

TWO NEW SPECIES OF *KELLERIA* (COPEPODA, CYCLOPOIDA,  
KELLERIIDAE) FROM INDONESIAN WATERS, WITH NOTES ON  
*KELLERIA PECTINATA* (A. SCOTT, 1909)

BY

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ABSTRACT

Two new species of *Kelleria*, i.e., *Kelleria indonesiana* and *Kelleria javaensis*, and one previously known species, *Kelleria pectinata* (A. Scott, 1909) are described and illustrated from specimens collected in four areas of Java coastal waters and Lembeh Strait, North Sulawesi (Celebes), Indonesia.

*Kelleria indonesiana*, collected from Cilacap Bay on the south coast of central Java, can be distinguished from other species of this genus by combination of several characters, i.e., mouthparts, segmentation of antennule and antenna, and shape of the fifth legs.

*Kelleria javaensis*, which was collected off Surabaya, Java Sea, is distinguished from other species of the genus by having two lobes on the inner margin of the fifth leg, length proportion of prosome and urosome, and a combination of several characters of the mouthparts.

*Kelleria pectinata* collected from off Tegal, north coast of central Java, and Lembeh Strait, North Sulawesi, was originally described and named from a single female specimen from the Bali Sea as *Pseudanthessius pectinatus* by A. Scott (1909).

Descriptions, measurements, and figures are given for these species, along with taxonomic remarks and ecological notes.

RÉSUMÉ

Deux espèces nouvelles de *Kelleria*, *Kelleria indonesiana* et *Kelleria javaensis*, ainsi qu'une espèce déjà connue, *Kelleria pectinata* (A. Scott, 1909) sont décrites et illustrées à partir de spécimens collectés dans quatre zones des eaux côtières de Java et du détroit de Lembeh, au nord de Sulawesi (Célèbes), Indonésie.

*Kelleria indonesiana*, collectée dans la baie de Cilacap sur la côte méridionale de la partie centrale de Java, peut être distinguée des autres espèces de ce genre par une combinaison de plusieurs caractères, soit, les pièces buccales, la segmentation de l'antennule et de l'antenne et la forme des cinquièmes pattes.

*Kelleria javaensis*, qui a été récoltée au large de Surabaya, mer de Java, se distingue des autres espèces du genre par la présence de deux lobes au bord interne de la cinquième patte, les

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longueurs relatives du prosome et de l'urosome, et une combinaison de plusieurs caractères des pièces buccales.

*Kelleria pectinata*, collectée au large de Tegal, sur la côte nord de la partie centrale de Java, et dans le détroit de Lembeh, au nord de Sulawesi, avait été décrite et nommée à partir d'un unique spécimen femelle, sous le nom de *Pseudanthessius pectinatus* par A. Scott (1909).

Les descriptions, les mesures et les figures sont fournies pour ces espèces, ainsi que des remarques taxonomiques et des notes écologiques.

## INTRODUCTION

The copepods of the genus *Kelleria* Gurney, 1927 are either free-living in intertidal burrows or associating with crinoids. In their revisionary work, Humes & Stock (1973) recognized nine species in *Kelleria*. Since then three more species have been described, viz., *Kelleria corioensis* Arnott & McKinnon, 1981; *K. vaga* Kim, 2000; and *K. reducta* Gomez, 2006. However, *K. fucicola* (T. Scott, 1912); *K. gurneyi* Sewell, 1949; and *Kelleria* sp. Saraswathy, 1966 were not included in their revision. Currently, there are 14 known species of *Kelleria*, i.e., *Kelleria andamanensis* Sewell, 1949; *K. australiensis* Bayly, 1971; *K. camortensis* Sewell, 1949; *K. corioensis* Arnott & McKinnon, 1981; *K. fucicola* (T. Scott, 1912); *K. gradata* Stock, 1967; *K. gurneyi* Sewell, 1949; *K. pectinata* (A. Scott, 1909); *K. propinqua* (T. Scott, 1894); *K. purpurocincta* Gurney, 1927; *K. reducta* Gomez, 2006; *K. regalis* Gurney, 1927; *K. rubimaculata* Krishnaswamy, 1952; and *K. vaga* Kim, 2000; and one unknown *Kelleria* species (Saraswathy, 1966).

During taxonomic studies on the pelagic copepods of Indonesian coastal waters, two new species of *Kelleria* were found in plankton samples collected from shallow coastal waters (10 m depth) in Cilacap Bay, central Java, and off Surabaya, east Java. The two new species, which will be described below, are the 2nd and 3rd species of *Kelleria* from Indonesian waters. The third species found, *K. pectinata*, was described by Scott (1909) from a single female specimen collected in a surface tow from the Bali Sea. The two new species described herein are the 15th and 16th species known of the genus, following *K. vaga* Kim, 2000, and *K. reducta* Gomez, 2006, which were described in the last decade.

This paper deals with descriptions and illustrations of the two new species of the genus *Kelleria* Gurney, 1927 and one previously known species, *K. pectinata* from Indonesian waters. All type specimens are deposited in the Museum Zoologicum Bogoriense, Bogor, Indonesia.

## MATERIAL AND METHODS

The present samples were obtained from four sites (fig. 1) during 1993-2003. Samples were collected by surface tows or vertical hauls (from 10 or 20 m depth to the surface) with conical plankton nets (0.33 mm mesh size; 0.45 m mouth

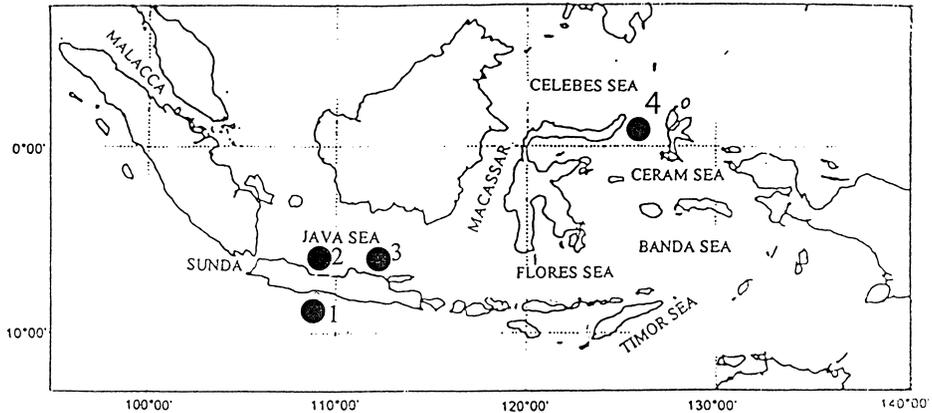


Fig. 1. Map of Indonesian waters showing study sites 1-4. 1, Cilacap Bay; 2, off Tegal; 3, off Surabaya; 4, Lembeh Strait.

diameter) at day- and nighttime. Samples were fixed and preserved in 5% buffered formaldehyde/seawater solution. The specimens were identified after dissection and examined with a compound microscope. Drawings were made with the aid of a camera lucida.

