

**The validation of *Palaemon peringueyi* (Stebbing, 1915) from Southern African waters and its relationship with *Palaemon pacificus* (Stimpson, 1860) (Decapoda, Palaemonidae)**

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*Palaemon peringueyi* (Stebbing, 1915) from Southern African waters is currently synonymized with *Palaemon pacificus* (Stimpson, 1860) a species reported from the Red Sea to Japan and Polynesia. The comparison of numerous specimens from several localities along the distribution range of the species revealed that *P. peringueyi* is a different species. The two species are easily distinguished by the length of the rostrum and the shape of the pleura of the fifth abdominal segment. The lectotype of *P. pacificus* is described.

KEYWORDS: Palaemonidae. *Palaemon*, Indo-Pacific, redescriptions, taxonomy

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**Introduction**

Stebbing (1915) described two new species of palaemonid shrimps under the names *Leander peringueyi* and *L. gilchristi* from South Africa (near Port Elizabeth and East London respectively). As Kemp (1925) and Barnard (1950) pointed out both species were described on an unique specimen with unusual or malformed rostrum and they were synonymized with *Palaemon pacificus* (Stimpson, 1860) reported from the Red Sea to Japan and Polynesia. There is no doubt about the synonymy of *P. gilchristi* (Stebbing, 1915, p. 76, pl. 18) with *P. peringueyi* (Stebbing, 1915, p. 75, pl. 17) but Holthuis (1952, 1980) found several differences between specimens from Southern African waters and those from Indo-West Pacific waters, and suggested the possibility of the presence of two different species.

The availability of Stimpson's type material of *Palaemon pacificus* from Hong Kong, fortunately saved from the great fire of Chicago in 1871 and located in the British Museum (Evans, 1967), together with numerous specimens from several localities along the distribution range of the species, provided an opportunity to solve the identity of the southern African specimens. Therefore, in this paper the lectotype and paralectotypes of *Palaemon pacificus* (Stimpson, 1860) are established and described from the type series deposited in the British Museum (Natural History) and the validation proven of the previously synonymized *P. peringueyi* described by Stebbing (1915) from Southern African waters.

The specimens used for this study are from the collections of the British Museum (Natural History), London (BM), National Museum of Natural History (Smithsonian Institution), Washington (USNM), South African Museum, Cape Town (SAM), Muséum National d'Histoire Naturelle, Paris (MNHN) and Instituto de Ciencias del Mar, Barcelona (ICM). The measures indicate carapace length, excluding rostrum.

