

# BEAUFORTIA

BULLETIN ZOOLOGICAL MUSEUM

UNIVERSITY OF AMSTERDAM

Vol. 50, no. 6

December 6, 2000

## CUMACEA CRUSTACEA COLLECTED FROM TANZANIAN COASTS BY THE 'GRIGORE ANTIPA' MUSEUM OF NATURAL HISTORY (ROMANIA). PART III. GENERA *CUMELLA* SARS, 1865 AND *BACESCELLA* N. GEN.

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### ABSTRACT

A new genus and a new species from the Tanzanian reefs are described: *Bacescella muradianae* n.gen., n.sp. *Bacescella* n.gen. has common features with *Cumella* and *Nannastacus*, but also specific ones. The descriptions of three already known species from the Red Sea (*Cumella forficuloides* Bacescu & Muradian, 1975, *C. limicoloides* Bacescu & Muradian, 1975 and *C. schieckeii* Bacescu & Muradian, 1975) are completed with new information. No *Cumella* species have been reported from the area as yet.

### INTRODUCTION

The 'Grigore Antipa' National Museum of Natural History from Bucharest organized a scientific expedition in Tanzania between December 1973 and January 1974 in order to study the less known fauna from the reefs of the western Indian Ocean. The family Nannastacidae was the most frequent family in the material because of the small depth of collecting (0-20 m), where this family is the most abundant one. The first study was dedicated to the genus *Campylaspis* (Petrescu, 1999). The second one concerns the genus *Cumella* and a new, very related one.

### MATERIALS AND METHODS

The material consists of 438 specimens of Cumacea collected from the shallow waters of

Tanzania (0.5-15 m) by Mihai Bacescu, Geza J. Müller and Teodor Nalbant, members of the Romanian team that explored the Tanzanian reefs by dredging and SCUBA diving. Other cumaceans were obtained by washing dead corals and sponges. The material is conserved in ethanol 70%; the slides were made with glycerine-alcohol.

The holotype of the new species is deposited in the collection of the Zoological Museum Amsterdam (ZMA), the Netherlands; the paratypes and non type specimens are deposited in the collections of 'Grigore Antipa' National Museum of Natural History from Bucharest (GANMNH).

### RESULTS AND DISCUSSIONS

The Cumacea specimens belong to the genera

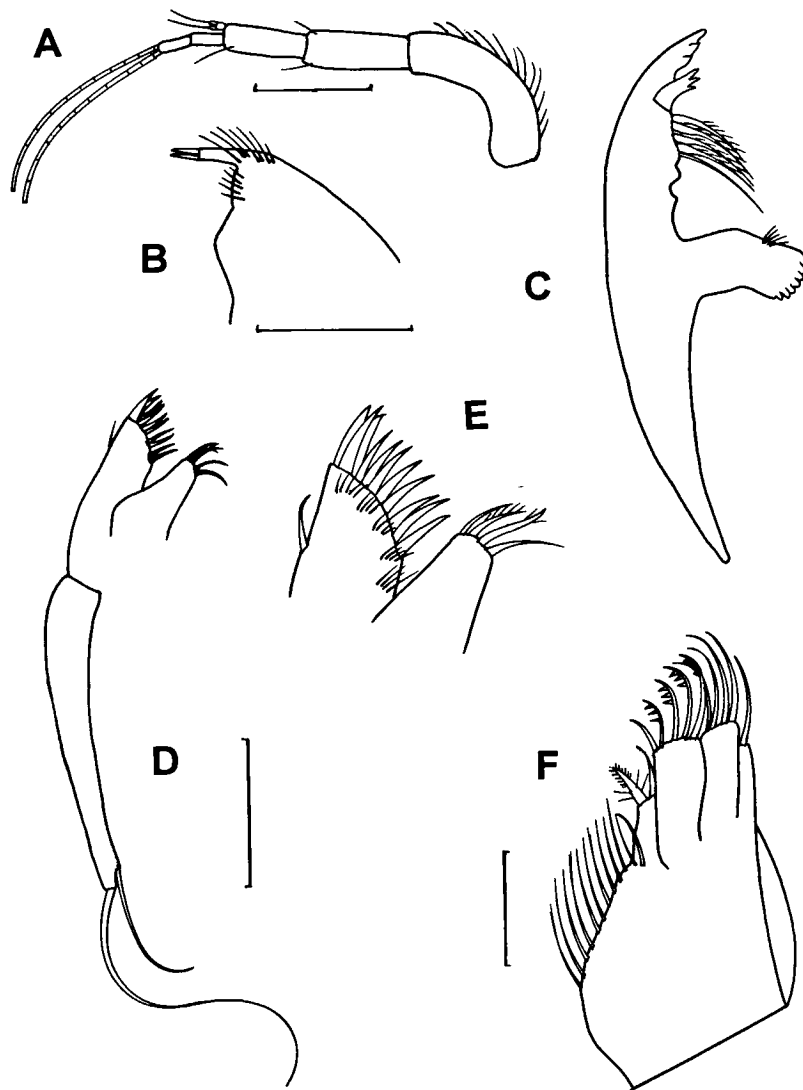


Fig. 1. *Cumella forficuloides* Bacescu & Muradian, 1975. Female. A, antenna 1. B, labium. C, mandible. D, maxilla 1. E, maxilla 1, detail. F, maxilla 2 (scale bars (in mm): A = 0.1; B, E = 0.05; C, D = 0.1; F = 0.05).

*Cumella* Sars, 1865 and *Bacescella* n. gen., and to four species, one of them being new for science.

***Cumella forficuloides* Bacescu & Muradian, 1975**

Figs. 1, 2

MATERIAL. - 2 ♂♂, 1 ♀, sta. 38; 1 ♀, sta. 43; 1 ♀, sta. 49; 1 ♂, sta. CR-5; 2 ♀♀, Mbudya, 21.12.1973.

DESCRIPTION. - The description is completed with the following details.

