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Muraenid fishes (Anguilliformes: Muraenidae) of the Colombian Caribbean, with notes on *Channomuraena vittata* and *Muraena robusta*

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Resumen: Del Caribe colombiano se conocen 14 especies de murénidos; se presenta una discusión de su presencia en seis regiones colombianas. Se registran por vez primera dos especies raras para la región de Santa Marta: *Channomuraena vittata*, que era desconocida de aguas continentales, y *Muraena robusta*, que sólo tenía una cita para el Caribe.

Key words: eels, geographic distribution, Colombia.

Eels of the family Muraenidae are conspicuous elements of the reef fish communities of tropical seas, but they live also on muddy bottoms (Cervigón 1980). For more than ten years we have studied Colombian Caribbean reef fishes, and felt surprised by the high number of moray species. In this note we discuss the presence of two rare forms near Santa Marta and the abundance of muraenids in Colombian Caribbean water.

Most fishes were observed and collected diving with SCUBA and using small amounts of rotenone solution; additional specimens were obtained with hook and line and traps. Material of all the species presented is deposited at the fish collection of the Instituto de Investigaciones Marinas de Punta de Betín (INVEMAR-P), Santa Marta, Colombia. Measurements were taken in fresh following Hubbs and Lagler (1958).

Table 1 shows the list of moray species found in Colombian Caribbean waters, and relates it with six relatively well known localities (Fig. 1). Several interesting aspects can be discussed after checking it.

The three species of *Lycodontis* are the most widely distributed; they are large, aggressive forms, which apparently dwell in almost any kind of shallow marine reef. They occur even in the Guajiran bay of Portete, where reef fishes are strongly limited due to high turbidity and

surge (Garzón-Ferreira 1989). In that bay the only other moray found was *G. ocellatus*, a species normally collected trawling over soft bottoms; this medium-sized eel also appears in Santa Marta and Urabá, regions highly influenced by continental sediments.

The two species of *Enchelycore*, *E. catenata* and *M. miliaris* have been collected or observed in at least four of the discussed regions; *E. carychroa*, the smallest species of this group, is abundant and frequent in rotenone collections in coral formations, but it is rarely seen. The other three forms are medium-sized morays, that seem to be absent only from very turbid areas.

Three of the other species are dwarf morays collected mainly in the nests of the sand tilefish *Malacanthus plumieri*; *G. hubbsi* and *M. acuta* are in fact known in the Colombian Caribbean only from those habitats at the Santa Marta region (Acero *et al.* 1984, Acero and Garzón *in press*). *Uropterygius diopus* has been seen also at Providencia and Islas del Rosario, areas characterized by well developed coral reefs.

The last three morays are large species which have been collected only during fishing operations; *G. conspersus* and *M. robusta* are known to us only from specimens caught in deep water

TABLE I

Fishes of the family Muraenidae known from several explored regions of the Colombian Caribbean: Bahía de Portete (BP), Santa Marta and Parque Nacional Tayrona (SM), Islas del Rosario (IR), Islas de San Bernardo (SB), Urabá Chocoano (UR) and Isla de Providencia (IP), Collected (C) or visually identified in dives (V).

Species	Region	BP	SM	IR	SB	UR	IP
<i>Channomuraena vittata</i> (Richardson)		–	C	–	–	–	–
<i>Echidna catenata</i> (Bloch)		–	C	C	C	C	V
<i>Enchelycore carychroa</i> Böhlke & Böhlke		–	C	C	C	C	C
<i>E. nigricans</i> (Bonnaterre)		–	C	C	C	C	C
<i>Gymnothorax conspersus</i> Poey		–	C	–	–	–	–
<i>G. hubbsi</i> Böhlke & Böhlke		–	C	–	–	–	–
<i>G. ocellatus</i> Agassiz		C	C	–	–	C	–
<i>Lycodontis funebris</i> (Ranzani)		C	C	V	V	C	V
<i>L. moringa</i> (Cuvier)		V	C	C	C	C	C
<i>L. vicinus</i> (Castelnau)		C	C	C	C	C	V
<i>Monopenchelys acuta</i> (Parr)		–	C	–	–	–	–
<i>Muraena miliaris</i> (Kaup)		–	C	C	–	C	C
<i>M. robusta</i> Osorio		–	C	–	–	–	–
<i>Uropterygius diopus</i> Böhlke		–	C	V	–	–	C

traps in the Santa Marta region. *Channomuraena vittata* is a rare form, discussed below.

