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**RESULTS OF THE REEXAMINATION OF THE TYPE
SPECIMENS OF SOME SPECIES BELONGING TO THE
SUBFAMILIES PONTONIIDAE AND PALAEMONINAE
(CRUSTACEA DECAPODA MACRURA)**

by

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A visit paid in June 1956 to the British Museum (Natural History), London, and to the University Museum of Zoology, Cambridge, England, enabled me to study the types of several species of Pontonid and Palaemonid prawns, the identity of which thusfar was not known with certainty. In the present paper some of the results of these reexaminations are given.

I wish to express here my sincere thanks to Dr. Isabella Gordon of the Crustacea Section of the British Museum, and to Dr. C. B. Goodhart of the University Museum of Zoology at Cambridge for the permission to study this valuable material and for their most cordial assistance.

***Periclimenes* (*Periclimenes*) *incertus* Borradaile, 1915**

Periclimenes (*Cristiger*) *incertus* Borradaile, 1915, Ann. Mag. nat. Hist. (8) 15: 210; Borradaile, 1917, Trans. Linn. Soc. Lond. Zool. (2) 17: 364, pl. 53 fig. 7.

Periclimenes (*Periclimenes*) *incertus* Kemp, 1922, Rec. Indian Mus. 24: 140, 150; Holthuis, 1952, Siboga Exped. 39 (a10): 9, 39.

Periclimenes (*Periclimenes*) *impar* Kemp, 1922, Rec. Indian Mus. 24: 140, 147, textfigs. 16, 17, pl. 3 fig. 1; Kemp, 1925, Rec. Indian Mus. 27: 322; Holthuis, 1952, Siboga Exped. 39 (a10): 9, 38, fig. 7; Holthuis, 1955, Zool. Verhand. Leiden 26: 60, fig. 33a.

In his key to the species of the subgenus *Periclimenes*, Kemp (1922: 140) placed *P. incertus* in the group with "no teeth of upper rostral series situated

on carapace behind orbit". However, in Borradaile's (1917) pl. 53 fig. 7, the posterior dorsal rostral tooth is shown as being placed behind the orbit. Since Kemp (1922: 150) stated that he had examined the type material of Borradaile's species, the possibility existed that the shape of the rostrum was not quite accurately represented in Borradaile's figure. Holthuis (1950: 39) pointed to the possible identity of *Periclimenes incertus* Borradaile with *P. impar* Kemp, 1922, a species placed by Kemp (1922: 140) in the group with "one or more upper rostral teeth situated on carapace behind posterior limit of orbit".

The reexamination of the type material of *Periclimenes incertus* in the collection of the University Museum of Zoology in Cambridge showed that the rostrum indeed has the posterior dorsal tooth placed behind the orbit as shown in Borradaile's (1917) figure. A comparison of the type specimen with Kemp's (1922) excellent description and figures of *Periclimenes impar* definitely proved that the two species are identical. As the name *Periclimenes incertus* Borradaile, 1915, is older than *P. impar* Kemp, 1922, it has priority and must be used for the species.

Distribution: Maldives, Ceylon, Andaman Islands, Lesser Sunda Islands, Aru Islands.

Periclimenes (Periclimenes) soror Nobili, 1904

Periclimenes soror Nobili, 1904, Bull. Mus. Hist. nat. Paris 10: 232; Nobili, 1906, Ann. Sci. nat. Zool. (9) 4: 50, pl. 2 fig. 6; Gordon, 1939, Ann. Mag. nat. Hist. (11) 4: 395, figs. 1-3.

Periclimenes (Cristiger) frater Borradaile, 1915, Ann. Mag. nat. Hist. (8) 15: 210; Borradaile, 1917, Trans. Linn. Soc. Lond. Zool. (2) 17: 324, 364, pl. 53 fig. 6.

Periclimenes (Cristiger) soror Borradaile, 1917, Trans. Linn. Soc. Lond. Zool. (2) 17: 363.

Periclimenes (Periclimenes) soror Kemp, 1922, Rec. Indian Mus. 24: 141, 165; Holthuis, 1952, Siboga Exped. 39 (a10): 9, 51, fig. 17.

Periclimenes (Ancylocaris) frater Kemp, 1922, Rec. Indian Mus. 24: 170.

Periclimenes bicolor Edmondson, 1935, Occ. Pap. Bishop Mus. 10 (24): 10, fig. 3.

Periclimenes (Harpilius) frater Holthuis, 1952, Siboga Exped. 39 (a10): 11.

