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ARGENTINOCHONDRIA PATAGONENSIS N. GEN., N. SP. (COPEPODA: CHONDRACANTHIDAE) PARASITIC ON *GENYPTERUS BRASILIENSIS* (PISCES: OPHIDIIDAE) FROM PATAGONIA, ARGENTINA

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ABSTRACT: *Argentinochondria patagonensis* n. gen., n. sp. (Copepoda: Chondracanthidae) is described from adult specimens recovered from the smooth kingklip *Genypterus brasiliensis* Reagan, 1903, from San Jorge Gulf, Patagonia, Argentina. The new genus is placed in the Chondracanthinae. Females of the new genus differ from other members of this subfamily in having 2 pairs of modified legs, a bulbose head, a long neck region, and a trunk devoid of processes. Males have usual chondracanthid form, oral appendages as in female, except a longer paragnath, fewer teeth on maxilla, and 2 pairs of reduced legs.

As a result of a parasitological study carried out on the smooth kingklip *Genypterus brasilienis* Reagan, 1903, in the San Jorge Gulf, Argentina, Sardella et al. (1998) reported the presence of an unidentified chondracanthid copepod on this fish host. Examination of the material revealed that these copepods belong to a new genus of Chondracanthinae, which is described and illustrated in the present article.

MATERIALS AND METHODS

A total of 31 specimens of *G. brasiliensis* Regan, 1903 (spotted kingklip), captured in October 1993 in the San Jorge Gulf (46°46′S, 66°14′W), Patagonia, Argentina were examined for parasitic copepods. The parasites were removed, fixed, and stored in 70% ethanol; the appendages were dissected, cleared in lactic acid, and examined under a light microscope. Measurements are the mean followed by the range in parentheses. All measurements are in millimeters.

DESCRIPTION

Argentinochondria n. gen.

Diagnosis: Chondracanthidae. Chondracanthinae.

Female: Body divided into subspherical head, elongate neck, and subcylindrical trunk. Head consisting of cephalosome only; first pedigerous segment forming long and cylindrical neck. Remaining prosomal segments fused into trunk, without processes. Genitoabdomen and caudal ramus as usual in family. Egg sacs cylindrical; egg multiseriate. Oral appendages as in usual form. Two pairs of legs modified; leg 1 small, reduced to 2 small processes without protopod, leg 2 large, biramous with cylindrical rami.

Male: Dwarf and arched. Cephalosome globose, not fully fused with first pediger, and much larger than remaining parts of body. Metamerism rather indistinct. Genitoabdomen carrying a pair of spiniform caudal rami at its end. Antennule slender and cylindrical. Antenna uncinate and robust. Oral appendages as in female, except for a longer paragnath and fewer teeth on maxilla. Legs 1 and 2 reduced to a lobe.

Type and only species: Argentinochondria patagonensis n. sp

Argentinochondria patagonensis n. sp

(Figs. 1–25)

