyake 1982: 61, pl. 21-3 (not Bate, 1888).

Plesionika lophotes – Hayashi 1986: 135, fig. 85. — Hanamura & Takeda 1987: 111. — Miyake 1991: 61, pl. 21-3; 1998: 61, pl. 21-3.

TYPE MATERIAL. — Philippines. *Albatross*: stn 5397, 11°57'27"N, 124°10'42"E, 245 m, 15.3.1909, holotype ♂ cl 16.8 mm (USNM 205212).

MATERIAL EXAMINED. — Japan. Toyama Bay, -10.1938, 1 ♂ cl 16.7 mm, 6 ovig. ♀ cl 15.1-22.5 mm (NSMT 1640).

Korea. Tr-5: stn 16, 33°14.8'N, 127°17.8'E, otter trawl, 135 m, 21.11.2001, 1 ♂ cl 16.1 mm, 1 ♀ cl 15.6 mm (photograph) (Pukyong National University).

Taiwan (all with color information). Tai-Shi fishing port, NE coast, I-Lan County, commercial trawlers, about 300 m, 6.11.1984, 1 ♀ cl 23.1 mm (NTOU); 27.11.1984, 1 ovig. ♀ cl 19.9 mm (MNHN, from NTOU exchange); 31.10.1984, 2 ♂ cl 10.8 and 17.8 mm, 1 ovig. ♀ cl 19.2 mm (MNHN Na 13150, from NTOU exchange); 21.05.1988, 1 ovig. ♀ cl 23.0 mm (NTOU); 9.01.1989, 1 ovig. ♀ cl 24.9 mm, 1 ♀ cl 8.9 mm (NTOU); 14.04.1990, 1 ovig. ♀ cl 15.6 mm (NTOU); 27.10.1999, 1 ♀ cl 19.1 mm (NTOU). — 10.04.2000, 3 ovig. ♀ cl 15.2-25.4 mm (NTOU); 20.10.2000, 2 ovig. ♀ cl 21.0 and 21.2 mm (NTOU); 29.08.2001, 1 ovig. ♀ cl 21.3 mm (NTOU). — Su-Aou fishing port, NE coast, I-Lan County, commercial trawlers, about 300 m, 2.05.1985, 1 ♀ cl 14.8 mm (NTOU); 05.1998, 1 ♀ cl 11.5 mm (MNHN, from NTOU exchange). — Hsiang-da-kong fishing port, SW coast, Kaoshung County, commercial trawler, about 150 m, 6.05.1988, 1 ♂ cl 14.1 mm (NTOU). — Tongkong fishing port, SW coast, Ping-Tong County, commercial trawler, about 300 m, 07.1975, 1 ♂ cl 15.6 mm, 1 ♀ cl 14.9 mm (NTOU); 28.07.1985, 1 ovig. ♀ cl 18.7 mm (NTOU); 7.05.1988, 2 ♂ cl

12.9 and 17.5 mm, 2 ♀ cl 15.0 and 15.5 mm (MNHN, from NTOU exchange); 20.09.1990, 1 ♀ cl 15.5 mm (NTOU); 17.01.1991, 1 ♂ cl 17.6 mm, 3 ovig. ♀ cl 16.2-19.7 mm, 1 ♀ cl 12.8 mm (NTOU); 2.06.1999, 1 ♂ cl 17.2 mm, 3 ovig. ♀ cl 15.9-23.8 mm (NMNS); 18.12.1999, 10 ♂ cl 9.4-15.4 mm, 3 ovig. ♀ cl 14.3-18.5 mm, 6 ♀ cl 7.5-15.5 mm (NTOU). — No data. 2 ♀ cl 12.0 and 13.8 mm (NTOU).

Philippines. MUSORSTOM 3: stn CP 87, 14°N, 120°19'E, 191-197 m, 31.05.1985, 2 ovig. ♀ cl 20.9 and 22.5 mm (photograph); stn CP 88, 14°1'N, 120°17'E, 183-187 m, 31.05.1985, 1 ♂ cl 13.0 mm, 1 ♀ cl 13.8 mm; stn CP 96, 14°N, 120°18'E, 190-194 m, 1.06.1985, 1 ♀ cl 13.0 mm; stn CP 97, 14°N, 120°18'E, 189-194 m, 1.06.1985, 2 ♂ cl 11.1 and 13.1 mm, 2 ♀ cl 11.6 and 12.3 mm; stn CP 98, 14°N, 120°18'E, 194-205 m, 1.06.1985, 1 ♂ cl 12.4 mm; stn CP 99, 14°1'N, 120°19'E, 196-204 m, 1.06.1985, 2 ♀ cl 9.3 and 12.1 mm; stn CP 100, 14°N, 120°18'E, 189-199 m, 1.06.1985, 1 ♂ cl 11.0 mm, 1 ovig. ♀ cl 21.6 mm; stn CP 101, 14°N, 20°19'E, 194-196 m, 1.06.1985, 2 ♂ cl 11.1 and 13.4 mm, 1 ovig. ♀ cl 16.8 mm; stn CP 111, 14°N, 120°18'E, 193-205 m, 2.06.1985, 4 ♂ cl 17.6-20.7 mm, 1 ♀ cl 14.1 mm; stn CP 109, 140°N, 120°18'E, 190-198 m, 2.06.1985, 2 ovig. ♀ cl 17.7 and 21.8 mm, 2 ♀ cl 12.8 and 13.3 mm.

NW Australia. *Soela*: stn 0184-85, 14°52'S, 121°40'E, 222 m, 16.02.1984, 1 ♂ cl 13.8 mm (NSMT Cr. 9381).

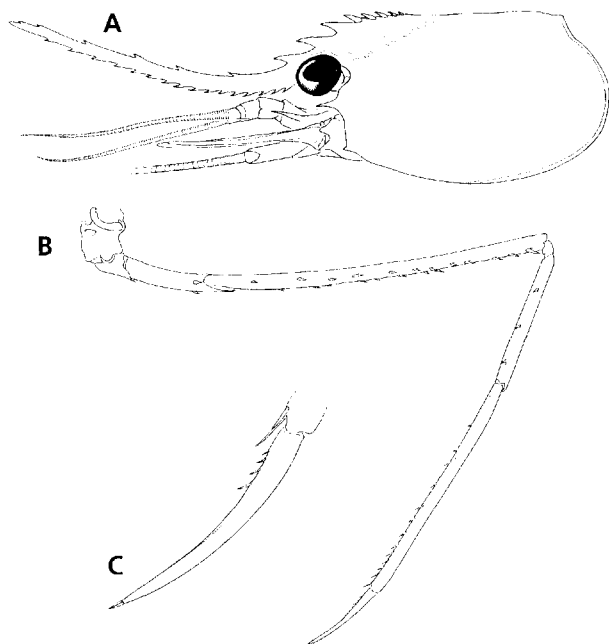


FIG. 6. *Plesionika lophotes* Chace, 1985, holotype, male, cl 16.8 mm, Albatross stn 5397, Philippines, 245 m: A, lateral view of carapace; B, pereopods III; C, dactylus of pereopod III (after Chace 1985).

