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A new species of *Acanthomolgus* Humes & Stock, 1972 (Copepoda: Cyclopoida) from the Red Sea, Egypt, with an updated key to species

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Abstract

The marine copepod genus *Acanthomolgus* Humes and Stock, 1972 is composed of 48 species of symbiotic copepods that have been collected from different localities of the Indian, Pacific and Atlantic Oceans. They appear to be host specific to anthozoan cnidarians including Alcyonacea, Gorgonacea and Telestacea. Herein, we describe a new species, *A. humesi* **sp. nov.** recorded from the Red Sea, Egypt. This species differs from its congeners based on the morphology of the prosome and urosome shape, antenna, female and male P5 and caudal rami. An updated key to the known species of *Acanthomolgus* for both females and males of the genus is presented.

Key words: Ergasilida, Rhynchomolgidae, symbiotic copepods, taxonomy

Introduction

Published reports of lichomolgid copepods from the Red Sea region are scarce. The following members of Ergasilida have been reported in nearby geographical regions: *Lichomolgus minor* Scott, A., 1902; an undescribed species of the genus *Xarifia* Humes 1960; five new species of the genus *Spaniomolgus* Conradi *et al.* (2018), Ivanenko *et al.* (2014) and Shelyakin *et al.* (2018) recorded unidentified species of *Spaniomolgus*, all associated with the coral *Stylophora pistillata* (Esper, 1792). The first author had the opportunity to study a collection of copepods from along the coast of Egypt in the Red Sea and found an undescribed species of the genus *Acanthomolgus* Humes & Stock, 1972. The members of this genus live in association with mostly cnidarians with species of the families Nephtheidae Gray, 1862 and Plexauridae Gray, 1859 and have been reported from the: Indian Ocean, 21 species; Pacific Ocean, 14 species; Atlantic Ocean, 13 species (Humes & Ho 1968a; Humes & Ho 1968b; Humes & Stock 1973; Humes 1973, 1974; Kim 2005, 2007 & 2009; Stock 1975; Lee *et al.* 2024). In this paper, we present the first report of a new species of the genus *Acanthomolgus* from the Red Sea. In addition, over the years several authors published keys for the genus, using the basics of these keys we have updated and now provide a revised species key for both the females and males of the genus.

Materials and methods

Drawings of the specimens were made using a Wild M5 dissecting microscope with a camera lucida. Total length was measured in millimeters (mm) from the tip of the prosome to the posterior end of the caudal rami, terminal setae of the caudal rami not included in determining the body length. In all measurements of the different structures, first the length is measured, followed by the width (length x width). In the formula for the armature of legs 1–4 the Roman numerals indicate spines, and the Arabic numerals represent setae. All material has been deposited in the United States National Museum (USNM). Morphological terminology follows Huys & Boxshall (1991) and abbreviations used in this paper are: swimming legs: P1 = Leg 1; P2 = Leg 2; P3 = Leg 3; P4 = Leg 4; P5 = Leg 5.

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Taxonomic results

Subclass Copepoda Milne Edwards, 1840

Order Cyclopoida Burmeister, 1834

Suborder Ergasilida Khodami, Mercado-Salas, Tang & Martinez Arbizu, 2019

Family Rhynchomolgidae Humes & Stock, 1972

Genus *Acanthomolgus* Humes & Stock, 1972

***Acanthomolgus humesi* sp. nov.**
(Figs. 1–3)

Diagnosis. Caudal rami as long as wide; antenna with two long claws almost the same length; maxillule with four elements; maxilliped segment 2 setae almost the same length; female genital segment with lateral margins non-parallel; P1 exopod segment 1 outer spine in the is longer than the width of this segment; P4 endopod segment 2 lacks inner spines. Female P5 with a proximally swollen, lateral margin with row of small spinules, the longer terminal seta does not extend over caudal rami.

Type material. All type specimens from Egypt, Ras Banas, Red Sea (23° 54' N 35° 48' E), no host data, no depth recorded, collected in 1950 by S. Vatikiotis. Holotype: non-ovigerous female USNM 1606769; Allotype: adult male, USNM 1606770; Paratypes: 18 females, 4 males USNM 1606771.

Description. Adult female. (Fig. 1A) Total Length 0.76 mm (mean = 0.73mm), greatest width 0.45 mm (mean = 0.43 mm) prosome unusually broad, 0.54 mm long, occupying more than 71% length of body. Cephalothorax with dorsal suture delimiting cephalosome and first pedigerous somite. Pedigerous somites 1–3 triangularly rounded lateral margins, somite 4 narrow with rounded lateral margins. Urosome (Fig. 1B) 5-segmented, caudal rami as long as wide. Genital double-somite 101×105 μm, almost as long as wide, distolateral margins produced laterally with small seta. Urosomites 1–3 length x width; 20×61, 16×57, 28×52 μm, respectively. Caudal rami (Fig. 1E) 16×24 μm, ratio slightly wider than long, distolateral seta smooth, terminal 5 setae plumose. Egg sac not seen. P5 (Fig. 3B) free segment proximally swollen and elongate, 36×10 μm, ratio 3.6: 1, terminating in two unequal smooth setae, 25 μm (medial) and 18 μm (lateral).

Rostrum (Fig. 1C) triangular in shape, apex bluntly rounded.

Labrum (Fig. 1D) bifid posteroventral lobes elongated.

Antennule (Fig. 1F) 7-segmented, slender, 319 μm long, with armature formula: 4, 13, 6, 3, 4+1 aesthetasc, 2+1 aesthetasc, and 7+1 aesthetasc; all setae smooth.

Antenna (Fig. 1G) slender, 4-segmented, with armature formula: 1, 1, 3, and 5+2 claws. Approximate lengths of first to fourth segments 83, 74, 32, and 96 μm. Two terminal claws nearly equal in length, 85 μm and 110 μm. Shorter claw slightly thicker than longer.

Mandible (Fig. 2A) inner medial margin knotched, with lateral triangular process close to the distal outer margin, inner margin with dense spinule rows. Convex margin with row of minute spinules. Lash long and serrate along both margins.

