

## Siphonostomatoid copepods from a deep-water hydrothermal zone in the Lau Basin, South Pacific

by Arthur G. HUMES

**Abstract.** — Three siphonostomatoid copepods are reported from a deep-water vent area in the Lau Basin, west of the Tonga islands. *Stygiopontius lauensis* n. sp., and *Stygiopontius brevispina* n. sp. are differentiated according to a key provided to the species of *Stygiopontius*. *Chasmatoptentius thescalus* Humes, 1990, has been known thus far only from the Mariana Back-Arc Basin.

**Résumé.** — Trois copépodes siphonostomatoides ont été recueillis pendant l'expédition BIOLAU, sur une ride en eau profonde dans le Bassin de Lau, à l'ouest des Îles Tonga. Les caractères distinctifs de *Stygiopontius lauensis* n. sp. et *Stygiopontius brevispina* n. sp. apparaissent dans une clef récapitulative des 14 espèces de *Stygiopontius*. *Chasmatoptentius thescalus* Humes, 1990, n'était connu jusqu'à présent que du Bassin de Mariana Back-Arc.

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Poecilostomatoid and siphonostomatoid copepods have been reported from hydrothermal vents in the mid-Atlantic (HUMES, 1987 : 723), the Gulf of Mexico (HUMES, 1988a, 1989a), the eastern Pacific (HUMES, 1984, 1987, 1988b, c, d, 1989b, c, 1990a, 1990c ; HUMES and DOJIRI, 1980a, b), and in the Mariana Back-Arc Basin (HUMES, 1990b). Siphonostomatoids are particularly abundant at these sites.

During the BIOLAU expedition organized by the Centre de Brest (IFREMER, Institut Français pour l'Exploitation de la Mer), 12-27 May 1989, to the Valu Fa Ridge, Lau Basin, Anne-Marie ALAYSE chief scientist, several samples of copepods were collected. These collections were sent to me for examination by the Centre National de Tri d'Océanographie Biologique (CENTOB, IFREMER).

The copepods were studied in lactic acid following the method described by HUMES and GOODING (1964). All drawings were made with the aid of a camera lucida. In the explanations of the figures the letter after each figure refers to the scale at which it was drawn. The abbreviations used are : A<sub>1</sub> = first antenna, A<sub>2</sub> = second antenna, MXPD = maxilliped, and P<sub>1</sub> = leg 1.

SIPHONOSTOMATOIDA Thorell, 1859

DIRIVULTIDAE Humes and Dojiri, 1980

STYGIOPONTIUS Humes, 1987

*Stygiopontius lauensis* n. sp.

(Figs. 1-3)

TYPE MATERIAL. — 34 ♀♀, 5 ♂♂ from depth of 1,750 m, BIOLAU 10, station 2, Vailili, Lau Basin, west of Tonga islands, 23°13' S, 176°38' E, 22 May 1989. Holotype ♀ (MNHN CP578), allotype (MNHN CP579), and 28 paratypes (25 ♀♀), 3 ♂♂ (MNHN CP580) deposited in the Muséum national d'Histoire naturelle, Paris; 5 paratype ♀♀ in the National Museum of Natural History, Smithsonian Institution, Washington. Remaining paratypes (dissected) in the collection of the author.

OTHER SPECIMENS (all from type locality).— 46 ♀♀, 20 ♂♂, BIOLAU 09, 21 May 1989; 48 ♀♀, 29 ♂♂, BIOLAU 11, 23 May 1989; 2 ♀♀, BIOLAU 06, 18 May 1989; 1 ♀, BIOLAU 12, 24 May 1989.

DESCRIPTION OF FEMALE

Body (fig. 1a) with moderately broad prosome. Length 0.88 mm (0.84-0.92 mm) and greatest width 0.48 mm (0.46-0.50 mm), based on 10 specimens in lactic acid. Greatest dorsoventral thickness 0.28 mm. Epimera of segment bearing leg 1 (fused with head) acutely pointed posteriorly, those of segment bearing leg 2 less pointed, those of segment bearing leg 3 truncate, and those of segment bearing leg 4 bluntly pointed. Ratio of length to width of prosome 1.26 : 1. Ratio of length of prosome to that of urosome 1.89 : 1.

Segment bearing leg 5 (fig. 1b) 70 × 103 μm. Genital segment in dorsal view 125 μm long, 146 μm wide in anterior half with pair of lateral spiniform processes, narrower in posterior half, 108 μm wide. Genital areas, both bearing 1 seta (fig. 1c), situated dorsolaterally near level of spiniform processes. Three postgenital segments from anterior to posterior 49 × 88, 36 × 79, and 44 × 70 μm. Anal segment (fig. 1d) with small posteroventral spines.

Caudal ramus (fig. 1e) elongate, 70 × 28 μm, ratio 2.5 : 1. Outer lateral seta 83 μm, dorsal seta 68 μm, outermost terminal seta 55 μm, innermost terminal seta 99 μm, and 2 long median terminal setae 285 μm (outer) and 520 μm (inner). Longest terminal seta with few indistinct lateral setules distally, other setae smooth. Few minute spinules at distal outer corner of ramus.

Dorsal surface of prosome and segment bearing leg 5 without sensilla. Dorsal surface of genital and postgenital segments with refractile points (fig. 1b).

Egg sac (fig. 1f) 363 × 230 μm, with 2 eggs 234 × 230 μm.

Rostrum not developed (fig. 2a). First antenna (fig. 1g) 300 μm long, 10-segmented. Lengths of segments (measured along their posterior nonsetiferous margins) : 57 (96 μm along anterior margin), 19, 9, 31, 23, 23, 21, 21, 23, and 39 μm, respectively. Formula for armature : 15, 8, 2, 4, 2, 2, 2, 2 + 1 aesthete, and 12. All setae smooth.