In his description of *Periclimenes frater*, Borradaile (1917) pointed to the fact that the species is closely related to *P. soror* Nobili, and listed four

points of difference between the two. Gordon (1939) examined the type material of *P. soror* and redescribed that species. This made it possible for Holthuis (1952: 52) to show that three of the four characters enumerated by Borradaile as differentiating *P. frater* from *P. soror* also are found in the latter species. The only remaining difference being that the dactylus of the last three legs in *P. frater* should be simple, while in *P. soror* it is biunguiculate. As the accessory tooth in *P. soror* is very small, Holthuis suggested the possibility that such a tooth is present in the type material of *P. frater* but that it had escaped the notice of Borradaile because of its small size.

Examination of the two type specimens of *Periclimenes frater* in the Cambridge Museum revealed that the dactylus of the last three legs is indeed inconspicuously biunguiculate, and a comparison of the specimens (one of which is an ovigerous female) with the description of *Periclimenes soror* showed the two species to be identical. The name *Periclimenes frater* Borradaile, 1915, thus disappears into the synonymy of *P. soror* Nobili, 1904.

Distribution: Red Sea, Seychelles, Lesser Sunda Islands, Sulu Archipelago, Hawaiian Islands.

Periclimenes (Periclimenes) batei (Borradaile, 1917) (Fig. 1)

Palaemonella orientalis Bate, 1888, Rep. Voy. Challenger, Zool. 24: 787,

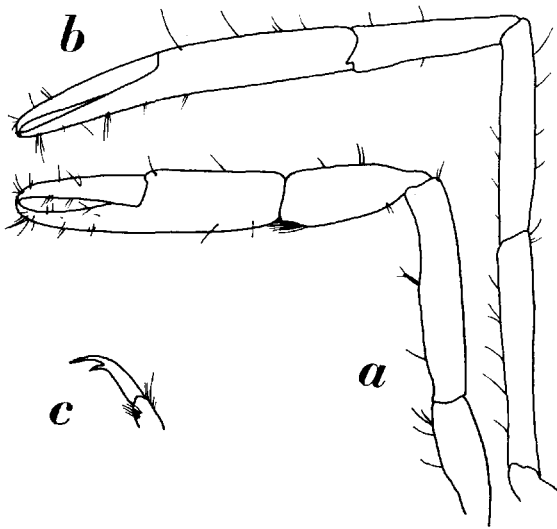


Fig. 1. *Periclimenes (Periclimenes) batei* (Borradaile), holotype.
a, first pereiopod; b, second pereiopod; c, dactylus of walking leg. a-c, $\times 50$.

pl. 128 fig. 4; Estampador, 1937, Philipp. Journ. Sci. 62: 489. (non Dana, 1852).

Palaemonella batei Borradaile, 1917, Trans. Linn. Soc. Lond. Zool. (2) 17: 357, 358; Holthuis, 1952, Siboga Exped. 39 (a10): 20, 22, 30.

Bate (1888) described and figured a Pontonid prawn from Sta. 200 of the Challenger Expedition (off Sibago, Philippine Islands, $6^{\circ} 47' N$ $122^{\circ} 28' E$, depth 25 fathoms, bottom green mud, 23 October 1874) and identified it with *Palaemonella orientalis* Dana, 1852. According to Bate the specimen was probably taken at or near the surface, though he did not give his reasons for this presumption.

The differences that exist between the description and figure given by Bate on the one hand, and Dana's (U. S. Exploring Exped. 13 (text, 1852): 583; (atlas, 1855): 12, pl. 38 fig. 4) original account of *Palaemonella orientalis* on the other, induced Borradaile (1917) in his revision of the Pontoninae to consider Bate's specimen as representing a distinct species for which he proposed the new name *Palaemonella batei*. Borradaile evidently had not examined Bate's specimen and based himself exclusively on the published information.

The specimen which Bate identified as *Palaemonella orientalis* is still preserved in the British Museum, and was there examined by me. It is in not too good a condition and evidently is not fullgrown. However, the following details, additional to Bate's description and figure, could be observed. All the six dorsal rostral teeth are placed on the rostrum proper, the posterior tooth standing over the posterior half of the orbit. A hepatic spine is present on the carapace. The antennula resembles that of *Periclimenes incertus* Borradaile as figured by Kemp (1922, Rec. Indian Mus. 24: 148, fig. 16a) under the name *P. impar* Kemp. The outer antennular flagellum has the two rami fused for three segments, the free part of the shorter ramus consists of about two small segments. The scaphocerite is very similar to that of *P. incertus*.

The mandibles show no palp at all.

The first pereopods (fig. 1a) have the palm slightly longer than the fingers and about as long as the carpus. The merus is about twice as long as the fingers and about 1.5 times as long as the ischium. The second leg (fig. 1b) is longer but not much heavier than the first. The palm is less than 1.5 times as long as the fingers and somewhat longer than the carpus. The carpus shows a tooth on the anterior margin. The merus is practically as long as the palm, and slightly shorter than the ischium; it is unarmed. The dactyli of the last

three pairs of legs are distinctly biunguiculate, both claws are sharp and slender (fig. 1c).

