Periclimenes attenuatus sp. nov. (Crustacea, Decapoda, Natantia, Pontoniinae), a New Commensal Shrimp from the Duke of York Islands[1]

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ABSTRACT: *Periclimenes attenuatus*, a new species of pontoniid found in association with an unidentified crinoid from the Duke of York Islands, New Ireland, Bismarck Archipelago, is described and its morphology illustrated. The distinctive features of the shrimp and its relationship to other species of the genus is discussed. The information available concerning pontoniid-crinoid associations is reviewed and tabulated.

THE SPECIES of the genus *Periclimenes* Costa, 1844, are found in association with a wide variety of invertebrate hosts representing several phyla. Amongst these species many are found as commensals of the Echinodermata, where they are particularly associated with the Crinoidea, Echinoidea, and Asteroidea, although a few examples have also been reported in association with ophiuroids (Gorgonocephalidae) and holothurians.

The first species of *Periclimenes* reported in association with a crinoid was *Periclimenes amboinensis*. This species was described by De Man in 1888, on the basis of a single specimen obtained from Ambon, Indonesia. The host was not identified and the species has not been recorded since. Another species was described by Zehntner in 1894 and the host was, on this occasion, identified as an *Actinometra*. Subsequently, in 1915, Borradaile described a number of new species of several genera and the hosts of some of these were identified to specific level. Kemp, in 1922, listed the species then known to be associated with crinoids in the Indo-West-Pacific region and a more detailed list was provided in 1952 by Holthuis who tabulated the available information for all pontoniid shrimps. A similar list was provided for crinoid associates by Balss (1956). Bruce (1965) provided a list of the echinoderm associates of the Indo-West-Pacific species of *Periclimenes*, including the crinoids. Information upon the crinoid hosts is still deficient and the range of host variation for most species is poorly known. It is also possible that some of the less-well-known species of pontoniid shrimps will be found to have crinoid associations.

Through the kindness of Dr. R. U. Gooding, I have been able to examine some specimens of *Periclimenes* that he collected from crinoids in the Bismarck Archipelago, which upon examination proved to belong to another undescribed species. A report upon these specimens is presented in this work. I am grateful to Miss A. M. Clark for the identification of the crinoid hosts referred to in this paper.

Periclimenes attenuatus sp. nov.

Figs. 1–5

Diagnosis

A small slender shrimp. Rostrum slender, with three dorsal teeth. Ventral teeth absent. Supraorbital spines absent. Antennal spine present. Third abdominal segment not produced posterodorsally. Pleura rounded. Telson slender, with two pairs of dorsal spines at 0.5 and 0.7 of telson length. Antennule slender, basal segment with distomedial lobe with one or two small acute teeth. Scaphocerite slender, distolateral spine exceeded by lamella. Molar process of mandible strongly toothed; incisor process slender, acute. Laciniae of maxillula slender, palp feebly bilobed. Endite of maxilla bilobed, scaphognathite normal. All maxillipeds with well-developed exopods. Basal and coxal en-

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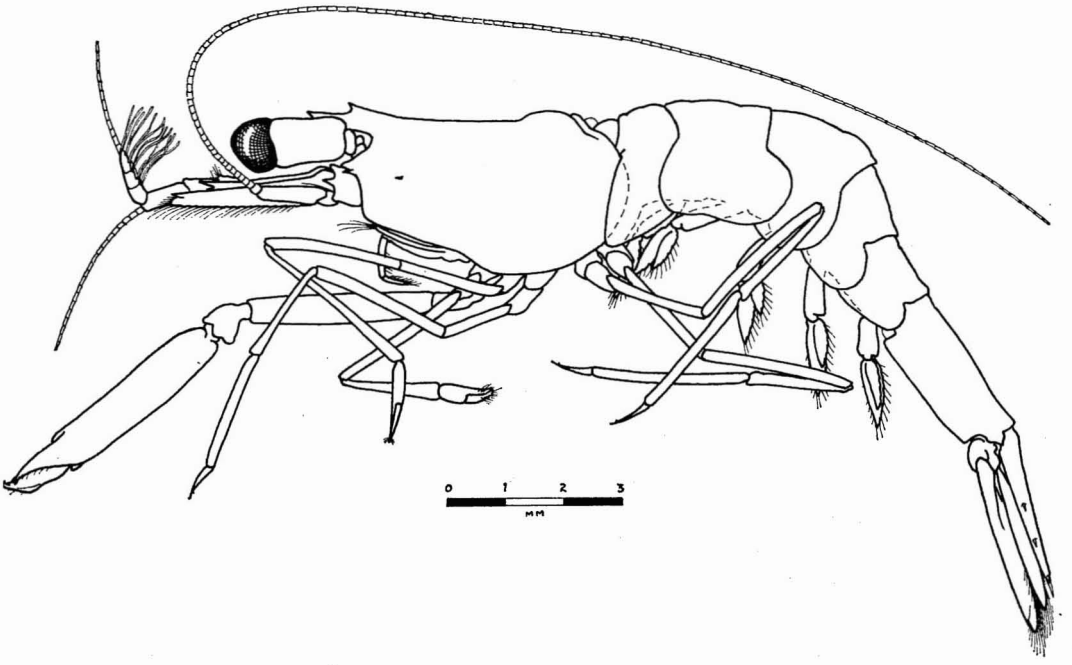


FIG. 1. *Periclimenes attenuatus* sp. nov., paratype. Duke of York Islands, New Ireland.