Antenna 1 (Fig. 1A): thin peduncle, 1st article the longest; minute, one-segmented accessory flagellum. Labium (Fig. 1B): acuminate, with two spines at the end of its few setulated apical process. Mandible (Fig. 1C): pars incisiva and lacinia mobilis with 3 teeth each, 2 small tubercles between 5 spiniform plumose setae and truncated pars molaris, pars molaris with a group of setules on its anterior margin.

Maxilla 1 (Figs. 1D, E): inner endite with stout setae, groups of short setules at the bases of the stout setae; palp longer than its two glabrous fila-

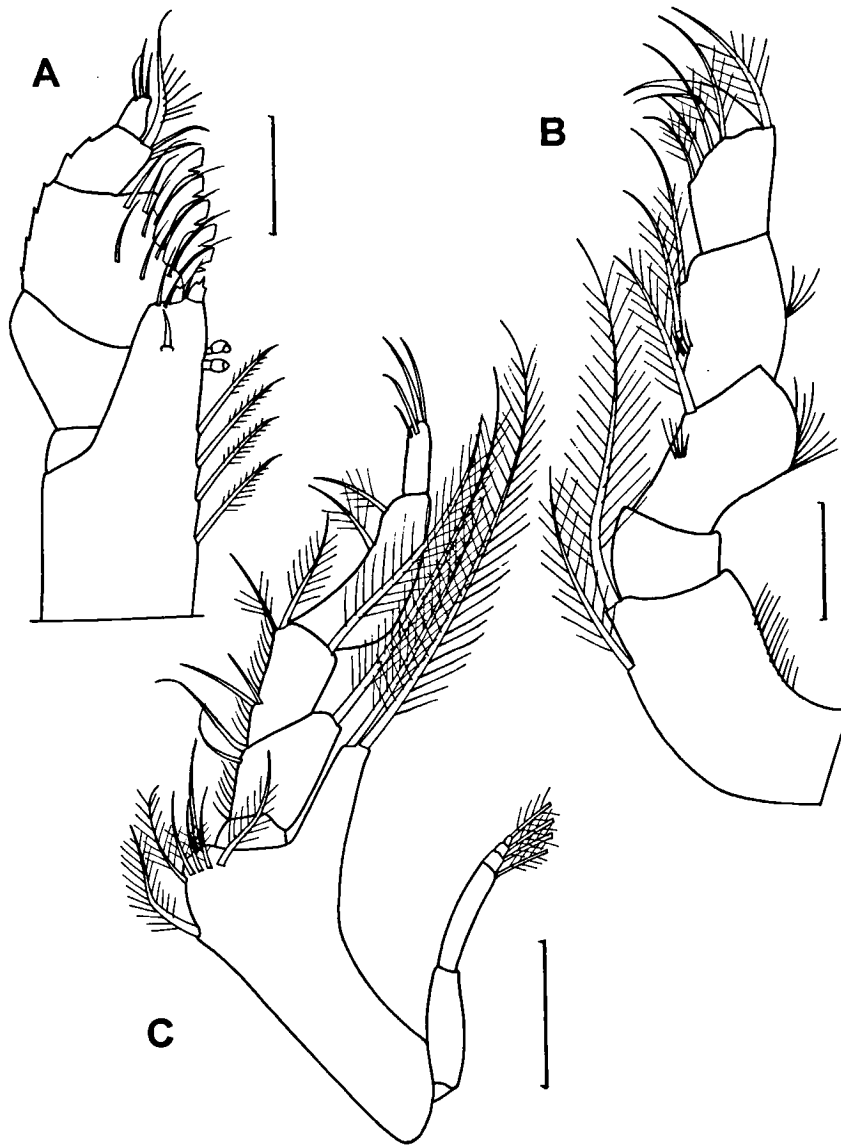


Fig. 2. *Cumella forficuloides* Bacescu & Muradian, 1975. Female. A, maxilliped 1. B, maxilliped 2. C, maxilliped 3 (scale bars (in mm): A, B = 0.05; C = 0.1).

ments.

Maxilla 2 (Fig. 1F): as usual for the genus.

Maxilliped 1 (Fig. 2A): with flattened hand-like setae, with a unique serration; narrow dactylus.

Maxilliped 2 (Fig. 2B): basis with 2 plumose setae on outer margin; merus, carpus and propodus with plumose setae on outer margins.

Maxilliped 3 (Fig. 2C): basis with a long inner process, never exceeding extremity of merus; group of short plumose setae on outer distal corner; merus as long as carpus; propodus the sec-

ond longest article; dactylus as long as apical setae.

REMARKS. - This is the first description and drawing of the labium of the genus *Cumella*; the styli-form process with ending phanerae is very characteristic. The mandible has two small outer tubercles between the setae and pars molaris, previously found in *C. hispida* Calman, 1911 and *C. indosinica* Zimmer, 1952 (Petrescu, 1997) (from the same subgenus *Cumewingia* Bacescu).

