

# Memoirs of the Queensland Museum | **Nature**

## **56 (2)**

© Queensland Museum 2013

PO Box 3300, South Brisbane 4101, Australia  
Phone 06 7 3840 7555  
Fax 06 7 3846 1226  
Email [qmlib@qm.qld.gov.au](mailto:qmlib@qm.qld.gov.au)  
Website [www.qm.qld.gov.au](http://www.qm.qld.gov.au)

National Library of Australia card number  
ISSN 0079-8835

### NOTE

Papers published in this volume and in all previous volumes of the *Memoirs of the Queensland Museum* may be reproduced for scientific research, individual study or other educational purposes. Properly acknowledged quotations may be made but queries regarding the republication of any papers should be addressed to the Director. Copies of the journal can be purchased from the Queensland Museum Shop.

A Guide to Authors is displayed at the Queensland Museum web site [www.qm.qld.gov.au](http://www.qm.qld.gov.au)

**A Queensland Government Project**  
Typeset at the Queensland Museum

# Identification aid for the Indo-West Pacific species of *Periclimenaeus* Borradaile, 1915 (Crustacea: Decapoda: Caridea: Pontoniinae) using ambulatory dactyli

A. J. BRUCE

Crustacea Section, Queensland Museum, P. O. Box 3300, South Brisbane, Queensland, Australia 4101. Email: [abruce@broad.net.au](mailto:abruce@broad.net.au)

Citation: Bruce, A.J. 2013 06 30. Identification aid for the Indo-West Pacific species of *Periclimenaeus* Borradaile, 1915 (Crustacea: Decapoda: Caridea: Pontoniinae) using ambulatory dactyli. *Memoirs of the Queensland Museum* — *Nature* 56(2): 647–664. Brisbane. ISSN 0079–8835.

## ABSTRACT

Species of the Indo-West Pacific shrimp genus *Periclimenaeus* Borradaile, 1915, can be preliminarily identified using the morphology of the dactylus of the third ambulatory pereiopods. The dactyli of the 60 currently recognised species are illustrated, and are placed into seven discrete groupings. Data is provided on major morphological reports, hosts, type material and general distribution. □ *Periclimenaeus*, *Palaemonidae*, *dactyli*, *morphology*, *commensal*, *Indo-Pacific Ocean*

*Periclimenaeus* Borradaile, 1915, is the second most speciose genus of Pontoniinae, with some 60 Indo-West Pacific species (and a further 14 in the East Pacific and Atlantic regions). The first species to be described was *Periclimenaeus tridentatus* (Miers, 1884), as *Coralliocaris ? tridentatus*, from Thursday Island, Torres Strait, collected on the voyage of H.M.S. *Alert*, 1881–1882. A number of undescribed species exist in collections, and undoubtedly numerous further species of these small cryptic shrimps, found in association with sponge and ascidian hosts, remain to be described and discovered. Most commonly found in shallow tropical waters and particularly on coral reefs, they may also occur in deeper water, with *P. jeancharcoti* Bruce, 1991, reaching a depth of 375–450 m.

One of the impediments to easy identification of *Periclimenaeus* species is the facility with which they autotomize their second pereiopods when disturbed, and especially on collection. These appendages are frequently essential for the precise identification of species, although the morphologies of the rostrum, scaphocerite, the other ambulatory pereiopods, and the caudal fan are all important. However, I have also found that a most useful character for the preliminary identification of *Periclimenaeus* species is the dactyl of the third ambulatory

pereiopod, an appendage that is relatively rarely autotomized. Some species, e.g. *Periclimenaeus arthrodactylus* Holthuis, 1952, can be identified on that character alone. Experience has shown that, where numerous specimens are collected simultaneously, for example *P. rhodope* (Nobili, 1904) or *P. quadrangularis* (Rathbun, 1906), the morphology of this character is highly consistent. The initial examination of the third ambulatory dactyl will readily indicate a small number of possible identifications. The identity of the specimens then needs to be confirmed by detailed comparisons with the appropriate species descriptions and illustrations available in the literature. Details particularly of the rostrum, presence or absence of supraorbital teeth or tubercles, inferior orbital angle and antennal tooth, presence of an anterior mediodorsal lobe on the first abdominal tergite, of the first segment of the antennular peduncle, carapocerite and scaphocerite, fingers of the first pereiopod chelae, major and minor second pereiopod chelae, tuberculation of the proximal segments, spinulation of the ambulatory propods and the armament of the uropodal exopod, will probably provide an identification without the necessity of removal of any mouthparts, although these can provide useful confirmatory details.

Discrepancies from these may suggest that an undescribed species is involved, and comparison with type material may be necessary when descriptions and illustrations are insufficiently detailed. The wide range of morphological variation in the ambulatory dactyls may well be related to details of host structure, either sponge skeletal or ascidian pharyngeal details. Many species are still poorly known, often from the type material only, frequently from a single sometimes incomplete specimen. In addition to details concerning type material, data is provided on descriptive reports, nomenclatorial changes, host preferences and general distributions. Major references to the literature of *Periclimenaeus* are Holthuis (1952), Bruce (1975), Fransen (2006) and Marin (2007). Several species of *Periclimenaeus* have recently been transferred into new genera, such as *Anisomenaeus spinimanus* (Bruce, 1969), *Climeniperaeus orbitospinatus* (Bruce, 1969), *Isopericlimenes gorgonidarum* (Balss, 1913), *Orthopontonia ornata* (Bruce, 1969), *Paraclimenaes fimbriatus* (Borradaile, 1915) and *P. spinicauda* (Bruce, 1969). All these closely resemble *Periclimenaeus* species and may need care in separation. Keys for generic identification are available in Holthuis (1993). It is likely that further changes can be expected as well as the discovery of numerous more undescribed species.

To facilitate further study of this interesting genus, figures of the third ambulatory dactyl of all Indo-West Pacific species are provided, grouped by easily observable characters, together

with details of the original descriptions, more detailed reports on morphological details, institutions where type material is held, host animals and general geographical distributions.

Abbreviations: BMNH, The Natural History Museum; London; BPBM, Bishop Museum, Oahu; ION, Institute of Oceanography, Nha Trang, Vietnam; LACM, Los Angeles County Museum, Los Angeles; LEMMI, Laboratory of Ecology and Morphology of Marine Invertebrates, A.N. Svertzov Institute of Ecology and Evolution, Moscow; MNHN, Muséum National d'Histoire Naturelle, Paris; NHM, The Natural History Museum, London; NTM, Northern Territory Museum of Arts & Sciences, Darwin; QM, Queensland Museum, Brisbane; RMNH, Netherlands Centre for Biodiversity Naturalis, Leiden; SAM, South African Museum, Capetown; USNM, Smithsonian Institution, National Museum of Natural History, Washington; WAM, Western Australian Museum, Perth; ZMA, Zoological Museum, Amsterdam, now with RMNH; ZLKU, Zoological Laboratory, Faculty of Agriculture, Kyushu University, Kyushu; ZMC, Zoology Museum, Cambridge; ZMMSU, Zoological Museum, Moscow State University, Moscow; ZMUC, Zoological Museum, University of Copenhagen.

#### SYSTEMATICS

Palaemonidae Rafinesque, 1815: 98.

Pontoniinae Kingsley, 1879: 64.

*Periclimenaeus* Borradaile, 1915: 207.

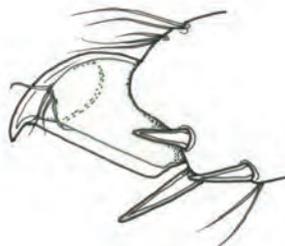
### Group 1: Species with simple ambulatory dactyli (4 species)

#### *Periclimenaeus calmani* Bruce 2012

*Periclimenes calmani* Bruce, 2012a: 525–528, figs 6–7.

**Host.** *Didemnum psammatoide* (Sluiter, 1895) [Ascidiacea],

**Distribution.** Known only from the holotype male from East Point, Darwin, 12°25.0'S, 130°39.0'E, 8–10 m, Northern Territory (NTM-Cr. 000326).



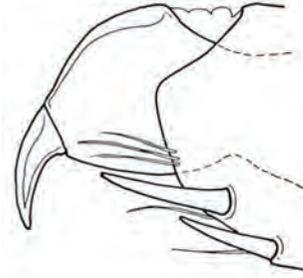
*P. calmani* Bruce 2012, from Bruce (2012a).

***Periclimenaeus hecate* (Nobili, 1904)**

*Coralliocaris hecate* Nobili, 1904: 232; 1906: 58, pl. 3, fig. 2.  
*Periclimenaeus hecate* — Bruce, 1975: 1574–1577, figs 11–12, 13e.

**Host.** *Diplosoma* ? *modestum*. Michaelsen, 1920 [Asciacea].

**Distribution.** Known from male and ovigerous female syntypes (MNHN-Na1911) from Djibuti (type locality), and reported also from Kenya, Comoro Islands, Seychelle Islands, Réunion, Maldive Islands, Indonesia, China, Western Australia, Queensland and Society Islands, to 60 m.



