



## ***Pseudopontonides plumosus* sp. nov., a new cnidarian-associated pontoniine shrimp (Crustacea, Decapoda, Palaemonidae) from Curaçao\***

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### **Abstract**

During a study of the associated fauna of gorgonians and black corals on the reefs of Curaçao (Netherlands Antilles, Caribbean Sea) by the first author, a new species of *Pseudopontonides* Heard, 1986: *P. plumosus* sp. nov. was discovered, which is here described and figured.

**Key words:** Crustacea, Decapoda, Palaemonidae, Pontoniinae, *Pseudopontonides*, new species, Antipatharia, Curaçao

### **Introduction**

The genus *Pseudopontonides* was erected by Heard (1986) for *Neopontonides principis* Criales, 1980. *Pseudopontonides* is distinguished from *Neopontonides* Holthuis, 1951 by (1) the absence of an exopodal flagellum on the caridean lobe of the first maxilliped; (2) the presence of a vestigial arthrobranch on the third maxilliped; (3) a well-developed rostral hood, which extends anteriorly to partially cover the statocysts; (4) a reduced movable spine on the exopod of the uropod; (5) the armature of the antennular peduncle, which has two distolateral teeth instead of a single tooth; (6) the presence of a well-developed pterygostomial notch; and (7) short flagella on the antennula and antenna. The only species so far known in the genus is known to associate with species of the antipatharian genera *Stichopathes* and *Virgularia* (Heard 1986). It has been recorded from Curaçao, Bonaire and the Gulf of Mexico.

During field work of the first author in Curaçao, a single specimen of *Pseudopontonides* was discovered, which did not appear to belong to *P. principis*. The new species can be easily distinguished from *P. principis* by characters on the rostrum, antennular peduncle, and pereopods.

### **Systematic Account**

#### ***Pseudopontonides* Heard, 1986**

#### ***Pseudopontonides plumosus* sp. nov.**

(Figs. 1–6)

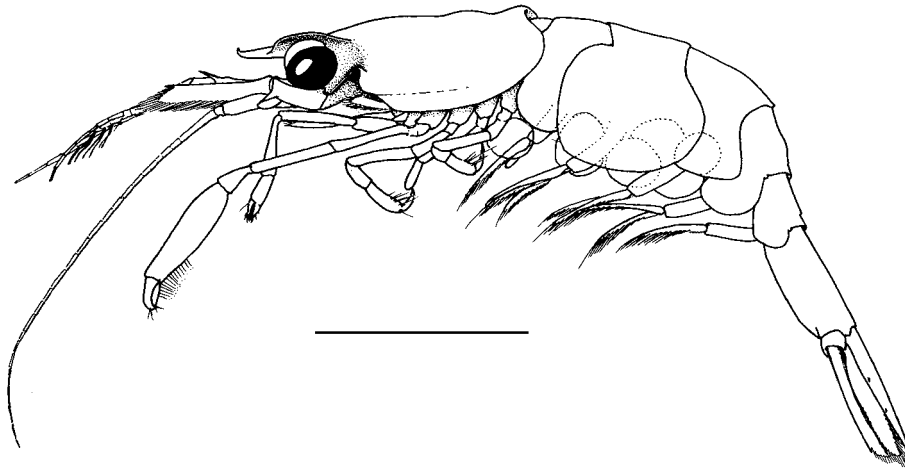
**Material examined.** RMNH D 51661, ov. female holotype, pocl 2.0 mm, stn. CUR.22, south coast, Otrobanda, harbour, Superior Producer, Curaçao, Lesser Antilles, 12°05'21.5"N, 068°56'35.5"W, on *Antipathes* spec.; depth 29 m; 2.VI.2005, leg. N. Snijders.

