

REEXAMINATION OF THE TYPE MATERIAL OF
MUNIDA MILITARIS HENDERSON, 1885
(CRUSTACEA: DECAPODA: GALATHEIDAE),
WITH THE SELECTION OF A LECTOTYPE

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Abstract. — The type material of *Munida militaris* Henderson, 1885, has been found to contain three species: *Munida militaris*, *M. japonica* Stimpson, 1858, and *M. inornata* Henderson, 1885. In order to clarify the taxonomy of *Munida militaris* Henderson, 1885, a lectotype is selected from "Challenger" Station 173 off Matuku, Fiji Islands, and a description of Henderson's original type material is provided.

Based upon the *Challenger* material, Henderson (1885:410) described *Munida militaris* from four different localities (Stations 173, 192, 200 and Ambon) without listing specimens. Henderson (1888:137), in his subsequent extensive account of the *Challenger* collection, synonymized *Munida vitiensis* Henderson, 1885, from Station 173, with *M. militaris*, although the original description of the former preceded that of the latter on the same page, and removed the locality record listed in his 1885 paper for *Munida militaris* from Station 200. The type of *M. vitiensis* could not be found in the collection in the Natural History Museum, London (formerly the British Museum (National History)) (BM). Very possibly it might have been combined with the type of *M. militaris* from Station 173 by Henderson himself.

As the type material of *Munida militaris* now comprises three species (*Munida militaris* Henderson, 1885, *M. japonica* Stimpson, 1858, and *M. inornata* Henderson, 1885) (Baba 1990:963), there is the need to select a lectotype for *M. militaris*, and to describe it in detail. In the following account, the carapace length (cl) includes the rostrum.

There is another query about the identity of *Challenger* material of *Munida militaris*

curvirostris Henderson, 1888 [originally *M. militaris* var. *curvirostris*]. Henderson (1885:412) described *M. curvirostris* from Station 210, but it was transferred under *M. militaris* as a variety (in the sense of a subspecies) in the 1888 paper, in which he listed a male from Station 200, in addition to a female (holotype of *M. curvirostris*) from Station 210. In all probability the Station 200 specimen may be the one that Henderson (1888:138) removed from the list of material of *M. militaris* (see above). Recently, Baba (1988:81) who briefly revised the genus *Munida* and provided a key to the Indo-West Pacific species of the genus, synonymized Henderson's variety (subspecies) with *M. militaris*. However, examination of the material of *M. militaris curvirostris* (BM 1888:33) disclosed that it is distinct from *M. militaris* and identical with *M. andamanica* Alcock, 1894, which is a well-known species in the Indo-West Pacific. This conclusion was drawn by comparison both with one of the *Investigator* materials (male, cl = 29.5 mm) taken in the Andaman Sea in 173 fm (317 m) and now deposited in the Smithsonian Institution (USNM 19017), and, more specifically, with 16 specimens from nine different localities in the Philippines and Indonesia made available from the Zoological Museum, Copenhagen (Baba,

unpublished data), of *M. andamanica*. The details will be incorporated in Baba's report still in progress on the collection of the *Ga-latheia* Expedition.

Munida militaris Henderson, 1885

Fig. 1

Munida militaris Henderson, 1885:410 (part); 1888:137 (part), pl. 14: figs. 2, 2a, 2b, 5, 5a, 5b.—Baba, 1988:85 (key).

Munida vitiensis Henderson, 1885:410.

Type material.—*Challenger* Sta 173 off Matuku, Fiji Islands, 576 m (315 fm): 2 ♂ (cl = 9.5, 21.9 mm), 2 ovig. ♀ (cl = 16.6, 17.0 mm) [Larger male is selected as lectotype (BM 1888:33)].—Ambon, Indonesia, 183 m (100 fm): 1 ♂ (cl = 19.8 mm).

Description.—Carapace excluding rostrum slightly longer than wide, epigastric region with transverse row of spines, consisting usually of 8 spines in 4 pairs, first pair (mesial) small, second pair (closest to mesial one) largest and situated directly behind supraocular spines, third and fourth pairs (lateral) small, occasionally with additional 1–2 spines lateral to each; lateral protogastric spine on each side; anterior branchial region with small spine directly behind midlength of anterior bifurcation of cervical groove. Front margin feebly oblique. Lateral margin of carapace usually with 7 spines, anterior 2 situated in front of cervical groove, first anterolateral, strong, directed nearly straight forward or slightly oblique, second occasionally accompanied by spinule in front of and/or behind it; remaining 5 (rarely 6) present on anterior branchial region. No spine on posterior ridge.

