

The genus *Munna* KRØYER (ISOPODA: ASELOTATA) in the Island of Ischia *

by

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12 Figures

(Received October 1st, 1973)

Summary. Two new species of the genus *Munna*, *M. (Munna) wolffi* n. sp. and *M. (Metamunna) similis* n. sp. are described and figured. Two further species, *M. (Uromunna) petiti* (new to the Italian fauna) and *M. (Metamunna) mediterranea* (second record for the Bay of Naples) are also recorded. Statements are made on the status of the subgenus *Uromunna* a new diagnosis of which is proposed. The new subgenus *Metamunna* n. sbg. is erected, too.

Riassunto. Si descrivono due nuove specie del genere *Munna*, *M. (Munna) wolffi* n. sp. e *M. (Metamunna) similis* n. sp. Si segnala altresì la presenza ad Ischia di *M. (Uromunna) petiti* (nuova per la Fauna italiana) e di *M. (Metamunna) mediterranea* (secondo ritrovamento nel Golfo di Napoli). Si discute la posizione del sottogenere *Uromunna* di cui viene proposta una nuova diagnosi e viene stabilito il nuovo sottogenere *Metamunna* n. sbg.

INTRODUCTION

The family MUNNIDAE sensu WOLFF (1962) contains 12 more or less widely distributed genera. Only three of these have been recorded from the Mediterranean: *Austrosignum* HODGSON, 1910 (*A. maltinii* SCHIECKE & FRESI, 1972) *Munna* KRØYER, 1839 (*M. mediterranea* PIERANTONI, 1916 and *M. petiti* AMAR, 1948), *Pleurogonium* G. O. SARS, 1872 (*Pleurogonium* sp. SCHIECKE & FRESI, 1969).

As it has already been stated (FRESI & SCHIECKE, 1972), *Pleurocope* WALKER, 1901, does not belong to the MUNNIDAE, being the type of a separate family, the PLEUROCOPIIDAE.

The genus *Munna* contains 64 described species, to which four further ones (*Munna* sp. MONOD, 1931, *Munna* 2 ssp. MONOD, 1933, and *Munna* sp. STEPHENSEN, 1947) should be added. This vast number of species has induced MENZIES (1952) to attempt a subdivision of the genus into groups. This has been done mainly on the basis of shape and spination of the ventral uropodal ramus. Originally

* Work performed with contribution of the Consiglio Nazionale delle Ricerche (C.N.R.), Italy.

four, these groups have later been reduced to three (MENZIES, 1962) and given the rank of subgenus: *Munna*, *Neomunna* and *Uromunna*.

This classification is followed by several authors, e.g. KUSSAKIN (1962, 1972), SCHULTZ (1964, 1969), GEORGE & STRÖMBERG (1968) and CLÉRET (1971).

Both the known Mediterranean species of *Munna* have been attributed to the subgenus *Uromunna*: *M. mediterranea* is the only one species of the genus known for the Italian seas.

A sampling programme carried out mainly by SCUBA diving, yielded a large number of specimens of *Munna*. Together with *M. mediterranea* and *M. petiti*, this latter new to Italian fauna, two additional species have been found which proved themselves to be new to science: *M. wolffi* n. sp. and *M. similis* n. sp. These are described in the present paper.

Subgenus *Munna* MENZIES, 1962

For diagnosis, see MENZIES, 1962, pag. 32.

This subgenus contains 22 species, mainly from cold waters (polar and subpolar basins). The present is the first record of *Munna* (*Munna*) for the Mediterranean.

Munna (*Munna*) *wolffi* n. sp.

Type locality: Punta S. Pancrazio — Island of Ischia — Bay of Naples.

Depth: 18 m.

Substrate: cliff covered by *Halimeda tuna*.

Location of types: Zoological Museum, University of Copenhagen, Denmark.

Material examined: 129 specimens from 12 localities of the Island of Ischia, collected on various algal substrates at depths from 6 to 48 m.

Specific name: the specific name is dedicated to the distinguished carcinologist Torben WOLFF, Zoological Museum, University of Copenhagen, Denmark.

Description: male Holotype (Fig. 1). Length 1,08 mm. Colour white, with dark brown specks. Body with subparallel margins, the first 5 pereonites being almost equal in width. Prn. 2 the widest and the longest, prn. 1 the shortest, prn. 7 the narrowest. Head much wider than long, with long and stout eyes-stalks. Frons slightly convex with some fine setae. Pleotelson pyriform, with rounded distal end, bearing a characteristic lateral spine in the proximal third. A dentate « sub-uropodal shelf » (see MENZIES, 1952) is present.

Antennulae (Fig. 2, A): peduncle consisting of four joints: the first has rectangular shape and bears one plumose seta; the second is longer and has four plumose setae. The two last joints are subequal in length, the fourth

having two plumose setae on its anterior margin. The flagellum consists of three segments, the first of which is one and a half times as short as the second. This bears, on its anterior margin, a long flattened sensory filament and a short seta. The last joint (Fig. 2, B) is very short and bears a flattened sensory filament and five setae, two of which are rather long.

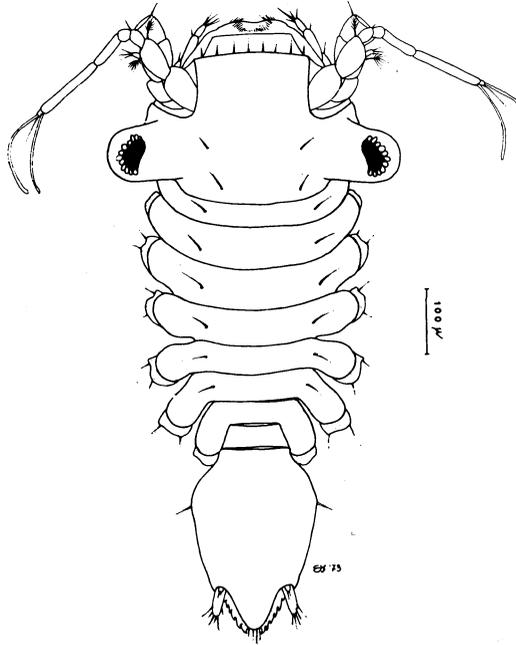


FIG. 1. *Munna (Munna) wolffi*, n. sp. *Holotype male*.

