

A new species of the genus *Munida* Leach, 1819 (Crustacea, Decapoda, Anomura, Galatheidae) from the Western Indian Ocean, with the redescription of *M. africana* Doflein and Balss, 1913.*

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SUMMARY: A new species of the genus *Munida* Leach, 1818 from the Indian Ocean (Gulf of Aden) is described and illustrated. The new species, *M. rubiesi*, is close to *M. remota* Baba, 1989, from Madagascar and *M. africana* Doflein and Balss, 1913, from Somalia. A redescription of the type material of *M. africana* is also provided.

Key words: Crustacea Decapoda, Galatheidae, *Munida*, New Species, Indian Ocean.

RESUMEN: ESPECIE NUEVA DEL GÉNERO *Munida* (CRUSTACEA, DECAPODA, ANOMURA, GALATHEIDAE) DEL OCEANO INDICO OCCIDENTAL CON LA REDESCRIPCIÓN DE *M. africana* DOFLEIN AND BALSS, 1913.— Se describe una especie del género *Munida* Leach, 1820 del océano Índico (golfo de Adén). La nueva especie, *M. rubiesi*, está próxima a *M. remota* Baba, 1989 de Madagascar y a *M. africana* Doflein y Balss, 1913 de Somalia. Se incluye una redescrípción del material tipo de *M. africana*.

Palabras clave: Crustacea Decapoda, Galatheidae, *Munida*, nueva especie, océano Índico.

INTRODUCTION

The genus *Munida* Leach, 1818 is represented in the Western Indian Ocean by about 16 species (see TIRMIZI, 1966; BABA, 1974, 1988, 1989; TÜRKAY, 1986 and references cited herein). Although, the identity of several occurrences should be revised (BABA and MACPHERSON, 1991) the list of species includes: *M. japonica* Stimpson, 1858, *M. incerta* Henderson, 1885, *M. militaris* Henderson, 1885, *M. squamosa* Henderson, 1888, *M. andamanica* Alcock, 1894, *M. microps* Alcock, 1894, *M. comorina* Alcock and Anderson, 1899, *M. vigiliarum* Alcock, 1901, *M. elegantissima* de Man, 1902, *M. africana* Doflein and Balss, 1913, *M. kuboi* Yanagita, 1943, *M. roshanei* Tirmizi, 1966, *M. brucei* Baba, 1974, *M. babai* Tirmizi and Javed, 1976, *M. benguela* Saint Laurent

and Macpherson, 1988 and *M. remota* Baba, 1989.

During the expedition of the R/V Meteor to the Western Indian Ocean and Red Sea, several specimens of a galatheid were taken. Through the courtesy of Dr. Türkay (Senckenberg Museum, Frankfurt) these specimens were examined, being considered a new species close to *M. remota* Baba, 1989 from Madagascar (BABA, 1989). The new species is also close to *M. africana* Doflein and Balss, 1913 caught off Somalia during the Deutschen Tiefsee-Expedition. Although the description and figures provided by DOFLEIN and BALSS (1913) are good, a redescription of the type material is provided in order to include new characters (e.g. sternal plastron) actually used in the systematics of the genus *Munida* (MACPHERSON and SAINT LAURENT, 1991).

The specimens are deposited in the Senckenberg Museum, Frankfurt. Measurements given refer to the length of the carapace, excluding rostrum.