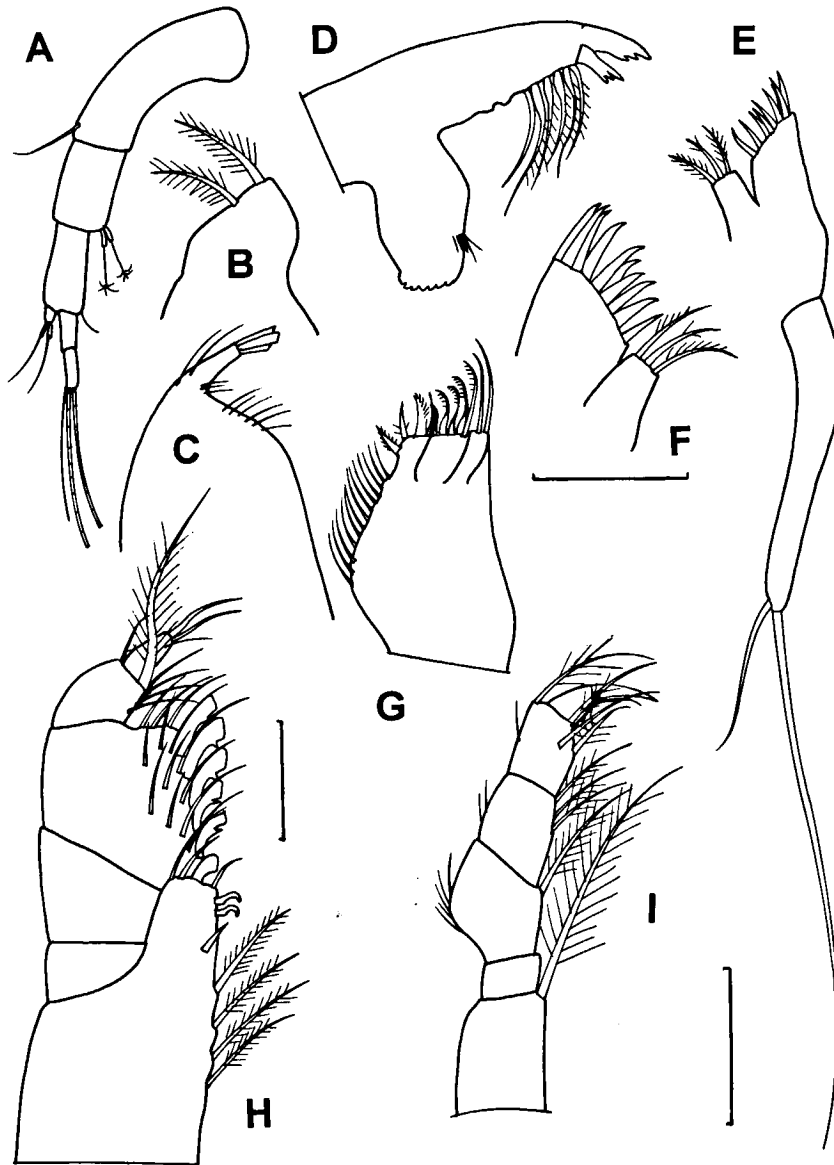


Fig. 3. *Cumella limicoloides* Bacescu & Muradian, 1975. Female. A, antenna 1. B, antenna 2. C, labium. D, mandible. E, maxilla 1. F, maxilla 1, detail. G, maxilla 2. H, maxilliped 1. I, maxilliped 2 (scale bars (in mm): A-E, G, I = 0.1; F = 0.05; H = 0.05).

Tanzanian specimens have a longer process of the basis than those of Bacescu and Muradian from the Red Sea.

***Cumella limicoloides* Bacescu & Muradian, 1975**  
Figs. 3, 4

MATERIAL. - 15 ♂♂, sta. 13; 1 ♀, sta. 23; 14 ♀♀, 2 ♂♂, sta. 30; 5 ♀♀, sta. 31; 1 ♂, 1 juv, sta. 33; 2 ♀♀, sta. 37; 1 ♂, sta. 40;

2 ♂♂, sta. 42; 4 ♀♀, 1 ♂, sta. 43; 1 ♀, 1 ♂, sta. 49; 1 ♂, sta. 53; 4 ♀♀, sta. 56; 87 ♂♂, sta. 57; 2 ♀♀, sta. 59; 2 ♀♀, sta. 62; 1 ♂, sta. 69; 1 ♂, sta. 73; 1 ♂, sta. 75; 1 ♀, 1 ♂, sta. 78; 1 ♀, sta. 82; 10 ♀♀, 10 ♂♂, sta. 83; 1 ♂, sta. 85; 1 ♀, 1 ♂, sta. 89; 1 ♀, sta. 96; 4 ♀♀, 2 ♂♂, sta. 103; 1 ♀, 3 ♂♂, sta. 105; 1 ♀, Kunduchi, 7.12.1973; 1 ♂, Kunduchi, alluvial sand, 21.12.1973; 1 ♀, 1 ♂, Mbudya, 21.12.1973; 4 ♂♂, Kunduchi, 24.12.1973; 2 ♀♀, 27.12.1973, from *Acropora*; 1 ♀, Kunduchi, 29.12.1973; 2 ♀♀, 29 ♂♂, 5.1.1974; 2 ♀♀, 1 ♂, 7.1.1974; 1 ♀, 1 ♂, 9.1.1974, from *Cymodocea* and sponges; 1 ♀, Sea Cove (Oyster), 30.1.1974.

