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### **The Mediterranean and Eastern Atlantic species of *Spinolambrus* Tan & Ng, 2007: *S. macrochelos* (Herbst, 1790), *S. notialis* (Manning & Holthuis, 1981), and *S. verrucosus* (Studer, 1883), with a note on the identity of *Lambrus spinosissimus* Osório, 1923 (Crustacea: Decapoda: Brachyura: Parthenopidae)**

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*Spinolambrus* Tan & Ng, 2007, was established for eight species of parthenopid crabs, with members of the genus characterised by the presence of two spine-like teeth on the upper margin of the third maxilliped merus, and one tooth on the upper margin of the propodus (Tan & Ng 2007: 111). Three species of *Spinolambrus*, are found in the Mediterranean and Eastern Atlantic regions: *Cancer macrochelos* Herbst, 1790 (type species by original designation), *Parthenope notialis* Manning & Holthuis, 1981, and *Lambrus verrucosus* Studer, 1883.

*Spinolambrus verrucosus* (Studer, 1883), is found only off the mid-Atlantic island of Ascension (Studer 1883: 9; Manning & Chace 1990: 48) and can be readily distinguished from *S. macrochelos* and *S. notialis* (and the remaining congeners) by the shape and proportion of the carapace as well as the rounded and blunt spines on the carapace and chelipeds (Studer 1883: 9, pl. 1, fig. 2a, b; Manning & Chace 1990: 48; Tan 2004: 528, fig. 146D).

The two other species of *Spinolambrus*, *S. macrochelos* (Herbst, 1790), and *S. notialis* (Manning & Holthuis, 1981), are superficially very similar. Herein, the taxonomy and distribution of both species are discussed. We also discuss the nomenclatural consequences of the identity of *Lambrus spinosissimus* Osório, 1923, which we confirm as a junior synonym of *S. macrochelos*. The nomenclatural actions taken hereafter are in accordance with the current (fourth) edition of the *International Code of Zoological Nomenclature* (ICZN 1999), and all measurements are in the convention of carapace width × length, and in millimetres (mm).

Herbst (1790: 254, pl. 19, fig. 107; reproduced here as Fig. 1A) described *Cancer macrochelos* from the Mediterranean near Naples (“im neapolitanischem Meere”). *Spinolambrus macrochelos* (Herbst, 1790), is found throughout the Mediterranean (Tan 2004: 516) and along the Eastern Atlantic coast north to Lisbon, Portugal and south to Salé, Morocco (see below).

Manning & Holthuis (1981: 331–336, figs. 85, 86a, b) described *Parthenope notialis* from material collected from off the coast of West Africa from Porto Alexandre (now Tombua), Angola in the south to Saint-Louis, Senegal in the north, with possible records as far north as Médano de Aaiún, Western Sahara. The type locality of *Spinolambrus notialis* is Pillsbury Station 260, off Cameroon (3.75°N 9.08°E to 3.72°N 9.17°E), where the male holotype was collected (Manning & Holthuis 1981: 335).

*Spinolambrus macrochelos* and *S. notialis* are superficially very similar and the latter was only separated from the former after Manning & Holthuis (1981: 331–336). Tan (2004) and Tan & Ng (2007) examined specimens of both species and found that they can be readily differentiated by the shape of the cheliped spines. The spines on outer margin of the manus of *S. macrochelos* are narrowly triangular and bear numerous smaller spines on them (Fig. 2A) but broadly triangular and less spinose in *S. notialis* (Fig. 2B).

Osório (1923: 51, 52, pl. 14) described *Lambrus spinosissimus* from two specimens: one from off Lisbon, Portugal and the other off Salé, Morocco. Nobre (1931: 138–140; 1936: 85) suggested that characteristics differentiating *Lambrus spinosissimus* from *Spinolambrus macrochelos* could be due to intraspecific variation but did not formally recognise *Lambrus spinosissimus* as a synonym of *S. macrochelos*. Based on Nobre’s (1936: 85) account of *Lambrus spinosissimus* (as the original was not available to them), Manning & Holthuis (1981: 322) suggested that *Lambrus spinosissimus* was a synonym of *S. macrochelos* and not of *S. notialis*.

From the description and figure of Osório (1923: 51, 52, pl. 14; reproduced here as Fig. 1B), it is clear that *Lambrus spinosissimus* is almost certainly conspecific with *Spinolambrus macrochelos*. *Spinolambrus macrochelos* is known from Algarve Province, south of Lisbon (Tan 2004: 515). Osório (1923: 51, 52, pl. 14) did not state which of the two syntypic specimens was figured and therefore the origin of the figured specimen is not known. Osório (1923: 51, 52) also stated that the specimen from Morocco was the smaller of the two syntypes (which also raises the possibility that the smaller of the two specimens was actually a specimen of *S. notialis*). The larger of the two specimens measured 37.0 × 33.0 mm (Osório 1923: 52).

The northernmost known limit of *Spinolambrus notialis* is off the coast of Senegal, but could possibly extend as far as Médano de Aaiún, Western Sahara (Manning & Holthuis 1981: 335). If Osório's (1923: 51, 52) specimen of *Lambrus spinosissimus* from Salé, Morocco was indeed *S. macrochelos* (and not *S. notialis*), this would represent the southernmost limit of the distribution of *S. macrochelos*. As Médano de Aaiún (27.12°N 13.42°W) is only about 650 km south of Morocco (34.03°N 6.80°W), there is a possibility that the distributions of *S. macrochelos* and *S. notialis* overlap at this region off the coast of northwestern Africa.

The material on which Osório (1923) based his description was destroyed in a fire in 1978 (A. Cartaxana, *in litt.*, 4 April 2013). The type material of *Cancer macrochelos* is also not extant (see K. Sakai 1999). Due to the possibility of the overlap in the distributions of *Spinolambrus macrochelos* and *S. notialis*, and the possibility that *Lambrus spinosissimus* could represent a composite of both species (possibly threatening the name *Parthenope notialis*), it is felt that neotype designations for *Cancer macrochelos* and *Lambrus spinosissimus* are necessary (Article 75, ICZN 1999: 84, 85).

A male specimen from the Mediterranean, near Genoa, Italy (54.0 × 48.0 mm; RMNH D 43604; Fig. 2A) is herein designated as the neotype of *Cancer macrochelos* (see Fransen *et al.* 1997: 99 and Holthuis 1960: 74–76 for more information on this specimen). The same specimen is also designated as the neotype of *Lambrus spinosissimus*. *Cancer macrochelos* and *Lambrus spinosissimus* thus become objective synonyms (Article 61.3.4, ICZN 1999: 64). The type locality of *S. macrochelos* is now the Mediterranean Sea, off Genoa, Italy, as determined by the neotype (Article 76.3, ICZN 1999: 87). With these neotype designations, *Spinolambrus macrochelos* can now be unequivocally differentiated from *S. notialis*. The holotype male of *S. notialis* (26.6 × 22.1 mm; RMNH D 31545; Fig. 2B) is herein figured for the first time.

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