Abbreviations used in the text to describe morphological features are: A1, antennule; A2, antenna; Ms1-Ms6, metasomal somites 1-6; P1-P6, swimming legs 1-6; Ur1-Ur6, urosomal somites 1-6; CR, caudal rami; Re, exopod; Ri, endopod; Se, outer spine; Si, inner spine; St, terminal spine.

## DESCRIPTIONS

### *Kelleria indonesiana* n. sp. (figs. 2-5)

Material examined. — Holotype (MZB-Cop 201) male (0.89 mm); paratypes (MZB-Cop 202), 5 females (1.15-1.20 mm) and 4 males (0.89-1.01 mm) collected from Cilacap Bay, central Java (07°40'S 109°00'E) by surface tow of an 0.33 mm mesh plankton net at daytime on 19 May 1993.

Female. — Body stout (fig. 2a). Prosoma about 1.60 times as long as its maximum width, and about 1.58 times as long as urosome (excluding caudal setae). CR (fig. 2b) about twice as long as wide. Large genital double somite (fig. 2a) expanded laterally at about 1/3 of its length from the anterior end. Area of attachment of egg sac bearing small seta on lateral margin. Three postgenital somites naked. Caudal rami (fig. 2b) about 2.3 times as long as wide, with six setae, inner two of 4 terminal caudal setae reduced in width and with same arrangement of hairs. Oval egg sacs extending to distal end of preanal somite of urosome.

Antennule (fig. 2c) seven-segmented; segment 1 as long as wide; segment 2 the longest, about 3 times as long as wide; segment 3 slightly wider than long;

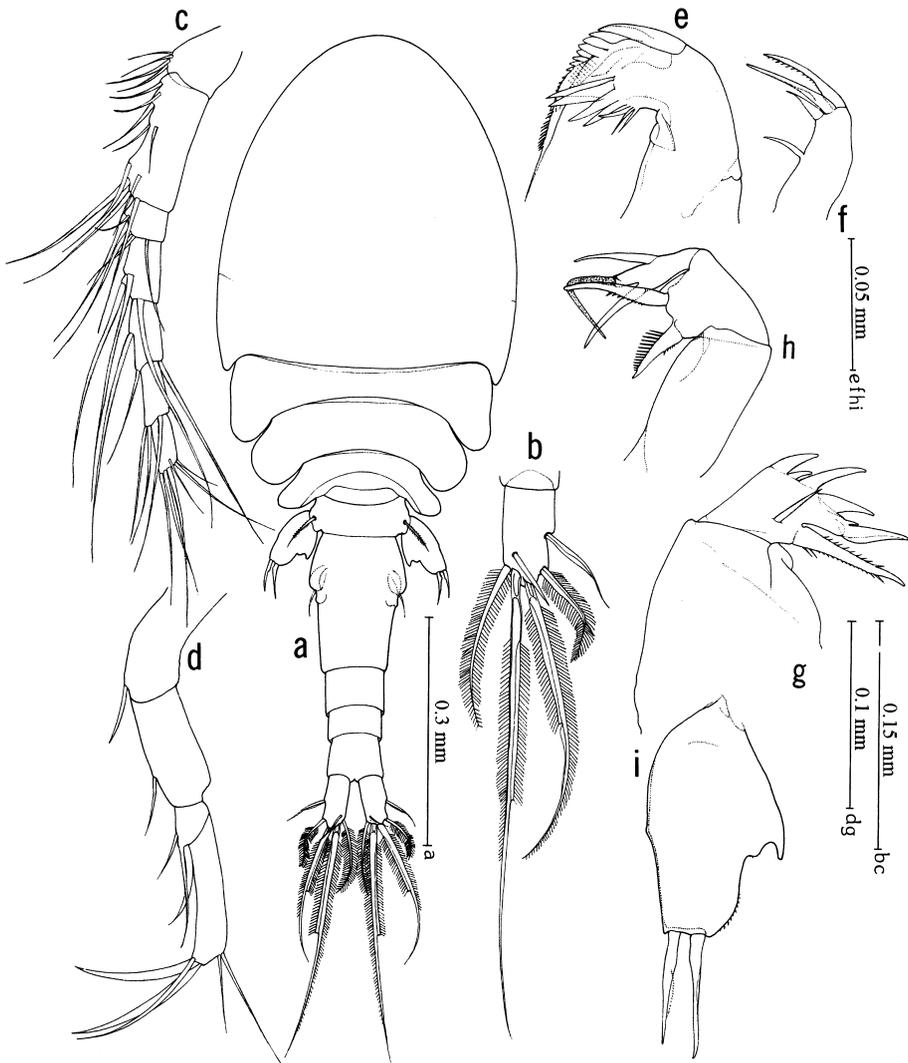


Fig. 2. *Kelleria indonesiana* n. sp. Female. a, whole animal, dorsal view; b, right CR, dorsal view; c, antennule; d, antenna; e, mandible; f, maxillule; g, maxilla; h, maxilliped; i, 5th leg.

segment 4 about 1.6 times as long as wide; segment 5, 6, and 7 about 2 times as long as wide. Antennule formula as follows: 1-(4), 2-(13), 3-(6), 4-(3), 5-(4 + 1 aesthetasc), 6-(2 + 1 aesthetasc), and 7-(7 + 1 aesthetasc).

Antenna (fig. 2d) four-segmented. Coxobasis with one seta. Endopod three-segmented; segment 1 about twice as long as wide, with one seta subdistally; segment 2 the shortest, slightly wider than long, with geniculate, setiform claw and two setae (proximal one shorter); segment 3 about 4 times as long as wide, with three subdistal setae, and two strong claws.

