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Source: *Transactions of the American Microscopical Society*, Vol. 92, No. 4 (Oct., 1973), pp. 604-620

Published by: Wiley on behalf of American Microscopical Society

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MEIOBENTHIC HARPACTICOIDA (CRUSTACEA, COPEPODA)
FROM THE DEEP SEA OFF NORTH CAROLINA IV. THE
FAMILIES CLETODIDAE T. SCOTT AND
ANCORABOLIDAE SARS¹

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COULL, B. C. Meiobenthic Harpacticoida (Crustacea, Copepoda) from the deep sea off North Carolina IV. The families Cletodidae T. Scott and Ancorabolidae Sars. *Trans. Amer. Micros. Soc.*, 92: 604–620. In this paper, the last in a series on deep sea harpacticoids from off North Carolina, a new genus and species, *Pyrocletodes desuramus* n.g., n. sp. and two new species *Mesocletodes commixtus* n. sp. and *Dorsiceratus triarticulatus* n. sp. are described. *Pyrocletodes* is unique in that it harbors characteristics of both the Cylindropsyllidae and Cletodidae and completely lacks P₂–P₄ endopods. Its inter-generic relationship is not known. *Mesocletodes commixtus* belongs to the “*inermis*” species group and is most closely related to *M. langi* Smirnov. Segmentation of the swimming legs separates the two species. *Dorsiceratus triarticulatus* is the second species known in its genus and differs from *D. octocornis* Drzycimski in P₁ segmentation. Keys are given for the family Ancorabolidae and the genera *Mesocletodes* and *Dorsiceratus*.

This is the last in my series of papers on the deep sea Harpacticoida from off North Carolina and deals exclusively with the families Cletodidae and Ancorabolidae (see Coull 1973a–c for other families). Besides describing new taxa in each paper, I have attempted to revise (where necessary) and present keys to the taxa involved. This hopefully will provide future investigators up-to-date summaries and allow them to go directly to the taxon in question.

The Cletodidae is a family which occurs from the shallow sublittoral to the abyss. Certain genera, however, appear to be restricted to deep water and ooze bottoms, for example, *Mesocletodes*, *Eurycletodes*, *Metahuntemannia*, *Pseudocletodes*, *Hemimesochra*, *Paranannopus*. One new genus, *Pyrocletodes*, and one new species, *Mesocletodes commixtus*, are described herewith. Three other new species in the family Cletodidae were described in Part I of this series (Coull, 1973a).

The Ancorabolidae represent an extremely bizarre and rapidly expanding taxon. One new species, *Dorsiceratus triarticulatus*, is described and a key to the family is presented.

Twenty-seven species representing these two families were collected (Table I). When Table I is compared with similar tables from Parts I, II, and III of this series, it is obvious that the Cletodidae was the most abundant family encountered. Most of the previously described Cletodidae in Table I are known from the deep North Atlantic; this is suggestive of a North Atlantic deep zoogeographic province. However, only further and more comprehensive sampling can substantiate this suggestion.

The station locations, collecting methods, preparation, and terminology used throughout are consistent with Part I of this series (Coull, 1973a).

¹I thank the Cooperative Program in Biological Oceanography of Duke University for ship time (supported by NSF Grant 8189) and Mr. Brian M. Marcotte for drafting the figures.

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TABLE I
List of species taken¹

Species	Station ²	Total no. specimens
CLETODIDAE		
* <i>Pyroclctodes desuramus</i> n.g., n. sp.	4	7 ♀♀, 5 copepodites
<i>Cletodes yotabis</i> Por	7	2 ♀♀
<i>Rhizothrix gracilis</i> (T. Scott)	1	1 ♀♀
<i>Hemimesochra trisetosa</i> Coull ³	13, 15, 18, 21	8 ♀♀, 1 ♂
<i>Cylindronannopus primus</i> Coull ³	13, 18	12 ♀♀, 1 ♂
<i>Paranannopus atlanticus</i> Coull ³	10, 13, 15, 18	8 ♀♀
<i>Mesocletodes abyssicola</i> (T. & A. Scott)	18	1 ♀
<i>M. irrasus</i> (T. & A. Scott)	4, 6, 12, 13, 18, 21	20 ♀♀
<i>M. katherinae</i> Sayer	4, 6, 27	12 ♀♀
<i>M. dolichurus</i> Smirnov	4	1 ♀
<i>M. robustus</i> Por	11	1 ♀
<i>M. soyeri</i> Bodin	6	2 ♀♀
* <i>M. commixtus</i> n. sp.	7, 11	5 ♀♀
<i>M. sp.</i>	11	1 ♀
<i>Eurycletodes (Oligocletodes)</i> <i>major</i> Sars	3	2 ♀♀
<i>E. (O.) monardi</i> Smirnov	4, 18, 29	3 ♀♀
<i>E. (O.) hoplurus</i> Smirnov	13	3 ♀♀
<i>E. (O.) echinatus</i> Lang	6, 13	6 ♀♀
<i>E. (Eurycletodes) gorbunovi</i> Smirnov	13	3 ♀♀
<i>Pseudocletodes vararensis</i> T. & A. Scott	3, 6, 9, 10, 11	33 ♀♀, 12 ♂♂
<i>Metahuntemannia crassa</i> (Por)	13, 24, 26	3 ♀♀
<i>M. gorbunovi</i> Smirnov	21	1 ♀
<i>M. drzycimskii</i> (Bodin)	7, 12	2 ♂♂
<i>M. spinosa</i> Klie	19	1 ♀
<i>M. sp.</i>	17	1 copepodite
ANCORABOLIDAE		
<i>Echinosyllus</i> sp.	13	1 ♀
* <i>Dorsiceratus triarticulatus</i> n. sp.	11	2 ♀♀, 1 ♂

¹ The "*" refers to new species described in this paper.
² The stations are the same as in Part I of this series (Coull, 1973a).
³ Species described in Part I of this series.

SYSTEMATIC DESCRIPTION
 Family Cletodidae T. Scott, 1904
Pyroclctodes n. g.

The generic designation coincides with that of its only known and type species, which must, therefore, be considered preliminary.

Remarks

Pyroclctodes n. g. is an enigma. It harbors some characteristics of the interstitial Cylindropsyllidae, for example, elongate body shape, elongate P₂-P₄ exopods, P₅, and caudal rami. However, the majority of the characteristics relate this genus to the Cletodidae. Some features are traditionally associated with several diverse genera (*Paranannopus*, *Cylindronannopus*, *Poria*), but other characteristics are unique. The body shape and single plate on each side of P₅ are characteristics associated with *Cylindronannopus* Coull (1973a). The upturned inner seta on the first segment of the P₁ endopod associates *Pyroclctodes* n. g. with *Poria* Lang, 1965, while the lack of P₂-P₄ endopods is known for two species of *Paranannopus*, *P. caheti* Soyer and *P. abyssi* Sars.

The presence of an inner seta on the second segment of the P₁ exopod estab-

lishes the exclusion of *Pyroclotodes* n. g. from the Cylindropsyllidae, and other features are suggestive of the same conclusion. A 5-segmented A_1 , spinulose swimming legs, and mouth parts are all traditionally associated with the Cletodidae and thus it must be included here. The inter-generic relationships of *Pyroclotodes* are unclear. The numerous and significant differences between it and other known genera justifies the erection of a new genus.

Pyroclotodes desuramus n.g., n. sp.
(Figs. 1-13)

Material: 7 ♀♀, 5 copepodites (Station 4). Holotype 1 ♀, USNM No. 141777; paratypes 2 ♀♀, USNM No. 141778.