dites of first maxilliped fused; palp nonsetose. Second maxilliped without podobranch. Third maxilliped slender, basis fused to ischiomerus; epipod well developed; arthrobranch absent. Fourth thoracic sternite without median process. First pereiopods slender, chela robust, simple. Second pereiopods extremely unequal, dissimilar. Major second pereiopod robust, slender, palm curved, twice length of fingers. Fingers with acute slightly hooked tips, cutting edges distally serrated. Proximal cutting edge with one large acute tooth on dactylus and two on fixed finger. Base of dactylus swollen, distal dorsolateral margin with flange. Minor second pereiopod very slender. Chela slender with tapering fingers subequal to palm. Carpus three times longer than chela and about one and one-half times longer than merus. Ambulatory pereiopods slender. Dactylus slender, biunguiculate, with ventral margin setose. Propod without ventral spines but distal ventral border minutely imbricated. Uropods normal, exceeding telson; basipodite unarmed; exopod with mobile distal spine.

Material Examined

Five specimens were examined (two males, two females, one juvenile), Waterhouse Cove, Burukuk, Duke of York Islands. Lat. 4°7.3′ S, long. 152°27.3′ E. 1 to 2 m. Coll. R. U. Gooding, October 15, 1969, RU-579e.

Description

A small-sized, very slenderly built pontoniid shrimp, with the postorbital carapace length 2.0 times the second abdominal segment in the dorsal midline. The body is subcylindrical and the carapace and abdomen are glabrous.

CARAPACE: The carapace is provided with a short, straight, slender, compressed rostrum, which extends to about two-thirds of the length of the basal segment of the antennular peduncle. The dorsal border bears three small equally spaced teeth, all situated anteriorly to the posterior orbital margin. The ventral border is almost straight, without teeth, and nonsetose. The lateral carina is feebly developed. The cardiac region is distinctly raised. Epigastric and

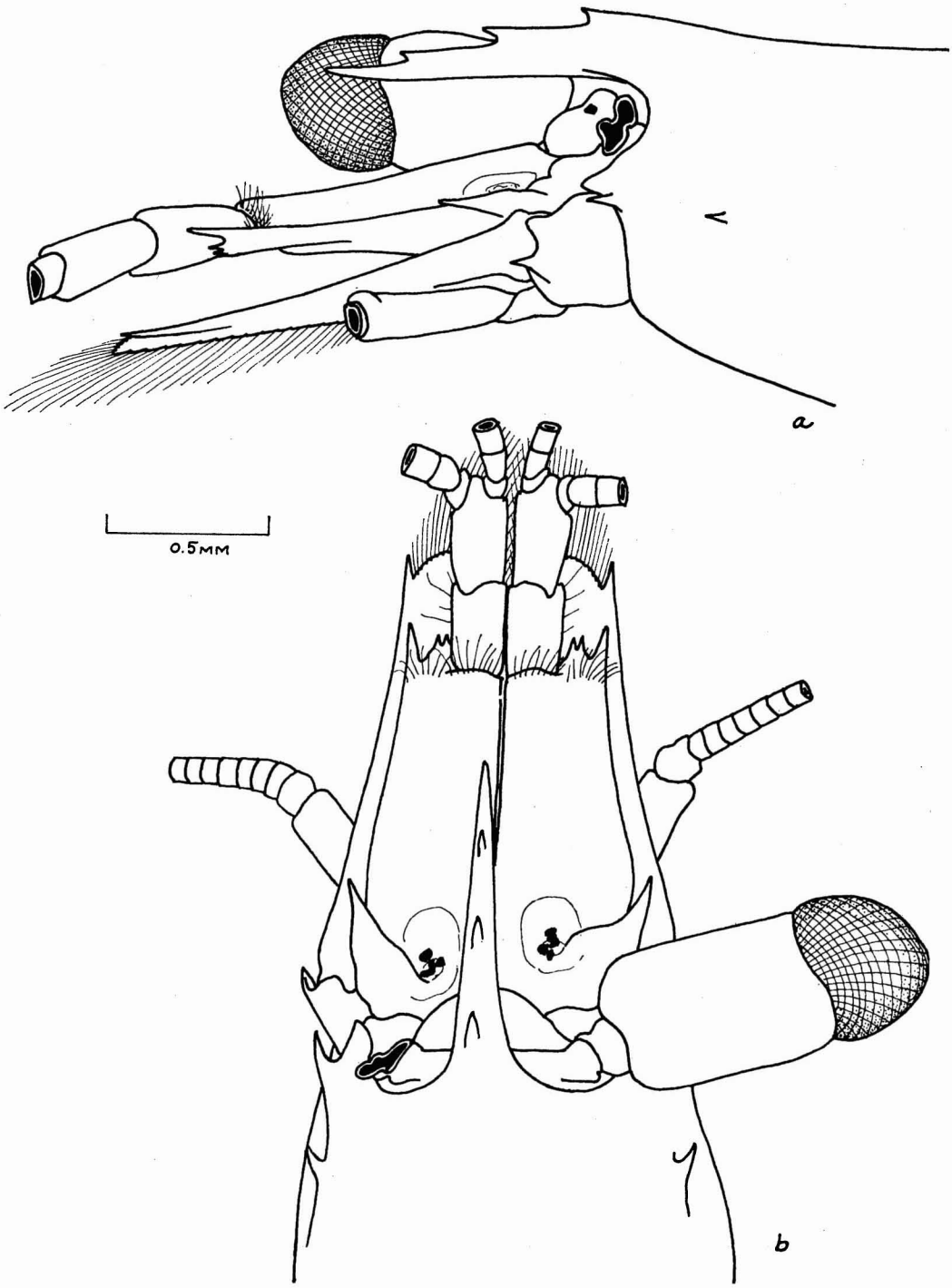


FIG. 2. *Periclimenes attenuatus* sp. nov., paratype: *a*, lateral view of anterior carapace and antennal peduncles, left eye removed; *b*, same, dorsal view.