**Comparative material examined.** *Pseudopontonides principis* (Criales, 1980): RMNH D 32017, ov. female holotype pocl 3.3 mm, Awa di Oostpunt, Curaçao, Lesser Antilles, on *Stichopathes gracilis*, depth 18 m, 3.VII.1977, leg. M.M. Criales; RMNH D 32688, paratypes, 1 ov. female pocl 3.0 mm, 1 male pocl 1.8 mm,

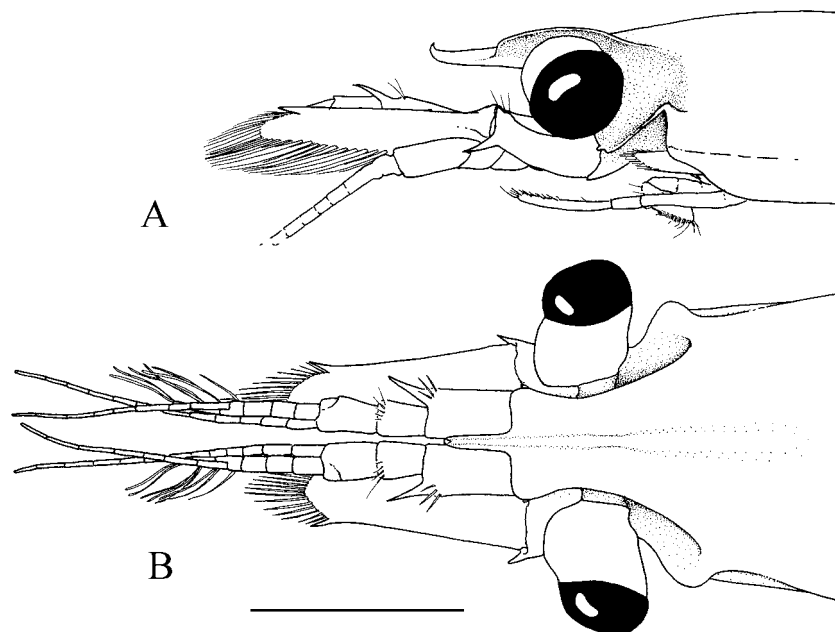
same data as holotype; RMNH D 51636, 1 specimen pool 2.6 mm, stn. CUR.05, Marie Pampoen/ Carpile, Curaçao, south coast, Lesser Antilles, 12°05'42.1"N, 068°54'43.0"W, depth 24.6 m, on *Cirripathes leutkeni*, 09.V.2005, leg. N. Snijders; RMNH D 51637, 1 ov. female pool 2.8 mm, stn. CUR.04, West Side Piscaderabaai, Curaçao, south coast, Lesser Antilles, 12°07'21.4"N, 068°58'10.5"W, depth 21.5 m, on *Cirripathes leutkeni*, 11.V.2005, leg. N. Snijders; RMNH D 51638, 1 specimen, stn. CUR.16, Fuikbaai, Curaçao, south coast, Lesser Antilles, 12°03'01.6"N, 068°50'05.2"W; depth 28.7 m, on *Antipathes* sp., 19.V.2005, leg. N. Snijders.

**Description.** Rostrum (Figs. 1–2) nearly horizontal, slender, unarmed dorsally and ventrally, dorsal lamina shallow; tip curled upwards, not reaching end of basal segment of antennular peduncle; expanded near base forming hood over eyestalk, rectangular structure over orbits, distolateral corners rounded, anterior margin straight, lateral margins constricted mesially; expansions continue as short but pronounced ridges on carapace. Carapace (Fig. 1) subcylindrical, slightly depressed, with small antennular spine only; anterolateral angle rounded; prominent pterygostomial sinus forming thin tube-like opening for branchial chamber together with caridean lobe of first maxilliped.

Pleura of abdominal somites (Fig. 1) rounded.