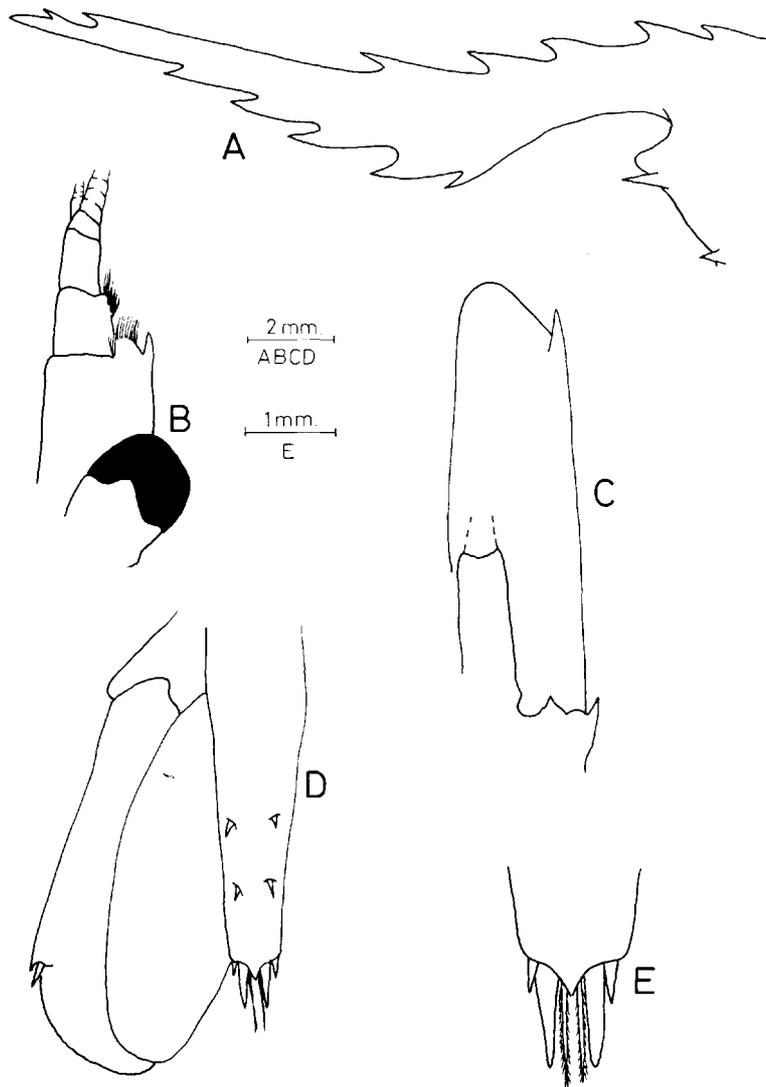


FIG. 1. *Palaemon pacificus* (Stimpson), lectotype, ♀ 11.3 mm. Hong Kong: A, rostrum; B, right antennule; C, right antenna; D, telson and uropods; E, end of telson.

***Palaemon pacificus* (Stimpson, 1860)**

(Figs 1, 2, 3 d-f, 4 a)

*Leander pacificus* Stimpson, 1860, p. 40; Kemp, 1925, p. 307.

*Palaemon pacificus* Holthuis, 1950, p. 87, fig. 19; Tirmizi & Kazmi, 1984, p. 315, fig. 2.

*Material examined*

Hong Kong: 1♀, 11.3 mm (LECTOTYPE); 2♂, 8.9-9.0 mm (paralectotypes) (BMNH 1861: 44). Hawaii: 1♀ ov. 10.6 mm, Honolulu reef (USNM 30693); 1♀ ov. 8.8 mm; 1♀ 7.7 mm; 2♂ 7.3-8.0 mm, Oahu, 1924 (MNHN Na 1461). Japan: 2♀ ov. 10.6-11.0 mm; 2♂

5.3–8.0 mm, Okinawa, 10.3.1954 (USNM 97805); 6♀ ov. 8.5–13.6 mm; 5♀ 6.0–8.2 mm; 1♂ 6.0 mm, Misaki, Sagami (USNM 26311); 1♀ 4.9 mm; 1♂ 4.8 mm, J. Harmand, 1906 (MNHN Na 1459). Thailand: 1♀ ov. 8.4 mm, 12° 30' 15" N–101° 26' 45" E, 26.10.1957 (USNM 105419). Indonesia: 1♀ ov. 8.8 mm, Ternate, J. G. de Man, 1902 (MNHN Na 1460). Red Sea: 3♀ 5.1–6.1 mm; 1♂ 9.7 mm (BM 1938.1.28.176–178); 4♀ ov. 10.6–11.6 mm; 2♂ 7.6–7.7 mm (BM 1913.10.30.14–18); 2♀ 8.0–8.6 mm; 2♂ 6.9–7.4 mm (BM 1927.11.2.165–168); 1♀ ov. 7.4 mm; 3♀ 5.6–8.1 mm; 5♂ 5.6–6.4 mm (BM 1938.1.28.166–175).

*Description.* (Female LECTOTYPE): Rostrum slightly curved upwards, clearly overreaching end of antennal scale. Dorsal border with nine acute teeth with three situated on anterior part of carapace. Two foremost dorsal teeth are subapical and separated from the next tooth by a long unarmed interval, longer than the other intervals. Ventral border with five large teeth. Branchiostegal spine slightly smaller than antennal spine and situated on margin of carapace.

Abdomen with fourth somite not postero-dorsally produced; fifth segment about 0.6 times length of sixth, postero-ventral angle bluntly acute, without tooth; sixth about 1.4 times longer than deep, postero-ventral angle ending in a tooth. Pleura of first three segments broadly rounded. Telson about 1.1 times length of sixth segment, 3.4 times longer than wide anteriorly; sides straight, convergent. Two pairs of well developed dorsal spines in terminal half; lateral posterior spines slightly smaller than dorsal spines; intermediate spines large, 0.12 of telson length.

Antennule with basal segment of peduncle narrow; stylocerite short, distally acute, reaching half segment length; disto-lateral angle strongly produced with well developed disto-lateral spine that reaches as far as middle of second segment. Second and third segments subequal in length, together about as long as 0.7 of proximal segment; second segment with lateral lobe. Upper flagellum biramous, rami slender, fused for nine proximal segments, shorter ramus with 25 free segments. Fused portion about 0.4 times as long as free portion. Antenna normally developed, basicerite with strong lateral tooth. Scaphocerite extending slightly beyond antennular peduncle, lamella narrow, about three times longer than broad, anterior border rounded, with strong distal tooth which does not extend beyond anterior laminar margin.

