

NEW SPECIES OF CUMACEA CRUSTACEA (PERACARIDA) FROM MEDITERRANEAN COAST OF MOROCCO COLLECTED BY THE EXPEDITION “ATLAS 2007”

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Abstract. A small collection of Cumacea collected from the Mediterranean coast of Morocco by the “Atlas 2007” expedition was made available for study. Seven species were found: *Bodotria scorpioides* (Montagu, 1804), *Iphinoe adrianae* n. sp., *I. trispinosa* (Goodsir, 1843), *Vaunthompsonia cristata* Bate, 1858, *Cumella razvani* n. sp., *Nannastacus atlanticus* (Băcescu & Muradian, 1972) and *Pseudocuma ciliatum* Sars, 1879. Two new species are described and new locality records for the other five species are documented.

Résumé. Une petite collection de Cumacea récoltée sur la côte méditerranéenne du Maroc par l'expédition “Atlas 2007” a été mis à disposition pour être étudiée. Sept espèces ont été trouvées: *Bodotria scorpioides* (Montagu, 1804), *Iphinoe adrianae* n. sp., *I. trispinosa* (Goodsir, 1843), *Vaunthompsonia cristata* Bate, 1858, *Cumella razvani* n. sp., *Nannastacus atlanticus* (Băcescu & Muradian, 1972) et *Pseudocuma ciliatum* Sars, 1879. Deux nouvelles espèces sont décrites et des nouvelles localités sont signalées pour les autres cinq espèces.

Key words. Cumacea, Bodotriidae, Nannastacidae, Pseudocumatidae, Morocco, new species, description.

INTRODUCTION

This study involves the documentation and description of Cumacea collected from the Mediterranean coast of Morocco during the “Atlas 2007” expedition of “Grigore Antipa” National Museum of Natural History (Bucharest) and “Oceanic Club” (Constanța). Based on these collections, two new species are described herein.

There are several previous studies that have dealt with cumaceans from Moroccan waters, but only from the Atlantic coast, not the Mediterranean one. Fage (1928) was the first who investigated the Cumacea of Morocco (Atlantic coast). He firstly mentioned 10 different species, *Bodotria pulchella* (Sars, 1878), *Iphinoe serrata* Norman, 1867, *I. trispinosa* Norman, 1867, *Eocuma dimorphum* Fage, 1928, *Vaunthompsonia cristata* Bate, 1858, *Eudorella truncatula* (Bate, 1856), *Cumella limicola* Sars, 1879, *Nannastacus unguiculatus* (Bate, 1859), *Diastylis laevis* Norman, 1869 and *D. dollfusi* Fage, 1928. Based on material collected at depths of 6-100 m along the Atlantic coast of Morocco, Jones (1955, 1956) reported nine species, *Bodotria pulchella*, *Eocuma dimorpha*, *Iphinoe tenella*, *I. trispinosa*, *Vaunthompsonia cristata*, *Cumella limicola*, *Nannastacus unguiculatus*, *Diastylis laevis* and *D. dollfusi*.

MATERIAL AND MEHODS

Material was collected from the Mediterranean coast of Morocco, “Atlas 2007” expedition of “Grigore Antipa” National Museum of Natural History and “Oceanic Club”, 35°10'40"N, 04°56'22"W, sand, 2-3 m, sta. 214, Jhmala, 5.05.2007, legit Dr. Răzvan Popescu Mirceni. The material, seven species representing three families, including two new species, was deposited in the Crustacean collection of “Grigore Antipa” National Museum of Natural History.

RESULTS

Family Bodotriidae T. Scott, 1901

Subfamily Bodotriinae Hale, 1944

Genus *Bodotria* Goodsir, 1843

Bodotria scorpioides (Montagu, 1804)

Material: 1 ♀, 2 ♂♂.

Distribution. NE Atlantic, North Sea, Mediterranean.

Genus *Iphinoe* Bate, 1856

***Iphinoe adrianae* n. sp.**

(Figs 1-2)

Material examined: holotype manca, MGAB CUM 1711; paratypes: 8 mancas, MGAB CUM 1712. Type locality: Morocco, Mediterranean, Jhmala, sta. 214, 35°10'40"N, 4°56'22"W, sand, 2-3 m, 5.05.2007, leg. Răzvan Popescu Mirceni.

Etymology. The new species is dedicated in honor of my colleague Adriana Stoica.