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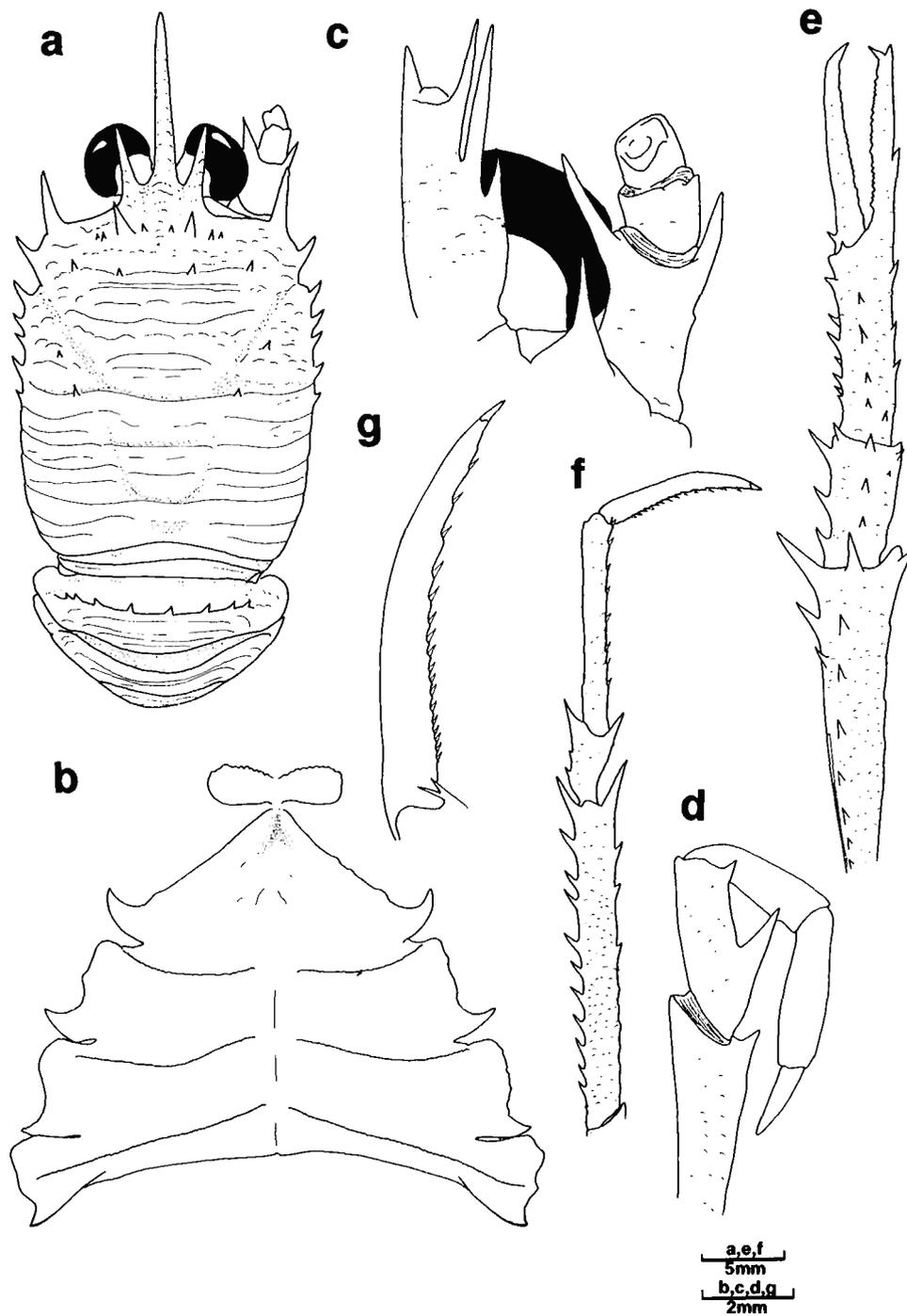


FIG. 1. — *Munida rubiesi* sp. nov., holotype, ov. ♀ (18.7 mm): a: carapace, dorsal view; b, plastron sternal; c, ventral view of cephalic region, showing antennula and antenna peduncles; d, right third maxilliped; e, right cheliped, dorsal view; f, right second pereiopod, lateral view; g, dactylus of right second pereiopod, lateral view.

***Munida rubiesi* sp. nov.**
Fig. 1

MATERIAL EXAMINED. — Gulf of Aden. Meteor Expedition: Stn 250, 08.03.1987, 12°40.4'N, 45°22.6'E, 907-917 m: 1 ♂ 10.2 mm; 2 juv. 3.2 and 5.2 mm. — Stn 267, 13.03.1987, 13°27.5'N, 47°20.5'E,

359-362; 1 ♂ 7.2 mm; 1 ♀ 6.0 mm. — Stn 279, 15.03.1987, 12°52.5'N, 45°53.3'E, 1185-1186 m: 2 ♂ 7.7 and 20.5 mm; 2 ov. ♀ 18.7 and 23.9 mm; 1 ♀ 9.0 mm. — Stn 281, 15.03.1987, 12°38.5'N, 45°28.5'E, 1063-1068 m: 2 ♂ 10.0 and 21.6 mm; 1 ov. ♀ 20.0 mm; 2 ♀ 8.2 and 9.8 mm.

TYPES. — One ovigerous female (18.7 mm) from

Stn 279 has been selected as holotype. The other specimens are paratypes.

ETYMOLOGY.— The species is dedicated to Pere Rubies, from the Instituto de Ciencias del Mar, Barcelona, for his continuous support and friendship.

