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Short Communication

First record of *Eurythenes thurstoni* Stoddart & Lowry, 2004 (Crustacea: Amphipoda: Lysianassoidea) from the South Mid-Atlantic Ridge

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ABSTRACT. The lysianassoid species *Eurythenes thurstoni* Stoddart & Lowry, 2004 is recorded for the first time to the Southern Atlantic Ocean, with material collected from the South Mid-Atlantic Ridge during the MAR-ECO Project expeditions. The examined material presents some important variations when compared with the original description discussed in the text.

Keywords: Lysianassoidea, Eurytheneidae, *Eurythenes thurstoni*, new record, biodiversity, Southern Atlantic.

Primer registro de *Eurythenes thurstoni* Stoddart & Lowry, 2004 (Crustacea: Amphipoda: Lysianassoidea) en la Cordillera Mesoatlántica Sur

RESUMEN. La especie lisianásida *Eurythenes thurstoni* Stoddart & Lowry, 2004 se registra por primera vez en el océano Atlántico sur, con el material colectado en la Cordillera Mesoatlántica Sur durante las expediciones del Proyecto MAR-ECO. El material examinado presenta algunas variaciones importantes en comparación con la descripción original, que se discute en el texto.

Palabras clave: Lysianassoidea, Eurytheneidae, *Eurythenes thurstoni*, nuevo registro, biodiversidad, Atlántico sudoccidental.

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The MAR-ECO Project (Patterns and Process of the Ecosystems of the Northern Mid-Atlantic) was proposed, as part of the Census of Marine Life (CoML), to study the biodiversity of the North Atlantic Mid-Oceanic Ridge (Bergstad & Godø, 2003). The Mid-Atlantic Ridge (MAR) is a huge oceanic mountain chain that extends from Iceland (87ºN) to the subantarctic Island Bouvet (54ºS), with most peaks at 1,500 m depth. However, its biota has never been widely studied (Bergstad *et al*., 2008). Until 2006, MAR-ECO scientific cruises have sampled first pelagic and benthic habitats of the North Atlantic Mid-Oceanic Ridge, from Iceland to Azores, up to 3.500 m depth, source for descriptions of new species and new records, improving the knowledge on the community structure for this area (Bergstad *et al*., 2008).

After that, MAR-ECO expanded the scientific cruises to the South Atlantic Mid-Oceanic Ridge, from 0º to 34ºS, in the Walvis Ridge Sector (WRS). The "South Atlantic MAR-ECO" was proposed with the same objectives and methodologies of the North Atlantic project, but considering the major gap of knowledge on the biodiversity from the deep South Atlantic (Bergstad & Godø, 2003).

The superfamily Lysianassoidea Dana, 1849 is a very abundant and diverse taxon of amphipod crustaceans in almost every habitat of the marine benthos. They occur from the intertidal zone to the deep sea, and they are hugely important in low-

latitude environments (Lowry & Stoddart, 2002, 2009, 2010, 2012; Senna & Souza-Filho, 2010).

Lysianassoid amphipods are characterized, in a variable way, by antenna 1 with peduncle short and robust, and flagellum with callynophore; antennae with calceoli; rostrum reduced; gnathopod 2 with a minute dactylus, with article 3 elongate and article 6 mitten-shaped (Senna & Serejo, 2008). The species recorded in this paper is a member of the amphipod family Eurytheneidae (Stoddart & Lowry, 2004), and is the first lysianassoid species recorded from the South Mid-Atlantic Ridge.

The South MAR-ECO Expedition was carried out from 25 October to 29 November, 2009, departing from Gran Canaria, Spain, and arriving in Cape Town, South Africa; on board of the oceanographic ship R/V Akademik Ioffe, of the Russian Academy of Sciences. Collections were made in 10 superstations, grouped in three sectors along the ridge. The South-Equatorial Mid-Atlantic Ridge Sector (SEMS) grouped a total of four superstations; the Tropical Mid-Atlantic Ridge Sector (TMS) grouped two of them, and the Walvis Ridge Sector (WRS) grouped other four.

The material examined was collected by a Sigsbee Trawl, proper for macrobenthos, in the Superstation 8 of the Walvis Ridge Sector (WRS) (Fig. 1). The specimen is preserved in 70% ethanol, housed at the Crustacea Collection of Museu Nacional, Universidade Federal do Rio de Janeiro (MNRJ), Rio de Janeiro, Brazil.