Antennae (Fig. 2 C): peduncle of six joints, the first four of which are short, the third bearing a distinct antennal scale. Fifth and sixth joints very long, the latter being 1, 2 times as long as the former. Both bear, in their apical zone, some two-pointed spines. The flagellum is composed of several (17) joints provided with setae on their anterior margins.

Mandibles (Fig. 2, D): normal. Incisor with five teeth. Spine-row of left mandible with four pectinate spines. Lacinia mobilis (Fig. 2, E) present, with four teeth. Molar process broad and truncate, with apical setae and denticulations. Spine-row of right mandible with five pectinate spines. Palp elongated, three-jointed, the first joint being half as long as the second. This bears two long and stout pectinate spines and is provided with two ranges of fine setae. Third joint spoonlike, half as long as the second, provided with several fine setae on the inferior margin and tipped with three pectinate setae.

Maxillulae (Fig. 3, A): normal. Outer lobe with 11 pectinate spines and some fine setae on both the outer and the inner margins. The inner lobe is provided with four apical pectinate spines and some setae. Several fine setae are seen on the outer margin.

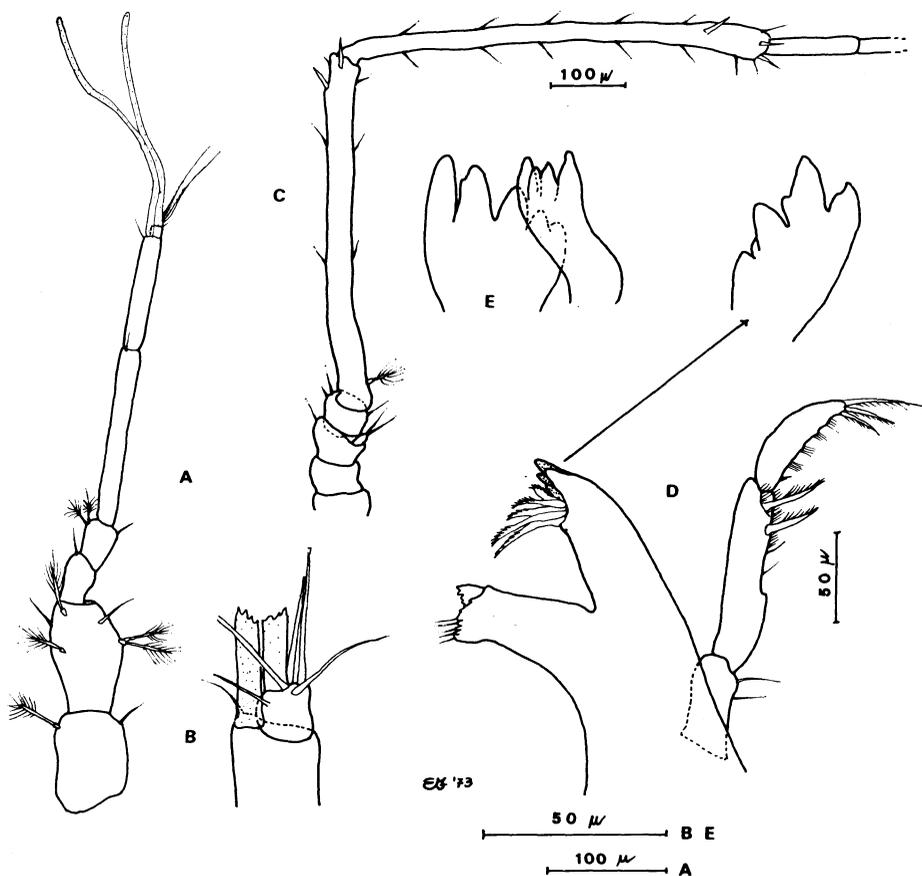


FIG. 2. *Munna (Munna) wolffi*, n. sp. A) right antennula; B) penultimate and last joint of antennular flagellum; C) left antenna; D) right mandible; E) pars incisiva and lacinia mobilis of left mandible.

Maxillae (Fig. 3, B): normal. Inner lobe much wider than the outer ones, carrying several spines, both pectinate and simple. Outer lobes have four apical long spines; apparently only the inner one is pectinate.

Maxillipeds (Fig. 3, C): normal. Endite with six plumose spines on its anterior margin, where also a short tooth is seen on the outer portion (see Fig. 6, A).

Three coupling-hooks are present on the inner margin. Palp five-jointed, narrower than the endite. Epipod suboval, tapering towards the apex.

Upper lip (Fig. 3, D): semicircular, with an indentation on the anterior margin, bearing several fine setae.

Lower lip (Fig. 3, E): normal. Both the lobes are provided with numerous setae.

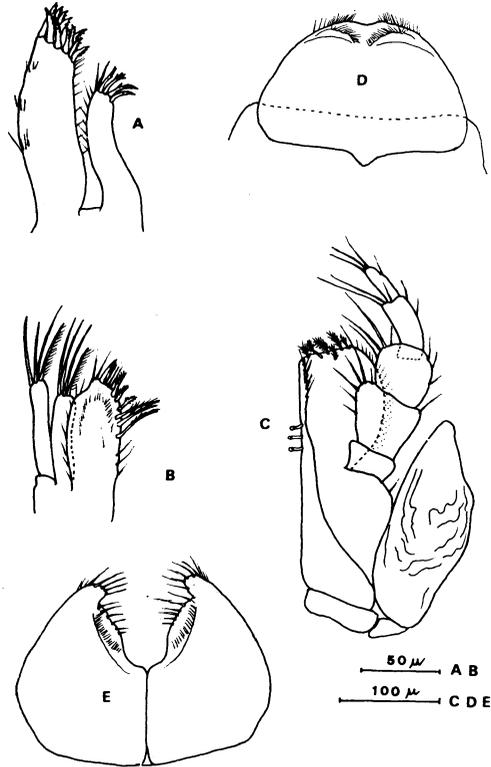


FIG. 3. *Munna (Munna) wolffi*, n. sp. A) left maxillula; B) left maxilla; C) left maxilliped; D) upper lip; E) lower lip.

