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

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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, dactyi, 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. jeincharcoti* 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 mediadorsal lobe on the first abdominal tergite, of the first segment of the antennular peduncle, carpocerite and scaphocerite, fingers of the first pereiopod chelae, major and minor second pereiopod chelae, tuberculation of the proximal segments, spination 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), Parapontoniaeus 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. Sverzov 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 Nationalis, 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, Zoological 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

Host. Didemnum psammatode (Sluiter, 1895) [Asciidiacea],
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 [Ascidiacea].

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

*Periclimenaeus serenei* Bruce, 2012


**Host.** Probably from ascidian.

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

*Periclimenaeus serrula* Bruce & Coombes, 1995


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

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

**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.
**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 Instituto 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.

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**Periclimenaeus sp. 1**

**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).

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**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.

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**Periclimenaeus pachydentatus** Bruce, 1969

**Hosts.** _Hypodistoma deerratum_ (Sluiter, 1885), _Botryllides leachi_ (Savigny, 1816) [Ascidiaeae].

**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.
Periclimenaeus palauensis Miyake & Fujino, 1968


**Host.** Uncertain.

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

*Periclimenaeus quadridensatus* (Rathbun, 1906)

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

*Periclimenaeus quadridensatus* — 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*.

*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.

*Periclimenaeus stylirostris* Bruce, 1969


**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.

*Periclimenaeus usitatus* Bruce, 1969


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

**Periclimenaeus bidentatus** Bruce, 1969

**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.

**Periclimenaeus djiboutensis** Bruce, 1969

**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.

**Periclimenaeus garthi** Bruce, 1976

**Host.** Unknown.

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

**Periclimenaeus hebedactylus** Bruce, 1969

**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.
**Periclimeneaus heronensis** Bruce, 2010

*Periclimeneaus 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.

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**Periclimeneaus leptodactylus** Fujino & Miyake, 1968


**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.

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**Periclimeneaus lobiferus** Bruce, 1978


**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.

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**Periclimeneaus matheri** Bruce, 2005


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

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

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**Periclimeneaus mortenseni** Bruce, 1994

*Periclimeneaus 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.
**Periclimeneaus nufu Šuriš, Horká, & Hoc, 2009**


**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.

**Periclimeneaus pachyspinosus** Marin, 2007


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

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

**Periclimeneaus pulitzerfinali** Bruce, 2011


**Host.** Unknown.

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

**Periclimeneaus rastrifer** Bruce, 1980

*Periclimeneaus 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 Îlôt Maitre, Nouméa, New Caledonia. Also known from Hong Kong, Vietnam, and Queensland. To 33 m.

**Periclimeneaus solitus** Bruce & Coombes, 1995


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

**Distribution.** Only known from ovig. female holotype and male allotype (NTM-Cr.000277) from Orontes Reef, Port Essington, Cobourg Peninsula, Northern Territory, at 3 m.
**Periclimenaeus spongicola** Holthuis, 1952

**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.


**Periclimenaeus tchesunovi** Đuriš, 1990

**Host.** Uncertain.

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

**Periclimenaeus tuamotae** Bruce, 1969

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

**Distribution.** From the type locality, Mururoa Atoll, Tuamotus 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).

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

**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.

**Periclimenaeus manihinei** Bruce, 1976

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

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

**Periclimenaeus parkeri** Bruce, 2012

**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.

**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.

**Periclimenaeus wolffi** Bruce, 1993

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

*Periclimenaeus arabicus* (Calman, 1939)

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

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


**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.

*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.

*Periclimenaeus echinimanus* Šuriš, Horká, & Al–Horani, 2011


**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.

*Periclimenaeus holthuisi* Bruce, 1969


*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, Tioor Island, Kepulauan Banda, Indonesia, at uncertain depth.
**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.

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**Periclimenaeus rhodope** (Nobili, 1904)

*Corallocaris (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.

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**Periclimenaeus uropodialis** Barnard, 1958


**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.

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

*Periclimenaeus jeancharcoti* Bruce, 1991


**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).

*Periclimenaeus minutus* Holthuis, 1952


**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.

*Periclimenaeus trispinosus* Bruce, 1969


**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.

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 [Asciidiacea].

**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).
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.

Periclimenaeus dactylodon Bruce, 2012
**Host.** Unidentified ascidian [Asciidiacea].
**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.

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’ian Islands, at about 3.0 m, with ovigerous female holotype and allotype male (BPBM-S14815; S148140); ovigerous female paratype (QM-W28904).

Periclimenaeus diplosomatis Bruce, 1980
**Host.** Diplosoma inflatum F. Mornriot, 1994 [Ascidiaeae].
**Distribution.** Known only from ovig. female holotype (AM-P24817) and male allotype (AM-P24818) from Heron I., Queensland, and New Caledonia, to 27 m.

Periclimenaeus sp. 2
Coralliolaris 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 ambulatory dactyli

Periclimenaeus kottae Bruce, 2005
Periclimenaeus kottae Bruce, 2005b: 325–331, figs 1–3.
Host. Didemnum membranaceum Sluiter, 1909 [Asciidiacea].
Distribution. Known only from the ovig. female holotype (WAM-174.93) from Ashmore Reef, Western Australia, at 6–16 m.

Periclimenaeus myora Bruce, 1998
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.

Periclimenaeus nobilii Bruce, 1975
Periclimenaeus nobilii Bruce, 1975: 1577–1581, figs 13f, 14; 1991b, 354–256, fig. 19.
Host. Lissoclinum sp. [Asciidiacea].
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).

Periclimenaeus orbitocarinatus Fransen, 2006
Hosts. Lissoclinum verrilli (Van Name, 1902) and Didemnum sp. [Asciidiacea].
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.

Periclimenaeus storchi Bruce, 1989
Periclimenaeus storchi Bruce, 1989b: 181–183, fig. 5.
Host. Didemnum molle (Herdman,1886) [Asciidiacea].
Distribution. Ovig. female holotype and male allotype (NTM-Cr.006473), from Cuaming I., Bohol, Philippines. Also reported from Indonesia and Vietnam.
**Periclimenaeus zarenkovi** Šuriš, 1990


**Host.** Unknown.

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

**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. pachypinosus*; *P. robustus*; *P. zarenkovi*) and 19 from the female holotype (*P. ardeae*; *P. creefi*; *P. garthi*; *P. holthuisi*; *P. kottae*; *P. lobiferus*; *P. manihinei*; *P. mortenseni*; *P. myora*; *P. nufu*; *P. orontes*; *P. palauensis*; *P. parkeri*; *P. pulitzerfinali*; *P. quadridentatus*; *P. serenei*; *P. spongicola*; *P. tchesunovii*; *P. wolffi*), with 11 known from a single hermaphroditic pair (*P. diplosomatis*; *P. echnimus*; *P. sp. 2*; *P. faoatu*; *P. hebedactylus*; *P. nielbrucei*; *P. serrula*; *P. solitus*; *P. storkii*; *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. jeamcharcoti*; *P. leptodactylus*; *P. sp. 1*; *P. minutus*; *P. nobilii*; *P. orbicarinatus*; *P. pachydentatus*; *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 or ascidian hosts. Of female syntypes (*P. bouvieri*; *P. colodactylus*; *P. hebedactylus*; *P. manihinei*; *P. nielbrucei*; *P. robustus*; *P. serrula*; *P. solitus*; *P. storkii*; *P. trispinosus*; *P. usitatus*). The following remarks are based on host-specific associations and additional information provided in the literature.

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