A new species of *Lophogaster* (Crustacea, Mysidacea, Lophogastrida) from the equatorial eastern Atlantic

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ABSTRACT
A new species of lophogastrid mysid of the genus *Lophogaster* M. Sars, 1857 is described from four specimens collected in box-core samples between 46 and 99 m depth off the coast of Equatorial Guinea. *Lophogaster eurylepis* n. sp. is distinguished from other species of the genus by its central rostral spine being about twice the length of the lateral spines, the antennal scale being as wide as long, and the antennular lobe being continuously rounded without medial indentation at the pair of distal setae. The carapace is without tuberculation or postorbital spines, and the posterolateral spines are short.

KEY WORDS
Crustacea,
Mysidacea,
Lophogaster,
Equatorial Guinea,
eastern Atlantic,
new species.

RÉSUMÉ
Une nouvelle espèce de Lophogaster *(Crustacea, Mysidacea, Lophogastrida) de l'Atlantique oriental équatorial.*
Une nouvelle espèce de mysidacé du genre *Lophogaster* M. Sars, 1857 est décrite d'après quatre spécimens, récoltés dans un carottier grande surface entre 46 et 99 m de profondeur, au large de la Guinée équatoriale. *Lophogaster eurylepis* n. sp. est la première espèce du genre à être décrite des eaux chaudes de l'Atlantique oriental, elle se distingue des autres espèces du genre par l'épine centrale de son rostre environ deux fois plus longue que les latérales, l'écaille antennaire aussi large que longue et le lobe antennulaire entièrement arrondi, sans indentation médiane au niveau de la paire de soies distales. La carapace est sans tubercules ni épines postorbitaires et ses épines postérolatérales sont courtes.

MOTS CLÉS
Crustacea,
Mysidacea,
Lophogaster,
Guinée équatoriale,
Atlantique oriental,
nouvelle espèce.

INTRODUCTION

During a box-core sampling survey of the sea-bed off Equatorial Guinea and west of Bioko, four specimens of a lophogastrid mysid were collected from three stations between 46-99 m depth on sandy mud sediment. The three brooding females and a juvenile are of a hitherto undescribed species of *Lophogaster* M. Sars, 1857.

The genus *Lophogaster* has had a controversial history owing to the subtle, though consistent, characters which distinguish the currently accepted species. These characters were rationalized by Tattersall (1960), and the most recent review of the genus and key to the species was presented by Băcescu (1991). Since then, a further four species have been described, *L. neocaledonensis* Casanova, 1993 (New Caledonia), *L. inermis* Casanova, 1996 (Indonesia), *L. anoplos* Casanova, 1997 (Madagascar) and *L. muranoi* Fukuoka, Hoffmeyer & Viñas, 1997.

Significant characters for species distinction include the proportions of the anterior spines of the rostral plate (of which the central spine may be regarded as the rostrum), tuberculation of the carapace, the presence or absence of postorbital carapace spines, the spination of the telson, the length to breadth ratio of the antennal scale and the structure of the antennular lamina. The present species is clearly distinguished from those previously described, and particularly those known from the Atlantic Ocean, on these characters.

Total length of specimens is taken from the anterior tip of the rostrum to the posterior tip of the telson.

Type material has been deposited in The Natural History Museum, London (NHM) and the Muséum national d'Histoire naturelle, Paris (MNHN).

SYSTEMATICS

Order MYSIDACEA Haworth, 1825
Suborder LOPHOGASTRIDA G. O. Sars, 1870
Family LOPHOGASTRIDAE G. O. Sars, 1870
Genus *Lophogaster* M. Sars, 1857

Lophogaster eurylepis n. sp.
(Figs 1-3)

TYPE MATERIAL. — **Off Equatorial Guinea.** 3°47.6'N, 8°43.0'E, 46.1 m, III.2002, 1 brooding ♀ holotype 13 mm (NHM 2002.2067); 1 brooding ♀ paratype 14.5 mm (NHM 2002.2068). — West of Point Europa, Bioko, 3°50'N, 8°20'E, 98.9 m, II.2003, 1 brooding ♀ paratype 14.9 mm (MNHN My490). — 3°46'N, 8°36'E, 85.3 m, 1 juvenile paratype 6.75 mm (NHM 2003.616).

TYPE LOCALITY. — Off Equatorial Guinea, 3°47.6'N, 8°43.0'E.

