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New record of *Paralomis spinosissima* Birstein & Vinogradov (Decapoda: Anomura: Lithodidae) from Mar del Plata, Argentina

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Abstract

The lithodid crab *Paralomis spinosissima* is previously known only in Sub-Antarctic waters from South Georgia Island to the Drake Passage. Here we recorded a juvenile male obtained off shores of Mar del Plata (~37°S), Argentina. This new occurrence extends the distribution range of the species over 1300 km northwards in the Atlantic Ocean.

Key words: Anomura, Lithodidae, *Paralomis*, new records, taxonomy, Mar del Plata, Atlantic Ocean

Introduction

The Lithodidae Samouelle, 1819 is a large family of deep-water decapods worldwide, including hydrothermal vents environments and polar regions (Ahyong 2010). This family encompasses 123 species in 10 genera, from which the genus *Paralomis* White, 1856 is the most speciose represented by 68 valid species (McLaughlin 2014). Fewer than half of these species have been recorded from the Atlantic Ocean (Macpherson 1988b, 2003; Ahyong 2010).

Four species of deep-water lithodids *Paralomis*, are currently referred to the Atlantic coast of South America: *Paralomis anamerae* Macpherson, 1988; *Paralomis formosa* Henderson, 1988; *Paralomis granulosa* (Hombron & Jacquinot, 1846); *Paralomis longidactylus* Birstein & Vinogradov, 1972 and *Paralomis spinosissima* Birstein & Vinogradov, 1972 (Macpherson 1988b; Boschi *et al.* 1992; Spivak 1997).

Paralomis spinosissima was described by Birstein & Vinogradov (1972) based on 17 specimens, including one male juvenile from northwest of South Georgia Island. Later, Macpherson (1988a) reported 16 specimens collected by the R/V Eltanin from Malvinas/Falkland Islands. In the subsequent years, other records of *P. spinosissima* were reported, and knowledge of biological aspects, such as population biology, distribution and fishery has been increased (Lopez-Abellán & Belguerías 1994; Otto & MacIntosh 1996, 2006; Reid *et al.* 2007; Griffiths *et al.* 2013). *Paralomis spinosissima* is regularly caught as by-catch in the commercial fishery for the Patagonian toothfish *Dissostichus eleginoides* at South Georgia shelf (Purves *et al.* 2003). Therefore, most information on this lithodid crab comes from that area.

The present work reports the occurrence of *Paralomis spinosissima* from Mar del Plata, not previously cited in this sector of the Atlantic Ocean and extends its range of geographic distribution 1300 km northward from the most recent record (Anosov *et al.* 2015).

Material and methods

Measurements are in millimetres (mm). Carapace length (cl) is measured from the base of the rostrum on the orbit side to the posterior margin of the carapace. Carapace width (cw) is the greatest width excluding lateral spines. The specimen is deposited in the collections of the Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires, Argentina (MACN-In). The terminology used follows Macpherson (1988a, 1988b) and Ahyong (2010).

Results

Systematic account

Family Lithodidae Samouelle, 1819

Genus *Paralomis* White, 1856

Paralomis spinosissima Birstein & Vinogradov, 1972

(Figs. 1–2)

Material examined. Mar del Plata, Argentina, station L42 of the Talud II campaign, 37°59.11'S, 54°41.136'W, Slope II, 877 m, (25.V.2013), R/V *Puerto Deseado*, 1 male (juvenile) cl = 13.61 mm, cw = 12.63 mm, MACN-In 39716.

Diagnosis. Carapace subpentagonal or pyriform, slightly longer than wider, covered with long conical spines (Fig. 1). Juveniles have mushroom shape tubercles, with spiniform setae surrounding at the apex. Gastric region with a prominent spine. Branchial regions with acute spines. Lateral and posterior surface with small spines. Rostrum acute trispinose, overreaching the ocular peduncle; paired dorsal spines divergent, directed obliquely upwards, slightly shorter than the central, with a small spine between them (Fig. 2A). Ocular peduncle with a longest dorsal spine overreaching the cornea; with scattered smaller spines along its length; some spines with several apical setae (Fig. 2A, B). Scaphocerite slender, armed with a long central acute spine, two lateral smaller spines and one short inner spine (Fig. 2B). Chelipeds and walking legs densely covered with long and acute spines; dorsal margin with prominent spines; ventral margin armed with blunt spines, in juveniles specimens have blunt tubercles with a tuft of long and rigid setae (Fig. 2C, D, E).

Distribution. Southeast Atlantic, Scotia Sea, South Georgia Island (Birstein & Vinogradov 1972), and between the Burwood Bank and the Malvinas Islands (Macpherson 1988a), and now from Mar del Plata. Depth range: 132 and 877 m.



FIGURE 1. *Paralomis spinosissima* Birstein & Vinogradov, 1972, male, cl 13.61 mm, dorsal view (MACN-In 39716).

Remarks. The specimen examined agrees with the description by Birstein & Vinogradov (1972) except for the armature of the scaphocerite, which has two pairs of lateral spines, and in the specimen analyzed here, just one spine on the inner side. However, Macpherson (1988b) noted that in the holotype, the inner side of the scaphocerite has three spines; this character may be variable in juvenile and adult specimens. The variations of this new specimen could be related to its juvenile stage.