Description

Body (Fig. 1 A), with smooth integument, 4.6 mm.

Carapace (Fig. 1 A), 0.3 times entire body length, 1.6 times as long as high, dorsal serrate carina, pseudorostrum 0.1 times carapace length, marked antennal notch, serrate ventral margin, without lenses, lateral pigmented area on ocular lobe and pseudorostrum.

Antenna 1 (Fig. 1 B, C). Peduncle article-1 shorter than articles 2 & 3, basal article of peduncle shorter than rest of peduncle, main flagellum with two short articles, accessory flagellum with two short articles, extending past basal article of main flagellum (Fig. 1 C).

Labium (Fig. 1 D), with four apical stout distally bent flattened setae, a few setules on medial margin.

Mandible (Fig. 1 E): pars incisiva with three teeth, lacinia mobilis with two teeth, seven setae between lacinia mobilis and pars molaris.

Maxilla 1 (Fig. 1 F), inner endite with 10 stout, spiniform setae (some subdistally dentate setae) on distal margin and two simple subdistal setae; outer endite with one simple and three short robust setae, two filaments.

Maxilla 2 (Fig. 1 G), inner endite with one microserrate seta; outer endite with three slender curved microserrate setae, protopod with short distally-bent microserrate seta on apical margin of protopod, nine simple setae on medial margin.

Maxilliped 1 (Fig. 2 A), basis with long endite with three apical three simple setae, five stout palmate setae on medial margin, large propodus about 0.8 times carpus length, simple short seta on apical margin, short dactylus with terminal stout short seta.

Maxilliped 2 (Fig. 2 B), basis with 1 pappose seta on medial margin; merus with 1 plumose medial seta; carpus 2 times merus length, with three pappose setae on distal medial margin; propodus as long as carpus, 1 simple seta on medial margin; dactylus half length of propodus with stout terminal seta and three simple setae.

Maxilliped 3 (Fig. 2 C), basis length about 0.6 times entire maxilliped length, outer process with three plumose setae reaching half of merus, merus 1.4 times ischium length, 1 pappose seta on outer margin of merus, carpus 0.7 times merus length, 1 plumose seta on outer margin, propodus 1.2 times carpus length, 2 plumose setae on