Rostrum nearly horizontal or weakly up-curved, barely half as long as remaining carapace. Supraocular spines about half length of rostrum, directed slightly laterad.

Second abdominal segment with row of 8–10 dorsal spines.

Eyes dilated, corneas 0.3 times as wide as long, setae short.

Basal antennular segment overreaching cornea, with 2 terminal subequal spines. Antennal peduncle having first (proximal) segment with stout mesial distoventral spine reaching about to end of second segment; second segment with 2 terminal spines; distomesial spine well developed, occasionally overreaching end of peduncle.

Merus of third maxilliped with 2 spines (occasionally with tiny process or spine equidistant between them) on flexor margin, proximal prominent, distal small and terminal; distodorsal margin unarmed; ischium with 26–32 denticles on mesial ridge.

Chelipeds spinose, with iridescent and plumose setae. Meri relatively short, stout; dorsal surface with 2 rows of spines and few scattered spinules on distal portion; lateral margin with moderate-sized distal spine followed by denticles or small denticular spines proximal to it; mesial margin with 2 or 3 spines in distal half, distal spine stouter but of moderate size; ventral surface with 2 spines (one spine well developed, situated near distomesial margin, another spine small, distal in midline). Carpi with 2 rows of spines dorsally, lateral row occasionally obsolete; with 4 or 5 spines mesially, proximal one tiny and somewhat dorsal, median 2 well developed (second one from distal end more so), distal one small. Palm twice as long as wide, dorsally with 2 rows of small spines: middle row with 2 accompanying spines (one spine distal, another spine proximal), another row of spines near mesial margin, occasionally with few spines; mesial surface with 2 rows of spines: one dorsal, consisting of 3–4 spines and other ventral, consisting of 2 or 3 spines, accompanied by 1–3 small spines further ventral to it; laterally with 4–7 spines continued into margin of fixed finger. Fingers as long as, or slightly longer than palm, terminating in curved claws (crossed when closed), opposable margins slightly gaping or not; movable finger with proximal marginal spine rarely