FIG. 6. *Plesionika lophotes* Chace, 1985, holotype, male, cl 16.8 mm, Albatross stn 5397, Philippines, 245 m: A, vue latérale de la carapace; B, péreopode III; C, dactyle du péreopode III (d'après Chace 1985).

1/2-2/3 length of carpus and entire chela. Pereiopod III overreaching scaphocerite by 2/3 to entire length of propodus and entire dactylus, propodus 0.58-0.68 x (mean 0.64, $n = 6$) as long as carapace, dactylus long and claw-like, 0.30-0.38 x as long as propodus, posterior margin bearing 2-5 (mostly 3) spinules at basal part, accessory spine minute and abutting terminal spine. Pereiopods IV and V similar to pereopod III, former overreaching scaphocerite by 1/2-2/3 length of propodus and entire dactylus, latter exceeding scaphocerite by about 1/3 length of dactylus.

Abdominal somite III slightly arched dorsally. Telson 1.4-1.7 x longer than abdominal somite VI, latter 1.4-1.7 x longer than deep.

Eggs about 0.5 mm in diameter.

Color: Body reddish pink. Lateral surfaces of abdominal tergite III with large red spot encircled by white ring. Eyes pale black. Carapace and anterior abdomen with scattered white dots that fade quickly with decreasing freshness. Basal rostral crest translucent and bluish. Thoracic appendages, antennular and antennal flagella distinctly banded with red and white. Eggs light blue.

DISTRIBUTION. — Japan, Korea, Taiwan, Philippines, Indonesia and northwestern Australia, 135-329 m.

REMARKS. — *Plesionika lophotes* is characterized by its relatively large body size, very high basal rostral crest, the high number of rostral teeth along both the dorsal and ventral borders, and the long dactyli on the posterior three pairs of pereopods. The basal rostral crest in males is lower than that of females but still high and distinct. Like most of the other species in the present study, the rostrum is less curved and sometimes rather horizontal in large males (but not so in juveniles). As pointed out by Chace (1985), *P. lophotes* is often misidentified as *P. binoculus* in older literature (see synonymy). A re-examination of the type series of *P. binoculus* (Arafura Sea, 1 ♂ cl 6.2 mm, 4 ovig. ♀ cl 7.3-9.6 mm, BMNH 1888.22) confirmed that it completely lacks a basal rostral crest.

DESCRIPTION. — Largest male cl 20.7 mm, largest female 25.4 mm, smallest ovigerous female 14.3 mm, smallest male with am longer than ai 15.5 mm, some males 13.1-17.2 mm with am as long as ai, largest male with am shorter than ai 13.2 mm. Rostrum curving downwards near base but abruptly upturned after passing eyes, 1.2-1.7 x (mean 1.5, $n = 6$) as long as carapace. Basal rostral crest high in males and very high in females, bearing 2-4 fixed and 5 (rarely 6) movable teeth, posterior 5 (sometimes 6) of them situated posterior to orbital margin; dorsal rostrum proper armed with 3 or 4 (rarely 2 or 5) teeth as well as 2 (rarely 3) small subapical teeth; 14-17 (very rarely 13 or 18) teeth evenly distributed on ventral rostrum. Stylocerite tapered anteriorly and reaching to about middle of second segment of antennular peduncle. Scaphocerite 3.8-4.5 x (mean 4.1, $n = 6$) longer than broad.

Maxilliped III with distal segment 1.4-1.6 x as long as penultimate segment, overreaching scaphocerite by about 2/3 length of distal segment. Pereiopod I exceeding scaphocerite by 2/3 to entire length of chela. Pereiopod II bearing 33-39 carpal articles on right side and 112-125 carpal articles on left side (40-59 and 156-171 carpal articles for right and left sides respectively recorded by Chace, 1985), shorter one exceeding scaphocerite by

Plesionika lophotes can be readily separated from the two closely similar species *P. scopifera* and *P. rufomaculata* by the red spot on abdominal tergite III, instead of on abdominal pleuron I. *Plesionika erythrocyclus* has a somewhat similar coloration but has very different morphology. It was noted too that photographs of the “*P. binoculus*” group material (*i.e.* basal rostral crest absent or only postrostral teeth forming a very low crest, and dorsal margin of rostrum with teeth distributed along entire length) from the MUSORSTOM expeditions and Taiwan show at least two forms with color patterns that also feature a similar large red spot on abdominal tergite III (see “general discussion”).

Plesionika lophotes is common off Taiwan and the Philippines. This species seems to be rather rare in Japan, and most of the old records of “*P. binoculus*” from there might represent *P. izumiae* Omori, 1971 rather than *P. lophotes* (*cf.* Hayashi & Koike 1976). The abundant material at hand confirms that the anteriormost movable tooth of the basal rostral crest may rarely be located just above the orbital margin, as illustrated by Hayashi & Koike (1976, fig. 1a). *Plesionika lophotes* appears to be uncommon in Indonesia. The *Siboga* and *Alva* expeditions together collected only six specimens while the *Albatross* and *KARUBAR* expeditions failed to obtain any specimens at all from there. Moreover, the small specimen (cl 12 mm) collected on the *Alva* expedition is unusual in having only 13 ventral rostral teeth and a low basal rostral crest. For the *P. lophotes* reported by Hanamura & Takeda (1987) from the off northwestern Australia, the smallest male (NSMT Cr. 9381) of the four specimens collected by the *Soela* was re-examined. It is generally similar to Boone's (1935) figure of the *Alva* specimen in having a low basal rostral crest and 14 ventral rostral teeth. Nevertheless, young males of similar size from Taiwan sometimes have a low basal rostral crest like this Australian specimen. Therefore, it is likely that northwestern Australia is the southern limit of distribution for *P. lophotes* since this species is absent from the rich collections obtained off eastern Australia (see Kensley *et al.* 1987) and in the New Caledonia region.

***Plesionika rufomaculata* n. sp.**

Figs 7, 16

TYPE MATERIAL. — Loyalty Islands (holotype and paratypes). MUSORSTOM 6: stn DW 399, 20°41.8'S, 167°0.2'E, 282 m, 14.02.1989, holotype ♀ cl 12.6 mm (photograph) (MNHN Na 14128); stn CP 401, 20°42.15'S, 167°0.35'E, 270 m, 14.02.1989, 1 ovig. ♀ cl 13.5 mm (photograph) (MNHN Na 14130).

