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NEWS AND COMMENTS

Southernmost occurrence of the slender tuna, *Allothunnus fallai*, off Tierra del Fuego, South Atlantic Ocean

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The slender tuna, *Allothunnus fallai* Serventy 1948, is an epipelagic scombrid with a circumglobal distribution in the Southern Ocean from about 20–50°S (Warashina and Hisada 1972; Collette and Nauen 1983), south to 54°S in the South Pacific (Yatsu 1995), with three exceptions from the North Pacific (Schaefer and Childers 1999). Recently, an adult male, 784-mm fork length (Fig. 1) was taken further south in the South Atlantic, at 53°25′S, 64°23′W off Tierra del Fuego, Argentina. It was caught while trawling at 167 m on March 12, 2007 by the fishing vessel Tai An. The surface water temperature was 8°C and the salinity 33.59 parts per thousand (ppt). The specimen has been deposited in the fish collection of the Instituto Nacional de Investigación y Desarrollo Pesquero under number INIDEP 801.

Measurements and counts (Table 1) follow the methods of Collette and Chao (1975) and Schaefer and Childers (1999). External characters agree with descriptions given by previous authors (Serventy 1948; Collette and Chao 1975; Collette and Nauen 1983; Schaefer and Childers 1999). The elongate and rounded shape of the body and the lack of body markings (Fig. 1) are characteristic of this species. Fin-ray and especially, gill-raker counts of 74 confirm the identification.

Slender tuna make seasonal migrations from subantarctic and transitional waters to subtropical waters, coupled to seasonal geographic shifts in biomass of epipelagic subantarctic zooplankton (Yatsu 1995). Slender tuna appear to spawn in subtropical waters and in the Peru Current, from approximately 20–30°S, October–December at sea-surface temperatures of 17–25°C (Watanabe et al. 1966; Yatsu 1995). Juveniles are principally encountered between 20 and 35°S at surface temperatures ranging from 19 to 24°C. With increasing size, they gradually move into higher latitudes where water temperatures are lower.

Distributions of three species of scombrids are concentrated in the Southern Ocean (Warashina and Hisada 1972; Collette and Nauen 1983; Collette et al. 2001): *A. fallai*; the butterfly mackerel, *Gasterochisma melampus* Richardson 1845; and the southern bluefin tuna, *Thunnus maccoyii* (Castelnau 1872). All species of the tribe Thunnini, except for *Allothunnus* Serventy 1948, have counter-current heat exchanger systems that allow them to retain body heat generated by muscular contractions thus keeping their bodies warmer than the surrounding sea temperature (Graham and Dickson 2000). *Gasterochisma* Richardson, 1845 has a layer of fat under the scales and has a brain heater that may be involved in keeping them warm. Recently Sepulveda et al. (2007) showed that *Allothunnus* also has a heater, extraocular muscles that differ from other tunas and serve as a heater organ that can raise cranial temperatures about 4.8°C above ambient sea temperature. Also, the small central vascular plexus of *Allothunnus* may be capable of conserving metabolic heat generated by continuous swimming to elevate red muscle temperatures (Graham and Dickson 2000) but body temperatures of *Allothunnus* are as yet unreported.

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Fig. 1 Photograph of *Allothunnus fallai* from off Tierra del Fuego (photograph by Fernando Repetto)

Table 1 Morphometric (in mm) and meristic characters for the specimen of *Allothunnus fallai* captured off Tierra del Fuego, Argentina

Fork length	784
Head length	204
Snout to first dorsal fin	235
Snout to second dorsal fin	494
Snout to ventral fin	223
Maximum body depth	200
Maximum body width	141
Ventral fin to vent	298
First dorsal fin base	247
Second dorsal fin base	59
Anal fin base	55
Pectoral fin length	113
Anal fin length	67
Eye diameter	32
Maxilla length	78
Snout to posterior border of eye	88
Meristics	
Dorsal-fin spines	17
Dorsal-fin rays	13
Dorsal finlets	7
Anal-fin rays	13
Anal finlets	7
Pectoral-fin rays	25
Gill rakers	74

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