ETYMOLOGY. — From the Greek *eury*: broad, and *lepis*: scale, alluding to the width of the antennal scale.

DISTRIBUTION AND HABITAT. — The specimens were collected on sandy mud; 3°47.6'N, 8°43.0'E (45% sand, 55% silt-clay; mean particle diameter 41.8 µm), 3°50'N, 8°20'E (50.32% sand, 49.68% silt-clay; mean particle diameter 48.38 µm), 3°46'N, 8°36'E (49.32% sand, 50.68% silt-clay; mean particle diameter 41.85 µm) with a depth distribution of 46.1-98.9 m. To date the species is only known from the type specimens.

DESCRIPTION

Carapace (Fig. 1) dorsally 2.3 times as long as wide, posterior dorsum deeply emarginate exposing seventh and eighth thoracic somites, posterolateral margins finely setose, posterior spine short. Carapace surface smooth, without tubercles or postocular spines, but with rugose anterolateral postocular ridges. Rostral plate covering eyestalks and much of eyes, anteriorly tridentate, median process reaching distal margin of antennal peduncle, lateral processes half as long as median processes.

Antennular peduncle (Fig. 2A) robust, typical; antennular lamina simple, continuously rounded, margin denticulate, distal pair of setae not in emargination. Antennal scale (Fig. 2B) broad, as wide as total length without terminal spine, outer margin slightly convex with five spines including terminal spine. Spine on distal peduncle article of antenna robust, one third length of proximal flagellum segment.

Mouthparts, thoracic appendages, pleopods typical for the genus (where known).

All but last abdominal somites sternally with anteriorly directed hyposphenia (thoracic somites covered by brood); sixth abdominal somite with paired stout posterior spines 0.12 times length of somite.

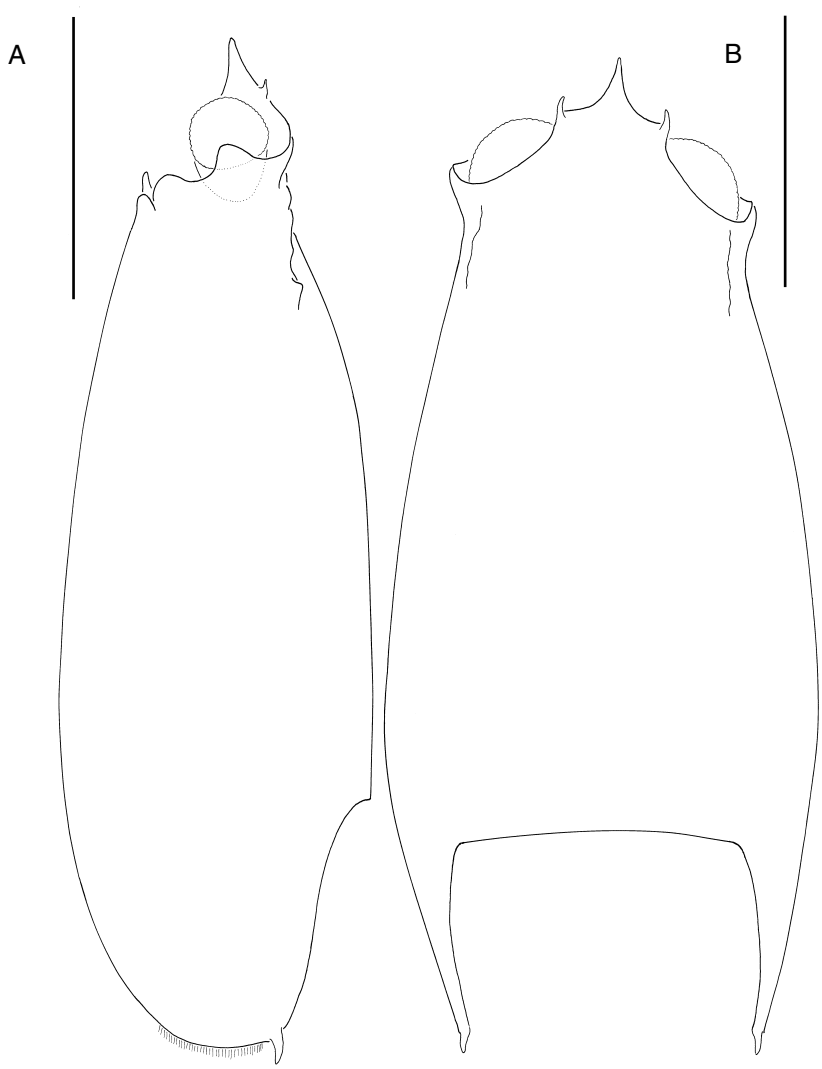

FIG. 1. — *Lophogaster eurylepis* n. sp., carapace; **A**, lateral view; **B**, dorsal view. Scale bars: 2 mm.