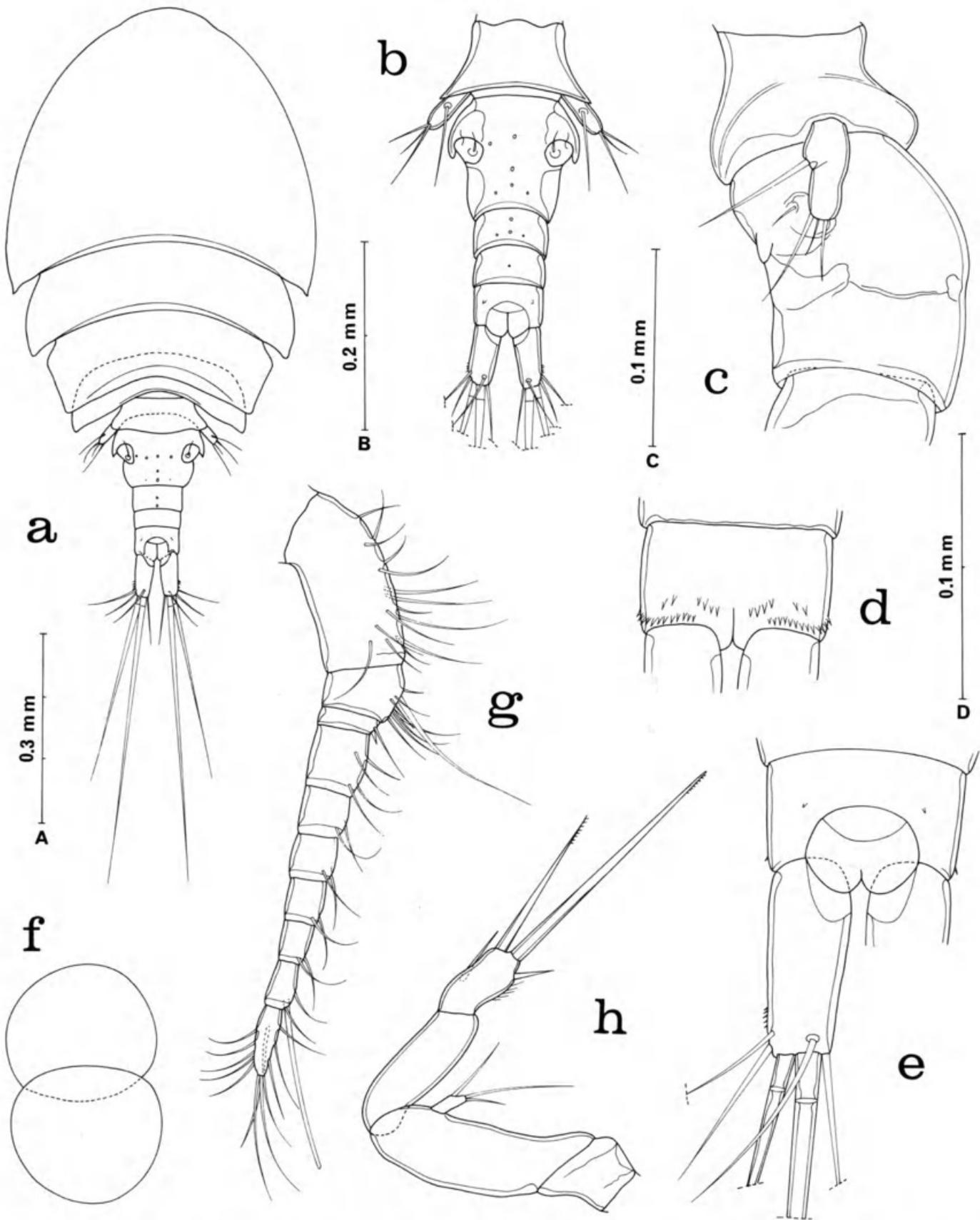


FIG. 1. — *Stygiopontius lauensis* n. sp., female : a, dorsal (scale A) ; b, urosome, dorsal (B) ; c, segment bearing leg 5 and genital segment, lateral (C) ; d, anal segment, ventral (D) ; e, anal segment and caudal ramus, dorsal (D) ; f, egg sac, dorsal (A) ; g, first antenna, posteroventral (C) ; h, second antenna, antero-inner (D).

Second antenna (fig. 1h) with short coxa and elongated basis, both unornamented. Exopod small,  $11 \times 5 \mu\text{m}$ , bearing 3 setae. Endopod with elongate smooth first segment. Second segment shorter with outer and inner short smooth setae and 2 unequal long spinelike setae (longer seta  $96 \mu\text{m}$ ) having minute subterminal spinules; segment with few outer setules.

Oral cone (siphon) (fig. 2a) short. Mandible (fig. 2b) with long slender blade  $96 \mu\text{m}$ . First maxilla (fig. 2c), second maxilla (fig. 2d), and maxilliped (fig. 2e) similar to those of congeners, for example, *Stygiopontius hispidulus* Humes, 1987. Claw of maxilliped  $80 \mu\text{m}$  long.

Legs 1-4 (figs. 2f-i) with 3-segmented rami, except for 2-segmented endopod in leg 4. Formula for armature (roman numerals representing spines, arabic numerals indicating setae) as follows :

P <sub>1</sub>	coxa 0-1	basis 1-I	exp I-1; I-1; II, I, 4
			enp 0-1; 0-2; 1, 2, 3
P <sub>2</sub>	coxa 0-1	basis 1-0	exp I-1; I-1; II, II, 4
			enp 0-1; 0-2; 1, 2, 3
P <sub>3</sub>	coxa 0-0	basis 1-0	exp I-1; I-1; II, II, 5
			enp 0-0; 0-2; 1, I, 3
P <sub>4</sub>	coxa 0-0	basis 1-0	exp I-1; I-1; II, II, 4
			enp 0-0; I, 1

Coxa of legs 1 and 2 with inner seta but unarmed in legs 3 and 4. Basis of leg 1 bluntly pointed with inner barbed spine  $25 \mu\text{m}$  long. Leg 3 with third segment of endopod having 1, I, 3. Leg 4 with exopod  $180 \mu\text{m}$  long. Endopod (fig. 3a) with unarmed first segment  $29 \times 16 \mu\text{m}$ . Second segment  $55 \times 18 \mu\text{m}$  with terminal barbed spine  $76 \mu\text{m}$ , inner plumose seta  $100 \mu\text{m}$ ; inner and outer margins with few setules.

Leg 5 (figs. 1c, 3b)  $52 \times 20 \mu\text{m}$ , with 2 segments only partly separated. Seta on first segment  $62 \mu\text{m}$ . Terminal setae on second segment 45, 18, and  $34 \mu\text{m}$  from dorsal to ventral. All setae smooth.

Leg 6 probably represented by seta on genital area (fig. 1b).

Color unknown.

