

**Researches on the coast of Somalia.  
On some Dynameninae  
(Crustacea Isopoda Sphaeromatidae)  
from the coast south of Mogadishu**

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A collection of Dynameninae from the coast of southern Somalia has produced several specimens of a new species of the genus *Dynamenella* Hansen 1905, only two individuals of a new genus *Eterocerceis* and many specimens of the genus *Sphaeromopsis* Holdich & Jones 1972. *D. scaptocephala* n. sp., *Eterocerceis somala* n. gen., n. sp., which differs from all the others Dynameninae by the morphology of its brood pouch, are described and reference is made to the presence in Somalia of the species *Sphaeromopsis amathitis* Holdich & Jones 1973.

KEY WORDS: Crustacea, marine Isopoda, Dynameninae, new genus, *Eterocerceis*, Somalia.

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#### INTRODUCTION

The marine isopods from East African beaches are poorly known, as very little research has been conducted in this area. A few articles have been published on the taxonomy of Flabellifera, STEBBING (1910), JONES (1971, 1976, 1983), JONES & ICELY

(1981) and by MESSANA (1985) on Cirolanidae. HOLDICH & JONES (1973) and MESSANA (1988) published articles on Dynameninae. Several articles exist which deal with this subfamily from the south-western (BARNARD 1914, 1940) and the eastern side of the Indian Ocean (PILLAI 1954, 1965), the Arabian Sea (JAVED & AHMED 1988) and the Red Sea (MONOD 1933).

Dynameninae, a widespread subfamily of the sphaeromatid family, inhabit intertidal rocky and sandy beaches all over the world. In the western Indopacific the family is represented by several species, belonging to the genera *Cerceis* Milne Edwards 1840, *Dynamenella* Hansen 1905, *Pseudocerceis* Harrison & Holdich 1982 and *Sphaeromopsis* Holdich & Jones 1972. Since the description of the new Somalian species *Pseudocerceis seleneides* Messana 1988, several other specimens of this subfamily have been found in material from the Somalian collections begun in 1971 by the «Centro di Studio per la Faunistica ed Ecologia Tropicali», Florence. Apart from the above-cited species, the specimens belong to the East African species *Sphaeromopsis amathitis* Holdich & Jones 1972 and to two new species, one of the genus *Dynamenella* Hansen 1905 and one of a genus which, by its morphological characteristics, appears to be new to science<sup>1</sup>.

Family Sphaeromatidae  
Subfamily Dynameninae

***Dynamenella scaptocephala* n. sp. (Figs 1-2)**

*Specimens examined.* Holotype 1♂, Nimu, 15.XI.1985, MZUF 1294; paratypes 14♂♂, 2♀♀, 2♀♀ ov., 57 indet., Nimu, MZUF 1295; 1♂, Gesira (Baia Smidling), 1.XI.1982, MZUF 1296; 2♂♂, 2♀♀, 4♂♂ juv., Habai Dacan (Nimu), 15.XI.1985, MZUF 1297; 1♂, 3♀♀, 1♀ ov., Gesira, 14.XII.1979, MZUF 1302; 1♂ juv., 8 indet., Gesira, 31.III.1984, MZUF 1303, G. Messana leg.; 2♂♂, 1♀ ov., Sar Uanle XI.1976 MZUF 1298, M. Vannini leg.; 1♂, Sar Uanle, 10.VIII.1975, MZUF 1299, SBS leg.

*Description.* A *Dynamenella* about twice as long as wide, maximum observed length 2.4 mm in female and 2.2 mm in male, cephalon with a small rostral process flanked by two concave surfaces which are separated from the remaining part of the cephalon by a sinuous groove (Fig. 1C-D), a central black spot appears through these surfaces. Antennae short, the second one hardly reaching the posterior margin of the first peraeonite. Peraeonites in males with a posterior ridge which, from the IV segment backward sometimes bears several tubercles (Fig. 1A-B). Peraeonite VII not reaching lateral margins of the body (Fig. 1A). Penes long, tapering from the median part, fused at base, covered with small scale-spines (Fig. 2H). Pleon without visible sutures. Pleotelson with a deep slit with subparallel margins, ventral margins of slit not contiguous. Four longitudinal ridges are present on pleotelson (Fig. 1B, M).