Maxillule (Fig. 1H) small, 1-segmented with 3 terminal and 1 lateral setae.

Maxilla (Fig. 1I) 2-segmented, syncoxa (first segment) unarmed, basis (second segment) with 2 small surface setae and one inner enlarge seta, with spinules along only one margin. Distal lash longer than inner seta, evenly curved

Maxilliped (Fig. 2B) 3-segmented. Syncoxa (first segment) longest and unarmed, basis (second segment) with two long smooth medial setae almost equal in length, short endopod (third segment) shortest, spinelike with lateral denticles and one small surface seta, and large lateral spine with denticles.

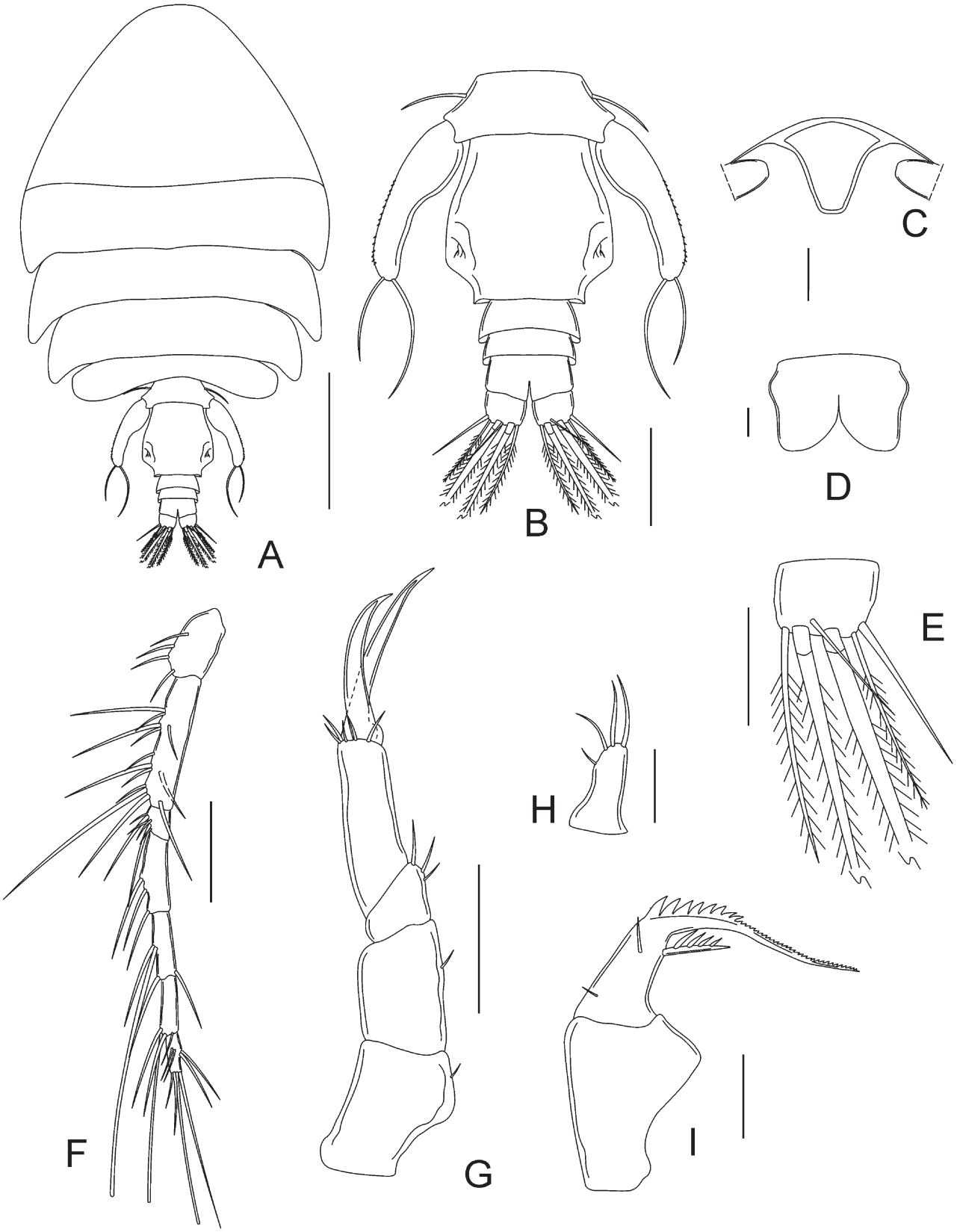

FIGURE 1. *Acanthomolgus humesi* **sp. nov.**, female. (Holotype). A) Habitus, dorsal view; B) urosome; C) rostrum; D) labrum; E) caudal ramus; F) antennule; G) antenna, H) maxillule, I) maxilla. Scale bars: 0.2 mm (A), 0.1 mm (B, E–G), 0.05 mm (C, D), 0.02 mm (H, I).