Type locality: EASTWARD Station 14422 (Station 4); 34° 23.0' N, 75° 41.5' W; depth 1050 m.

Description

Female: Based on a non-ovigerous female, 0.64 mm. Body elongate, narrow and tapering in form, without ornamentation (Fig. 1). Rostrum small, broadly rounded (Fig. 1). Anal operculum inconspicuous. Caudal rami 4.8 times as long as wide at widest portion with two lateral and one dorsal seta at 1/3, 1/2, and 3/5 the length, respectively. One principal terminal seta "flame" shaped and gradually tapering to a fine point (Figs. 1, 2).

A_1 (Fig. 3), 5-segmented, fourth segment very small, fifth segment tear-drop shaped. Aesthetasc on segment 3.

A_2 (Fig. 4), 2-segmented endopod, second segment with seven setae. Exopod 1-segmented with two setae.

Md. (Fig. 5), cutting edge with bidentate pars incisiva, 6-dentate lacinia, one seta, and several spines. Palp 2-segmented with one seta on first and four on the second, three of which are terminal.

Mxl. (Fig. 6), arthrite of pre-coxa with five strong setae, two spinulose setae, and two surface spines. Coxa with two terminal setae. Basis and endopod with three terminal setae. Exopod absent.

Mx. (Fig. 7), syncoxa with two endites, each with a spinulose outer seta and a non-spinulose inner seta. Basis with a terminal claw and a smaller spinulose seta. Endopod represented by two setae.

Mxp. (Fig. 8), basis with small seta at inner distal corner. Endopod 1-segmented with row of small spinules and terminating in a claw.

P_1 (Fig. 9), 3-segmented exopod, 2-segmented endopod. Inner seta of first endopod segment directed upward. Setation as figured and listed below.

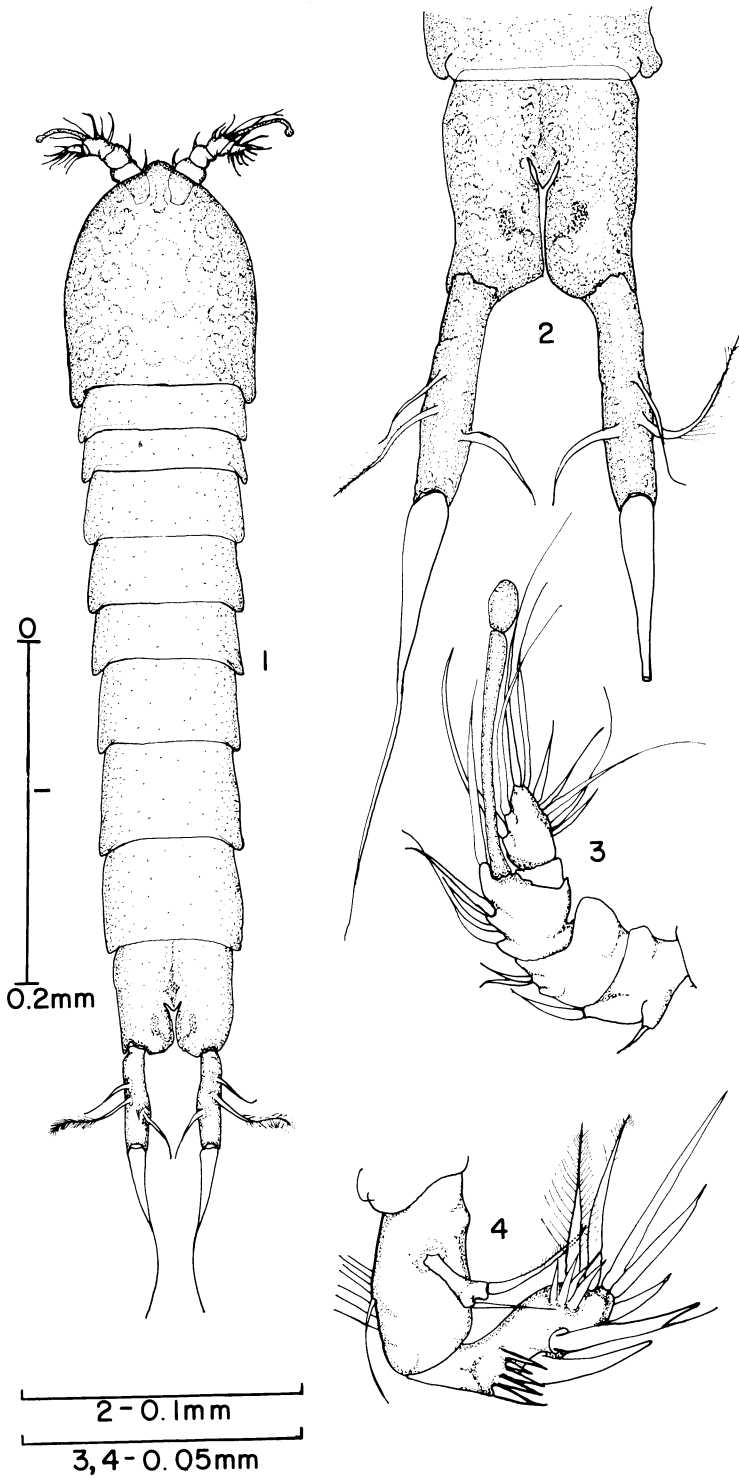
P_2 (Fig. 10), P_3 (Fig. 11), and P_4 (Fig. 12) all with 3-segmented exopods and no endopods. Setation as figured and listed below.

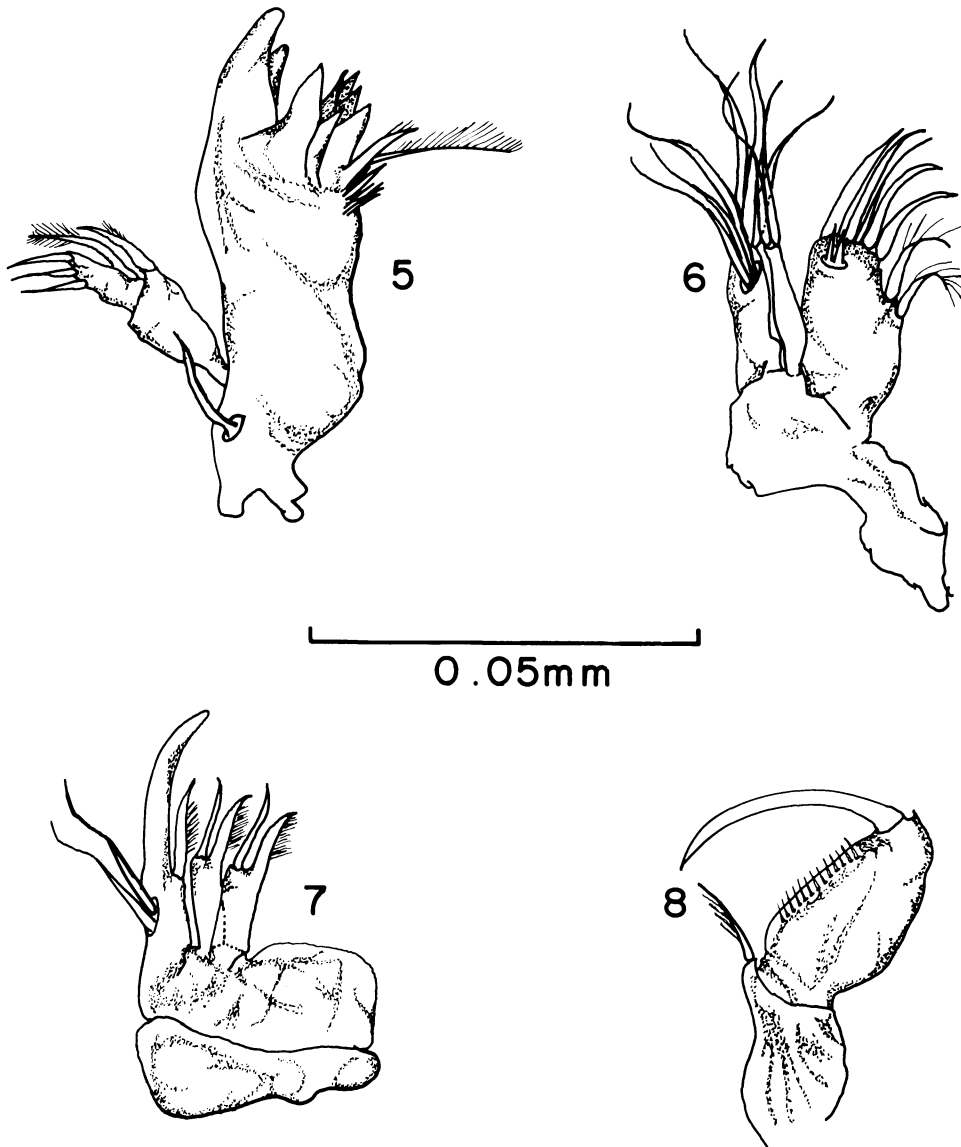
Setal formula: *Pyroclotodes desuramus* n.g., n. sp.