<sup>1</sup> Abbreviations used in the text: MZUF = Museo Zoologico dell'Università di Firenze; BMNH = British Museum (Natural History), London; SBS = Spedizione Biologica in Somalia del Centro di Studio per la Faunistica ed Ecologia Tropicali del C.N.R., Firenze; PL = Programma Litorale, ecological research on the beach of Sar Uanle (Somalia) held by the Centro di Studio per la Faunistica ed Ecologia Tropicali del C.N.R., Firenze; SBIS = Spedizione per lo Studio della Fauna Interstiziale in Somalia, held by the Centro di Studio per la Faunistica ed Ecologia Tropicali del C.N.R., Firenze.

Uropod's exopodite longer than endopodite and slightly trepassing pleotelsonic apex. Females and young males have a smooth body surface, the four pleotelsonic ridges are hardly apparent, the exopodite of the uropods is shorter than endopodite (Fig. 1P) and the posterior pleotelsonic slit is more roundish proximally (Fig. 1N). Females

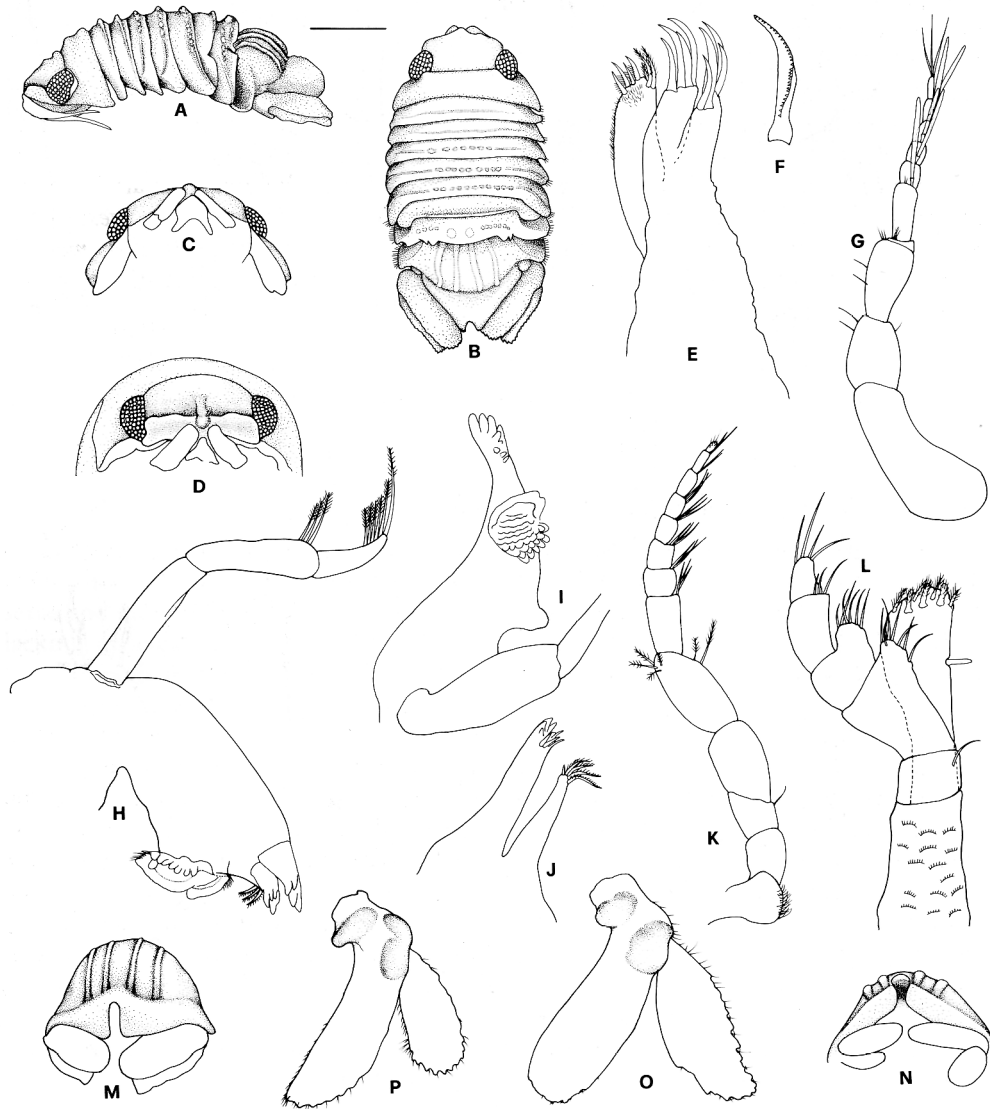


Fig. 1. — *Dynamenella scaptocephala* n. sp.: A-B, lateral and dorsal view of a male specimen (bar = 500  $\mu$ m). C-D, ventral and frontal view of the cephalon of the same specimen. E, second maxilla with detail of apical spine (F). G, first antenna. H-I, right and left mandible. J, first maxilla. K, second antenna. L, maxilliped. M, posterior view of male pleotelson. N, same view of a female. O, male uropod. P, female uropod.

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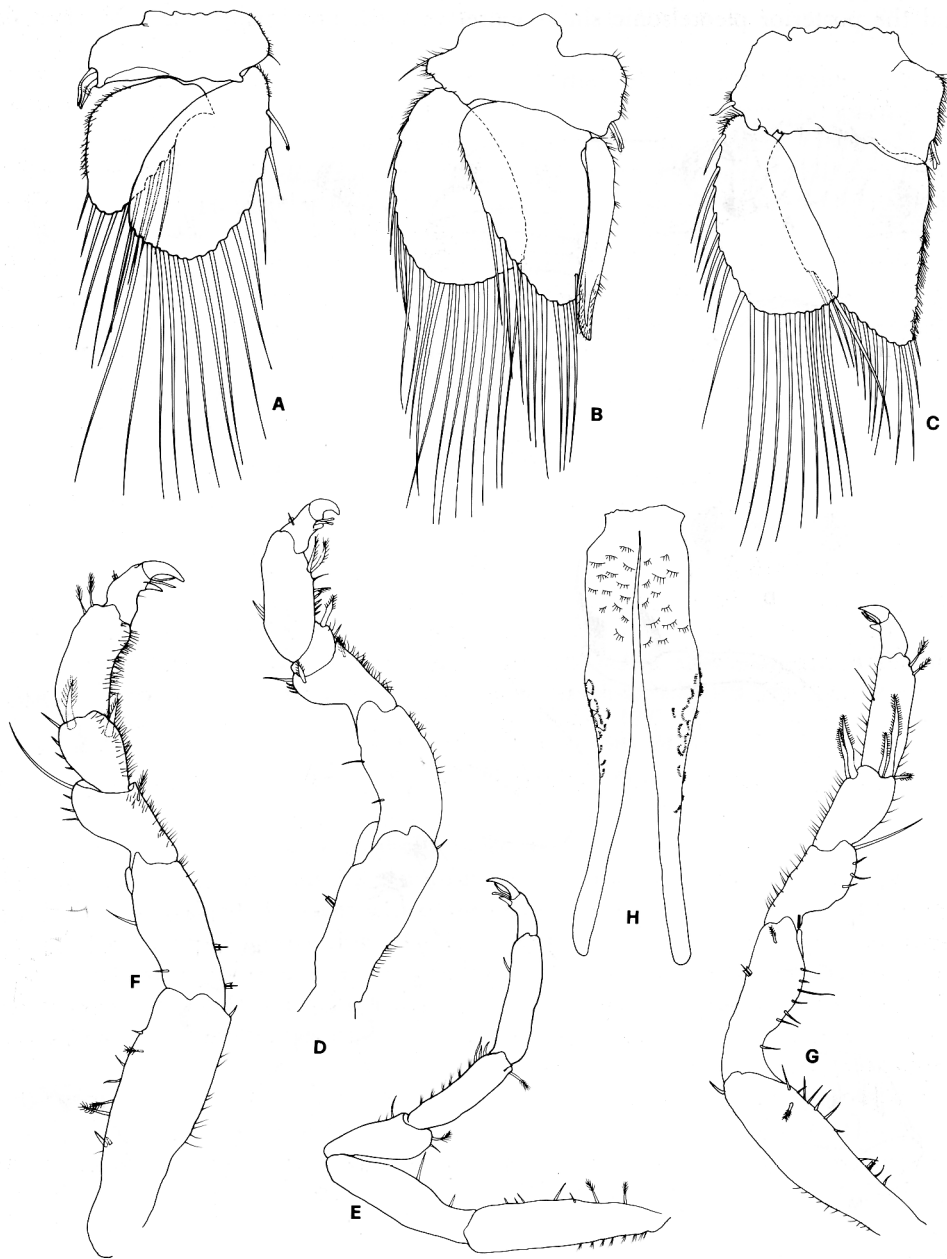