**FIGURE 1.** *Pseudopontonides plumosus* n. sp., female holotype RMNH D 51661. Scale = 2 mm.



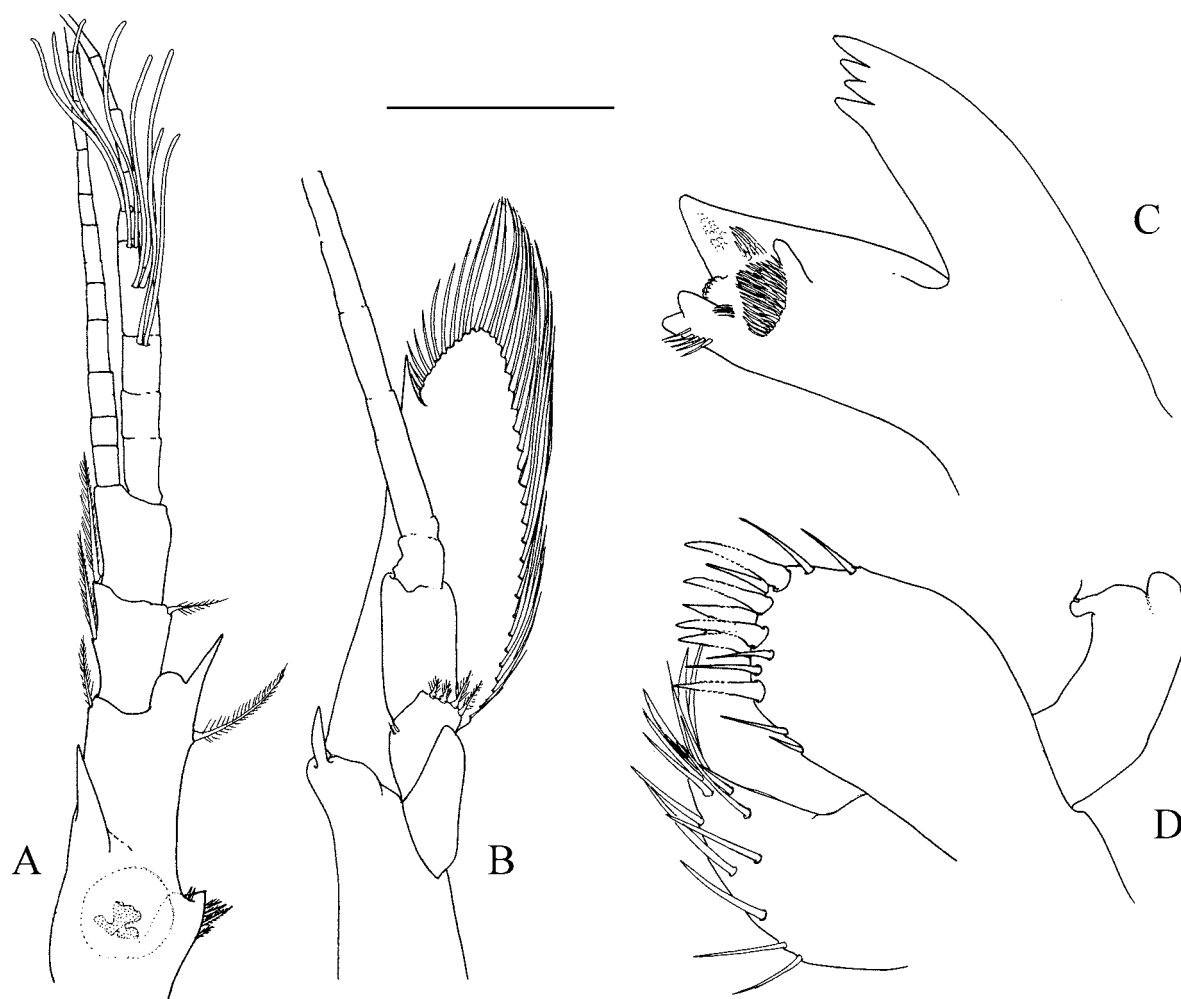
**FIGURE 2.** *Pseudopontonides plumosus* n. sp., female holotype RMNH D 51661: A, distal part of carapace and anterior appendages, lateral view; B, same, dorsal view. Scale = 1 mm.

Eyes (Fig. 2) well developed, not reaching end of basal segment of antennular peduncle; eyestalk slightly broader than cornea.