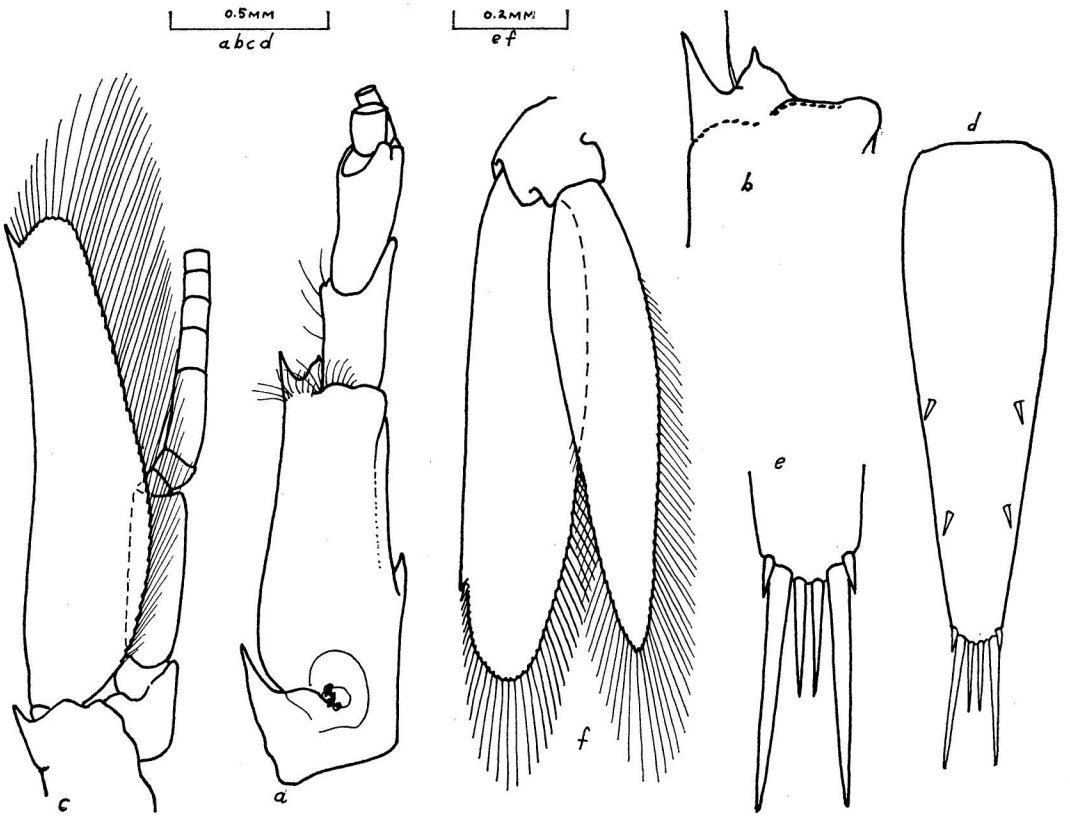


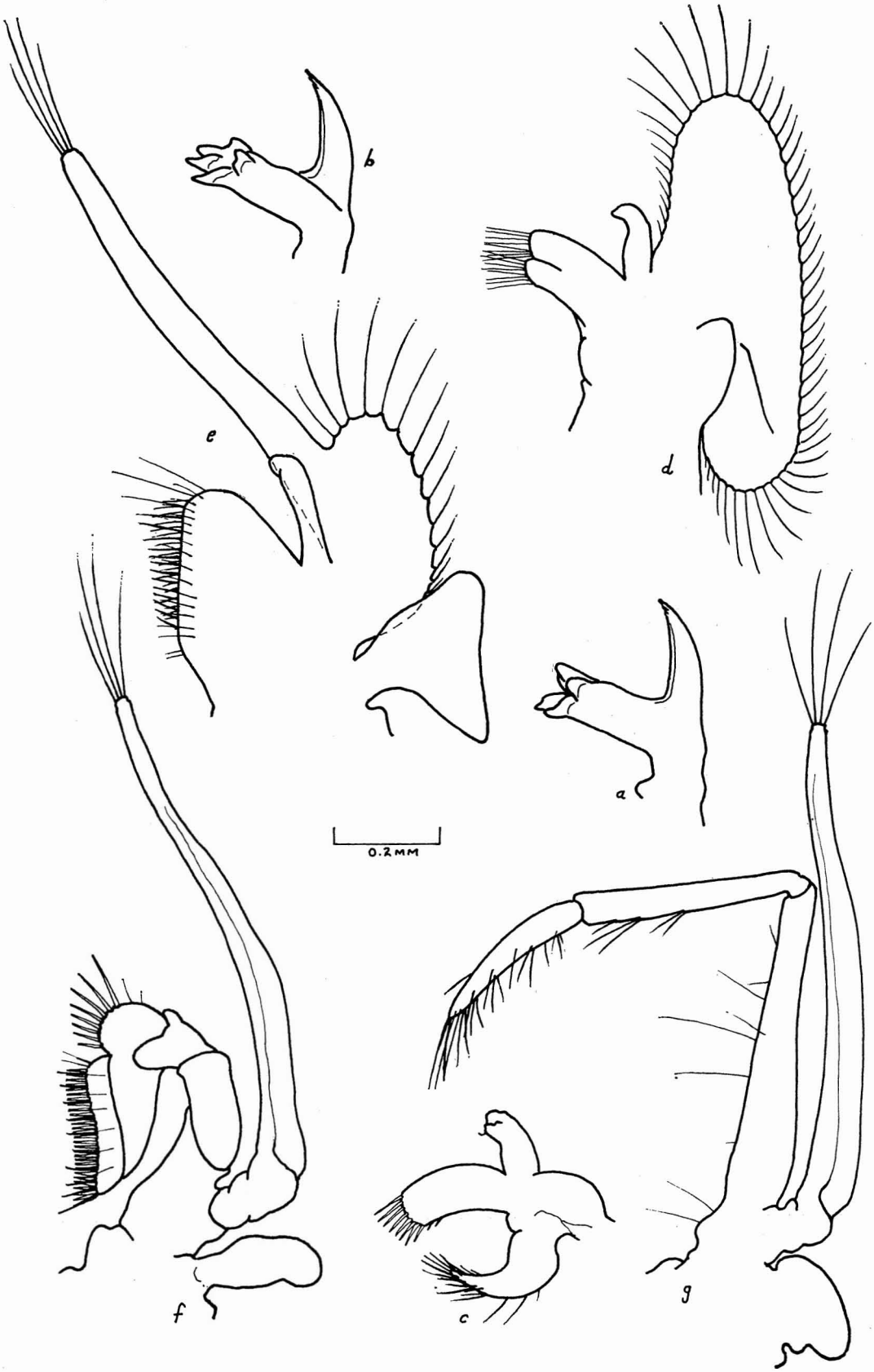
FIG. 3. *Periclimenes attenuatus* sp. nov., paratype: *a*, antennular peduncle; *b*, distolateral angle of basal segment of antennular peduncle; *c*, antennal peduncle; *d*, telson; *e*, posterior telson spines.

supraorbital spines are absent. The orbit is feebly developed but the inferior orbital angle is distinct, produced anteriorly, and acute. A small, acute, antennal spine is present, on the anterior margin of the carapace, close below the inferior orbital angle. The hepatic spine is distinctly smaller than the antennal spine and situated at a slightly lower level and is directed horizontally. The anterolateral angle of the carapace is not produced and is obliquely angulated. The ventral margin is slightly emarginated at the level of the bases of the maxillipeds. The posterior angle of the branchiostegite is broadly rounded.

ABDOMEN: The abdomen is slender. The third segment is not produced in the dorsal midline and is without a carina. The fourth and fifth segments are subequal in length and the sixth segment is 2.2 times the length of the fifth and is 2.5 times longer than deep. The pleuron of the first segment is produced anteroventrally and subacute. The pleura of the second to fifth segments are rounded. The posterior ventral angle of the sixth segment is not produced but the posterolateral angle is broadly and acutely produced.

TELSON: The telson is slender, subequal to the length of the sixth abdominal segment, and about 3.2 times longer than wide anteriorly. The lateral borders are feebly convex and converge gradually posteriorly. Two pairs of small submarginal dorsal spines are present at 0.5 and