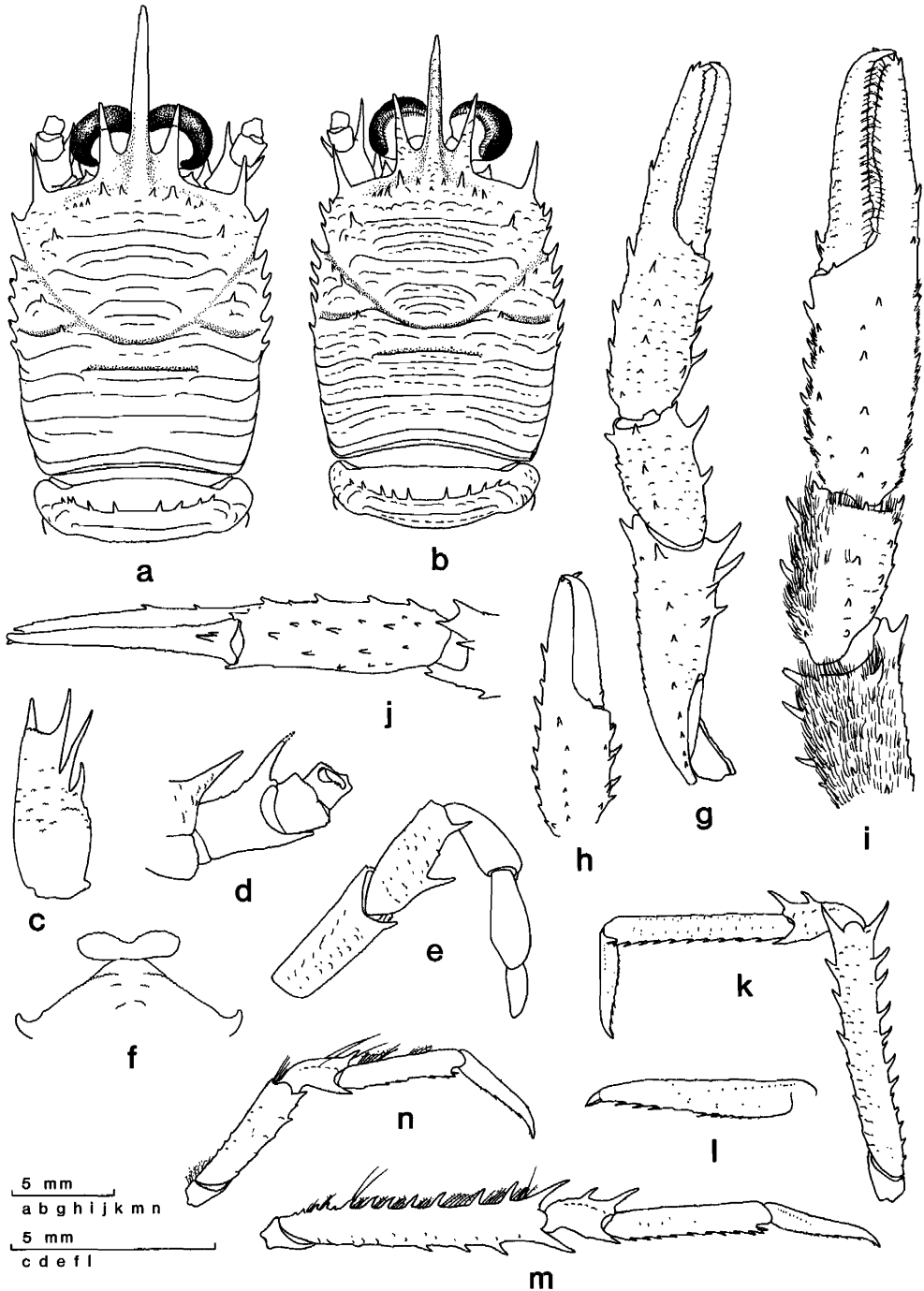


Fig. 1. *Munida militaris* Henderson, 1885: a, c–h, k, l, types from “Challenger” Station 173 off Matuku, Fiji Islands. a, c, d–f: male lectotype, g, h, k, l: detached appendages from type specimens, b, i, j, m, n: paralectotype male from Ambon. a, b, carapace and anterior part of abdomen; c, basal segment of left antennule, ventral view; d, left antennal peduncle, ventral view; e, endopod of right third maxilliped; f, anterior part of sternum; g, left cheliped; h, left chela (granulation omitted); i, right cheliped; j, chela of same, lateral view; k, left first or second walking leg (largest among detached walking legs); l, dactylus of same; m, right first walking leg; n, right third walking leg.