#### DESCRIPTION OF MALE

Body (fig. 3c) with prosome more rounded anteriorly than in female. Length  $0.65 \text{ mm}$  ( $0.64\text{-}0.66 \text{ mm}$ ) and greatest width  $0.33 \text{ mm}$  ( $0.32\text{-}0.33 \text{ mm}$ ). Ratio of length to width of prosome 1.30 : 1. Ratio of length of prosome to that of urosome 1.94 : 1.

Segment bearing leg 5 (fig. 3d)  $55 \times 78 \mu\text{m}$ . Genital segment  $94 \times 110 \mu\text{m}$  with gently rounded margins. Four postgenital segments  $39 \times 75$ ,  $31 \times 62$ ,  $20 \times 56$ , and  $35 \times 55 \mu\text{m}$ . First postgenital segment with pair of conspicuous posterolateral spiniform processes (fig. 3d, e). Anal segment with spines as in female.

Caudal ramus resembling that of female, but shorter,  $42 \times 21 \mu\text{m}$ , ratio 2 : 1.

Urosome lacking refractile points seen in female.

Rostral area as in female. First antenna (fig. 3f) geniculate, 12-segmented. Lengths of segments (measured along their posterior nonsetiferous margins) : 12, 5, 38, 10, 9, 10, 28, 22, 21, 46, 34, and  $29 \mu\text{m}$ , respectively. Formula for armature : 1, 2, 12, 8, 2, 2, 4, 2, 2, 1, 1 aesthete, and 10. Fifth segment with large finely barbed spiniform seta  $28 \mu\text{m}$  and shorter bifurcate seta  $7 \mu\text{m}$  long (fig. 3g).

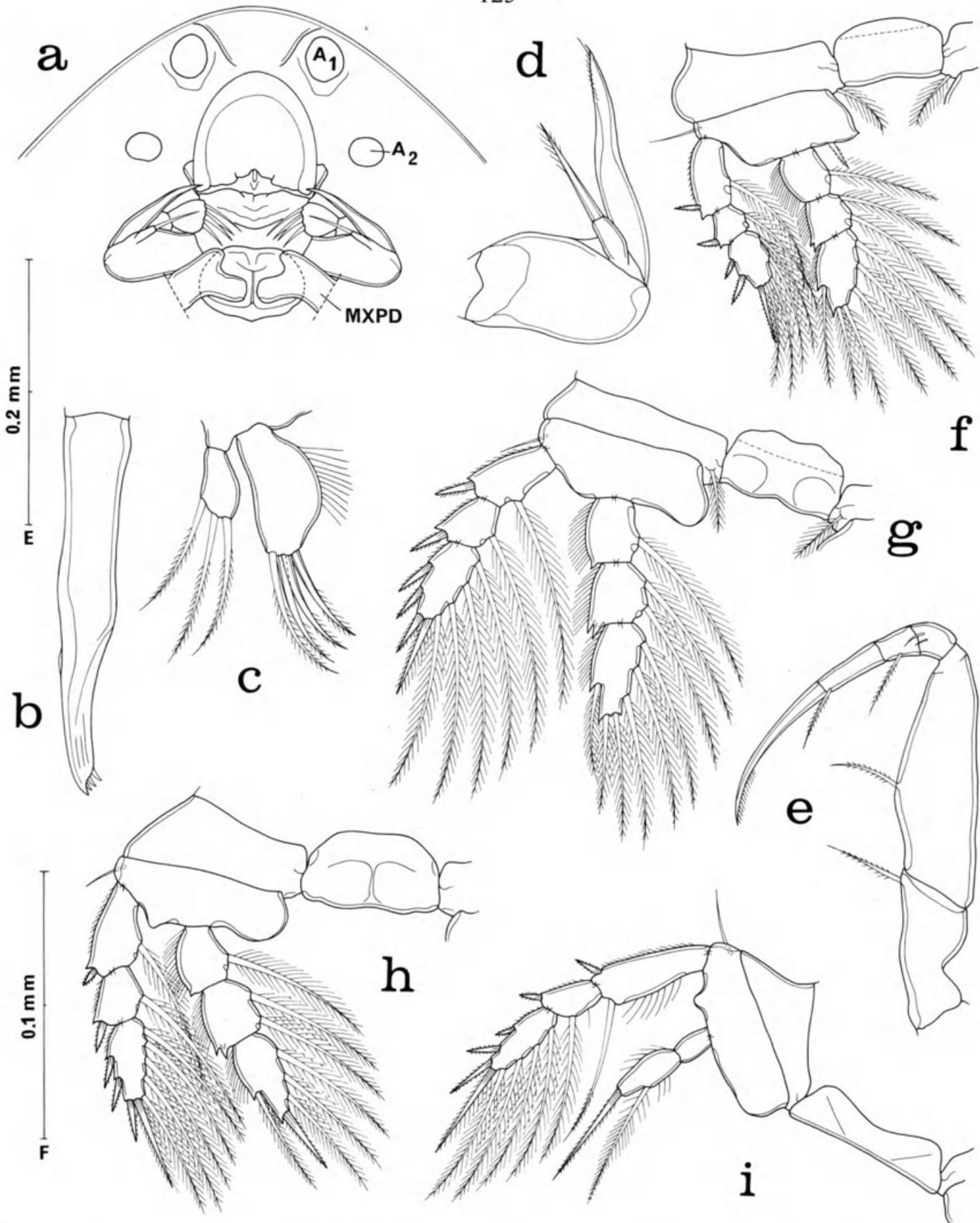


FIG. 2. — *Stygiopontius lauensis* n. sp., female : a, middle region of cephalosome, ventral (scale E); b, mandible, posterior (F); c, first maxilla, anterior (D); d, second maxilla, posterior (D); e, maxilliped, posterior (C); f, leg 1 and intercoxal plate, anterior (E); g, leg 2 and intercoxal plate, anterior (E); h, leg 3 and intercoxal plate, anterior (E); i, leg 4 and intercoxal plate, anterior (E).