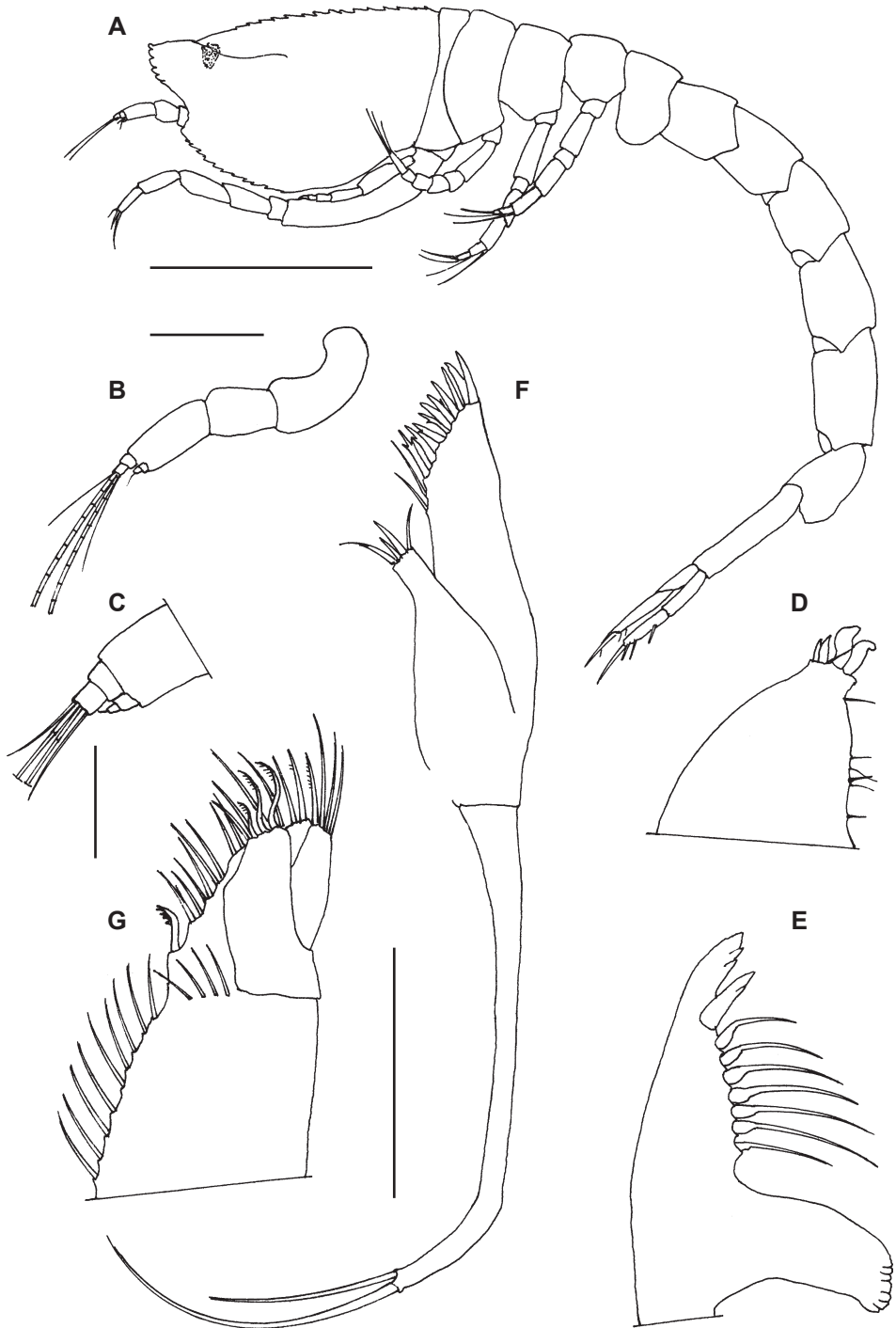


Fig. 1 - *Iphinoe adrianae* n. sp. Holotype manca: A, body, lateral view; B, antenna 1; C, antenna 1, detail; D, labium; E, mandible; F, maxilla 1; G, maxilla 2. Scales in mm: A, 1; B, 0.1; C, 0.05; D-G, 0.1.

