

***Cuapetes uncinatus* sp. nov. (Crustacea: Decapoda: Pontoniinae) from Futuna Island, Eastern Pacific Ocean**

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Abstract: A new pontoniine shrimp, *Cuapetes uncinatus*, is designated. A pair of specimens was collected from 105-160 m off Futuna Island. The *Cuapetes tenuipes* species group is discussed.

Résumé : *Cuapetes uncinatus* sp. nov. (Crustacea : Decapoda : Pontoniinae) de l'île Futuna, Océan Pacifique oriental. Une nouvelle crevette pontoniine, *Cuapetes uncinatus*, est décrite. Une paire de spécimens a été récoltée entre 105 et 160 m au large de l'île de Futuna. Le complexe d'espèces *Cuapetes tenuipes* est discuté.

Keywords: *Cuapetes uncinatus* • Crustacea • Pacific Ocean • Systematic

Introduction

The genus *Cuapetes* Clark, 1919, was recently resurrected by Okuno (2009) and now includes 24 species, some free-living and some commensally associated with other marine invertebrates, principally cnidarians. All, except *C. americanus* (Kingsley, 1878) occur in the Indo-West Pacific region, generally in tropical coral reef habitats. *Cuapetes* was proposed as a replacement name for the

invalid sub-genus *Falciger* Borradaile 1915. The genus *Cuapetes* has previously been regarded as a junior synonym of *Periclimenes* Costa (Holthuis, 1993).

The taxonomy of *Cuapetes tenuipes* species group is unclear. A number of separate taxa have been reported under this name and numerous photographs have indicated a variety of distinct colour patterns, unfortunately only rarely supported by preserved specimens. Borradaile's original designation of *Periclimenes tenuipes* was brief and un-illustrated (Borradaile, 1898, type locality, Ralun, New Britain, Papua New Guinea). He later published a more detailed illustrated report (Borradaile, 1900). Subsequently, in 1915, he described *Periclimenes (Falciger) kolumadu-*

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lensis, (type locality, Maldives, Kolumadulu Atoll) initially with a short un-illustrated report followed by a more detailed illustrated description (Borradaile, 1917). Both taxa were represented by a single male specimen. The two taxa have markedly different fingers on the chelae of the second pair of pereiopods. Kemp (1922), with numerous specimens from the Andaman Islands, considered the two taxa to be synonymous with the name of *Periclimenes* (*Ancylocaris*) *tenuipes*, as did Holthuis (1952), under the name *Periclimenes* (*Harpilius*) *tenuipes*. Bruce (1978) re-examined Borradaile's specimens, held in the collections of the Zoology Museum, Cambridge, considering them as *Periclimenes tenuipes* and provided further details and illustrations. The median process of the fourth thoracic sternites of both *P. tenuipes* and *P. kolumadulensis* are noted as similar, acute slender and curved (Bruce, 1978: 264). Since then numerous reports under this name from a wide variety of localities, including Jordan, Kenya, Zanzibar, Madagascar, La Réunion, Seychelle Islands, Maldivian Islands, Sri Lanka, Andaman Islands, Indonesia, Vietnam, China, Taiwan, Japan, Philippines, Papua-New Guinea, Western Australia, Northern Territory, Queensland, New Caledonia, Fijian Islands, Caroline Islands, and Marshall Islands (see Li, 2000). More recently the species was placed in the genus *Kemponia* by Bruce (2004) and later transferred to *Cuapetes* Clark by Okuno (2009).

Over recent years the colour patterns of live shrimps have been noted as a useful taxonomic tool. Unfortunately the taxonomist is frequently faced with specimens without photographs or photographs without specimens. The difficulty in reconciliation is that Borradaile did not record the colouration of either *C. tenuipes* or *C. kolumadulensis*. The various colour patterns can not, at present, be related to a particular type specimen. The first specimen-based description of the colouration was provided by Kemp (1922).

The specimens upon which this report is based were collected off Futuna Island, Territoire des îles Wallis et Futuna. There have been no previous reports of pontoniine shrimps from Wallis and Futuna Islands. They were originally identified as *Periclimenes tenuipes* Borradaile. A description of the major features was provided and illustrated (Bruce, 1996). Recent re-examination indicated that this was incorrect and the specimens are now designated as a new species and some further morphological information is provided and illustrated. The specimens are deposited in the collections of the Museum National d'Histoire Naturelle, Paris.

Abbreviations used: MNHN, Muséum National d'Histoire Naturelle, Paris; CL, post-orbital carapace length. Rostral dentitions are dorsal over ventral teeth.