Fig. 2. — *Dynamenella scaptocephala* n. sp.: A-C, first, second and third pleopod male. D-G, first, second, sixth and seventh pereopod. H, penes.

mouthparts are not metamorphosed. Oostegites are absent and the brood pouch is formed by one anterior and one posterior large pockets opening with a narrow transverse slit between fourth pereopods. No internal pouches present.

Antenna I (Fig. 1G): first article of peduncle as long as the others together, second article shorter and larger than the third. A fourth article is present very short and transparent which has been interpreted in different ways (WÄGELE 1983, BRUCE 1986, BOTOSANEANU & NOTENBOOM 1989). Flagellum short, composed of few articles, the first one longer than the others, each bearing a distal aesthetasc.

Antenna II (Fig. 1K): peduncle with small scales on each article, the last one with five distal plumose setae. Flagellum first article longer than the others, each article bearing a group of smooth setae on the distal margin.

Mandible (Fig. 1H-I): pars molaris thick, with roundish teeth. Lacinia mobilis present only on the left mandible and followed by three setigerous spines. Palp triarticulate, the two terminal articles with six and three spinate terminal setae.

First maxilla (Fig. 1J): inner endite with four long plumose setae and one short and naked; outer endite with five strong teeth and four smooth setae.

Second maxilla (Fig. 1E-F): inner endite with four spinate and three plumose setae; both rami of outer endite with four falciform, faintly dentate spines.

Maxilliped (Fig. 1L): endite with single coupling hook, distal margin with three stout and four slender setose spines; palp 5-segmented, second and third article lobate.

Peraeopods (Fig. 2D-G): long and slender, dactylus with single strong spine and two setae on the distal part of the internal margin.

First three pairs of pleopods (Fig. 2A-C) with both rami with long plumose setae on margin. First pleopod (Fig. 2A) with three coupling hooks on sympodite. Second male pleopod with copulatory organ longer than endopodite, apex covered with tiny setae and tapering distally in the form of a gutter. Third pleopod exopodite (Fig. 2C) lacking articulation.

Uropods in males slightly longer than pleotelson with external margin of exopodite crenulate and longer than endopodite. In females uropods exopodite is shorter than endopodite.

*Dynamenella scaptocephala* lives in sandy beaches and can be collected either in tide pools or at low tide under vegetal debris on the beach. It is a fast swimmer, has very good digging capabilities, it «dives» rapidly into the sand (personal observation). Some of its morphological characteristics such as the frontal shield, could be connected with this behaviour. The name of the species refers to the form of the frontal part of the cephalon which resembles an excavator blade. From the root of the greek verb *scapto*, meaning to excavate.