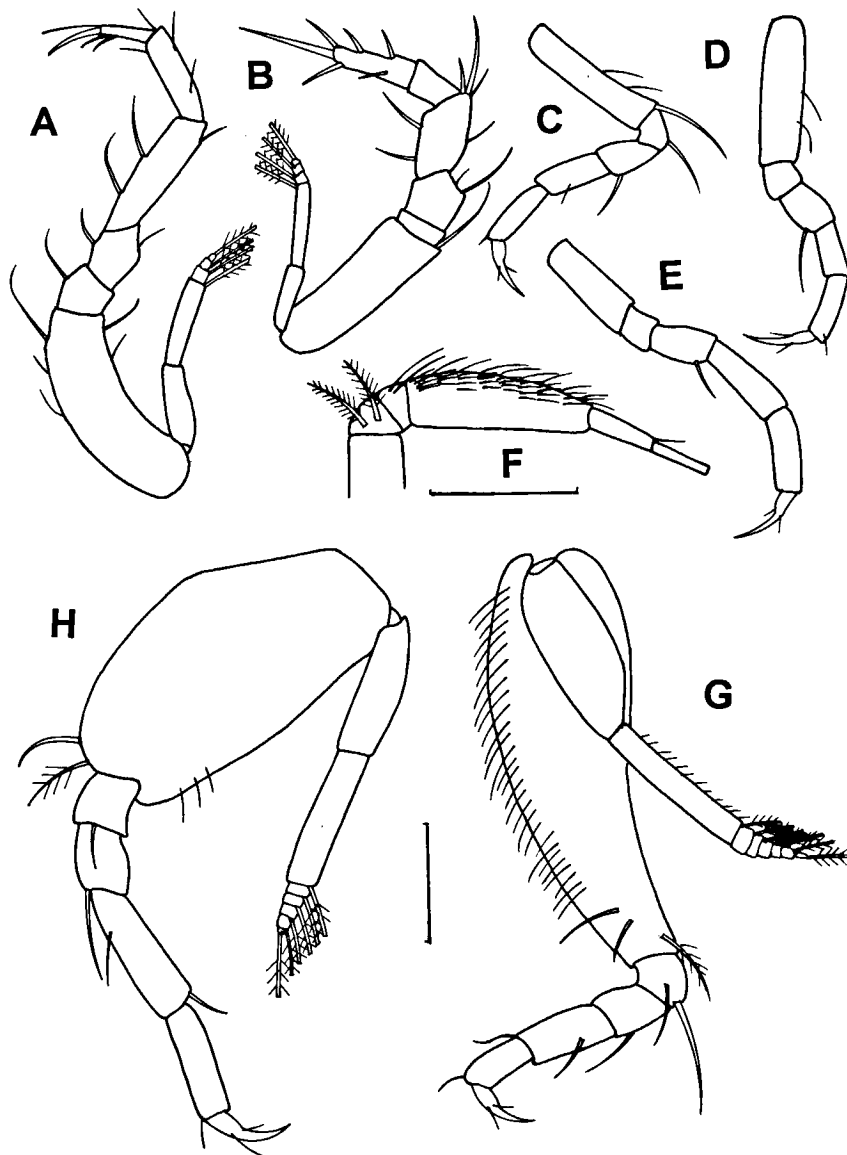


Fig. 4. *Cumella limicoloides* Bacescu & Muradian, 1975. Female: A-E, male: F-H. A, pereopod 1. B, pereopod 2. C, pereopod 3. D, pereopod 4. E, pereopod 5. F, antenna 2. G, pereopod 3. H, pereopod 4 (scale bars (in mm): A-F = 0.2; G, H = 0.1).

DESCRIPTION. - The description made by Bacescu and Muradian (1975) is completed with the following details.

Females. - Antenna 1 (Fig. 3A): peduncle with glabrous thick articles.

Antenna 2 (Fig. 3B): 1-articled, with 2 plumose setae.

Labium (Fig. 3C): acuminate, apical process with 3 enlarged setae.

Mandible (Fig. 3D): pars incisiva and lacinia mobilis with 3 teeth, 6 plumose setae on outer

margin, truncated pars molaris with a tuft of setules.

Maxilla 1 (Fig. 3E, F): inner endite with 11 simple stout setae; palp longer than protopod, with two glabrous, unequal long filaments.

Maxilla 2 (Fig. 3G): outer endite with serrated setae, row of setules on outer margin of protopod.

Maxilliped 1 (Fig. 3H): 4 plumose stout setae on outer margin of endite of basis, carpus with flattened hand-like setae interspersed with simple

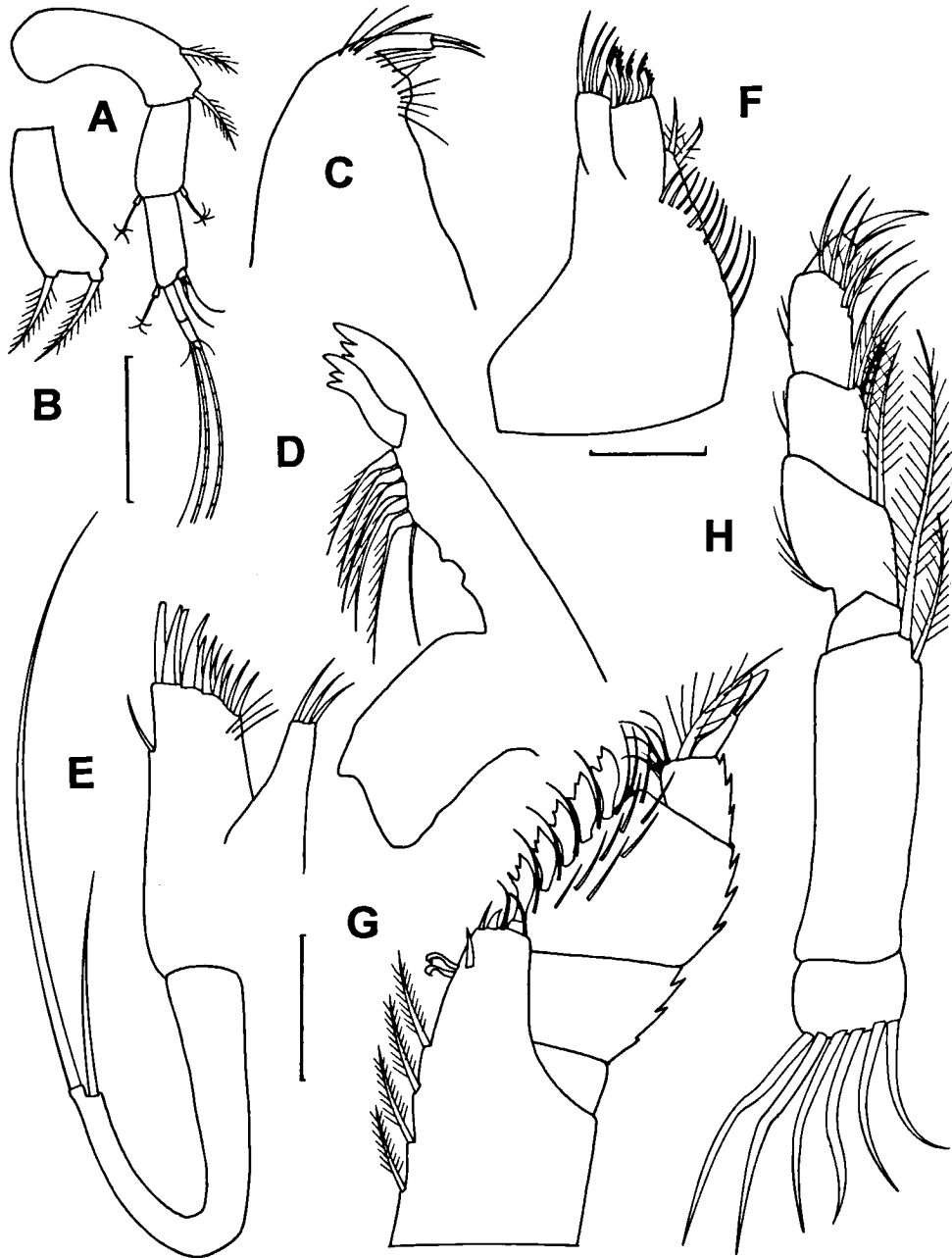


Fig. 5. *Cumella schieckei* Bacescu & Muradian, 1975. Female. A, antenna 1. B, antenna 2. C, labium. D, mandible. E, maxilla 1. F, maxilla 2. G, maxilliped 1. H, maxilliped 2 (scale bars (in mm): A, B = 0.1; C-E, G = 0.05; F, H = 0.1).

setae on outer margin, thin dactylus.