New Caledonia (paratypes). MUSORSTOM 4: stn 190, 19°6.3'S, 163°29.5'E, 215 m, 19.09.1985, 2 ♂ cl 11.3 and 12.7 mm, 2 ovig. ♀ cl 11.7 and 13.5 mm (photograph) (MNHN Na 14129). — NORFOLK 1: stn CP 1668, 23°40.44'S, 168°0.54'E, 234-261 m, 21.06.2001, 1 ♂ cl 7.8 mm (photograph) (NTOU P-N-1668b); stn CP 1718, 23°23.73'S, 168°1.39'E, 260-373 m, 26.06.2001, 1 ♂ cl 13.6 mm (photograph) (NTOU P-N-1718).

Vanuatu (paratype). MUSORSTOM 8: stn CP 963, 20°20.1'S, 169°49.8'E, 400-440 m, 21.09.1994, 1 ♂ cl 14.4 mm (photograph) (MNHN Na 14131).

OTHER MATERIAL EXAMINED. — Japan. KT02-3: stn E5-1, Tokashiki Island, Kerama Islands, Okinawa, dredge, about 180 m, 19.04.2002, 1 ♂ cl 11.2 mm, 2 ovig. ♀ cl 11.4 and 12.1 mm (photograph) (CBM-ZC 6426).

Taiwan. Su-Aou fishing port, NE coast, I-Lan County, commercial trawler, about 300 m, 18.11.1997, 1 ♂ cl 15.1 mm (photograph) (NTOU).

Futuna Island. MUSORSTOM 7: stn DW 508, 14°19'S, 178°04'W, 245-440 m, 11.05.1992, 1 ovig. ♀ cl 15.3 mm (photograph); stn CP 515, 14°13'S, 178°10'W, 224-252 m, 12.05.1992, 1 ovig. ♀ cl 13.7 mm (photograph).

New Caledonia. MUSORSTOM 4: stn 152, 19°57'S, 163°21.6'E, 233 m, 14.09.1985, 1 ♂ cl 12.0 mm, 1 ovig. ♀ cl 11.0 mm, 1 ♀ cl 10.4 mm; stn 191, 19°2.4'S, 163°28.3'E, 250 m, 19.09.1985, 1 ♂ cl 12.3 mm (badly damaged), 1 ♀ cl 10.1 mm.

— SMIB 6: stn DW 112, 19°5.6'S, 163°30.2'E, 220-225 m, 2.03.1990, 1 ovig. ♀ cl 14.9 mm. — BATHUS 2: stn DW 749, 22°33.4'S, 166°26'E, 233-258 m, 15.05.1993, 1 ♂ cl 17.19 mm. — BATHUS 4: stn CP 936, 19°37'S, 163°28.5'E, 258-252 m, 8.08.1994, 1 ovig. ♀ cl 14.8 mm.

Loyalty Islands. MUSORSTOM 6: stn CP 400, 20°42.18'S, 167°0.4'E, 270 m, 14.02.1989, 1 ovig. ♀ cl 11.8 mm; stn CP401, 20°42.15'S, 167°0.35'E, 270 m, 14.02.1989, 1 ♀ cl 9.42 mm.

Vanuatu. MUSORSTOM 8: stn CP 962, 20°19.7'S, 169°49.02'E, 370-400 m, 21.09.1994, 1 ♂ cl 13.1 mm, 1 ♀ cl 10.6 mm; stn CP 1095, 15°7.37'S, 167°11.43'E, 304-320 m, 6.10.1994, 1 ♀ cl 8.8 mm; stn CP 1133, 15°38.83'S, 167°3.6'E, 11.10.1994, 174-210 m, 2 ♂ cl 9.3 and 12.8 mm, 1 ovig. ♀ cl 15.1 mm.

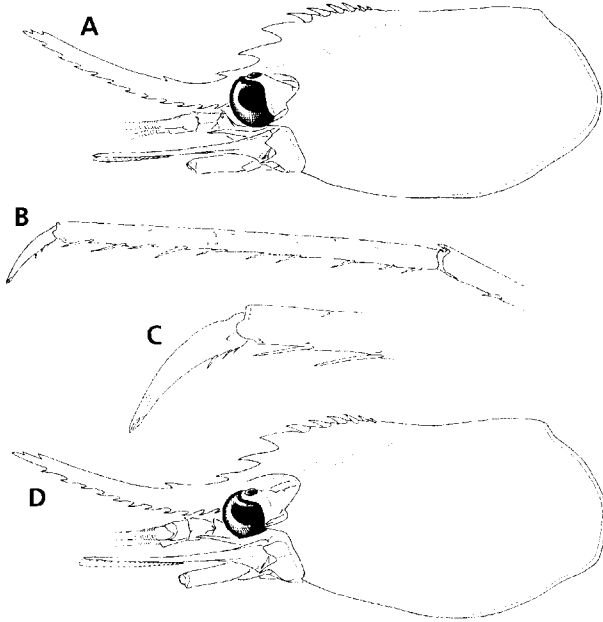


FIG. 7. *Plesionika rufomaculata* n. sp. A-C, holotype, female, cl 12.6 mm, MUSORSTOM 6 stn DW 399, Loyalty Islands, 282 m (MNHN Na 14128): A, lateral view of carapace; B-C, propodus and dactylus of pereopod III. — D, paratype, male, cl 11.3 mm, MUSORSTOM 4 stn 190, New Caledonia, 215 m (MNHN Na 14129): lateral view of carapace.

FIG. 7. *Plesionika rufomaculata* n. sp. A-C, holotype, female, cl 12.6 mm, MUSORSTOM 6 stn DW 399, îles Loyauté, 282 m (MNHN Na 14128): A, vue latérale de la carapace; B-C, propode et dactyle du péréiopode III. — D, paratype, mâle, cl 11.3 mm, MUSORSTOM 4 stn 190, Nouvelle-Calédonie, 215 m (MNHN Na 14129): vue latérale de la carapace.

(mean 0.59, $n = 8$) as long as carapace, dactylus claw-like, 0.20-0.25 x as long as propodus, posterior margin bearing 3 spinules, accessory spine slightly shorter and abutting terminal spine. Pereiopods IV and V similar to pereopod III, former overreaching scaphocerite by up to half length of propodus and entire dactylus, latter exceeding scaphocerite by up to about entire length of dactylus.

Abdominal somite III slightly arched dorsally. Telson 1.3-1.4 x longer than abdominal somite VI, latter 1.5-1.8 x longer than deep.

Eggs about 0.4 mm in diameter.

Color: Body red-pink and covered with light orange or somewhat golden reticulate stripes. Abdominal pleuron I bearing large, round, purple spot encircled by thin white and then thick red rims (some also bearing additional thin white exterior rim). Eyes pale black. Anterior half of rostrum, thoracic appendages, antennular and antennal flagella distinctly banded with red and white. Abdominal somite VI and taillan sometimes colorless and translucent. Eggs pale blue.

DISTRIBUTION. — Western Pacific from Okinawa, Taiwan, New Caledonia, Loyalty Islands, Vanuatu to Futuna Island, 174-440 m.