*Discussion.* *Dynamenella scaptocephala* differs from all the other species of the genus especially in the shape of the body and of the frontal margin of the cephalon, which is similar to the Pakistani species *D. bulejiensis* Javed & Ahmed 1988 and *D. granulata* Javed & Ahmed 1988. It differs from these species in the form and shape of the pleotelson and in the length and shape of the stylet of the second male pleopod. Among the African species the most similar appears to be *D. scabricula* (Heller 1866) which differs in body shape and ornamentation, in the dimensions of the first two articles of antenna I, in the form of epistome and in peraeopod setation. However, the

species which looks more closely related to *Dynamenella scaptocephala* is *D. quadrilirata* Kensley 1984, from which can be distinguished by the form of posterior pleotelsonic slit and ridges, by the shape of second male pleopod stylet and by the lack of articulation on third pleopod endopodite. The two species share a similar form and shape of proximal part of first pleopod endopodite and the fact that the seventh pereonite does not reach the lateral margins of the body. *D. scaptocephala* is the only species of the genus not to have an enclosed foramen in pleotelson which could suggest the creation of a new genus for it, but, in consideration of the characters shared with other species, I prefer to maintain it in the genus *Dynamenella*. The pleotelsonic ridges have a similar shape in a species of a different genus *Paracassidinopsis sculpta* Nobili 1906, suggesting the possibility of a convergent evolution of these structures.

### *Eterocerceis* n. gen. (Figs 3-4)

Type species: *Eterocerceis somala* n. sp.

*Generic description.* Body smooth, about twice as long as wide, telson bearing two median tubercles and a notch at the rounded telsonic apex in both sexes (Figs 3O-Q, 4M-N). Penes short, not fused at base (Fig. 4F), appendix masculina arising about half way along internal margin of endopodite, and extending beyond apex of exopodite for about 1/3 of its length (Fig. 4B). Sympodite of first three pleopods biarticulate, exopodite of third pleopod divided distally by a transverse groove. The ovigerous female bears four pairs of oostegites slightly overlapping in the middle and increasing in size posteriorly. A large posterior pocket reaching peraeonite IV and a small anterior pocket are present. Embryos are held in five pairs of internal pouches. Mouthparts metamorphosed, mandibles fused distally.

*Derivatio nominis.* From the greek root *eteros* = different and *Cerceis*.

### *Eterocerceis somala* n. sp.

*Material examined.* Holotype 1♂, Gesira, on *Pocyllopora lenae* at -3 m, X.1981, MZUF 1300, M. Vannini leg. Paratype 1♀ ov. with 13 embryos, Gesira, on *Pocyllopora demicornis* at -3 m, MZUF 1301, same date and collector.

*Description.* Antenna I (Fig. 3A). First and second peduncle article with two and one plumose setae on external margin respectively, the second article also has two internal setae. The fourth article (= first flagellar in WÄGELE 1983) reduced with two median plumose setae. Flagellar articles, from the third onwards, with two distal external aestetasc.

Antenna II (Fig. 3B). With four plumose setae on the distal part of last peduncular article.

First maxilla. Male (Fig. 3C-D): inner endite with four (one broken in Fig. 3D) spinulate and one simple setae, outer endite with five smooth, five dentate teeth and one subapical seta. Female (Fig. 3J): the two endites are reduced to short appendices covered with scale-spines.