Systematics

Crustacea Decapoda

Family Palaemonidae Rafinesque, 1815

Sub-family Pontoniinae Kingsley, 1878

Genus *Cuapetes* Clark, 1919

Cuapetes uncinatus sp. nov.

Periclimenes tenuipes - Bruce, 1996: 239, fig. 12 h-l.
(Fig. 1)

Material examined

1 ♂ allotype, dissected, 1 ovig. ♀ holotype, Futuna Island, MUSORSTOM 7, N.O. *Alis*, stn CP498, 14°19'S 178°03'E, 105–160 m, 10 May 1992, MNHN Na12865.

Diagnosis

A small sized *Cuapetes* with up-curved rostrum, dentition of 9/7 (♂) and 11/8 (♀), about 2.2 times CL, fourth pleuron posteroventrally rounded and fifth with small acute point, mandible without palp, fourth thoracic sternite with slender anteriorly curved median process, female second pereiopods slender, carpus slender, distally swollen, about 1.3 times chela length, without acute distal tooth, merus and ischium not distally swollen, merus with and ischium without distoventral tooth, ambulatory propods feebly segmented, dactyls with several (1–3) finely denticulate setae along dorsal median margin.

Description

The major characters of this species are described and illustrated by Bruce (1996) but some further details may be added. Rostrum (Fig. 1A) extending well beyond scaphocerite, ventral rostral teeth of similar size to dorsal teeth (Fig. 1B), bordered by submarginal plumose setae; dorsal teeth separated by shorter median plumose setae; upper antennular flagellum elongate, reaching to tip of rostrum, with about 15 proximal segments of rami fused, shorter ramus with 2 free segments, about 10 groups of aesthetascs on five distal segments; scaphocerite (Fig. 1C) about 1.2 times CL, slender, about 5.8 times longer than maximal width, with distolateral tooth far exceeding lamella; mandible without palp; unique second pereiopod as previously described, without distal carpal spine (Fig. 1D); ambulatory propods without discernible segmentation; telson (Fig. 1E) about 0.68 of CL, 2.8 times longer than wide, with robust dorsal spines at 0.32 and 0.65 of telson length, distal pair of spines deeply set, about 0.1 of telson length, posterior telson margin (Fig. 1F) bluntly angular, lateral spines small, about 0.5 of dorsal spine length, intermediate spines long, slender, about 0.33 of telson length, submedian spines slender, sparsely setose, 0.5 of intermediate spine length. Length of ovum 0.5 mm.