Mandible (fig. 2e). Proximal notch weakly defined. Main blade broad basally, with tapering lash distally; with inner row of 7 strong spinules; with a longitudinal row of 18 very robust teeth along outer margin of lash, with the first tooth more than twice as long as the rest, these spines gradually smaller distally, terminating in a spike-like process with fine secondary hair-like processes.

Maxillule small (fig. 2f). A single lobe with one subapical, bare element and three distal, bipinnate spines (innermost the smallest).

Maxilla (fig. 2g) with large unarmed syncoxa. Basis with one smooth seta and one inner strong and bipinnate spine; distally armed with six unequal teeth as figured.

Maxilliped (fig. 2h) three-segmented; syncoxa large, unarmed; basis with two large bipinnate spines, proximal one shorter; endopodal segment with two bipinnate spines, one long seta, and one bare, claw-like element.

P1 (fig. 3a). Coxa with well developed inner plumose seta. Basis of P1 without setules on distal inner corner; with outer slender seta. Rami three-segmented; first exopodal segment with one outer spine and without inner seta, second segment with one outer spine and inner seta, third segment with three outer spines, one apical spine, and four inner setae; first and second endopodal segments with one inner seta, third segment with six setae/spines.

P2 (fig. 3b). Coxa as in P1. Basis with outer slender seta. Rami three-segmented; first exopodal segment with one outer spine and without inner seta, second segment with one outer spine and inner seta, third segment with three outer spines, one apical spine, and five inner setae; first endopodal segment with one inner seta, second segment with two inner setae, third segment with six setae/spines.

P3 (fig. 3c). Coxa and basis as in P1. Rami three-segmented; first exopodal segment with one outer spine and without inner seta, second segment with one outer spine and inner seta, third segment with three outer spines, one apical spine, and five inner setae; first endopodal segment with one inner seta, second segment with two inner setae, third segment with five setae/spines.

P4 (fig. 3d). Inner seta of coxa bare and small. Basis as in previous legs. Exopod three-segmented; first segment with one outer spine and without inner seta, second segment with one outer spine and inner seta, third segment with two outer spines (with eight setae/spines in all). Endopod one-segmented; with small outer notch in proximal third, without suture between outer notch and point of insertion of seta; with one inner proximal seta and two apical spines (outermost shorter).

Armature formula of P1-P4 (spines in Roman and setae in Arabic numerals) as follows:

P1	coxa 0-I	basis I-0	Re I-0	I-1	III, I, 4	Ri 0-1	0-1	I, I, 4
P2	coxa 0-I	basis I-0	Re I-0	I-1	III, I, 5	Ri 0-1	0-2	II, I, 3
P3	coxa 0-I	basis I-0	Re I-0	I-1	III, I, 4	Ri 0-1	0-2	II, I, 2
P4	coxa 0-I	basis I-0	Re I-0	I-1	II, I, 5	Ri II, 1		

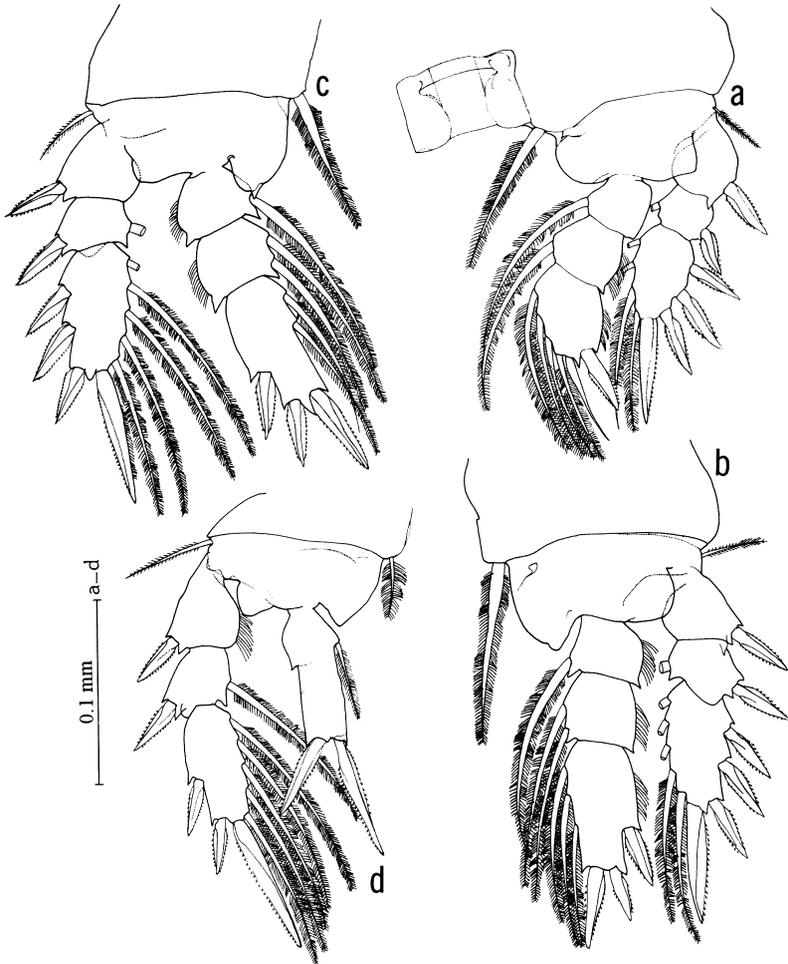


Fig. 3. *Kellera indonesia* n. sp. Female. a–d, 1st–4th legs, respectively, anterior view.

P5 (fig. 2a, i) with basal seta on surface of somite; free exopodal segment oval, less than twice as long as maximum width, ornamented with minute spinules along distal third of inner margin; with 2 lobes halfway on inner margin, proximal lobe longer and pointed in dorsal view, adjacent, slightly more distal lobe rounded; with small notch halfway outer margin; armed with two unequal apical elements, inner one longer and blunt at tip.

P6 (fig. 2a) represented by two setae (one of these very small) laterally on genital opercula.