Female (Figs. 1–14): Measurements based on 9 specimens. Body divided into subspherical head, elongate neck, and subcylindrical trunk (Figs. 1, 2). Head bulbose, with lateral constrictions about midlength, 3.03 (2.57–3.34) long and 3.09 (2.60–3.72) wide, with conical antennal region projecting anteroventrally. Neck region cylindrical, formed by first pediger. Remaining prosomal segments fused into trunk, without processes. Neck (measured only in 6 fully extended specimens) 5.60 (5.15–6.36) long and 1.07 (0.99–1.27) wide. Trunk 4.53 (4.06–5.17) long and 1.93 (1.58–2.23) wide (at posterior end). A pair of small protrusions on posteroventral surface of trunk, near genitoabdomen (Fig. 3). Genital complex conical, 0.575 (0.57–0.58) long, and 0.40 (0.38–0.42) wide, attached subdorsally to trunk, carrying 2 posteroventral setules, probably representing leg 6 (Fig. 3). Abdomen small, 0.06 (0.051–0.067) long, and 0.13 (0.10–0.15) wide, broadly fused with genital complex, carrying a pair of dorsal setules (Fig. 4). Caudal ramus a spiniform process armed with 3 setae (1 dorsal and 2 ventral setae) and a small dorsal tubercle (Fig. 4). Egg sacs cylindrical, 6.60 (5.42–7.75) long, and 1.26 (1.12–1.39) wide, eggs multiseriate. Antennule small, not swollen at base, and rather flattened, with an irregular ventral row of 7 spines and 2 subterminal marginal setae and tipped with 8 elements (2 spines and 6 naked setae) (Fig. 5). Antenna 2-segmented, terminal segment uncinate and without atrophied tip (accessory antennule) (Fig. 6). A central protrusion located between 2 antennae. Labrum with smooth posterior margin (Fig. 7). Mandible 2-segmented, terminal blade with 19–21 teeth on convex side and 25–27 smaller teeth on concave side (Fig. 8). Paragnath a small fleshy, smooth lobe (Fig. 9). Maxillule, a small lobe bearing 2 elements and a patch of spinules (Fig. 10). Maxilla 2-segmented, first segment robust and unarmed, second segment armed with 2 setae at basal portion (one large and other small) and with a row of 9–14 teeth on inner edge of terminal process (Fig. 11). Maxilliped 3-segmented, first segment robust and unarmed, second segment with lobate distal end bearing row of spinules on inner edge, terminal segment a small claw with denticle at midlength of concave side (Fig. 12). Two pairs of biramous legs present. Leg 1 reduced, with protopod largely fused to neck and only identifiable by its outer, basal seta; both rami rodlike, with endopod larger than exopod, latter bearing 2 short setae, one terminal and other subterminal (Fig. 13). Leg 2 large, biramous, protopod with small outer seta, rami cylindrical and tapering distally, exopod slightly longer than endopod and carrying small distal seta (Fig. 14).

Male (Figs. 15–25): Measurements based on 5 specimens. Body 0.77 (0.73–0.82) long, strongly arched (Fig. 15). Cephalosome globose and much larger than remaining parts of body, bearing a median protrusion in rostral area between bases of antennae. Metamerism of body indistinct but division between cephalosome and first pedigerous segment distinct mainly in dorsal view. Main body flexure located between second pedigerous segment and genitoabdomen. Genital complex with prominent ventrolateral ridges (Fig. 16). Abdomen broadly fused with genital complex and indistinct, carrying a pair of dorsal setules. Caudal ramus a spiniform process armed with 2 setae with 1 seta on each side of base. Antennule small and cylindrical but slightly swollen at base, with a ventral row of 3 spines and 1 subterminal marginal setule and tipped with 8 elements (2 spines and 6 naked setae) (Fig. 17). Antenna 2-segmented, terminal segment uncinate without atrophied tip (accessory antennule) and bearing a ventral setule at base (Fig. 18). Labrum with smooth posterior margin. Mandible 2-segmented, terminal blade with 19–23 teeth on convex side and 17–18 smaller teeth on concave side (Fig. 19). Paragnath a long, almost straight bar with rounded tip (Fig. 20). Maxillule a naked small lobe bearing 2 elements (Fig. 21). Maxilla 2-segmented, first segment robust and unarmed, second segment armed with 2 setae (one large and other small) at basal portion and with a row of 3–5 teeth on inner edge of terminal process (Fig.