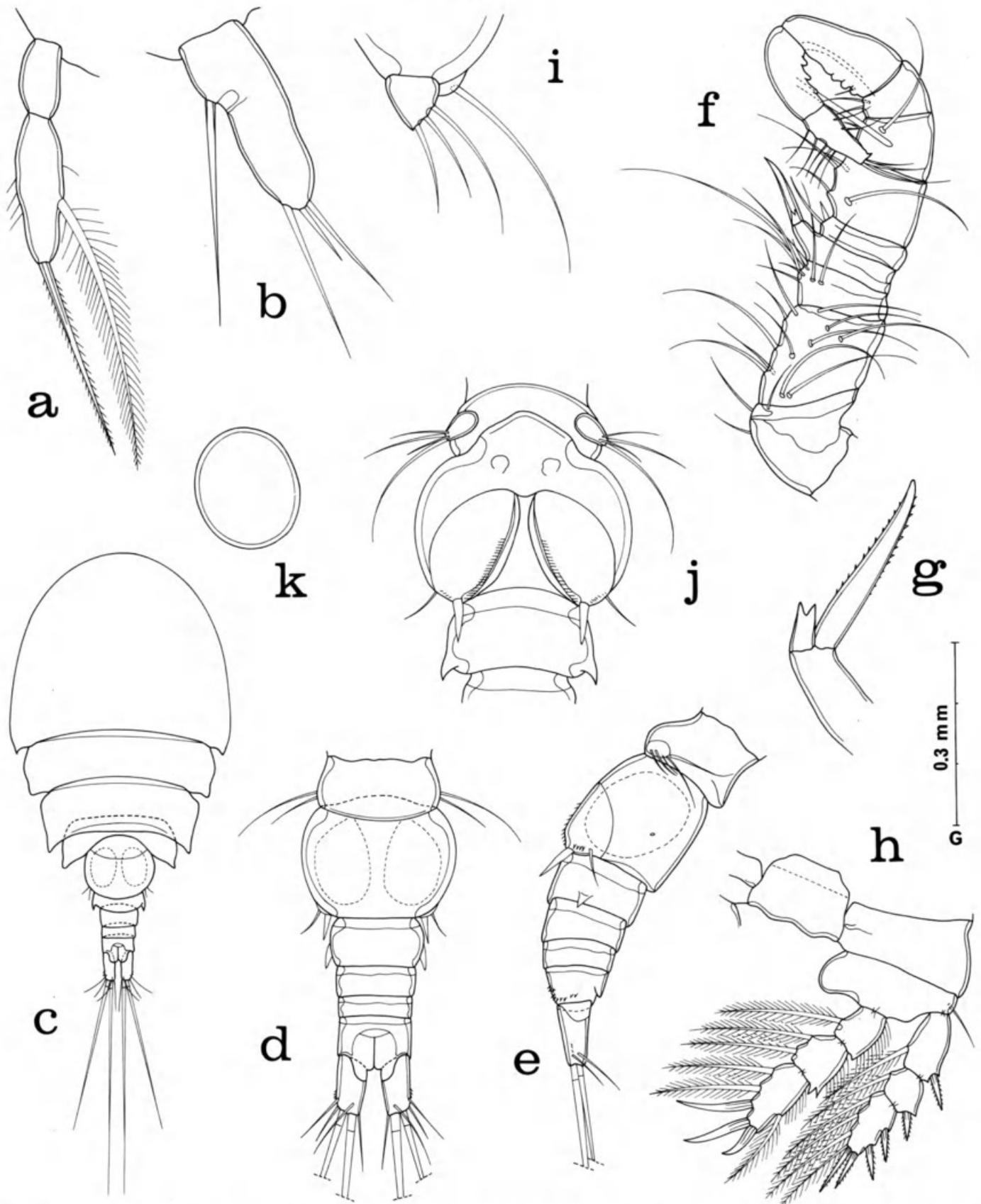


FIG. 3. — *Stygiopontius lauensis* n. sp. Female : a, endopod of leg 4, anterior (scale D) ; b, leg 5, dorsal (F). Male : c, dorsal (A) ; d, urosome, dorsal (E) ; e, urosome, lateral (E) ; f, first antenna, anterodorsal (D) ; g, spiniform setae on segment 5 of first antenna, posteroventral (G) ; h, leg 2 and intercoxal plate, anterior (E) ; i, leg 5, ventral (F) ; j, segment bearing leg 5, genital segment, and first postgenital segment, ventral (C) ; k, spermatophore, attached to female, ventral (D).

Second antenna, oral cone, mandible, first maxilla, second maxilla, and maxilliped like those of female.

Legs 1-4 similar to those of female, but all legs lacking inner seta on coxa. Leg 2 with sexual dimorphism in third segment of endopod, formula 1, II, I, 2 (fig. 3h).

Leg 5 (fig. 3i) situated ventrally (fig. 3j) with minute subtriangular free segment  $13 \times 13 \mu\text{m}$ , bearing 3 setae 42, 18, and  $21 \mu\text{m}$  from outer to inner, and lacking 2 innermost setae seen in congeners. Adjacent seta  $65 \mu\text{m}$ . All setae smooth.

Leg 6 (fig. 3e, j) posteroventral flap on genital segment ornamented with minute spinules and bearing stout spine  $25 \mu\text{m}$  and slender seta  $24 \mu\text{m}$ , both smooth.

Spermatophore (fig. 3k), attached to female, oval,  $43 \times 39 \mu\text{m}$ .

Color unknown.

ETYMOLOGY. — The specific name refers to the locality where found.

#### REMARKS

*Stygiopontius lauensis* may be differentiated from its congeners by the use of the key below.

One character of *S. lauensis* is unusual : the absence of two innermost setae on the free segment of leg 5 in the male (these setae being present in the other male congeners known, namely, *S. quadrispinosus*, *S. verruculatus*, *S. paxillifer* and *S. appositus*).

#### *Stygiopontius brevispina* n. sp.

(Figs. 4-6)

TYPE MATERIAL. — 12 ♂♂ from depth of 1,750 m, BIOLAU 10, station 2, Vailili, Lau Basin, west of Tonga islands,  $23^{\circ}13' \text{ S}$ ,  $176^{\circ}38' \text{ E}$ , 22 May 1989, 3 ♂♂, BIOLAU 11, same depth and locality, 23 May 1989. Holotype ♀ (MNHN CP582), allotype (MNHN CP583), and 7 paratypes (7 ♀♀ (MNHN CP584), 1 ♂ (MNHN CP585)) deposited in the Muséum national d'Histoire naturelle, Paris. Remaining paratypes (dissected) in the collection of the author.

OTHER SPECIMENS (all from type locality). — 4 ♀♀, BIOLAU 09, 21 May 1989 ; 21 ♀♀, 3 ♂♂ (designated as allotype and paratypes), BIOLAU 11, 23 May 1989 ; 4 ♀♀, BIOLAU 06, 18 May 1989 ; 1 ♀, BIOLAU 12, 24 May 1989.