Maxilliped 2 (Fig. 3I): robust articles, basis with a long plumose seta, merus and carpus with setules on inner margins, propodus with plumose setae. Pereopod 1 (Fig. 4A): thick articles, carpus longer than propodus.

Pereopod 2 (Fig. 4B): thick short articles, dactylus 2 times longer than propodus, with short stout

setae on margins, as long as its apical stout seta. Pereopods 3- 5 (Fig. 4C-E): with progressively shorter bases from pair 3 to 5, carpus as long as propodus, dactylus fused with apical seta.

Males. - Antenna 2 (Fig. 4F): 3rd article of peduncle with two plumose setae, the 5th with groups of short setae on outer margin.

Pereopod 3 (Fig. 4G): basis longer than half of

pereopod, with a row of setules on outer margin, carpus longer than propodus, dactylus fused with the apical short stout seta.

Pereopod 4 (Fig. 4H): basis longer than 1/3 of the pereopod, carpus longer than propodus, dactylus fused with short stout apical seta.

REMARKS. - *Cumella limicoloides* resembles *C. forficuloides* and *C. schieckei* in several characters, all three species belonging to the subgenus *Cumewingia* (see also remarks for *C. schieckei*), but it differs in: antenna 1 with shorter and thicker articles, labium with enlarged setae instead of sharp ones, maxilla 1 without tuft of setules on inner endite, palp with longer filaments, maxilliped 1 with different kind of setae on the basal endite, carpus with similar setae like in *C. forficuloides*, but different than those of *C. schieckei*, maxilliped 2 only with one plumose seta on the basis (two in the other species).

**Cumella schieckei** Bacescu et Muradian, 1975

Figs. 5, 6

MATERIAL. - 3 ♀♀, sta. 12; 1 ♀, sta. 17; 10 ♀♀, sta. 18; 9 ♀♀, 3 ♂♂, sta. 40; 1 ♀, 1 ♂, sta. 42; 4 ♀♀, sta. 43; 1 ♀, sta. 45; 1 ♀, sta. 47; 5 ♀♀, sta. 55; 1 ♂, sta. 69; 1 ♀, 1 ♂, sta. 78; 1 ♀, sta. 81; 1 ♀, coral debris, sta. 82; 4 ♀♀, sta. 85; 1 ♀, sta. 95; 8 ♀♀, sta. 97; 3 ♀♀, sta. 103; 2 ♀♀, sta. 105; 8 ♀♀, 2 ♂♂, 1.1.1974, in *Syringodium*; 30 ♀♀, 20 ♂♂, Bahary Beach, 25.12.1973; 17 ♀♀, 4 ♂♂, travers Kunduchi, 1.1.1974; 22 ♀♀, 10 ♂♂, Kunduchi, 1.1.1974; 4 ♀♀, 1 ♂, E of Mbivukumi, 18.1.1974.

DESCRIPTION. - The original description is completed with the following details.

Females. - Antenna 1 (Fig. 5A): as usual for the genus, peduncle with short articles.

Antenna 2 (Fig. 5B): peduncle with one article and two plumose setae.

Labium (Fig. 5C): with an apical thin peduncle armed with two stout setae.

Mandibula (Fig. 5D): pars incisiva and lacinia mobilis with three teeth, six plumose stout setae and two small tubercles between lacinia mobilis and truncated pars molaris.

Maxilla 1 (Fig. 5E): inner endite with four stout longer inner setae and seven smaller ones, outer endite with three simple long setae, palp with two

glabrous filaments.

Maxilla 2 (Fig. 5F): as usual for the genus, with a row of short setules on outer margin of protopod up to the basis of outer endite.

Maxilliped 1 (Fig. 5G): four plumose setae on outer margin of basis, its endite with two retinacula, short spines and setules; merus, carpus and propodus with inner serrated margins; carpus with hand-like flattened setae; slender dactylus. Maxilliped 2 (Fig. 5H): basis shorter than half of maxilliped, two plumose setae on outer distal corner of basis; propodus with plumose setae; dactylus with a strong, stout apical seta.

Maxilliped 3 (Fig. 6A): basis with an inner process; propodus the second longest article; dactylus with a strong apical seta.

Pereopod 1 (Fig. 6B): basis longer than 1/3 of pereopod; carpus longer than propodus.

Pereopod 2 (Fig. 6C): basis longer than 1/3 of pereopod, basis and merus with a long simple seta on inner margin; carpus little longer than merus, with simple setae; dactylus three times longer than propodus, with short stout setae on margins and an apical stout seta.

Pereopod 3 (Fig. 6D): slender basis with setules on inner margin, carpus as long as propodus; dactylus fused with apical stout seta.

Pereopod 4 (Fig. 6E): slender basis with setules on inner margin; carpus a little longer than propodus; dactylus fused with apical stout seta.

Pereopod 5 (Fig. 6F): with shorter basis than in the previous pairs; carpus as long as propodus; dactylus like in pairs 3 and 4.

Males. - Pereopod 3 (Fig. 6G): basis half of pereopod; carpus shorter than propodus; dactylus fused with apical stout seta; exopod with a short basal article.

Pereopod 4 (Fig. 6H): like the previous pair; carpus longer than propodus; exopod like in pair 3.