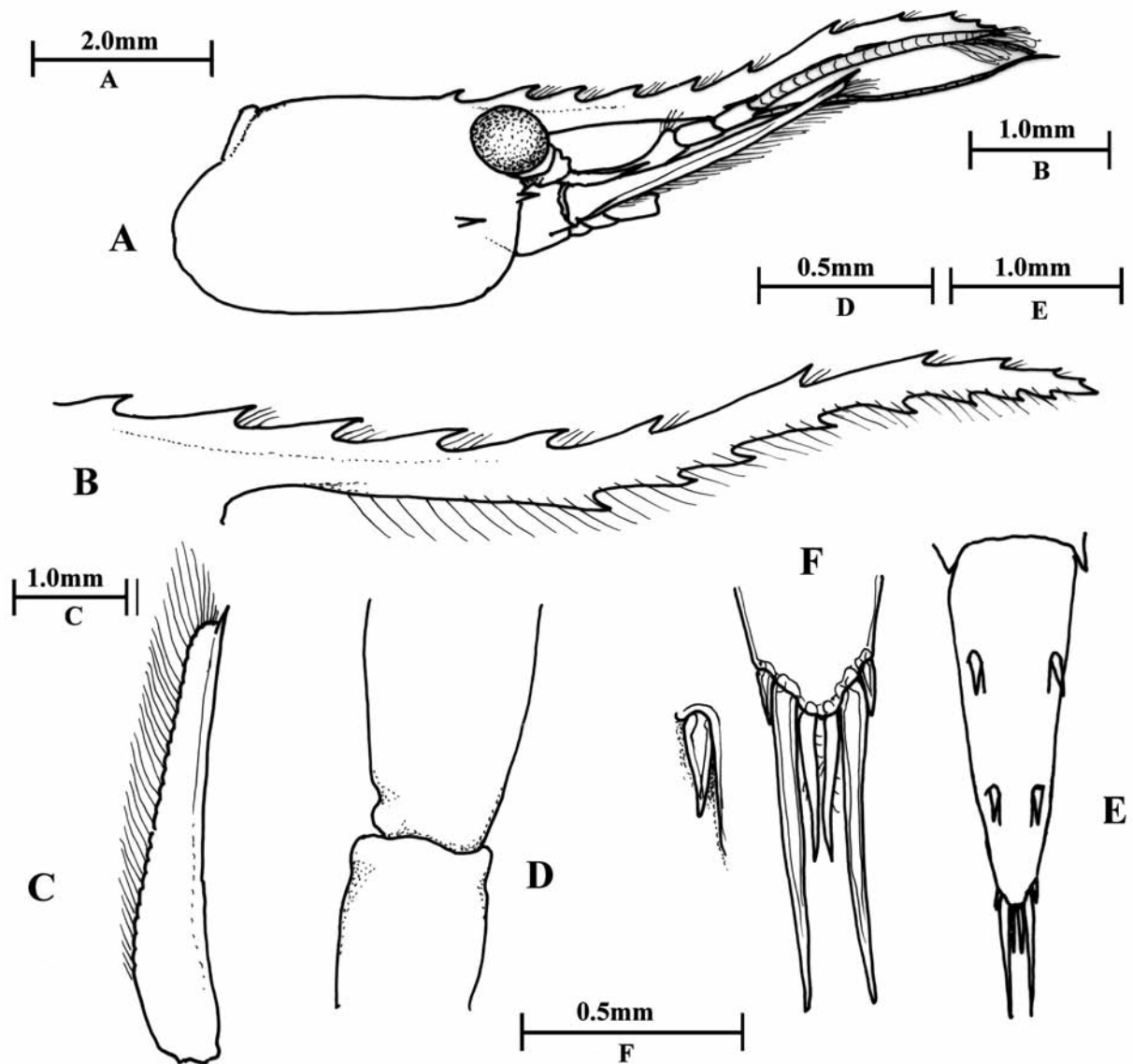


Figure 1. *Cuapetes uncinatus* sp. nov. Ovigerous female holotype, off Futuna Island, MNHN Na12865. **A.** Carapace rostrum and antennae. **B.** Rostrum. **C.** Scaphocerite. **D.** Second pereiopod, carpo-propodal joint, dorsal. **E.** Telson. **F.** Same, posterior spines, dorsal spine inset (left).

Figure 1. *Cuapetes uncinatus* sp. nov. Holotype femelle ovigère récoltée au large de l'île de Futuna, MNHN Na12865. **A.** Rostre et antennes. **B.** Rostre. **C.** Scaphocérîte. **D.** Second péréiopode, articulation carpo-propodale, vue dorsale. **E.** Telson. **F.** Idem, épines postérieures, insert de l'épine dorsale (gauche).

Systematic position

Cuapetes uncinatus sp. nov. most closely resembles *C. tenuipes* (Borradaile, 1898). It may be distinguished by its smaller size (CL 3.3-3.6 versus 4.2 mm), and the distally unarmed carpus of the second pereiopods which contrasts with the distally bidentate carpus in *C. tenuipes* (Bruce & Svoboda, 1983, Fig. 1C). The second pereiopod is very

slender, ischium longer than merus and carpus about 1.3 times length of chela. The rostral dentition of *C. uncinatus* falls within the range of variation of *C. tenuipes*.

Etymology

From *uncinus* (Latin), a hook, a reference to the curved fourth thoracic sternal process.

Discussion

Cuapetes tenuipes has been most frequently reported from shallow reef waters, commonly by underwater photographers. *Cuapetes uncinatus* was collected from considerably deeper waters, from between 105 and 160 metres. Its colouration and associations are unknown. *Cuapetes tenuipes* has been reported from 70-130 m off New Caledonia (Li & Bruce, 2006: 650) and these specimens should be re-examined to confirm their identification.

Cuapetes uncinatus belongs, together with *C. tenuipes*, *C. platycheles* (Holthuis, 1952) and *C. lacertae* (Bruce, 1992), to a group of morphologically similar species that may be designated the *Cuapetes tenuipes* species group. This species group is characterized by a slender elongate rostrum, over 1.7 or more times the CL, strongly dentate dorsally and ventrally, without supraorbital spines, second pereopods well developed, slender, carpus generally distally swollen, merus with distoventral tooth. The species may be distinguished by the following key.