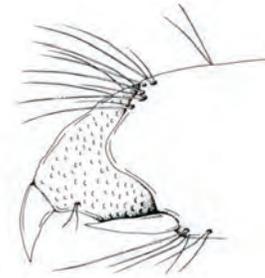
*P. hecate* (Nobili, 1904), from Bruce (1974).

***Periclimenaeus serenei* Bruce, 2012**

*Periclimenaeus hecate* — Marin, Britaev & Anker, 2004: 205–207, fig. 5a–h.  
*Periclimenaeus serenei* Bruce, 2012a: 528–529.

**Host.** Probably from ascidian.

**Distribution.** Known only from the ovigerous female holotype, Tam Island, Nha Trang Bay, Vietnam, LEMMI, un-numbered.



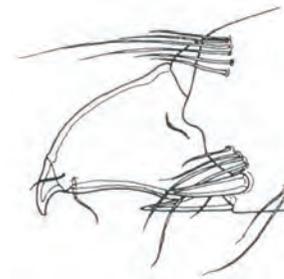
*P. serenei* Bruce, 2012, from Marin *et al.* (2004).

***Periclimenaeus serrula* Bruce & Coombes, 1995**

*Periclimenaeus serrula* Bruce & Coombes, 1995: 111–115, figs 3–5.

**Host.** *Leptoclinoides incertus* Sluiter, possibly a *lapsus* for *Leptoclinoides dubius* (Sluiter, 1909) [Asciacea].

**Distribution.** Known only from the ovigerous female holotype and male allotype, (NTM-Cr 004174AB). Type locality Orontes Reef, Port Essington, Northern Territory, 12 m.



*P. serrula* Bruce & Coombes, 1995, from Bruce & Coombes (1995).

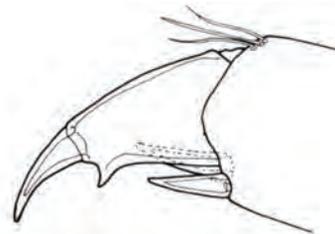
**Group 2: Species with distal accessory tooth only (10 species)**

***Periclimenaeus ardeae* Bruce, 1970**

*Periclimenaeus ardeae* Bruce, 1970: 310–312: 2005a: 397, fig. 5AB.

**Host.** *Asteropus simplex* (Carter, 1879) [Porifera] (Bruce, 1976a).

**Distribution.** Known only from the ovigerous female holotype (RMNH-D45526), type locality Heron Island, Queensland, and from Mombasa, Kenya.



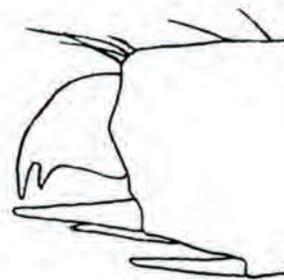
*P. ardeae* Bruce, 1970, from Bruce (2005a).

***Periclimenaeus bouvieri* (Nobili, 1904)**

*Typton bouvieri* Nobili, 1904: 233; 1906: 67, pl. 3, fig. 4.  
*Periclimenaeus bouvieri* – Holthuis, 1952: 131–134, fig. 56.

**Host.** Unknown.

**Distribution.** ‘Several syntypes’ (MNHN-Na1926, *fide* Paula Martin-Lefevre, 12 April 2012). Five syntypes (2 ovig. females), in collections of the Istituto e Museo di Zoologia della Università, Turin (Holthuis 1952), from Djibouti (type locality). Also known only from Suez. Nobili (1906) reports on 15 syntypes, but the whereabouts of the additional specimens is unknown.



*P. bouvieri* (Nobili, 1904), from Holthuis (1952).

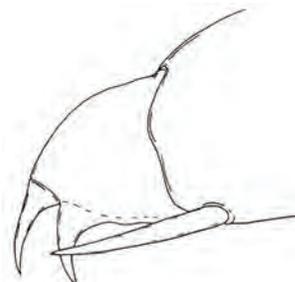
***Periclimenaeus* sp. 1**

*Periclimenaeus stylirostris* – Marin, Britayev & Anker, 2004: 307, figs 7–8.

**Host.** Uncertain, probably sponges.

**Distribution.** Known only from Vietnam as reported by Marin *et al.* (2004). Material presently housed in the Laboratory of Ecology and Morphology of Marine Invertebrates, Moscow.

**Remarks.** To be described as a new species in Bruce (2013).



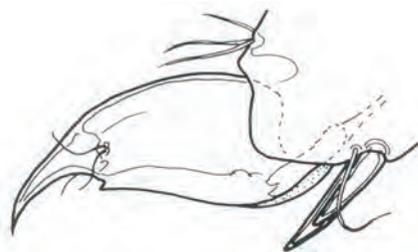
*Periclimenaeus* sp. 1, from Marin *et al.* (2004).

***Periclimenaeus orontes* Bruce, 1986**

*Periclimenaeus orontes* Bruce, 1986: 151–158, figs 1B, 6–10.

**Host.** *Jaspis stellifera* (Carter, 1879) [Porifera].

**Distribution.** Known only from the ovigerous female holotype (NTM-Cr000272), from Orontes Reef, Port Essington, Northern Territory, 3.0 m.



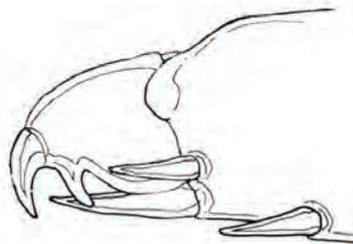
*P. orontes* Bruce, 1986, from Bruce (1986)

***Periclimenaeus pachydentatus* Bruce, 1969**

*Periclimenaeus pachydentatus* Bruce, 1969: 162–163; 1993: 834, fig. 3a; 2005b: 338–341, figs 9–10.

**Hosts.** *Hypodistoma deerratum* (Sluiter, 1885), *Botrylloides leachi* (Savigny, 1816) [Ascidiacea].

**Distribution.** Ovig. female holotype and male allotype (BMNH-1971.152, BMNH-1971.153), from Gulf of Carpentaria, Queensland, 14°12'S, 142°48'E. Also from Western Australia, Heron Island, Qld, Papua New Guinea and the Philippines.



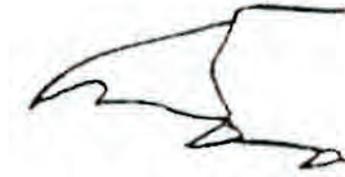
*P. pachydentatus* Bruce, 1969, from Bruce (2005b).

***Periclimenaeus palauensis* Miyake & Fujino, 1968**

*Periclimenaeus palauensis* Miyake & Fujino, 1968: 417–420, fig. 5.

**Host.** Uncertain.

**Distribution.** Known only from the ovigerous female holotype (ZLKU-2773) from Ngadarak Reef, Palau, Caroline Islands.



*P. palauensis* Miyake & Fujino, 1968, from Miyake & Fujino (1968).

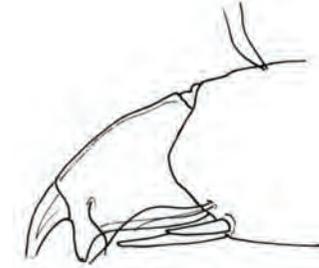
***Periclimenaeus quadridentatus* (Rathbun, 1906)**

*Coralliocaris quadridentatus* Rathbun, 1906: 920, fig. 69, pl. 24, fig. 1.

*Periclimenaeus quadridentatus* – Bruce, 2012a: 515–519, figs 1–2; 2013 [in press].

**Host.** Unidentified yellow sponge [Porifera].

**Distribution.** Holotype female (USNM-30552) from Auau Channel, between Maui and Lanai Is, Hawaiian Is, 51–79 m. Known with certainty only from holotype. Also reported from Kenya, La Réunion?, Marianna? and the Hawaiian Is. Some records may be confused with *P. stylirostris*.



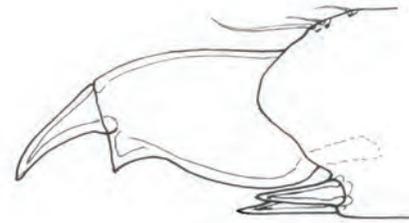
*P. quadridentatus* (Rathbun, 1906), from Bruce (2012a).

***Periclimenaeus robustus* Borradaile, 1915**

*Periclimenaeus robustus* Borradaile, 1915: 213; 1917: 324, 278, pl. 55, fig. 20; Bruce, 2005a: 390–395, figs 1–3.

**Host.** *Asteropus simplex* (Carter, 1879) [Porifera].

**Distribution.** Reported only from the male holotype (ZMC-I.1953.1) from Amirante Is, Seychelle Is, 52–71 m and Kenya, 119–141 m.



*P. robustus* Borradaile, 1915, from Bruce (2005a).

***Periclimenaeus stylirostris* Bruce, 1969**

*Periclimenaeus stylirostris* Bruce, 1969: 165–166; 1972: 68–75, figs 2–6.