Pereopods: Prp. 1 (Fig. 4, A) subchelate. The carpus shows six strong spines and several fine setae. Propodus longer than the carpus with a slightly convex upper margin. The lower margin has several fine short setae and some long ones and, its proximal portion, bears three strong spines. Dactylus half as long as the propodus, biunguiculate, the inferior claw being half as long as the superior one. A row of fine setae is seen on the lower margin. Prps. 2-7 (Fig. 4, B, C) of similar shape, increasing greatly in length caudally (the propodal and the carpal joints are especially elongate). All have several two-pointed

spines on carpus and propodus. Dactyli with two claws, the inferior of which is somewhat shorter than the superior one.

Pleopods: Plp. 1 (Fig. 5, A) with apex narrower than the base. The extremities (Fig. 5, A₁) show an outer tooth followed by a rounded lamellar portion carrying 7 setae. Plp. 2 (Fig. 5, B) with triangular sympod bearing several short

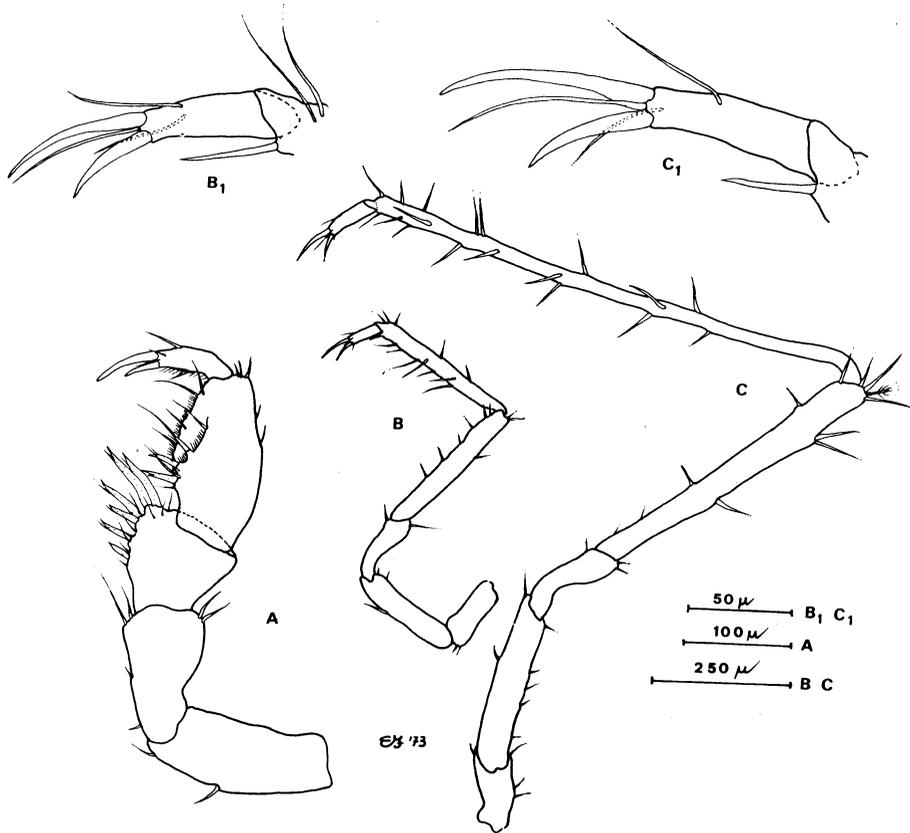


FIG. 4. *Munna (Munna) wolffi*, n. sp. A) first right pereopod; B) second right pereopod; C) seventh right pereopod; B₁ and C₁) dactyli of prp. 2 and prp. 7.

setae near the outer margin, on the upper surface. Endopod geniculate, rather robust. Exopod inconspicuous. Plp. 3-5 (Fig. 5, C, D) normal.

Uropods: biramous, non pedunculate. Ventral ramus much longer and wider than the dorsal one, bearing 6 plumose setae (Fig. 5, F).

Allotype: female 1,2 mm long. All the characteristics mentioned for the male. Plp. 2 suboval, with several fine setae on ventral surface and a large bump in the antero-medial portion (Fig. 5, E, and 6, B).

NOTES ON BIOLOGY

M. (Munna) wolffi is distributed in the infra- and circa-littoral zones. This species was found mainly on algal substrates below 10 m, especially between 10 and 35 m. It seems to favour algal populations the dominant species of which are *Halimeda tuna* and several species of *Peyssonnelia*, mainly *P. bornetii*.