Second maxilla. Male (Fig. 3E): inner endite with two plumose and 13 spinulate

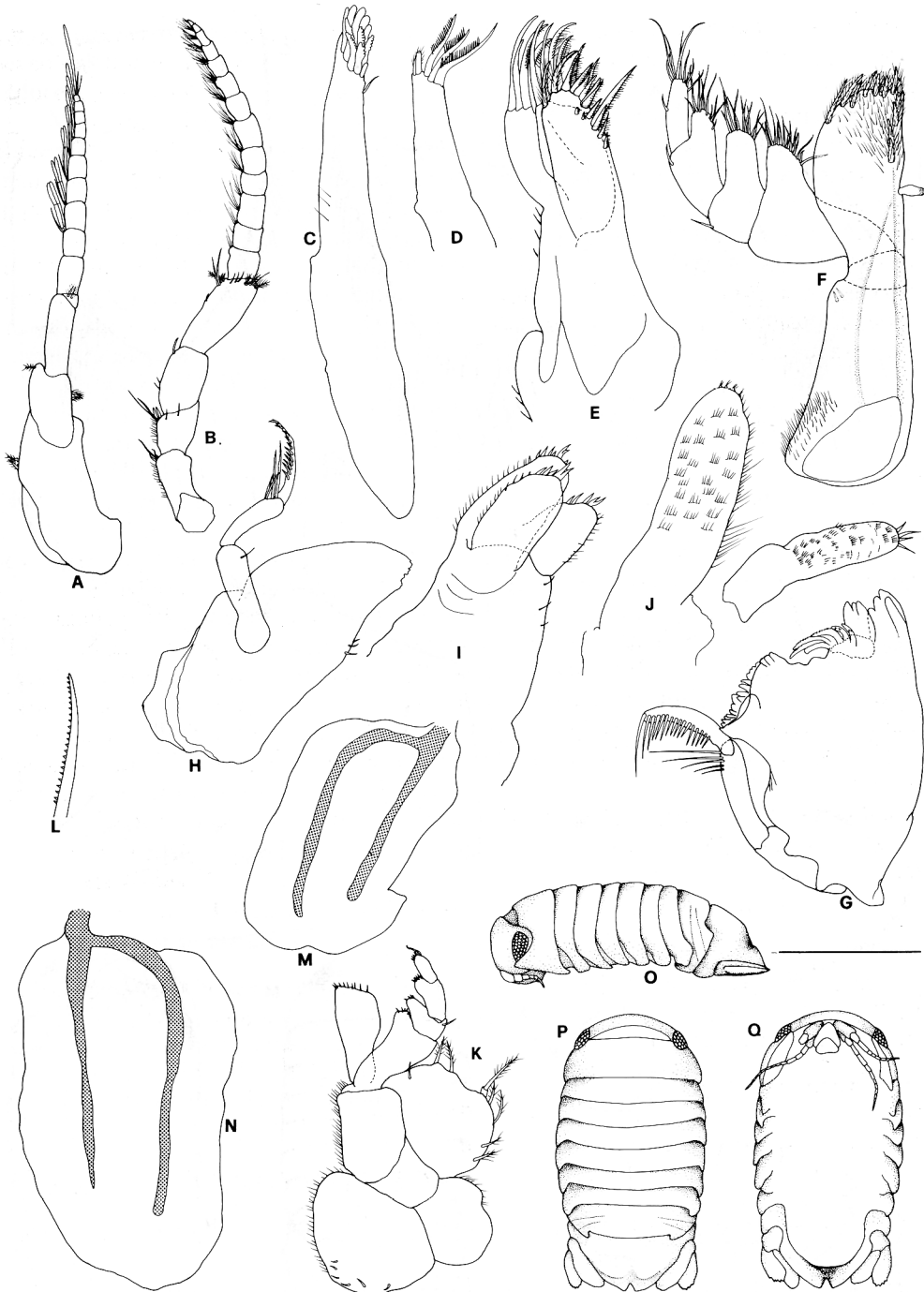


Fig. 3. — *Eterocerceis somala* n. gen., n. sp.: A-B, first and second antenna. C-G, first (C, D) and second (E) maxilla, maxilliped and mandible of male. H-K, mandible with detail (L) of palp spine, second and first maxilla, maxilliped of female. M-N, oostegites. O-Q, lateral, dorsal and ventral view of female (bar = 2 mm).