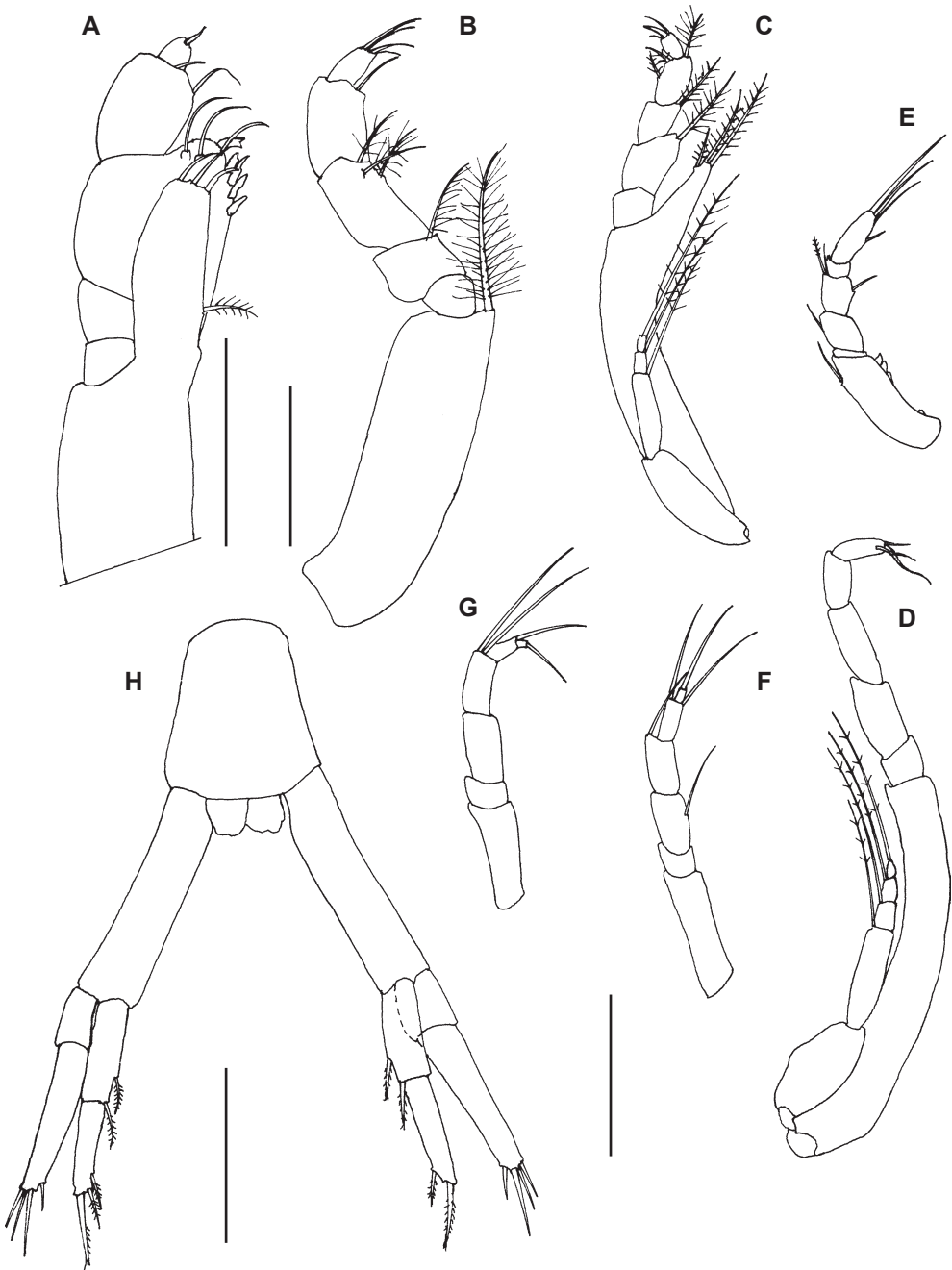


Fig. 2 - *Iphinoe adrianae* n. sp. Holotype manca: A, maxilliped 1; B, maxilliped 2; C, maxilliped 3; D, pereopod 1; E, pereopod 2; F, pereopod 3; G, pereopod 4; H, uropod. Scales in mm: A, 0.1; B, 0.1; C-H, 0.2.

medial margin, 1 pappose seta on outer margin, dactylus 0.4 times propodus length, with terminal robust seta; exopod reaching about half of endopod basis.

Pereopod 1 (Fig. 2 D), basis 0.5 times entire pereopod length, merus 2.2 times ischium length, as long as carpus, propodus 0.6 times carpus length, dactylus 0.8 times propodus length, terminal stout seta twice as long as dactylus.

Pereopod 2 (Fig. 2 E), basis 0.4 entire pereopod length, 1 simple seta on medial margin, serrate outer margin, merus 4 times ischium length, 1 stout seta on medial margin, carpus as long as merus, two stout setae on distal medial margin, 1 simple seta on outer margin, dactylus 3.5 times propodus length, 1 simple short seta on outer margin, 2 subterminal ones longer, terminal seta 1.4 times dactylus length.

Pereopod 3 (Fig. 2 F), basis 0.3 entire pereopod length, merus 2 times ischium length, 1 long simple seta on medial margin, carpus 0.9 times merus length, 1 annulate seta on distal outer margin, propodus 0.7 carpus length, 1 annulate seta on distal outer margin, dactylus about 1/3 length of pereopod.

Pereopod 4 (Fig. 2 G), basis 0.3 entire pereopod length, merus 2 times ischium length, carpus 0.9 times merus length, 2 annulate setae on distal outer corner, propodus 0.4 times carpus length, 1 annulate seta on distal outer corner, dactylus 0.5 times propodus length, terminal seta 2.3 times dactylus length.

Pereopod 5 (Fig. 2 A), not developed.

Uropod (Fig. 2 H), peduncle length about 1.2 times pleonite 6 length, with smooth margins, 1.1 times endopod length. Exopod biarticulate, about equal in length to endopod with three subterminal simple setae and a long terminal one, about 1/2 length of exopodal distal article. Endopod with proximal article slightly longer (about 1.1 times) than distal article; proximal article with two inner marginal, strong, pectinate setae on distal third; distal article with two subterminal pectinate setae and one terminal pectinate seta, terminal seta 0.66 times distal article length.