FIG. 4. *Periclimenes attenuatus* sp. nov., paratype: *a*, left mandible; *b*, right mandible; *c*, maxillula; *d*, maxilla; *e*, first maxilliped; *f*, second maxilliped; *g*, third maxilliped.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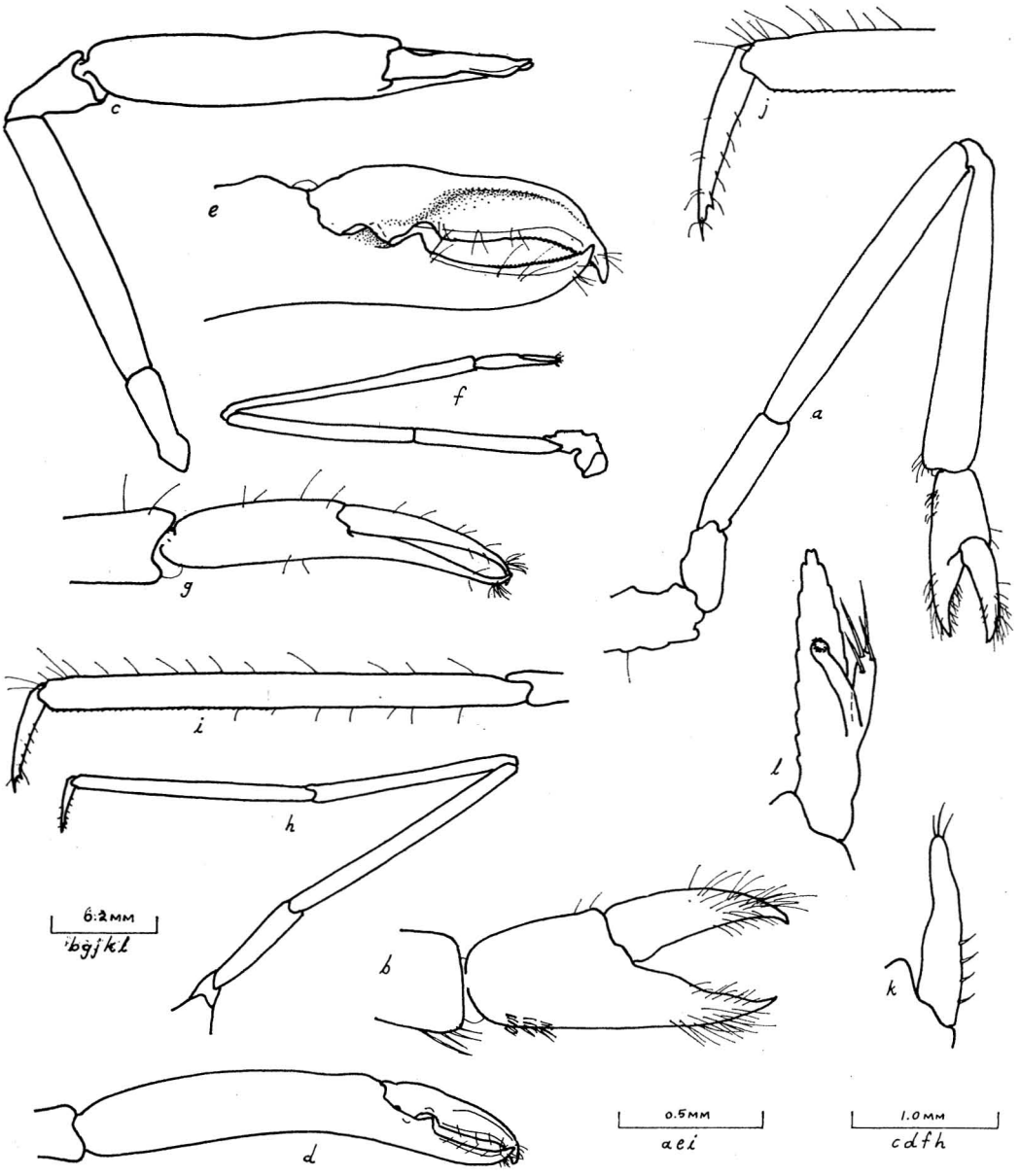

FIG. 5. *Periclimenes attenuatus* sp. nov., paratype: *a*, first pereiopod; *b*, chela of first pereiopod; *c*, major second pereiopod; *d*, chela of major second pereiopod; *e*, fingers of chela of major second pereiopod; *f*, minor second pereiopod; *g*, chela of minor second pereiopod; *h*, fifth pereiopod; *i*, propodus and dactylus of fifth pereiopod; *j*, dactylus of fifth pereiopod; *k*, endopod of male first pleopod; *l*, endopod of male second pleopod.

0.7 of the telson length. There are three pairs of posterior telson spines present. The lateral spines, short and fairly stout, are subequal to the dorsal spines. The intermediate spines are robust, long and slender, and equal to 0.2 of the telson length. The submedian spines are more slender and equal to half the length of the intermediate spines.

EYES: The eyes are particularly large and well developed, greater than half the postorbital carapace length and extending well beyond the tip of the rostrum. The cornea is large and globular, transverse, and without an accessory pigment spot. The stalk is subequal to the width of the cornea, subcylindrical, and 1.5 times longer than wide.

ANTENNULE: The antennule has a slender peduncle which exceeds the anterior margin of the scaphocerite by half the length of the distal segment. The basal segment is slender, three times longer than broad. The lateral border is feebly concave and bears an acute distolateral tooth distally. The distal medial lobe is produced and bears one or two small acute teeth. The medial border bears a robust tooth ventrally at the middle of its length. The stylocerite is short, not exceeding one-third of the length of the segment, and acute. The statocyst is normally developed and contains a few discrete granules. The intermediate and distal segments of the peduncle are slender and subequal. Their combined length is equal to two-thirds of the length of the basal segment. The lower flagellum is filiform with 21 segments in the dissected specimen. The upper flagellum is biramous with the rami fused for the two proximal segments. The shorter free ramus consists of a single free segment with three groups of aesthetascs. Three further groups are present on the fused portion. The longer free ramus is filiform and consists of 23 slender segments.

ANTENNA: The antenna has a normal basicerite with a small, acute, lateral tooth. The carpocerite is subcylindrical, about 3.3 times longer than broad and reaching almost to the middle of the lateral border of the scaphocerite. The flagellum is well developed and slender, exceeding the length of the body. The scaphocerite is slender and extends to the middle of the distal segment of the antennular peduncle. The lateral border is feebly sinuous, convex proximally and concave distally, and terminates in a slender acute tooth. The lamella is about four times longer than the greatest width, situated at one-third of its length. The anterior margin is slightly produced, rounded, and slightly exceeds the distal spine.

EPISTOME: The epistome bears two rounded bosses and is unarmed. The labrum is small but normal. The fourth thoracic sternite is without a median process and the succeeding thoracic sternites are narrow.

MOUTHPARTS: The mouthparts have been removed from the right side of the dissected specimen and are typical of the genus *Periclimenes*. The left mandible has also been removed.

MANDIBLE: The mandible is without palp. The molar process is very robust and is provided with stout teeth distally, four on the left and five on the right. The incisor process is small and weak, tapering to an acute point with two small subterminal teeth.

MAXILLULA: The maxillula is normal. The upper lacinia is slender, curved, of uniform width, with the distal end truncated and bearing eight slender, simple spines. The lower lacinia is also slender, tapering, bearing a few stout setae. The palp is slender, feebly bilobed, with a small hooked setule on the inner lobe.