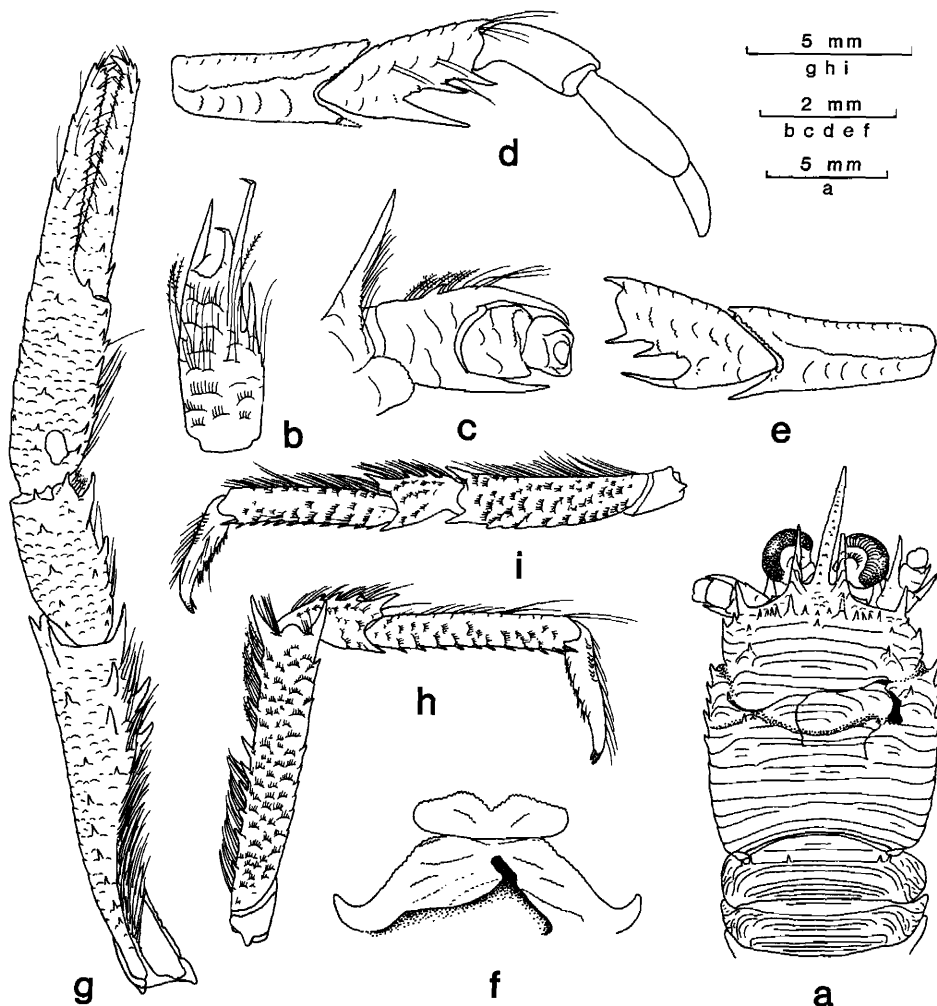


Fig. 2. *Munida japonica* Stimpson, 1858, female from *Challenger* Station 173 off Matuku, Fiji Islands, cl 15.0 mm [originally one of the syntypes of *M. militaris* (see Henderson 1885:411, 1888:138)]. a, carapace and anterior part of abdomen; b, basal segment of left antennule, ventral view; c, left antennal peduncle, ventral view; d, endopod of right third maxilliped; e, merus and ischium of left third maxilliped; f, anterior part of sternum; g, left cheliped; h, right first or second walking leg; i, left third walking leg.

accompanied by dorsal spinule; fixed finger with 3 or 4 lateral marginal spines, distal 2 at base of curved terminal claw.

Meri of first and second walking legs with 11–13 dorsal and 4–5 ventral spines, each terminal spine prominent; carpi with 2 prominent terminal and 1 or 2 moderate-sized dorsal spines; propodi 6–7 times as long as wide, with about 11 ventral movable spinules (distal 2 paired, mesial one of them invisible in lateral view); dactyli distinctly more than half length of propodi, distally

with somewhat curved claw preceded by 10–13 low processes and movable spinules on ventral margin. Third walking leg shortest, merus in particular; merus with very minute dorsal spines; carpus unarmed except distodorsal spine; propodus with about 8 movable, slender ventral spines.

Male with 2 pairs of pleopods modified as gonopods.

Remarks.—One lot from *Challenger* Station 173 off Matuku, Fiji Islands (Henderson, 1888:138) contains five specimens (2