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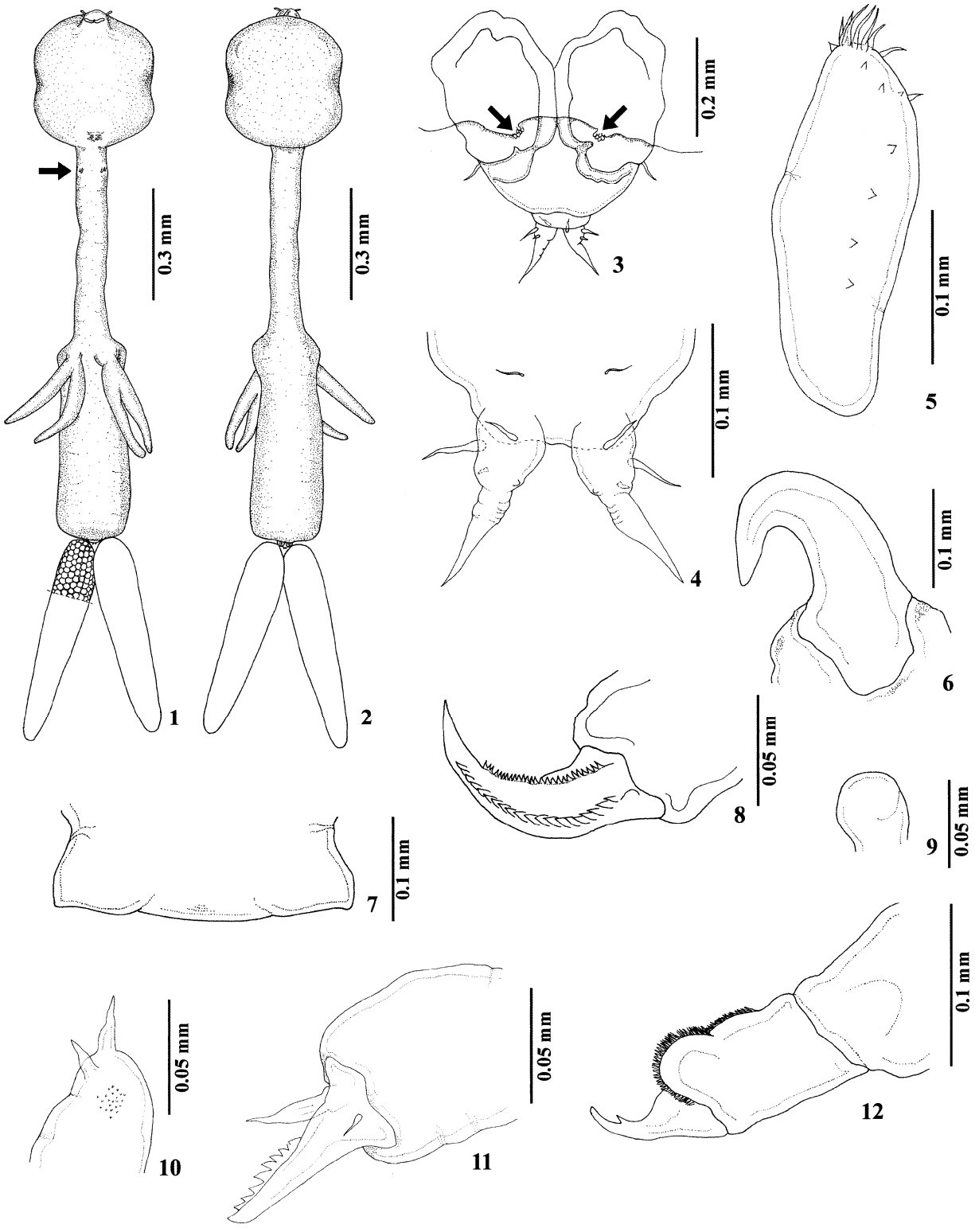
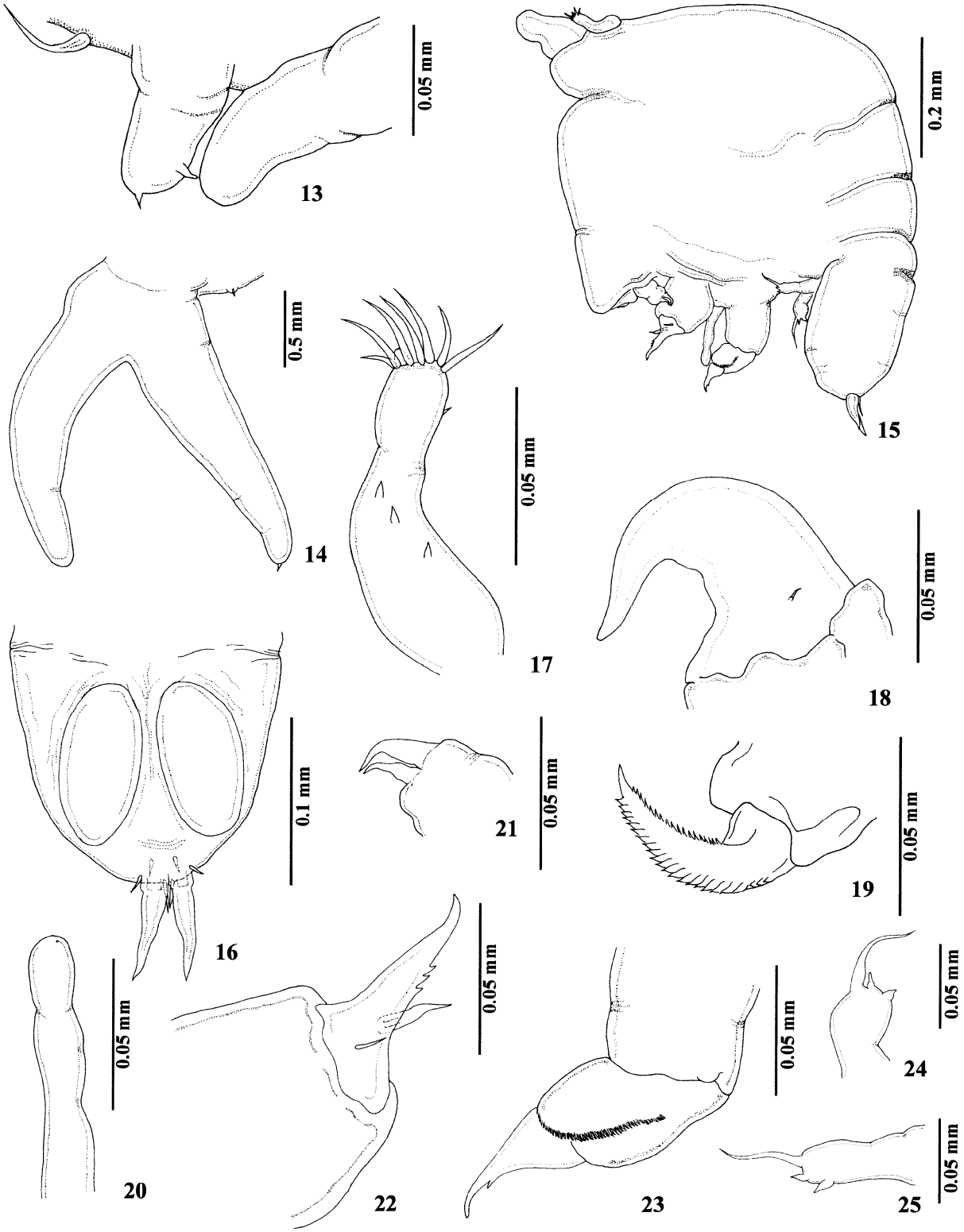