REMARKS. — The general appearance and coloration of the present form are rather similar to *Plesionika hsuehyui* but morphologically it belongs to the “*P. lophotes*” group. This form can be easily separated from *P. lophotes* by the lower basal rostral crest, fewer rostral teeth and shorter dactyli of the posterior three pereiopods. The present form closely resembles *P. scopifera*, and both have a similar big purple spot on abdominal pleuron I. The color pattern of the other parts of the body, however, is much more complex in *P. scopifera* (see Figs 16, 17) and no specimen with intermediate coloration has

DESCRIPTION. — Largest male cl 17.2 mm, largest female 15.3 mm, smallest ovigerous female 11.0 mm, smallest male with am longer than ai 11.2 mm, largest male with am shorter than ai 9.3 mm. Rostrum curving downwards near base but recurved upwards (strongly so in females, less in males) after passing eyes, 1.1-1.6 x (mean 1.3, $n = 7$) as long as carapace; basal rostral crest high in females and slightly lower in males, bearing 2 or 3 fixed and 6 (rarely 7) movable teeth, posterior 5 or 6 of them situated posterior to orbital margin; dorsal rostrum proper bearing 1 or 2 teeth, usually restricted to proximal half of rostrum, and 2 (rarely 1) small apical teeth; 11-13 (rarely 9) teeth generally distributed on ventral rostrum Stylocerite tapered anteriorly and extending to around middle part of second segment of antennular peduncle. Scaphocerite 3.8-4.2 x (mean 4.0, $n = 10$) longer than broad.

Maxilliped III with distal segment 1.4-1.6 x (mean 1.5, $n = 8$) as long as penultimate segment, overreaching scaphocerite by 1/2-2/3 length of distal segment. Pereiopod I exceeding scaphocerite by half to entire length of chela. Pereiopod II bearing 21-30 carpal articles on right side and 106-121 carpal articles on left side, shorter one exceeding scaphocerite by 1/2-1/4 length of carpus and entire chela. Pereiopod III overreaching scaphocerite by 1/2-2/3 length of propodus and entire dactylus, propodus 0.53-0.63 x

been found. Morphologically, these two forms are extremely similar except that the basal rostral crest is slightly higher in the present form than in *P. scopifera*. This difference is more apparent in males since males of this form still have a distinct basal rostral crest but the basal rostral crest is nearly level with the dorsal surface of the carapace in males of *P. scopifera*. Moreover, the dorsal border of the rostrum between the subapical teeth and the anteriormost tooth of the basal rostral crest is armed with only one or two teeth and these teeth are often restricted to the proximal half of the rostrum in the present form. In *P. scopifera* the dorsal border of the rostrum between the subapical teeth and the anteriormost tooth of the basal rostral crest usually bears two or three widely spaced teeth and with at least one of them located in the anterior half of the rostrum. The body size of the present form appears to be slightly larger than *P. scopifera*, too (see “description” for this species and *P. scopifera*). Such a striking difference in coloration with only very slight differences in morphological characters recalls the problem of distinguishing between *P. carsini* Crosnier, 1986 and *P. poupini* Chan & Crosnier, 1997 (see Chan & Crosnier 1997), and in the present case too, the more colorful form is restricted to a narrow geographical area while the less colorful form is widely distributed. Such a phenomenon may not be rare in *Plesionika*, and this is emphasized here by assigning a new name to the present form to distinguish it from *P. scopifera*. Nevertheless, if *P. scopifera* and *P. rufomaculata* are later proved to be conspecific, *P. scopifera* would be the preferred name.

ETYMOLOGY. — So named because of the large red (*rufo-*) spot (*maculata*) on abdominal pleuron I.

***Plesionika scopifera* n. sp.**

Figs 8, 9, 17

TYPE MATERIAL. — Chesterfield Islands (holotype and paratype). MUSORSTOM 5: stn 377, 19°48.6'S, 158°29.1'E, 260-270 m, 20.10.1986, holotype ovig. ♀ cl 12.7 mm (photograph) (MNHN Na 14132), paratype 1 ovig. ♀ cl 11.1 mm (photograph) (MNHN Na 14133).

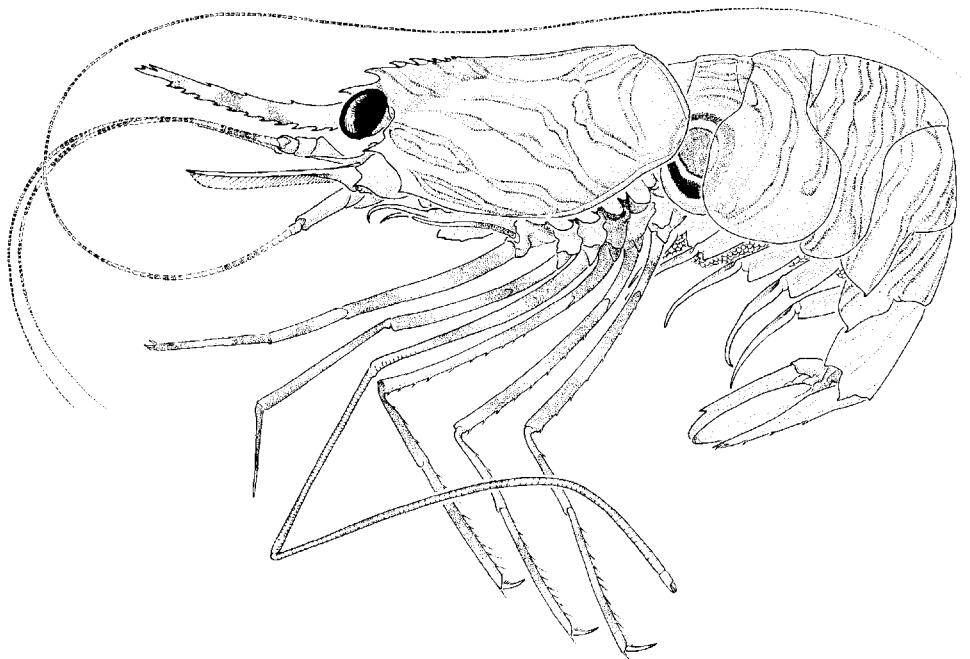


FIG. 8. *Plesionika scopifera* n. sp., holotype, ovig. female, cl 12.7 mm, MUSORSTOM 5 stn 377, Chesterfield Islands, 260-270 m (MNHN Na 14132).

FIG. 8. *Plesionika scopifera* n. sp., holotype, femelle ovigère, cl 12,7 mm, MUSORSTOM 5 stn 377, îles Chesterfield, 260-270 m (MNHN Na 14132).