**Host.** Unidentified sponge [Porifera].

**Distribution.** Known from holotype female (RMNH-D25612) and male paratype (BMNH), from South China Sea, 20°34.0'N, 113°30.5'E – 20°30.3'N, 113°29.0'E, 89–91 m. Also reported from Fiji. Possibly from Northern Territory, Queensland (Coral Sea), and New Caledonia.



*P. stylirostris* Bruce, 1969, from Bruce (1972).

***Periclimenaeus usitatus* Bruce, 1969**

*Periclimenaeus usitatus* Bruce, 1969: 172–174; 2010b: 28–29, fig. 6.

**Host.** Unidentified sponge [Porifera].

**Distribution.** Known only from ovig. holotype female (RMNH-D25614) and male allotype (NHM-2010.291) from off Unguja, Zanzibar, 7°46'48"S, 39°42'36"E, at 20 m.



*P. usitatus* Bruce, 1969, from Bruce (2010b).

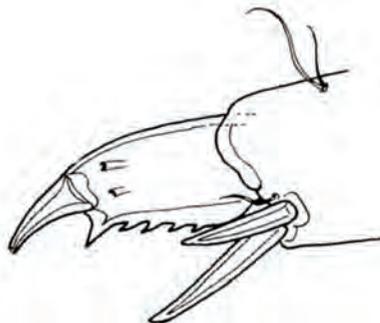
### Group 3: Species with distal accessory tooth and corpus with ventral denticles (17 species)

#### *Periclimenaeus bidentatus* Bruce, 1969

*Periclimenaeus bidentatus* Bruce, 1970: 305–307; 1991b: 257–258, figs 20.

**Hosts.** *Dysidea fragilis* (Montagu, 1818), *Hyatella intestinalis* (Lamarck, 1814), *Liosina paradoxa* Thiele, 1899 [Porifera].

**Distribution.** Reported first from the ovigerous female holotype (RMHH-D45527) from Heron I., Qld at 18.2–27.4 m. Now known from Kenya, Zanzibar, Papua New Guinea, Western Australia, Northern Territory, and New Caledonia. To 33 m.



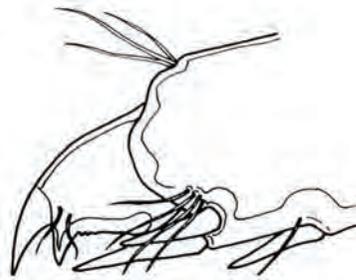
*P. bidentatus* Bruce, 1969, from Bruce (1991b).

#### *Periclimenaeus djiboutensis* Bruce, 1969

*Periclimenaeus djiboutensis* Bruce, 1970: 307–308; 1975: 1568–1572, figs 8, 9, 13AD; Bruce, 1978: 256–259, figs 28–29; Marin, 2007: 227–228, fig. 11.

**Host.** *Spongia officinalis* var. *ceylonica* Dendy [Porifera].

**Distribution.** Known from the ovig. female holotype (MNHN-Na17812) and male and two ovig. female paratypes (MNHN-Na11053) from Djibuti (type locality, 80–85 m). Now known from Israel, Zanzibar, Madagascar, Vietnam and Queensland.



*P. djiboutensis* Bruce, 1969, from Bruce (1978).

#### *Periclimenaeus garthi* Bruce, 1976

*Periclimenaeus garthi* Bruce, 1976b: 443–447, figs 2–4.

**Host.** Unknown.

**Distribution.** Known only from the ovigerous female holotype (LACM-CR1964-001.1), from Dunidu, Malé Atoll, Maldive Islands.



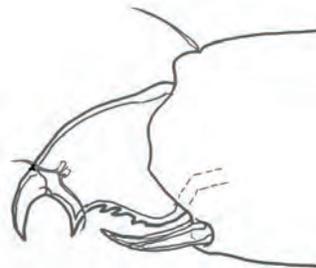
*P. garthi* Bruce, 1976, from Bruce (1976).

#### *Periclimenaeus hebedactylus* Bruce, 1969

*Periclimenaeus hebedactylus* Bruce, 1970: 308–310; 2012b: 472–481, figs 1–58.

**Host.** Unidentified sponge [Porifera].

**Distribution.** Known only from the male holotype (RMNH-D51597) and ovigerous female allotype (RMNH-D53333) from off Makunduchi, Unguja, Zanzibar, at 91.5 m.



*P. hebedactylus* Bruce, 1969, from Bruce (2012b).

***Periclimeneus heronensis* Bruce, 2010**

*Periclimeneus heronensis* Bruce, 2010b: 21–28, figs 1–5.

**Host.** Sponge ?

**Distribution.** Known only from the male holotype (QM-W31919), from Heron Island, Capricorn Islands Queensland, at 12 m.



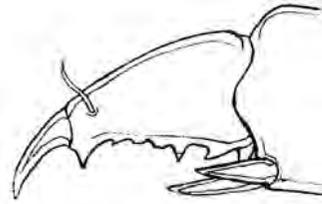
*P. heronensis* Bruce, 2010, from Bruce (2010b).

***Periclimeneus leptodactylus* Fujino & Miyake, 1968**

*Periclimeneus leptodactylus* Fujino & Miyake, 1968: 90–95, figs 3–5.

**Host.** *Desmacidon* sp. [Porifera].

**Distribution.** Reported only from the ovig. female holotype (ZLKU-9276) and ovig. female paratype (ZLKU-9277) from Kasari-cho, Amami Is, Japan, and from Kenya, Tanganyika and Zanzibar. The Zanzibar material (QM-W29194), Mazizini Bay, Unguja Ukuu, Zanzibar, intertidal sponge), has been compared with the type by Dr Fujino and is considered conspecific.



*P. leptodactylus* Fujino & Miyake, 1968, ♂ from Zanzibar (QM-W29194) [original].

***Periclimeneus lobiferus* Bruce, 1978**

*Periclimeneus lobiferus* Bruce, 1978: 260–269, figs 30–35.

**Host.** Unknown.

**Distribution.** Known only from the female holotype (MNHN-Na2582) from the Mozambique Channel, 15°21.7'S, 46°12.6'E, at 80–85 m



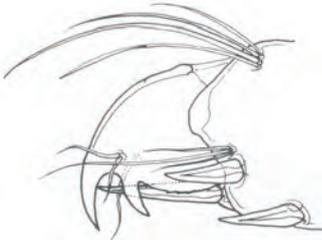
*P. lobiferus* Bruce, 1978, from Bruce (1978).

***Periclimeneus matheri* Bruce, 2005**

*Periclimeneus matherae* Bruce, 2005b: 331–338, figs 4–8.

**Host.** *Hypodistoma deerata* (Sluiter, 1895) [Ascidiacea].

**Distribution.** Known only from the male holotype (NTM-Cr013631), from Ashmore Reef, Western Australia, at 4–7 m.



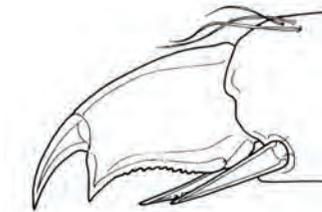
*P. matheri* Bruce, 2005, from Bruce (2005b).

***Periclimeneus mortenseni* Bruce, 1994**

*Periclimeneus mortenseni* Bruce, 1993: 829–833, figs 1–2.

**Host.** Unknown.

**Distribution.** Known only from adult female holotype specimen (ZMUC-CRU-007399), from Tual, Pulau Kai Dulah, Indonesia, at 2 m.



*P. mortenseni* Bruce, 1994, from Bruce (1993).

***Periclimeneaeus nufu* Āuriš, Horká, & Hoc, 2009**

*Periclimeneaeus nufu* Āuriš, Horká, & Hoc, 2009: 453–464, figs 1–5.

**Host.** Found in coral rubble, presumably from a sponge host [Porifera].

**Distribution.** Known only from the holotype female (ION.R.4254/E54104), from Van Phong Bay, Vietnam, 12°36'25"N, 109°19'58"E, at 5 m.



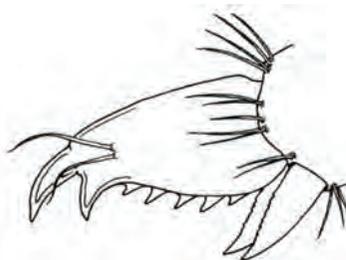
*P. nufu* Āuriš, Horká & Hoc, 2009, from Āuriš *et al.* (2009).

***Periclimeneaeus pachyspinus* Marin, 2007**

*Periclimeneaeus pachyspinus* Marin, 2007: 239–235, figs 12–15.

**Host.** Unidentified sponge (Porifera).

**Distribution.** Known only from the male holotype specimen (RMNH-D51752), from Nok Island, Nhatrang Bay, Vietnam, 15–20 m.



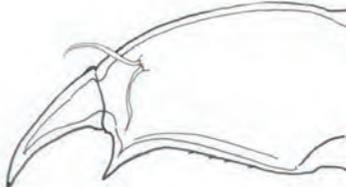
*P. pachyspinus* Marin, 2007, from Marin (2007).