Third maxilliped with endopod slender overreaching antennal peduncle.

First pereopods extending beyond anterior border of scaphocerite by length of fingers; chela with palm 2.2 times longer than broad, fingers about 0.8 times as long as palm; carpus 1.9 times longer than chela, 6.2 times longer than distal width; merus about 0.9 times carpal length, 6.6 times longer than broad; basis short; coxa robust.

Second pereopods well developed with robust, subequal feebly dissimilar chelae; extending beyond scaphocerite by most of chela. Merus not reaching end of antennal peduncle. Palm smooth, subcylindrical, about 2.4 times longer than deep; fingers 0.8 times as long as palm. Chela 1.3 times as long as carpus. Carpus 4.4 times longer than distal width. Merus 1.1 times as long as carpus and 5.5 longer than broad distally. Ischium 0.8 times as long as merus.

Third and fourth pereopods slightly overreaching scaphocerite. Third pereopod with merus 7.2 times longer than its terminal width, 1.8 times longer than carpus and 1.1 times as long as propodus. Propodus with six movable spinules on ventral margin, being 3.1 times longer than dactylus.

Fifth pereopod not overreaching scaphocerite. Merus not reaching pterygostomian angle, being 6.6 times longer than its distal width, 1.6 times longer than carpus

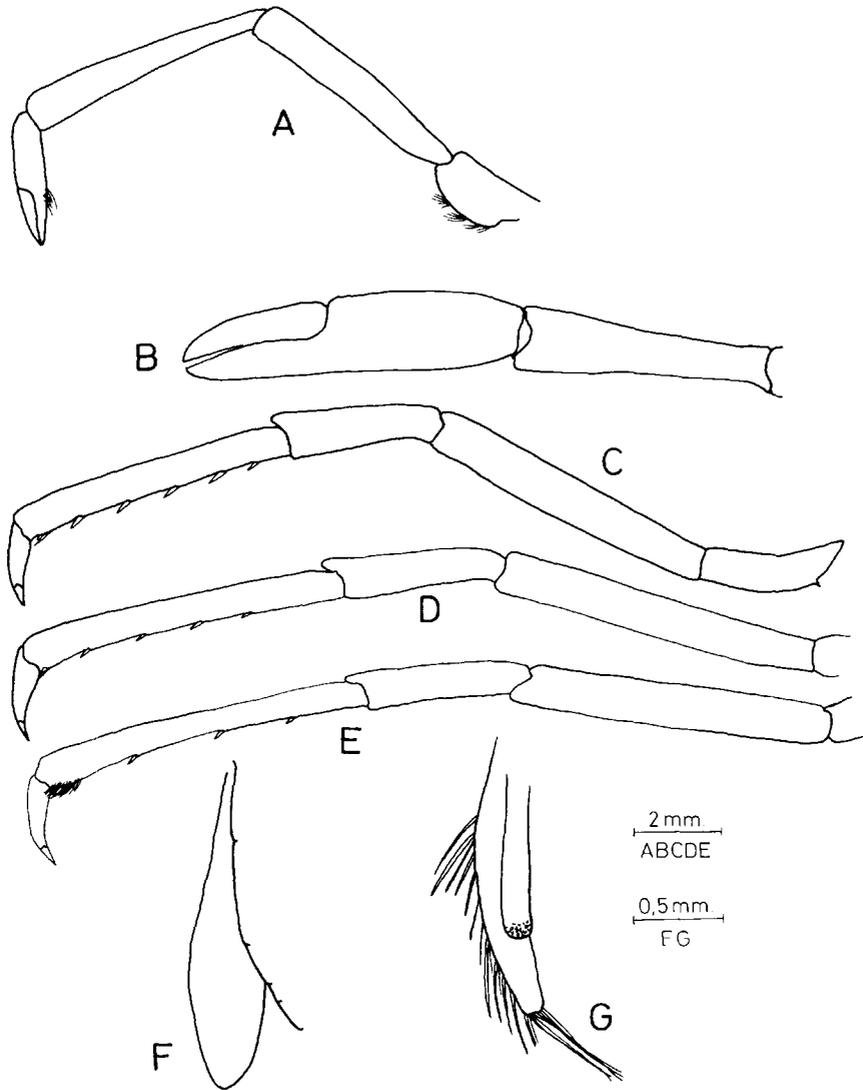


FIG. 2. *Palaemon pacificus* (Stimpson). A-E, lectotype, ♀ 11.3 mm. Hong Kong: F-G, ♂ 8.0 mm, Okinawa: A, first pereopod; B, second pereopod; C, third pereopod; D, fourth pereopod; E, fifth pereopod; F, endopod of first right pleopod; G, appendix masculina of right second pleopod.

and slightly shorter than propodus. Propodus with five movable spinules on ventral border, being more than three times longer than dactylus.