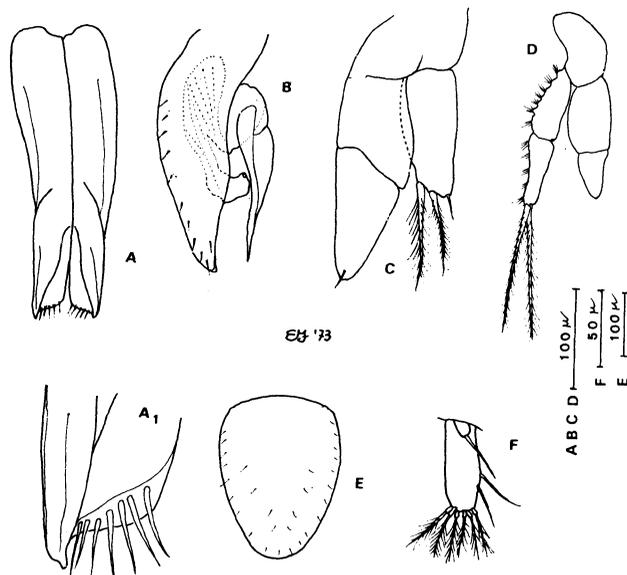


FIG. 5. *Munna (Munna) wolffi* n. sp. A) male pleopods 1; A₁) apical portion of male plp. 1; B) right male plp. 2; C) right male plp. 3; D) left male plp. 4; E) female plp. 2; F) left uropod.

Of the 129 specimens which were obtained, 64 were females and 65 males. 38 females had marsupium, 7 of which containing from 6 to 10 eggs. No oostegites were found in the remaining 26 females, confirming the statement made by WOLFF (1962) and SCHIECKE & FRESI (1972) that in the MUNNIDAE there is no preparatory stage with developing oostegites. The reproduction seems to take place all the year around as mature females were found in all seasons. The females ranged in size from 0,70 to 1,70 mm (average length 1,14 mm). The males ranged from 0,80 to 1,90 mm (average length 1,22 mm).

TAXONOMICAL REMARKS

Only one species seems to be allied to *M. (Munna) wolffi* n. sp., *M. (Munna) groenlandica* HANSEN, 1916. This differs from *M. (Munna) wolffi* n. sp. in having

four flagellar segments in the antennulae instead of three, and strong spines on the upper surface of male preoperculum.

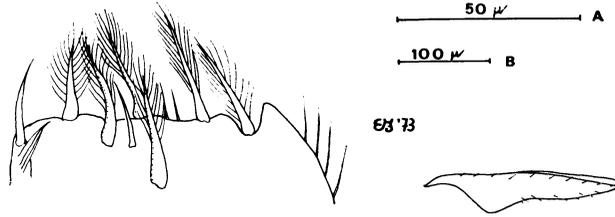


FIG. 6. *Munna (Munna) wolffi*, n. sp. A) distal portion of maxilliped shown in Fig. 3, C (magnified); B) side view of female plp. 2 shown in Fig. 5, E.

Subgenus *Uromunna* MENZIES, 1962

For diagnosis see MENZIES, 1962, pag. 36, KUSSAKIN, 1962, pag. 68 and FRANKENBERG & MENZIES, 1966, pag. 201.

Eight species have been attributed to this subgenus:

M. schauinslandi G. O. SARS, 1905, *M. mediterranea* PIERANTONI, 1916, *M. nana* NORDENSTAM, 1933, *M. acarina* MILLER, 1941, *M. ubiquita* MENZIES, 1952, *M. petiti*,

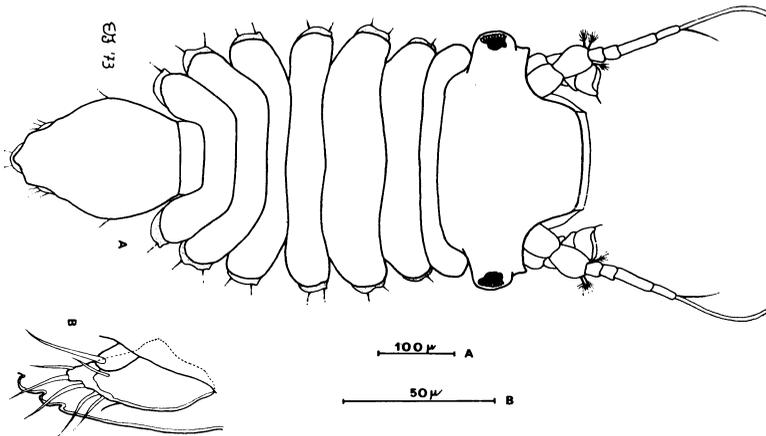


FIG. 7. *Munna (Uromunna) petiti* AMAR. A) habitus (male); B) right uropod (male).

AMAR, 1948, *M. reynoldsi* FRANKENBERG & MENZIES, 1966 and *M. magnifica* SCHULTZ, 1964. As it will be seen later, *M. mediterranea* and *M. magnifica* do not belong to *Uromunna*.

Munna (Uromunna) petiti AMAR, 1948*Munna petiti* AMAR, 1948, pag. 63, 1 pl.*Synonymy:**Munna petiti* AMAR: MENZIES, 1952, pag. 119