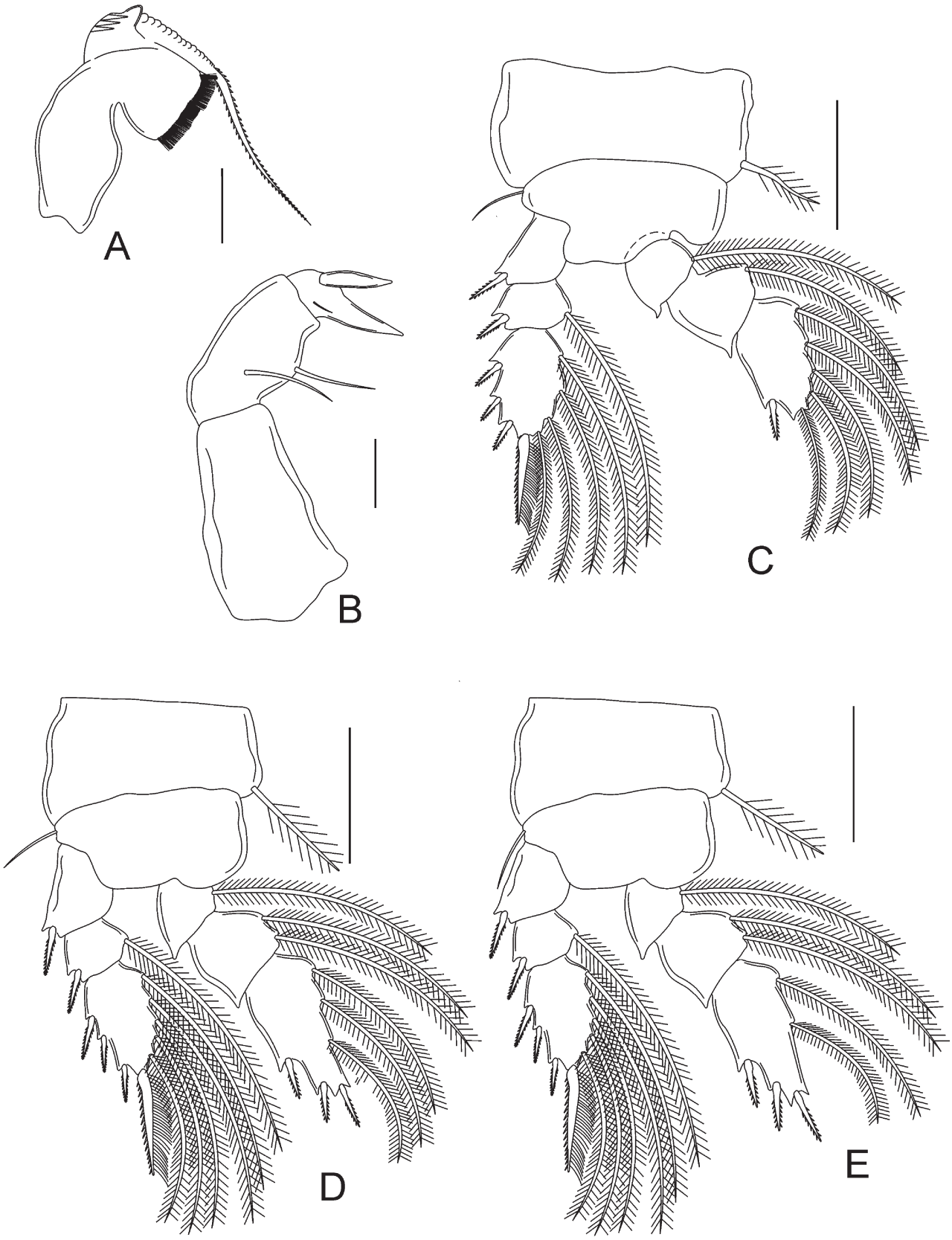

FIGURE 2. *Acanthomolgus humesi* **sp. nov.**, female. (Holotype). A) mandible; B) maxilliped; C) P1; D) P2; E) P3. Scale bars: 0.02 mm (A–E).

Legs 1-4 (Fig. 2C–E, 3A) 3-segmented exopod and endopod, except P4 endopod only 2-segmented, with following armature formula.

	Coxa	Basis	Exopod	Endopod
Leg 1	0-1	1-0	I-0; I-1; III, I, 4	0-1; 0-1; I, 5
Leg 2	0-1	1-0	I-0; I-1; III, I, 5	0-1; 0-2; I, II, 3
Leg 3	0-1	1-0	I-0; I-1; II, I, 5	0-1; 0-2; I, II, 2
Leg 4	0-1	1-0	I-0; I-1; II, I, 5	0-I; II

P1–P3 inner coxal seta large and plumose, though P4 this seta small and smooth. P4 second endopodal segment 1.4 times as long as wide, two terminal spines the medial 2.3 times as long as lateral spine.

Description. Adult male. Body (Fig. 3C) smaller and narrower than female. Prosome ovate in shape, length 0.68 mm (0.67mm–0.68 mm) and greatest width 0.26 mm (0.25mm–0.26 mm) based on 4 specimens, lateral margins rounded. Urosome (Fig. 3D) 6-segmented, segment 1 (fifth pedigerous somite) small, 0.13 mm wide. Segment 2 (genital somite) distinctly broad, distolateral corners somewhat acute, 140×150 μm and somites 3–6, 20×60, 20×57, 18×54, and 20×57 μm, respectively. Caudal rami 15×20 μm, slightly wider than long. Rostrum and labrum as in female. Antennule with two additional aesthetasc on second segment and one in fourth segment. Antenna and mouthparts resembling those of female. Maxilliped (Fig. 3F) 3-segmented, syncoxa 36 μm long and unarmed, basis distally swollen and medial margin lined with small spinules and two surface setae, third segment smallest with very large terminal claw possessing large smooth proximal seta. P5 (Fig. 3E) free segment, 40×15 μm with two terminal setae, medial seta the smaller. P1–P4 segmented and armed as in the female except for the last segment of P1 endopod with armature of I, I, 4 (Fig. 3G).

Etymology. The species is dedicated to Arthur G. Humes, who described 730 symbiotic copepods during his career.

Remarks. 48 species of *Acanthomolgus* are currently known (Walter & Boxshall, 2025). Members of this genus typically found associated with marine cnidarians, however, in this species no host data was available, though we assume it is not a free living species. *Acanthomolgus humesi* **sp. nov.** caudal rami as long as wide, antenna pair of long claws of similar lengths, maxilliped second segment medial setae of the same length, P4 endopod second segment smooth lacks spines and spinules, except for terminal spines. Female genital segment with sides non-parallel. Other species of *Acanthomolgus* that share these characters are far from the Red Sea: *A amboinensis* Kim I.H, 2007 Ambon Island and *A. gomumuiensis* Kim I.H, 2007 Gomumu Island, both from Banda Islands, Indonesia; and *A. gentilis* (Humes & Ho, 1968a) from Madagascar, all from southern and western Indian Ocean.