Uropod protopod with small blunt postero-lateral lobe; exopod with lateral border almost straight with small postero-lateral tooth bearing small spine medially; endopod not exceeding exopod.

#### Variations

The variations of many characters observed in this species were noted by several authors (e.g. Kemp, 1925; Holthuis, 1950; Tirmizi and Kazmi, 1984). In all specimens

examined (except those with a regenerated rostrum) the rostrum is clearly produced beyond the scaphocerite and the unarmed interval of the upper border is rather long. Therefore, both characters are of specific value. Other features, e.g. the relative length of articles of the pereopods, are variable and are less useful for distinguishing the two species.

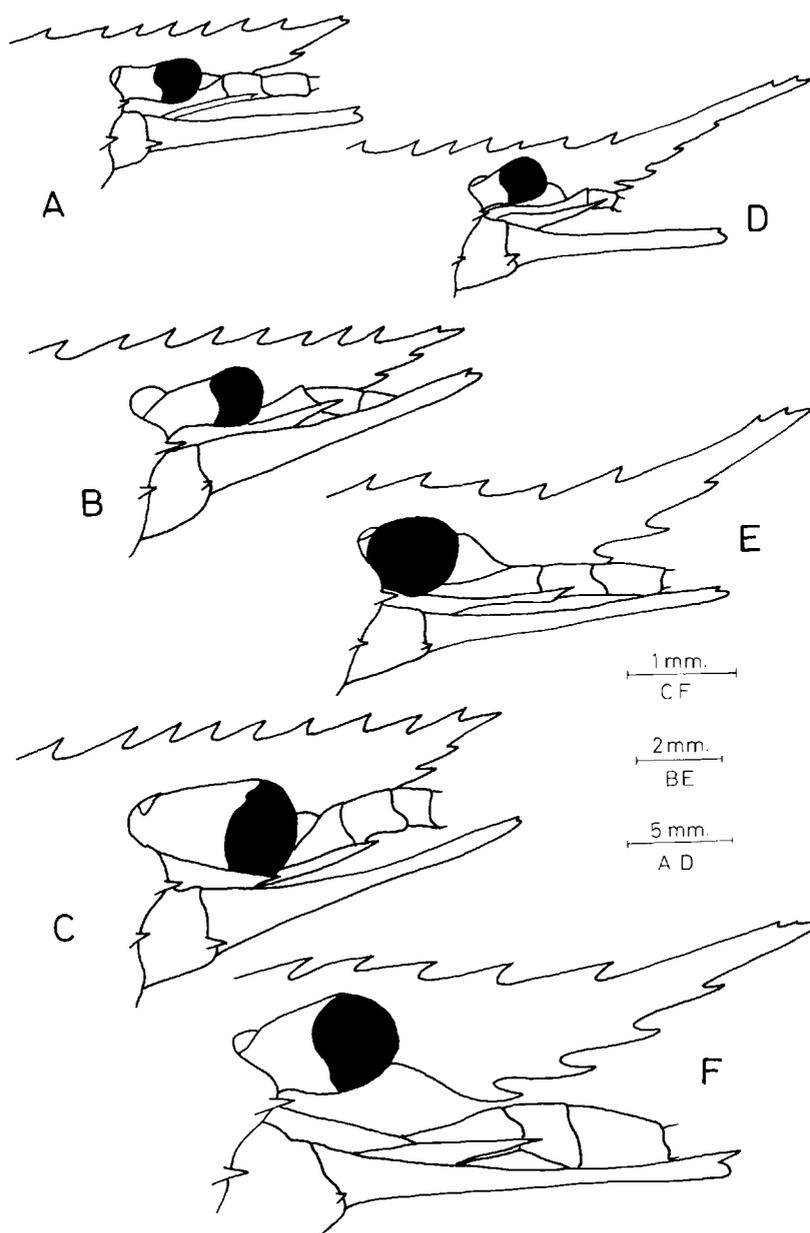


FIG. 3. Anterior part of the carapace. A–C, *Palaemon peringueyi* (Stebbing); A, ♀ ov. 10.4 mm, Saldanha Bay; B, ♀ 7.2 mm, Möwe Bay; C, ♀ 3.7 mm, Möwe Bay. D–F, *Palaemon pacificus* (Stimpson): D, ♀, lectotype, 11.3 mm; E, ♀ 7.3 mm, Sagami Bay; F, ♂ 4.8 mm, Japan.