	Exopod	Endopod
P_1	0.1.022	1.020
P_2	0.1.122	—
P_3	0.1.122	—
P_4	0.1.122	—

→

FIGS. 1-4. *Pyroclotodes desuramus* n.g., n. sp. ♀. Fig. 1. Habitus. Fig. 2. Last two abdominal somites and caudal rami. Fig. 3. A_1 . Fig. 4. A_2 .



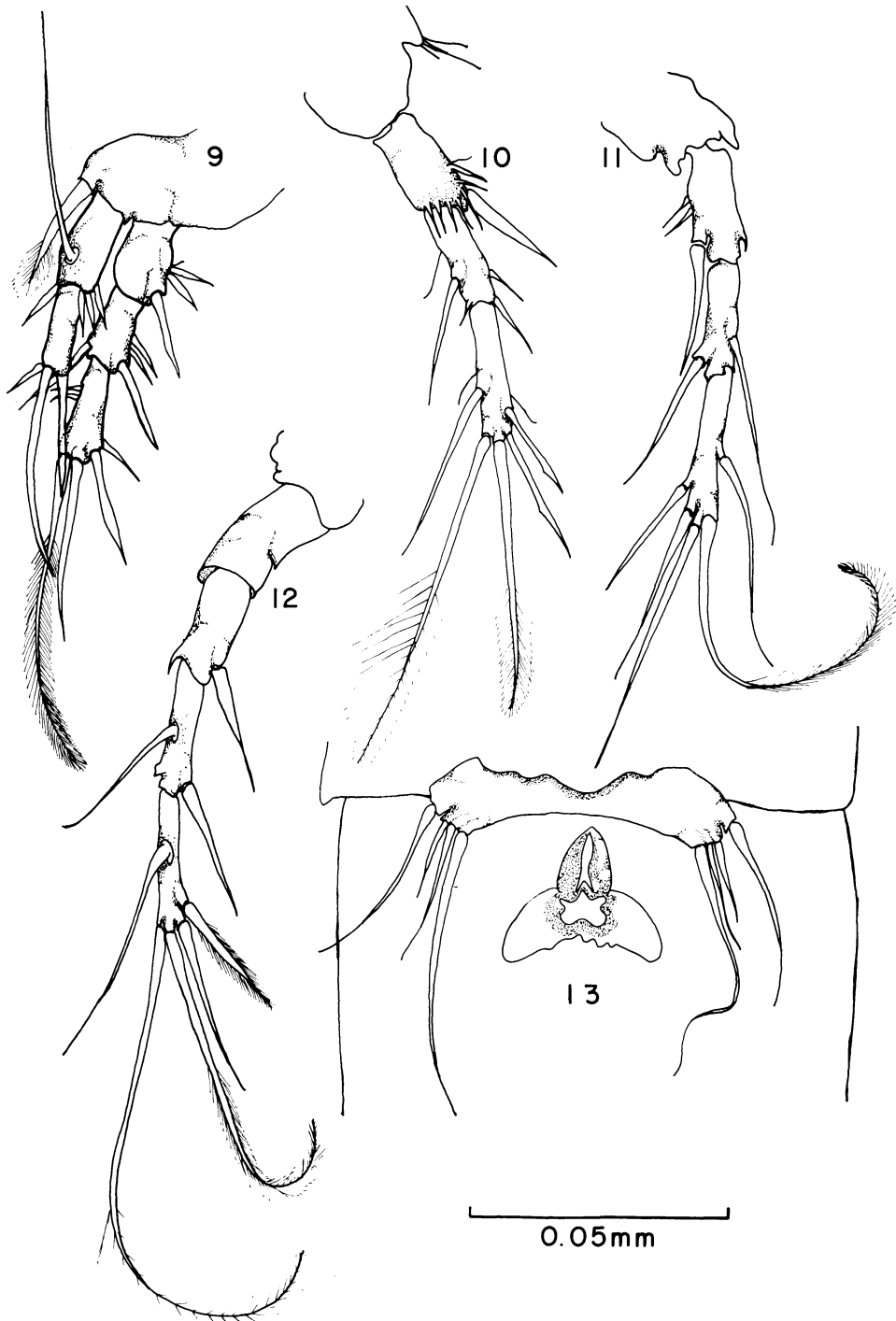


FIGS. 5-8. *Pyroclotodes desuramus* n.g., n. sp. ♀. Fig. 5. Md. Fig. 6. Mxl. Fig. 7. Mx. Fig. 8. Mxp.