Comparing these three species the following differences are noted. In *A. amboinensis* female P5 free segment with a proximomedial margin roundly expanded; P4 endopod second segment terminal spine equal in length to the segment; P1 exopod first segment lateral spine longest of the three exopod segments. Whereas in *A. humesi* n. sp. P5 free segment lacks a pronounced proximal expansion, P4 endopod second segment terminal spine shorter than segment; P1 exopod first segment lateral spine shorter and all three exopod segments spines equal in length. In *A. gomumuensis***,** female P5 free segment terminal longer seta extending past caudal rami, maxilla medial seta large with many large spinules along lateral margin and small spinules along medial margin, P4 endopod second segment large distal spine equal in length to segment.,–Whereas in *A. humesi* **sp. nov.**, female P5 free segment terminal longer seta not extending past caudal rami, maxilla medial seta small with few spinules along lateral margin and none along medial margin, P4 endopod second segment large distal spine much shorter in length to segment. In *A. gentilis***,** P4 endopod second segment large distal spine equal in length to segment, female P5 free segment numerous lateral setae, male P5 free segment elongate with lateral spinules. Whereas in *A. humesi* sp. nov, P4 endopod second segment large distal spine much shorter in length to segment, female P5 free segment few lateral setae, male P5 free segment short lacking lateral spinules.

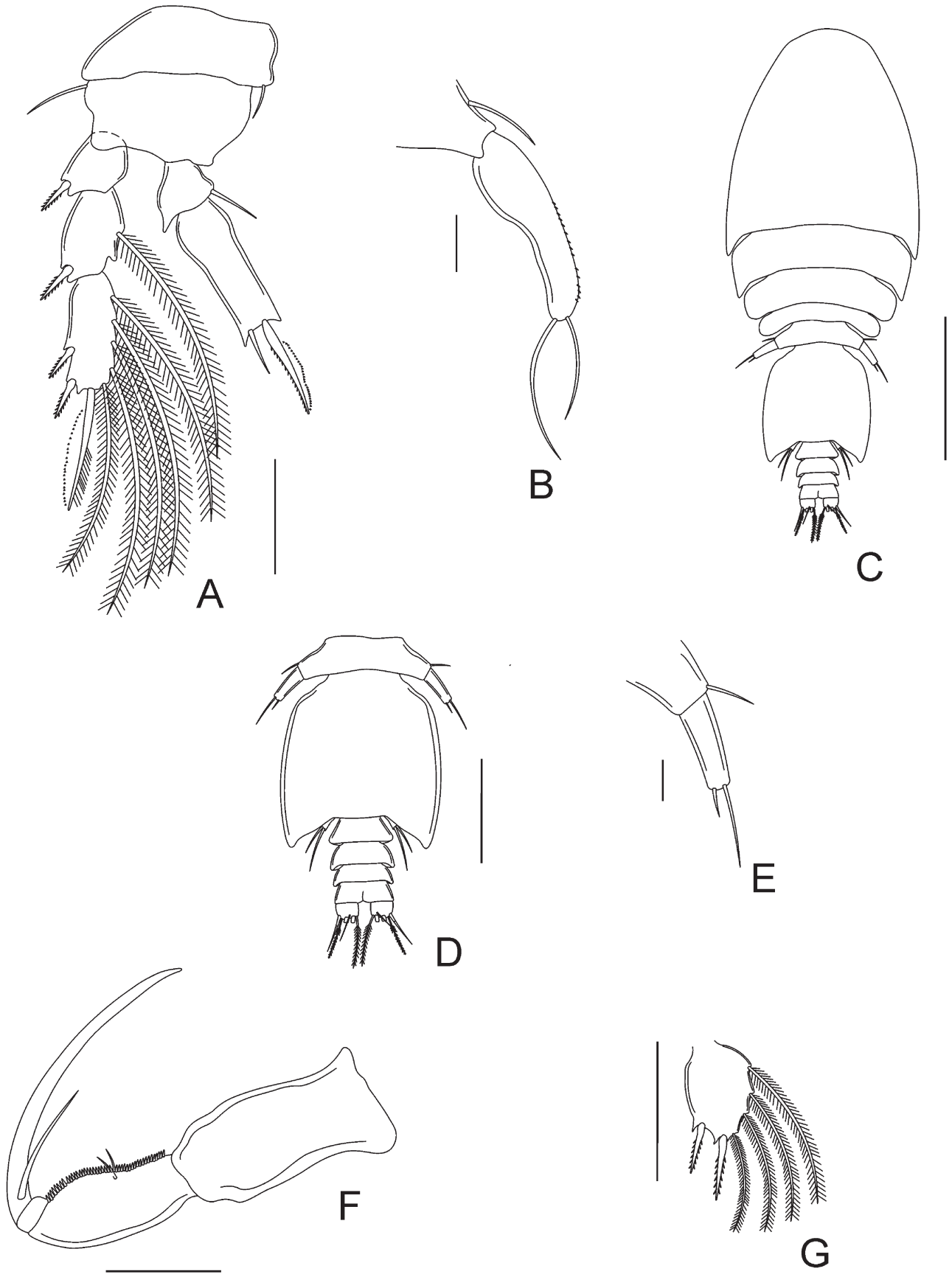

FIGURE 3. *Acanthomolgus humesi* **sp. nov.**, female. (Holotype). A) P4; B) P5. *A. humesi* **sp. nov.**, male. (Allotype). C) dorsal view; D) urosome; E) Free segment of P5; F) maxilliped; G) P1(endopod third article). Scale bars: 0.02 mm (A, B, E–G), 0.1 mm (C, D).

Taxonomic key for the identification of the known species of the genus *Acanthomolgus*

This key is based and modified on keys presented by Humes & Stock (1973), Humes (1973) and Stock (1975).