DESCRIPTION.— (Holotype). Carapace, without rostrum, slightly longer than wide. Principal transverse striae on posterior part of carapace interrupted in cardiac region. Numerous secondary striae and scales between principal striae. Cardiac region triangular in shape, convex and separated from branchial areas by grooves. Intestinal region slightly swollen. Gastric region with one row of 4 pairs of epigastric spines, biggest pair just behind supraocular spines. One small spine behind each biggest epigastric spine. Small parahepatic spine on each side. Each anterior branchial region with one spine. Postcervical spine present on each side.

Front margins horizontal. Lateral margins slightly convex. Anterolateral spine well developed situated on anterolateral angle, overreaching sinus between rostrum and supraocular spines. Second marginal spine before cervical groove smaller than preceding one. Branchial margins with 5 spines decreasing in size posteriorly.

Rostrum spiniform, half as long as remaining carapace, directed slightly upwards. Supraocular spines reaching end of corneae, parallel and directed slightly upwards.

Thoracic sternites without striae; third sternite narrow with distinct median notch; fourth sternite anterior-mesially hollowed; lateral parts of seventh sternite without granules.

Second abdominal segment with one row of 4 pairs of spines on anterior border. Second to fourth abdominal segments with three transverse continuous striae, fifth with two continuous transverse striae.

Eyes large, maximum corneal diameter about one-third length of anterior border of carapace between bases of anterolateral spines.

Basal segment of antennule elongate, overreaching corneae, with two distal spines, distomesial spine clearly shorter than distolateral spine; two lateral spines, proximal short, located at midlength of segment, distal long and not overreaching distolateral spine.

First segment of antennal peduncle with one strong distal spine on inner margin reaching end of second segment; second segment with two long distal spines, inner spine longer than outer and almost reaching end of antennal peduncle; third segment unarmed.

Merus of third maxilliped bearing 2 ventral well-developed spines, proximal spine longer than distal; dorsal margin without spines.

Chelipeds squamate, subequal, with iridescent setae more dense on mesial borders of articles. Right cheliped about 2.5 times as long as carapace; merus slightly shorter than carapace, about 2.5 times longer than carpus and twice longer than palm; palm about 2.5 times as long as high and slightly shorter than fingers; merus armed with rows of spines on mesial, dorsal and ventral borders and one distal spine on lateral margin; carpus with one row of spines on mesial border and several spines scattered on dorsal and ventral sides; palm with two rows of mesial spines, one row of small dorsal spines, one row of dorsolateral spines; fixed finger with one proximal and one distal spine on lateral border; movable finger with one proximal spine on mesial border.

Walking legs slender, furnished with long, plumose and iridescent setae on dorsal margins and short setae on lateral borders. Second pereopods twice carapace length; merus shorter than carapace length, almost 8 times as long as high, about 5 times carpus length and 1.5 times as long as propodus; propodus about 10 times as long as high and 1.5 times dactylus length; merus with one row of 12 spines on dorsal border increasing in size distally, and 4 spines on distal half of ventral margin, both distal spines prominent; carpus with one long distal spine on dorsal and ventral borders, 2 additional spines on dorsal margin; propodus with one row of 8 movable spines on ventral margin; dactylus long, curved, with 17 movable spinules along ventral margin. Third and fourth pereopods missing. Epipods absent from all pereopods.

VARIATIONS.— The spines behind epigastric spines are usually present; the secondary striae are less numerous in small specimens. The other characters remain constant. Males with two pairs of gonopods present on first and second abdominal segments.

REMARKS.— *Munida rubiesi* is closely related from *M. remota* Baba, from Madagascar. A comparison with the holotype of this species (Muséum national d'Histoire naturelle, Paris) showed that they can be easily distinguished by the following characters:

- The fourth thoracic sternite anteriorly hollowed in the new species, whereas in *M. remota* is clearly less concave.
- The corneae are moderately dilated in *M. remota*. In the new species the corneae are clearly larger.

- *Munida rubiesi* has the distomesial spine of the basal antennal segment reaching the end of the second segment. This spine is clearly shorter in *M. remota*.
- Palm of the chelipeds with one row of well-developed dorsal spines in *M. rubiesi*. This row is absent in *M. remota*.
- Fingers of the chelipeds with more spines in *M. rubiesi*: fixed finger with one proximal and one

- distal spine on lateral border; movable finger with one proximal spine on mesial border. In *M. remota* the movable finger is spineless and the fixed finger has only two small distal spines.
 - The dactylus of the walking legs have more spines and are more curved in the new species.
- The new species is also close to *Munida africana* Doflein and Balss, 1913 from Somalia (see below for differences).