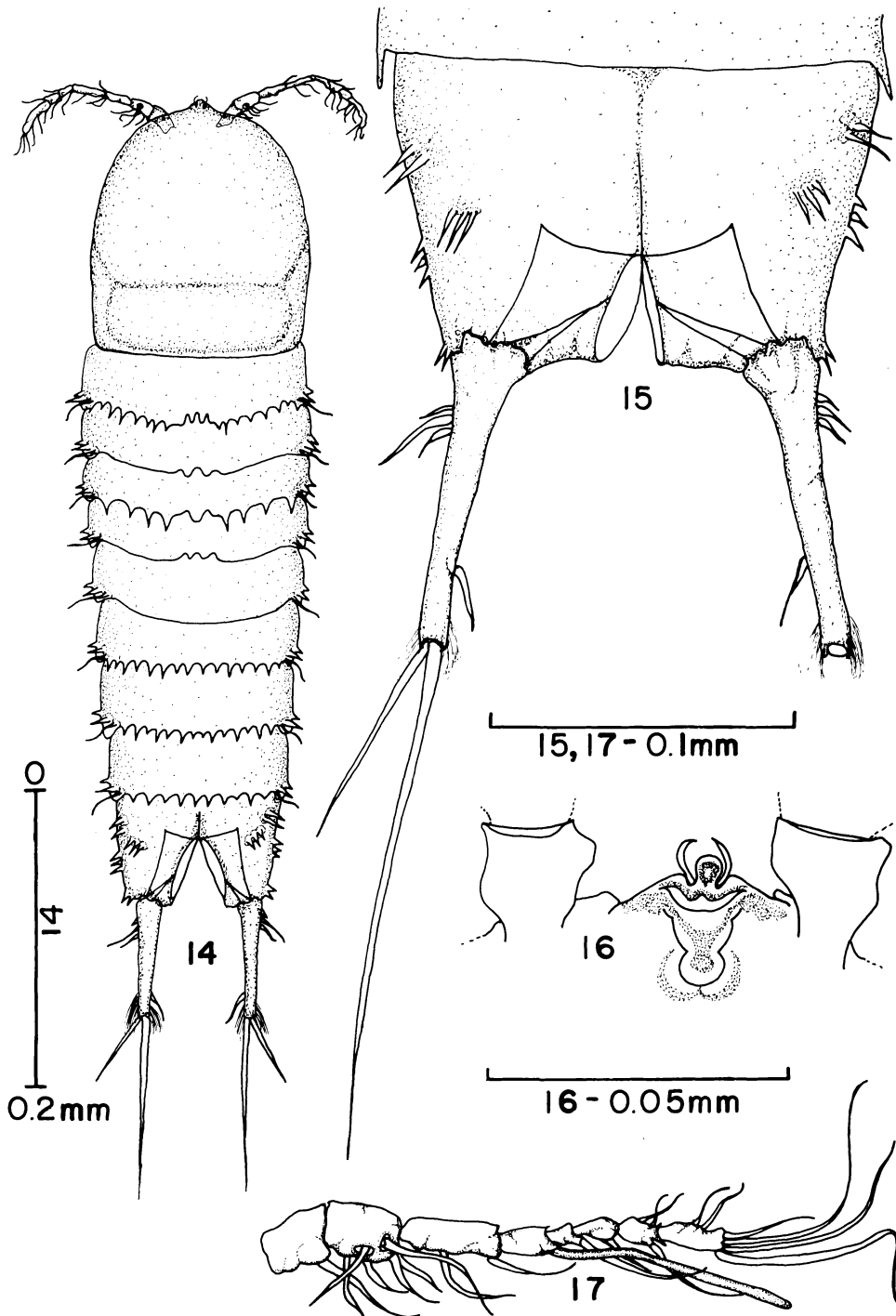
P_5 and genital field (Fig. 13): P_5 reduced to a single plate on each side with four setae; genital field perpendicularly oval at proximal end, widening and becoming horizontally oval at distal end with star-shaped opening.

Male: Unknown.

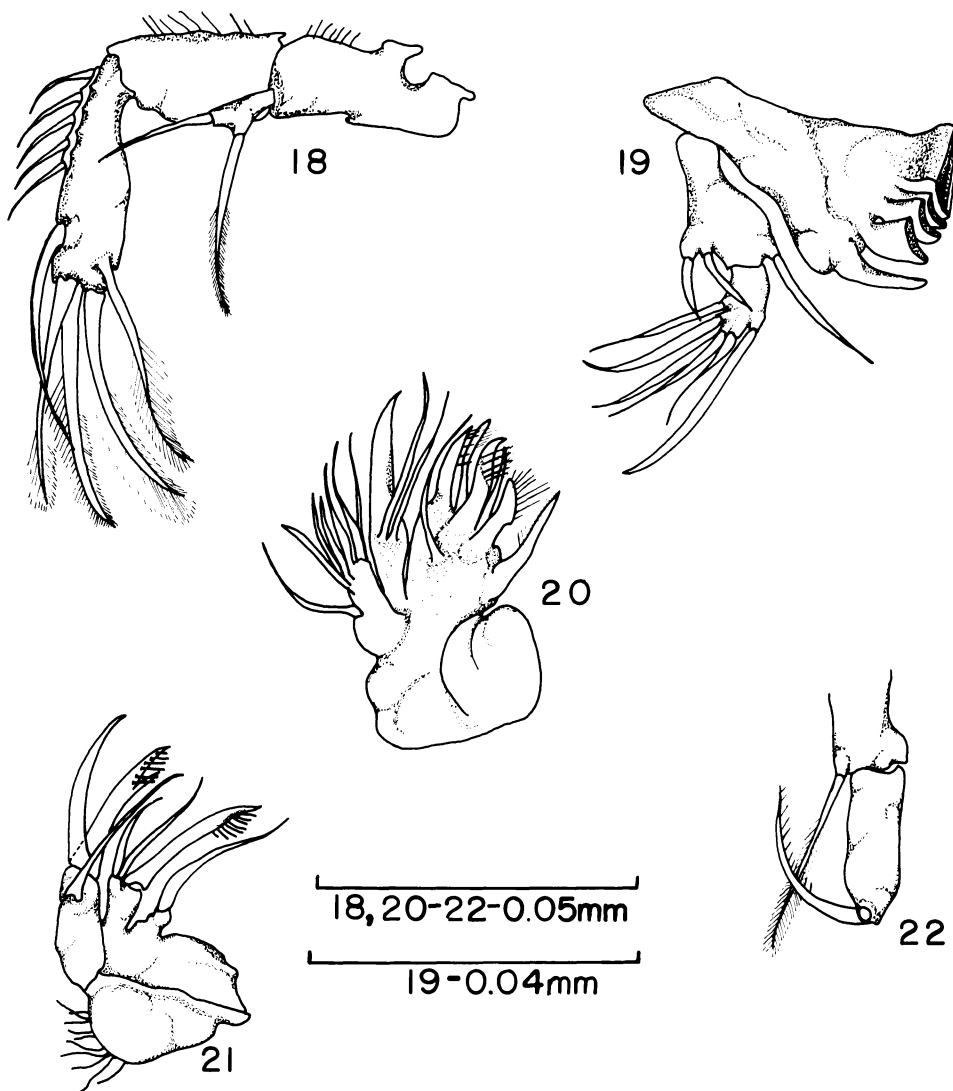
Etymology: The generic name *Pyroclotodes* (Gr. "pyro" = fire or flame) refers to the unique shape of the caudal rami and principal terminal setae. The specific epithet *desuramus* (L. "desum" = to be absent) refers to the "absent endopods" of the second, third, and fourth swimming legs.



FIGS. 9-13. *Pyroclotodes desuramus* n.g., n. sp. ♀. Fig. 9. P₁. Fig. 10. P₂. Fig. 11. P₃. Fig. 12. P₄. Fig. 13. P₅ and genital field.



FIGS. 14-17. *Mesocletodes commixtus* n. sp. ♀. Fig. 14. Habitus. Fig. 15. Last abdominal somite and caudal rami. Fig. 16. Rostrum. Fig. 17. A₁.



FIGS. 18-22. *Mesocletodes commixtus* n. sp. ♀. Fig. 18. A₂. Fig. 19. Md. Fig. 20. Mxl. Fig. 21. Mx. Fig. 22. Mxp.

Genus *Mesocletodes* Sars, 1909

Since Bodin's (1968) key to the genus, *M. farauni* Por, 1967 has been added.

Mesocletodes commixtus n. sp.
(Figs. 14-27)

Material: 5 ♀♀ (4 ♀♀ Station 11, 1 ♀ Station 7). Holotype 1 ♀, USNM No. 141779.

Type locality: EASTWARD Station 12641 (Station 11): 34° 14.4' N, 75° 49.5' W, depth 500 m.

Description

Female: Based on a non-ovigerous female, 0.55 mm. Body gradually tapering and ornamented with dentations (Fig. 14). Anal operculum devoid of ornamentation (Figs. 14–15). Caudal rami 4.7 times as long as wide at widest portion with lateral setae 2/7 the length, a median seta 5/7 the length, and two terminal setae, the innermost of which is about double the length of the outer (Fig. 15). Rostrum small with bulbous tip (Fig. 16).

A₁ (Fig. 17), 8-segmented, aesthetasc on fourth segment.