REMARKS. - *Cumella schieckei* has several characters in common with *C. forficuloides* and/or *C. limicoloides*: spines on the carapace (on both sexes or only on females), lenses on pseudorostrum, antenna, labium, mandible, maxilla 2, maxilliped 1 (with different setae on endite of basis and also different shape of setae from carpus), maxilliped 2 and 3, pereopods 3-5 with dactylus fused with apical stout seta. The differences consist in: form of carapace, form of setae from endite of maxil-

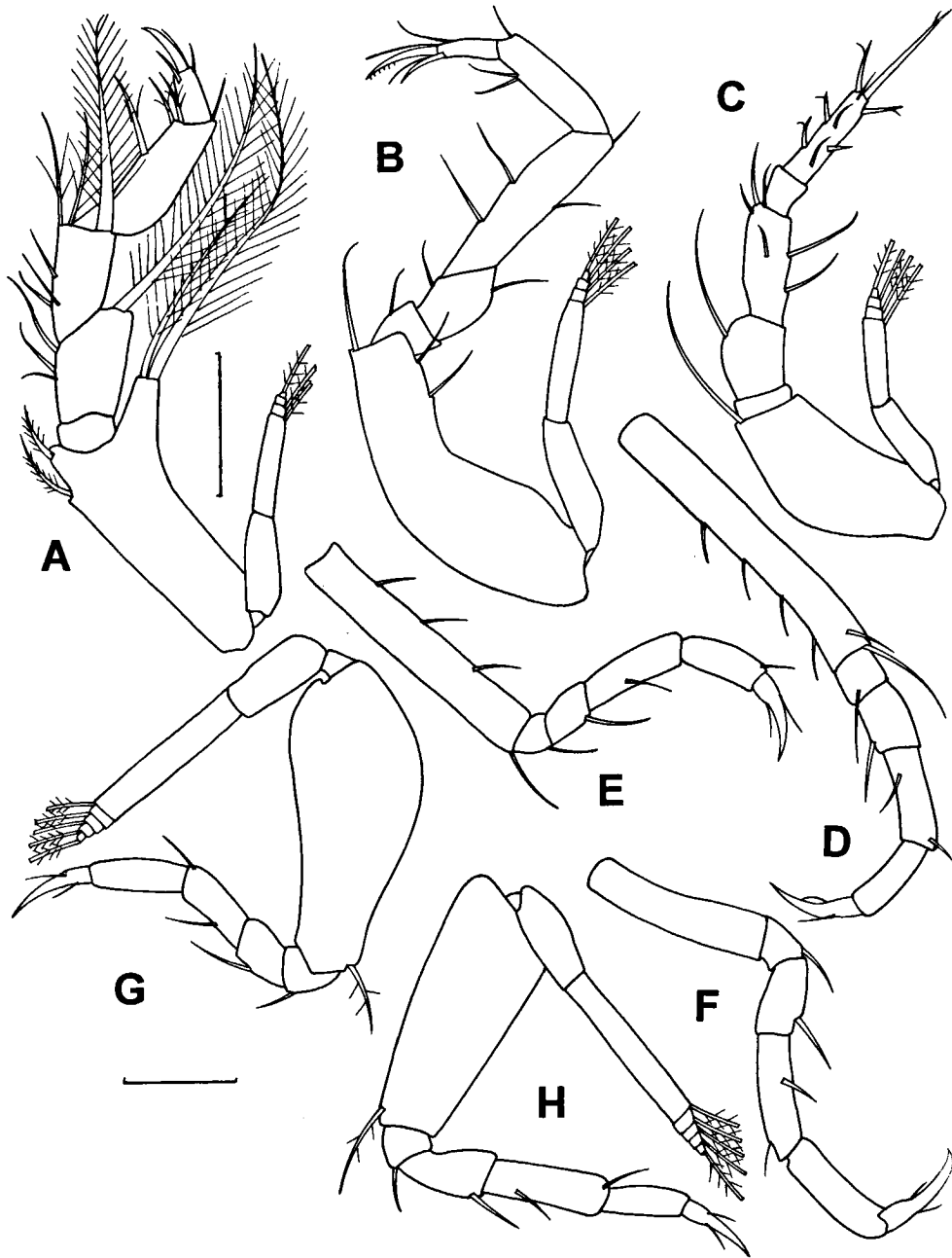


Fig. 6. *Cumella schieckei* Bacescu & Muradian, 1975. Female: A-G, male: G, H. A, maxilliped 3. B, pereopod 1. C, pereopod 2. D, pereopod 3. E, pereopod 4. F, pereopod 5. G, pereopod 4. H, pereopod 5 (scale bars (in mm): A = 0.1; B-H = 0.1).

1a. 1 and shape of setae from carpus of maxilliped 2.

**KEY TO THE IDENTIFICATION OF CUMELLA SPECIES FROM TANZANIAN WATERS**

1a. Carapace with spines in female .....  
 ..... *C. forficuloides* Bacescu & Muradian, 1975

b. Carapace without spines in both sexes ..... 2

2a. Basis of maxilliped 2 with one plumose seta, peduncle of antenna 1 with short and thick articles .....  
 ..... *C. limicoloides* Bacescu & Muradian, 1975

b. Basis of maxilliped 2 with two plumose setae, peduncle of antenna 1 with long and thin articles .....  
 ..... *C. schieckei* Bacescu & Muradian, 1975



**Bacescella** n. gen.

TYPE SPECIES. - *Bacescella muradianae* n. sp.

DIAGNOSIS. - No pleopods; 3 pairs of exopods in female; carapace's length represents 1/4 of entire body; peduncle of antenna 1 without tubercles; mandible with truncated pars molaris; maxilla 1 with two filaments; maxilla 2 with two endites; enlarged dactylus of maxilliped 1; maxilliped 2 with setae on propodus; uropodal peduncle shorter than last pleonite.

ETYMOLOGY. - The genus is dedicated in the memory of one of the greatest world specialist in Peracarida, Mihai C. Bacescu (1908-1999), founder of the Romanian carcinological and modern oceanographic school, with fundamental contributions to the knowledge of Cumacea and also prodigious activity in the domain of Mysidacea, Tanaidacea, Isopoda, Decapoda, zoological folklore and museology (former director of the 'Grigore Antipa' National Museum of Natural History), as a pious homage.

GENDER. - Feminine.