***Periclimeneaeus pulitzerfinali* Bruce, 2011**

*Periclimeneaeus pulitzerfinali* Bruce, 2011: 113–121, figs 1–5.

**Host.** Unknown.

**Distribution.** Known only from the ovigerous female holotype (NTM-Cr.17287), from Shelly Beach, Mombasa, Kenya, at 16 m.



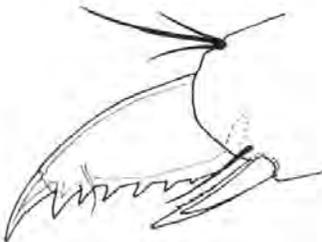
*P. pulitzerfinali* Bruce, 2011, from Bruce (2011).

***Periclimeneaeus rastrifer* Bruce, 1980**

*Periclimeneaeus rastrifer* Bruce, 1980a: 27–33, figs 12, 13 A, B.

**Hosts.** *Mycale philippinensis* Dendy, 1896, *Tedania anhelans* (Lieberkuhn, 1859). Also *Siphonochalina*, *Dysidea* and *Ulosa* spp. [Porifera].

**Distribution.** Reported from male holotype (MNHN-Na3696) from Ilôt Maitre, Nouméa, New Caledonia. Also known from Hong Kong, Vietnam, and Queensland. To 33 m.



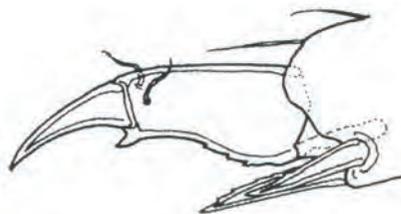
*P. rastrifer* Bruce, 1980, from Bruce (1980).

***Periclimeneaeus solitus* Bruce & Coombes, 1995**

*Periclimeneaeus solitus* Bruce & Coombes, 1995: 115–119, figs 6–7.

**Host.** *Jaspis stellifera* (Carter, 1879) [Porifera].

**Distribution.** Only known from ovig. female holotype and male allotype (NTM-Cr.000277) from Orontes Reef, Port Essington, Cobourgh Peninsula, Northern Territory, at 3 m.



*P. solitus* Bruce & Coombes, 1995, from Bruce & Coombes (1995).

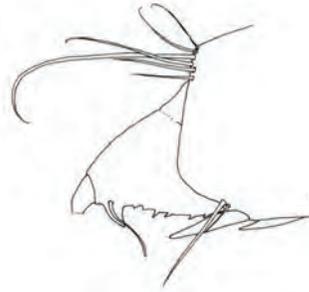
***Periclimeneaus spongicola* Holthuis, 1952**

*Periclimenaeus spongicola* Holthuis, 1952: 13--140, figs 60--62; Fransen, 2006: 741, fig. 18.

**Host.** Unidentified sponge [Porifera].

**Distribution.** Known only from ovig. female holotype (RMNH-D4751), from the Java Sea, Indonesia, at 4°41'S. 113°2'E, 28--32 m.

**Remarks.** See also, *Periclimenaeus* aff. *spongicola* Fransen, 2006: 738--740, fig. 17.



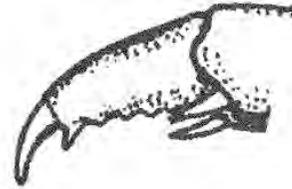
*P. spongicola* Holthuis, 1952, from Fransen (2006).

***Periclimeneaus tchesunovi* Đuriš, 1990**

*Periclimenaeus tchesunovi* Đuriš, 1990: 615--620, figs 1--2.

**Host.** Uncertain.

**Distribution.** Reported from female holotype (ZMMSU-Ma2520) only. Type locality: Genego Island, North Nilandu Atoll, Maldive Islands, at 20 m.



*P. tchesunovi* Đuriš, 1990, from Đuriš (1990).

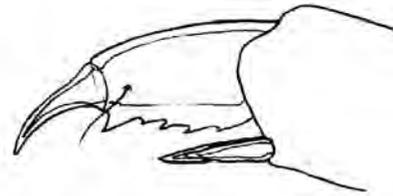
***Periclimeneaus tuamotae* Bruce, 1969**

*Periclimenaeus tuamotae* Bruce, 1969: 170--172.

**Host.** *Acanthus ternatus* Ridley 1844; *Acanthostrongylophora ingens* (Thiele, 1899) (Fransen 2013). [Porifera].

**Distribution.** From the type locality, Mururoa Atoll, Tuamotu Is, and from Kenya, Tanganyika, Northern Territory and Queensland, and Sabah.

**Remarks.** The type material was originally sent to MNHN, Paris, but recent enquiries reveal it was either not received or subsequently misplaced. However, one ovig. ♀ paratype was retained in the author's collection and is now deposited in the Queensland Museum (W29193).



*P. tuamotae* Bruce, 1969, ovig. ♀ paratype, Mururoa (QM-W29193) [original].

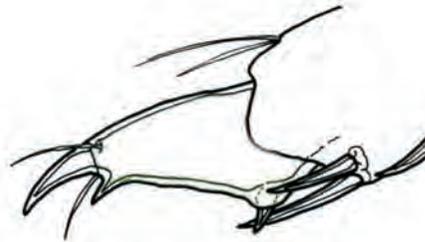
**Group 4: Species with distal accessory tooth and corpus with basal ornamentation, without ventral denticles (6 species)**

***Periclimenaeus creefi* Bruce, 2010**

*Periclimenaeus creefi* Bruce, 2010b: 29--35, figs 7--11.

**Host.** Ascidian ?

**Distribution.** Known only from ovig. ♀ holotype (QM-W31437), from Heron Island, Capricorn Islands, Queensland.



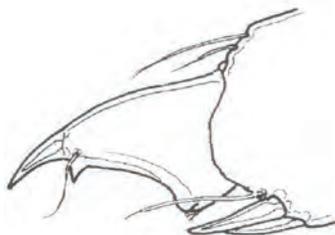
*P. creefi* Bruce, 2010, from Bruce (2010b).

***Periclimenaeus fawatu* Bruce, 2006**

*Periclimenaeus fawatu* Bruce, 2006a: 33–41, figs 1–6.

**Host.** Unidentified sponge [Porifera].

**Distribution.** Known only from the holotype male and ovigerous female allotype specimens (RMNH-D51593), from Fungu Fawatu, Unguja, Zanzibar, 33–36.5 m.



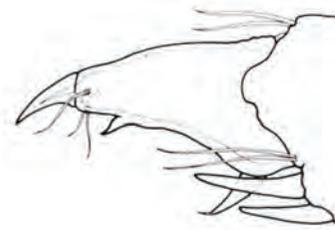
*P. fawatu* Bruce, 2006, from Bruce (2006a).

***Periclimenaeus manihinei* Bruce, 1976**

*Periclimenaeus manihinei* Bruce, 1976c: 138–142, figs 29–30.

**Host.** Unknown: found in coral debris.

**Distribution.** Known only from ovigerous female holotype specimen (BMNH-1976.69) from Baie Sainte Anne, Praslin, Seychelle Islands, at 4 m.



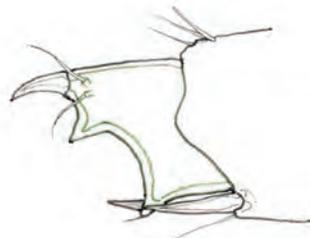
*P. manihinei* Bruce, 1976, from Bruce (1976).

***Periclimenaeus parkeri* Bruce, 2012**

*Periclimenaeus parkeri* Bruce, 2012c: 289–298, figs 1–5.

**Host.** Unidentified ascidian [Ascidiacea].

**Distribution.** Known only from the adult female holotype specimen (WAM-40281) from Cassini Island, Western Australia, 13°55.926'S 125°37.094'E, at 12 m.



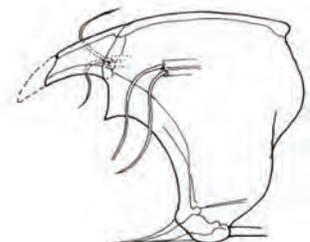
*P. parkeri* Bruce, 2012, from Bruce (2012c).

***Periclimenaeus tridentatus* (Miers, 1884)**

*Coralliocaris? Tridentatus* Miers, 1884: 2946, pl. 32, fig C.  
*Periclimenaeus tridentatus* – Holthuis, 1952: 14, 140–146, figs 63–65 (*partim*); Bruce, 2002: 566–577, figs 1–7.

**Hosts.** *Diplosoma* sp. [Ascidiacea].

**Distribution.** Ovig. female holotype (BMNH-81.31). Type locality Thursday Island, Queensland. Also reported from Moçambique, Singapore (?), Vietnam, China (?), Northern Territory, Marianas Islands, Society Islands.



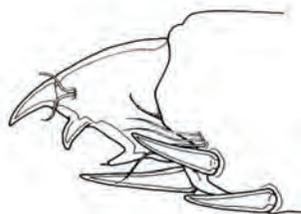
*P. tridentatus* (Miers, 1884), from Bruce (2002).