A₂ (Fig. 18), with basis, endopod 2-segmented, terminal segment with five setae. Exopod 1-segmented with two setae.

Md. (Fig. 19), cutting edge with one claw-shaped tooth, three single molar-teeth, and one flattened, elongate tooth which probably represents fusion of 2 or 3 molar teeth. Palp bi-articulate, first segment with two small outer and one inner seta, second segment with six setae.

Mxl. (Fig. 20), pre-coxa arthrite with six marginal spines and one surface seta. Coxa terminally with claw-like seta and two surface setae. Basis with six terminal setae, endopod represented by single seta. Exopod absent.

Mx. (Fig. 21), syncoxa with two endites, the proximal one with one non-plumose seta, the distal one with one strong spinulose seta and two smaller slender ones. Basis with two claws terminally. Endopod represented by one seta. Exopod absent.

Mxp. (Fig. 22), basis with plumose seta at inner distal corner. Endopod 1-segmented terminating in a claw.

P₁ (Fig. 23), with 3-segmented exopod, 2-segmented endopod. Setation as figured and listed below.

P₂ (Fig. 24), with 3-segmented exopod, 2-segmented endopod. Setation as figured and listed.

P₃ (Fig. 25) and P₄ (Fig. 26), with 3-segmented exopods and very small 1-segmented endopods. Setation as figured and listed.

Setal formula: *Mesocletodes commixtus* n. sp.

	Exopod	Endopod
P ₁	0.0.021	0.020
P ₂	0.1.222	1.120
P ₃	0.1.222	.020
P ₄	0.1.122	.020

P₅ (Fig. 27), rami separate. Baseoendopodite with three setae, the middle one longest. Exopod six times longer than wide with two inner, one terminal, and three outer setae.

Male: Unknown.

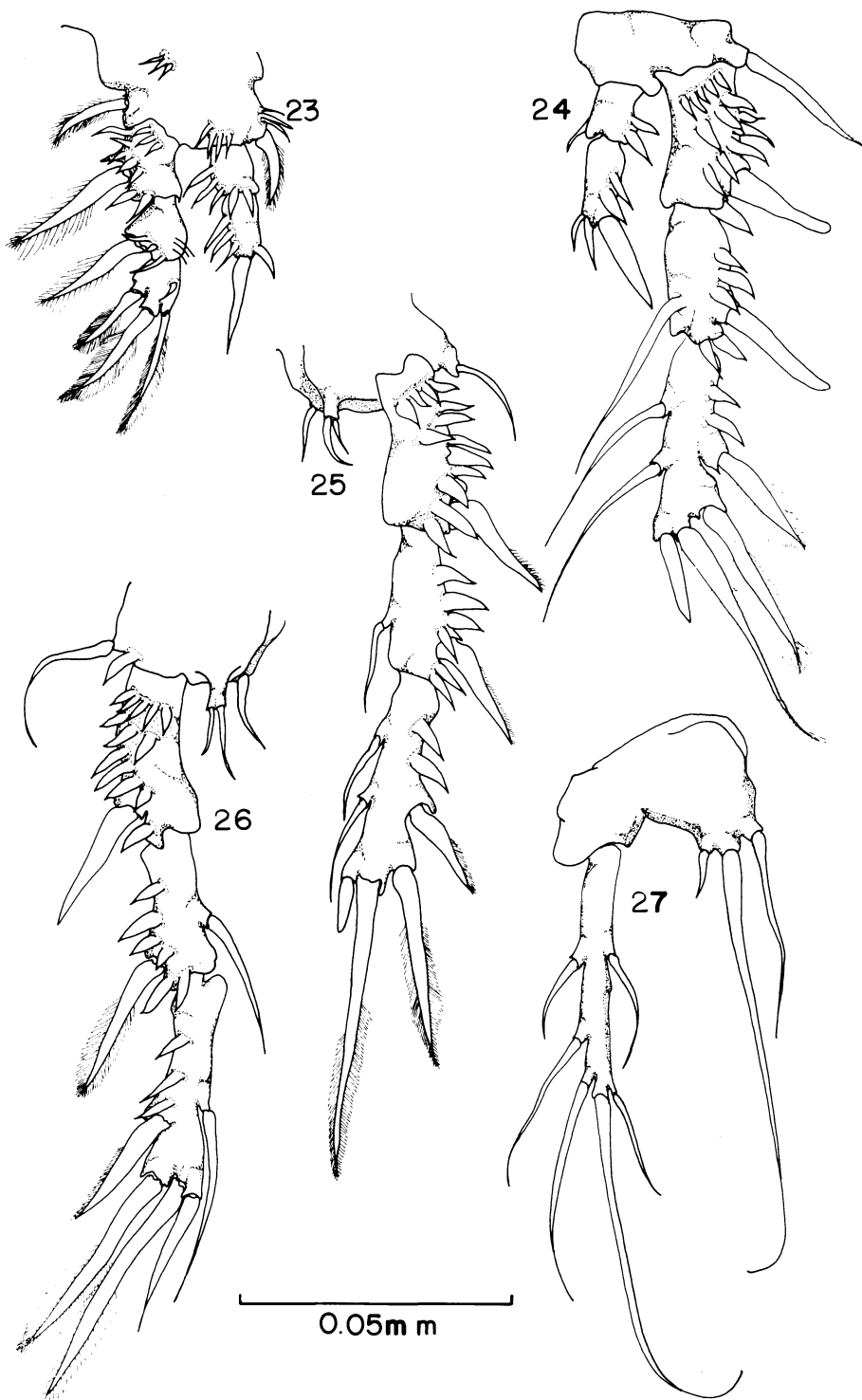
Etymology: The specific name *commixtus* (L. = "mixed") refers to the segmentation of the P₁–P₄ endopods; that is, being "mixed" with the P₁–P₂ endopods which are 2-segmented and the P₃–P₄ endopods which are 1-segmented.