FIGURES 1–12. *Argentinochondria patagonensis* n. gen., n. sp. Female. **1.** Habitus, ventral view. Arrow shows position of leg 1. **2.** Habitus, dorsal view. **3.** Genitoabdomen, ventral view, arrow showing small protrusions. **4.** Abdomen and caudal rami, dorsal view. **5.** Antennule. **6.** Antenna. **7.** Labrum. **8.** Mandible. **9.** Paragnath. **10.** Maxillule. **11.** Maxilla. **12.** Maxilliped.



FIGURES 13–25. *Argentinochondria patagonensis* n. gen., n. sp. Female (13–14). **13.** Leg 1. **14.** Leg 2. Male (15–25). **15.** Habitus, lateral view. **16.** Genital complex, ventral view. **17.** Antennule. **18.** Antenna. **19.** Mandible. **20.** Paragnath. **21.** Maxillule. **22.** Maxilla. **23.** Maxilliped. **24.** Leg 1. **25.** Leg 2.

22). Maxilliped 3-segmented, first segment robust and unarmed, second segment with lobate distal end bearing spines on inner edge, terminal segment a small claw with denticle on concave side (Fig. 23). Two pairs of reduced uniramous legs present, both lobate; legs 1 (Fig. 24) and 2 (Fig. 25) bearing 1 subterminal short seta and 2 terminal setae (one short and the other long).

Taxonomic summary

Type host: Genypterus brasiliensis Regan, 1903 (Ophidiiformes: Ophidiidae).