In conclusion, fourteen muraenid species are known from the Colombian Caribbean, all of them present in the Santa Marta region. In about 100 Km² this region holds a mixture of environments (soft bottoms and coral formations), and a very narrow continental shelf. It seems improbable that any other Caribbean region may shelter a marine fauna as heterogeneous as that of Santa Marta.

Channomuraena vittata (Richardson) (Fig. 2)

Ichthyophis vittatus Richardson, Voy. Sulphur, Fishes: 114, 1844 (locality uncertain).

C. vittata, Böhlke (1978); Cervigón (1980): 163; Lubbock (1980): 284; Böhlke (1981); Robins *et al.* (1986): 52.

The 4th of August, 1981, while SCUBA diving at Ensenada de Guachaquita (11°21'N, 74°03'W), Parque Nacional Natural Tayrona (Santa Marta), the first author observed a

large specimen of this unmistakable species. The fish was seen for only few seconds before it disappeared in a crevice at 15 m depth, near the lower edge of a fringing reef; the dominant corals present were *Montastrea cavernosa*, *M. annularis* and *Diploria* spp. The 20th of September, 1988, an individual was fished at night in 24 m depth at Arrecifes, about 10 km east of Guachaquita; the bottom at this sector is mainly rocky. The fish was preserved (INVEMAR-P 1551) and its morphometric characteristics are presented in Table 2; it is a female in quiescent stage of maturation (stage II). The species is easily separated by its distinctive coloration, large size, projecting lower jaw, small teeth, and reduced dorsal and anal fins, confined to the posterior part of body. Head coloration of our specimen is reversed, i.e. snout is dark in ours, clear in the literature; therefore it appears that the Colombian individual is chocolate brown with yellowish brown bands.

The species is known from oceanic islands at both sides of the tropical Atlantic and from Hawaii; in the western Atlantic it has been reported from Bermuda, Bahamas and the Antillean ring. This is the first report of this moray from a continental shelf. The Santa Marta region has relatively well developed reef formations, but water conditions are not insular since strong sedimentation and a seasonal upwelling appear as important environmental factors (Acero and