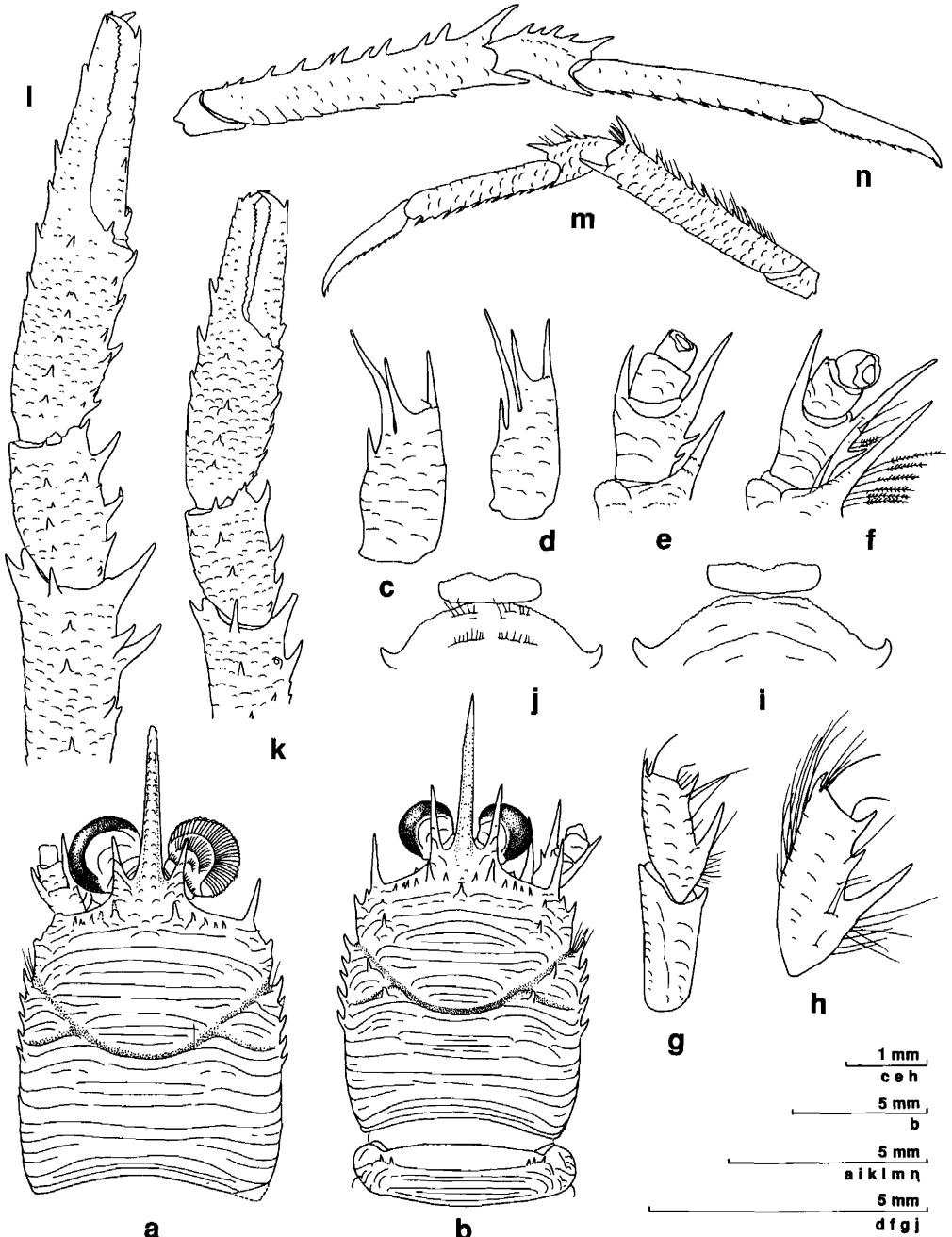


Fig. 3. *Munida inornata* Henderson, 1885 (a, c, e, g, i, k, n), and *M. japonica* Stimpson, 1858 (b, d, f, h, j, l, m) from *Challenger* Station 192 off Little Ki Island [originally syntypes of *M. militaris* (see Henderson 1885: 411, 1888:138)]. a, carapace; b, carapace and anterior part of abdomen; c, d, basal segment of right antennule, ventral view; e, f, right antennal peduncle, ventral view; g, proximal 2 segments of endopod of right third maxilliped, lateral view; h, merus of right third maxilliped; i, j, anterior part of sternum; k, l, left cheliped, dorsal view (proximal part omitted); m, n, left first or second walking leg, lateral view.

♂, 2 ovig. ♀, 1 ♀), one of which, the nonvigorous female (cl = 7.6 mm), represents *Munida japonica* Stimpson, 1858 (see Fig. 2). All pereopods were found detached in this lot, of which one set of appendages in our opinion belong to *M. japonica* based primarily on their very scaly condition. However, the true identity of this specimen is unclear. Variations observed in Philippine specimens (Baba 1988:109), as well as material from Japan, Taiwan, Eastern Australia, New Caledonia and Madagascar (Baba & Macpherson, unpublished data), suggest the existence of a *M. japonica* complex, which includes two or more species.