Male. — General appearance as that of female (fig. 4a), except for genital double somite and second urosomite (the latter visibly larger in male). Urosome

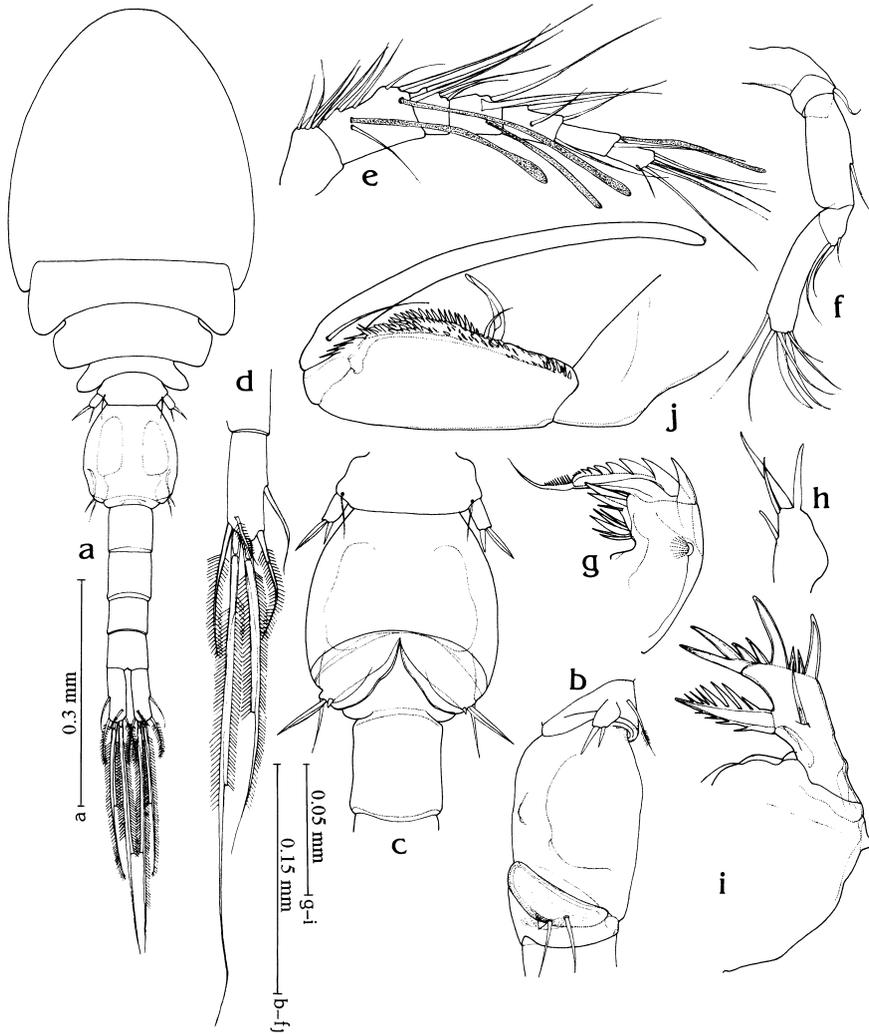


Fig. 4. *Kelleria indonesiana* n. sp. Male. a, whole naimal, dorsal view; b, genital complex, lateral view; c, genital complex, ventral view; d, right CR, dorsal view; e, antennule; f, antenna; g, mandible; h, maxillule; i, maxilla; j, maxilliped.

(fig. 4a) consists of six somites, genital somite much enlarged (fig. 4c), longer than the following two somites combined. Caudal rami as in female.

Antennule (fig. 4e) similar to that of female but 3 aesthetascs added, 2 on the 2nd segment and 1 on the 4th segment.

Maxilla (fig. 4i). General shape as in female, except for sexually dimorphic inner spine of basis and comparatively more slender surface seta; and innermost spine with larger accessory spines along proximal half of distal edge.

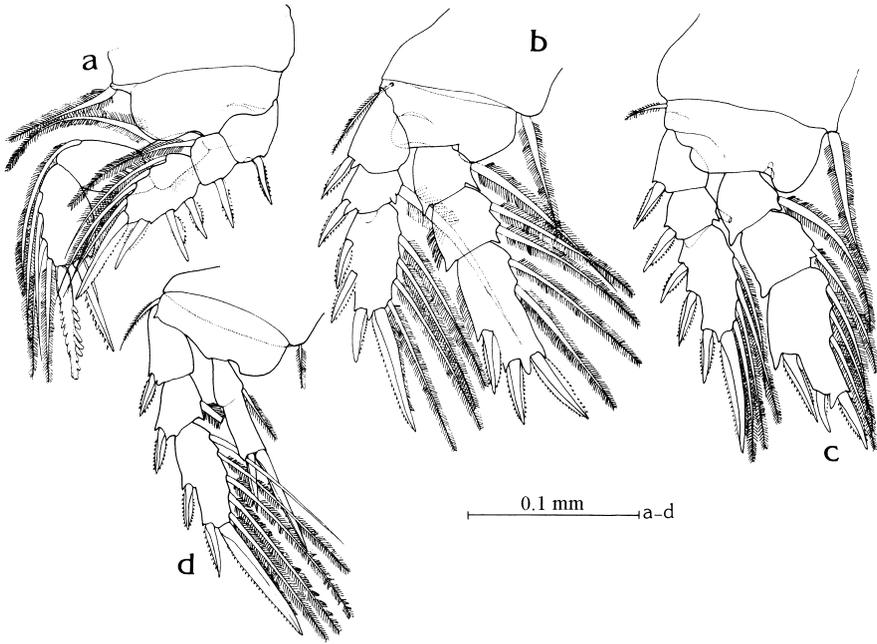


Fig. 5. *Kelleria indonesiana* n. sp. Male. a–d, 1st–4th legs, respectively, anterior view.

Maxilliped (fig. 4j) sexually dimorphic; three-segmented, prehensile, syncoxa large, unarmed; basis with two setae and ornamented with spinules along inner margin; endopodal segment small, unarmed; with long terminal claw accompanied by one anterior and one posterior accessory seta (one of those very small).

P1–P4 (fig. 5a–d) similar to those of female but some sexual dimorphism is evident for the endopods of P1 and P2. Endopod of P1 (fig. 5a) strongly geniculate between 2nd and 3rd segments, and distalmost of 5 setae on 3rd segment replaced by large spine with obtuse lateral spinules. P2 as in female except for apparently dimorphic outer apical spine (fig. 5b); third endopodal segment with atypical outer terminal spine, naked except for 2 or 3 small proximal denticles. P3–P4 (fig. 5c–d) as in female. P5 (fig. 4a–c) with basal seta arising from somite; free exopodal segment oval, with one spine and one seta apically. P6 (4a–c) represented by two setae and a small spiniform process.