***Periclimenaeus wolffi* Bruce, 1993**

*Periclimenaeus wolffi* Bruce, 1993: 833–839, figs 3–4.

**Host.** Unknown.

**Distribution.** Known from ovigerous female holotype specimen only (ZMUC-CRU-008631), from Tai-Wan Hai-Hsia, Taiwan, 23°20'N, 118°30'E, at 31 m.



*P. wolffi* Bruce, 1994, from Bruce (1993).

**Group 5: Species with unguis as well as corpus ventrally dentate (8 species)**

***Periclimenaeus arabicus* (Calman, 1939)**

*Periclimenaeus* (*Periclimenaeus*) *arabicus* Calman, 1939: 210–211, fig. 4.

*Periclimenaeus arabicus* – Holthuis, 1952: 13, 130.

*Periclimenaeus ohshimai* – Miyake & Fujino, 1967: 275–279, fig. 1.

**Hosts.** *Gellius*, *Toxochalina*, *Callyspongia*, *Acarnus* spp. [Porifera].

**Distribution.** Known from the female holotype (BMNH-1939.10.9) from off Oman, at 13.5 m. Also from ‘Cotes d’Arabie’, Djibuti, Kenya, Zanzibar, Tanganyika, Seychelles, Maldives, Vietnam, China, Hong Kong, Japan, Northern Territory, Queensland, New Caledonia, Fijian Islands.



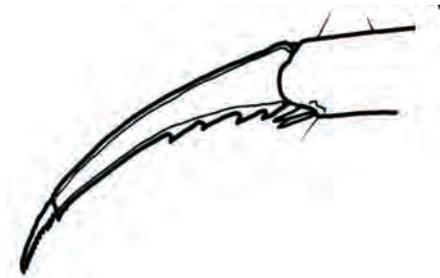
*P. arabicus* Calman, 1939, from Bruce (1975).

***Periclimenaeus arthrodactylus* Holthuis, 1952**

*Periclimenaeus arthrodactylus* Holthuis, 1952: 122–125, figs 51–53; Bruce, 2006b: 14–15, fig. 7G–I; Bruce, 2010a: 51–53, fig. 1.

**Host.** Unknown.

**Distribution.** Known from ovig. female holotype (ZMA-De.102518), from Pulau Sailus ketjil, Indonesia, to 18 m, and from Heron Island, Qld.



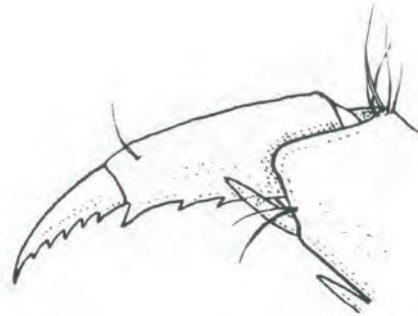
*P. arthrodactylus* Holthuis, 1952, from Bruce (2010a).

***Periclimenaeus echinimanus* Đuriš, Horká, & Al-Horani, 2011**

*Periclimenaeus echinimanus* Đuriš, Horká, & Al-Horani, 2011: 56–65, figs 1–6.

**Host.** Unident. sponges [Demospongia: Porifera].

**Distribution.** Known only from holotype male and allotype female (RMNH-D.53450, D.53452) and 13 paratypes from Aqaba, Jordan, from 2–9 m.



*P. echinimanus* Đuriš, Horká, & Al-Horani, 2011, from Đuriš, *et al.* (2011).

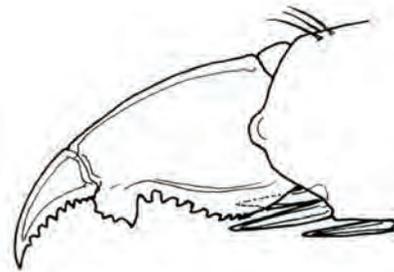
***Periclimenaeus holthuisi* Bruce, 1969**

*Periclimenaeus rhodope* – Holthuis, 1952: 125–129, figs 54–55 bis.

*Periclimenaeus holthuisi* – Bruce, 1969: 159–160; 2006b: 12–14, fig. 7A–F.

**Host.** Unknown.

**Distribution.** Known only from the ovigerous female holotype (ZMA-De.102519), from Rumah-lusi, Tiour Island, Kepulauan Banda, Indonesia, at uncertain depth.



*P. holthuisi* Bruce, 1969, from Bruce (2006b).

***Periclimenaeus nielbrucei* Bruce, 2006**

*Periclimenaeus nielbrucei* Bruce, 2006b: 1–12, figs 1–6.

**Hosts.** Unidentified sponge [Porifera].

**Distribution.** Known only from ovig. female holotype and male allotype (QM-W27987, QM-W27988), from Wreck I., and female paratype from Heron I., Capricorn Is, Qld.



*P. nielbrucei* Bruce, 2006, from Bruce (2006b).

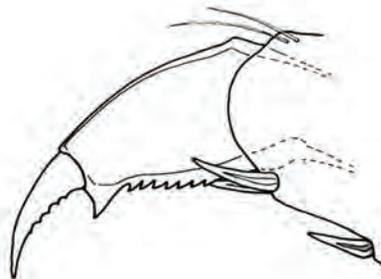
***Periclimenaeus rhodope* (Nobili, 1904)**

*Coralliocaris* (*Onycocaris*) *rhodope* Nobili, 1904: 233; 1906: 61, pl. 2 fig. 8.

*Periclimenaeus rhodope* – Holthuis, 1952, 125–129, figs 54, 55, 55bis; Bruce, 1975: 1558–1562, figs 1–2, 3A, B, 7A, B; Marin, Britaev & Anker, 2004: 207, fig. 6a–l.

**Hosts.** *Haliclona* sp.; *Siphonochalina* sp. [Porifera].

**Distribution.** Known from male lectotype (MNHN-Na2766) and male and two ovig. female paralectotypes (MNHN-Na2767) from Djibouti; also reported from Somalia, Kenya, Zanzibar, Tanganyika, Seychelle Islands, China (South China Sea) ?, and Queensland.



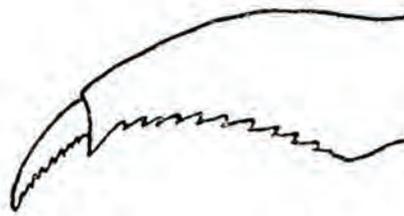
*P. rhodope* (Nobili, 1904), from Bruce (1975).

***Periclimenaeus uropodialis* Barnard, 1958**

*Periclimenaeus uropodialis* Barnard, 1958: 18–20, fig. 6.

**Host.** *Callyspongia* sp. [Porifera].

**Distribution.** Adult female holotype from Delagoa Bay, Mozambique (present whereabouts unknown; not in SAM). Also from Kenya, Zanzibar, Tanganyika, and Queensland.



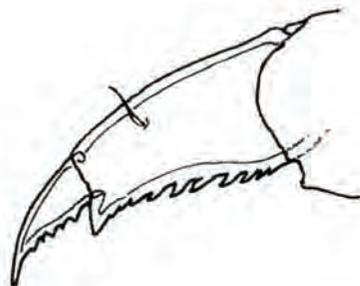
*P. uropodialis* Barnard, 1958, from Barnard (1958).

***Periclimenaeus zanzibaricus* Bruce, 1969**

*Periclimenaeus zanzibaricus* Bruce, 1969: 174–175: Bruce, 2006b:15–20, figs 8–9.

**Host.** *Haliclona* sp. [Porifera].

**Distribution.** Known only from 15 specimens including the type material, ovigerous female holotype (RMNH-D.25615 and male allotype RMNH-D.51673?), 1 paratype (BMNH-2006.407-408), from Uroa, Unguja, Zanzibar, intertidal. Further specimens from Ras Iwatine and Mombasa I., Kenya.



*P. zanzibaricus* Bruce, 1969, from Bruce (2006b).

**Group 6: Species with unguis dorsally dentate (3 species)**

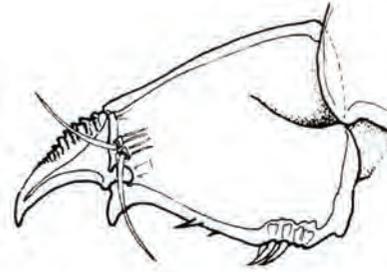
***Periclimenaeus jeancharcoti* Bruce, 1991**

*Periclimenaeus jeancharcoti* Bruce, 1991a: 371–378, figs 50–55; Fransen, 2006: 727–731, figs 9–10.

**Hosts.** *Leptoclinides uniorbis* Monniot & Monniot, 1996; *Didemnum granulatum* Tokioka, 1954; *D. subviridis* (Sluiter, 1909) (Asciacea).

**Distribution.** Holotype female from 375–450 m off New Caledonia: 21°31'S, 166°21'E, (MNHN-Na12023); also from Papua New Guinea and Philippines, at 3–37 m.

**Remarks.** Also see *Periclimenaeus* aff. *jeancharcoti* Bruce, 1991, Palau, 1 juv., 10 m, in *Leptoclinides madara* Tokioka, 1953, (Fransen 2006, fig. 12).