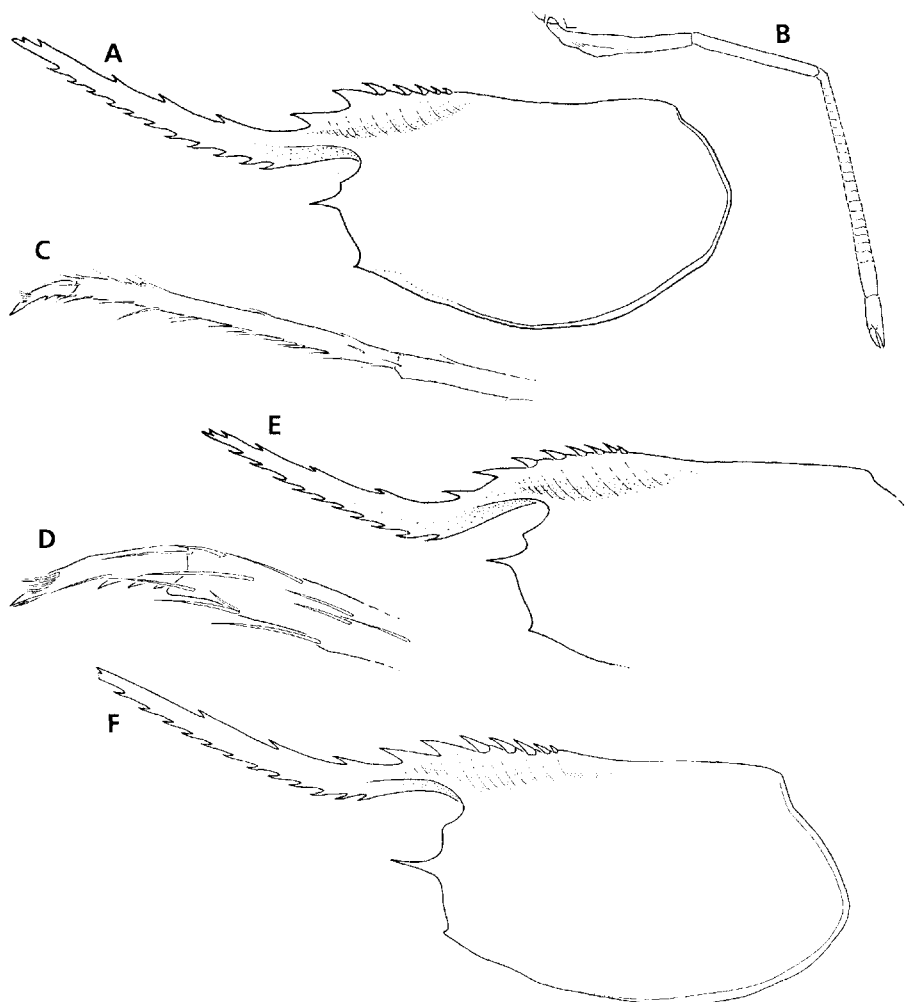
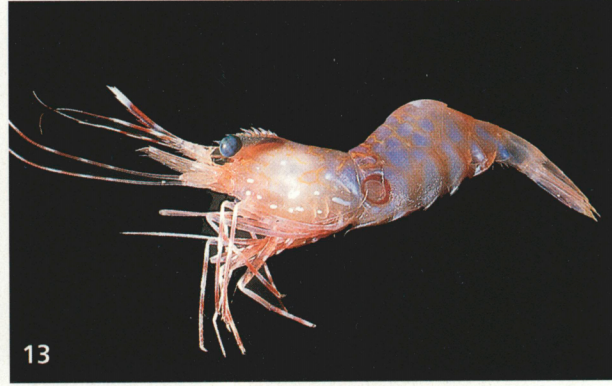
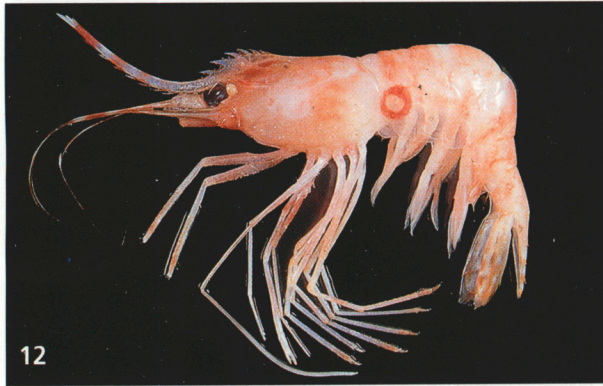
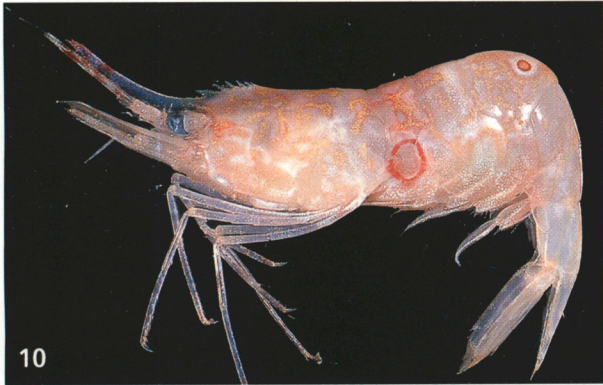


FIG. 9. *Plesionika scopifera* n. sp. A-D, holotype, ovig. female, cl 12.7 mm, MUSORSTOM 5 stn 377, Chesterfield Islands, 260-270 m (MNHN Na 14132): A, lateral view of carapace; B, shorter pereopod II, C-D, propodus and dactylus of pereopod III. — E, paratype, ovig. female, cl 11.1 mm, MUSORSTOM 5 stn 377, Chesterfield Islands, 260-270 m (MNHN Na 14133): lateral view of carapace. — F, paratype, female, cl 6.7 mm, SMIB 8 stn DW 146, Chesterfield Islands, 514-522 m (MNHN Na 14137): lateral view of carapace.

FIG. 9. *Plesionika scopifera* n. sp. A-D, holotype, femelle ovigère, cl 12,7 mm, MUSORSTOM 5 stn 377, îles Chesterfield, 260-270 m (MNHN Na 14132): A, vue latérale de la carapace; B, péréopode II plus court, C-D, propode et dactyle du péréopode III. — E, paratype, femelle ovigère, cl 11,1 mm, MUSORSTOM 5 stn 377, îles Chesterfield, 260-270 m (MNHN Na 14133): vue latérale de la carapace. — F, paratype, femelle, cl 6,7 mm, SMIB 8 stn DW 146, îles Chesterfield, 514-522 m (MNHN Na 14137): vue latérale de la carapace.