Remarks. — The present species resembles *K. australiensis* Bayly, 1971 but it can be distinguished from the latter by (1) the proportional length of prosome and urosome in both sexes; (2) the presence of an acute process on the inner margin, and completely fused Ri segments of P5 female; (3) the segmentation of the antennule and the antenna; and (4) the form of the 5th legs.

Bayly (1971) described *K. australica* based on female and male specimens collected from Lake King, Victoria, Australia. Bayly (1971) described and figured

the species briefly. Later, Arnott & McKinnon (1981) added to the description of this species based on the same sample used by Bayly (1971) for the original description. Arnott & McKinnon's (1981) specimens were smaller than those mentioned by Bayly (1971). Mean body lengths of female and male were 1.14 mm and 0.94 mm (cf. 1.23 mm and 1.01 mm given by Bayly, 1971).

Etymology. — The specific name *indonesiana* refers to Indonesia, the country where the species was collected. It is an adjective agreeing in gender with the (feminine) generic name.

### ***Kelleria javaensis* n. sp. (figs. 6-7)**

Material examined. — Holotype (MZB-Cop 203) female (1.09 mm), paratypes (MZB-Cop 204) 3 females (1.05-1.10 mm) collected from off Surabaya, east Java by surface tow of a 0.33 mm mesh plankton net at daytime on 9 June 1994.

Female. — Prosome moderately slender (fig. 6a), about 1.50 as long as maximum width, and about 1.34 times as long as urosome excluding caudal setae. Urosome consists of five somites, genital complex elongated (fig. 6a), in dorsal view somewhat expanded on its anterior 1/3 and narrower distally. Egg sacs located laterally on the anterior, expanded portion of somite. Caudal rami (fig. 6b) moderately elongate, twice as long as wide, outer seta short and naked, other setae with lateral spinules.

Antennule (fig. 6c) seven-segmented, not reaching distal end of Ms1 when folded backwards; segments 1 and 3 wider than long; segment 2 the longest, about 1.6 times as long as wide; segment 4 about 1.3 times as long as wide; segments 5 and 6 about twice as long as wide; segment 7 about 3.2 times as long as wide. Antennule formula as follows: 1-(4), 2-(13), 3-(6), 4-(3), 5-(4 + 1 aesthetasc), 6-(2 + 1 aesthetasc) and 7-(7 + 1 aesthetasc).

Antenna (fig. 6d) four-segmented. Coxobasis with one seta. Endopod three-segmented; segment 1 about twice as long as wide, with one seta subdistally; segment 2 the shortest, slightly wider than long, with geniculate, setiform claw and two setae (proximal one shorter); segment 3 about 3 times as long as wide, with three subdistal setae, and two strong claws and one seta apically.

Mandible (fig. 6e). Proximal notch weakly defined. Main blade broad basally, with tapering lash distally; with inner row of eight strong spinules; with a longitudinal row of 13 very robust teeth, varying in shape, along outer margin of lash, with the first tooth more than twice as long as the rest, these spines gradually smaller distally, terminating in a long spine-like process with hair-like accessory.

Maxillule small (not figured). A single lobe with one subapical, bare element and three distal, bipinnate spines (innermost the smallest).

Maxilla (fig. 6f) with large unarmed syncoxa. Basis with one smooth seta and one inner strong, bipinnate spine (with 10 anterior and 6 posterior secondary

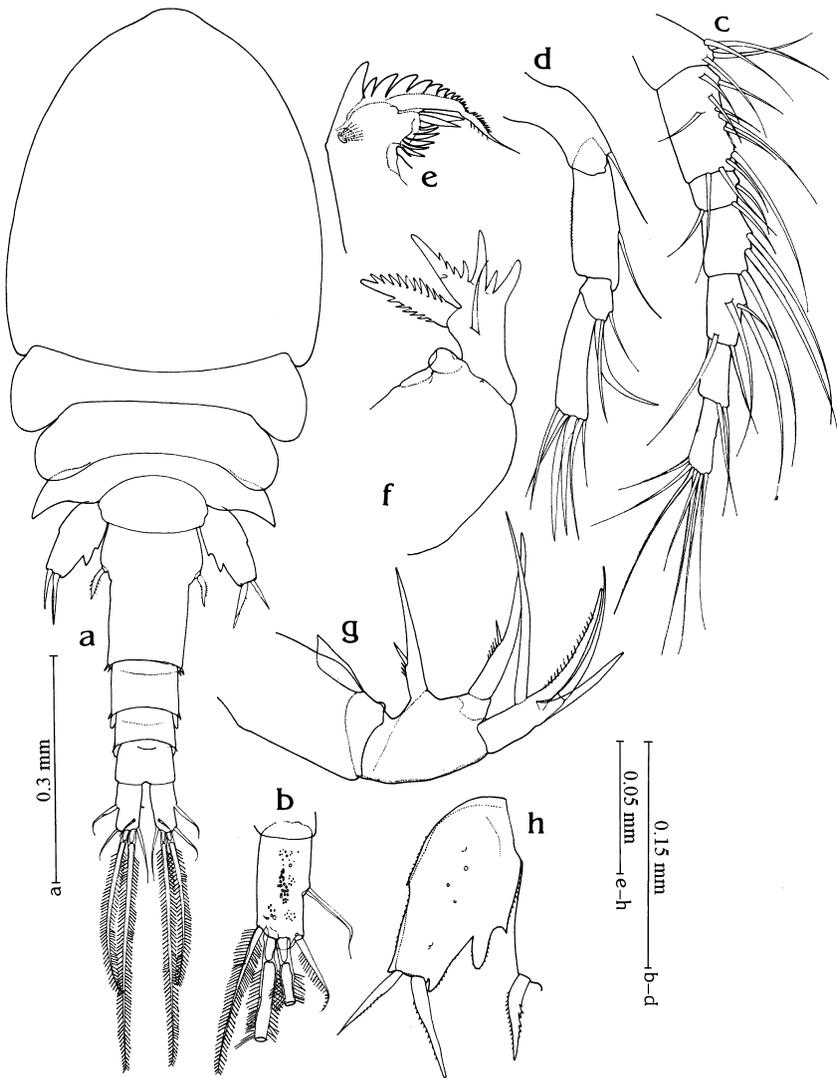


Fig. 6. *Kelleria javaensis* n. sp. Female. a, whole animal, dorsal view; b, right CR, dorsal view; c, antennule; d, antenna; e, mandible; f, maxillule; g, maxilliped; h, 5th leg.

spines); distally armed with eight unequal teeth (3 long and 5 small) as figured.