Remarks

Iphinoe adrianae n. sp. has a high carapace as in *I. marisrubrae* Mühlenhardt-Siegel (1996) from Red Sea and *I. capensis* (Zimmer, 1921) from Sri Lanka (Mühlenhardt-Siegel, 2000). It differs from *I. marisrubrae* by having the dactylus of pereopod 2 with fewer setae. It is distinguished from *I. capensis* by having uropodal endopod with a distinctly shorter proximal article. The new species has uropodal endopod with a longer proximal article similar to those of *I. crassipes crassipes* Hansen (1895) from western and southern African coasts, Red Sea, Indian Ocean (India, Sri Lanka, Tanzania), *I. crassipes haifae* Băcescu (1961) from Eastern Mediterranean (Israel), *I. hupferi* Zimmer (1916) from Eastern Atlantic (Senegal), *I. pokoui* Le Loeuff & Intes (1972) from Eastern Atlantic (western Africa), *I. truncata* Hale (1953) from Indian Ocean (South Africa, Mozambique, Tanzania) (Petrescu, 1998) and *I. insolita* Petrescu (1992) from Indonesia. It differs from these species by having: 1) the basal article of the main flagellum distinctly shorter; 2) maxilliped 1 having basis long instead of short; 3) maxilliped 3 merus without an outer process; 4) pereopod 2 having dactylus with only three terminal setae instead of numerous setae; 5) uropodal peduncle without medial seta; 6) uropodal endopod having proximal article with two instead of 4-16 setae; and 7) uropodal endopod having distal article with two instead of 1-7 setae.

Iphinoe trispinosa (Goodsir, 1843)

Material: 4 ♀♀.

Distribution. Species known from NE Atlantic, North Sea, Mediterranean (Tunisian coast). First mention from Morocco Mediterranean coast.

Subfamily Vaunthompsoniinae Sars, 1878

Genus *Vaunthompsonia* Bate, 1858*Vaunthompsonia cristata* Bate, 1858*Material*: 3 immature ♂♂.

Distribution. North Eastern and Western Atlantic (Bate, 1858; Calman, 1907; Sars, 1879; Jones, 1976), Caribbean Sea (Petrescu, 2002, 2003), the Mediterranean (Tunis), South Africa (Day, 1978), SE Asia, Annam (Fage, 1951), Japan (Gamô, 1962, 1967), Korea (Kang & Lee, 1995), Indonesia (Petrescu, 1997).

Family Nannastacidae Bate, 1858

Genus *Cumella* Sars, 1865*Cumella razvani* n. sp.

(Fig. 3)

Material examined: holotype male, MGAB CUM 1713. Type locality: Morocco, Mediterranean, Jhmala, sta. 214, 35°10'40"N, 4°56'22"W, sand, 2-3 m, 5.05.2007, leg. Răzvan Popescu Mirцени.

Etymology. The new species is dedicated in honor of Dr. Răzvan Popescu Mirцени („Oceanic Club”), who collected the specimens and kindly made them available to me for study.

Description

Body (Fig. 3 A), with smooth tegument, size: 4.33 mm.

Carapace (Fig. 3 A), 0.4 times total length, 2.1 times as long as high, ocular lobe with five lenses, pseudorostrum 0.5 times ocular lobe length, marked antennal notch, anterior-ventral margin smooth.

Antenna 1 (Fig. 3 B, C), basal article of peduncle 0.8 times rest of articles combined length, apical article 0.6 times middle article length, main flagellum with two articles, accessory one with three articles, not exceeding extremity of main flagellum basal article.

Maxilliped 3 (Fig. 3 D), basis 1.5 times rest of articles combined length, one pappose seta on medial margin, outer process with two pappose setae, merus 3 times ischium length, one pappose seta on outer margin, carpus 1.2 times merus length, one pappose on outer margin, propodus 0.8 times carpus length, two pappose setae on medial margin, one pappose seta on outer margin, dactylus 0.7 times propodus length, terminal robust seta 1.6 times dactylus length; one simple seta on medial margin of basal article of exopod.

Pereopod 1 (Fig. 3 E), basis as long as rest of pereopod length, hyaline crest on outer margin, merus 1.8 times ischium length, one simple seta on outer margin, carpus 1.7 times merus length, one simple seta on medial margin, two simple ones on outer margin, propodus as long as carpus, one simple seta on each margin, dactylus 0.58 times propodus length, terminal robust seta 1.6 times dactylus length; one plumose seta on outer margin of basal article of exopod, one plumose seta outer margin of peduncle, flagellum, broken.