FIRST MAXILLIPED: The first maxilliped bears a well-developed exopod. The flagellum is robust with four plumose distal setae. The caridean lobe is small with sparse plumose marginal setae. The palp is well developed, slender, and without setae. The coxal and basal lobes are not separated. The medial border bears numerous simple setae, long distally and shorter proximally. A triangular epipod is also present.

SECOND MAXILLIPED: The second maxilliped is normal but slender. A large exopod is present with four plumose setae distally. The terminal segment of the endopod is narrow with a row of short, stout spines along its medial border, with a submarginal row of longer, more slender, setae. The anteromedial border of the preterminal segment is slightly produced and bears eight simple spines. The coxa is rounded medially and bears an elongated epipod laterally but lacks a podobranch.

THIRD MAXILLIPED: The third maxilliped is slender and the endopod extends to the middle of the basicerite. The ischiomerus, which is fused with the basis, is about five times longer

than the basal width and tapers distally. The medial border is straight and bears a few simple setae only. The penultimate segment is two-thirds of the length of the ischiomerus and nearly seven times longer than wide distally. The distal medial margin bears a few simple setae. The terminal segment is a little less than three-quarters of the length of the preterminal segment and bears some long, simple setae distally, with three or four groups of shorter setae along the medial border. The basis is rounded medially and sparsely setose. The endopod is well developed, the flagellum extending to two-thirds of the length of the preterminal segment of the endopod. A large oval epipod is present but there is no arthrobranch.

FIRST PEREIOPOD: The first pereiopod is slender and exceeds the carpocerite by half the length of the carpus and chela, and the scaphocerite by the fingers of the chela. The palm of the chela is slightly compressed and subequal to the length of the fingers which are broad, with numerous long setae and finely acute tips. The cutting edges are not defined. The carpus is twice the length of the chela, six times longer than wide distally, slender proximally and slightly expanded distally. The merus is subequal to the length of the carpus, slender, and of uniform width, nine times longer than wide centrally. The ischium is about two-fifths of the length of the merus and is without a median lobe. The coxa bears a very small distomedian lobe.

SECOND PEREIOPODS: The second pereiopods are markedly unequal and quite dissimilar. In all specimens the right second pereiopod was much larger than the left. The coxae are without medial lobes.

MAJOR SECOND PERIOPOD: The major second pereiopod is elongated, robust, and extends beyond the carpocerite by the carpus and the chela. The palm of the chela is subcylindrical, slightly compressed, about four times longer than wide, slightly wider basally and curved ventrally. The fingers are slender, compressed, equal to half the length of the palm. The tips are acute and the cutting edges curved and finely denticulate distally. The proximal third of the fixed finger bears two large acute teeth which oppose into deep pits on the dactylus. The dactylus bears a single large, acute tooth on the proximal third of the cutting edge. The basal portion of the dactylus is inflated and a fine flange is present along the distal dorsomedial aspect. The carpus is short and stout, one-third of the length of the palm, broadened distally, and unarmed. The merus is six times longer than wide, subequal to the length of the palm, and unarmed. The ischium is slender, two-fifths of the length of the merus, and unarmed.

MINOR SECOND PEREIOPOD: The minor second pereiopod is extremely slender, the chela and carpus equalling about four-fifths of the length of the chela of the major second pereiopod. The chela is short and slender, slightly curved, with a subcylindrical palm equal to the length of the slender tapering fingers which terminate in acute, hooked tips. The carpus is 2.7 times the length of the chela, narrower proximally than distally, 16 times longer than the merus, which is slightly more robust. The ischium is about three-quarters of the length of the merus.

AMBULATORY PEREIOPODS: The ambulatory pereiopods are very slender. The third pereiopod exceeds the carpocerite by the length of the dactylus, propodus, and carpus. In the fifth pereiopod the dactylus is very slender, tapering, slightly curved, and about six times longer than wide basally. A small distinct, very slender unguis is present. The body of the dactylus bears a small, acute, subterminal, accessory tooth and the ventral margin is provided with five simple setae. Lateral and terminal setae are also present. The posterior ventral margin is devoid of spinules. The propodus is 4.5 times the length of the dactylus and is 13.5 times longer than broad. The dorsal border is sparsely setose. The ventral border is devoid of spines but the distal half is finely imbricated, with sparse setae along the proximal half. The carpus is slender and unarmed, slightly widened distally, about 0.8 times the length of the propodus. The merus and ischium are unarmed. The merus is 2.2 times the length of the ischium and 1.1 times the length of the pro-

podus. The third and fourth pereiopods are similar to the fifth.

PLEOPODS: The pleopods are normal but relatively small. The endopod of the male first pleopod is narrow, tapering, and rounded distally, about 4.5 times longer than wide basally, with four short spines along the proximal half of the medial border and with three short distal setae. The endopod of the second pleopod bears an appendix masculina. The appendix masculina is short and stout, equal to one-fourth of the length of the endopod, and bearing two simple setae terminally with two shorter subterminal setae.

UROPODS: The uropods are normal with slender rami. The basipodite is short and unarmed posterolaterally. The exopod is broader and slightly longer than the endopod. The lateral border is mainly straight, nonsetose, with a small distal tooth and a mobile spinule. The endopod is lanceolate.

Measurements

Measurements are given in Table 1.