Key for Females

l. Antenna with two distal claw-like elements, smaller one being at least half as long as the larger one **11**

\- Antenna distally with one claw-like and one setiform element, the latter almost vestigial, much smaller both in length and in diameter than the claw **2**

2. P5 lateral margin of the free segment naked. Medial margin of the same article without conspicuous expansion . . . . . ***A. mononyx* Stock, 1975 (Curacao)**

\- P5 lateral margin of free segment armed with row(s) of spinules. Medial margin of P5 with conspicuous expansion. **3**

3. Antenna second segment slender (more than twice as long as wide). **4**

\- Antenna second robust (less than twice as long as wide). . . . . **6.**

4. Antenna subterminal, outer armature of fourth segment consisting of four minute elements . . . . . **5.**

\- Antenna subterminal, outer armature of fourth segment consisting of one long and three small elements. . . . . ***A. seticornis* Stock, 1975 (St. Martin).**

5. P5 free segment with conspicuous spinules on lateral margin and terminal setae about equal in length. Caudal rami with a length/width ratio of 1.4–1.6: 1 . . . . . ***A. aequiseta* Stock, 1975 (Curacao).**

\- P5 free segment with minute spinules on lateral margin and terminal setae markedly unequal in length. Caudal rami with a length/ width ratio of 1.9: 1 . . . . . ***A. intermedius* Stock, 1975 (Curacao)**

6. P5 free segment with conspicuous spinules on lateral margin **7**

\- P5 free segment with minute spinules on lateral margin . . . . . **8.**

7. Antenna terminal claw relatively long, more than the half of the fourth segment length . . . . . ***A. affinis* Stock, 1975 (Curacao and Bermuda).**

\- Antenna terminal claw relatively short, less than the half of the fourth segment length . . . . . ***A. muriceanus* Humes, 1973 (Bermuda).**

8. Caudal rami more than twice as long as wide . . . . . **9.**

\- Caudal rami less than twice as long as wide . . . . . **10.**

9. P5 free segment lateral margin with less than 10 spinules; this article is about twice as long as its greatest width. Terminal claw of antenna relatively short, is 0.6 the length of fourth segment . . . . . ***A. longifurca* Stock, 1975 (Curacao).**

\- P5 free segment lateral margin with more than 10 spinules; this article is 2.6 times as long as its greatest width. Terminal claw of antenna relatively long, is 0.9 the length of fourth segment . . . . . ***A. bayeri* Humes, 1973 (Bermuda).**

10. Antenna fourth segment longer than second segment and outer margin of second segment of antenna with a row of spinules; P4 second endopod segment with long distal spiniform processes. . . . . ***A. longidactylus* Stock, 1975 (Curacao).**

\- Antenna fourth segment slightly shorter than second segment and outer margin of second segment naked; P4 second endopod segment with short distal spiniform processes . . . . . ***A. verrucipes* Humes, 1973 (Bermuda).**

11. Antenna two terminal antennal claws are almost equal in length and diameter. . . . . **20.**

\- Antenna two terminal antennal claws one distinctly shorter and thinner than the other . . . . . **12.**

12. P5 free segment triangular in shape . . . . . ***A. triangulipes* Stock, 1975 (Curacao, St. Eustatius, St. Martin & Cuba).**

\- P5 free segment not triangular in shape . . . . . **13.**

13. Third pedigerous somite with a dorsal tubercle. P5 exopod segment Ear-like proximal expansion . . . . . **14.**

\- Third pedigerous somite without a dorsal tubercle. P5 exopod segment lacks ear-like proximal expansion . . . . . **16.**

14. Genital segment is longer than wide . . . . . ***A. rugosus* Lee, Lee & Kim, 2024 (Dokdo Island, Korea).**

\- Genital segment is wider than long . . . . . **15.**

15. Antenna fourth segment is shorter than segment 2; P4 inner spine on segment 2 about 2.5 times longer than outer spine. . . . . ***A. triplus* Lee, Lee & Kim, 2024 (Jeju Island, Korea).**

\- Antenna fourth segment of antenna is longer than segment 2; P4 inner spine on segment 2 is about 2 times longer than outer spine . . . . . ***A. dokdoicus* Lee, Lee & Kim, 2024 (Dokdo Island, Korea).**

16. P5 free segment with two rounded swellings on the inner margin. . . . . **17.**

\- P5 free segment with a small rounded proximal inner expansion on the inner margin. . . . . **18.**

17. Genital segment in dorsal view with rounded sides and maxilla with the main lash medially armed with a row of teeth of which the proximal four teeth are small and needlelike . . . . . ***A. dionyx* Stock, 1975 (Curacao).**

\- Genital segment with slight lateral “wings” and maxilla with the most proximal tooth in the main lash are the largest and triangular in shape . . . . . ***A. bilobipes* Humes & Stock, 1973 (Curacao, Jamaica & Barbados).**

18. Maxillule with four elements.. . . . . ***A. notialis* Lee, Lee & Kim, 2024 (Jeju Island, Korea).**

\- Maxillule with three elements . . . . . **19.**

19. P5 free segment with small spinules on the lateral margin, P4 first endopod segment more than half the length of the second endopod segment . . . . . ***A. gorgoniae* Humes, 1973 (Bermuda & Curacao).**

\- P5 free segment strongly tapering with strong spines on the lateral margin, P4 first endopod segment less than half the length of the second endopod segment . . . . . ***A. dispadactylus* Kim, I.H., 2007 (Moluccas).**

20. Maxilliped two setae on second segment almost equal in length. . . . . **21.**

\- Maxilliped two setae on second segment one seta much longer than the other. . . . . **28.**

21. Caudal rami two long medial terminal setae on caudal rami naked, P5 free segment with a prominent inner basal pointed expansion directed distally . . . . . ***A. cuneipes*** **(Humes & Ho, 1968a) (Madagascar).**

\- Caudal rami two long medial terminal setae on caudal rami with plumose, P5 free segment with a small inner basal rounded expansion . . . . . **22.**

22. Genital segment lateral margin expanded rather than rounded; mandible with small blunt process on basal area near serrated fringe. . . . . ***A. exilipes*** **(Humes & Ho, 1968a) (Madagascar).**

\- Genital segment lateral margin expanded partly rounded; mandible lacks small blunt process . . . . . **23.**