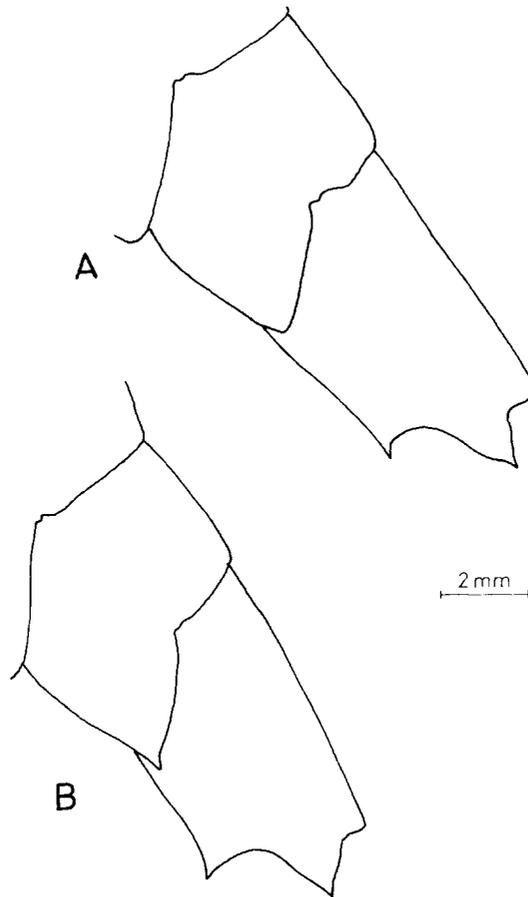


FIG. 4. Fifth and sixth abdominal segments. A, *Palaemon pacificus* (Stimpson), ♀, lectotype, 11.3 mm, Hong Kong; B, *Palaemon peringueyi* (Stebbing), ♀ ov. 11.6 mm, Saldanha Bay.

***Palaemon peringueyi*** (Stebbing, 1915)  
(Figs 3 a–c, 4 b)

*Leander peringueyi* Stebbing, 1915, p. 75, pl. 17.

*Leander gilchristi* Stebbing, 1915, p. 76, pl. 18.

*Leander pacificus* Barnard, 1950, p. 784, fig. 149 a–k (not Stimpson, 1860).

*Palaemon pacificus* Holthuis, 1952, p. 55; Barnard, 1955, p. 46 (key); Kensley, 1970, p. 183; Kensley, 1981, p. 24 (list) (no Stimpson, 1860)

*Material examined.* South Africa: 8♀ ov. 10.4–11.6 mm; 3♀ 9.4–10.6 mm; 17♂ 6.8–10.6 mm, Saldanha Bay (SAM A16345); 50♀ 5.3–9.3 mm; 21♂ 5.3–7.6 mm, Knysna Lagoon, 5.9.1968 (SAM A 16351). Namibia: 62♀ 4.3–8.0 mm; 5♂ 5.7–6.3 mm, Möwe Bay, 5.2.1988 (ICM 1051).

*Remarks*

*Palaemon peringueyi* was described by Stebbing from a specimen with an abnormal rostrum. Barnard (1950) redescribed the species (as *P. pacificus*), and in some detail,

including variability, particularly of rostral formulae and rostral malformations. He showed that the rostrum reaches to the end of the scaphocerite or '... slightly beyond in specimens with rostral formula 10/5...'.

Holthuis (1952) compared specimens of *P. pacificus* from Walvis Bay with those from Malaysia. He noted regional differences in length and shape of rostra and relative lengths of palm/fingers of the second pereopods. He suggested that two species may be represented, but that both features were variable.

The rostral variability described by Barnard (1950) is evident in the present specimens and the unarmed interval on the dorsal border is always considerably longer in *P. pacificus* than *P. peringueyi*, even in specimens of the latter species, in which the rostrum reaches slightly beyond the scaphocerite, it is always shorter than noted for *P. pacificus* (Fig. 3). The variability of the second pereopod, as indicated by Holthuis (1952) clearly shows overlap in the present material studied of both species.

These rostral differences, combined with the rounded posterolateral angle of the fifth abdominal somite of *P. pacificus*, in contrast to the sharp tooth present in *P. peringueyi* (Fig. 4), allow the two species to be readily distinguished from each other.

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