#### DESCRIPTION OF FEMALE

Body (fig. 4a) with moderately broad prosome. Length 1.25 mm (1.20-1.31 mm) and greatest width 0.61 mm (0.59-0.63 mm), based on 8 specimens in lactic acid. Greatest dorsoventral thickness 0.36 mm. Epimera of segments bearing legs 1-4 rounded. Ratio of length to width of prosome 1.36 : 1. Ratio of length prosome to that of urosome 1.63 : 1.

Segment bearing leg 5 (fig. 4b)  $132 \times 176 \mu\text{m}$ . Genital segment in dorsal view  $297 \mu\text{m}$  long, incised medially, anterior part of segment  $287 \mu\text{m}$  wide, posterior part  $156 \mu\text{m}$ , both parts with rounded lateral margins. Genital areas situated dorsolaterally near middle of segment, both with single minute seta (fig. 4b, c). Three postgenital segments from anterior to posterior  $88 \times 131$ ,  $65 \times 109$ , and  $68 \times 97 \mu\text{m}$ .

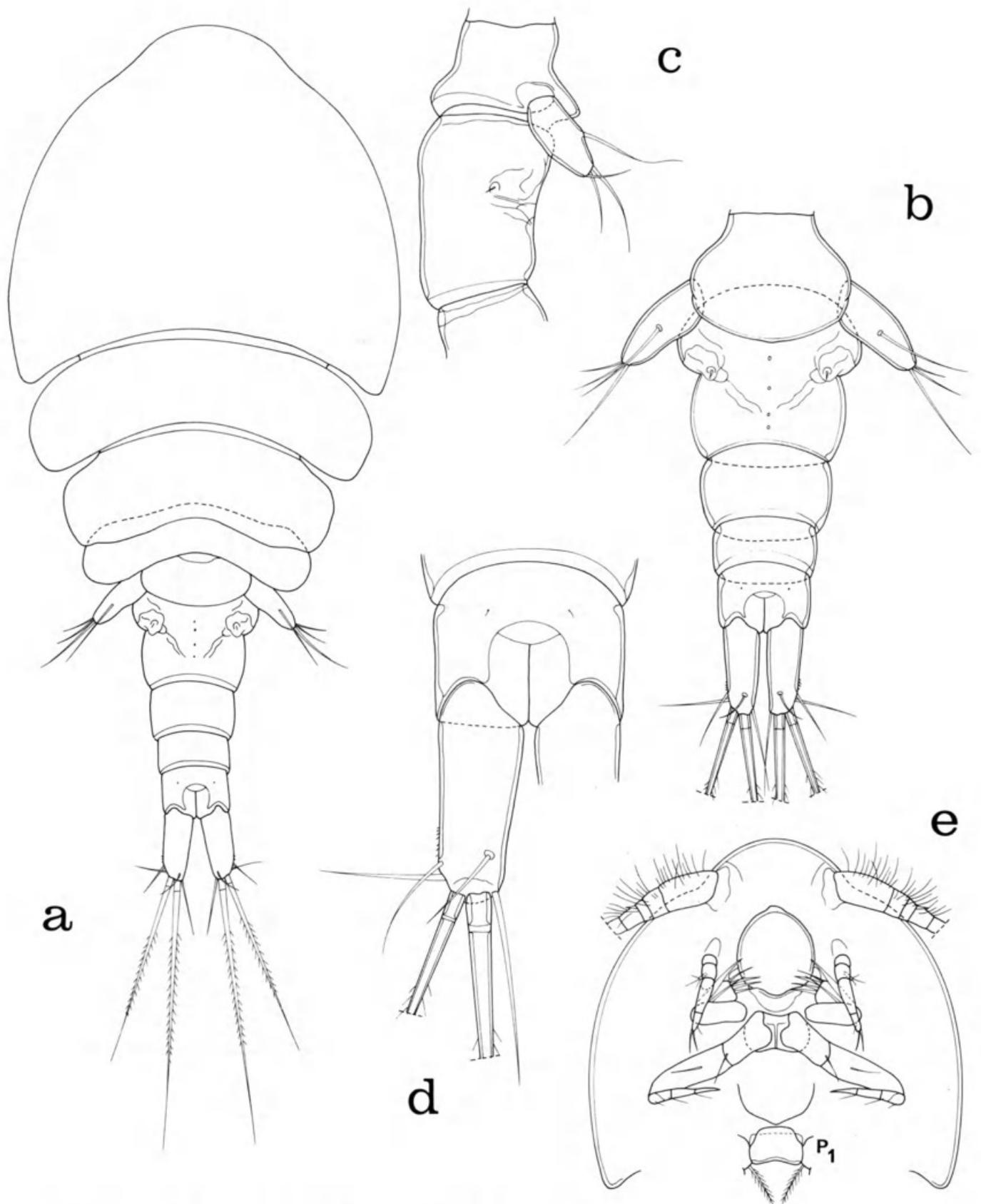


FIG. 4. — *Stygiopontius brevispina* n. sp., female : a, dorsal (scale A) ; b, urosome, dorsal (B) ; c, segment of leg 5 and genital segment, lateral (B) ; d, anal segment and caudal ramus, dorsal (C) ; e, cephalosome, ventral (A).

Caudal ramus (fig. 4d) elongate,  $117 \times 43 \mu\text{m}$ , ratio 2.72 : 1. Outer lateral seta  $55 \mu\text{m}$ , dorsal seta  $42 \mu\text{m}$ , outermost terminal seta  $52 \mu\text{m}$ , and innermost terminal seta  $96 \mu\text{m}$ . Two long terminal setae  $285 \mu\text{m}$  (outer) and  $460 \mu\text{m}$  (inner), both with short lateral setules. Distal outer margin of ramus with small spinules.

Dorsal surface of genital segment with longitudinal median row of 4 refractile points (fig. 4b). Anal segment with pair of minute sensilla. Otherwise body unornamented.

Egg sac unknown.

Rostrum not developed (fig. 4e). First antenna (fig. 5a)  $300 \mu\text{m}$  long, 10-segmented. Lengths of segments (measured along their posterior nonsetiferous margins) : 62 ( $101 \mu\text{m}$  along anterior margin), 24, 13, 32, 25, 23, 21, 19, 22, and  $39 \mu\text{m}$ , respectively. Formula for armature : 15, 8, 2, 4, 2, 2, 2, 2, 2 + 1 aesthete, and 12. All setae smooth.