FIGS 10-17. **10.** *Plesionika bimaculata* n. sp., paratype, ovig. female, cl 10.3 mm, SMIB 8 stn CP 162, New Caledonia, 254-264 m (photograph J.-L. Menou). **11.** *Plesionika erythrocyclus* Chan & Crosnier, 1997, female, cl 9.0 mm, MUSORSTOM 6 stn CP 408, Loyalty Islands, 380 m (photograph P. Laboute). **12.** *Plesionika hsuehyui* n. sp., paratype, female, cl 17.3 mm, Taiwan, NE coast, about 300 m (photograph T.-Y. Chan). **13.** *Plesionika hsuehyui* n. sp., ovig. female, cl 16.7 mm, CHALCAL 2 stn DW 78, Nouvelle-Calédonie, 320-360 m (cliché P. Laboute). **14.** *Plesionika suffusa* n. sp., paratype, female, cl 13.5 mm, SMIB 8 stn DW 169, New Caledonia, 447-450 m (photograph J.-L. Menou). **15.** *Plesionika lophotes* Chace, 1985, ovig. female, cl 24.9 mm, Taiwan, NE coast, about 300 m (photograph T.-Y. Chan). **16.** *Plesionika rufomaculata* n. sp., holotype, female, cl 12.6 mm, MUSORSTOM 6 stn DW 399, Loyalty Islands, 282 m (photograph P. Laboute). **17.** *Plesionika scopifera* n. sp., holotype, female, cl 12.7 mm MUSORSTOM 5 stn 377, Chesterfield Islands, 260-270 m (photograph P. Laboute).

FIG. 10-17. **10.** *Plesionika bimaculata* n. sp., paratype, femelle ovigère, cl 10,3 mm, SMIB 8 stn CP 162, Nouvelle-Calédonie, 254-264 m (cliché J.-L. Menou). **11.** *Plesionika erythrocyclus* Chan & Crosnier, 1997, femelle, cl 9,0 mm, MUSORSTOM 6 stn CP 408, îles Loyauté, 380 m (cliché P. Laboute). **12.** *Plesionika hsuehyui* n. sp., paratype, femelle, cl 17,3 mm, Taïwan, côte NE, environ 300 m (cliché T.-Y. Chan). **13.** *Plesionika hsuehyui* n. sp., femelle ovigère, cl 16,7 mm, CHALCAL 2 stn DW 78, Nouvelle-Calédonie, 320-360 m (cliché P. Laboute). **14.** *Plesionika suffusa* n. sp., paratype, femelle, cl 13,5 mm, SMIB 8 stn DW 169, Nouvelle-Calédonie, 447-450 m (cliché J.-L. Menou). **15.** *Plesionika lophotes* Chace, 1985, femelle ovigère, cl 24,9 mm, Taïwan, côte NE, environ 300 m (cliché T.-Y. Chan). **16.** *Plesionika rufomaculata* n. sp., holotype, femelle, cl 12,6 mm, MUSORSTOM 6 stn DW 399, îles Loyauté, 282 m (cliché P. Laboute). **17.** *Plesionika scopifera* n. sp., holotype, femelle ovigère, cl 12,7 mm MUSORSTOM 5 stn 377, îles Chesterfield, 260-270 m (cliché P. Laboute).



New Caledonia (paratypes). MUSORSTOM 4: stn 184, 19°4.0'S, 163°27.5'E, 260 m, 18.09.1985, 1 ♀ cl 11.9 mm (photograph) (MNHN Na 14134); stn 189, 19°7.5'S, 163°29.0'E, 210 m, 19.09.1985, 3 ♂ cl 10.8-14.7 mm, 2 ovig. ♀ cl 10.0 and 13.3 mm, 1 ♀ cl 9.5 mm (photograph) (MNHN Na 14135). — SMIB 6: stn DW106, 19°8.1'S, 163°30.7'E, 165-195 m, 2.03.1990, 1 ♂ cl 11.7 mm (photograph) (MNHN Na 14136). — SMIB 8: stn DW 146, 24°55.2'S, 168°21.7'E, 514-522 m, 27.01.1993, 1 ♀ cl 6.7 mm (photograph) (MNHN Na 14137); stn CP 161, 24°46.7'S, 168°9'E, 232-251 m, 2.08.1993, 1 ovig. ♀ cl 13.1 mm (photograph) (NTOU P-5-161, from MNHN exchange). — NORFOLK 1: stn CP 1676, 24°42.92'S, 168°8.77'E, 227-232 m, 22.06.2001, 1 ♂ cl 12.8 mm, 1 ovig. ♀ cl 12.7 mm (photograph) (NTOU P-N-1676); stn DW 1726, 23°18.01'S, 168°14.85'E, 185-207 m, 27.06.2001, 1 ovig. ♀ cl 11.4 mm (photograph) (NTOU P-N-1726).

OTHER MATERIAL EXAMINED. — Chesterfield Islands. CHALCAL 1: stn D 31, 19°33.3'S, 158°30.3'E, 230 m, 1984, 1 ♂ cl 10.5 mm.

New Caledonia. LAGON: stn 537, Lagon Nord, 19°7'S, 163°22'E, 200 m, 6.03.1985, 1 ♂ cl 12.5 mm. — BIOCAL: stn CP 84, 20°43'S, 167°1'E, 150-210 m, 6.09.1985, 1 ♀ cl 7.3 mm (damaged, cn). — MUSORSTOM 4: stn 152, 19°5.7'S, 163°21.6'E, 223 m, 14.09.1985, 1 ovig. ♀ cl 10.5 mm, 1 ♀ cl 10.0 mm (damaged, cn). — CHALCAL 2: stn DW 83, 23°20.3'S, 168°5.5'E, 200 m, 31.10.1986, 1 ♀ cl 6.9 mm (badly damaged); stn DW 84, 23°23.8'S, 168°7.1'E, 170 m, 31.10.1986, 4 ♂ cl 8.9-11.1 mm, 1 ovig. ♀ cl 11.4 mm, 1 ♀ cl 7.6 mm. — SMIB 3: stn DW 8, 24° 45'S, 168°8'E, 233 m, 21.05.1987, 1 ♀ cl

11.35 mm. — SMIB 4: stn DW 57, 23°21.5'S, 168°4.6'E, 260 m, 9.03.1989, 1 ♂ cl 8.8 mm. — SMIB 5: stn DW 95, 22°59.7'S, 168°19.8'E, 200 m, 14.09.1989, 1 ♀ cl 9.6 mm. — SMIB 6: stn DW 107, 19°7.6'S, 163°30.2'E, 195-205 m, 2.03.1990, 1 ♂ cl 11.6 mm. — BERYX 11: stn CP 25, 24°44'S, 168°9'E, 230-235 m, 17.10.1992, 1 ♀ cl 6.5 mm. — BATHIUS 2: stn CP 728, 22°47.11'S, 167°28.11'E, 241-245 m, 12.05.1993, 2 ♂ cl 9.6 and 13.1 mm, 3 ovig. ♀ cl 11.9-13.0 mm, 5 ♀ cl 10.3-11.6 mm.

Matthew Islands. VOLSMAR: stn DW 41, 22°17.7'S, 168°41.2'E, 250 m, 8.06.1989, 1 ♂ cl 7.7 mm.

Tonga. BORDAU 2: stn CP 1626, 23°20'S, 176°16'W, 220-249 m, 19.06.2000, 1 ovig. ♀ cl 11.9 mm (photograph).