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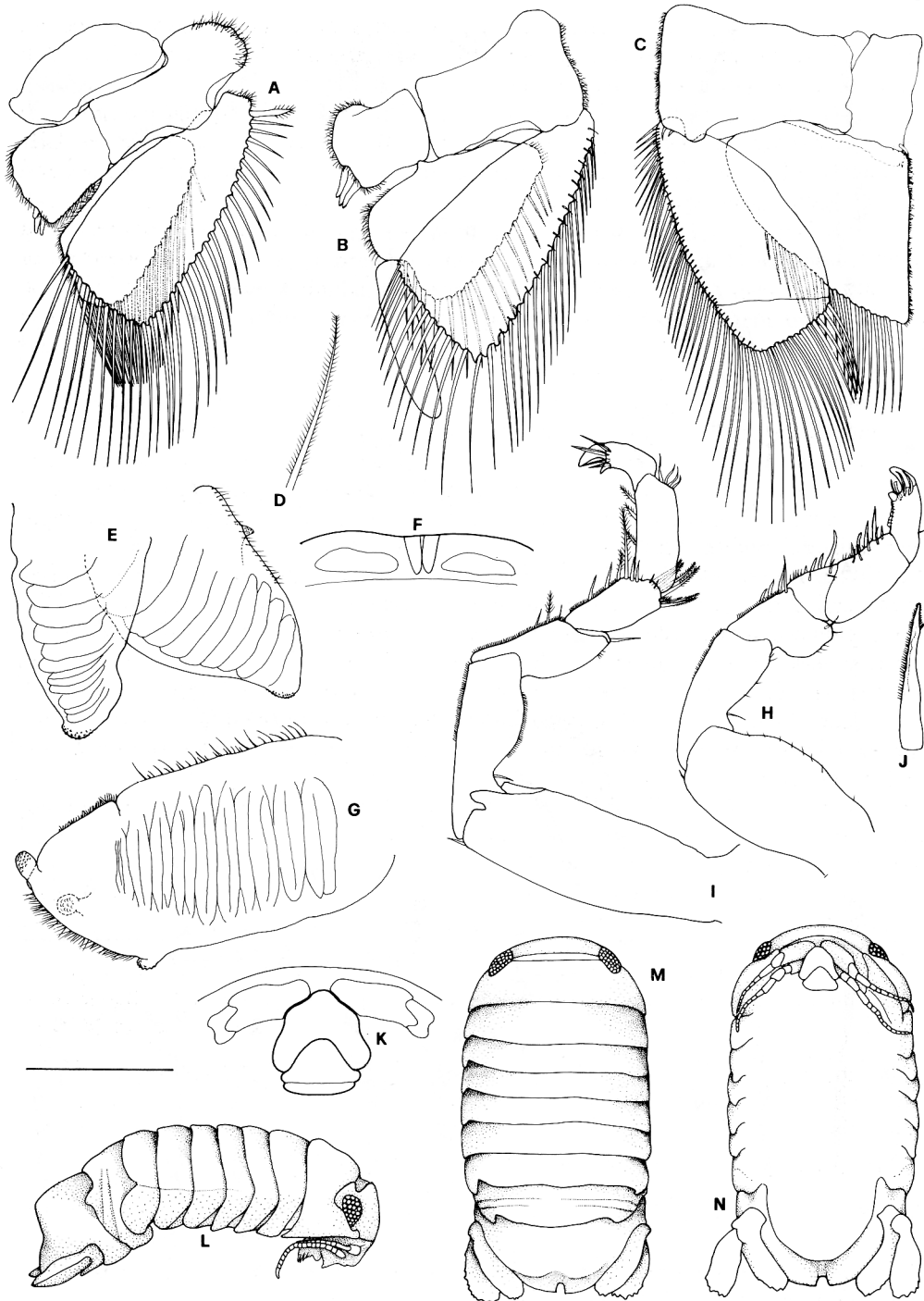


Fig. 4. — *Eterocerceis somala* n. gen., n. sp.: A-D, first, second, third pleopod and particular of seta (D). E, G, fourth and fifth pleopod. F, penes. H-J, first and seventh pereopod with particular of spine (J). K, epistome, labrum and antennular base. L-N, lateral, dorsal and ventral view of male.



spines, one subapical longer than the others; the two rami of outer endite bear six and seven falciform spines respectively, two of which are spinulate. Female (Fig. 3I): reduced, each endite with a few setae.

Mandible. Male (Fig. 3G). Pars incisiva with four teeth, lacinia mobilis with three teeth, both strongly sclerosed, palp triarticulate, last article with 16 spines. Left mandible with lacinia mobilis less sclerosed. Female (Fig. 3H) mandible reduced and apically fused, palp not greatly reduced.