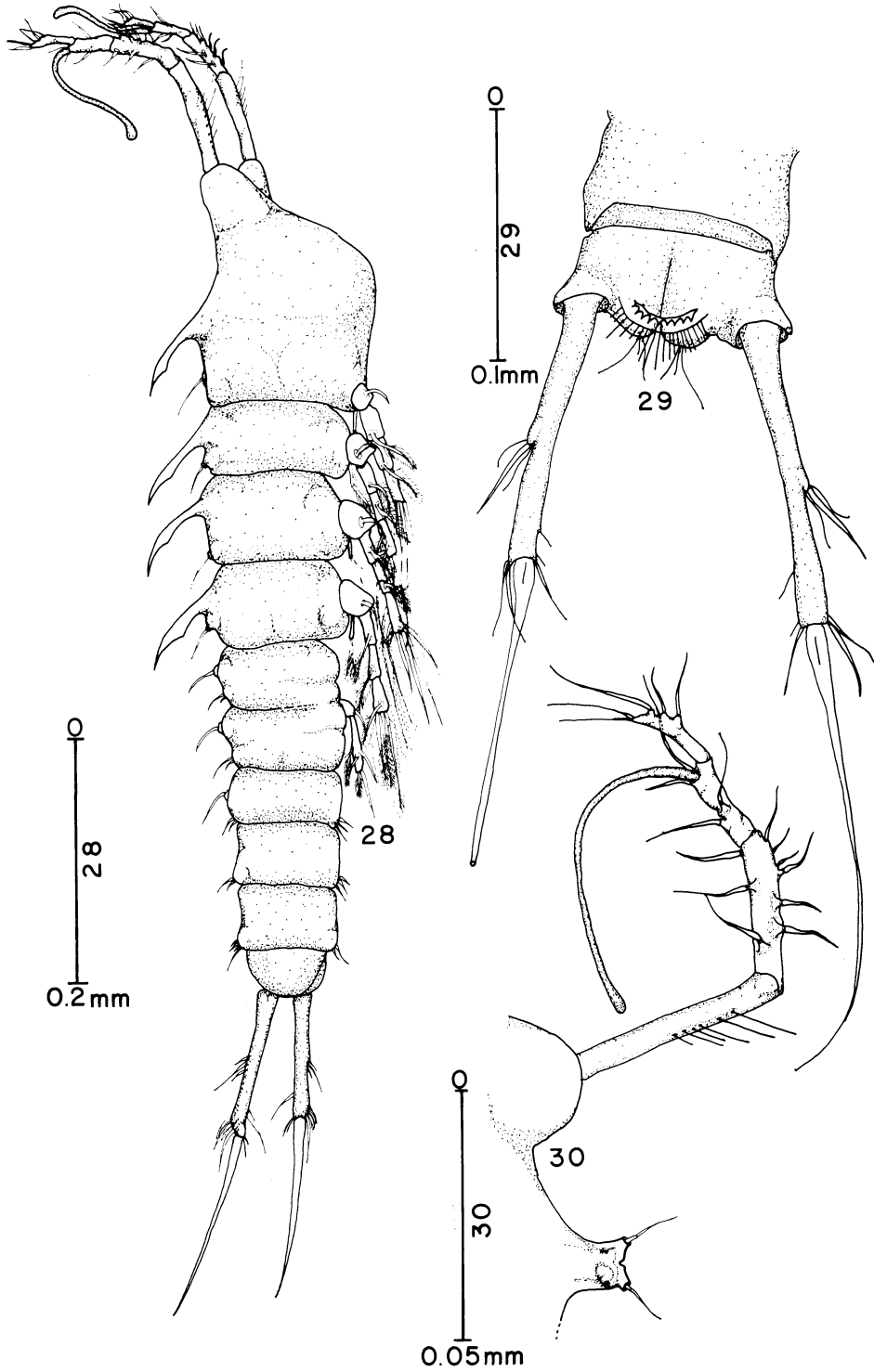
Discussion

Mesocletodes commixtus n. sp. is the only species within the genus that exhibits 2-segmented P₁ and P₂ endopods along with 1-segmented P₃ and P₄

→

FIGS. 23–27. *Mesocletodes commixtus* n. sp. ♀. Fig. 23. P₁. Fig. 24. P₂. Fig. 25. P₃. Fig. 26. P₄. Fig. 27. P₅.





endopods. It belong to the “*inermis*” species group (Bodin, 1968), that is, those without dorsal projections on the cephalothorax and on the last abdominal somite. Only one other “*inermis*” species, *M. langi* Smirnov, varies in endopod segmentation, having a 2-segmented P₁ endopod and 1-segmented P₂–P₄ endopods. *M. commixtus* differs further from *M. langi* in A₁ segmentation, number of setae on the terminal segment of the P₁ exopod, number of setae P₃–P₄ endopods, P₅ setation, and caudal rami length width ratio. Because of these important differences between *M. commixtus* and its most closely related species, *M. commixtus* is described here as a new species.

Key to Species of *Mesocletodes*
(Modified from Bodin, 1968)

1. Cephalothorax and last abdominal somite without dorsal projection—
“*inermis*” group 2
Cephalothorax and last abdominal somite with dorsal projection—“*abys-*
sicola” group 9
2. Endopod P₁ 2-segmented 3
Endopod P₁ 1-segmented 7
3. Endopod P₂–P₄ 2-segmented 4
Endopod P₂–P₄ 1-segmented *M. langi* Smirnov
Endopod P₂–P₄ 2-, 1-, and 1-segmented, respectively *M. commixtus* n. sp.
4. First segment endopod P₂–P₄ without inner seta 5
First segment endopod P₂–P₄ with inner seta 6
5. Last segment endopod P₁ with three setae *M. fladensis* Wells
Last segment endopod P₁ with four setae *M. glaber* Por
6. Last segment endopod P₃–P₄ with three setae *M. arenicola* Noodt
Last segment endopod P₃–P₄ with four setae *M. irrasus* (T. & A. Scott)
Last segment endopod P₃–P₄ with five setae *M. farauni* Por
7. Endopod P₂–P₄ 1-segmented 8
Endopod P₂–P₄ 2-segmented *M. guillei* Soyér
8. Inner expansion baseoendopodite P₅ ♀ with two setae *M. inermis* Sars
Inner expansion baseoendopodite P₅ ♀ with three setae
..... *M. markarovi* Smirnov
9. Endopod P₁ 2-segmented 10
Endopod P₁ 1-segmented 13
10. Endopod P₂–P₄ 2-segmented 11
Endopod P₂–P₄ 1-segmented *M. dolichurus* Smirnov
11. Caudal rami as long as last two abdominal somites 12
Caudal rami as long as last abdominal somite *M. brevifurca* (Lang)
12. Exopod P₅ ♀ with five setae *M. katharinae* Soyér
Exopod P₅ ♀ with six setae *M. monensis* (Thompson)
13. Inner expansion baseoendopodite P₅ normal 14
Inner expansion baseoendopodite P₅ with conical projection at base of
exopod *M. bathybia* Por
14. Endopod P₂–P₄ with two setae *M. abyssicola* (T. & A. Scott)
Endopod P₂–P₄ with three setae *M. soyeri* Bodin
Endopod P₂–P₄ with four setae *M. robustus* Por

←

FIGS. 28–30. *Dorsiceratus triarticulatus* n. sp. ♀. Fig. 28. Habitus. Fig. 29. Last abdominal somite and caudal rami. Fig. 30. Rostrum and A₁.

Family Ancorabolidae Sars, 1909
Genus *Dorsiceratus* Drzycimski, 1967

This is the first species to be added since Drzycimski (1967) created this genus.

Dorsiceratus triarticulatus n. sp.
(Figs. 28–42)

Material: 2 ♀♀, 1 ♂ (Station 11). Holotype 1 ♀, USNM No. 141780; paratype 1 ♂, USNM No. 141781.

Type locality: EASTWARD Station 12641 (Station 11); 34° 14.4' N, 75° 49.5' W, depth 500 m.

Female: based on a non-ovigerous female, 0.67 mm. Body typical for family, squared cephalothorax, swimming legs extended. Body dorsally with four paired processes. First thoracic segment fused to cephalon. One pair dorsal processes on fused first thoracic somite and cephalon, one additional pair on second, third, and fourth thoracic somites. Remainder of body without these processes. Each somite, except last three, ornamented with a pair of dorsal "sensillae" (Fig. 28). Anal operculum dentate and finely spinulose (Fig. 29). Caudal rami 7.3 times as long as wide with three lateral setae 1/2 the length, terminally with one large principal seta, two smaller lateral setae, a small median seta, and several spinules (Fig. 29).

A₁ (Fig. 30), 4-segmented, first segment greatly elongated, third segment bearing an aesthetasc.

A₂ (Fig. 31), greatly elongated, 2-segmented endopod, with four terminal setae, two of which are geniculate. Exopod represented by single seta.

Md. (Fig. 32), cutting edge with bi-dentate pars incisiva and 4-dentate lacinia. Palp 1-segmented with one inner, two terminal, and one outer seta.

Mxl. (Fig. 33), arthrite of pre-coxa with seven strong setae. Coxa with two setae terminally. Basis with two lateral setae. (The terminal end of the basis was broken in preparation and is not illustrated.)

Mx. (Fig. 34), syncoxa with two endites, each with two setae. Basis terminally with a claw and a strong seta. Endopod and exopod represented by a single seta each.