23. P4 s endopod second segment without inner spinules . . . . . **24.**

\- P4 s endopod econd segment with small inner spinules. . . . . ***A. fissisetiger*** **(Humes & Ho, 1968a) (Madagascar).**

24. Caudal rami distinctively wider than long . . . . . ***A. brevifurca*** **Humes, 1990 (Moluccas).**

\- Caudal rami almost as wide as long . . . . . **25.**

25. Antenna third endopod segment with scalpel-like setae . . . . . **26.**

\- Antenna third endopod segment with simple setae . . . . . **27.**

26. Maxillule bearing three terminal setae. Labrum with two very broad posteroventral lobules, incision not reached middle length of the labrum. . . . . ***A. gentilis*** **(Humes & Ho, 1968a) (Madagascar).**

\- Maxillule bearing three terminal setae and one small lateral seta. Labrum with two broad posteroventral lobules, deep incision passes middle of the length of the labrum . . . . . ***A. gomumuensis*** **Kim, I.H., 2007 (Moluccas)**.

27. P1 outer spine on the first exopod segment distinctly longer than the width of the first exopod segment . . . . . ***A. amboinensis*** **Kim, I.H., 2007 (Moluccas).**

\- P1 outer spine on the first exopod segment not longer than the width of the first exopod segment . . . . . ***A. humesi*** **n. sp. (Egypt, Red Sea).**

28. P4 basis medial margin of basis with a row of hairs; rostrum sexually dimorphic; two long median terminal setae on caudal ramus naked . . . . . ***A. varirostratus*** **(Humes & Ho, 1968a) (Madagascar).**

\- P4 basis medial margin of basis smooth; rostrum alike in both sexes; two long median terminal setae on caudal ramus with lateral spinules (sometimes sparse and minute) . . . . . **29.**

29. P5 free segment without an inner expansion . . . . . **30.**

\- P5 free segment with an inner expansion. . . . . **31.**

30. Maxillule with four elements.. . . . . ***A. crassae*** **Lee, Lee & Kim, 2024 (Chuja Island, Korea).**

\- Maxillule with three elements . . . . . ***A. jei*** **Lee, Lee & Kim, 2024 (Jeju Island, Korea).**

31. P5 free segment with medial proximal distally directed process separated sharply from the more distal margin of the segment . . . . . **32.**

\- P5 free segment with a rounded medial process not separated sharply set from the more distal margin of the segment . . . . . **36.**

32. Genital segment wider anteriorly to middle; P5 free segment shorter than genital segment . . . . . ***A. verseveldti*** **(Humes & Ho, 1968a) (Madagascar).**

\- Genital segment wider posteriorly to middle; P5 free segment as long as genital segment . . . . . **33.**

33. P1 exopod first segment with spine unusually long (twice the length of the spine on second segment). . . . . ***A. longispinifer*** **(Humes & Ho, 1968b) (Madagascar).**

\- P1 exopod first segment with spine about as long as that on second segment. . . . . **34.**

34. Antenna with the shorter claw about twice as thick as the longer . . . . . ***A. astrictus*** **Humes & Stock, 1973 (Madagascar).**

\- Antenna with the shorter claw almost as thick as the longer . . . . . **35.**

35. Antenna with the terminal claws distinctly shorter than segment 4, maxilla distal margin very delicately serrated. . . . . ***A. arctatipes*** **Humes, 1974 (Madagascar).**

\- Antenna with terminal claws almost the same length of the segment 4, maxilla distal margin with dentate convex margin . . . . . ***A. tenuispinatus*** **Kim, I.H., 2009 (Madagascar).**

36. Maxillule with four elements . . . . . **37.**

\- Maxillule with three elements . . . . . **47.**

37. Genital segment widest posterior to middle. . . . . ***A. boholensis*** **Humes, 1990 (Philippines).**

\- Genital segment widest at middle. . . . . **38.**

38. P1 First exopodal segment with a long outer spine, more than 1.5 times as long as the width of the first exopodal segment . . . . . ***A. bandaensis*** **Kim, I.H., 2007 (Moluccas).**

\- P1 First exopodal segment lacks a long outer spine. . . . . **39.**

39. Antenna terminal claws shorter than the fourth antenna segment . . . . . **44.**

\- Antenna terminal claws longer than the fourth antenna segment. . . . . **40.**

40. P5 free segment about two times longer than wide . . . . . ***A. plantei*** **Humes & Stock, 1973 (Madagascar).**

\- P5 free segment more than three times longer than wide. . . . . **41.**

41. Antenna fourth segment less than two times the length of the third segment . . . . . **42.**

\- Antenna fourth segment at least two times the length of the third segment. . . . . **43.**

42. Antenna the distal seta on the third segment is distinctly smaller than the other two proximal setae on the same segment, P5 free segment shorter with the ratio of length to width being 4.18:1 . . . . . ***A. geminus*** **Kim, I.H. 2005 (Phillipines).**

\- Antenna the distal setae on the third segment is almost the same length the other two setae on the same segment, P5 free segment longer with the ratio of length to width being 5,0:1. . . . . ***A. longiunguifer*** **Kim, I.H., 2005 (Phillipines).**

43. Antennule second segment relatively short (3.5:1). P5 slender with two terminal setae nearly equal in length . . . . . ***A. mopsellae*** **Humes, 1974 (Madagascar)**.