DESCRIPTION. — Largest male cl 14.7 mm, largest female 13.3 mm, smallest ovigerous female 10.0 mm, smallest male with am longer than ai 10.8 mm, some males 8.9-10.5 mm with am as long as ai, largest male with am shorter than ai 8.8 mm. Rostrum curving downwards near the base but abruptly upturned after passing eyes (less curve and rather horizontal in males), 1.1-1.5 x (mean 1.3, $n = 12$) as long as carapace and overreaching scaphocerite; basal rostral crest low and sometimes nearly level with dorsal surface of carapace in males and juveniles, bearing 1-4 (mostly 2 or 3) fixed and 5 or 6 movable teeth, posterior 5 or 6 teeth situated posterior to orbital margin; dorsal rostrum proper armed with 2 or 3 well-spaced teeth and 2 (rarely 3) small subapical teeth; 10-13 teeth evenly distributed on ventral rostrum. Stylocerite tapered distally and extending to around middle part of second segment of antennular peduncle. Scaphocerite 3.8-4.8 x (mean 4.4 x, $n = 12$) longer than broad.

Maxilliped III with distal segment 1.4-1.8 x (mean 1.6, $n = 11$) as long as penultimate segment, overreaching scaphocerite by up to half length of distal segment. Pereiopod I exceeding scaphocerite by up to half length of chela. Pereiopod II bearing 19-25 carpal articles on right side and 83-106 carpal on left side, shorter one exceeding scaphocerite by 2/5 carpus and entire chela to only chela length. Pereiopod III overreaching scaphocerite by 1/3-2/3 length of propodus and entire dactylus, propodus 0.48-0.61 x (mean 0.55, $n = 12$) as long as carapace, dactylus claw-like, 0.20-0.25 x as long as propodus, posterior margin bearing 1-3 (mostly 2) spinules, accessory spine half to nearly as long as and abutting terminal spine. Pereiopods IV and V similar to pereiopod III, former overreaching scaphocerite by up to 1/3 length of propodus and entire dactylus, latter exceeding scaphocerite by less than entire length of dactylus.

Abdominal somite III slightly arched dorsally. Telson 1.3-1.5 x longer than abdominal somite VI, latter 1.6-1.9 x longer than deep.

Eggs about 0.4 mm in diameter.

Color: Body somewhat marbled with orange-red and white, with many oblique transverse golden bands from carapace to abdominal somite V. Abdominal pleuron I with large, round, purple spot rimmed, from interior to exterior, with red, white, thicker red and then thicker white. Golden bands on posterior carapace and first 2 abdominal somites somewhat semicircular and encircling purple spot. Posterior half of abdominal somite V to tailfan translucent, with white lines that

are continuous with golden bands on anterior abdominal somites. Tips of uropods of tailfan reddish. Eyes pale black. Rostrum translucent except where banded with red and white at tip. Thoracic appendages, antennular and antennal flagella with red and white bands. Pleopods reddish, outer borders of pleopods III and IV whitish. Eggs light blue, becoming light green when bearing eye spots.

DISTRIBUTION. — Chesterfield Islands, New Caledonia, Matthew Island and Tonga, 150-522 m.

REMARKS. — The coloration of *P. scopifera* is unique and perhaps the most striking for the genus. The presence of a basal rostral crest, dorsal margin of the rostrum distributed with teeth along the entire length, and the bearing of a short stylocerite align this form with *P. lophotes*, from which, however, it can be readily separated by having a lower basal rostral crest, fewer rostral teeth and much shorter dactyli on the posterior three pereopods. *Plesionika scopifera* is, nevertheless, very similar to another new species *P. rufomaculata*, and their distinguishing characters are discussed in the “remarks” on that species.

The basal rostral crest of *P. scopifera* is the lowest in the “*P. lophotes*” group, with that of males and juveniles rather low and sometimes nearly level with the dorsal surface of the carapace. This species was depicted on a New Caledonian stamp in 1989 as “*Plesionika* sp.”

ETYMOLOGY. — The Latin *scopifera* refers to the brilliant target-like marking on the body of this new species.

DISCUSSION

The eight closely related species in the present study are separated into two groups on the basis of armature of the dorsal margin of the rostrum, and the lengths of both the stylocerite and the pereopod dactyli. The main characters used to separate the species are the height of the basal rostral crest, the extension of the stylocerite, the number of rostral teeth and movable postrostral teeth, the relative length of the pereopod dactyli and the body size. The basal rostral crest is highest in *P. suffusa* and *P. lophotes*, and slightly lower in *P. rostricrescentis* and *P. rufomaculata*. The basal rostral crest of *P. hsuehyui* is high in females but low in males. Similarly in *P. scopifera*, the basal rostral crest of males is nearly level with the dorsal surface of the carapace. *Plesionika erythrocyclus* has a low basal rostral crest in females, and females of *P. bimaculata* have the basal rostral crests only slightly elevated from the carapace. The males of both *P. erythrocyclus* and *P. bimaculata* almost completely lack a basal rostral crest. As for the stylocerites, those of *P. lophotes*, *P. scopifera* and *P. rufomaculata* are shortest and only extend to about the middle of the second segment of the antennular peduncle. The stylocerite is longest in *P. suffusa* and generally far overreaches the antennular peduncle. *Plesionika rostricrescentis* and *P. hsuehyui* have the second longest stylocerites, more or less reaching the tip of the antennular peduncle. In *P. bimaculata* and *P. erythrocyclus*, the stylocerite is of intermediate length and generally extends to around the base of the distal segment of the antennular peduncle. The dactyli of the posterior three pereopods are very long (about 1/3 propodus length) in *P. lophotes* but short (1/7-1/4 propodus length) in all the other species, although the dactyli of *P. scopifera*, *P. rufomaculata* and sometimes *P. bimaculata* may be slightly longer. The difference in the number of ventral rostral teeth appears to be slight but rather constant for the species of the “*P. rostricrescentis*” group. There are 6-9 ventral rostral teeth in *P. erythrocyclus*, generally 9 or 10 in *P. hsuehyui*, 10 or 11 in *P. bimaculata*, 11 or 12 in *P. suffusa* and 15 in *P. rostricrescentis*. On the other hand, for separating the species of the “*P. lophotes*” group, the number of dorsal rostral teeth between the subapical teeth and the anteriormost tooth of the basal rostral crest (1 or 2 in *P. rufomaculata*, 2 or 3 in *P. scopifera* and usually 3 or 4 in *P. lophotes*) appears to be more important. The postrostral crest of *P. rostricrescentis*, *P. hsuehyui*, *P. suffusa* and *P. lophotes* usually has five movable teeth while *P. bimaculata*, *P. erythrocyclus* and *P. rufomaculata* typically have six movable teeth. In terms of body size, *P. suffusa* is the largest and *P. lophotes* is the second largest, while *P. bimaculata* is the smallest and *P. erythrocyclus* is the second smallest species. *P. rufomaculata* and *P. hsuehyui* are intermediate, with *P. rostricrescentis* probably slightly larger and *P. scopifera* slightly smaller.