Basal segment of antennular peduncle (Fig. 3A) almost 3 times as long as penultimate segment; ultimate segment slightly longer than penultimate segment. Basal segment with short and angular stylocerite not reaching beyond middle of segment; ventromesial tooth very strong at about middle of segment; distolateral tooth long and acute, extending as far as three quarters of length of penultimate segment; upper antennular flagellum biramous, fused for basal 4 segments; short free ramus consists of two segments; long free ramus and lower antennular flagellum equal in length, shorter than length of carapace.

Antennal scale (Fig. 3B) overreaching antennular peduncle, slightly less than three times as long as broad, distolateral tooth not reaching beyond distal margin of produced blade; antennal peduncle reaches to about midlength of scale; basal segment with a strong ventrolateral tooth.

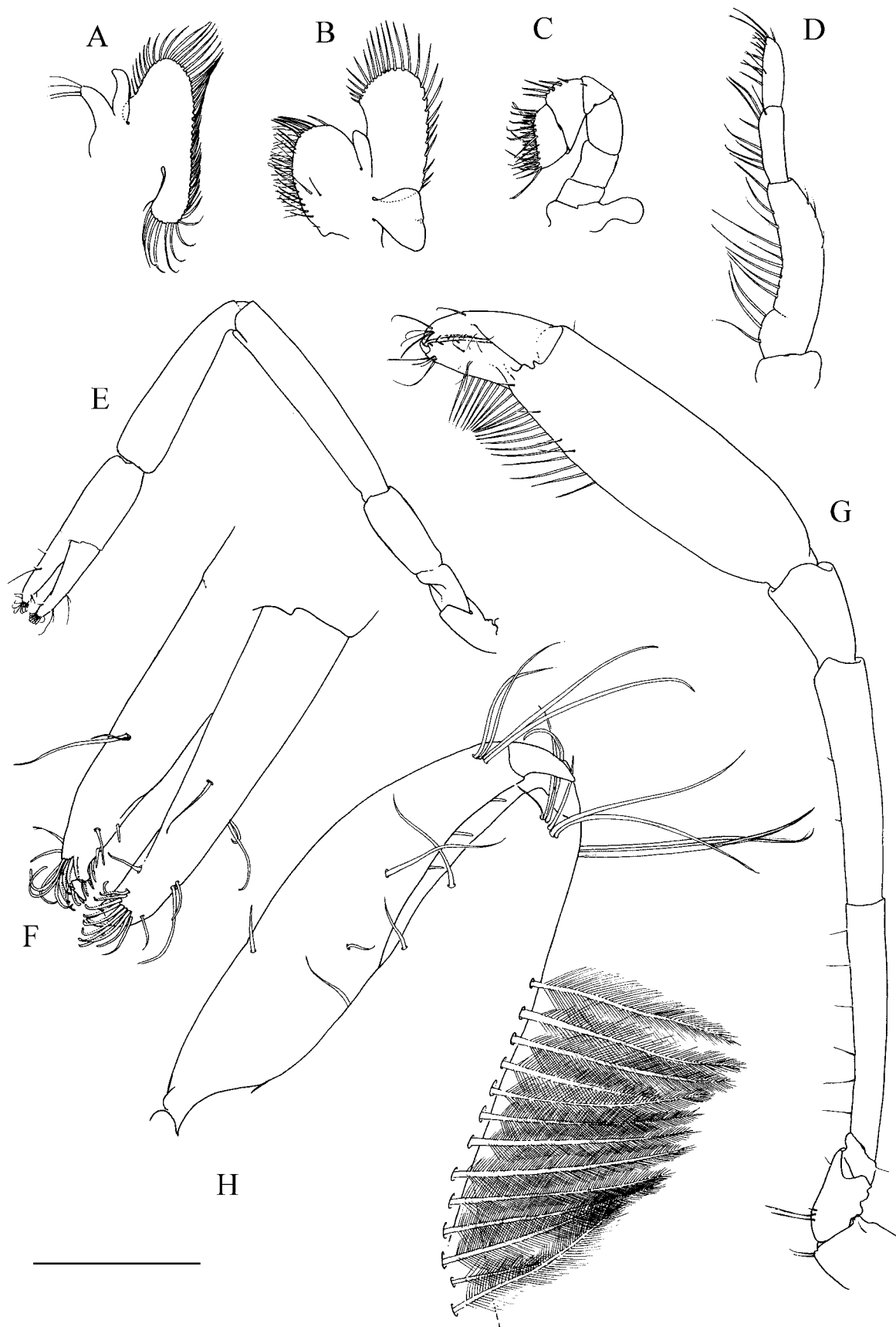
Mandible (Fig. 3C) with incisor process armed with 4 apical teeth, lateral teeth being larger than medial teeth; molar process with various rounded teeth and setal brushes.