Second antenna (fig. 5b) with short coxa and elongated basis, both unornamented. Exopod  $16 \times 8 \mu\text{m}$  with 3 setae. Endopod with first segment unarmed. Second segment having 2 relatively short terminal spiniform setae  $36 \mu\text{m}$  and  $49 \mu\text{m}$  long, both with few minute subterminal spinules, 1 short subterminal seta, 1 inner short seta, and row of setules on outer margin.

Oral cone (fig. 4e) short. Mandible (fig. 5c) with blade  $104 \mu\text{m}$  long, having oblique terminal row of small teeth. First maxilla (fig. 5d) and second maxilla (fig. 5e) resembling in major respects those of *Stygiopontius lauensis*. Maxilliped (fig. 5f) with first segment having 1 distal inner seta, second segment with 1 inner seta and few small outer marginal spinules, both third and fourth segments with 1 seta, and fifth segment with 1 subterminal seta and relatively short terminal unornamented claw  $47 \mu\text{m}$ . Ratio of length of claw to sum of segments 3-5 approximately 1 : 2.

Legs 1-4 (figs. 5g-i, 6a) with segmentation and spine and setal formula as in *Stygiopontius lauensis*. Leg 1 with inner spine on basis  $30 \mu\text{m}$  long. Leg 4 with exopod  $187 \mu\text{m}$  long. Endopod (fig. 6b) with unarmed first segment  $31 \times 21 \mu\text{m}$ . Elongate second segment  $73 \times 29 \mu\text{m}$ , terminal barbed spine  $74 \mu\text{m}$ , and inner plumose seta  $108 \mu\text{m}$ ; outer and inner margins of segment with long setules.

Leg 5 (fig. 6c)  $104 \times 39 \mu\text{m}$ , ratio 2.67 : 1, 2 segments completely fused. Seta on area of first segment  $117 \mu\text{m}$ , terminal setae 34, 34, and  $102 \mu\text{m}$ . All seta smooth.

Leg 6 probably represented by minute seta on genital area (fig. 4b, c).

Color unknown.

#### DESCRIPTION OF MALE

Body (fig. 6d) resembling in general form that of female. Length 0.85 mm (0.83-0.89 mm) and greatest width 0.39 mm (0.39-0.40 mm), based on 3 specimens in lactic acid. Greatest dorsoventral thickness 0.21 mm. Epimera of segment bearing leg 3 truncate rather than rounded as in female. Ratio of length to width of prosome 1.43 : 1. Ratio of length of prosome to that of urosome 1.71 : 1.

Segment bearing leg 5 (fig. 6e)  $44 \times 91 \mu\text{m}$ . Genital segment in dorsal view  $96 \times 127 \mu\text{m}$ , wider than long, with moderately rounded lateral margins. Four postgenital segments from anterior to posterior  $55 \times 90$ ,  $52 \times 78$ ,  $34 \times 69$ , and  $40 \times 62 \mu\text{m}$ . First postgenital segment with pair of small posterolateral spiniform processes.

Caudal ramus similar to that of female, but smaller,  $57 \times 26 \mu\text{m}$ , ratio 2.19 : 1.