Mxp. (Fig. 35), basis elongate with one seta and four spinules at inner distal corner. Endopod with row of small spinules and terminating in claw.

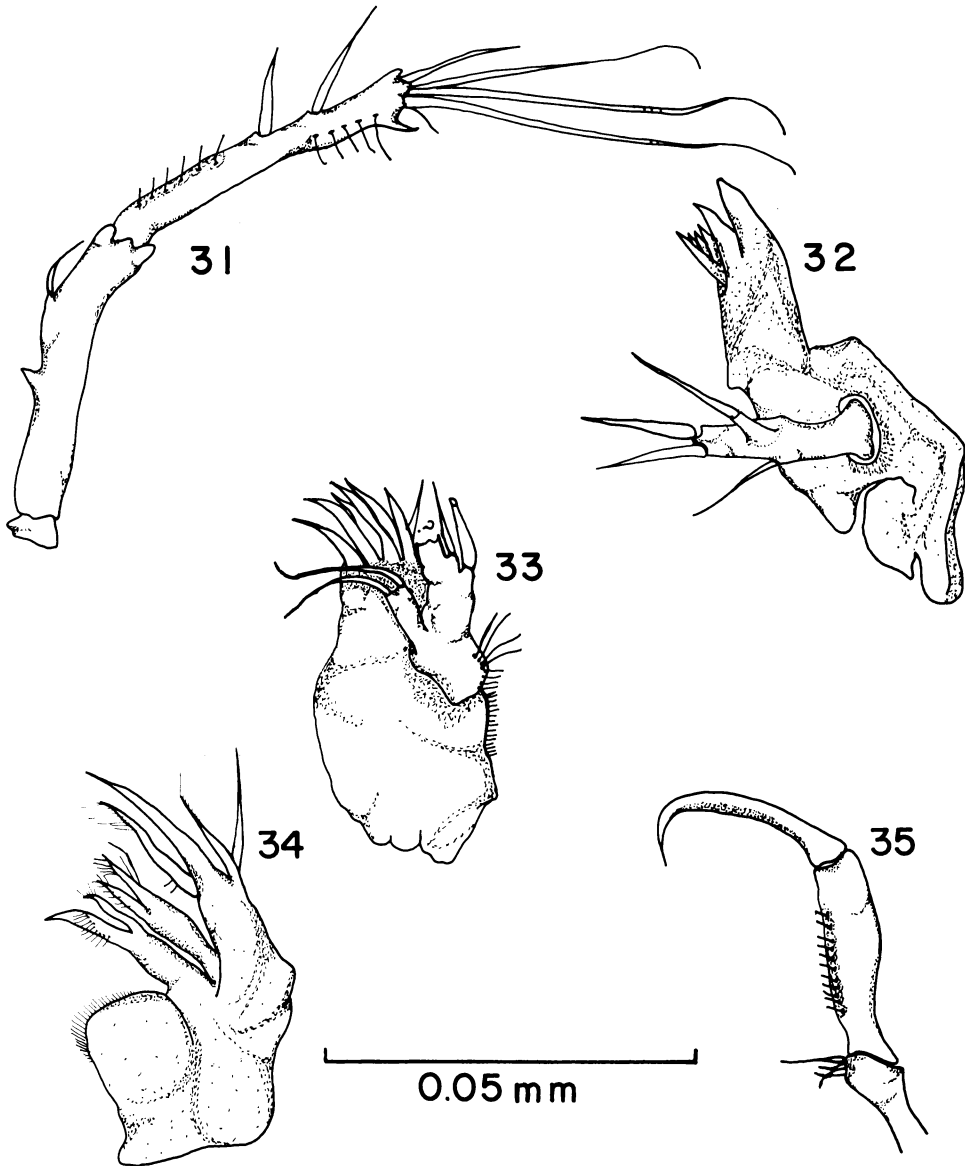
P₁ (Fig. 36), basis transversely elongate. Exopod 3-segmented, endopod 2-segmented. One female (the one figured) had but one seta terminally on the endopod; the other female and the male had two terminal setae on the endopod and such variation is indicated in the table that follows.

P₂ (Fig. 37), P₃ (Fig. 38), P₄ (Fig. 39) all with transversely elongated bases, 3-segmented exopods, and 2-segmented endopods. Setation as figured and listed below:

Setal formula: *Dorsiceratus triarticulatus* n. sp.

	Exopod	Endopod
P ₁	0.0.022	0.01(2)0
P ₂	0.1.122	0.010
P ₃	0.1.222	0.020
P ₄	0.1.122	0.020

P₅ (Fig. 40), rami separate. Inner expansion baseoendopodite devoid of setae. Exopod 7–8 times as long as wide with two inner, two terminal, and one outer seta.



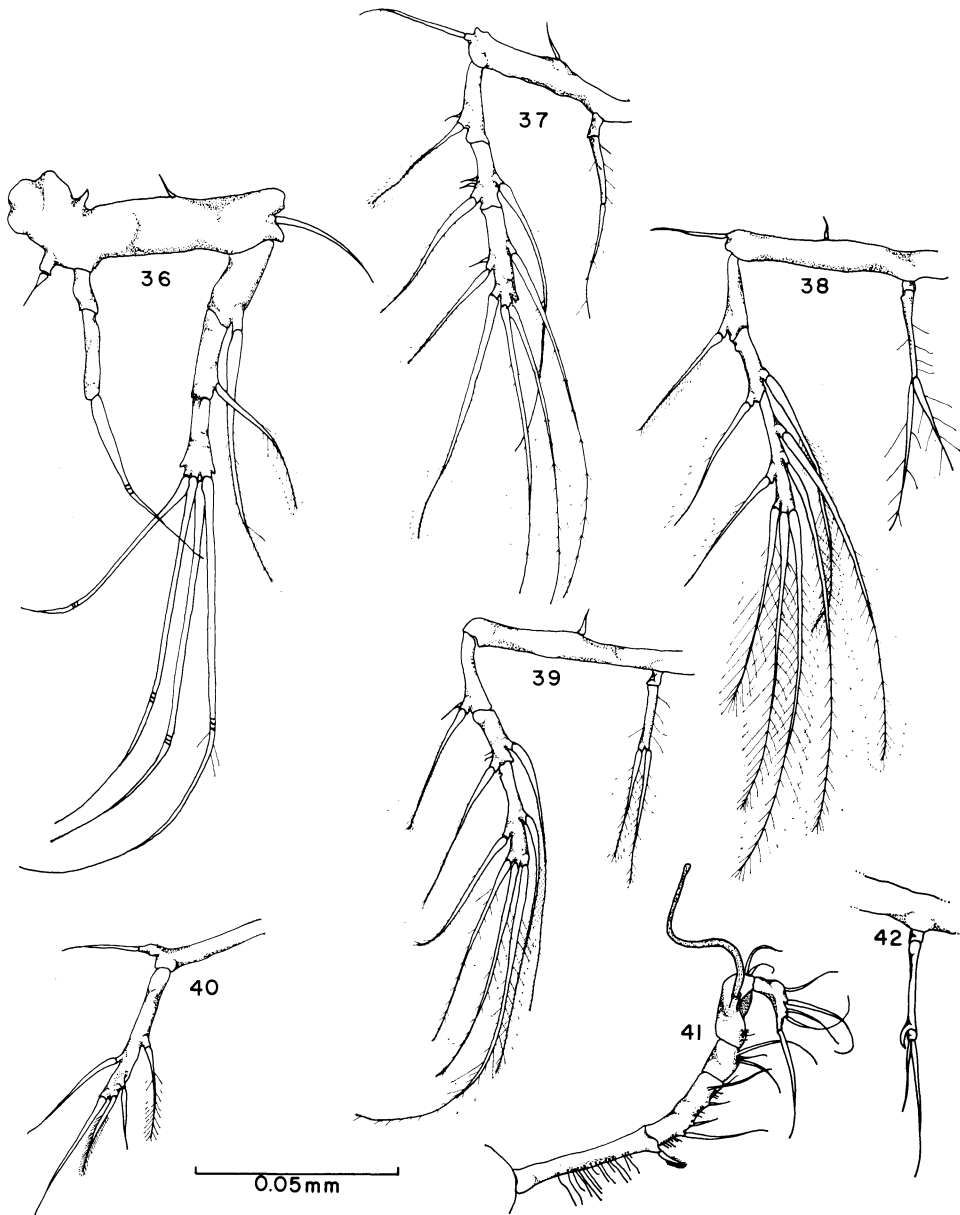
FIGS. 31-35. *Dorsiceratus triarticulatus* n. sp. ♀. Fig. 31. A₂. Fig. 32. Md. Fig. 33. Mxl. Fig. 34. Mx. Fig. 35. Mxp.

