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Scrawled Cowfish, *Acanthostracion quadricornis* (Tetraodontiformes: Ostraciidae), Collected from Argentine Waters

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Two species of *Acanthostracion* live on the coasts of the tropical and temperate Western Atlantic. *A. poligonius* occurs from Bermuda south through the Atlantic on the coast of South America to Brazil (Tyler, 1965a). Luengo (1968) extended the range of the species to Isla de Flores, in Uruguay. *A. quadricornis* is known from Massachussetts to Santa Catarina, Brazil (Dr. José L. de Figueiredo, pers. comm.). One specimen of *A. quadricornis* was recently captured off Mar del Plata, Argentina at depth of 7 m and is described below. This is the southernmost record of the species and the first record from Argentine waters (Fig. 1); the specimen is deposited in the ichthyological collection of the Instituto Nacional de Investigación y Desarrollo Pesquero (INIDEPCI). Identification was based on Tyler (1965a, b). Morphometric measurements are expressed as percentages of standard length (SL) or head length (HL).

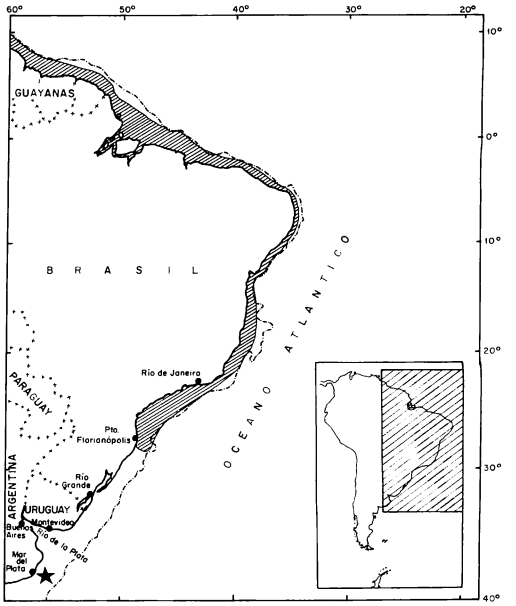

Fig. 1. Distribution of *Acanthostracion quadricornis* in the Western South Atlantic; new southern record indicated (★).

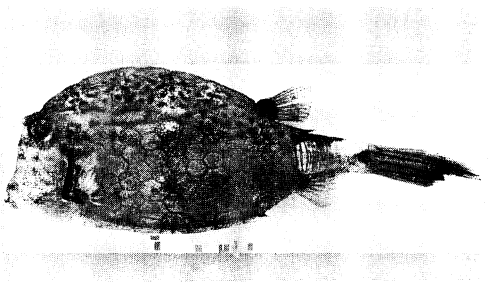

Fig. 2. *Acanthostracion quadricornis.* INIDEPCI 448, 283 mm SL, off Mar del Plata, Argentina.

Acanthostracion quadricornis (Linnaeus, 1758) (Fig. 2)

Material. INIDEPCI 448, 283 mm SL, 38°01′S, 57°31′W, 3 June 1993, F/V *Nueva Lucía Madre.*

Description. Dorsal fin rays 10; anal fin rays 10; pectoral fin rays (excluding short uppermost element) 11–11; caudal fin rays 10. Total length 132.5, head length 17.7, prepectoral length 16.9, preanal length 75.9, predorsal length 65.4, body depth 45.6, caudal peduncle depth 9.9, pectoral fin length 17.7; all in SL. Snout 34.0, eye diameter 40.0, interorbital width 56.0; all in HL.

Body deep, covered with mostly hexagonal dermal plates (except for caudal peduncle), sutured together forming a thick carapace triangular in transverse section. Posteroventral region of carapace expanded as two well-developed spines projecting posteriorly. A pair of conspicuous spines projecting anteriorly from eyes. Posterior end of carapace prolonged above and below caudal peduncle as single spiny processes. Origin of anal fin posterior to last ray of dorsal fin.

Post mortem color yellowish-brown with dark, short or long irregular bars and blotches, more visible on upper half of body. Cheek with several more or less parallel, dark stripes.

Remarks. The profile angle of the snout of the specimen described above (78°) falls within the range given by Tyler (1965b) for the species (75°–85°). The depth of the posterior end of the carapace measured from the upper and lower surfaces of the spines is also between the range shown by Tyler.

No bony scutes were present on the dorsal and ventral surfaces of the caudal peduncle, although Tyler (1965a) and Matsuura (1983) found at least one isolated dermal plate above and below the caudal peduncle in many specimens.

Discussion. At the end of summer and beginning of fall tropical species are occasionally reported along the coast of Buenos Aires Province. Specimens of Pomadasydae, Sphyraenidae, Polynemidae, Tetraodontidae, Molidae (Cousseau and Bastida, 1976), Balistidae (García and Menni, 1982), Mobulidae and Kyphosidae (Cousseau and Menni, 1983), Fistulariidae (Figueroa et al., 1992) and Sphyrnidae (Dr. M. B. Cousseau, pers. comm.) have been collected near the coasts of Mar del Plata (38°S) during this period.

There is no clear explanation of how tropical species arrive at this region. Generally, the influence of the warm Brazil Current could offer a means of transport. However, the Brazil Current flows poleward along the continental margin of South America. South of 36°S, after its confluence with the Malvinas Current, the western boundary of the current separates from the shelf edge, turning southeast towards deeper water (Olson et al., 1988). Three hypotheses have been put forward concerning the origin of the waters meeting the coast of Buenos Aires Province at the end of summer. Hart (1947) believed that the warmer inshore water did not result from a southward translocation of subtropical water by the (offshore) Brazil Current. Boltovskoy (1981) indicated that under favorable conditions, a minor branch of the Brazil Current flows southward towards the coast, west of the Malvinas Current. A third hypothesis postulated by Balech (1986) involved the incursion of warm neritic waters (warm drift) to the Argentine continental shelf after originating in the subantarctic waters of the Malvinas Current. Such waters, after reaching lower latitudes and thus warming up, return poleward, west of the cold current, mixed with neritic Brazilian waters. A recent analysis of hydrographic conditions over the Argentine continental shelf (Martos and Piccolo, 1988) appears to endorse the last hypothesis.

Acknowledgments

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アルゼンチンから採集されたハコフグ科魚類 *Acanthostracion quadricornis*

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Acanthostracion quadricornis はこれまで北米の Massachussetts から南米のブラジル (Santa Catarina) まで分布することが知られていた．アルゼンチンの Mar del Plata で本種が水深 7 メートルから採集された．これは本種の南限の記録となる．また，アルゼンチン周辺海域に熱帯性魚類が出現する要因について論議した．