The fact that the mandible bears no palp shows that Bate was wrong in placing the species in the genus *Palaemonella*; it is a true *Periclimenes*. The biunguiculate dactyli of the last three pereopods make it clear that it belongs in the subgenus *Periclimenes* s.s. The species is rather closely related to *Periclimenes* (*P.*) *incertus* Borradaile, but may immediately be distinguished from that species by the fact that all the dorsal rostral teeth are placed in advance of the posterior limit of the orbit. In this respect *P. batei* is closer to *Periclimenes parvus* Borradaile, which, however, has the rostrum much higher and the second legs of an entirely different shape. Additional and full-grown material of *P. batei* is necessary to make its systematic position clear. As far as can be concluded from the evidence at hand, *Periclimenes batei* (Borradaile) is a good species, distinct from any of the other representatives of the genus *Periclimenes* thusfar described.

The species is only known from the type specimen.

***Periclimenes* (*Harpilius*) *yaldwyni* new name**

Brachycarpus audouini Bate, 1888, Rep. Voy. Challenger, Zool. 24: 798, pl. 129 fig. 5; Hutton, 1904, Index Faun. Nov. Zeal.: 255; Nobili, 1907, Annu. Mus. zool. Univ. Napoli (n. ser.) 2 (21): 4; Thomson, 1913, Trans. Proc. New Zeal. Inst. 45: 240.

Brachycarpus Audouinii Cano, 1890, Boll. Soc. Nat. Napoli 4: 38.

Palaemon audouini Ortmann, 1891, Zool. Jb. Syst. 5: 728. (non Heller, 1862).

Brachycarpus Audouini Thomson, 1903, Trans. Linn. Soc. Lond. Zool. (2) 8: 451; Nobili, 1905, Boll. Mus. Zool. Anat. comp. Torino 20 (502): 3, 4.

Periclimenes (*Ancylocaris*) *audouini* Kemp, 1925, Rec. Indian Mus. 27: 326.

Brachycarpus Antonini Magri, 1926, Natural. Sicil. (n. ser.) 24: 94.

Periclimenes batei Holthuis, 1950, Siboga Exped. 39 (a9): 22. (non *Palaemonella batei* Borradaile, 1917).

Periclimenes (*Harpilius*) *batei* Holthuis, 1952, Siboga Exped. 39 (a10): 10, 73; Richardson & Yaldwyn, 1958, Tuatara 7: 34, fig. 22.

The discovery that *Palaemonella batei* Borradaile, 1917, actually is a species of the genus *Periclimenes* has some nomenclatural repercussions, as it is now necessary to introduce a new name for *Periclimenes batei* Holthuis, 1950.

The latter was described for the first time by Bate (1888), who named

his new species *Brachycarpus audouini*. The type material originated from Cook Strait, New Zealand. Ortmann (1891) placed Bate's species in the genus *Palaemon*, by which action it became a junior secondary homonym of *Palaemon audouini* Heller, 1862. Though Ortmann treated Bate's and Heller's species as congeneric and recognized the homonymy of their names, he did not propose a new name for Bate's species: "Da letzterer [= *Palaemon audouini* Heller] jedoch kaum wiederzuerkennen ist, so behalte ich einstweilen diese Artbezeichnung [= *P. audouini*] für die Bate'sche Art bei". Kemp (1925) made it clear that Bate had placed *Brachycarpus audouini* in the wrong genus and that it actually belongs in the genus *Periclimenes*, subgenus *Harpilius* (the latter subgenus indicated by Kemp with the name *Ancylocaris*). Holthuis (1950), basing himself on the then existing rules of zoological nomenclature, considered the specific name *audouini* Bate to be invalid on the ground that it had been a junior homonym of *audouini* Heller when Ortmann (1891) referred both species to the genus *Palaemon*. Holthuis thereupon proposed the new specific name *batei* for Bate's species. The action of rejecting the specific name *audouini* Bate at that time (July 1950) was perfectly correct, as the old rules, which did not distinguish between primary and secondary homonyms, were still valid then. The revised rules concerning secondary homonymy came into force too late to prevent the above change of names. These revised rules, namely, state "that, where, prior to midnight G.M.T. (Greenwich Mean Time), 31st December, 1950/1st January, 1951, an author makes it clear that he rejects a specific trivial name on the ground that it is part of the later published of a pair of secondary homonyms, that rejection is to be accepted as valid, irrespective of whether the author makes it clear that he himself considers that the condition of homonymy still exists" (Hemming, 1950, Bull. zool. Nomencl. 4: 121). Furthermore these revised rules state (on the same page) that a specific name rejected in the just cited way is not to be used again. These two decisions are still in force and have been passed by the 1958 London Congress to be incorporated into the new Code. As Holthuis's action of rejecting the specific name *audouini* Bate, 1888, was published before 1951, it cannot be undone, and consequently that name cannot be used anymore. The specific name *batei*, which Holthuis (1950) proposed as a substitute name for *audouini* Bate, is not valid either as *Periclimenes batei* Holthuis 1950 is a junior (secondary) homonym of *Periclimenes batei* (Borradaile, 1917), a state of homonymy which still exists at the present moment. The specific name *Antonini* used by Magri (1926) is an erroneous spelling of *audouini* and thus has no nomenclatural status. It is therefore necessary to introduce again a new name for the present species, for