Peraeopod I (Fig. 4H). Dactyl organ with four chaetae, in pairs on both sides of unguis, internal margin of dactylus with small lamellae. Propodite with two rows of four spinate chaetae on internal margin. Carpus with four spinate chaetae on internal margin and three laminar setae on posterior side. Merus with three spinate and numerous tiny setae along internal margin.

Peraeopods II-IV. Long and thin.

Peraeopods V-VII. Much stronger and armed, sixth and seventh peraeopod (Fig. 4I) with distal margin of carpus armed with strong dentate spines.

Male pleopod I (Fig. 4A). Basipodite biarticulate, bearing three dentate coupling hooks and a dense cover of tiny setae on internal and external margins. Exopodite with dentate margin, first seta on external margin pennate, the remainder on exopodite and endopodite, plumose.

Male pleopod II (Fig. 4B). Basipodite biarticulate, with three dentate coupling hooks and thick setae on internal margin. Exopodite with dentate margin bearing many plumose setae, each with a small basal accessory seta. The copulatory organ inserted about mid-way on endopodite, extending beyond the exopodite for 1/3 of its length, and covered by numerous tiny setae clustered in small groups.

Pleopod III (Fig. 4C). Basipodite biarticulate, with three coupling hooks. Exopodite biarticulate. Endopodite triangular with internal margin parallel to sagittal line and covered with thick setae.

Pleopods IV and V (Fig. 4E, G). Exo- and endopodites with respiratory foldings, exopodite of fifth pleopod with lateral incision and three subterminal bosses covered with scale-spines.

Uropods not extending beyond posterior margin of pleotelson in female, longer in male; external margin of both rami slightly crenulated.

*Discussion.* The creation of a new genus seems justified by the fact that *Eterocerceis somala* shows some of the characteristics of a species belonging to the «cerceid group», such as the crenulation of exopodite of pleopods I and II. It differs from all the other genera in the morphology of the brood pouch and by the fact that the pleotelson bears two lateral tubercles and no median raised region.

### ***Sphaeromopsis amathitis* Holdich & Jones 1973**

*Sphaeromopsis amathitis* HOLDICH & JONES 1973: 386-391, figs 1-4; HOLDICH & HARRISON 1981: 288-290, fig. 1.

*Type specimens examined.* Holotype, Kenya, Watamu, BMNH 1973:150, 1♂. Paratypes, Kenya, Watamu, BMNH 1973:151, 2♂♂, 2♀♀.

*Specimens examined.* Somalia: Sar Uanle (PL), SBS leg., 03.XI.1971, 1♂; Sar Uanle (PL), SBS leg., 09-21.VI.1973, 150♂♂, 167♀♀, 39♀♀ ov., 4♂♂ juv., 197 indet.; Sar Uanle, SBIS leg., 27.IX.1974, 2♂♂ Sar Uanle, G. Messina leg., 10.VIII.1975, 11♂♂, 6♀♀; Sar Uanle, XI-XII.1976,

M. Vannini leg., 5♂♂, 8♀♀, 1 indet.; Gesira, 13.XII.1979, G. Messina leg., 56 indet.; Gesira, 4-9.V.1980, G. Messina leg., 13♂♂, 10♀♀; Gesira, 1.XI.1982, Baia Smidling, G. Messina leg., 1 indet.; El Covonne, G. Messina leg., 23.III.1984, 12 indet.; Gesira, 31.III.1984, G. Messina leg., 1 indet.; Aumache (S of Gesira), G. Messina leg., 10.XI.1985, 2 indet.; Habai Dacan (Nimu), G. Messina leg., 83 indet.

The specimens examined correspond perfectly to the original description given by HOLDICH & JONES in 1973. The ovigerous female with no metamorphosed mouthparts and with two large anterior and posterior pockets matches the description of the female given by HARRISON (1984). The only difference I noticed from the original description of *Sphaeromopsis amathitis* is a more marked crenulation of the margin of the uropod endopodite in some specimens.

*Ecology.* All the species described above were collected along the beaches of the Somalian coast in sandy gravel on the beaches or tide pools or in some cases in small caves along the reef. *Eterocerceis somala* has been collected at -3 m on corals of the genus *Pocillopora*.

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