Uropods (Fig. 3) shorter than telson; exopod outer margin naked with distal tooth; endopod slightly longer than exopod.

Telson (Fig. 2C, D) 2.15 times as long as last abdominal somite, 2.7 times as long as basal width, dorsal surface concave centrally; margin with two midlateral spines, subapical spine more than twice length of midlateral spines and 0.8 times length of apical spine which is 0.2 times as long as telson. Posterior margin (Fig. 2D) with four central spines, paired plumose setae lateral to these, and one outer spine between seta and apical spine (left outer spine absent in paratype, Fig. 2C, D).

REMARKS

Lophogaster eurylepis n. sp. is the only species of the genus with a combination of a continuously rounded antennular lamina, no postocular spine or tuberculation on the carapace, medial rostral spine twice as long as lateral rostral processes (although it may be

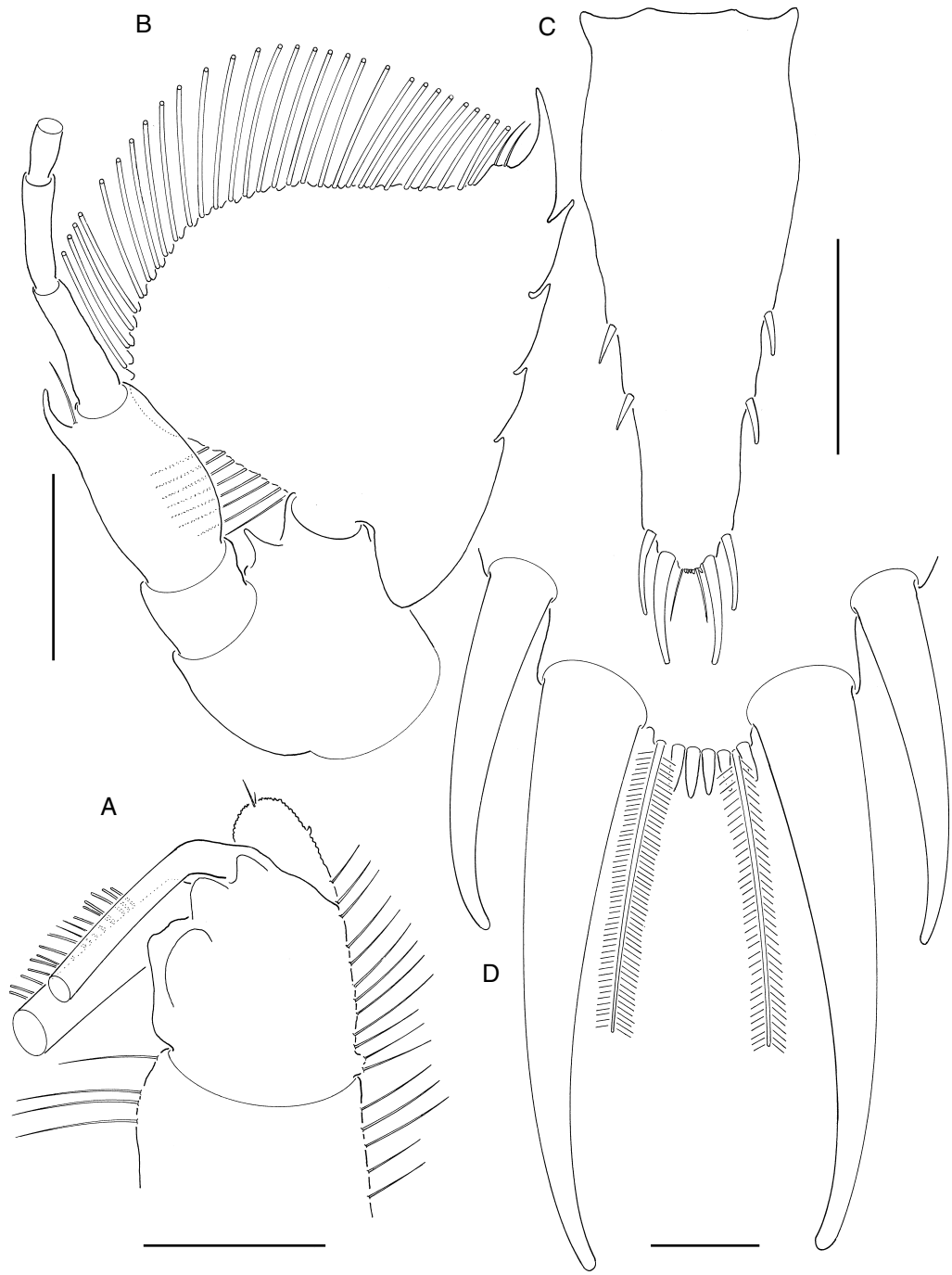

FIG. 2. — *Lophogaster eurylepis* n. sp., paratype; **A**, antennular peduncle; **B**, antennal scale; **C**, telson; **D**, posterior of telson. Scale bars: A, B, 0.5 mm; C, 1.0 mm; D, 0.1 mm.

expected to be proportionately longer or shorter in the male, as are known to be the cases in, for example, *L. muranoi* and *L. longirostris* Faxon, 1896, respectively), only two midlateral marginal spines on the telson and a broad ("*rotundatus*-type") antennal scale. Indeed, with a width equal to the length, the antennal scale is broader than any described species (e.g., 0.75 times in *L. rotundatus* Illig, 1930).

From Băcescu (1991) the present species would key out to *L. musorstomi* Băcescu, 1991, from which it differs in most features of the rostral plate, the antennular lamina, the antennal scale, the distal telson spination and the carapace posterior margin.