» » » : WOLFF, 1962, pag. 252

» » » : CARTON, 1961, pag. 222

» » » : SCHIECKE & FRESI, 1972, pag. 31

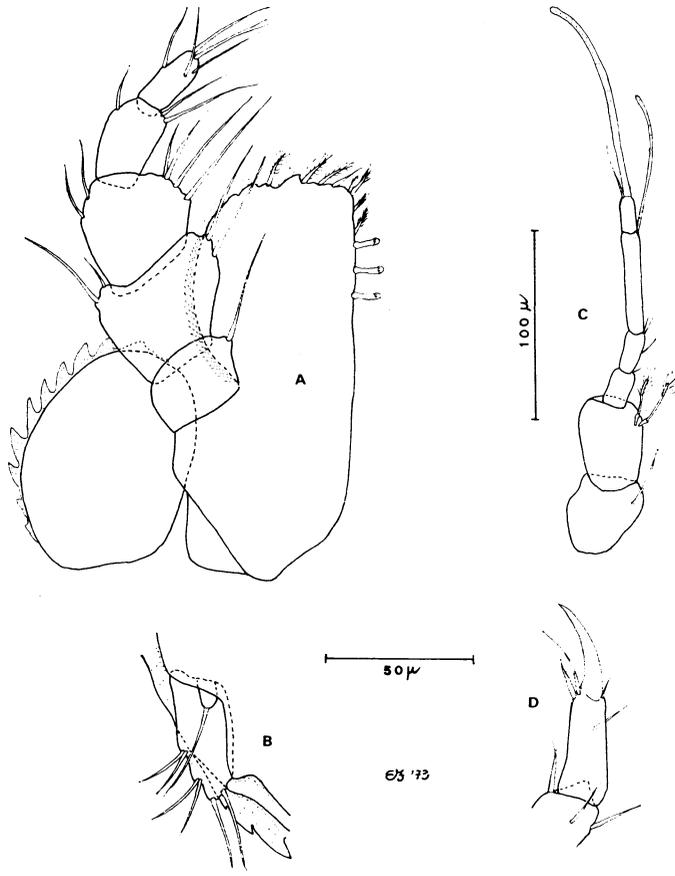
Munna? *petiti* AMAR: FRANKENBERG & MENZIES, 1966, pag. 206*Munna (Uromunna) petiti* (AMAR): MENZIES, 1962, pag. 36*Munna (Uromunna) petiti* AMAR: KUSSAKIN, 1962, pag. 68

FIG. 8. *Munna (Metamunna) mediterranea* PIERANTONI. A) right maxilliped (male); B) left uropod (male); C) right antennula (male); D) dactylus of second right pereopod (male).

Material examined: 12 specimens from three localities of the Island of Ischia, collected both on algal substrates and sandy bottoms, at depths from 2,5 to 46 m. Three additional specimens have been obtained from algae at the Island of Vulcano (Aeolian Islands, North of Sicily) at a depth of 2 m (Fig. 7, A).

In the original description, AMAR (1948) claimed that the uropods of this species are pedunculate. This fact made FRANKENBERG & MENZIES (1966) doubt that *M. petiti* belongs to the genus *Munna*, though they included it in their key to *Munna* (*Uromunna*). A close examination of our specimens revealed that in *M. (Uromunna) petiti* the uropods are not pedunculate (Fig. 7, B).

REMARKS ON THE SUBGENUS *Uromunna*

In the original diagnosis of *Uromunna*, MENZIES (1962, pag. 36) took into account the shape and the spination of ventral uropodal ramus: «MUNNIDAE with leaf-like ventral uropodal ramus, flattened in cross section. Apical spines lacking». He included in this subgenus *M. ubiquita*, *M. acarina*, *M. nana*, *M. mediterranea* and *M. schauinslandi*.

KUSSAKIN (1962, pag. 68) also considered flattened uropods as diagnostic of the subgenus, but completed his diagnosis by including the single sensory filament on the flagellum of the antennulae, and the narrow exopod of plp. 3. He attributed to *Uromunna* the six species mentioned above. SCHULTZ (1964) added to this list a further species, *M. magnifica*, without modifying the diagnosis.

FRANKENBERG & MENZIES (1966), when describing a further species of *Uromunna*, *M. reynoldsi*, produced a new diagnosis for the subgenus, also including the characters proposed by KUSSAKIN. This diagnosis is as follows: «*Munna* (*sensu lato*) with inferior ramus of uropoda lacking apical spines. Terminal articles of the flagellum of first antennae with a single sensory seta; penultimate and terminal articles similar in length; apex of first male pleopod simple; exopod of plp. 3 narrower than the endopod, endopod with plumose setae. First prp. in male and female similar».

Thus FRANKENBERG & MENZIES no longer considered the shape in cross-section of the uropods as distinctive for the subgenus, though they considered the lack of apical spines as a diagnostic feature of prime importance. We agree with the former modification of the diagnosis, for the uropods are too minute to determine cross-sectional shape with a reasonable degree of accuracy. We cannot fully agree with the latter modification of the diagnosis as *Uromunna* shares with *Munna* the lack of apical spines.

As far as the other characters mentioned by FRANKENBERG & MENZIES are concerned, we would like to make the following comments:

— *penultimate and terminal articles of antennulae of similar length*: we would slightly correct this statements, as in all the species attributed to

Uromunna the terminal article is definitely shorter than the penultimate one, except for *M. acarina* which seems to have only one flagellar article, and *M. magnifica* which has a minute terminal article. Though they are not of similar length, the two terminal articles of the flagellum of the antennulae have a relative size much different from that which is seen in *Munna* and *Neomunna*.

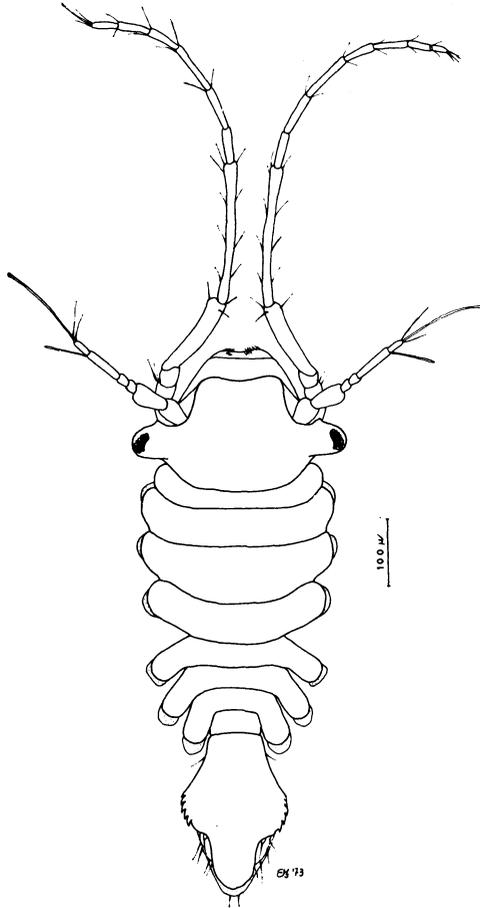


FIG. 9. *Munna* (*Metamunna*) *similis*, n. sp. *Holotype male*.