**FIGURE 3.** *Pseudopontonides plumosus* n. sp., female holotype RMNH D 51661: A, left antennula; B, left antenna; C, left mandible; D, left maxillula. Scale A–B = 0.6 mm; C–D = 0.15 mm.

Maxillula (Fig. 3D) with bilobed palp, of which lower lobe bears a simple seta; upper lacinia rounded with 6 spines and several setae distally; lower lacinia pointed with long, simple and serrulate setae.

Maxilla (Fig. 4A) with distinct simple palp; scaphognathite more than 3 times as long as broad; basal endite well developed, not bilobed, with few simple setae distally; coxal endite obsolete, median margin convex, without setae.



**FIGURE 4.** *Pseudopontonides plumosus* n. sp., female holotype RMNH D 51661: A, left maxilla; B, left first maxilliped; C, left second maxilliped; D, left third maxilliped; E, left first pereiopod; F, idem, fingers of chela; G, left second pereiopod; H, idem, fingers of chela. Scale A–E, G = 0.6 mm; F, H = 0.15 mm.

First maxilliped (Fig. 4B) with well-developed bilobed epipod, and simple, short palp; basal and coxal endite well-developed, fused, fringed by several rows of setae; exopodal flagellum absent, caridean lobe well developed.

Second maxilliped (Fig. 4C) with well-developed epipod on coxa; basis without exopod; 5-segmented endopod; propodal segment with few strong setae on anteromesial margin; dactylar segment with numerous stout serrulate setae medially.

Third maxilliped (Fig. 4D) reaching to distal margin of basal segment of antennal peduncle; endopod 3-segmented, ischiomerus almost completely fused to basis, with stout long setae along medial margin of ultimate, penultimate and antepenultimate segments; without exopod; arthrobranch not observed; lateral plate moderately developed; with small rounded epipod laterally.

First pereopods (Fig. 4E) not reaching beyond antennal scale; fingers (Fig. 4F) slender, shorter than palm, tips with brush of setae, cutting edges entire; merus longer than carpus, carpus and chela equal in length.

Second pereopods (Fig. 4G) robust, similar in form, unequal in size, extending well beyond first pereopods; palm 3 times as long as fingers, dactylus with large basal tooth fitting into depression in fixed finger, distal cutting edges entire; prominent row of long plumose setae (Fig. 4H) on ventromedial margin of distal half of palm and proximal half of fixed finger; carpus about 0.3 times as long as palm; merus 2.5 times as long as carpus and about as long as ischium.

Dactylus of third pereopod (Fig. 5A, B) strongly curved, 0.4 times propodus length, unguis not markedly separated from corpus; propodus slightly curved, with long plumose setae in distal third of ventral margin and shorter plumose setae on distal third of dorsal margin; carpus 0.4 times propodus length; merus about as long as propodus; ischium half length of merus. Fourth (Fig. 5C, D) and fifth (Fig. 6A, B) pereopods similar to third, slightly shorter.

Telson (Fig. 6C) as long as sixth abdominal somite; bearing two pairs of very small dorso-lateral spines, anterior pair situated slightly before mid-length of telson, posterior pair between anterior pair and distal margin; three pairs of terminal spines, intermediate pair twice as long as inner pair, outer pair one-third length of inner pair; uropodal exopod longer and more expanded than endopod; exopod with distinct fixed distolateral tooth, with minute mobile spine medially.