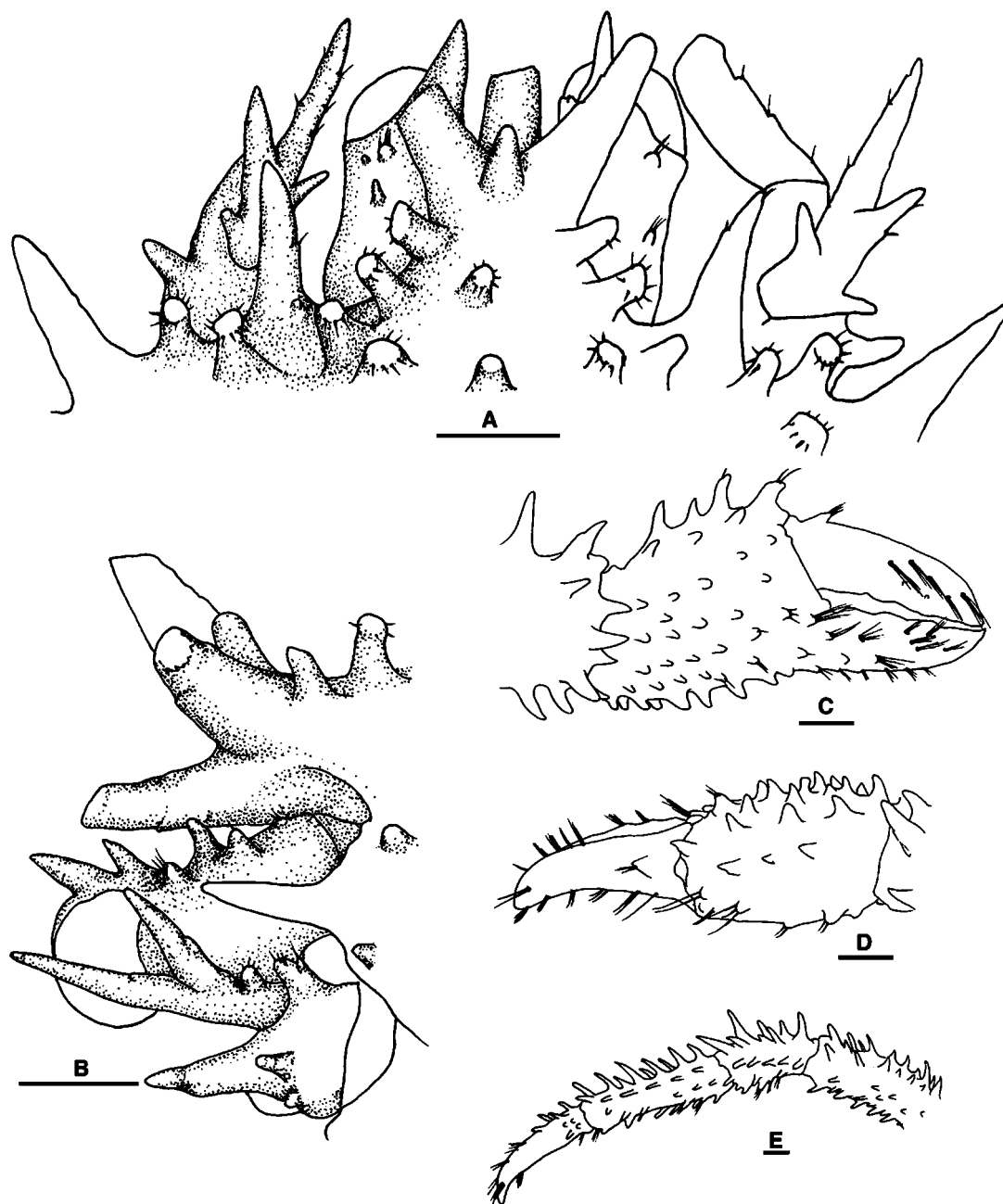


FIGURE 2. *Paralomis spinosissima*, male, cl 13.61 mm (MACN-In 39716). A, anterior part of the carapace, dorsal view; B, anterior part of the carapace, lateral view; C, right cheliped; D, right cheliped, dorsal view; E, third left walking leg. Scale bar = 1 mm.

The species is distinguished from all other described species of *Paralomis* by the armature of the carapace, chelipeds and walking legs that are densely covered by acute spines. Eleven species share this character (Guzman 2009), but only *P. erinacea* Macpherson, 1988, *P. sonne* Guzmán, 2009 closely resemble *P. spinosissima* because they are more densely covered with spines than, for instance, *P. formosa* Henderson, 1888 and *P. spectabilis* Hansen, 1908. Moreover, these spines are not as long as in *P. phryxa* Macpherson, 1992, *P. hystrix* (de Haan, 1844) and *P. hystrixoides* Sakai, 1980.

The differences between *P. erinacea* and *P. spinosissima* were discussed by Macpherson (1988b) and are based mainly on the presence of thick spines in the gastric and branchial regions in the latter species. Our specimen is agree with the Macpherson's observations in the presence of thick spines in the gastric and branchial regions. On the other hand, the rostrum of *P. spinosissima* differs from *P. sonne* in the shape and number of the spines; *P. sonne* bears two pairs of lateral spines and just one in *P. spinosissima*. Other differences are in the armature of the pereiopods, more densely covered in *P. spinosissima* than *P. sonne* (Guzman 2009).

The present specimen from Mar del Plata extends significantly the distribution of the species northwards.

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