Pereopod 2 (Fig. 3 F, G), basis 0.8 times rest of pereopod length, hyaline crest on outer margin, short serration and one pappose seta on medial margin, merus 2.5 times ischium length, one simple seta on medial margin of ischium and merus, carpus 2.1 times merus length, two stout setae on medial distal corner, two simple setae on outer margin, propodus 0.4 times carpus length, one simple seta on medial margin, dactylus 2 times propodus length, two subterminal short setae and 3 terminal setae, one 1.5 times longer than dactylus length; short exopod.

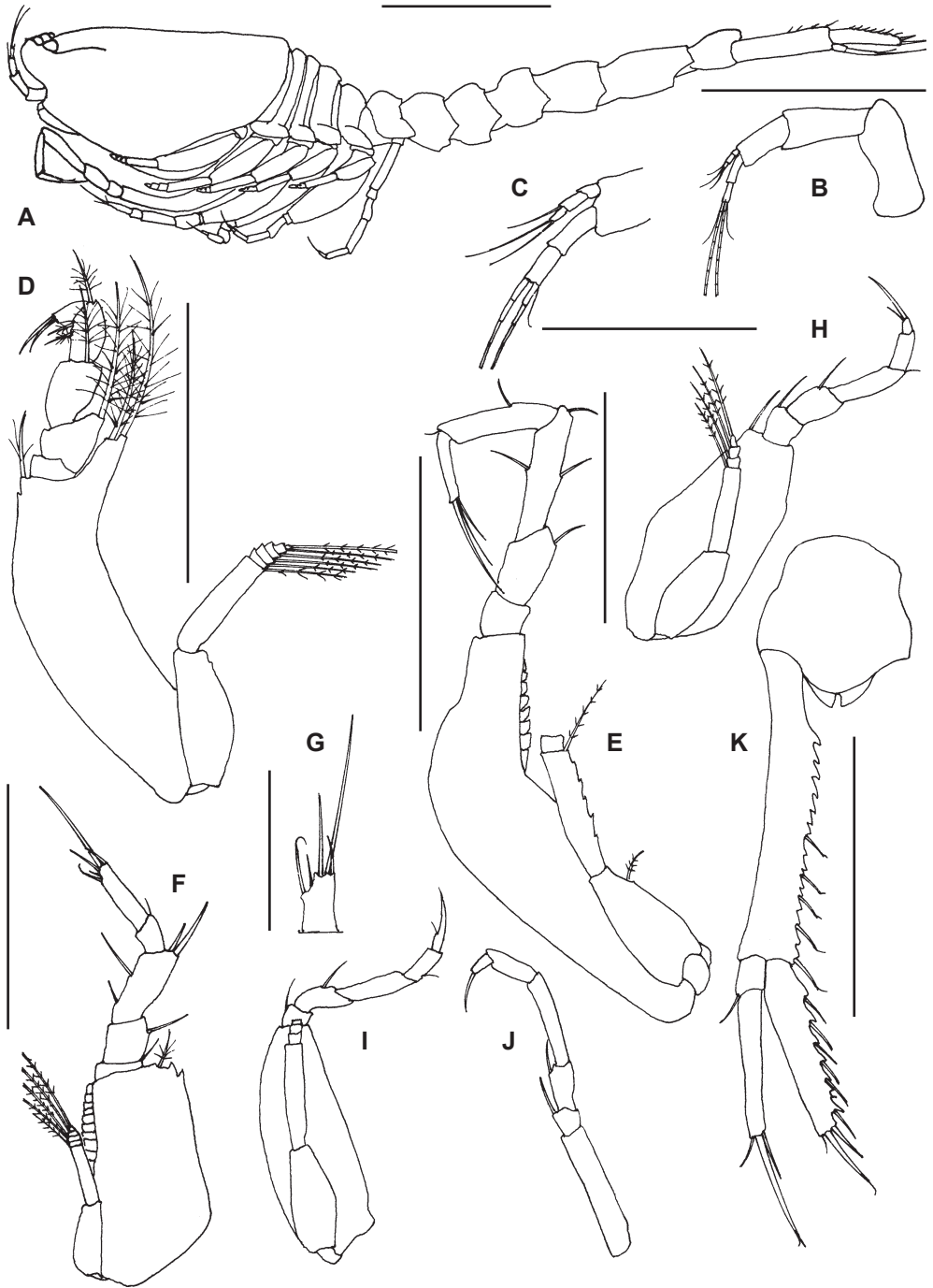


Fig. 3 - *Cumella razvani* n. sp. Holotype male: A, body, lateral view; B, antenna 1; C, antenna 1, detail; D, maxilliped 3; E, pereopod 1; F, pereopod 2; G, dactylus of pereopod 2; H, pereopod 3; I, pereopod 4; J, pereopod 5; K, uropod. Scales in mm: A, 1; B, 0.2; C, 0.1; D-F, I-K, 0.3; G, 0.1.