which I now propose *Periclimenes (Harpilius) yaldwyni* nom. nov. The specific name *yaldwyni* is suggested for this species, which is one of the commoner shallow water prawns of New Zealand, in order to honour Dr. J. C. Yaldwyn, at present the foremost specialist of New Zealand Macrura, for his valuable contributions in the field of carcinology.

Periclimenes yaldwyni is known only from New Zealand waters.

Macrobrachium gracilirostre (Miers, 1875)

Palaemon gracilirostris Miers, 1875, Ann. Mag. nat. Hist. (4) 16: 343; Ortmann, 1891, Zool. Jb. Syst. 5: 712.

Palaemon (Parapalaemon) modestus De Man, 1892, Weber's Zool. Ergebn. Reise Niederl. O. Ind. 2: 469, pl. 27 fig. 43. (non *Leander modestus* Heller, 1862).

Palaemon (Parapalaemon) modestus brevimanus J. Roux, 1934, Rev. Suisse Zool. 41: 228, figs. 9, 10.

Palaemon modestus Kubo, 1941, Trans. biogeogr. Soc. Japan 3: 310, text-fig. 4, pl. 20 fig. 2.

Macrobrachium sophronicum Holthuis, 1950, Siboga Exped. 39 (a9): 18, 198, fig. 40.

Holthuis (1950: 200) pointed to the possibility that *Palaemon gracilirostris* Miers, 1875, would prove to be synonymous with *Macrobrachium sophronicum* Holthuis, 1950 (= *Palaemon modestus* De Man, 1892). As Miers's description, however, was very short and not illustrated it was impossible to draw any certain conclusions from it.

The holotype of Miers's species, a male of 64 mm long, is still preserved in the collection of the British Museum (Reg. No. 74. 54). It was collected at Upolu, Samoa, and received from the Rev. S. J. Whitmer. The rostral formula is $\overline{7} \ 11$. The seventh dorsal tooth stands just over the posterior margin

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of the orbit, the first tooth is situated distinctly behind the middle of the carapace. The teeth are erect. Of the two ventral teeth of the rostrum the distal is very small. The hepatic spine is placed close to the anterior margin of the carapace somewhat below the antennal spine.

The pleurae of the fourth abdominal somite are about rectangular at the top, while the fifth has them pointed. The sixth somite has the pleurae rectangularly rounded, while the postero-lateral angles are bluntly pointed. The anterior pair of dorsal spines of the telson lies in the middle of the length of

the telson, the posterior pair lies closer to the posterior margin of the telson than to the anterior pair.

The scaphocerite resembles the figure given by Holthuis (1950) for *Macrobrachium sophronicum*, though it is slightly more slender.

The first pereopods reach with about half the carpus beyond the scaphocerite. The carpus is about 1.5 times as long as the chela and distinctly longer than the merus. Only the right leg of the second pair is present. It is rather slender and reaches with the greater part of the carpus beyond the scaphocerite. The fingers are slightly shorter than the palm. The cutting edges of the fingers show no teeth (yet). The carpus is somewhat longer than the palm and about as long as or slightly longer than the merus. The last three legs are like those described and figured by Holthuis (1950) for *Macrobrachium sophronicum*.

A comparison of this type specimen with De Man's (1892) and Holthuis's (1950) descriptions and figures of *Macrobrachium sophronicum* Holthuis (= *Palaemon modestus* De Man) showed that the latter species and *Palaemon gracilirostris* Miers are identical.

As Holthuis (1950) pointed out, the name *Palaemon modestus* De Man, 1892, is invalidated by *Palaemon modestus* (Heller, 1862) and thus cannot be used for the present species; for that reason Holthuis proposed the substitute name *Macrobrachium sophronicum* for De Man's species. This action, however, now proves to have been entirely unnecessary since the oldest available name given to the present species is *Palaemon gracilirostris* Miers, 1875, of which *Macrobrachium sophronicum* consequently falls as a junior subjective synonym. The correct name of the present species is thus *Macrobrachium gracilirostre* (Miers).

The species has been reported from fresh water of the Riukiu Islands, the Moluccas, the Lesser Sunda Islands, New Ireland and Samoa.