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New records of Morid fishes (Teleostei: Gadiformes) from the southernmost tip of South America*

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SUMMARY: Three species of morid fishes were collected during the Expedition Antarktis XIII/4 of RV "Polarstern" at the southernmost tip of South America, on the slope east of Isla Nueva, Southern Chile (*ca*. 55ºS), *Antimora rostrata* (Günther, 1878), *Guttigadus kongi* (Markle and Meléndez, 1988) and *Lepidion ensiferus* (Günther, 1887). Representing new records for the above area, all of them were previoulsy recorded from the Chilean and Argentinean Patagonian region.

Key words: Moridae, Chile, Southern Ocean.

RESUMEN: NUEVOS REGISTROS DE PECES DE LA FAMILIA MORIDAE (TELEOSTEI: GADIFORMES) DEL EXTREMO SUR DE AMÉRICA DEL SUR. – Tres especies de peces de la Familia Moridae fueron recolectadas durante la Expedición Antarktis XIII/4 del B/I "Polarstern"en el talud continental, al este de Isla Nueva, Chile (*ca*. 55ºS), *Antimora rostrata* (Günther, 1878), *Guttigadus kongi* (Markle y Meléndez, 1988) y *Lepidion ensiferus* (Günther, 1887), representando una ampliación en la distribución sur de las especies mencionadas. Todas ellas fueron previamente registradas para la región austral de América del Sur.

Palabras clave: Moridae, Chile, Océano Austral.

INTRODUCTION

Morid fishes include about 100 species, but they are poorly known (Cohen *et al*., 1990). Within morids the genus *Antimora* was reviewed by Small (1981). A revision of *Lepidion* from the North Atlantic was made by Templeman (1970). Nakaya *et al*. (1980) reviewed *Lepidion* from the north-western Pacific, and Paulin (1984) indicate new records of *Lepidion* species from New Zealand. Only *Laemonema* was recently the subject of a phylogenetic study in which this genus was split in two genera: *Laemonema* and *Guttigadus* (Meléndez and Markle, 1997). Howes (1991) studied the biogeography of gadoid fishes and concluded that morid fishes have a wide vertical distribution, are mostly benthopelagic, and *Antimora* may reach 3000 m depth.

During the 1996 Expedition Antarktis XIII/4 of RV "Polarstern" cruise to the Antarctic, passing by the southernmost tip of South America, in May 1996 some specimens of the morid genera *Antimora*, *Guttigadus* and *Lepidion* were caught. These captures are commented in the present paper, as well as a short discussion on the ichthyogeographical significance of their presence on the eastern slope of Isla Nueva, southern Chile.

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MATERIAL AND METHODS

Fishes were collected in May 1996 by the Expedition Antarktis XIII/4-5 of RV "Polarstern" to the Antarctic, with an Agassiz trawl of 1.5 m width and 10mm meshes in the codend. All specimens were fixed in 10% formaldehyde. Measurements and counts follow Templeman (1970) and Paulin (1983). Specimens are deposited at the Instituto de Zoología de la Universidad Austral de Chile (IZUA), the Museo Nacional de Historia Natural, Chile (MNHNC) and the Instituto de la Patagonia, Universidad de Magallanes, Chile. Abbreviation used: Sl = standard length.

RESULTS

Antimora rostrata (Günther, 1878): MNHNC P. 7086, 1 specimen, 119.8 mm Sl. East of Isla Nueva, southern Chile, 55º28.8'S, 66º03.4'W, 1005–1070 m depth. 17 May 1996. RV "Polarstern" sta. 40/111-AGT. Measurements and counts are presented in Table 1.

Guttigadus kongi (Markle and Meléndez, 1988): IZUA-PM 2044. 2 specimens, 134.6-164.1 mm Sl. MNHNC P: 7087, 134.0 mm Sl, and Instituto de la Patagonia, uncatalogued, 134.6 mm Sl,. East of Isla Nueva, southern Chile, 55º27.4'S, 66º06.3'W, 712-780 m depth. 18 May 1996. RV "Polarstern" sta. 40/115-AGT. Measurements and counts are presented in Table 1.

Lepidion ensiferus (Günther, 1887): MNHNC P 7088. 1 specimen, 233 mm Sl. East of Isla Nueva, southern Chile, 55º26.3'S, 66º13.5'W, 107 m depth. 16 May 1996. RV "Polarstern" sta. 40/110-AGT. Measurements and counts are presented in Table 1.

TABLE 1. – Measurements (in % Sl) and meristic counts for *Antimora rostrata*, *Guttigadus kongi* and *Lepidion ensiferus* from the East of Isla Nueva, southern Chile.

	A. rostrata	*G. kongi*	*L. ensiferus*
Standard length (mm)	119.8	134.6-164.1	233
Measurements (in % of Sl)			
Head length	25.3	25.5-27.9	20.6
Snout length	8.9	8.1-8.9	7.0
Interorbital width	6.4	10.3-11.8	4.2
Orbit diameter	8.1	7.1-9.2	7.5
Upper jaw length	10.3	12.3-13.5	8.4
Predorsal length	26.5	28.4-31.7	22.8
Preanal length	55.3	39.9-42.6	43.9
Caudal peduncle height	3.5	2.2-2.6	2.1
Barbel length	2.4	0.7-1.9	4.5
Meristic counts			
First dorsal fin	4	5-6	6
Second dorsal fin	52	67-75	53
Anal fin	41	65-66	42
Pectoral fin	20	23-25	23
Pelvic fin	6	5	7
Gill rakers	11+4	15-16 + 6-7	12 + 5
Gill filaments on first arch	84	-	-

DISCUSSION

All specimens fit with available descriptions (*fide* Günther, 1887; Small, 1981; Meléndez and Markle, 1997).

These fishes were caught in an area where the sea temperature showed a homogeneous distribution within the first 50 m, between 7 and 8ºC. A thermocline was found between 50 and 100 m. Below this layer, the temperature fluctuated from 5 to 6ºC in the upper part to 2 and 3ºC in the deeper part. *Lepidion ensiferus* was found living in the lower layer of the thermocline with temperatures around 5ºC; Nakamura (1986) indicated that in the Argentinean Patagonian region where *L. ensiferus* was caught the water temperatures from 200 to 1000 m depth were 5 to 4ºC. The capture depths for *G. kongi* and *A. rostrata* were similar to those found for other specimens elsewhere. *A. rostrata* seems to live at greater depth.

The records described here were not surprising because of the wide distribution of *A. rostrata* and *G. kongi* in the Southern Ocean, however these species were never caught at the southernmost tip of South America before. *Lepidion ensiferus* was restricted to a narrow belt off Chile at 18º51'S to 19º03'S (Kong and Meléndez, 1991), and was known from the continental slope off Argentina (Cohen *et al.*, 1990). Kong and Meléndez (1991) also reported another specimen of *Lepidion* from Chile (32º13'S), but they adscribed it to a probable *Lepidion microcephalus* Cowper,1956. The new captures tend to show more continuity in the distribution of these species, which seem to form part of a belt with particular taxonomic composition in which gadiforms and zoarcids, among other groups, are important components.

If a visual comparison among species is needed, we recommend Cohen *et al*. (1990) for *Lepidion ensiferus* and *Antimora rostrata* and Chiu *et al*. (1990) for *Guttigadus kongi*.

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