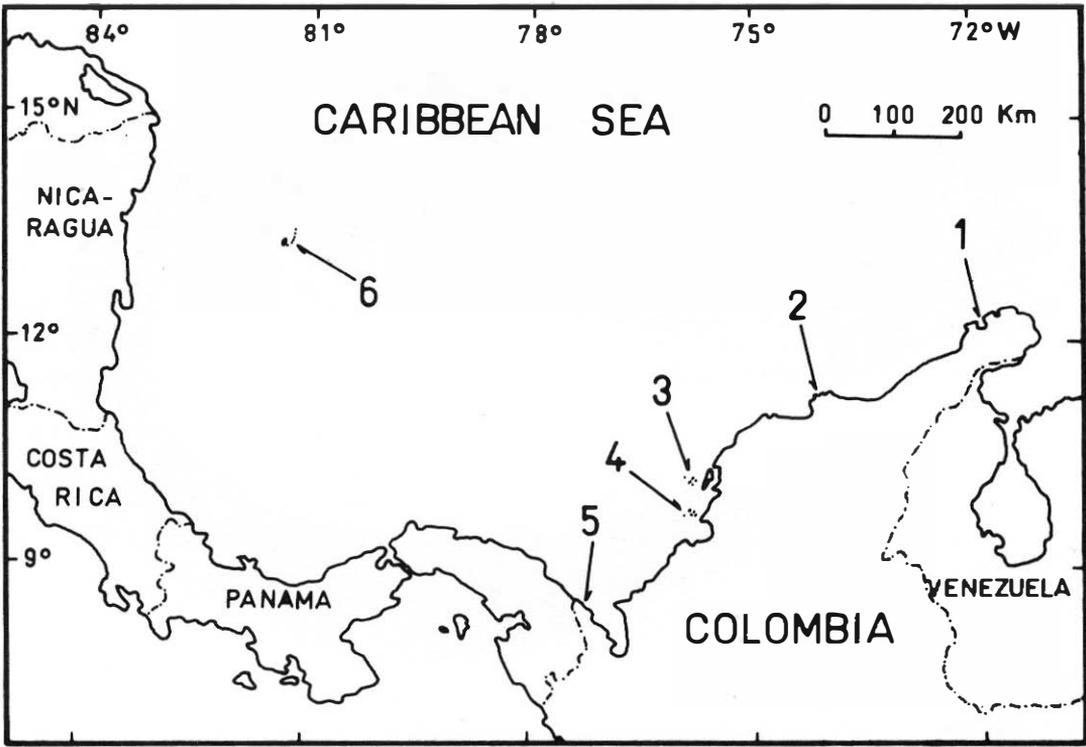


Fig. 1. Colombian Caribbean areas of collection and observation of muraenid fishes: Bahía de Portete (1), Santa Marta and Parque Nacional Tayrona (2), Islas del Rosario (3), Islas de San Bernardo (4), Urabá chochoano (5) and Isla de Providencia (6).

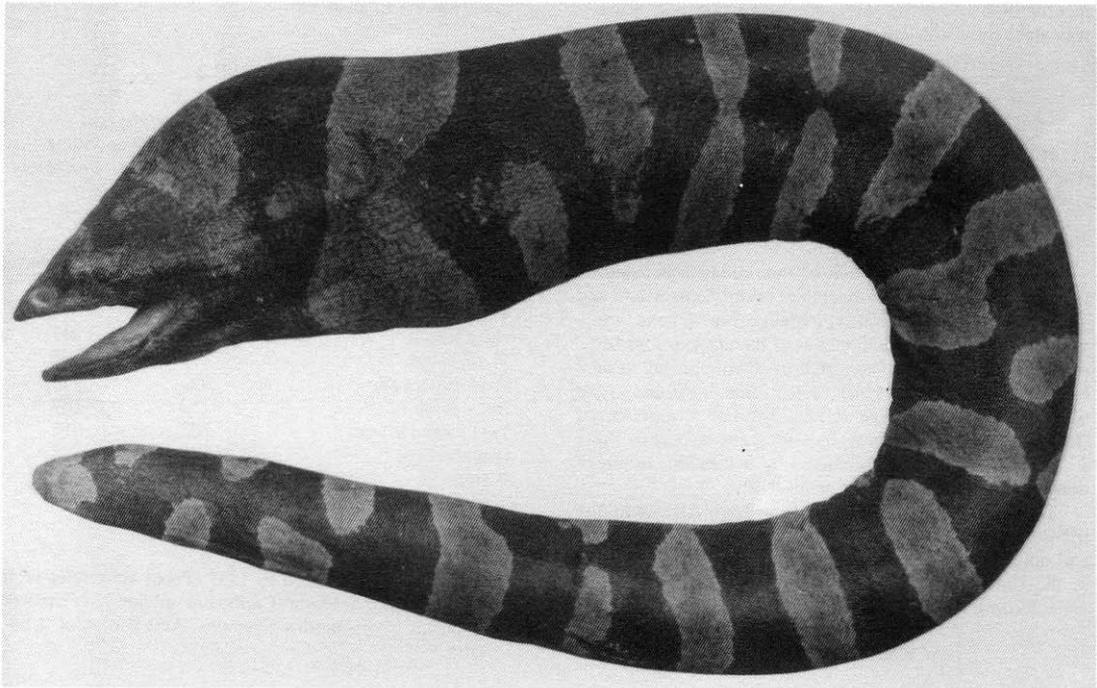


Fig. 2. Female *Channomuraena vittata* (1052 mm total length) from the Caribbean coast of Colombia.