In fact, in these two subgenera, the last article is much shorter than the penultimate (cfr. Fig. 2, A and 2, B in this paper). Then this seems to be a good distinctive character for *Uromunna*.

— *apex of male pleopod I simple*: it is not completely clear to us what FRANKENBERG & MENZIES mean by this. The apical portion of male preoperculum

is expanded in *M. schauinslandi*, as well as a slight lateral expansion is seen in *M. acarina*. In *M. reynoldsi* the apical setiferous lobes are preceded by indentations. The apical region is not laterally expanded in *M. nana* where the lobes are rounded, in *M. petiti*, where there are pointed corners, and in *M. mediterranea* where the lobes are obliquely truncate. Male is unknown in *M. magnifica*.

— *exopod of plp. 3 narrower than the endopod*: this seems to be a good distinctive character as all the species attributed to *Uromunna* share it. It must be added that the exopod of plp. 3 is non-jointed in all these species, whereas it is two-jointed and wider than the endopod both in *Munna* and *Neomunna*. Plp. 3 is not known in *M. magnifica*.

— *endopod of plp. 3 with plumose setae*: this is true also for both *Munna* and *Neomunna* species.

Another important additional comment can be made. The mandibular palp seems to be rather short in all the species of *Uromunna*, with the exception of *M. magnifica*, where it is elongate, and *M. reynoldsi* where it is absent. Especially the terminal article appears to be very short and straight, when compared with that of *Munna* and *Neomunna*, which is long and spoon-shaped. In the light of what is stated above, we believe that the species attributed to *Uromunna* are somewhat separate from those of *Munna* and *Neomunna*, and this may justify the erection of a subgenus to contain them. Its diagnosis should be as follows:

Munna (sensu lato) with terminal joint of antennular flagellum never minute. Only one sensory filament on antennular flagellum. Mandibular palp comparatively short or absent. Exopod of plp. 3 unjointed, narrower than the endopod.

The subgenus *Uromunna* contains the following species which seem to satisfy the above diagnosis:

- Munna (Uromunna) schauinslandi* G. O. SARS, 1905
- Munna (Uromunna) nana* NORDENSTAM, 1933¹
- Munna (Uromunna) acarina* MILLER, 1941
- Munna (Uromunna) petiti* AMAR, 1948
- Munna (Uromunna) ubiquita* MENZIES, 1952
- Munna (Uromunna) reynoldsi* FRANKENBERG & MENZIES, 1966

¹ Both forma « *typica* » MENZIES, 1962 and forma « *a* » MENZIES, 1962.

As far as the remaining two species previously attributed to *Uromunna*, *M. mediterranea* and *M. magnifica* are concerned, it must be stated the following:

— *M. mediterranea* satisfies the diagnosis but has only one claw on prps. 2-7. This seems sufficient to remove it from *Uromunna*. The position of this species will be discussed below.

— *M. magnifica* does not satisfy the diagnosis in all the relevant characters, as the antennulae have a minute terminal article, two sensory filaments, and the mandibles have a long palp, with spoon-like terminal joint. As it has not recurved apical spines on ventral uropodal rami, it is probably best placed in the subgenus *Munna*.

GEOGRAPHIC DISTRIBUTION OF *Uromunna*

The subgenus *Uromunna* shows an interesting geographic distribution. While it has subantarctic representatives, such as *M. nana* (Falkland Islands, South Chile) and *M. schauinslandi* (Chatham Island and South Chile), it is apparently missing from northern cold waters. As far as the other species are concerned, *M. ubiquita* (Seattle, California), *M. reynoldsi* (Sapelo Island - Georgia) are temperate North Pacific and North Atlantic species (EKMAN, 1953), *M. petiti* (Marseille, Naples, Sicily) is a temperate Mediterranean element. *M. acarina* (Hawaii) is the only tropical representative of the subgenus. All the above species occur in shallow waters, the deepest one being *M. nana* forma « a » MENZIES, which has been collected at 100 m. It is relevant to remark that *M. schauinslandi* seems to be a true brackish water species. The same tendency is shown by *M. reynoldsi* which has been found in a salted marsh.

Subgenus *Metamunna*, new subgenus

Type species: *Munna mediterranea* PIERANTONI, 1916

Diagnosis: *Munna* (*sensu lato*) with the same characters of *Uromunna*, having two sensory filaments on terminal joints of antennular flagellum and only one claw on prp. 2-7.

Munna (*Metamunna*) *mediterranea* PIERANTONI, 1916

Munna mediterranea PIERANTONI, 1916, pag. 147, pl. IV

Synonymy:

- Munna mediterranea* PIERANTONI: ARCANGELI, 1924, pag. 3
 » » » : MONOD, 1925, pag. 242
 » » » : MONOD, 1931, pag. 22
 » » » : AMAR, 1948, pag. 63
 » » » : AMAR, 1957, pag. 79, pl. II
 » » » : CARTON, 1961, pag. 222
 » » » : WOLFF, 192, pag. 253
 » » » : SCHIECKE & FRESI, 1972, pag. 31

Munna? mediterranea PIERANTONI: FRANKENBERG & MENZIES, 1966, pag. 206

Munna (Uromunna) mediterranea (PIERANTONI): MENZIES, 1962, pag. 36

Munna (Uromunna) mediterranea PIERANTONI: KUSSAKIN, 1962, pag. 68

Material examined: 30 specimens from four localities of the Island of Ischia, collected on sandy bottoms at depths from 23 to 48 m.