DISTRIBUTION. - Found only in the type locality, western Indian Ocean, Tanzanian coasts, in front of Kunduchi.

REMARKS. - This genus contains mixed characters of *Cumella* and *Nannastacus*: *Cumella* characters - unique ocular lobe, pseudorostral lobes totally united, peduncle of antenna 1 without tubercle, propodus of maxilliped 2 with setae; *Nannastacus* characters - enlarged dactylus of maxilliped 1, uropodal peduncle shorter than last pleonite. *Bacescella* n. gen. has a smaller carapace to body length ratio and more robust antenna 1 different than in *Cumella* and *Nannastacus*.

**Bacescella muradianae** n. gen., n. sp.

Figs. 7, 8

MATERIAL. - Holotype: ♀, ZMA Cu. 204857; paratypes: 2 ♀♀, GANMNH Cum 263, Cum 264 (both from sta. 55, on slades).

TYPE LOCALITY. - Western Indian Ocean,

Tanzania, Kunduchi, collected by the expedition organized by the 'Grigore Antipa' Museum on 27.12.1973.

ETYMOLOGY. - The species is dedicated in the honour of the famous Romanian specialist in Cumacea, Zarui Muradian-Ciamician, the best disciple of Mihai Bacescu in Cumacea, who started the study of this material from Tanzania.

DESCRIPTION. - Body (Fig. 7A): elongated. Almost glabrous integument. Length: 2.66 mm. Carapace 1/4 of the entire body length; upturned pseudorostrum, its lobes totally united; small notch; unique ocular lobe with three lenses (lateral ones pigmented).

Pereon: as long as carapace.

Pleon: as long as carapace and pereon together. Antenna 1 (Fig. 7B): peduncle with very robust articles, main flagellum with 2 articles, accessory ones with one article. No tubercle on the peduncle.

Mandibula (Fig. 7C): pars incisiva and lacinia mobilis with 3 teeth, 5 long simple setae between lacinia mobilis and truncated pars molaris. Maxilla 1 (Fig. 7D): inner endite with 10 apical stout setae, first 3 inner ones being longer; palp shorter than inner endite, with 2 glabrous, almost equal filaments.

Maxilla 2 (Fig. 7E): with two endites with fine long setae and a row of setules on outer margin of protopod, no setules between this margin and basis of outer endite.

Maxilliped 1 (Fig. 7F): basis with four plumose strong setae, its endite with a stout serrated short seta and setules, never exceeding the limit of merus; carpus with 5 serrated long stout setae on outer margin; enlarged dactylus.

Maxilliped 2 (Fig. 8A): with short and enlarged articles; propodus with simple setae.

Maxilliped 3 (Fig. 8B): basis with a short inner process with 2 long plumose setae; propodus 2 times longer than carpus; dactylus as long as its apical seta.

Pereopod 1 (Fig. 8C): basis longer than 1/3 of pereopod, propodus a little longer than carpus and dactylus.

Pereopod 2 (Fig. 8D): basis a little longer than 1/3 of pereopod, carpus a little longer than merus, dactylus 1.5 times longer than propodus, with lat-