Superfamily Lysianassoidea Dana, 1849

Family Eurytheneidae Stoddart & Lowry, 2004

Genus *Eurythenes* Smith, 1882

Composition

The genus *Eurythenes* groups three species: *Eurythenes gryllus* (Lichtenstein in Mandt, 1822); *E. obesus* (Chevreux, 1905); and *E. thurstoni* Stoddart & Lowry, 2004.

Diagnosis

Head exposed, much deeper than long, not extending much below insertion of antenna 2, without cheek notch. Antennae with calceoli present in male, absent in female. Antenna 1 with well developed two-field callynophore in both male and female. Antenna 2, peduncular article 3 without distal hook. Mouthpart bundle subquadrate. Epistome and upper lip separate. Mandible incisors present, well developed, symmetrical, convex, and smooth; right *lacinia mobilis* absent; accessory setal row without distal tuft of setae; molar as a setose tongue, with small triturative surface; palp present, mid-anteriorly attached. Maxilla 1, inner plate with more than two apical pappose setae; outer plate narrow with setal-teeth in 8/3 crown arrangement, setal-teeth large, ST6 and ST7 slender, ST7 slightly displaced from ST6; palp large, with apical robust setae. Maxilla 2, inner plate significantly shorter than outer plate. Maxilliped, outer plate present, medial setae small; palp four-articulate, article 4 well developed. Gnathopod 1 subchelate to parachelate; coxa small; merus and carpus not rotated; carpus short; propodus large, palm straight to convex; dactylus slightly curved, not hidden by setae. Gnathopod 2, coxa small, shorter than coxa 3. Pereopods simple; distal spurs absent. Pereopod 3, coxa large. Pereopod 4, coxa large with well developed posteroventral lobe.

Pereopod 5, coxa with anterior and posterior subequal lobes. Uropod 2, inner ramus without constriction. Uropod 3, biramous. Telson cleft. Modified from Senna (2009).

Eurythenes thurstoni Stoddart & Lowry, 2004 (Figs. 2, 3).

Material examined

1 female, South Mid-Atlantic Ridge, MAR-ECO Program, Superstation 8, Walvis Ridge Sector (WRS), 30º00.62'S, 02º49.92'W, 1,175 m depth, 21.xi. 2009, R/V Akademik Ioff, Sigsbee Trawl, MNRJ 23430.

Diagnosis

Anterodorsal margin of head forming an upturned ridge. Gnathopod 1 subchelate; basis length more than three times breadth; propodus margins subparallel. Pereopods 3 to 7 dactyli short. Pereopod 4 coxa deeper than wide. Pereopod 7 basis length of anterior margin about 1.5 times breadth; posteroventral margin straight but angled. Pleonite 3 without anterodorsal notch. Epimeron 3 posteroventral corner subquadrate. Urosomite 1 dorsodistally produced over urosomite 2. Uropod 3 peduncle, medial face with robust setae.

Among the *Eurythenes* species, two of them are widely distributed around the world, *E. gryllus*, type species of the genus, and *E. obesus*. On the other hand, *E. thurstoni* is known until now by a disjunction distribution, recorded only from the deep sea of the southwestern Pacific Ocean (Australia, Indonesia, New Zealand, Tonga, and Loyalty, Wallis and Futuna Islands), besides the northwest Atlantic Ocean (Gulf of Mexico, Bahamas and Caribbean Sea). This species presents bathymetry varying from 128 to 4,670 m depth, and could be found more than 3,000 m up the sea bottom.