Site: Inner side of operculum, with head and neck buried into the host tissue.

Type locality: San Jorge Gulf, Patagonia, Argentina (45–47°S, 65–67°30′W).

Type specimens: Holotype No. 5102 (female), allotype No. 5103 (male), and paratypes (2 females with attached males) No. 5104 are deposited in the Helminthological Collection of the Museo de La Plata (CHMLP), La Plata, Argentina.

Number of copepods collected: Twenty-five.

Prevalence and mean intensity of infection: Twenty-nine and 2.8%, respectively.

Etymology: The generic name is a combination of the geographical area (Argentina) where copepods were found and the Greek word *chondria* (= cartilage, usually used to denote chondracanthid genera); the specific name refers to the geographical area (Patagonia) where San Jorge Gulf (type locality) is located.

Remarks

The general appearance of the female of the new genus is similar to those of some genera of the Lernentominae Oakley, 1927, such as *Lernentoma* de Blainville, 1822, *Brachichondrites* Markevich, 1940, and *Jusheyhoea* Villalba et Fernandez, 1985, in having a long neck. However, the location of mouthparts precludes *Argentinochondria* n. gen. from this subfamily, which is characterized by the oral appendages located at the basal portion of a cephalic neck, whereas in Chondracanthine Edwards, 1840, the neck is the narrow, anterior region of the trunk (Kabata, 1979). Considering this morphological characteristic, the new genus clearly belongs to the Chondracanthinae.

Among Chondracanthinae, only 2 genera have trunks completely devoid of processes with a narrow elongated anterior end, *Scheherezade* Leigh-Sharpe, 1934, and *Andreina* Brian, 1939. Nevertheless, specimens of *Scheherezade* have only 1 pair of legs, located on the anterior end of the trunk, and a small accessory antennule. Male of *Scheherezade* is unknown (Ho, 1970). *Andreina* has 2 pairs of unmodified, biramous legs and subcylindrical trunk with no appreciable segmentation (Ho, 1994). Both genera can also be distinguished from *Argentinochondria* n. gen. by the presence of a large bulbose head, clearly marked from the neck in the new genus.

More recently, Ho (1994) provided a key to distinguish the 41 genera of Chondracanthidae. Following Ho's key, the new genus closely resembles *Prochondracanthopsis* Shiino, 1960, and *Pseudoblias* Heegaard, 1962. However, both genera differ from *Argentinochondria* n. gen. in lacking a long neck. In addition, *Prochondracanthopsis* differs from the new genus in having posterolateral lobes on its cephalothorax, and *Pseudoblias* has incipient segmental boundaries on the anterior part of its trunk, which are not present in *Argentinochondria* n. gen.

After the work of Ho (1994) only *Bactrochondria* Ho, Kim et Kumar, 2000, has been added to the family. It can be distinguished from the new genus by the elongate body, elongate head with cephalic process, and short neck (Ho et al., 2000).

Argentinochondria patagonensis is the fifth species of chondracanthid copepods parasitizing fishes of *Genypterus* Philippi, 1857 spp. The other species include *Chondracanthus genypteri* Thomson, 1889, *Chondracanthus colligens* Barnard, 1955, *Rohdea cryptopoda* Kabata, 1992, and an unidentified species, apparently belonging to the Lernentominae, parasitic on *G. brasiliensis* from Brazil (Alves et al., 2002).

In the identified species, *C. genypteri* was found parasitizing *Genypterus blacodes* Schneider, 1801, from New Zealand, Australia, Argentina, and Chile (Hewit and Hine, 1973; Ho, 1975; Atria, 1980; Grabda and Slosarczyk, 1981; Villalba and Fernández, 1985; Etchegoin and Sardella, 1989; Kabata, 1992; Riffo, 1994; Sardella et al., 1998) and *Genypterus chilensis* (Guichenot, 1848) from Chile (Villalba and Fernández, 1985). *Chondracanthus colligens* was found on *Genypterus capensis* (Smith) from South Africa (Ho, 1972). *Rohdea cryptopoda* was found parasitizing *G. blacodes* from Australia (Kabata, 1992).

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