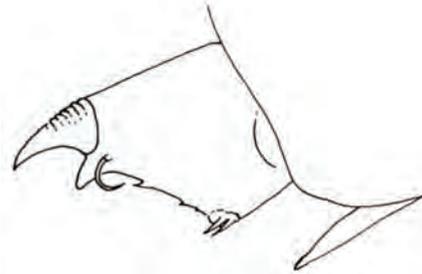
*P. jeancharcoti* Bruce, 1991, from Bruce (1991a).

***Periclimenaeus minutus* Holthuis, 1952**

*Periclimenaeus minutus* Holthuis, 1952: 134–137, figs 57–59; Fransen, 2006: 730–731, fig. 11; Bruce, 2010c: 386–387 fig. 6.

**Hosts.** Unidentified sponges.

**Distribution.** Known from two syntypes (male, ovig. female) (ZMA-De.101.630) from Banda I., Indonesia, at 73–80 m; also from Somalia, Zanzibar, Tanganyika, Indonesia, Philippines and (?) Western Australia.



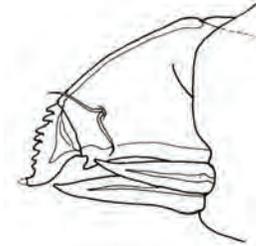
*P. minutus* Holthuis, 1952, from Fransen (2006).

***Periclimenaeus trispinosus* Bruce, 1969**

*Periclimenaeus trispinosus* Bruce, 1969: 169–170; 2001: 147–152, figs 1–3.

**Host.** Unidentified sponge [Porifera].

**Distribution.** Known from ovig. female holotype and male allotype only, from Mkokotoni, Unguja, Zanzibar (RMNH-D.25613, BMNH, number uncertain), from 25.5–27.5 m.



*P. trispinosus* Bruce, 1969, from Bruce (2001).

**Group 7: Species with corpus bearing acute proximal tooth, without ventral denticles or distal accessory tooth (12 species)**

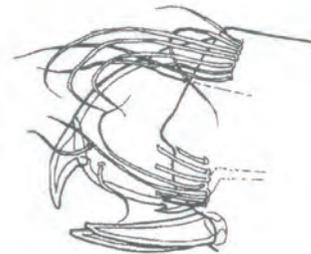
***Periclimenaeus colodactylus* Bruce, 1996**

*Periclimenaeus colodactylus* Bruce, 1996: 222–226, figs 9–10.

**Host.** *Diplosoma versicolor* F. Monniot, 1994 [Asciacea].

**Distribution.** Known from male holotype, female allotype (MNHN-Na12926; 12927) and two paratypes, from Uatio Islet, New Caledonia at 20–25 m.

**Remarks.** See also *P. aff. colodactylus* — Fransen (2006: 726, fig. 7).



*P. colodactylus* Bruce, 1996, from Bruce (1996).

***Periclimenaeus crassipes* Calman, 1939**

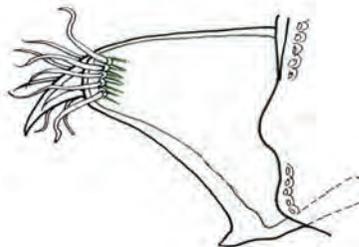
*Periclimenes (Ancylocaris) crassipes* Calman, 1939: 211–215, fig. 5.

*Periclimenaeus tridentatus* – Holthuis, 1952: 14, 141.

*Periclimenaeus crassipes* – Bruce, 2012a, 520–524, figs 3–5.

**Host.** Unknown.

**Distribution.** Known only from two ovig. female syntypes (NHMUK-1939.10.9.304–305) from Oman, 18°03.5'N, 57°02.5'E, at 38 m.



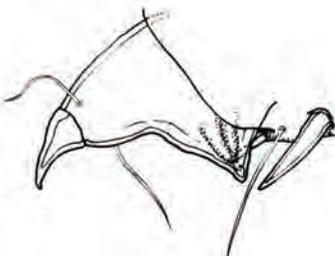
*P. crassipes* Calman, 1939, from Bruce (2012a).

***Periclimenaeus dactylodon* Bruce, 2012**

*Periclimenaeus dactylodon* Bruce, 2012d: 51–60, figs 1–7.

**Host.** Unidentified ascidian [Ascidacea].

**Distribution.** Known only from type specimens, an ovig. female holotype (QM-W29142), male allotype (QM-W29143) and ovig. female paratype (QM-W29144), from Wistari Reef, Heron I., Queensland at 24.5 m.



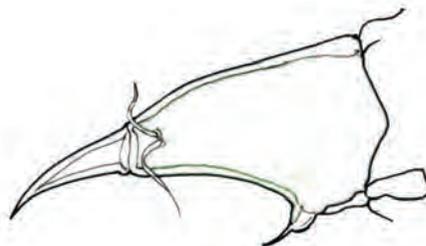
*P. dactylodon* Bruce, 2012, from Bruce (2012d)

***Periclimenaeus devaneyi* Bruce, 2010**

*Periclimenaeus devaneyi* Bruce, 2010c: 380–386, figs 1–5.

**Host.** Uncertain, probably sponge or ascidian associated with *Pocillopora*.

**Distribution.** Known only from the type locality, Kahe Point, Oahu, Hawai'i an Islands, at about 3.0 m, with ovigerous female holotype and allotype male (BPBM-S14815; S148140); ovigerous female paratype (QM-W28904).



*P. devaneyi* Bruce, 2010, from Bruce (2010c).

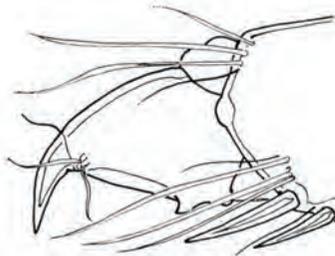
***Periclimenaeus diplosomatis* Bruce, 1980**

*Periclimenaeus diplosomatis* Bruce, 1980b: 39–51, figs 1–6.

*Periclimenaeus djiboutensis* – Fransen, 2006: 726–727, fig. 8.

**Host.** *Diplosoma inflatum* F. Monniot, 1994 [Ascidacea].

**Distribution.** Known only from ovig. female holotype (AM-P24817) and male allotype (AM-P24818) from Heron I., Queensland, and New Caledonia, to 27 m.



*P. diplosomatis* Bruce, 1980, from Bruce (1980).

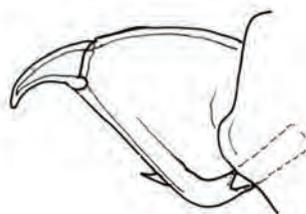
***Periclimenaeus* sp. 2**

*Coralliocaris tridentata* – Edmondson, 1925: 7.

**Host.** Unknown.

**Distribution.** Known only from one female and one male (BPBM-S1026), from Pearl & Hermes Reef, Hawaiian Islands.

**Remarks.** To be described as a new species in Bruce (2013).



*Periclimenaeus* sp. 2, from Bruce (2013).

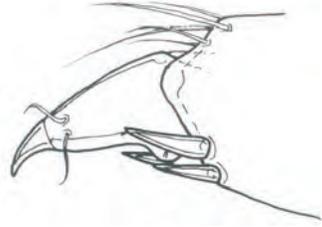
*Periclimenaeus ambulatory dactyli*

***Periclimenaeus kottae* Bruce, 2005**

*Periclimenaeus kottae* Bruce, 2005b; 325–331, figs 1–3.

**Host.** *Didemnum membranaceum* Sluiter, 1909 [Asciacea].

**Distribution.** Known only from the ovig. female holotype (WAM-174.93) from Ashmore Reef, Western Australia, at 6–16 m.



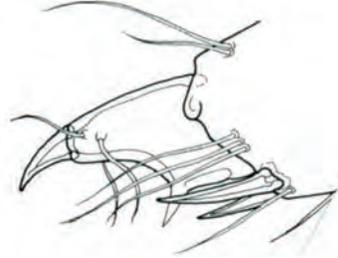
*P. kottae* Bruce, 2005, from Bruce (2005b).

***Periclimenaeus myora* Bruce, 1998**

*Periclimenaeus myora* Bruce, 1998: 394–398, figs 4–5.

**Host.** ‘Unidentified, presumably a tunicate.’

**Distribution.** Known only from the ovig. female holotype (QM-W21706) from Myora, North Stradbroke I., Qld, 27°29’S. 153°25’E, at 3m.



*P. myora* Bruce, 1998, from Bruce (1998).

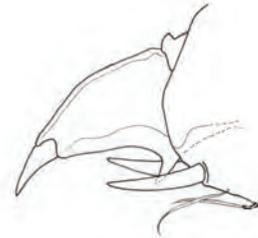
***Periclimenaeus nobilii* Bruce, 1975**

*Periclimenaeus nobilii* Bruce, 1975: 1577–1581, figs 13f, 14; 1991b, 354–256, fig. 19.

**Host.** *Lissoclinum* sp. [Asciacea].

**Distribution.** Holotype female from ‘Red Sea’, MNHN number not reported. Also from La Réunion, Papua New Guinea and New Caledonia.