Maxilliped (fig. 6g) three-segmented; syncoxa large, unarmed; basis with two large bipinnate spines, proximal one shorter; endopodal segment with two bipinnate spines, one long seta, and one bare, claw-like element.

P1 (fig. 7a). Coxa with well developed inner plumose seta. Basis of P1 without setules on distal inner corner; with outer slender seta. Rami three-segmented; first exopodal segment with one outer spine and without seta, second segment with one

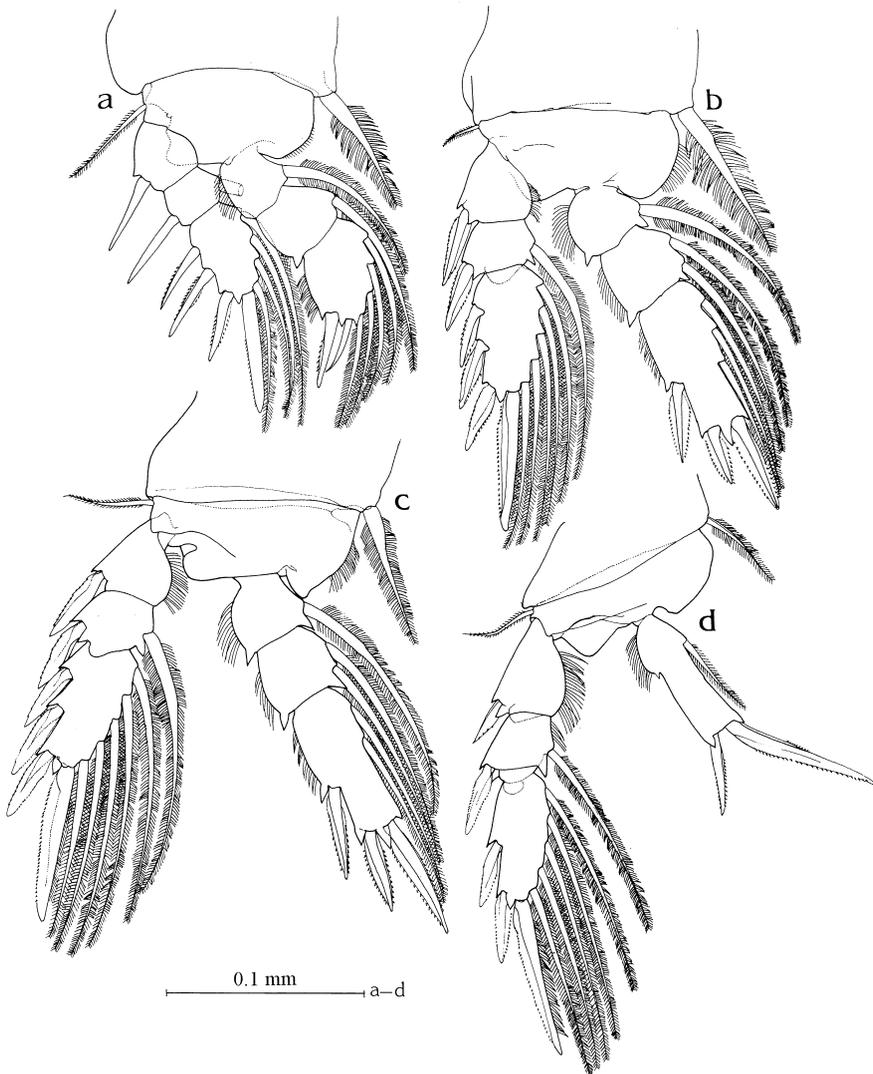


Fig. 7. *Kalleria javaensis* n. sp. Female. a–d, 1st–4th legs, respectively, anterior view.

outer spine and inner seta, third segment with three outer spines, one apical spine, and four inner setae; first and second endopodal segments with one inner seta, third segment with six setae/spines.

P2 (fig. 7b). Coxa as in P1. Basis with outer slender seta. Rami three-segmented; first exopodal segment with one outer spine and without inner seta, second segment with one outer spine and inner seta, third segment with three outer spines, one apical spine, and five inner setae; first endopodal segment with one inner seta, second segment with two inner setae, third segment with six setae/spines.

P3 (fig. 7c). Coxa and basis as in P1. Rami three-segmented; first exopodal segment with one outer spine and without inner seta, second segment with one outer spine and inner seta, third segment with three outer spines, one apical spine, and five inner setae; first endopodal segment with one inner seta, second segment with two inner setae, third segment with five setae/spines.

P4 (fig. 7d). Inner seta of coxa bare and small. Basis as in previous legs. Exopod three-segmented; first segment with one outer spine and without inner seta, second segment with one outer spine and inner seta, third segment with two outer spines, one distal spine, and five inner setae. Endopod one-segmented; with small outer notch in proximal third, without suture between outer notch and point of insertion of seta; with one inner proximal seta and two apical spines (outermost very short).

Armature formula of P1-P4 (spines in Roman and setae in Arabic numerals) as follows:

P1	coxa 0-1	basis 1-0	Re I-0	I-1	III, I, 4	Ri 0-1	0-1	I, 5
P2	coxa 0-1	basis 1-0	Re I-0	I-1	III, I, 5	Ri 0-1	0-2	I, II, 3
P3	coxa 0-1	basis 1-0	Re I-0	I-1	III, I, 4	Ri 0-1	0-2	I, II, 2
P4	coxa 0-1	basis 1-0	Re I-0	I-1	II, I, 5	Ri II, 1		

P5 (fig. 6a, h) with basal seta on surface of somite; free exopodal segment oval, less than twice (1.8) as long as maximum width, ornamented with minute spinules along outer margin and along distal half of inner margin; with two lobes halfway inner margin, proximal lobe pointed in dorsal view, adjacent, slightly more distal lobe longer and stout with serrated border; with small notch halfway outer margin; armed with two unequal apical elements, inner one longer and blunt at tip.

P6 (fig. 6a, h) represented by one bipinnate spine as figured.

Male unknown.