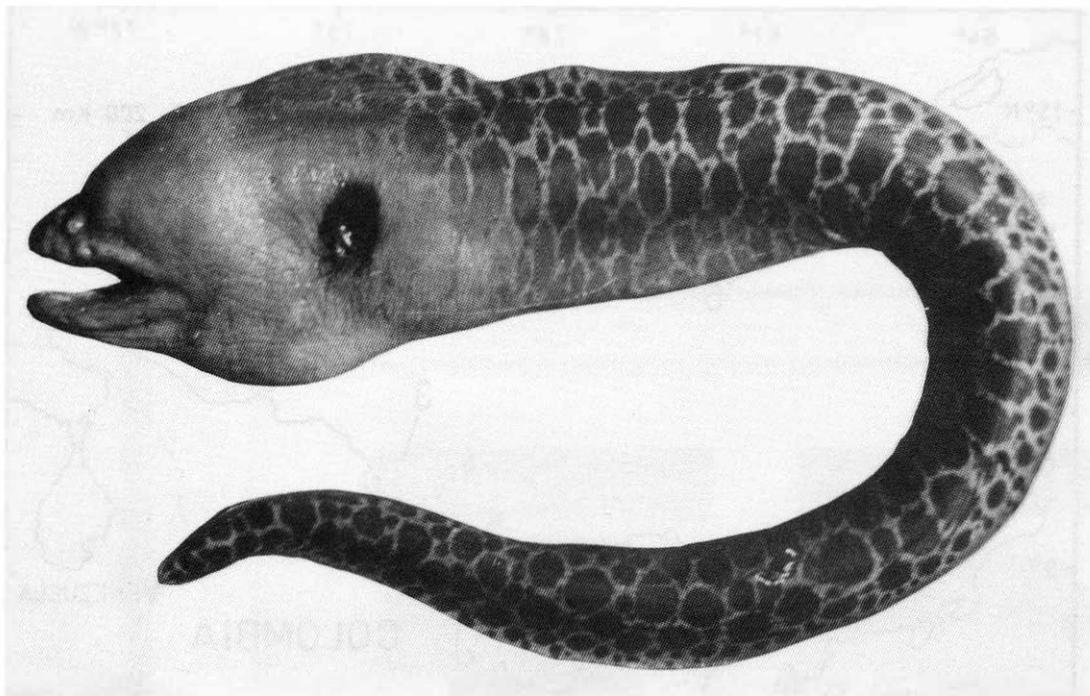


Fig. 3. Specimen of *Muraena robusta* (1270 mm total length) collected in the Colombian Caribbean.

Garzón 1987). These facts increase the importance of the records of *C. vittata* in the Colombian Caribbean, since it was apparently restricted to insular waters.

Muraena robusta Osorio
(Fig. 3)

M. robusta Osorio, Mem. Mus. Bocage, 1: 75, 1909 (Cape Verde); Böhlke and Ross (1981): 123–125; Böhlke (1981).

Gymnothorax galetae Rubinoff (1966): 1–4.

In April 1984 a specimen of this moray was captured in a fish trap at about 70 m depth between Santa Marta and Taganga bays. In fresh it had an orange-brown head, grey-violaceous body with the blotches of the anterior four fifths orange and those of the last fifth brown; gill opening located in the ventral third of a black blotch, orange iris and inside of mouth to larynx orange yellow. The fish was preserved (INVEMAR-P 1552) and its measurements appear in Table 2. The species is easily separated by coloration, origin of dorsal fin and tubular posterior nostrils.

The species seems to be mainly western African in distribution, but it was reported once from Panamá as a juvenile and apparently it is not rare in the southern Atlantic coast of the United States. This individual is the first adult of *M. robusta* recorded from the Caribbean.

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TABLE 2

Morphometric (mm) and weight (gr)
data of specimens of *Channomuraena vittata*
and *Muraena robusta* from the Colombian Caribbean.

	<i>C. vittata</i>	<i>M. robusta</i>
Total length	1052	1270
Head length	167	207
Snout length	17	26
Predorsal length	923	140
Body depth	153	187
Tip of snout to anus	703	612
Length of eye	9	8
Weight	2220	4030

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