Coloration

Not recorded, but recently preserved formalin specimens appeared mainly transparent with a deep red stripe down the midventral line of the body, extending also along the medial borders of the antennular peduncles.

Host

The specimens were all obtained together from a single specimen of a black and yellow "sticky" crinoid.

TABLE 1

MEASUREMENTS OF FIVE SPECIMENS OF *Periclimenes attenuatus* sp. nov.

SPECIMEN NUMBER	POSTORBITAL CARAPACE LENGTH	CHELA OF SECOND PEREIOPOD		REMARKS
		MAJOR	MINOR	
1	1.8	3.05	0.64	allotype
2	1.67	3.15	0.63	paratype
3	2.00	3.27	0.73	holotype
4	1.68	2.30	0.52	paratype
5	1.00	—	0.47	paratype

Types

The largest female is selected as the holotype and is deposited in the collections of the British Museum (Natural History), registration number 1970:443. A male allotype has also been deposited in the collections of the Rijksmuseum van Natuurlijke Historie, Leiden, registration number D 27194.

Remarks

As neither of the female specimens were ovigerous, it is possible that the specimens are subadult and not yet fully grown. The degree of development of the endopod of the male first pleopod and the appendix masculina and the degree of differentiation between the second pereiopods indicate that the four larger specimens are probably almost fully developed. It may be also noted that the much smaller juvenile specimen also has three dorsal rostral teeth, just as in the larger specimens, although the differentiation between the left and right second pereiopods is rather less marked.

No other crustaceans were found in association with the crinoid host on this occasion.

THE DISTINCTIVE FEATURES OF *Periclimenes attenuatus* AND ITS RELATIONSHIP TO OTHER SPECIES

Periclimenes attenuatus occupies an isolated systematic position in the large genus *Periclimenes*, although most closely related to other crinoid-associated commensals. It may be readily distinguished from all other species of the genus by its small size and slender build; short rostrum with three dorsal teeth only, which is distinctly exceeded by the anteroverted eye; and the extreme asymmetry between the left and right second pereiopods. The degree to which this last character is developed is without parallel in any other species of *Periclimenes*. Other features of special interest concern the ambulatory pereiopods, with the long slender dactylus, bearing a slender distinct unguis and a small preterminal accessory tooth, with setae along the ventral border. In most of the crinoid-commensal species the dactylus is comparatively short and stout, without a clearly defined unguis and with the ventral border devoid of setae.

The imbricated, or possibly merely serrated, distal ventral border of the propods is also a feature that has not been reported in any other species although it may possibly have been overlooked in earlier descriptions.

Of the other crinoid commensals, *P. attenuatus* is most closely related to *P. tenuis* Bruce. Both species are very slenderly built, with short slender rostra, but there are five dorsal teeth only in *P. tenuis*. The second pereiopods are not asymmetrical as in *P. attenuatus* but do possess finely serrated distal cutting edges on the fingers, a feature which is also found in *P. commensalis* and *P. novaecaledoniae*, but which has not been recorded in other species.

Of the other less aberrant crinoid associates, *P. attentuatus* shows some resemblance to *P. carinidactylus* in that the dactylus of the major second pereiopod bears a distolateral flange. It may be readily separated from that species, which has a larger rostrum with up to 10 dorsal and three ventral teeth and has spines along the ventral border of the propodus of the ambulatory pereiopods, which also lack accessory teeth on the dactyls.

When compared with the mouthparts of other species of *Periclimenes* known to associate with crinoids, those of *P. attenuatus* fail to show any special features. The incisor process of the mandible is more acuate than in *P. novaecaledoniae* and *P. commensalis*. The upper lacinia of the maxillula is also more slender. The endite of the maxilla is bilobed as in *P. commensalis*, not simple as in *P. novaecaledoniae* but the palp is nonsetose. In the first maxilliped the palp is similarly nonsetose, in contrast with the other two species, but otherwise similar, except that the basal region is without the long plumose setae found in *P. commensalis*. The terminal and preterminal segments of the

TABLE 2

CRINOID HOSTS AND ASSOCIATED SHRIMPS

HOST	ASSOCIATE	AUTHORITY
Comasteridae		
Cenolia sp.	*Periclimenes affinis* (Zehntner)	Bruce, 1967
Comanthina belli (Carpenter)	*Periclimenes commensalis* (Borradaile)	Bruce (in press)
Comanthina schlegeli (Carpenter)	*Palaemonella pottsi* (Borradaile)	Bruce, 1970
Comanthus bennetti (Müller)	*Palaemonella pottsi* (Borradaile)	Bruce, 1970
Comanthus timorensis (Müller)	*Periclimenes commensalis* (Borradaile)	Borradaile, 1917
	Pontoniopsis comanthi Borradaile	Borradaile, 1917
Comanthus sp.	*Palaemonella pottsi* (Borradaile)	Borradaile, 1917
Himerometridae		
Himerometra robustipinna (Carpenter)	*Periclimenes commensalis* Borradaile	Bruce (in press)
Tropiometridae		
Tropiometra afra (Hartlaub)	*Parapontonia nudirostris* Bruce	Bruce, 1967
	Periclimenes novaecaledoniae Bruce	Bruce, 1967
Zygometridae		
Zygometra microdiscus (Bell)	*Periclimenes commensalis* (Borradaile)	Bruce (in press)
Comasteridae		
Nemaster grandis (A. H. Clark)	*Periclimenes crinoidalis* Chace	Chace, 1969
Nemaster sp.	*Periclimenes meyeri* Chace	Chace, 1969
Family (?)		
"Actinometra" sp.*	*Periclimenes affinis* (Zehntner)	Zehntner, 1894
Unidentified		
	Periclimenes brocketti Borradaile	Borradaile, 1917
	Periclimenes cornutus Borradaile	Borradaile, 1917
	Periclimenes ceratophthalmus Borradaile	Borradaile, 1917
	Periclimenes tenuis Bruce	Bruce, 1969
	Periclimenes carinidactylus Bruce	Bruce, 1969
	Periclimenes amboinensis De Man	De Man, 1888