The original description of this species has been completed and corrected by AMAR (1957). Nevertheless, a few additional remarks are required. Both PIERANTONI and AMAR seem to have overlooked the dentate hyaline membrane present on the epipod of maxillipeds (Fig. 8, A). The epipod itself is of oval shape and not « tronqué obliquement du côté externe à son extrémité » as AMAR claimed. According to PIERANTONI the uropods are pedunculate and uniramous. The peduncle, judging from his Fig. 7, pl. IV, is rather long. Also after AMAR, the uropods are uniramous and two-jointed, the terminal joint being very small (see pl. II, pag. 80). For this reason AMAR himself and other authors, e.g. FRANKENBERG & MENZIES (cit.) have doubted that *M. mediterranea* really belongs to the genus *Munna*.

Actually this species has not pedunculate uropods (Fig. 8, B). The dorsal ramus is minute, with a single simple seta, and the ventral one is flattened, leaf-like, bearing a few simple setae. A dentate « sub-uropodal shelf » (see MENZIES, 1952) is also present.

As far as the other characters of this species are concerned, it should be stated the following:

— *flagellum of the antennulae and sensory filaments*: last joint about three times as short as the penultimate, both having a sensory filament (Fig. 8, C). This has been stated by PIERANTONI in the original description (cfr. pag. 149 and Fig. 11, pl. IV). Thus, as far as the relative size of the last peduncular joints is concerned, *M. mediterranea* agrees with *Uromunna*, but one is prevented to place it in that subgenus because of the presence of two sensory filaments instead of one.

— *number of claws on pereopods*: prp. 1 with two claws, all the other legs with only one claw. At the apex of dactylus there is one two-pointed seta and two simple ones (Fig. 8, D). PIERANTONI claims (pag. 149) that prps. 1 are biunguiculate whereas (pag. 150) the dactylus of prps. 2-7 is not biunguiculate as in all the other species of the genus *Munna*, having only one well developed claw.



FIG. 10. *Munna* (*Metamunna*) *similis*, n. sp. A) right antennula; B) basal joints of right antenna; C) left maxillula; D) left mandible; E) left maxilla; F) left maxilliped.

The two setae which are seen at the apex of the dactylus are interpreted by PIERANTONI as «very thin, almost rudimentary setae-like claws». AMAR (1957) draws only one claw both on prp. 1 and 2-7 but does not make any statement on this subject in the text.

This character of *M. mediterranea* seems to us the most important one. It has not been possible to find in the literature any details of a similar feature in any representative of the genus *Munna*, though it must be stated that several authors have apparently omitted to report on the number of claws present on prps. 2-7. Thus the presence of a single claw on prps. 2-7 renders *M. mediterranea* clearly different from all the other species of *Munna* (*sensu lato*) and could be sufficient to justify a separation of it at a generic level. We refrain from doing it, as for the time being data on variation of the number of claws on prp. 2-7 within the genus *Munna* are fairly insufficient.

— *palp of the mandibles*: as in the representatives of the subgenus *Uromunna*, the mandibular palp of *M. mediterranea* is rather short, especially as far as the last joint is concerned.

— *exopod of pleopod 3*: unjointed and narrower than the endopod as in *Uromunna* species.

In the light of what is stated above, *Metamunna* n. sbg. is clearly allied to *Uromunna* from which it differs for the presence of two sensory filaments on antennular flagellum and for the single claw on prps. 2-7. These differences point to a separate phyletic line to which the rank of subgenus is given, awaiting that the mutual relationships among the species of *Munna* are better clarified.

Munna (Metamunna) similis n. sp.

Type locality: Punta Caruso, Island of Ischia, Bay of Naples.

Depth: 18 m.

Substrate: vertical cliff covered by *Halimeda tuna*.

Location of types: Zoological Museum, University of Copenhagen, Denmark.

Material examined: 6 specimens from three localities of the Island of Ischia, collected on various algal substrates at depths from 18 to 32 m.

Description: male holotype (Fig. 9). Length 0,77 mm. Colour whitish, translucent. Body with subparallel margins, the first five pereionites being almost equal in width. Prn. 3 the longest, almost as wide as the second. Prn. 1 the shortest, prn. 7 the narrowest. Head much wider than long, with ocular lobes rather long. Eyes red. Frons slightly concave. Pleotelson pyriform, one and a half times longer than wide, having five teeth curved backwards in its medial portion.

Antennulae: (Fig. 10, A). Peduncle of four joints. First two joints almost of the same width, the second being somewhat longer than the first. This bears one plumose seta, the second four plumose setae. Peduncular joints 3 and 4 much shorter, the third being slightly longer than the fourth. Flagellum consisting of two joints, the first of which is about three times as long as the second. Both bear one flattened sensory filament, that on the second being much longer and wider. Four simple setae one of which is rather long, are seen at the tip of last flagellar joint.

Antennae: (Fig. 9 and 10, B). Longer than the body. Peduncle of six joints, the first four of which are short. No exopodial squama on the third peduncular joint, replaced by a simple seta. Joints 5 and 6 elongate, the latter being longer than the former. Flagellum of seven joints.

Mandibles: (Fig. 10, D). Normal. Incisor with four teeth. Spine row of the left mandible with three pectinate spines. Lacinia mobilis present, with three

teeth. Molar process very long and wide, tipped with a single seta. Palp very short, the second article being the longest. First joint longer than the third, this being tipped with two simple setae. A long, stout seta is present on the distal end of the second joint.

Maxillulae: (Fig. 10, C). Normal. Outer lobe with nine pectinate spines. Inner lobe provided with four pectinate spines.

