

A NEW RECORD OF THE OARFISH *Regalecus kinoi* (LAMPRIDIFORMES: REGALECIDAE) IN THE GULF OF CALIFORNIA, MÉXICO

Un nuevo registro del pez *Regalecus kinoi* (Lampridiformes: Regalecidae) en el Golfo de California, México.

RESUMEN. Se documenta el segundo registro del pez *Regalecus kinoi* para el Golfo de California, capturado moribundo frente a Los Frailes, B.C.S. Se dan los datos merísticos, morfométricos y morfológicos del ejemplar, información adicional complementaria al holotipo, y se señalan las principales diferencias con las otras dos especies mencionadas para el Pacífico oriental.

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We have documented the second record from the Gulf of California of the oarfish *Regalecus kinoi* Castro-Aguirre, Arvizu-Martínez & Alarcón-González, 1991. This corresponds to the third of this species in the Eastern Pacific. The holotype was described from a stranded specimen in Bahía de La Paz, in the Gulf of California (Castro-Aguirre *et al.*, 1991) and now deposited in the Ichthyological Collection of CICIMAR (Cat. num. 4552); it means the holotype was not lost as Salazar-Hermoso *et al.* (1999) supposed. The only other known record of *R. kinoi* is off the coast of Zihuatanejo, Guerrero, México (Ramírez-Murillo & Schmitter-Soto, 1996).

The specimen, 4.27m total length prior to preservation and 70 kg, was collected moribund in the Lower Gulf of California off Cabo Los Frailes (23°23' N 109°23.7' W) by the sport fleet on 9 July 1998. The depth at this site is 183 m. The specimen was preserved in the freezing chamber of a hotel at Buenavista,

B.C.S., until taken to La Paz, B.C.S., the following day. The measurements (in mm) and counts made, were: head length 327; horizontal eye diameter 50; snout length 109; upper jaw length 115.2; lower jaw length 120.9; body depth at pectorals 390; maximal body depth 400; pectoral fin length 115; preanal length 469; 4th dorsal spine length 463; dorsal fin formula VI, 191; pectoral rays 12.

The morphometry, meristic counts, and morphological analysis correspond with slight variations, to the original description of the species and with other details indicated by Ramírez-Murillo & Schmitter-Soto (1996) (Table 1 and Fig. 1). The most important difference with the holotype -and in agreement with the Zihuatanejo specimen- was the presence of six dorsal spines (Fig. 1D, E).

The difference from the holotype, without gonadic development, was this specimen showed two long and whitish gonads. The histological analysis confirmed the specimen was an immature male (Fig. 1A). The mostly silver sides of the body showed six dark longitudinal bands with numerous light and fungiform tubercles on the skin (Fig. 1B). The caudal end was devoid of rays (Fig. 1C). The pelvic fins had a red dermal extension outlined in black at the end of the only spiniform ray. Because of the removal of the branchial arches by the fishermen, the number of gill rakers of the first arch could not be determined.

R. kinoi is distinguished easily from the two other congeneric species cited for the Eastern Pacific, *R. russelli* and *R. glesne*, by the smaller number of dorsal rays (less than 200 vs. more than 260 rays), dorsal spines without distal bulbs (at least in the two complete spines observed), pectoral fins proportionally longer and lanceolated (truncated or fan-shaped in the other species) (Fig. 1F), and the body proportionally higher (Table 1). All these characters are of prime importance for the taxonomic discrimination between the three known