Pereopod 3 (Fig. 3 H), basis length about 1.2 times combined length of remaining articles, one simple seta on medial margin, merus 1.4 times ischium length, one simple seta on medial margin of ischium and merus, carpus 1.6 times merus length, propodus 0.6 times carpus length, dactylus 0.4 times propodus length, terminal stout seta 4 times dactylus length; exopod not reaching distal extremity of endopod basis.

Pereopod 4 (Fig. 3 I), basis as long as rest of articles combined length, merus 2.1 times ischium length, one simple seta on medial margin of ischium and merus, carpus 1.4 times merus length, propodus 0.5 times carpus length, dactylus fused with terminal stout seta, 0.5 times propodus length; missing last article of flagellum of exopod.

Pereopod 5 (Fig. 3 J), basis length 0.6 times other articles combined length, simple seta on medial margin of ischium and merus, merus about 1.8 times ischium length, carpus 1.9 times merus length, propodus length about 0.6 times that of carpus length, dactylus 0.4 times propodus length, terminal stout seta 2 times dactylus length.

Uropod 5 (Fig. 3 K), uropodal peduncle 2 times 6th pleonite article length, serrate medial margin, five setae on medial margin, peduncle 1.7 times endopod length. Exopod with two articles, one simple seta on outer margin of proximal article, two subterminal simple setae and one stout terminal seta, 0.7 times exopod length. Endopod with six simple short seta on medial serrate margin, three terminal setae, two simple short ones and one stout terminal seta, 0.4 times endopod length.

Remarks

Cumella razvani n. sp. is mostly related with *Cumella pygmaea* Sars, 1865, previously reported by Corbera & Garcia-Rubies (1998) from the Mediterranean Medes Islands. Both new species and *C. pygmaea* resemble by the general aspect of body, antenna 1 with accessory flagellum with more than one article, maxilliped 3 with outer process on basis. *Cumella razvani* differs from *C. pygmaea* by having (1) antenna 1 with accessory flagellum having three vs. 2 articles; (2) pereopod 1 with medial margin of basis smooth vs. serrate; (3) pereopod 2 having dactylus without setae on both margins vs. one seta on each margin; (4) pereopod 2 with dactylus having four short subterminal setae vs. two distinctly longer setae; (5) uropodal peduncle with setae on medial basis vs. the absence of setae; (6) uropodal exopod as long as endopod vs. shorter; (7) endopod with seven setae on medial margin vs. six medial setae.

Genus *Nannastacus* Bate, 1858

Nannastacus atlanticus (Băcescu & Muradian, 1972)

Material: 2 ♀♀.

Distribution. NE Atlantic. First mention from Morocco Mediterranean coast.

Family Pseudocumatidae Sars, 1878

Genus *Pseudocuma* Sars, 1865

Pseudocuma ciliatum Sars, 1879

Material: 14 ♀♀, 3 immature ♂♂, 2 juveniles.

Distribution. NE Atlantic, Mediterranean, Black Sea. First mention from Morocco Mediterranean coast.

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NOI SPECII DE CUMACEA CRUSTACEA (PERACARIDA) COLECTATE DE LA COASTA MEDITERANEANĂ A MAROCULUI DE EXPEDIȚIA “ATLAS 2007”

REZUMAT

O colecție mică de cumacee (Crustacea, Cumacea) a fost colectată de la Jhmala, 2-3 m adâncime, din Maroc, în 2007 de Expediția “Atlas 2007”. Au fost identificate șapte specii, cinci la prima mențiune de la coastele marocane ale Mării Mediterane: *Bodotria scorpioides* (Montagu, 1804), *Iphinoe trispinosa* (Goodsir, 1843), *Vaunthompsonia cristata* Bate, 1858, *Nannastacus atlanticus* (Băcescu & Muradian, 1972) și *Pseudocuma ciliatum* Sars, 1879. Două specii sunt noi pentru știință: *Iphinoe adrianae* n. sp. și *Cumella razvani* n. sp.

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