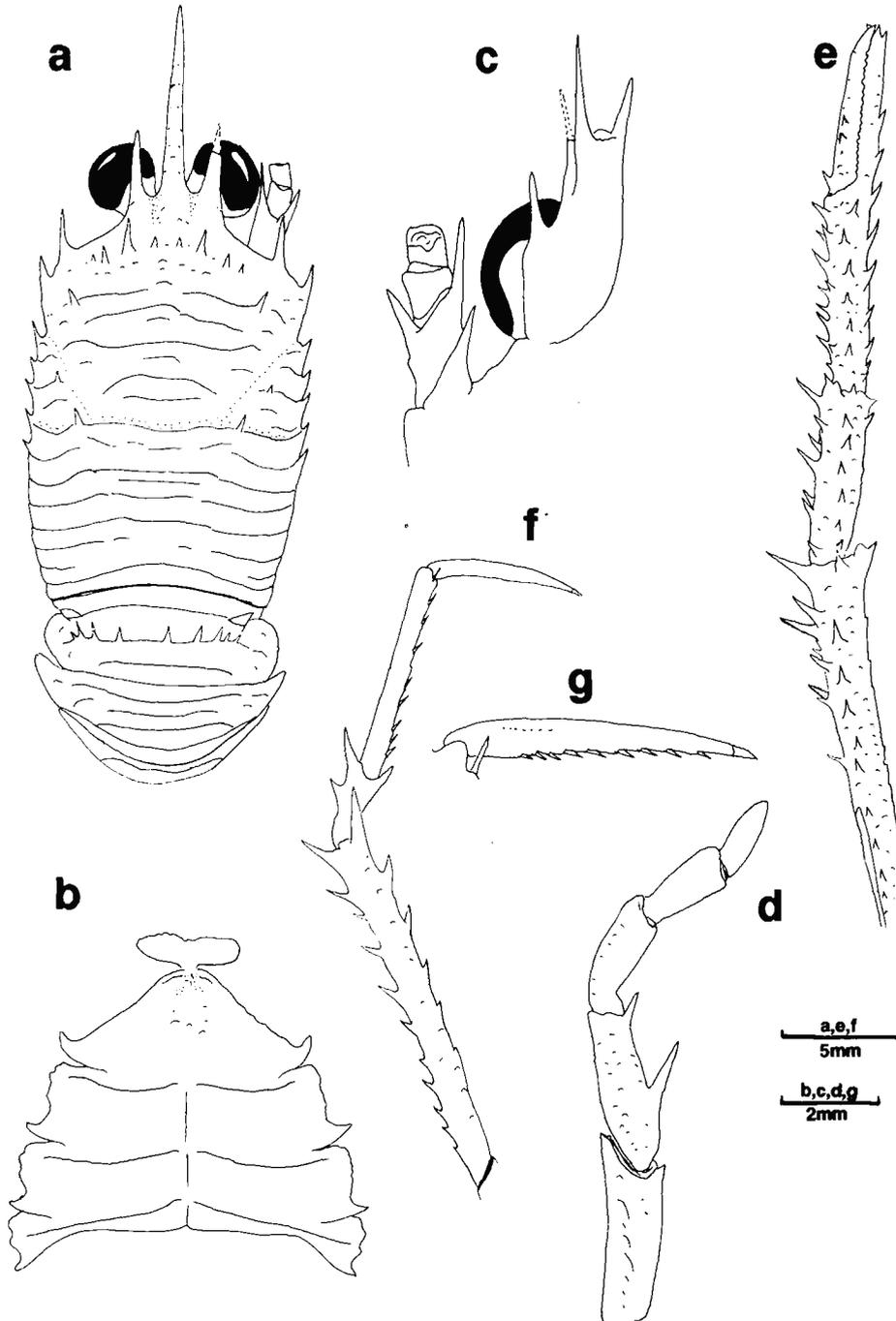


FIG. 2. — *Munida africana* Doflein and Balss, 1913, lectotype, ov. ♀ (10.8 mm): a: carapace, dorsal view; b: plastron sternal; c: ventral view of cephalic region, showing antennula and antenna peduncles; d: right third maxilliped; e: right cheliped, dorsal view; f: right second pereiopod, lateral view; g: dactylus of right second pereiopod, lateral view.