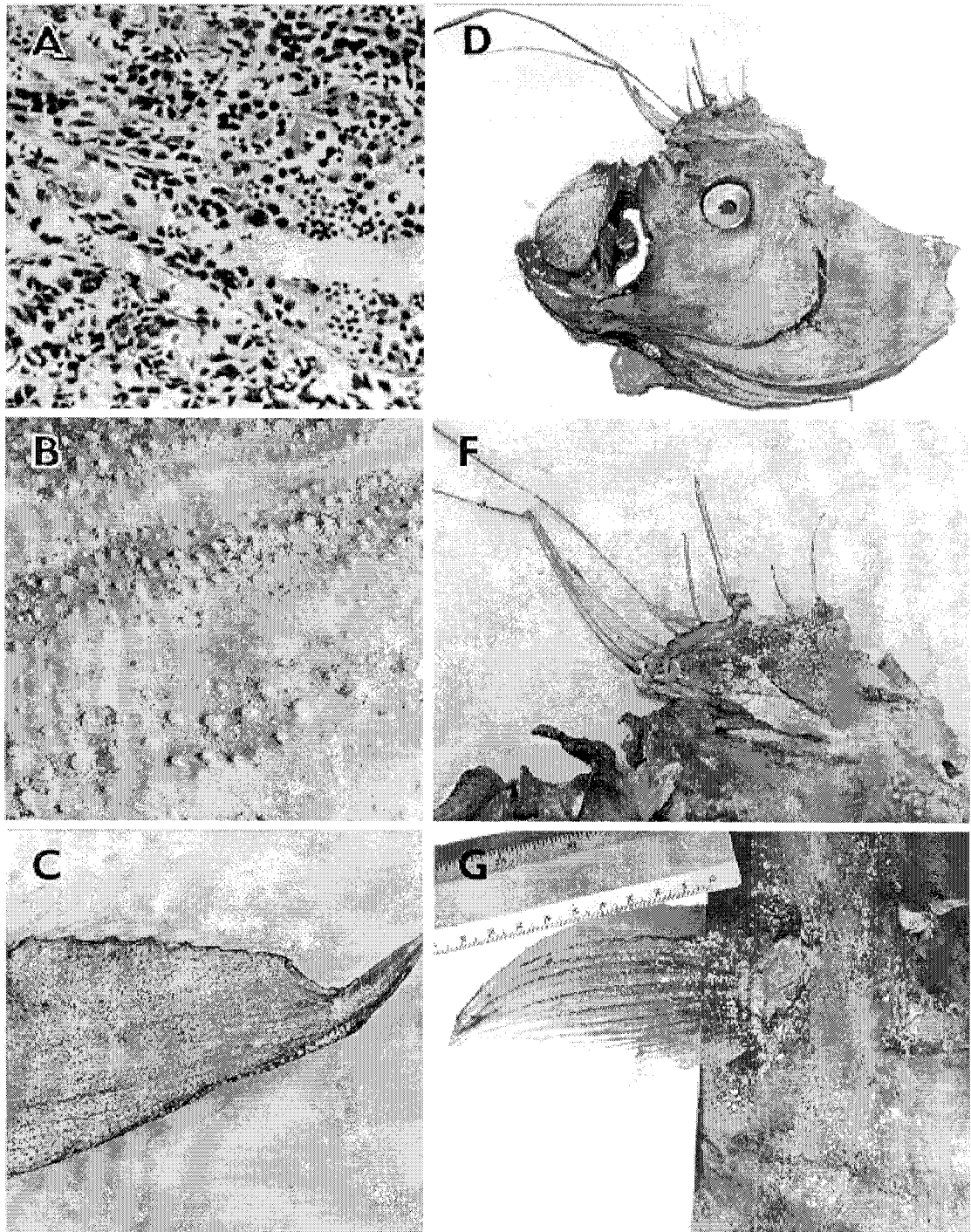


Figure 1. *Regalecus kanoi* Castro-Aguirre *et al.*, 1991 collected in the Gulf of California at Los Frailes. A) Photomicrograph of a cross-section of testis, X 100. B) Detail of the lateral body skin showing the fungiform tubercles. C) Caudal end. D) Lateral view of the head. E) Detail of the head top showing the six spine bases and the two anteriormost dorsal rays. F) Lateral view of pectoral fin.

Figura 1. *Regalecus kanoi* Castro-Aguirre *et al.*, 1991 recolectado en el Golfo de California frente a Los Frailes. A) Microfotografía de un corte histológico del testículo, X 100. B) Detalle de la piel lateral del cuerpo mostrando los tubérculos fungiformes. C) Extremo caudal. D) Vista lateral de la cabeza. E) Detalle de la porción superior de la cabeza mostrando las bases de las seis espinas y los dos radios dorsales anteriores. F) Vista lateral de la aleta pectoral.

Table 1. Comparison of some morphometric proportions (as percentage of total length) and meristic counts of the species of *Regalecus* present in the Pacific waters. Data from Castro-Aguirre *et al.* (1991), Chávez *et al.* (1985), Jordan & Evermann (1896-1900), Miller & Lea (1972), Fujii (1984), Ramírez-Murillo & Schmitter-Soto (1996), Robins & Ray (1986), and Wheeler (1969).

Tabla 1. Comparación de algunas proporciones morfo-métricas (en porcentaje de la longitud total) y conteos merísticos de las especies de *Regalecus* presentes en aguas del Pacífico. Información tomada de Castro-Aguirre *et al.* (1991), Chávez *et al.* (1985), Jordan & Evermann (1896-1900), Miller & Lea (1972), Fujii (1984), Ramírez-Murillo & Schmitter-Soto (1996), Robins & Ray (1986) y Wheeler (1969).

	<i>R. kinoi</i>	<i>R. russelli</i>	<i>R. glesne</i>
1st. Dorsal spine length	7.1	21.6	1.5-15.2
Pectoral fin length	2.7-3.4	1.0	1.5-1.9
Pelvic fin length	9.3	29.7	23.4-28.5
Head length	7.7-9.8	6.7	5.2-8.1
Head height	8.0-9.1	4.3-5.8	3.0-5.2
Maximum body height	9.4-9.8	7.1	4.2-8.3
Eye diameter	1.0-1.7	0.8-0.9	1.1-1.3
Snout length	1.3-3.4	1.6-2.6	1.5-1.8
Postorbital length	2.8-4.9	4.1	2.6-4.2
Dorsal spines	III-IV	IV-VIII	VIII-XV

species, though the opposite view of Salazar-Hermoso *et al.* (1999).

The anatomical parts of this specimen preserved (head, pectoral fins, caudal end, vertebrae, and internal organs) were fixed in commercial 10% formalin and deposited in the Ichthyological Collection of the Centro Interdisciplinario de Ciencias Marinas in La Paz, B.C.S., catalogue number 4720.

The reasons for the moribund emerging or stranding of the species of *Regalecus* seems still obscure though often discussed (*i.e.*, Hutton, 1961; Fitch & Lavenberg, 1968;

Hulley & Rau, 1969; Saloman *et al.*, 1973; Chávez *et al.*, 1985; Castro-Aguirre *et al.*, 1991).

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