Commonly, *E. thurstoni* is collected by bottom or mid-water trawl nets and baited traps. It is considered

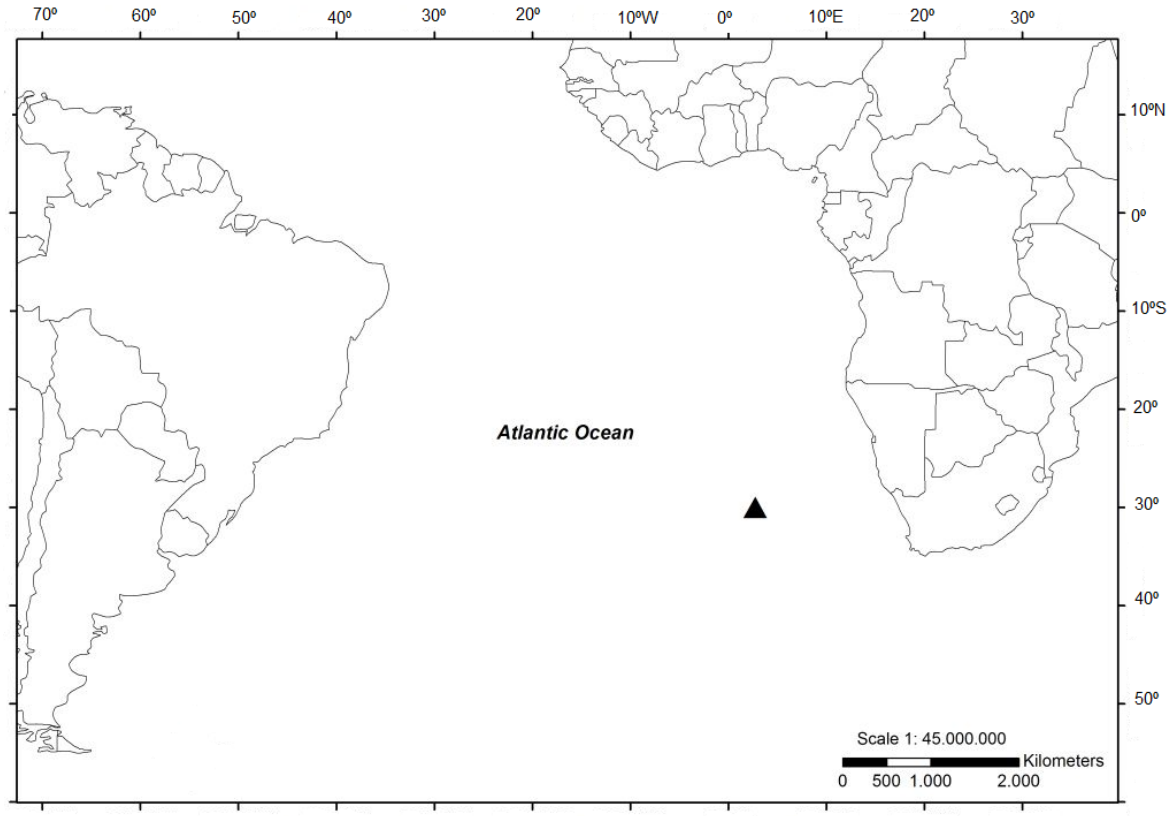

Figure 1. New record of *Eurythenes thurstoni* Stoddart & Lowry, 2004, South Mid-Atlantic Ridge, MAR-ECO Program, Superstation 8, Walvis Ridge Sector (WRS), 30º00.62'S, 02º49.92'E, 1,175 m depth, MNRJ 23430.

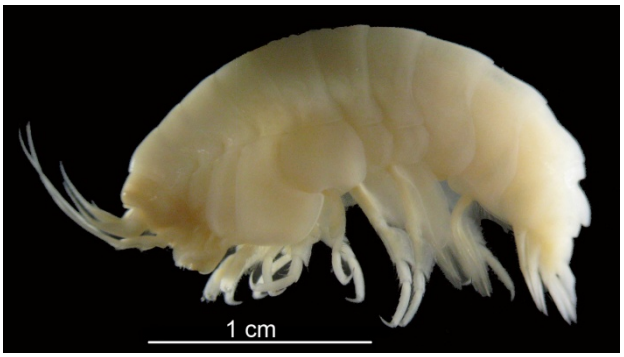

Figure 2. *Eurythenes thurstoni* Stoddart & Lowry, 2004, female, South Mid-Atlantic Ridge, MAR-ECO Program, MNRJ 23430.

an epibenthic scavenger, as well as other species in the same genus, *E. gryllus*. However, the presence of large amounts of this species in mid-water trawl nets suggests that it could be a nectonic predator or scavenger, as well as *E. obesus*.