Of the other Atlantic species, *L. typicus* M. Sars, 1857 and *L. muranoi* have postocular carapace spines; *L. spinosus* Ortmann, 1906 has a very long medial rostral process and long posterior carapace spines; *L. challengeri* Fage, 1940 has the three anterior processes of the rostral plate subequal in length (e.g., Tattersall 1955: fig. 2) and a tuberculate carapace.

Nevertheless, with its simple form of the antennular lamina and gross morphology of the antennal scale and telson, *L. eurylepis* n. sp. appears to be closest to the Atlantic species group including *L. typicus* and *L. challengeri*.

Tattersall (1955) remarked on the apparent cold-water preference of species of *Lophogaster*, referring to the fact that "[…] Dana in 1941 made collections at 18 stations while crossing the Atlantic from Cape Verde to Guiana without taking a single *Lophogaster*"; from this she inferred that the genus would not be found in Atlantic Equatorial waters. Fage (1942) referred to material collected from off southern Angola (*c.* 16°S) in 1912, and examined by K. Stephensen, which "corresponded with the description of" (and was thus attributed to) *L. challengeri*, although the specimens had only two pairs of lateral telson spines (in brooding females). With limited information on these specimens, such as the presence or absence of carapace tuberculation, it may be the case that they too were of the present species.

As members of this genus are normally mesopelagic, the occurrence of *L. eurylepis* n. sp. in box-core samples is not regarded as indicative of benthic habit, rather of serendipity.

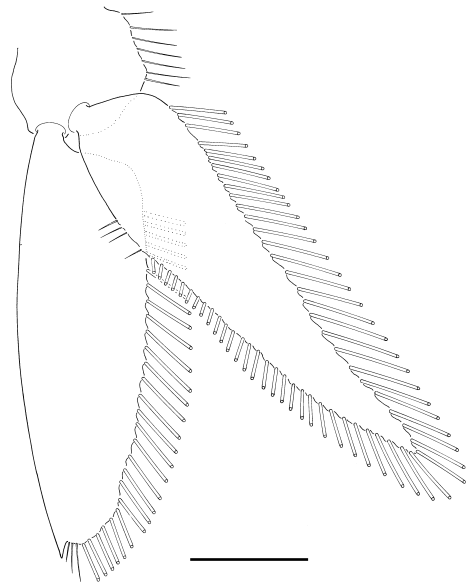

FIG. 3. — *Lophogaster eurylepis* n. sp., uropods. Scale bar: 0.5 mm

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