Remarks. — The present female P5 resembles that of *Kelleria regalis* Gurney, 1927, figured by Humes & Ho (1969: 221-229, pl. 4 fig. 21) in having 1 long lobe on the inner margin of the P5, but it is distinguished from that species by (1) the proportional lengths of prosome and urosome; (2) the inner margin of P5 of the male having two lobes (one very acute lobe, and one long and stout lobe); (3) there is no suture between the accessory spine and seta on the Ri of P4, and the outer spine on Ri of P4 is twice the length of the inner one; (4) between the long outermost and the 2nd spine of the maxilla there is only 1 small spine (2 small spines in *K. regalis*). In addition, the small size of *K. javaensis* (1.09 mm) is a distinguishing character, too: according to Humes & Ho (1969) the size of *K. regalis* is never less than 1.32 mm.

Etymology. — The specific name *javaensis* refers to the Java Sea, where the species was collected. The name is an adjective agreeing in gender with the (feminine) generic name.

***Kelleria pectinata*** (A. Scott, 1909) (figs. 8-9)

*Pseudanthessius pectinatus* A. Scott, 1909: 268, pl. 58 figs. 21-27 (type locality: Bali Sea, Indonesia 08°0.3'S 116°59'E).

*Kelleria pectinata*; Humes & Ho, 1968: 221-229, pl. 6 figs. 32-38, pl. 7 figs. 39-45, pl. 8 figs. 46-53; Humes & Ho, 1969: 225-228, figs. 31-53; Humes & Stock, 1973: 187, fig. 105g.

Material examined. — Two females (1.30 mm) collected off Tegal, central Java, and 5 females (1.30-1.35 mm) from Lembeh Strait, northern Sulawesi (Celebes) by surface tow of 0.33 mm mesh plankton net at daytime on 3 June 1994 and 25 March 2003.

Female. — Body elongate and narrow (fig. 8a). Prosome about 1.6 times as long as its maximum width, and about 1.3 times as long as urosome (excluding caudal setae). Posterolateral ends of Ms4 narrow and rounded, distal end of Ms5 considerably expanded. Urosome (fig. 8h) consists of 4 somites, genital complex long, as long as postgenital somites combined, proximal end of somite expanded, distal end slightly contracted. Caudal rami (fig. 8a) elongated, about 2.5 times as long as wide, with six setae.

Antennule (fig. 8b) seven-segmented, moderately long; segments 1 and 3 wider than long; segment 2 the longest, about 3 times as long as wide, segment 4 about 1.8 times as long as wide, segments 5 and 6 about 2.5 times as long as wide, segment 7 about 3.3 times as long as wide. Antennule formula as follows: 1-(4), 2-(13), 3-(6), 4-(3), 5-(4 + 1 aesthetasc), 6-(2 + 1 aesthetasc), 7-(7 + 1 aesthetasc).

Antenna (fig. 8c) four-segmented. Coxobasis with one seta. Endopod three-segmented; segment 1 about 1.7 times as long as wide, with one seta subdistally; segment 2 the shortest, slightly wider than long, with geniculate, setiform claw and two setae (proximal one shorter); segment 3 about twice as long as wide, with 4 subdistal setae, and two strong claws and one seta apically.

Mandible (fig. 8d). Proximal notch weakly defined. Main blade broad basally, with tapering lash distally; with inner row of strong spinules; with a longitudinal row of very robust teeth along outer margin of lash, these spines gradually smaller distally, terminating in spine-like process with fine secondary hair-like processes, cluster of about 7 spines present on concave inner margin.

Maxillule (fig. 8e). A single lobe with one subapical, bare element and three distal, bipinnate spines (innermost the smallest).

Maxilla (fig. 8f) with large unarmed syncoxa. Basis with one smooth seta and one inner strong and bipinnate spine; distally armed with coarse teeth as figured.

Maxilliped (fig. 8g) three-segmented; syncoxa large, unarmed; basis with two bipinnate spines, proximal spine with a fringe of long spinules; endopodal segment very short, terminating in a long, stout and curved claw and 2 short spines.

P1 (fig. 9a). Coxa with well developed inner plumose seta. Basis of P1 without setules on distal inner corner, with outer slender seta. Rami three-segmented; first exopodal segment with one outer spine and without inner seta, second segment

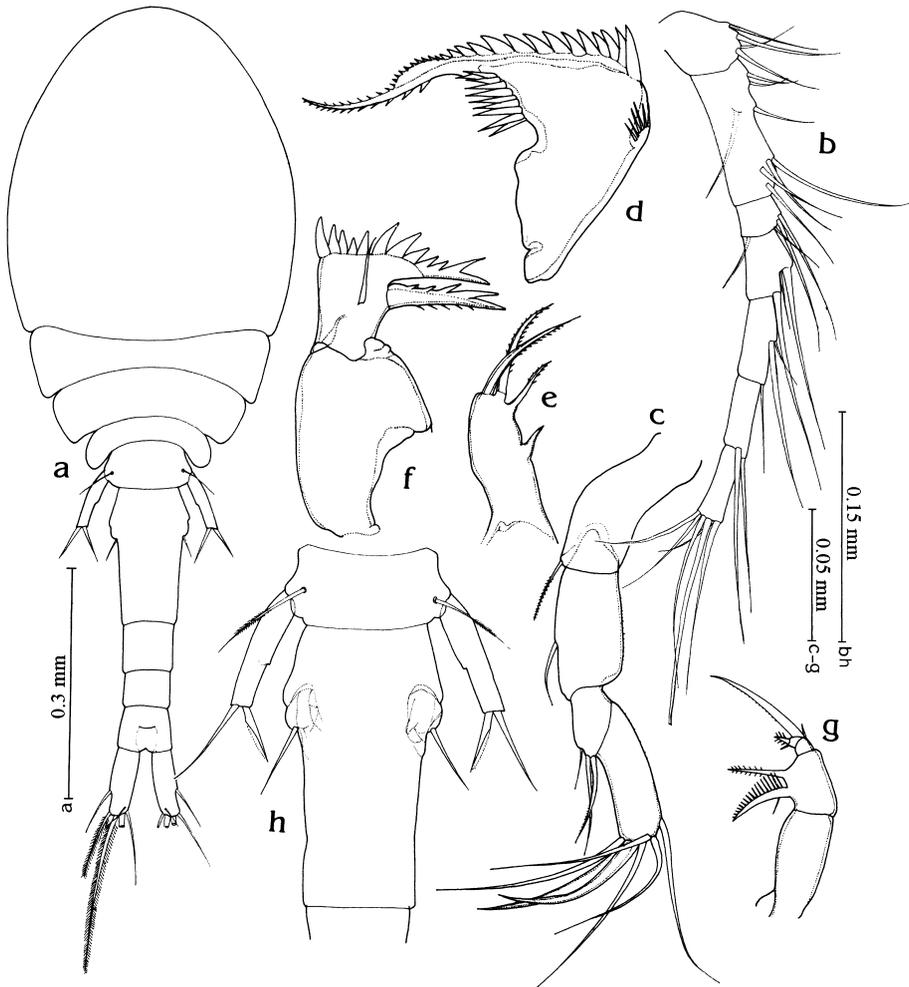


Fig. 8. *Kellieria pectinata* (A. Scott, 1909). Female. a, whole animal, dorsal view; b, antennule; c, antenna; d, mandible; e, maxillula; f, maxilla; g, maxilliped; h, genital complex, dorsal view.

with one outer spine and inner seta, third segment with three outer spines, one apical spine, and four inner setae; first and second endopodal segments with one inner seta, third segment with six setae/spines.