**Size.** Postorbital carapace length 2.0 mm.

**Colouration.** Unknown.

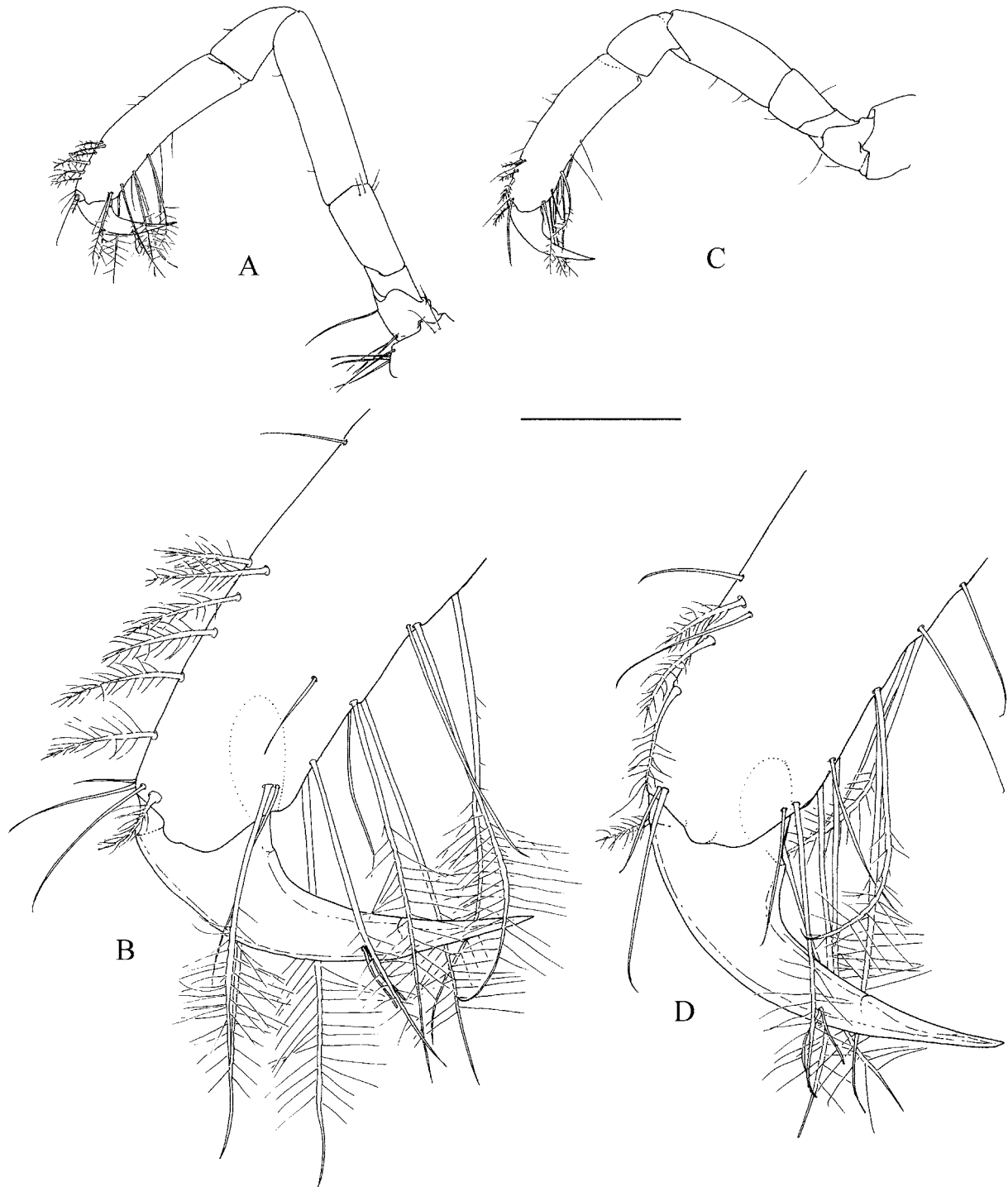
**Host.** *Antipathes* sp. (id. F.R. Stokvis); *Antipatharia* (Octocorallia).