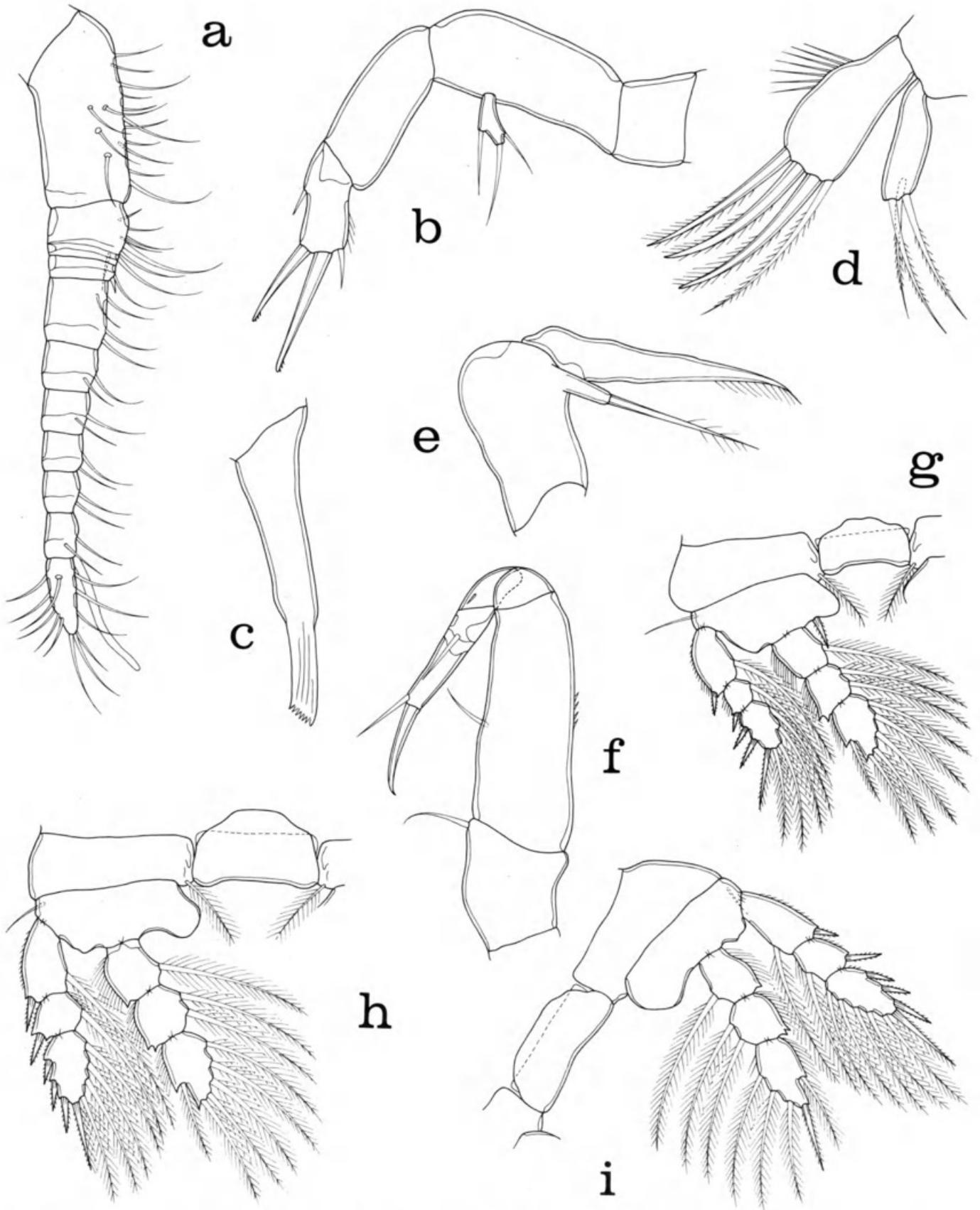


FIG. 5. — *Stygiopontius brevispina* n. sp., female : a, first antenna, ventral (scale C) ; b, second antenna, anteroinner (D) ; c, mandible, anterior (D) ; d, first maxilla, posterior (D) ; e, second maxilla, posterior (D) ; f, maxilliped, posterior (C) ; g, leg 1 and intercoxal plate, anterior (B) ; h, leg 2 and intercoxal plate, anterior (B) ; i, leg 3 and intercoxal plate, anterior (B).

Urosome without refractile points.

Rostral area like that of female. First antenna (fig. 6f) geniculate, 12-segmented. Lengths of segments (measured along their posterior nonsetiferous margins) : 6 (36  $\mu\text{m}$  along anterior margin), 10, 40, 33, 8, 11, 33, 30, 26, 45, 36, and 27  $\mu\text{m}$ , respectively. Formula for armature : 1, 2, 12, 8, 2, 2, 4, 2, 2, 3, 1 aesthete, and 10. Fifth segment with large minutely barbed spiniform seta 31  $\mu\text{m}$  and shorter bifurcate seta 8  $\mu\text{m}$  (fig. 6g).

Second antenna, oral cone, mandible, first maxilla, and second maxilla like those of female. Maxilliped similar to that of female but claw slightly longer, 55  $\mu\text{m}$ .

Legs 1-4 segmented as in female. Formula for armature like that of female, but inner coxal seta lacking on all 4 legs. Endopod of leg 2 (fig. 6h) showing sexual dimorphism, with third segment having 1, II, 3.

Leg 5 (fig. 6i) with minute free segment 16  $\times$  21  $\mu\text{m}$ , bearing 3 setae 44, 21, and 31  $\mu\text{m}$ . Adjacent seta 88  $\mu\text{m}$ . All setae smooth.

Leg 6 (fig. 6j) posteroventral flap on genital segment bearing 2 setae 62  $\mu\text{m}$  and 21  $\mu\text{m}$ . Spermatophore seen only inside genital segment.

Color unknown.

ETYMOLOGY. — The specific name *brevispina*, Latin meaning short spine, alludes to the relatively short terminal spiniform setae on the second antenna and to the short terminal claw on the maxilliped.

#### REMARKS

*Stygiopontius brevispina* may be recognized by : (1) the two short terminal spinelike setae on the end of the second antenna, (2) the short claw on the maxilliped, (3) the incised female genital segment without lateral or posterolateral spiniform processes, and (4) the completely undivided leg 5 in the female. This combination of characters may be used to differentiate the new species from its 13 congeners. *Stygiopontius brevispina*, as in *S. lauensis*, lacks the two innermost setae on the free segment of leg 5 in the male.

With the addition of the two new species described above the genus *Stygiopontius* is now represented by 14 species, all from deep-water hydrothermal vent areas.

#### KEY TO FEMALES OF *Stygiopontius* (Females unknown in 3 species)

1. Genital segment without spiniform processes ..... 2
- Genital segment with at least 1 pair of spiniform processes ..... 4
2. First postgenital segment with pair of spiniform processes..... *lumiger* Humes, 1989b
- First postgenital segment without spiniform processes ..... 3
3. Band of light brown color on ventral surface of posterior half of genital segment ; second postgenital segment unusually short ..... *cinctiger* Humes, 1987
- Without colored band on genital segment ; second postgenital segment not unusually short ...  
..... *brevispina* n. sp.
4. Maxilliped with seta on second segment much enlarged, thornlike, spinulose. *sentifer* Humes, 1987
- Maxilliped with seta on second segment slender, not enlarged ..... 5