* According to A. M. Clark (in litt.) the specimens referred to as "*Actinometra*" by Zehntner cannot be placed in any of the presently accepted families with any degree of certainty.

second maxilliped are more slender than in *P. commensalis* and *P. novaecaledoniae* and spinose as in *P. novaecaledoniae* rather than setose as in *P. commensalis*. The endopod of the third maxilliped is more sparsely setose and the fusion of the basis with the ischiomerus is complete when compared with *P. commensalis* and *P. novaecaledoniae* and there is also no arthrobranchial rudiment. The mouthparts, therefore, closely resemble those found in other crinoid associates of the same genus and do not show any evidence of modification for special feeding habits.

REMARKS UPON THE PONTONIID SHRIMPS ASSOCIATED WITH CRINOIDS

Fifteen species of pontoniid shrimps are now known to be associated with crinoid hosts and it is probable that some previously described species of unknown associations may also be found to be crinoid associates when further material becomes available for study. These species belong to the four genera: *Palaemonella* Dana, *Periclimenes* Costa, *Parapontonia* Bruce, and *Pontoniopsis* Borradaile. *Palaemonella pottsi* is the only member of a genus, at present containing seven species, which is of definite commensal habits; the other species are thought to be free-living. Twelve species of *Periclimenes* are known to be associated with crinoids out of this very large genus containing some 100 species and associated with most of the phyla of larger marine invertebrates. *Parapontonia nudirostris* is the only species of its genus, which is closely related to *Periclimenes*. *Pontoniopsis comathi* is similarly the only species of its genus, which is less closely related to the three other genera, as is shown by the absence of a hepatic spine, which is distinct in the other genera. The host records are distributed amongst four families of crinoids, the majority of records referring to species of the Comasteridae.

The hosts of some of the crinoid-associated species of pontoniid shrimps have been recorded, but further information based upon careful collecting is badly needed. A synopsis of the present information of the crinoid hosts and their associated shrimps is given in Table 2. The record of *Vir orientalis* with a crinoid, reported by De Man (1888) is not included as this species is normally an associate of the pocilloporine corals and the association, if the identification is correct, must have been accidental.

KEY TO THE INDO-WEST-PACIFIC PONTONIID SHRIMPS KNOWN TO BE ASSOCIATED WITH CRINOID HOSTS

1. Mandible with palp .... *Palaemonella pottsi*
   Mandible without palp 2
2. Rostrum with teeth present 3
   Rostrum toothless 11
3. Eyes with cornea conoidally produced 4
   Eyes with cornea globular or hemispherical 6
4. Ventral rostral margin without teeth, three to four dorsal teeth .... *Periclimenes ceratophthalmus*
   Ventral rostral margin provided with teeth 5
5. Rostrum slender, six dorsal teeth and one ventral tooth present; posterior tooth situated well in advance of orbit. Ambulatory pereiopods with minute accessory spines on dactylus; propodus without ventral spines ... . *Periclimenes amboinensis*
   Rostrum deep, seven dorsal teeth and one ventral tooth present; posterior tooth situated over orbit. Dactylus of ambulatory pereiopods simple, propodus ventrally setose and spinulate .... *Periclimenes cornutus*
6. Ventral rostral teeth present 7
   Ventral rostral teeth absent; cutting edges of fingers of second pereiopods finely serrated distally 10
7. Dactylus of ambulatory pereiopods simple 8
   Dactylus of ambulatory pereiopods biunguiculate; cutting edges of fingers of second pereiopods finely serrated; posterior borders of propods of ambulatory pereiopods spinulate 10

8. Propodus of ambulatory pereiopods with ventral spines present; dactylus of major second pereiopod with distolateral flange; rostrum with 10 dorsal and three ventral teeth .... *Periclimenes carinidactylus*
   Propodus of ambulatory pereiopods nonspinose; dactylus of major second pereiopod without distolateral flange; less than 10 dorsal rostral teeth 9
9. Fingers of second pereiopod much shorter than palm; rostrum with seven dorsal teeth and one ventral tooth ..... *Periclimenes affinis*
   Fingers of second pereiopod subequal to palm; rostrum with six dorsal teeth and one ventral tooth .... *Periclimenes brocketti*
10. Supraorbital spine present .... *Periclimenes commensalis*
    Supraorbital spine absent .... *Periclimenes novaecaledoniae*
11. Second pereiopods subequal and similar; rostrum with five or six dorsal teeth only ..... *Periclimenes tenuis*
    Second pereiopods very unequal and dissimilar; rostrum with three dorsal teeth only .... *Periclimenes attenuatus*
12. Rostrum long, exceeding antennular peduncle; epistomal horns present; second pereiopods subequal, similar ..... *Parapontonia nudirostris*
    Rostrum long, not exceeding antennular peduncle; epistomal horns absent; second pereiopods unequal, dissimilar ..... *Pontoniopsis comanthi*

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