1. Ischium of second pereopods with distoventral tooth, rostral dentition 10/ 6.....*C. lacertae* (Bruce)
- Ischium of second pereopods without distoventral tooth2
2. Carpus of second pereopod unarmed, rostral 9–11/ 7–8
.....*C. uncinatus* sp. nov.
- Carpus of second pereopod with distal tooth3
3. First pereopod chela with fingers scaphoid, cutting edges entire, rostral dentition 7-9/ 5-8*C. platycheles* (Holthuis)
- First pereopod chela with fingers simple, rostral dentition 9-12/ 6-9*C. tenuipes* (Borradaile)

It is not absolutely certain the Kemp's *C. tenuipes* material is conspecific with the type material as the rostrum is considerably longer, 2.0 times the CL, versus 1.7 times the CL, and the corneal diameter much smaller, 0.25 of CL, versus 0.36 of CL (Kemp, 1922, pl. VIII; Bruce, 1978, fig. 7). Also, Kemp's description of the colour pattern does not correspond well with image of a specimen from the Maldive Islands provided by Coleman (2000) showing a characteristic dark spot at the distal ends of the second pereopod merus and ischium, a feature usual in Western Indian Ocean specimens. Fransen (1994, pl. 4A) also shows a similar pattern, with the characteristic dark second pereopod spots with a specimen, fortunately preserved, from the Seychelles Islands.

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References

- Borradaile L.A. 1898.** A revision of the Pontoniidae. *Annals and Magazine of Natural History*, **2**: 376-391.
- Borradaile L.A. 1900 (1899).** On the Stomatopoda and Macrura brought by Dr Willey from the South Seas. In: *Zoological results based on material from New Britain, New Guinea, Loyalty Islands and elsewhere, collected during the years 1895, 1896, 1897*, (A. Willey ed), **4**, pp. 395-428, pls. 36-39.
- Borradaile L.A. 1915.** Notes on Carides. *Annals and Magazine of Natural History*, **15**: 205-213.
- Borradaile L.A. 1917.** On the Pontoniinae. The Percy Sladen Trust Expedition to the Indian Ocean in 1905, under the leadership of Mr J. Stanley Gardiner. *Transactions of the Linnean Society of London, Zoology*, **17**: 323-396, pls. 52-57.
- Bruce A.J. 1978.** The re-examination of some pontonine shrimp types first described by L.A. Borradaile. *Crustaceana*, **34**: 251-268, figs. 1-9.
- Bruce A.J. 1992.** Two new species of *Periclimenes* (Crustacea: Decapoda: Palaemonidae) from Lizard Island, Queensland, with notes on some related taxa. *Records of the Australian Museum*, **44**: 45-84, figs. 1-27.
- Bruce A.J. 1996.** Crustacea Decapoda: Palaemonid shrimps from the Indo-West Pacific region, mainly from New Caledonia. *Mémoires du Muséum National d'Histoire Naturelle*, **168**: 197-267, figs 1-31.
- Bruce A.J. 2004.** A partial revision of the genus *Periclimenes* Costa 1884 (Crustacea: Decapoda: Palaemonidae). *Zootaxa*, **582**: 1-27.
- Bruce A.J. & Svoboda A. 1983.** Observations upon some pontonine shrimps from Aqaba, Jordan. *Zoologische Verhandelingen, Leiden*, **205**: 1-44, figs. 1-15.
- Coleman N. 2000.** Marine Life of the Maldives. Atoll Editions, Victoria, pp. i-xxiv, 1-328.
- Fransen C.H.J.M. 1994.** Marine palaemonid shrimps of the Netherlands Seychelles Expedition 1992-1993. *Zoologische Verhandelingen, Leiden*, **297**: 85-152, figs 1-112, col. pls 1-4.
- Holthuis L.B. 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.
- 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*, **39a 10**: 1-252, figs, 1-110, tab. 1.
- Kemp S. 1922.** Notes on Crustacea Decapoda in the Indian Museum. XV. Pontoniinae. *Records of the Indian Museum*. **24**: 113-288, figs. 1-105, pls. 3-9.
- Li X. 2000.** *Catalog of the Genera and Species of Pontoniinae Kingsley, 1878*. Xueyuan Press: Beijing, pp. 319, figs 1-408.
- Li X. & Bruce A.J. 2006.** Further Indo-West Pacific palaemonoid shrimps (Crustacea: Decapoda: Palaemonoidea), principally from the New Caledonian region. *Journal of Natural History*, **40**: 611-738, figs 1-31.
- Okuno J. 2009.** *Cuapetes* Clark, 1919, a senior synonym of *Kemponia* Bruce, 2004 (Crustacea: Decapoda: Palaemonidae). *Zootaxa*, **2028**: 67-68.