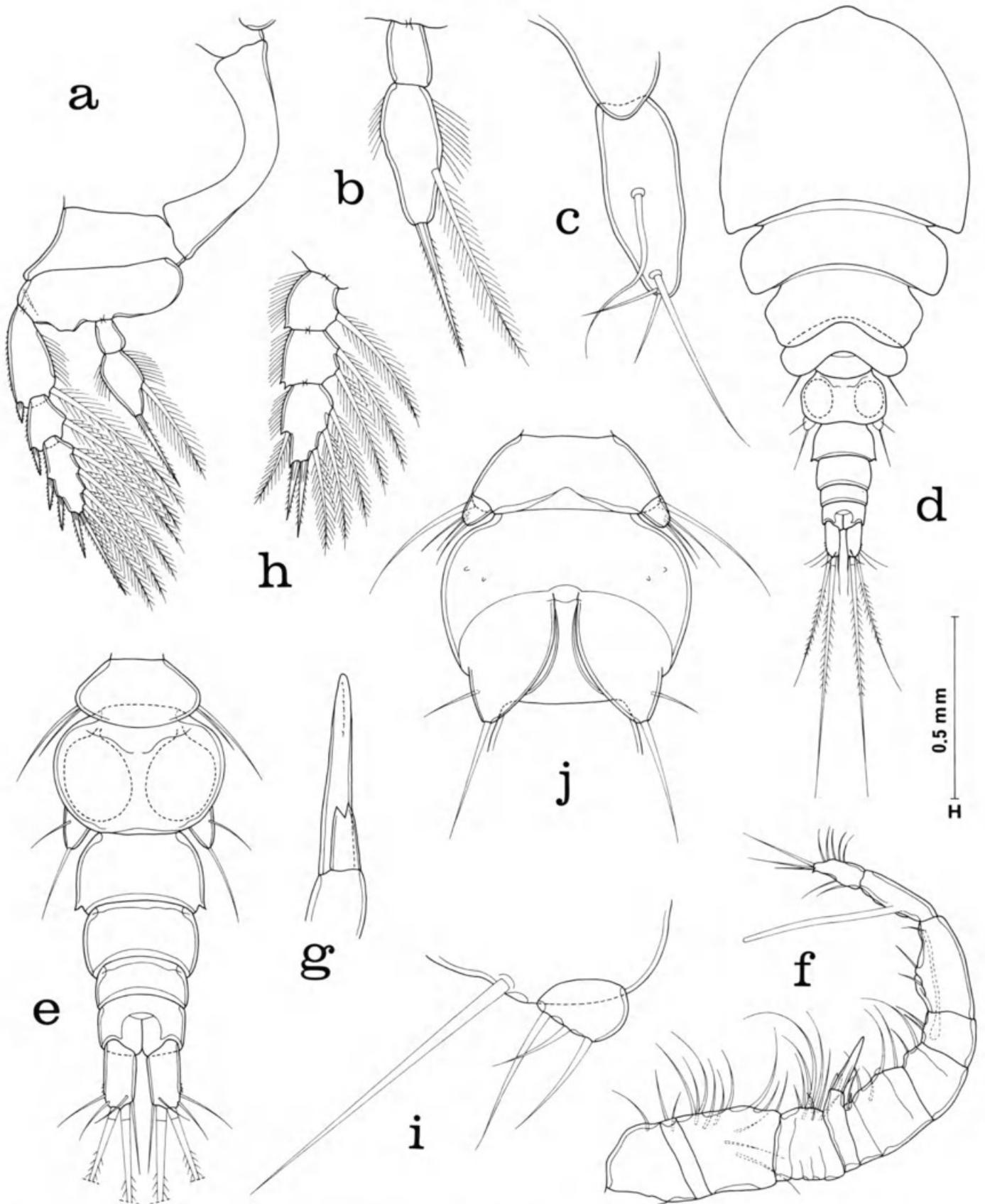


FIG. 6. — *Stygiopontius brevispina* n. sp. Female : a, leg 4 and intercoxal plate, anterior (scale B) ; b, endopod of leg 4, anterior (C) ; c, leg 5, dorsal (C). Male : d, dorsal (H) ; e, urosome, dorsal (E) ; f, first antenna, anteroventral (C) ; g, spiniform setae on segment 5 of first antenna, anterodorsal (D) ; h, endopod of leg 2, anterior (E) ; i, leg 5, ventral (F) ; j, segment bearing leg 5 and genital segment, ventral (E).

- 5. Genital segment with 1 pair of posterolateral spiniform processes ; segment with parallel sides in dorsal view ..... *flexus* Humes, 1987
- Genital segment with 2 pairs of lateral processes, either spiniform or slightly lobate ; sides of segment not parallel ..... 6
- 6. Third segment of exopod of leg 4 with I, II, 4 ; length of body 1.78 mm. *mucroniferus* Humes, 1987
- Third segment of exopod of leg 4 with II, II, 4 ; length of body not greater than 1.30 mm. 7
- 7. Third segment of endopod of leg 3 with 1, 1, 3 ; caudal ramus with innermost seta very short, 10  $\mu$ m, about one-sixth length of ramus ..... *quadrispinosus* Humes, 1987
- Third segment of endopod of leg 3 with 1, I, 3 ; caudal ramus with innermost seta longer than ramus ..... 8
- 8. Clawlike seta on fourth segment of second antenna and claw of maxilliped conspicuously pectinate, with long erect spinules ..... *pectinatus* Humes, 1987
- Setae on fourth segment of second antenna neither clawlike nor pectinate and claw of maxilliped without long erect spinules ..... 9
- 9. Coxae of legs 1-4 with formula 0-1 ; 0-1 ; 0-0 ; 0-0 ; outer margin of second segment of maxilliped smooth ..... 10
- Coxae of legs 1-4 with formula 0-0 ; 0-1 ; 0-0 ; 0-0 ; small setules along outer margin of second segment of maxilliped ..... *stabilitus* Humes, 1990b
- 10. Length of body 1.14 mm (1.03-1.20 mm) ; inner margin of basis of leg 1 rounded with small spinules ; distal outer corner of caudal ramus smooth, without spinules. *hispidulus* Humes, 1987
- Length of body 0.88 mm (0.84-0.92 mm) ; inner margin of basis of leg 1 bluntly pointed, smooth ; distal outer corner of caudal ramus with small spinules ..... *lauensis* n. sp.

KEY TO MALES OF *Stygiopontius*  
(Males unknown in 8 species)

- 1. Sides of cephalosome with ventral bifurcate pegs ..... 2
- Sides of cephalosome without ventral bifurcate pegs ..... 3
- 2. Length of body 0.86 mm (0.78-0.95 mm) ; second segment of maxilliped having slender setule with setules ..... *appositus* Humes, 1989b
- Length of body 1.22 mm(1.18-1.27 mm) ; second segment of maxilliped with modified broad seta bearing many spinules ..... *paxillifer* Humes, 1989b
- 3. Second segment of maxilliped lacking seta but having spherical knob. *verruculatus* Humes, 1987
- Second segment of maxilliped having seta ..... 4
- 4. Length of body 1.22 mm (1.14-1.33 mm) ; leg 6 with spinules, and having stout spiniform seta and slender seta, both nearly equal in length ; spiniform processes on first postgenital segment larg2 and prominent ..... *lauensis* n. sp.
- Length of body less than 0.90 mm ; leg 6 without spinules, 2 setae slender ..... 5
- 5. Length of body 0.85 mm (0.83-0.89 mm) ; endopod of leg 3 with I, II, 3 ... *brevispina* n. sp.
- Length of body 0.67 mm (0.63-0.72 mm) ; endopod of leg 3 with I, II, I, 2 ..... *quadrispinosus* Humes, 1987

## CHASMATOPONTIUS Humes, 1990

### *Chasmatopontius thescalus* Humes, 1990

MATERIAL EXAMINED. — 93 ♀♀, 44 ♂♂, in 1,750 m, BIOLAU 10, station 2, Vailili, Lau Basin, 23°13' S, 176°38' W, west of Tonga islands, 22 May 1989; 108 ♀♀, 48 ♂♂, BIOLAU 06, same depth and locality, 10 May 1989; 81 ♀♀, 37 ♂♂, BIOLAU 11, same depth and locality, 23 May 1989; 10 ♀♀, 16 ♂♂, BIOLAU 09, same depth and locality, 21 May 1989; 1 ♀, BIOLAU 12, same depth and locality, 24 May 1989.

*Chasmatopontius thescalus* has been previously known only from washings of tubes of the polychaete *Paralvinella hessleri* Desbruyères and Laubier in 3,640 m in the Mariana Back-Arc Basin (HUMES, 1990b).

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