- Antennule second segment more elongate (5.9:1). P5 stouter with two terminal setae very unequal . . . . . ***A. hians*** **(Humes & Ho, 1968a) (Madagascar).**

44. Maxilliped second segment longer seta almost twice the length of the shorter seta. . . . . **45.**

- Maxilliped second segment longer seta is five times the length of the shorter seta. . . . . **46.**

45. P5 segment with a small and rounded inner expansion. Caudal rami with the two median terminal setae pinnate, not broad or ribbon-like . . . . . ***A. oporinus*** **Lee, Lee & Kim, 2024 (Jeju Island, Korea).**

- P5 segment with ear-like inner expansion. Caudal rami with the two median terminal setae broad, ribbon-like . . . . . ***A. taenichaetatus*** **Lee, Lee & Kim, 2024 (Geomon Islands, Korea).**

46. Antenna third segment with naked spine. Maxilla with inner distal spine rather blunt and finely barbed . . . . . ***A. hales*** **(Humes & Stock, 1973) (Madagascar).**

- Antenna third segment with simple spine. Maxilla with inner distal spine ornamented with large spines . . . . . ***A. telestophilus*** **(Humes & Ho, 1968b) (Madagascar).**

47. P5 free segment inner margin with a thumb-like process . . . . . ***A. pollicaris*** **Humes & Lewbel, 1977 (California).**

- P5 free segment inner margin lacks a thumb-like process . . . . . **48.**

48. Antenna claws longer than 3 segment. . . . . ***A. eminulus*** **Humes & Lewbel, 1977 (California).**

- Antenna claws shorter than 3 segment. . . . . ***A. combinatus*** **Humes, 1974 (Madagascar).**

Key for Males

l. Antenna terminal claws one claw-like and one setiform element, the latter almost vestigial, much smaller both in length and in diameter than the claw . . . . . **2.**

- Antenna terminal claws nearly equal in length, the shorter at least three fourths the length of the longer . . . . . **14.**

2. Caudal rami almost as long as wide. . . . . **3.**

- Caudal rami slightly longer than wide or longer than wide . . . . . **4.**

3. Antenna with very elongated, spiniform, sigmoid, pectinated elements on the inner margin of articles 1 and 2, both are at least more than the half of the length of both articles respectively . . . . . ***A. triangulipes*** **Stock, 1975 (Curacao, St. Eustatius, St. Martin & Cuba).**

- Antenna with short, thin, sigmoid, minutely pectinated elements on the inner margin of articles 1 and 2, both are at least less than the half of the length of both articles respectively . . . . . ***A. dionyx*** **Stock, 1975 (Curacao).**

4. Antenna second segment slender (more than twice as long as wide). . . . . **5.**

- Antenna second segment robust (less than twice as long as wide) . . . . . ***A. bayeri*** **Humes, 1973 (Bermuda).**

5. P5 free segment lateral margin naked. . . . . ***A. mononyx*** **Stock, 1975 (Curacao).**

- P5 free segment lateral marginarmed with row(s) of spinules. . . . . **6.**

6. P5 free segment with conspicuous spinules on lateral margin . . . . . **7.**

- P5 free segment with minute spinules on lateral margin . . . . . **10.**

7. Caudal rami ratio length/wide 1.2: 1 and ratio length/wide, antenna second segment more than 3:1 . . . . . ***A. aequiseta*** **Stock, 1975 (Curacao).**

- Caudal rami ratio length/wide more than 1.2: 1, antenna second segment less than 3:1. . . . . **8.**

9. Antenna second segment with a setiform element. . . . . ***A. muriceanus*** **Humes, 1973 (Bermuda).**

- Antenna second segment with dagger-like spine . . . . . ***A. affinis*** **Stock, 1975 (Curacao and Bermuda).**

10. P5 setae unequal in length . . . . . **11.**

- P5 setae subequal in length. . . . . **12.**

11. Antenna terminal claws more than half of the length of third segment of antenn . . . . ***A. verrucipes*** **Humes, 1973 (Bermuda).**

- Antenna terminal claws less than half of the length of third segment of antenna . . . . . ***A. intermedius*** **Stock, 1975 (Curacao).**

12. P5 slender, ratio length/wide is more than 4.5:1 . . . . . ***A. seticornis*** **Stock, 1975 (St. Martin).**

- P5 slender, ratio length/wide is less than 4.5:1. . . . . **13.**

13. Antenna single terminal claw of relatively short, ratio length claw/article 3 is 1.82: 1, P2 endopod third segment with medium long mediolateral spiniform process . . . . . ***A. longifurca*** **Stock, 1975 (Curacao).**

- Antenna single terminal claw relatively long, ratio length claw/article 3 is 1.28:1, P2 endopod third segment with very long mediolateral spiniform process. . . . . ***A. longidactylus*** **Stock, 1975 (Curacao).**

14. Maxilla with four setae. . . . . **21.**

- Maxilla with three setae . . . . . **15.**

15. Caudal rami longer than wide or wider than long . . . . . **16.**

- Caudal rami almost longer than wide. . . . . **17.**

16. Caudal rami wider than long, maxilla with three simple setae. . . . . ***A. bilobipes*** **Humes & Stock, 1973 (Curacao, Jamaica & Barbados).**

- Caudal rami equal in size, maxilla with one barbed and two simple setae . . . . . ***A. pollicaris*** **Humes & Lewbel, 1977 (California).**

17. Rostrum with a minute median posteroventral knob . . . . . ***A. varirostratus*** **(Humes & Ho, 1968a) (Madagascar).**