**Systematic position.** The holotype of *Pseudopontonides plumosus* n. sp. was compared with specimens of the only other species in the genus, *P. principis* (Criales, 1980), differences between both species are listed in Table 1.

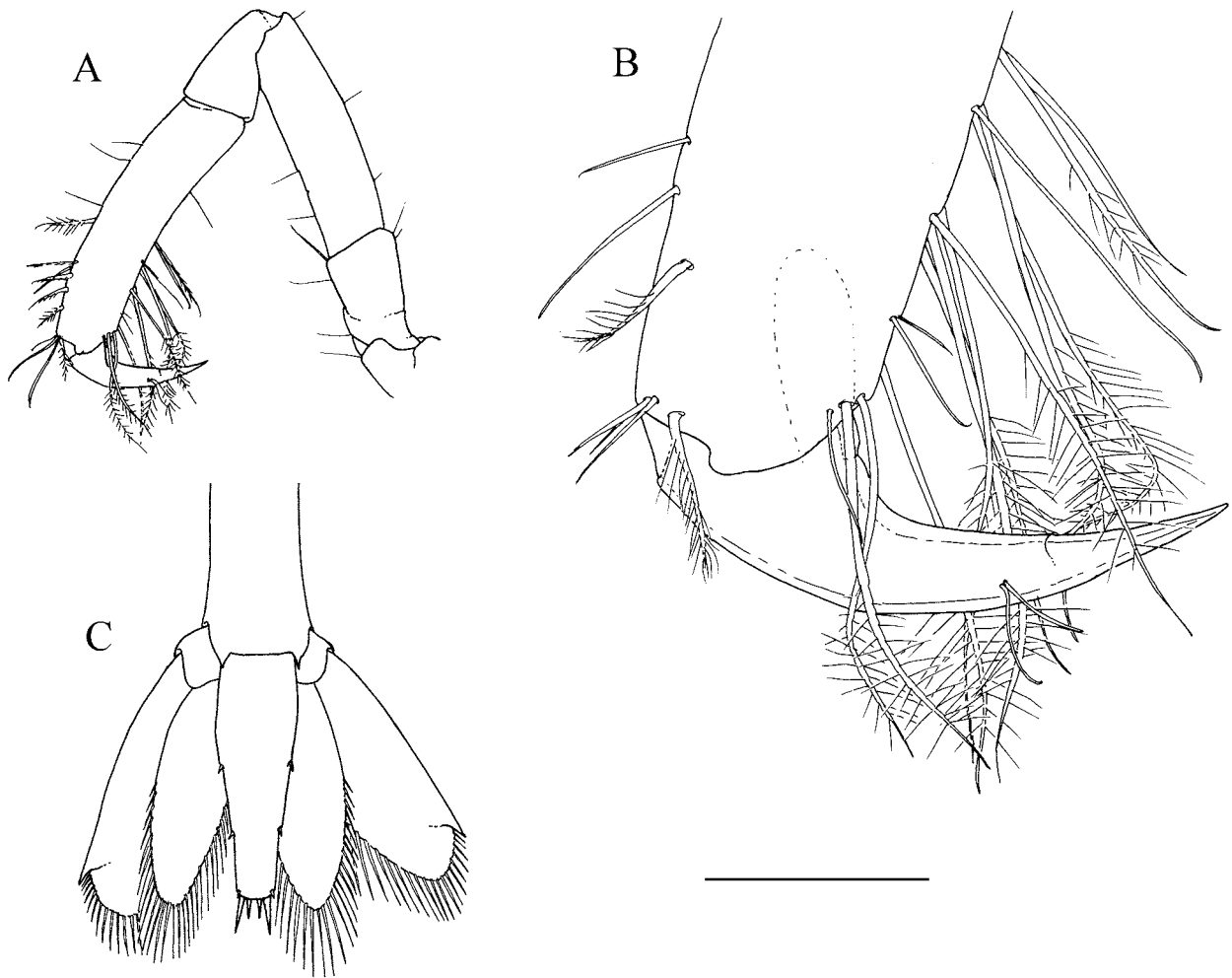
The new species fits the diagnosis of the genus *Pseudopontonides* Heard, 1986 except for the number of teeth on the distolateral margin of the basal segment of the antennular peduncle, which is one in the new species and two in *P. principis*. The diagnosis of *Pseudopontonides* should be broadened for this character to incorporate the new species.