P2 (fig. 9b). Coxa as in P1, basis with outer slender seta. Rami three-segmented; first exopodal segment with one outer spine and without inner seta, second segment with one outer spine and inner seta, third segment with 3 outer spines, one apical spine, and five inner setae; first endopodal segment with one inner seta, second segment with two inner setae, third segment with six setae/spines.

P3 (fig. 9c). Coxa and basis as in P1. Rami three-segmented; first exopodal segment with one outer spine and without inner seta, second segment with one

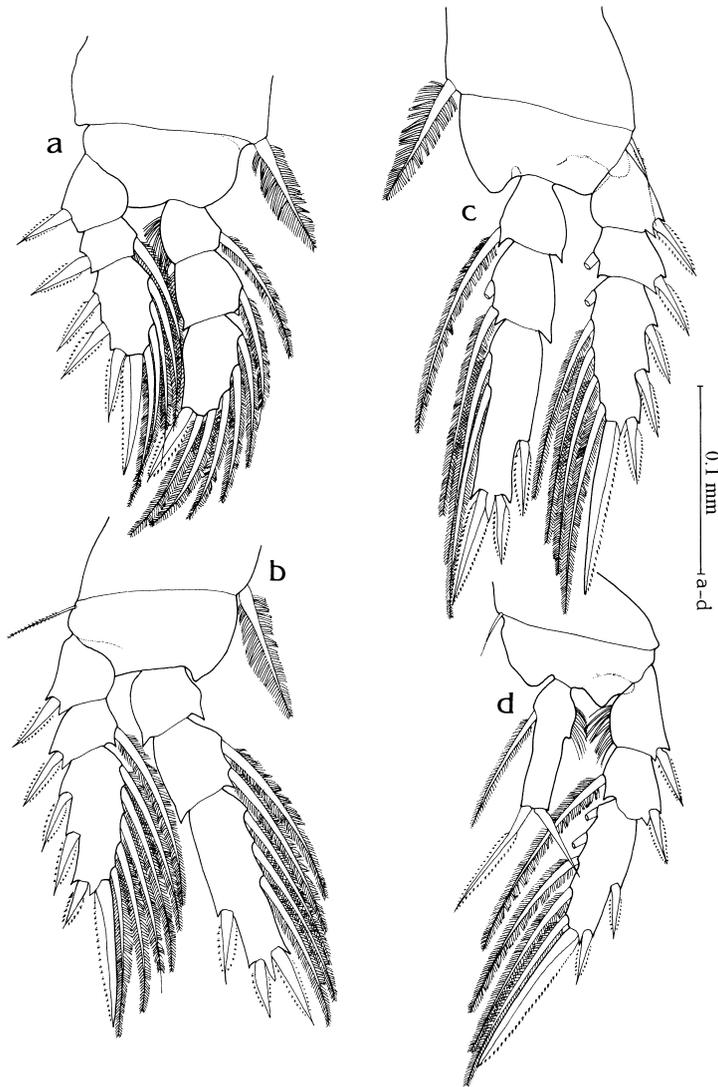


Fig. 9. *Kelleria pectinata* (A. Scott, 1909). Female. a–d, 1st–4th legs, respectively, anterior view.

outer spine and inner seta, third segment with three outer spines, one apical spine, and five inner setae; first endopodal segment with one inner seta, second segment with two inner setae, third segment with five setae/spines.

P4 (fig. 9d). Inner seta of coxa bare and small. Basis as in previous legs. Exopod three-segmented; first segment with one outer spine and without inner seta, second segment with one outer spine and inner seta, third segment with two outer spines, one apical spine, and five inner setae. Endopod one-segmented; with small outer

notch in proximal fourth, without suture between outer notch and point of insertion of seta, and one inner proximal seta and two apical spines (outermost shorter).

Armature formula of P1-P4 (spines in Roman and setae in Arabic numerals) as follows:

P1	coxa 0-1	basis I-0	Re I-0	I-1	III, I, 4	Ri 0-1	0-1	I, I, 4
P2	coxa 0-I	basis I-0	Re I-0	I-1	III, I, 5	Ri 0-1	0-2	II, I, 3
P3	coxa 0-I	basis I-0	Re I-0	I-1	III, I, 4	Ri 0-1	0-2	II, I, 2
P4	coxa 0-I	basis I-0	Re I-0	I-1	II, I, 5	Ri II-1		

P5 (fig. 8a, h) with basal seta on surface of somite, free exopodal segment slender and elongated, with a slight inner proximal expansion, about 3.5 times as long as maximum width, with small notch halfway inner margin; armed with two unequal apical elements, outer terminal element setiform and naked.

P6 (fig. 8a, h) represented by two naked setae (one of these very small) laterally on genital opercula, and a small spiniform process near their insertions.

The male was not found in this study.

Remarks. — This species was originally described from a single female found in surface plankton in the Bali Sea as *Pseudanthessius pectinatus* by A. Scott (1909). Gurney (1927) transferred it to his new genus *Kelleria*. The male of this species was described by Humes & Ho (1969) based on specimens collected from Nosy Bé, Madagascar. Among the striking similarities in the females are: the form of the antenna and its terminal elements, the nature of the mandible, and the armature of the maxilliped, especially on the distalmost segment. The female of *K. pectinata* resembles *K. propinqua* (T. Scott, 1894), but it can be distinguished from the latter by the form of the basis of the maxilliped. The proximal spine on the basis of *K. pectinata* has a fringe of long spinules (vs. without fringe of long spinules), and a single long apical claw on the endopod (vs. two long apical claws).

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