**Remarks.** *Periclimenaeus* sp. aff. *nobilii* reported from Socotra, Yemen (Bruce, 2006c).



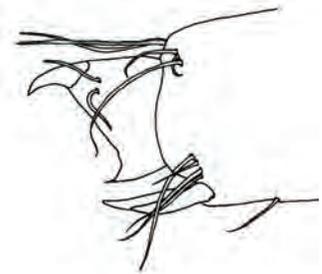
*P. nobilii* Bruce, 1974, from Bruce (1974).

***Periclimenaeus orbitocarinatus* Fransen, 2006**

*Periclimenaeus orbitocarinatus* Fransen, 2006: 732–737, figs 13–15.

**Hosts.** *Lissoclinum verrilli* (Van Name, 1902) and *Didemnum* sp. [Asciacea].

**Distribution.** Known from ovig. female holotype (MNHN-Na.15253), from Loyalty Is, 20°22.25’S 166°10.00’E, and paratypes from Madagascar (RMNH-D51002), and from Indonesia and Society Islands.



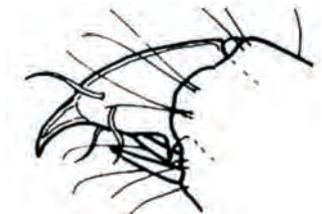
*P. orbitocarinatus* Fransen, 2006, from Fransen (2006).

***Periclimenaeus storchi* Bruce, 1989**

*Periclimenaeus storchi* Bruce, 1989b: 181–183, fig. 5.

**Host.** *Didemnum molle* (Herdmann, 1886) [Asciacea].

**Distribution.** Ovig. female holotype and male allotype (NTM-Cr.006473), from Cuaming I., Bohol, Philippines. Also reported from Indonesia and Vietnam.



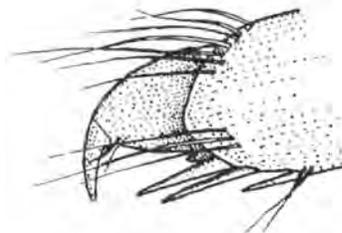
*P. storchi* Bruce, 1989, from Bruce (1989).

*Periclimenaeus zarenkovi* Đuriš, 1990

*Periclimenaeus zarenkovi* Đuriš, 1990: 620–624, figs 3–4.

**Host.** Unknown.

**Distribution.** Known only from male holotype (ZMMSU-Ma2519) from 0.7 m, Genego Islet, North Nilandu Atoll, Maldives Islands.



*P. zarenkovi* Đuriš, 1990, from Đuriš (1990).

## REMARKS

Of the 60 species of *Periclimenaeus* 25 are known from only a single specimen, six from the male holotype (*P. calmani*; *P. heronensis*; *P. matheri*; *P. pachyspinosus*; *P. robustus*; *P. zarenkovi*) and 19 from the female holotype (*P. ardeae*; *P. creffi*; *P. garthi*; *P. holthuisi*; *P. kottae*; *P. lobiferus*; *P. manihine*; *P. mortensen*; *P. myora*; *P. nufu*; *P. orontes*; *P. palauensis*; *P. parkeri*; *P. pulitzerfinali*; *P. quadridentatus*; *P. serenei*; *P. spongicola*; *P. tchesunovi*; *P. wolffi*), with 11 known from a single heterosexual pair (*P. diplosomatis*; *P. echinimanus*; *P. sp. 2*; *P. fawatu*; *P. hebedactylus*; *P. nielbrucei*; *P. serrula*; *P. solitus*; *P. storchi*; *P. trispinosus*; *P. usitatus*). Two species are known each from a pair of female syntypes (*P. bouvieri*; *P. crassipes*). The remaining twenty two species are known from multiple localities (*P. arabicus*; *P. arthrodactylus*; *P. bidentatus*; *P. colodactylus*; *P. dactylodon*; *P. devaneyi*; *P. djiboutensis*; *P. hecate*; *P. jeancharcoti*; *P. leptodactylus*; *P. sp. 1*, *P. minutus*; *P. nobilii*; *P. orbitocarinatus*; *P. pachyidentatus*; *P. stylirostris*; *P. rastrifer*; *P. rhodope*; *P. tuamotae*; *P. tridentatus*; *P. uropodialis*; *P. zanzibaricus*).

Further information on hosts is needed. *Periclimenaeus* species have been found only in association with poriferan or ascidian hosts. So far, 24 species have been confirmed as poriferan associates, 16 confirmed as ascidian associates, and the remainder are of uncertain or unknown origin. In many cases the hosts are just unidentified sponges or ascidians, without generic or specific determinations. This is unfortunate as it seems likely that a high degree of specificity may exist in these associations together with species complexes of the shrimps.

## LITERATURE CITED

Barnard, K.H. 1958. Further additions to the crustacea fauna list of Portuguese East Africa. *Memorias do Museu Dr. Alvaro de Castro* 4: 3–23, figs 1–7.

Borradaile, L.A. 1915. Notes on Carides. *Annals and Magazine of Natural History* (8)15: 205–213.

Bruce, A.J. 1969. Preliminary descriptions of ten new species of the genus *Periclimenaeus* Borradaile, 1915 (Crustacea, Decapoda Natantia, Pontoniinae). *Zoologische Mededelingen* 44(12): 159–175.

1970. Further preliminary descriptions of new species of the genus *Periclimenaeus* Borradaile, 1915 (Crustacea, Decapoda Natantia, Pontoniinae). *Zoologische Mededelingen, Leiden* 44(21): 305–315.

1972. A report on a small collection of pontoniid shrimps from Fiji, with the description of a new species of *Coralliocaris* Stimpson. *Pacific Science* 26(1): 63–86, figs 1–11.

1975. Observations upon some specimens of the genus *Periclimenaeus* Borradaile (Decapoda Natantia, Pontoniinae) originally described by G. Nobili. *Bulletin du Muséum national d'Histoire naturelle* (3)258, Zool. 180: 1557–1583, figs 1–15.

1976a. A Synopsis of the Pontoniid Shrimp Fauna of central East Africa. *Journal of the Marine Biological Association of India* 16(2)(1974): 462–490.

1976b. A report on a small collection of pontoniine shrimps from the northern Indian Ocean. *Journal of the Marine Biological Association of India* 17(1974): 437–454.

1976c. A report on some pontoniid shrimps collected from the Seychelle Islands by the F.R.V. *Manihine*, 1972, with a review of the Seychelles pontoniid shrimp fauna. *Journal of the Linnean Society of London, Zoology* 59: 89–153, tabs 1–8, figs 1–30.

1978. A report on a collection of pontoniine shrimps from Madagascar and adjacent seas. *Zoological Journal of the Linnean Society* 62: 205–290, figs 1–44.

1980a. On some pontoniine shrimps from Nouméa, New Caledonia. *Cahiers de l'Indo-Pacifique* 2(1): 1–39, figs 1–14.

1980b. Notes on some Indo-Pacific Pontoniinae, XXXIII. *Periclimenaeus diplosomatis* sp. nov., an ascidian associate from Heron Island, Australia. *Crustaceana* 39(1): 39–51, figs 1–6.