The male from Ambon (Henderson 1888:138) (Fig. 1b, i, j, m, n) generally agrees with the specimens from Station 173, only differing in that the carapace has many more secondary striae and the branchial region with one or two additional spinules along the anterior bifurcation of the cervical groove, the cheliped is more setose, and has slightly gaping fingers. These differences, however, seem to have no systematic importance.

Two females in a lot from *Challenger* Station 192 off Little Ki Island, Indonesia (see Henderson 1888:138), are not referable to *M. militaris*. In fact, Henderson (1888:138) noted abnormalities of these specimens in the longer rostrum, the smooth and glabrous carapace with several spinules, the short and slim chelipeds, and the second abdominal segment provided with very obsolete spinules. Examination of the syntypes of *M. inornata* (BM 1888:33) has allowed us to confirm that the smaller specimen (cl = 11.5 mm) represents *M. inornata* Henderson, 1885 (Fig. 3a, c, e, g, i, k, n); the supraocular spines are very short, barely one-third the length of the rostrum, the lateral protogastric and postcervical spines as well as the anterior branchial spines along the anterior bifurcation of the cervical groove are absent, and the second segment of the antennal peduncle bears two mesial marginal spines, in addition to the strong

terminal one, as defined earlier for the Philippine specimen of *M. inornata* (Baba 1988:106). The only difference we found between the present material and the syntypes of *M. inornata* is that the smaller of the mesial marginal spines of the second antennal segment is absent in the latter. The larger ovigerous female (cl = 16.0 mm) displays characters of *M. japonica* as noted above for the specimen from Station 192 (Fig. 3b, d, f, h, j, l, m). This lot also contains a small detached cheliped and a third left maxilliped which apparently belong to another unknown species.

Henderson's (1888) figure 5 of Plate 14 incorrectly depicts the epigastric spination. Figure 2 of that plate is no doubt illustrated from one of the specimens from off Matuku. In order to clarify the taxonomy of *M. militaris*, and to restrict the type locality, the larger male from *Challenger* Station 173 off Matuku is selected as the lectotype for Henderson's species.

Munida militaris strongly resembles *M. benguelae* de Saint Laurent & Macpherson, 1988, originally known from the South African coast between southern Namibia and Natal, and subsequently from Madagascar; their relationships are discussed in Baba (1990:963).

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Literature Cited

- Alcock, A. 1894. Natural history notes from H.M. Indian Marine Survey Steamer "Investigator,"

- commander R.F. Hoskyn, R.N., late commanding. Series II, No. 1. On the results of the deep-sea dredging during the season 1890–91 (continued).—*Annals and Magazine of Natural History*, Series 6, 13:321–334.
- Baba, K. 1988. Chirostylid and galatheid crustaceans (Decapoda: Anomura) of the “Albatross” Philippine Expedition, 1907–1910.—*Researches on Crustacea*, The Carcinological Society of Japan, Special Number 2: v + 203 pp.
- . 1990. Chirostylid and galatheid crustaceans of Madagascar (Decapoda, Anomura).—*Bulletin du Muséum national d’Histoire naturelle*, Paris, Série 4, Section A, (1989) 11(4):921–975.
- Henderson, J. R. 1885. Diagnoses of the new species of Galatheidea collected during the “Challenger” Expedition.—*Annals and Magazine of Natural History*, Series 5, 16:407–421.
- . 1988. Report on the Anomura collected by H.M.S. Challenger during the years 1873–76.—*Report on the Scientific Results of the Voyage of H.M.S. Challenger During the Years 1873–76*, Zoology, 27:vi + 221 pp., 21 pls.
- Saint Laurent, M. de, & E. Macpherson. 1988. *Munida benguela*, espèce nouvelle d’Afrique du Sud. Comparaison avec *Munida sanctipauli* Henderson, 1885 (Crustacea Decapoda Galatheidae).—*Bulletin du Muséum national d’Histoire naturelle*, Paris, Série 4, Section A, 10(1):105–115.
- Stimpson, W. 1858. Prodrômus descriptionis animalium evertibratorum, quae in Expeditione ad Oceanum Pacificum Septentrionalem a Republica Federata missa, Cadwaladaro Ringgold et Johanne Rodgers Ducibus, observavit et descripsit. Pars VII. Crustacea Anomura.—*Proceedings of the Academy of Natural Sciences of Philadelphia*, 10:225–252.

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