**Revised generic diagnosis.** Small sized palaemonid shrimps of subcylindrical to somewhat depressed body form. Carapace smooth; rostrum well developed, lateral carinae distinct, posteriorly expanded, forming hood over eyestalks, dorsal and ventral carinae unarmed, orbit well developed, epigastric and supraorbital spines or teeth absent, hepatic spine absent, antennal spine present. Pterygostomial notch well developed. Abdomen smooth, third segment not produced, pleura rounded, fourth and fifth not posteroventrally acute. Telson with two pairs of small dorsal spines, three pairs of posterior marginal spines. Eyes with globular cornea, not conoidally produced. Antennule well developed, basal segment armed with 1 or 2 distolateral teeth. Antenna with basicerite armed, scaphocerite well developed. Mandible without palp, molar process robust, incisor process normal, not distally expanded; maxillula with bilobed palp, laciniae slender; maxilla with simple palp, basal endite entire, coxal endite obsolete; first maxilliped with simple palp, basal endite broad, coxal endite obsolete, exopod without flagellum, epipod well developed, bilobed; second maxilliped with normal endopod, exopod absent, coxa with small epipod without podobranch; third maxilliped with endopod slender, ischiomerus largely fused to basis, exopod absent, coxa with epipod, without or with small arthrobranch. Thoracic sternites not elongate, fourth thoracic sternite without median process. First

pereiopods slender, chela simple. Second pereiopods well developed, chelae robust similar in shape, fingers dentate, without molar process or fossa, carpus and merus unarmed. Ambulatory pereiopods robust, dactyls simple. Uropod with protopodite posterolaterally rounded, exopod with distolateral tooth with small mobile spine medially.



**FIGURE 5.** *Pseudopontonides plumosus* n. sp., female holotype RMNH D 51661: A, left third pereiopod; B, idem, dactylus and distal part propodus; C, left fourth pereiopod; D, idem, dactylus and distal part propodus. Scale A, C = 0.6 mm; B, D = 0.15 mm.



**FIGURE 6.** *Pseudopontonides plumosus* n. sp., female holotype RMNH D 51661: A, left fifth pereiopod; B, idem, dactylus and distal part propodus; C, telson. Scale A = 0.6 mm; B = 0.15 mm; C = 1 mm.

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**TABLE 1.** Morphological differences between *P. plumosus* sp. nov. and *P. principis*.

	<i>Pseudopontonides plumosus</i> sp. nov.	<i>P. principis</i> (Crales, 1980)
Rostrum	tip curled upwards not exceeding basal segment of antennular peduncle expanded basal part constricted mesially, anterior margin straight	tip straight, horizontal overreaching basal segment or even penultimate segment of antennular peduncle expanded basal part of rostrum with straight lateral margins, anterior margin oblique
Antennular peduncle	stylocerite angular, short basal segment with one distolateral tooth	stylocerite acute, well developed basal segment with two distolateral teeth
Third maxilliped	no arthrobranch visible	with small arthrobranch
First pereopod	not reaching beyond antennal scale carpus and chela equal in length merus about 1.5 times carpus length	overreaching antennal scale with end of chela carpus longer than chela merus as long as carpus
Second pereopod	prominent row of long plumose setae on ventromedial margin of distal half of palm and proximal half of fixed finger	with scattered, simple setae on ventromedial margin of distal half of palm and proximal half of fixed finger
Ambulatory pereopods	distoventral part of propodus with long, plumose setae	distoventral part of propodus with few short, simple setae
Telson	anterior pair of dorsolateral spines situated slightly before mid length, posterior pair between anterior pair and distal margin	anterior pair of dorsolateral spines situated at about 0.65 of length of telson, posterior pair at about 0.75 of length of telson