1986. Three new species of commensal shrimp from Port Essington, Arnhem Land, Northern Australia

*Periclimenaeus ambulatory dactyli*

- (Crustacea: Decapoda: Pontoniinae). *The Beagle, Records of the Northern Territory Museum of Arts and Sciences* **3**: 143–166, figs 1–15.
1989. A report on some coral reef shrimps from the Philippine Islands. *Asian Marine Biology* **6**: 173–192, figs 1–6.
- 1991a. Crustacea Decapoda: Further deep-sea Palaemonid shrimps from New Caledonian waters. In: A. Crosnier (Ed.), *Résultats des Campagnes MUSORSTOM, 9. Mémoires du Muséum national d'Histoire Naturelle (A) Zoologie* **152**: 299–411, figs 1–75.
- 1991b. Shallow water Palaemonoid shrimps from New Caledonia (Crustacea: Decapoda). In: Richer de Forges, B., (Ed.), *Le Benthos des fonds meubles des lagons de Nouvelle-Calédonie, 1. Études et Thèses; Paris, ORSTOM*: 221–279, figs 1–31.
1993. Pontoniine shrimps from the Zoological Museum, Copenhagen. *Journal of Natural History* **28**: 829–840, figs 1–6.
1996. Crustacea Decapoda: Palaemonid shrimps from the Indo-West Pacific region, mainly from New Caledonia. In: A. Crosnier (Ed.), *Résultats des Campagnes MUSORSTOM, 15. Mémoires du Muséum National d'Histoire Naturelle* **168**: 197–267, figs 1–31.
1998. Pontoniine shrimps from Moreton Bay, Queensland (Crustacea: Decapoda: Pontoniinae). *Memoirs of the Queensland Museum* **42**(2): 387–389, figs 1–5.
2001. A re-examination of *Periclimenaeus trispinosus* Bruce and *P. orbitospinatus* Bruce (Crustacea: Decapoda: Pontoniinae). *Zoologische Mededelingen, Leiden* **75**(9): 147–158, figs 1–4, tab.1.
2002. A re-description of *Periclimenaeus tridentatus* (Miers, 1884), based on specimens from Port Essington, Northern Territory, and a note on *P. hecate* (Nobili, 1904) (Crustacea: Decapoda: Pontoniinae), with a key for the preliminary identification of the tunicate-associated species of *Periclimenaeus* Borradaile. *Journal of Natural History* **35**: 565–584, figs 1–8.
- 2005a. A re-description of *Periclimenaeus robustus* Borradaile, the type species of the genus *Periclimenaeus* Borradaile, 1915 (Crustacea: Decapoda: Pontoniinae). *Cahiers de Biologie Marine* **46**: 389–398, figs 1–5.
- 2005b. New species of *Periclimenaeus* Borradaile (Crustacea: Decapoda: Pontoniinae) from Ashmore Reef, Western Australia, with remarks on *P. pachydentatus* Bruce, 1969. *Records of the Western Australian Museum* **22**: 325–343, figs 1–10.
- 2006a. *Periclimenaeus fawatu* spec. nov. (Crustacea: Decapoda: Pontoniinae), from Zanzibar. *Zoologische Mededelingen, Leiden* **80-4** (3): 33–43, figs 1–6.
- 2006b. *Periclimenaeus nielbrucei* sp. nov. (Crustacea: Decapoda: Pontoniinae), a new sponge associate from the Capricorn Islands, Queensland, with notes on related *Periclimenaeus* species. *Zootaxa* **1224**: 1–22, figs 1–5.
- 2006c. Pontoniine shrimps (Decapoda: Palaemonidae) from the island of Socotra, with descriptions of new species of *Dactylonia* Fransen, 2002 and *Periclimenoides* Bruce, 1990. *Zootaxa* **1137**: 1–36, figs 1–9.
- 2010a. Pontoniine shrimps (Crustacea: Decapoda: Palaemonidae) from the CReefs 2009 Heron Island Expedition, with a review of the Heron Island pontoniine fauna. *Zootaxa* **2541**: 50–68, figs 1–8.
- 2010b. More pontoniine shrimps (Crustacea: Decapoda: Palaemonidae) from the CReefs 2009 Heron Island expedition. *Zootaxa* **2604**: 20–36, figs 1–11.
- 2010c. *Periclimenaeus devaneyi* sp. nov., from Oahu, Hawai'i (Crustacea: Decapoda: Pontoniinae). *Zootaxa* **2372**: 339–388, figs 1–5.
2011. *Periclimenaeus pulitzerfinali* spec. nov. (Crustacea: Decapoda: Pontoniinae), from Mombasa, Kenya. *The Beagle, Records of the Museums and Art Galleries of the Northern Territory* **27**: 113–122, figs 1–5.
- 2012a. Notes on some Indo-Pacific Pontoniinae, LI. *Periclimenaeus quadridentatus* (Rathbun, 1906) and *P. crassipes* (Calman, 1939) (Crustacea: Decapoda: Pontoniinae), with the designation of *P. calmani* and *P. serenei* spp. nov. *Crustaceana* **85**(4–5): 513–531, figs 1–7.
- 2012b. A re-description of *Periclimenaeus hebedactylus* Bruce, 1970 (Crustacea: Decapoda: Palaemonidae). *Zoologische Mededelingen* **86**(2): 471–484, figs 1–58.
- 2012c. *Periclimenaeus parkeri* sp. nov. (Crustacea: Decapoda: Pontoniinae) from the Kimberley, Western Australia. *Cahiers de Biologie Marine* **53**(2): 289–298, figs 1–5.
- 2012d. *Periclimenaeus dactylodon* sp. nov. (Decapoda: Pontoniinae), from Heron Island, Queensland, Australia. *Zootaxa* **3436**: 51–60, figs 1–7.
2013. Notes on some Indo-Pacific Pontoniinae, LIII. *Periclimenaeus* species from the Hawai'ian region, *Crustaceana* [In Press].
- Bruce, A.J. & Coombes, K.E. 1995. The palaemonoid shrimp fauna (Crustacea: Decapoda: Caridea) of the Cobourg Peninsula, Northern Territory. *The Beagle, Records of the Museums and Art Galleries of the Northern Territory* **12**: 101–144, figs 1–12.
- Calman, W.T. 1939. Crustacea: Caridea. *The John Murray Expedition 1933–34, Scientific Reports* **6**: 183–224, figs 1–8.
- Đuriš Z. 1990. Two new species of the commensal shrimp genus *Periclimenaeus* Borradaile, 1915, (Decapoda, Palaemonidae) from the Maldives

- Islands. *Journal of Natural History* **24**: 615–625, figs 1–4.
- Đuriš, Z., Horká, I. & Hoc, Dan Tan, 2009. *Periclimenaeus nufu*, a new species of shrimp (Crustacea: Decapoda: Pontoniinae) from Vietnam. *The Raffles Bulletin of Zoology* **57**(2): 453–464, figs 1–5.
- Đuriš, Z., Horká, I. & Al-Horani, F. 2011. *Periclimenaeus echinimanus* sp. nov. (Crustacea: Decapoda: Pontoniinae), a new species from the Gulf of Aqaba, Red Sea. *Zootaxa* **2983**: 57–68, figs 1–7.
- Edmondson, C.H. 1925. Crustacea. Marine Zoology of Tropical central Pacific. (Tanager Expedition Publ. 1). *Bulletin of the Bishop Museum, Honolulu* **27**: 3–62, pls 1–4.
- Fransen, C.H.J.M. 2006. On Pontoniinae (Crustacea, Decapoda, Palaemonidae) collected from ascidians. *Zoosystema* **28**(3):713–746, figs 1–18.
2013. A new species of the sponge-associated pontoniine shrimp genus *Nippontonia* Bruce & Bauer, 1997 (Decapoda, Caridea, Palaemonidae) from Sabah, Malaysia. *Zootaxa* [In Press].
- Fujino, T. & Miyake, S. 1968. Descriptions of two new species of pontoniid shrimps (Crustacea, Decapoda, Palaemonidae) commensal with sponges. *Occasional Papers of the Zoological Laboratory, Faculty of Agriculture, Kyushu University* **1**(3): 85–96, figs 1–5.
- Holthuis, L.B. 1952. The Decapoda of the *Siboga* Expedition. Part XI. The Palaemonidae collected by the *Siboga* and *Snellius* Expeditions with remarks on other species. II. Subfamily Pontoniinae. *Siboga Expedition Monograph* **39a10**: 1–252, figs 1–110, tab. 1.
1993. *The recent genera of the caridean and stenopodidean shrimps (Crustacea, Decapoda) with an appendix on the order Amphionidacea*. (Nationaal Natuurhistorisch Museum, Leiden). 1–328, figs 1–312.
- Marin, I. 2007. Pontoniine shrimps (Decapoda: Caridea: Palaemonidae) inhabiting boring sponges (Porifera: Demospongia) from Nhatrang Bay, Vietnam, with descriptions of three new species. *Zoologische Mededelingen, Leiden* **81**: 217–240, figs 1–18.
- Marin, I.N., Britayev, T.A. & Anker, A. 2004. Pontoniine shrimps associated with cnidarians: new records and list of species from coastal waters of Viet Nam. *Arthropoda Selecta* **13**(4): 199–218, figs 1–13.
- Miers, E.J. 1884. Part II. Collections from the Western Indian Ocean. Crustacea. In: Report of the Zoological Collections made in the Indo-Pacific Ocean during the Voyage of H.M.S. 'Alert' 1881–82., 513–575, pls. 46–52. (British Museum of Natural History, London).
- Miyake, S. & Fujino, T. 1967. On four species of Pontoniinae (Crustacea, Decapoda, Palaemonidae) found in Porifera inhabiting the coastal regions of Kyushu, Japan. *Journal of the Faculty of Agriculture, Kyushu University* **14**: 275–291, figs 1–7, pl. 3.
1968. Pontoniinid shrimps from the Palau Islands (Crustacea, Decapoda, Palaemonidae). *Journal of the Faculty of Agriculture, Kyushu University* **10**(3): 339–431, figs 1–8.
- Nobili, G. 1904. Diagnoses préliminaires de vingt-huit espèces nouvelles de Stomatopodes et Décapodes Macroures de la Mer Rouge. *Bulletin du Museum d'Histoire Naturelle, Paris* **10**: 228–238.
1906. Faune Carcinologique de la Mer Rouge. Décapodes et Stomatopodes. *Annales des Sciences naturelles, Zoologie* (9)**4**(1–3): 1–347, text figs 1–12, pls 1–11.
- Rafinesque, C.S. 1815. *Analyse de la Nature ou Tableau de l'Univers et des Corps organisés* (Palermo). 224 pp.
- Rathbun, M.J. 1906. The Brachyura and Macrura of the Hawaiian Islands. *Bulletin of the U.S. Fisheries Commission* **23**(3): 827–930, figs 1–79, pls 3–24.