The differences listed above, however, are sometimes indistinct. One of the difficulties is that the height of the basal rostral crest may vary considerably with the size and sex of the specimens (generally it is lower in males and juveniles). For example, the basal rostral crest is low in males of *P. hsuehyui* and in juveniles of *P. suffusa*, making them sometimes very similar to *P. bimaculata* of similar size. The length of the stylocerite also tends to be shorter in younger specimens. Therefore, definite identification is rather difficult for some small individuals based on morphological characters alone. Fortunately, the species in this study all have very distinctive colorations (except *P. rostricrescentis*, the coloration of which is unknown) and many preserved *P. bimaculata* specimens still bear color markings on the body. Moreover, males of *P. bimaculata* and *P. hsuehyui* sometimes have a rather long and nearly horizontal rostrum, rendering them quite distinct from the other species.

Although coloration is treated as a key character in separating the species discussed here, coloration alone is evidently not a natural grouping character for these species. For example, *P. hsuehyui*, *P. rufomaculata* and *P. scopifera* have the red circle on abdominal pleuron I, while in *P. erythrocyclus* and *P. lophotes* the large red circle is located on abdominal tergite III, and in *P. bimaculata* there are red circles on both abdominal pleuron I and tergite III, although the latter is very small. *Plesionika suffusa* does not have a clear circular spot, but abdominal tergite III bears a somewhat diffuse orange spot. The presence of a large red spot on the body is in any case not unique for the "*P. rostricrescentis*-*P. lophotes*" species complex. *Plesionika unidens* Bate, 1888 also has a large red spot on abdominal somite III (see Hayashi 1986: fig. 90), although otherwise this species shows great differences from the species of the present study. It should also be pointed out that the type series of *P. unidens* (Challenger stn 219, 4 syntypes, BMNH 1888.22) actually contains two species, with one syntype probably being *P. binoculus*. Moreover, in the material from the MUSORSTOM expeditions and Taiwan, there are at least two color forms in the "*P. binoculus*" group that also have large red spots on the body. The coloration of one of them is almost the same as that of *P. lophotes* while in the other, both abdominal pleuron I and abdominal tergite III have large red spots (i.e. a coloration similar to *P. bimaculata* but with the red spot on abdominal tergite III as large as that on abdominal pleuron I). Morphologically, the "*P. binoculus*" group (including at least *P. binoculus*, *P. izumiae*, *P. philippinensis* Chace, 1985 and probably also *P. assimilis*) is very similar to the "*P. lophotes*" group except that its members lack a distinct basal rostral crest. The problem is further complicated, however, by some MUSORSTOM material (probably representing a new species) in which the height of the basal rostral crest is intermediate between that of *P. scopifera* and *P. binoculus*. It is thus possible that the "*P. binoculus*" and "*P. lophotes*" groups (perhaps even together with the "*P. rostricrescentis*" group) may later have to be merged. Nevertheless, to date, this large colored circular spot pattern has only been found in these "*Nothocaris*" species (*sensu* Burukovsky 1981; i.e. referring to those *Plesionika* species in which the second pair of pereopods are very unequal). It will be interesting to know the coloration of *P. rostricrescentis*, the type-species of *Nothocaris*, and if it also bears large circular spots on the body.

Although the basal rostral crest is very high in both *Plesionika rostricrescentis* and *P. lophotes*, it is now known that not all the species in the "*P. rostricrescentis*-*P. lophotes*" species complex have a high basal rostral crest. Low basal rostral crests can also be found in some other species of the genus, such as *P. grahami* Kensley, Tranter & Griffin, 1987, *P. carinata* Holthuis, 1951, the "*P. williamsi* Forest, 1964" and the "*P. laevis* (A. Milne Edwards, 1883)" groups, etc. Therefore, the presence of a high basal rostral crest within this genus is not confined to the "*P. rostricrescentis*-*P. lophotes*" species complex. Further, even the high basal rostral crest in some species of the "*P. rostricrescentis*-*P. lophotes*" complex is not unique for the genus since one is present in *Plesionika albocristata* Chan & Chuang, 2002, which belongs to a very different species complex (discovered when the present report was in press).

Lastly, the KARUBAR Indonesian expedition obtained a few specimens probably belonging to the "*P. rostricrescentis*-*P. lophotes*" species complex and all have short dactyli. However, there are no color photographs nor color notes on these specimens and most of them are badly damaged. Only one juvenile (from stn DW 1) is intact, and while it is closest to *P. erythrocyclus*, it has five movable postrostral teeth. The other specimens are all somewhat different from the eight species reported in this study. Interestingly, the largest ovigerous female (from stn DW 18) still has a large red spot on abdominal somite III but has short dactyli on the posterior three pereopods. The carapace is completely broken in this specimen. Therefore, it is uncertain whether or not this specimen truly belongs to the "*P. rostricrescentis*-*P. lophotes*"

species complex. Thus, the identification of specimens from the following KARUBAR stations from Kai and Tanimbar Islands has been made with reservations: stn DW 1, 5°46'S, 132°10'E, 156-305 m, 22.10.1991, 1 ♀ cl 6.6 mm (probably *P. erythrocyclus*); stn CP 16, 5°17'S, 132°50'E, 315-349 m, 24.10.1991, 1 ♀ cl 10.8 mm (close to *P. suffusa*), 1 ♀ cl 13.3 mm (badly damaged); stn DW 18, 5°18'S, 133°10'E, 205-215 m, 24.10.1991, 1 ♂ cl about 12 mm and 1 ovig. ♀ cl about 17.3 mm (badly damaged), 1 ovig. ♀ cl 15.7 mm (may be *P. hsuehyui*).

The possibility that there are more than eight species in the "*P. rostricrescentis*-*P. lophotes*" species complex is also indicated by a damaged specimen recently collected from Taiwan. This specimen (Aou-Di, NE coast, Taipei County, commercial trawler, 200 m, 27.03.2000, ovig. ♀ cl 13.3 mm, NTOU), with the rostrum missing completely and the dorsal carapace crushed, has a large red spot on abdominal tergite III and a large red circle on abdominal pleuron I. However, it lacks the characteristic small submedian red spots on abdominal tergite VI as in *P. erythrocyclus*. Only the shorter pereopod II (with 18 carpal articles), one pereopod IV and one pereopod V are still intact in this specimen and the dactyli are 0.14-0.16 times as long as the propodi. The basal rostral crest has six movable teeth remaining, and it is low but distinct. The stylocerite extends to the tip of the antennular peduncle. Therefore, its general characters most closely resemble those of *P. hsuehyui* but it has a coloration more similar to *P. erythrocyclus*. As with the severely damaged KARUBAR specimens, it therefore remains uncertain whether this Taiwanese specimen truly belongs to the "*P. rostricrescentis*-*P. lophotes*" species complex or not.

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