MATERIAL EXAMINED.— **South of Somalia.** Deutschen Tiefsee-Expedition: Stn 247, 23.03.1899, 3°38'N, 40°16'E, 863 m: 1 ♂ 9.5 mm; 1 ov. ♀ 10.8 mm (lectotype) (Zoologisches Museum, Berlin No. 17494).

DESCRIPTION.— (Lectotype). Carapace, without rostrum, clearly longer than wide. Secondary striae almost absent. Posteriormost principal stria widely interrupted on intestinal region. Cardiac area slightly defined. Intestinal region slightly swollen. Gastric region with one row of 4 pairs of epigastric spines, biggest pair just behind supraocular spines. Small parahepatic spine on each side. Anterior branchial region with small spine, behind midlength of anterior bifurcation of cervical groove. Postcervical spine present on each side.

Front margins oblique. Lateral margins slightly convex. Anterolateral spine well developed situated on anterolateral angle, not overreaching sinus between rostrum and supraocular spines. Second marginal spine before cervical groove smaller than preceding one. Branchial margins with 5 spines of subequal size.

Rostrum long, spiniform, more than half as long as remaining carapace, directed slightly upwards. Supraocular spines overreaching end of corneae, parallel and directed slightly upwards.

Thoracic sternites without striae (only few short striae on third sternite); third sternite narrow with distinct median notch; lateral parts of seventh sternite without granules.

Second abdominal segment with one row of 4 pairs of spines on anterior border. Second to fifth abdominal segments with one transverse continuous stria.

Eyes moderately large, maximum corneal diameter about one-third length of anterior border of carapace between bases of anterolateral spines.

Basal segment of antennule elongate, clearly overreaching corneae, with two distal spines, distomesial spine clearly shorter than distolateral spine; two lateral spines, proximal short located at midlength of segment, distal long and not overreaching distolateral spine.

First segment of antennal peduncle with one strong distal spine on inner margin slightly overreaching end of second segment; second segment with two long distal spines, inner spine longer than outer and slightly overreaching end of antennal peduncle; third segment unarmed.

Merus of third maxilliped bearing 2 ventral well-developed spines, proximal spine longer than distal; dorsal margin without spines.

Right cheliped (left is missing) about 2.5 times as long as carapace; merus slightly longer than carapace, about 2.5 times longer than carpus and twice longer than palm; palm about 4 times as long as high and as long as fingers; merus armed with rows of spines on mesial, dorsal and ventral borders and one distal spine on lateral margin; carpus with one row of spines on mesial border and several spines scattered on dorsal and ventral sides; palm with two rows of mesial spines, one row of well-developed dorsal spines, one row of dorsolateral spines continuing along proximal half of fixed finger, with two distal spines; movable finger with one proximal spine and two small spines on proximal half of mesial border, without distal spine.

Walking legs slender. Second pereopods twice carapace length; merus as long as carapace length, almost 10 times as long as high, about 4 times carpus length and 2 times as long as propodus; propodus about 7.5 times as long as high and 1.5 times dactylus length; merus with one row of 11 spines on dorsal border increasing in size distally, and 6 spines on distal half of ventral margin, both distal spines prominent; carpus with one long distal spine on dorsal and ventral borders, one additional spine on dorsal margin; propodus with one row of 9 movable spines on ventral margin; dactylus long, slightly curved, with 9 movable spinules along ventral margin. Third pereopod similar to second; fourth pereopod shorter than second, merus about one-half that of first walking leg. Epipods absent from all pereopods.

VARIATIONS.— The male has six spines on the second abdominal segment; two pairs of gonopods on first and second abdominal segments. The other characters remain constant.

REMARKS.— *Munida africana* is closely related to *M. rubiesi* sp. nov. from which it is distinguished by the following respects:

- The carapace is clearly longer than wide and the front margins are oblique in *M. africana*, whereas in *M. rubiesi* the carapace is slightly longer than wide and the front margins are horizontal.
- In *M. rubiesi* the cardiac region is convex and separated from branchial areas by grooves. In *M. africana* these grooves are almost absent.
- Fingers of the chelipeds with more spines in *M. africana*: fixed finger with several proximal and two distal spines on lateral border; movable finger with three proximal spines on mesial border. In

M. rubiesi the movable finger has only one basal spine and the fixed finger has one basal and one distal spines.

- The dactylus of the walking legs are more curved and have more spines in *M. rubiesi*.

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