- Rostrum rounded as in female . . . . . **18.**

18. P5 slender, more than seven times as long as wide . . . . . ***A. eminulus*** **Humes & Lewbel, 1977 (California).**

- P5 least than six times as long as wide. . . . . **19.**

19. Antenna terminal claws almost equal in size to longer claw . . . . . **20.**
- Antenna terminal claws one slender and shorter than longer claw . . . . . ***A. dispadactylus*** **Kim, I.H., 2007 (Moluccas).**
20. P5 Free segment distally armed with two elements, the longest is more than twice the length of the shorter . . . . . ***A. combinatus*** **Humes, 1974 (Madagascar).**
- P5 Free segment distally distally armed with two elements of almost the same length . . . . . ***A. jei*** **Lee, Lee & Kim, 2024 (Jeju Island, Korea).**
21. Caudal rami longer than wide or wider than long . . . . . **41.**
- Caudal rami as long as wide. . . . . **22.**
22. Third pedigerous somite with dorsal tubercle, dorsal surface rugose . . . . . ***A. rugosus*** **Lee, Lee & Kim, 2024 (Dokdo Island, Korea).**
- Third pedigerous somite lacks dorsal tubercle, dorsal surface smooth . . . . . **23.**
23. Antenna terminal claws longer than the third segment . . . . . **31.**
- Antenna with claws shorter than or as long than the third segment. . . . . **24.**
24. Antenna terminal claws about as long as fourth segment . . . . . **25.**
- Antenna terminal two claws distinctly shorter than fourth segment. . . . . **26**.
25. Mandible with a small blunt process on basal area near serrated fringe. . . . ***A. exilipes*** **(Humes & Ho, 1968a) (Madagascar).**
- Mandible lack a blunt processs on basal area near serrated fringe. . . . . ***A. astrictus*** **Humes & Stock, 1973 (Madagascar).**
26. P1 exopod first segment with spine unusually long (twice the length of the spine on second segment). . . . . ***A. longispinifer*** **(Humes & Ho, 1968b) (Madagascar).**
- P1 exopod first segment with spine about as long as that on second segment . . . . . **27.**
27. P5 Free segment less than five times longer than wide. . . . . **28**.
- P5 Free segment more than five times longer than wide . . . . . ***A. cuneipes*** **(Humes & Ho, 1968a) (Madagascar).**
28. P1 endopod third segment with process between the two spines, blunt. . ***A. verseveldti*** **(Humes & Ho, 1968a) (Madagascar).**
- P1 endopod third segment with process between the two spines, pointed. . . . . **29.**
29. P5 Free segment with two distal elements almost with the same length . . . . . ***A. boholensis*** **Humes, 1990 (Philippines).**
- P5 Free segment with two distal elements with different length . . . . . **30**.
30. Maxilla marginal distal spine rather blunt and finely barbed. . . . . ***A. telestophilus*** **(Humes & Ho, 1968b) (Madagascar).**
- Maxilla marginal distal spine, attenuated and ornamented with large spinules. . . . ***A. arctatipes*** **Humes, 1974 (Madagascar).**
31. P5 segment with ratio length/width less than 3: 1 . . . . . **32.**
- P5 segment with ratio length/width more than 3: 1 . . . . . **35.**
32. P1 exopod first segment spine more than 1.5 times as long as the width of the first exopodal segment. . . . . ***A. bandaensis*** **Kim, I.H., 2007 (Moluccas).**
- P1 exopod first segment spine less than 1.5 times as long as the width of the first exopodal segment. . . . . **33.**
33. Antenna third segment with curved setae. . . . . ***A. gomumuensis*** **Kim, I.H., 2007 (Moluccas).**
- Antenna third segment with simple setae. . . . . **34.**
34. P5 free segment lateral margin with few broad spines. . . . . ***A. plantei*** **Humes & Stock, 1973 (Madagascar).**
- P5 free segment lateral margin lacks spines. . . . . ***A. humesi*** **n. sp (Red Sea, Egypt).**
35. Maxilliped claw more than 165µm long, P5 free segment with ratio length/width more than 5: 1. . . . . **36.**
- Maxilliped claw less than 160 µm long, P5 free segment with ratio length/width less than 5: 1 . . . . . **37.**
36. P1 endopod third segment inner of two spines with barbs along medial margin only. . . . . ***A. mopsellae*** **Humes, 1974 (Madagascar).**
- P1 endopod third segment inner of two spines with barbs along both margins. . . . . ***A. gentilis*** **(Humes & Ho, 1968a) (Madagascar).**
37. Maxilliped second segment with one of the setae on inner surface terminating in several pointed spiniform elements. . . . . ***A. fississetiger*** **(Humes & Ho, 1968a) (Madagascar).**
- Maxilliped second segment with both setae simple not terminating in several pointed spiniform elements . . . . . **38**.
38. Antenna terminal segment with more than 3 scalpel-like setae. . . . . **39.**
- Antenna terminal segment with only one or without scalpel-like setae. . . . . **40.**
39. Proximal seta in the maxillipedal claw less than half the length of the claw. . . . . ***A. tenuispinatus*** **Kim, I.H., 2009 (Madagascar).**
- Proximal seta in the maxillipedal claw more than half the length of the claw. . . . . ***A. hians*** **(Humes & Ho, 1968a) (Madagascar).**
40. P4 endopod second segment lacks spinules on medial margin, Antenna third segment distal seta distinctly smaller than the other two proximal setae on the same segment . . . . . ***A. geminus*** **Kim, I.H., 2005 (Philippines).**
- P4 endopod second segment with spinules on medial margin, Antenna third segment with three setae almost equal in length. . . . . ***A. longiunguifer*** **Kim, I.H., 2005 (Philippines).**
41. Caudal rami is longer than wide. . . . . **42.**
- Caudal rami is wider than long. . . . . ***A. brevifurca*** **Humes, 1990 (Moluccas).**
42. P5 free segment longest seta, broad, less than twice the length of shorter seta . . . . . ***A. taenichaetatus*** **Lee, Lee, Kim, 2024 (Geomon Island, Korea).**
- P5 free segment longest seta, broad, slender, more than twice the length of shorter seta. . . . . 43.
43. Total length is less than 750 µm. Free segment of P5 with two naked setae . . . . . **44.**
- Total length is more than 750 µm. Free segment of P5 with one seta and one spine. . . . . **45.**

44. Maxilla with inner seta with eight or nine spinules along lateral margin and one spinule at subdistal region of medial margin . . . . . ***A. triplus*** **Lee, Lee & Kim, 2024 (Jeju Island, Korea).**

- Maxilla with inner seta with six spinules along lateral margin and 3 spinules along medial margin. . . . . ***A. hales*** **(Humes & Stock, 1973) (Madagascar).**

45. Maxilla bearing minute spinules covering posterior surface of syncoxa; seta II with minute spinules on inner margin . . . . . ***A. notialis*** **Lee, Lee & Kim, 2024 (Jeju Island, Korea).**

- Maxilla with unarmed syncoxa; seta II, naked. . . . . .***A. crassae*** **Lee, Lee & Kim, 2024 (Chuja Island, Korea).**

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