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Allometric growth of *Oligoplites palometa* (Perciformes: Carangidae) in Colombia

Arturo Acero P.[1], Guillermo Duque[2] and Adriana Santos-Martínez[3]

[1] Universidad Nacional de Colombia (Instituto de CienciasNaturales), Apartado 1016 (INVEMAR), Santa Marta, Colombia.

[2] Universidad Nacional de Colombia/Instituto de Investigaciones Marinas y Costeras (INVEMAR), Apartado 1016, Santa Marta, Colombia.

[3] Instituto de Investigaciones Marinas y Costeras (INVEMAR), Apartado 1016, Santa Marta, Colombia.

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Resumen: Veinte juveniles de *Oligoplites palometa* (menores de 50 mm) fueron recolectados entre las raíces de mangle rojo de la Ciénaga Grande de Santa Marta (Caribe colombiano) mayoritariamente en diciembre. Se presenta evidencia del crecimiento alométrico en la especie de la altura del cuerpo contra la longitud horquilla.

Key words: Leatherjacks, carangids, coastal lagoons, allometric growth, mangrove areas.

The Maracaibo leatherjack, *Oligoplites palometa* (Cuvier), is a carangid endemic to the southern Caribbean and Brasil which grows to a little less than 50 cm and 1 kg (Cervigón 1993). Smith-Vaniz and Staiger (1973), who reviewed the genus, did not examine specimens of *O. palometa* smaller than 92 mm fork length (FL). As a matter of fact, only Cervigón (1993) gave information on small individuals of this species, since he examined two fishes 56 and 70 mm standard length. From the Ciénaga Grande de Santa Marta (CGSM), southern Caribbean (10° 45'- 11° 00' W, 74° 15-30' W), the largest Colombian coastal lagoon, two species of the genus have been reported: *O. saurus*, the most abundant, and *O. palometa* (Santos-Martínez and Acero 1991). During a project on the biodiversity of the CGSM, 20 specimens 9.5-50 mm FL of the Maracaibo leatherjacket were collected with rotenone between the roots of the red mangrove, *Rhizophora mangle*. They were measured following the methods of Smith-Vaniz and Staiger (1973); measurements of specimens smaller than 33.2 mm were made using an ocular micrometer attached to a microscope. Unless otherwise stated all measurements refer to FL. The material is deposited in the fish collection of the Instituto de Investigaciones Marinas y Costeras (INVEMAR-P), Santa Marta, Colombia.

Ninety-five percent of the specimens were collected between the 4th and the 16th of December, 1992, and only one was got on the 29th of July, 1992. Duque et al. (1995) found a main reproductive peak for *O. palometa* in the CGSM between October and November, which is coherent with the collection of recruits. The scarcity of Maracaibo leatherjack juveniles in collections may be related to their apparent recruitment between the mangrove roots. Our findings indicate that *O. palometa* dwell in that habitat, fairly undersampled in the southern Caribbean.

Smith-Vaniz and Staiger (1973) data on the relationships between body depth (BD) and FL, and upper jaw length (UJL) and head length (HL) in *O. palometa* indicate that they tend to increase isometrically with growth. Our own data (Table 1) show that UJL/HL does seem to do so, but that the case of BD/FL is apparently different. Fishes 9.5-26.6 mm have BD between 30.8 and 38.5 %, but those 32.5-50.0 mm

TABLE 1

Upper jaw length, UJL (in percentage of head length) and body depth, BD (in percentage of fork length) data of 20 juvenile specimens of Oligoplites palometa *from the southern Caribbean*

FL	N	UJL	BD
9.5-26.6	14	40.0-63.6 (49.8)	30.8-38.5 (33.6)
32.5-50.0	6	44.0-62.5 (53.2)	28.6-31.2 (30.1)

have BD of 28.6-31.2 %; Cervigón (1993) information on two specimens approximately 62 and 78 mm also show BD higher than 31 %, but Smith-Vaniz and Staiger (1973) specimens larger than 92 mm have BD smaller than 31 % (Fig. 1). Therefore, it seems that the Maracaibo leatherjack changes its rate of BD increase in

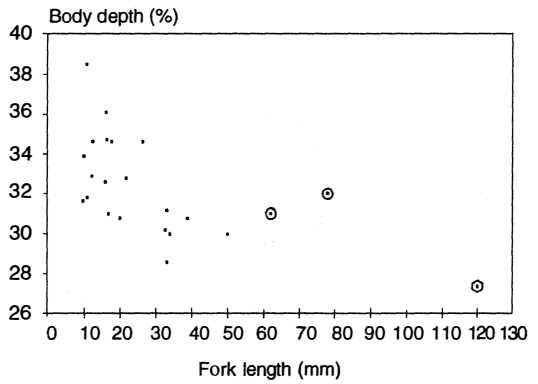

Fig. 1. Body depth data (in percentage of FL) of 20 juvenile specimens of *Oligoplites palometa* 9.5-50 mm FL from the Colombian Caribbean. The points enclosed by a circle are two additional Venezuelan specimens taken from Cervigón (1993); that enclosed by an hexagon is taken from Smith-Vaniz and Staiger (1973) and is the average of 12 specimens 92-147 mm FL.

relation to body length at least twice during development: specimens 26.6 mm or smaller have an average BD of 33.6 %, those larger than that but smaller than 147 mm reduce their rate of BD growth [our data: average BD 30.1 %; Smith-Vaniz and Staiger (1973) data: average BD 27.3 %], but those larger than 160 mm increase again their rate of BD growth (average BD 29.2 %). Since this species begins to mature at about 160 mm (Duque *et al.* 1995), it is possible that specimens of that size or larger tend to have deeper bodies than those between 92-147 mm in order to accomodate their ripe gonads.

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