This species presents large dimensions when compared with other amphipods. Some specimens rise up to 46 mm length. The specimen collected during the MAR-ECO Project is a female specimen of *E. thurstoni*, with 23 mm length. This specimen presents all diagnostic characters of the species, but with some variations, when compared with the holotype description.

The maxilla 1 presents the inner plate with two long and robust plumose setae on the apical margin, while the holotype presents the apical margin with a dense row of slender plumose setae. Maxilla 2, inner and outer plate present both a dense fringe of slender simple setae, when in the holotype, these setae are widely plumose. The epimeral plates 1-3 present the same shape of those in the holotype, but with different pattern of setation, being the epimeral plate 1 non setose, epimeral plate 2 with five plumose setae anteriorly and a row of small slender setae on the ventral margin, and epimeral plate 3 with few slender and simple setae.

Besides that, the examined material presents some other morphological variations: gnathopod 1 basis 4x longer than wide, versus 3.6x longer than wide in the holotype, and propodus with palmar corner more

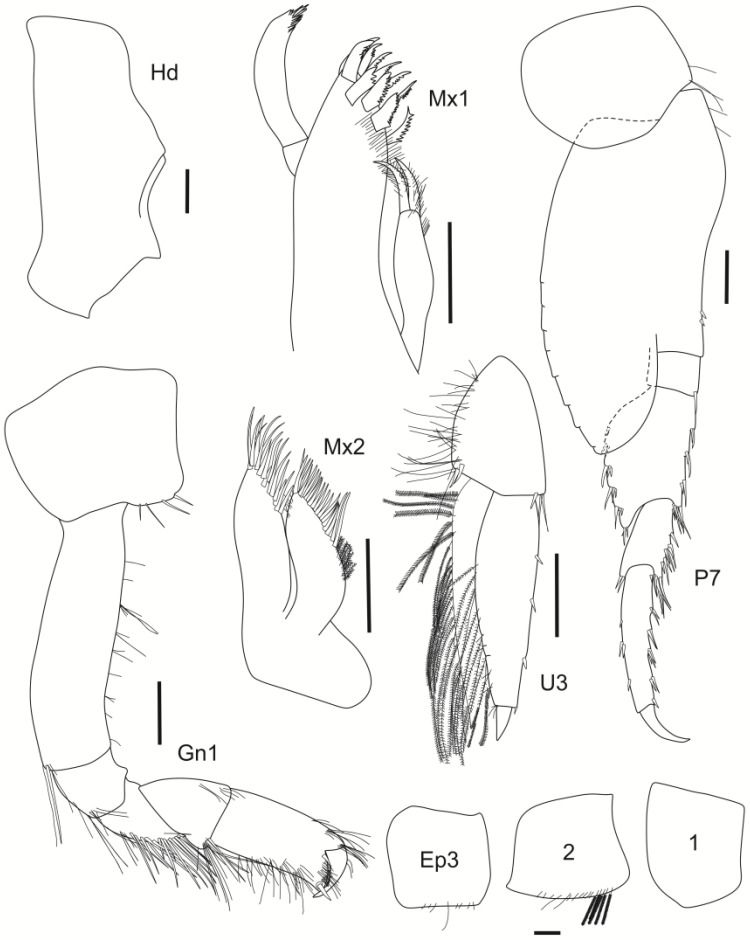

Figure 3. *Eurythenes thurstoni* Stoddart & Lowry, 2004, female, South Mid-Atlantic Ridge, MAR-ECO Program, MNRJ 23430. Scale bars: 0.1 mm.

projected and subacute than in the original description; pereopod 4, coxa 1.4x longer than wide, being this ratio 1.25x in the holotype; pereopod 7, anterior margin of basis 1.7x longer than the basis width, versus 1.5x longer than the basis width in the holotype; and uropod 3 outer ramus 2.3x the peduncle versus 1.6x in the original description. The telson presents a deformation on the left lobe, making it asymmetric when compared to right one, showing a hump in the inner margin, and with 0.8x the length of the right lobe.

Despite the variations, we assume the analyzed specimen as *E. thurstoni*, once it shares the diagnostic characters of this species. Besides that, to establish a new species would be necessary to have a greater series of specimens with the same morphological variations. This is the first record of *E. thurstoni* from the Mid-Atlantic Ridge, as well as the entire southern Atlantic Ocean.

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