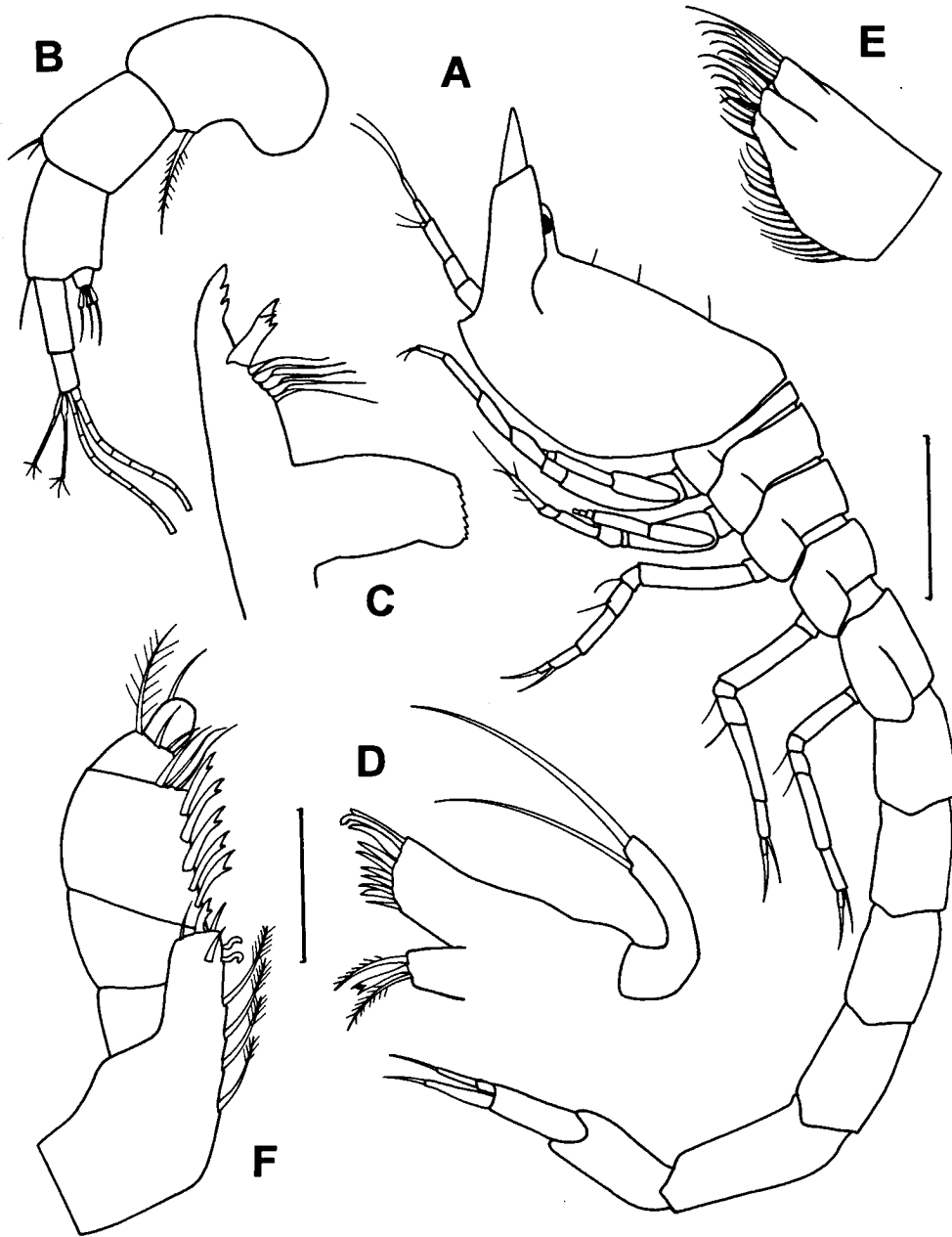


Fig. 7. *Bacescella muradianae* n.gen., n.sp. Female. A, body, lateral view. B, antenna 1. C, mandible. D, maxilla 1. E, maxilla 2. F, maxilliped 1 (scale bars (in mm): A = 0.3; B-F = 0.1).

eral setules and an apical stronger one.

Pereopod 3 (Fig. 8E): basis almost a half of pereopod, carpus longer than merus and propodus, dactylus with an apical short seta.

Pereopod 4 (Fig. 8F): basis a half of entire pereopod, carpus longer than merus, but as long as

propodus.

Pereopod 5 (Fig. 8G): basis shorter than 1/3 of pereopod, carpus like in the 3rd pair.

Exopods: three pairs.

Uropod (Fig. 8H): peduncle shorter than last pleonite (0.8 : 1), shorter than its rami; exopod a

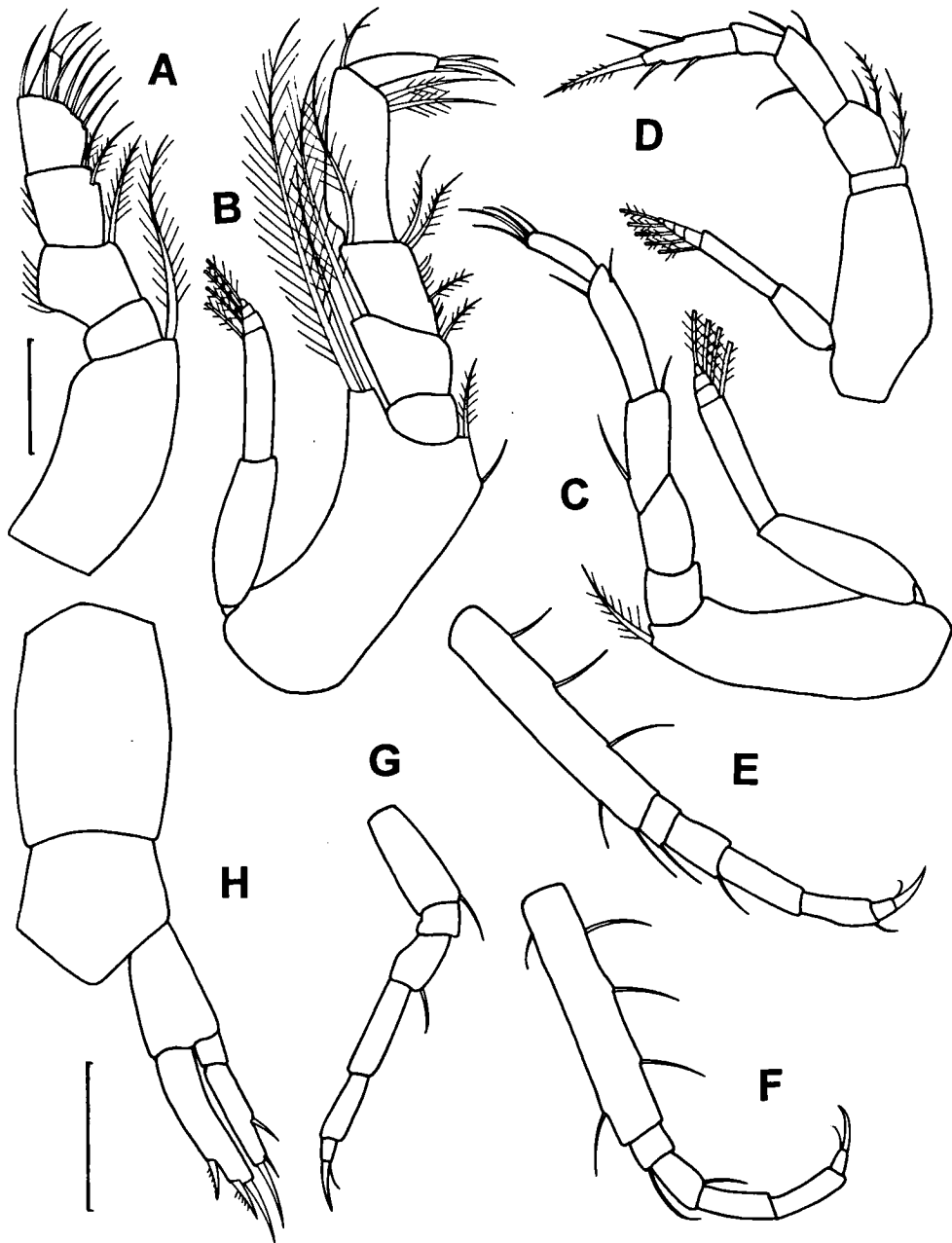


Fig. 8. *Bacescella muradianae* n. gen. n. sp. Female. A, maxilliped 2. B, maxilliped 3. C, pereopod 1. D, pereopod 2. E, pereopod 3. F, pereopod 4. G, pereopod 5. H, uropod (scale bars (in mm): A, B = 0.1; C-H = 0.1).

little shorter than endopod, with a short apical seta; endopod with 2 short stout setae on inner margin and an apical longer one.

#### ACKNOWLEDGEMENTS

My posthumous thanks to regretted Professor Mihai Bacescu for the kindness to offer me the

material and all the necessary papers concerning this study; all my thanks to Mrs Aurora Dinu who inked my drawings.

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Received: June 20, 2000