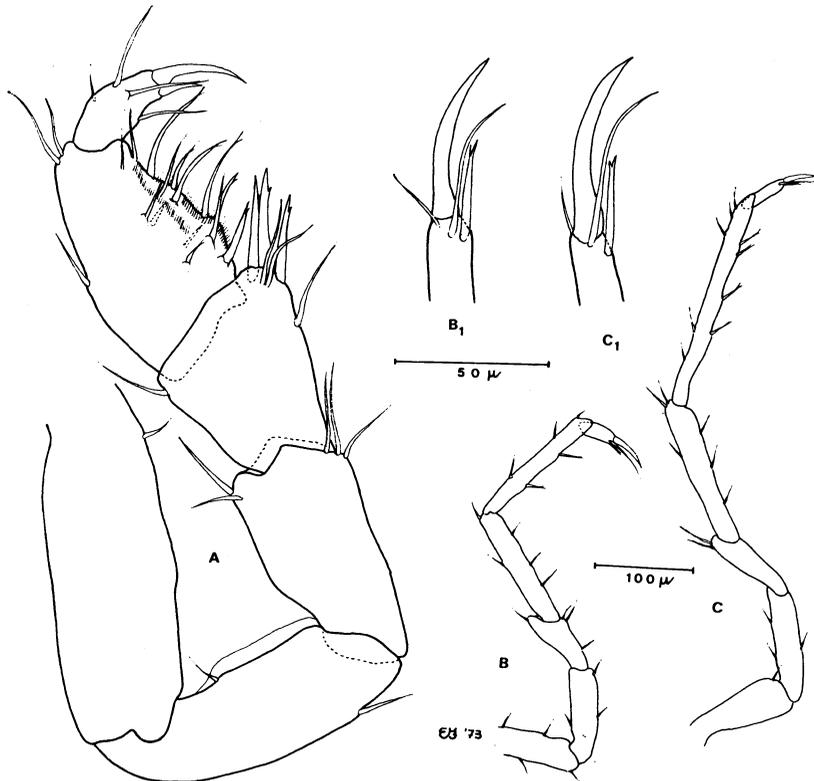


FIG. 11. *Munna* (*Metamunna*) *similis*, n. sp. A) first left pereopod; B) second left pereopod; C) seventh left pereopod; B₁ and C₁) dactyli of prp. 2 and prp. 7.

Maxillae: (Fig. 10, E). Normal. Inner lobe with eight pectinate setae and one pectinate spine. Outer lobes with four long spines, the innermost of which is pectinate.

Maxillipeds: (Fig. 10, F). Normal. Endite with five plumose spines on its anterior margin which bears also a short tooth in the outer portion. Three coupling-hooks on the inner margin. Palp five-jointed, the second joint being wider than the endite. Epipod ovate, with rounded apex.

Upper lip and lower lip normal.

Pereopods: prp. 1 (Fig. 11, A) subchelate. The carpus has three strong two-pointed spines and three simple setae on its lower margin. Propodus longer than the carpus, with six long two-pointed spines; several simple setae and two rows of fine setae on the palmar edge. Dactylus rather short, with unequal claws and three long simple setae. Prps. 2-7 (Fig. 11, B, C) all of the same shape, increasing in length caudally (the elongation concerns especially both the carpal

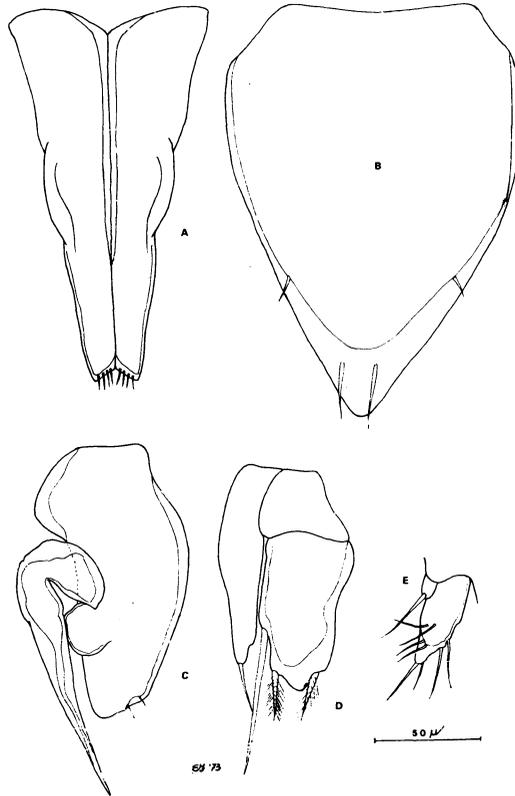


FIG. 12. *Munna* (*Metamunna*) *similis*, n. sp. A) male pleopods 1; B) female pleopod 2; C) male left pleopod 2; D) male right pleopod 3; E) male left uropod.

and propodial joints). All have several spines on carpus and propodus. Dactyli (Fig. 11, B₁ and C₁), with one claw, under which there is a strong spine, shorter than the claw itself.

Pleopods: Plp. 1 (Fig. 12, A) much wider at the base than at the apex. The apical lobes are obliquely truncate and bear four simple setae. Plp. 2 (Fig. 12, C) with rounded sympod, having only two short fine setae on the lower portion. Endopod geniculate, rather long. Exopod inconspicuous. Plp. 3 (Fig. 12, D) with

narrow exopod tipped with one seta. The endopod bears three long setae, two of which are plumose. Plp. 4 and 5 normal.

Uropods: (Fig. 12, E). Ventral ramus apparently flattened, with eight simple setae on both the outer and the upper surface. Dorsal ramus minute, tipped with a single seta.

Allotype. Female 0,9 mm long. All the characteristics similar to those of the male. Operculum (Fig. 12, B) suboval, much tapering at the apex, in the region of which there are two setae. Two further setae are seen at the level of the distal third.

TAXONOMICAL REMARKS

The most closely allied species to *M. (Metamunna) similis* n. sp. is *M. (Metamunna) mediterranea*. The former is easily distinguished from the latter for it has a more slender and elongate body, frons concave, longer ocular lobes, pleotelson of different shape.

ACKNOWLEDGEMENTS

We are most grateful to Dr. Torben WOLFF, Universitetets Zoologiske Museum, Copenhagen, Denmark, for helpful discussions and for reading the manuscript. Our best thanks are also due to Dr. Mike ROBINS, King's College, London, for revising the English.

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