Male: Based on specimen 0.47 mm. The male differs from the female in size, A₁, and P₃ endopods.

A₁ (Fig. 41), 5-segmented and haplocer. Aesthetasc on expanded segment 4.

P₃ endopod (Fig. 42), 3-segmented, second segment outer distal corner, hook-shaped and overlapping third segment. Terminally with two setae.

Etymology: The specific name *triariculatus* refers to the 3-segmented P₁ exopod.



FIGS. 36-42. *Dorsiceratus triarticulatus* n. sp. Fig. 36. P₁ ♀. Fig. 37. P₂ ♀. Fig. 38. P₃ ♀. Fig. 39. P₄ ♀. Fig. 40. P₅ ♀. Fig. 41. A₁ ♂. Fig. 42. Enp. P₃ ♂.

Discussion

Although the segmentation of the P₁ exopod of *D. triarticulatus* n. sp. differs from that of *D. octocornis* Drzycimski (a character often used for generic separation within the family), there is little doubt that these two species belong to the same genus. Only in these two species are the dorsal processes restricted to the

fused cephalon—first thoracic somite and second, third, and fourth “free” thoracic somites. Furthermore, A_1 , A_2 , and the mouth parts are almost identical in the two species and the setal formulae (P_2 – P_4) are exactly the same for both. The distinguishing characters are: the segmentation of the P_1 exopod (2-segmented in *D. octocornis*, 3-segmented in *D. triarticulatus*); the ♀ and ♂ P_5 (fused in *D. octocornis* with eight setae, separate in *D. triarticulatus* with six setae); and the caudal rami (4–5 times as long as wide in *D. octocornis*, 7–8 times as long as wide in *D. triarticulatus*). Because of these taxonomically significant differences, *D. triarticulatus* is reported here as a new species.

With the description of *Dorsiceratus triarticulatus* and the addition of *Patagoniaella* Pallares, 1968, Drzycimski's (1967) key to the genera of Ancorabolidae is no longer inclusive and a new key to the family is presented.

Key to the Genera of the Family ANCORABOLIDAE including
the Known Species of *Dorsiceratus*

(Modified from Lang, 1965, Drzycimski, 1967, Pallares, 1968)

1. Basis P_1 transversely prolonged; last segment P_2 – P_4 with two outer setae Ancorabolinae Lang 2
Basis P_1 not transversely prolonged; last segment exopod P_2 – P_4 with two
outer setae Laophontinae Lang 7
2. Endopod P_1 2-segmented 3
Endopod P_1 1-segmented *Echinossyllus* Sars
3. Cephalothorax and body without dorsal processes 4
Cephalothorax and/or body with dorsal processes 5
4. Exopod P_1 3-segmented; middle segment exopod P_2 – P_4 without inner seta;
exopod P_5 ♀ with three setae *Echinocletodes* Lang
Exopod P_1 2-segmented; middle segment exopod P_2 – P_4 with inner seta;
exopod P_5 ♀ with five setae *Arthroposyllus* Sars
5. More than four dorsal processes; distributed on cephalothorax, thorax,
and abdomen 6
Four dorsal processes; one each on cephalon and first three free thoracic
somites *Dorsiceratus* Drzycimski 9
6. Body except last two somites with several processes, some of which are
forked, rostrum pointed in center and squared at edges
..... *Ancorabolus* Norman
Body except last three somites with pair of horn-like processes; anterior
edge of which with comb-like series of spinules, rostrum absent
..... *Ceratonotus* Sars
7. Exopod P_1 2-segmented; endopod P_4 absent 8
Exopod P_1 3-segmented; endopod P_2 – P_4 present *Laophontodes* T. Scott
8. Endopod P_2 – P_3 (♀ and ♂) present *Patagoniaella* Pallares
Endopod P_2 – P_3 (♀), endopod P_2 (♂) absent *Paralaophontodes* Lang
9. Exopod P_1 3-segmented; P_5 with separate rami *D. triarticulatus* n. sp.
Exopod P_1 2-segmented; baseoendopodite and exopod P_5 fused .. *D. octocornis*

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A NEW CAVERNICOLOUS SPECIES OF *APOCHTHONIUS* (CHELONETHIDA: CHTHONIIDAE) FROM THE WESTERN UNITED STATES WITH SPECIAL REFERENCE TO TROGLOBITIC TENDENCIES IN THE GENUS¹

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BENEDICT, E. M. & MALCOLM, D. R. 1973. A new cavernicolous species of *Apochthonius* (Chelonethida: Chthoniidae) from the western United States with special reference to troglobitic tendencies in the genus. *Trans. Amer. Micros. Soc.*, 92: 620-628. A new species of pseudoscorpion, *Apochthonius malheuri* n. sp., is described from a Pleistocene lava tube in southeastern Oregon. The first species of the genus to be reported from a cave west of Missouri and Arkansas, the organism is compared to congeneric epigeal and cavernicolous species in terms of the following troglobitic modifications: depletion of pigment, loss of photoreceptors, attenuation, and gigantism. Aspects of habitat and life cycles are considered. The genus *Apochthonius* is redefined on the basis of study of the types of all known species.

The common North American pseudoscorpion genus *Apochthonius* Chamberlin was established in 1929 for two four-eyed epigeal species, the widespread *Chthonius moestus* Banks, 1891 and a western species, *Apochthonius intermedius* Chamberlin, 1929. Subsequently, the following epigeal species were added: *A. occidentalis* Chamberlin, 1929 from Oregon; *A. magnanimus* Hoff, 1956 from New Mexico; and *A. minimus*, *A. irwini*, and *A. maximus*, all described by Schuster (1966), from the Pacific Coast. Until Muchmore (1963) re-examined the types of the eyeless *Chthonius coecus* Packard, 1884 and verified its earlier tentative determination as *Apochthonius* (Chamberlin & Malcolm, 1960), there was no cavernicolous species included within the genus. Six additional eastern cave species exhibiting variable eye development have since been described by

¹The authors acknowledge the use of research facilities at the Malheur Environmental Field Station, near Burns, Oregon. Appreciation is also expressed to Charles L. Stephens, Portland, Oregon for his technical assistance; to Quentin D. Clarkson of Portland State University for statistical assistance; to Nancy Koroloff for computer programming; and to John Cooke of the American Museum of Natural History, to Herbert Levi of the Museum of Comparative Zoology, Cambridge, to William B. Muchmore of the University of Rochester, and to Robert O. Schuster of the University of California at Davis for the loan of specimens.