Aplochiton zebra (SALMONIFORMES, APLOCHITONIDAE) IN THE ARGENTINIAN PATAGONIA

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ABSTRACT

Possible spawning places of *Aplochiton zebra* in Argentina and new data on allometry of characters used in the identification of the species are reported.

Key-words: spawning, allometry, Argentinian Patagonia, A. zebra, Salmoniformes.

RESUMO

Aplochiton zebra (Salmoniformes, Aplochitonidae) na Patagônia Argentina

São relatados possíveis lugares de desova de *Aplochiton zebra* na Patagônia Argentina, bem como novos dados de alometria para caracteres empregados na identificação das espécies.

Palavras-chave: alometria, Patagônia Argentina, A. zebra, Salmoniformes.

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INTRODUCTION

Aplochiton zebra Jenyns 1842, commonly called "peladilla",is part of the endemic ichthyofauna of the Austral Subregion, Patagonian Province (Ringuelet, 1975; Arratia,1983). The biology of this fish is poorly known, and its morphological and morphometric characters are highly variable. Published records for Argentina are few and old; being Jenyns (1842) who first collected *A. zebra* in Islas Malvinas. Later on, Günther (1864) recorded *A. zebra* from Islas Malvinas. Eigenmann ***Eigenmann (1891) also recorded this species from Tierra del Fuego and López (1944) recorded it from Lago Puelo (province of Chubut), while Pozzi (1945) listed *A. zebra* for the basin of the Rio Negro, Limay and Neuquén; as well as in Tierra del Fuego and Islas Malvinas. The same year, González Regalado (1945) stated that the presence of "peladillas" had been verified only in Lago Lácar (National Park Lanin) and Puelo (National Park Los Alerces). Ringuelet *et al.* (1967) described again the species of the genus *Aplochiton*, and provided keys and distribution for *A. zebra* in Tierra del Fuego and Islas Malvinas. New geographic localities of *A.zebra* from El Hoyo, El Bolsón, Lago Epuyén, Lago Puelo (province of Chubut) and Rio Neuquén were stated by Piacentino (1999). In the present paper, some observations on allometry and possible spawning places are recorded.The specimens are deposited in the ichthyological collection of the Museo Argentino de Ciencias Naturales Bernardino Rivadavia, Buenos Aires (MACN).

MATERIAL AND METHODS

Identifications were based on Jenyns (1842) and Mc Dowall (1988).Measurement follows Hubbs & Lagler (1957),and were taken point to point, using a fixed-point pair, (estimated error of 1 mm). Examined material: *A zebra*: MACN 732, 2 ex., Puerto Blest, Lago Nahuel Huapi, 09-Apr-1930. MACN 1214, 2 ex., Rio Neuquén, 18-Jan-1933. MACN 4975, 1 ex., El Hoyo, province of Chubut, 26-Nov-1962. MACN 6538, 1 ex., El Bolsón province of Chubut, 1972. MACN 8015, 2 ex., Lago Epuyén, province of Chubut, 22-Mar-1984. MACN 8016, 21 ex. Lago Puelo province of Chubut, 18-Mar-1984.

RESULTS

Morphometrics

In *Aplochiton zebra* the percentage ratio of the snout/head length (Fig. 1a) is positively allometric for fish 40-220mm total length;these percentages vary from 17% to 33% of HL. The ratio of maxillary length (upper jaw) and head length (Fig.1b)is isometric during growth, being 25 %- 37 % of head length for fish 40- 220mm of total length.The ratio of mandible /head length is positively allometric, being 15 % - 40 % of head length (Fig.1c). The percentage ratio of eye diameter/head length (Fig.1d) is 19 % - 31 % of head length at small sizes (LT= 40-50 mm).

DISCUSSION

Percentage ratios for the characters: maxillary length, mandible length and snout length, reflect ontogenetic variation occurring in which is the relative size of the mouth a character used for identification of *A. zebra* and *A. taeniatus*. In *A. zebra* the posterior corner of the mouth does not extend further back than the anterior margin of the eye (McDowall & Nakaya, 1988), while in *A.taeniatus* it extends behind the anterior margin of the eye.

In *A. zebra* the maxillary and mandible length differ in growth pattern, being isometric for maxillary length and positively allometric for mandible length, although the corner of the mandible does not reach further back than the eye margin which is reflected on the described variation of ratios.

Eye diameter (fig.1d), although apparently useful for species identification, shows a negatively allometric growth in *A. zebra;* therefore, it cannot be used in the same way for different stages of development.

For *A. taeniatus,* McDowall (1971) stated that the snout is less acute in small specimens than in large ones, and that snout length/head length ratio is larger. The maxillary length/head length ratio in *A. zebra* differs from *A. taeniatus* (McDowall, 1971) and is positively allometric. In *A.taeniatus,* as observed by McDowall (1971), the mandible length/ head length is also positively allometric.

However, unlike what occurs in *A. zebra*, McDowall (1971) shows the same growth pattern for maxillary and mandible length [for *A. taeniatus*]. The mandible of small specimens reaches the anterior margin of the eye, and extends further back in larger specimens. McDowall finds that eye size in *A. zebra* decreases very little with age, while in *A. taeniatus* marked growth changes were observed. Because of allometry the above characters cannot be used as diagnostic between these species in the same fashion at different growth stages.

Available literature shows the occasional captures and scarce number of specimens [Lopez 1944, Gonzales Regalado 1945, Ringuelet et al 1967], which are insufficient to delucidate the controversial *Aplochiton* species migration. The present paper shows that the genus *Aplochiton* is represented by *A. zebra* in at least four patagonian provinces of Argentina, and by *A. taeniatus* in Tierra del Fuego (Chile). A single specimen of *A. zebra* collected in May 1984, with abundant intestinal fat, in Lago Epuyen, along with 17 juveniles (Total length, 4-5cm) of *A. zebra* collected in Lago Puelo and also specimens taken in El Bolsón and El hoyo; lead to the hypothesis that Lago Puelo is a possible spawning area for fishes migrating from the Pacific , considering that lakes are interconnected and drain into the Pacific Ocean through the Andes chain. Other specimen of *A. zebra* had been found in Lago Lacar by Gonzalez Regalado (1945), although he identified as

Haplochiton taeniatus (= *A. taeniatus*), as it may be seen in his drawing to be *A. zebra*. On the other hand in May 1930 two specimens with ovocites were found in Puerto.Blest, Nahuel Huapi (province of Rio Negro). This lake clearly drains into the Atlantic ocean and is considered another possible spawning area. In January, 1933 in Rio Neuquén two specimens with mature ovocites were colleted. The Rio Neuquén, drains into the Atlantic; and the occurrence of *A. zebra* suggests the hypothesis that this species came from the Atlantic to spawn in fresh water. However, is also known the existence of landlocked populations of *Aplochiton* as Mcdowall (ms) states; when these fish are in the continental territory. Up to now, only the specimens of *A. zebra* have been found in the Argentinian continental patagonia (Piacentino,1999).

ACKNOWLEDGEMENTS

The author thanks Dra. B. Cousseau for correcting the manuscript, Lic. Marinone, Dr. Braga, Mr.Chiaramonte for their help, Dra. Oliva, Dra. Wais for the English version of the manuscript and to the Museo Argentino de Ciencias Naturales, where the present study was performed.

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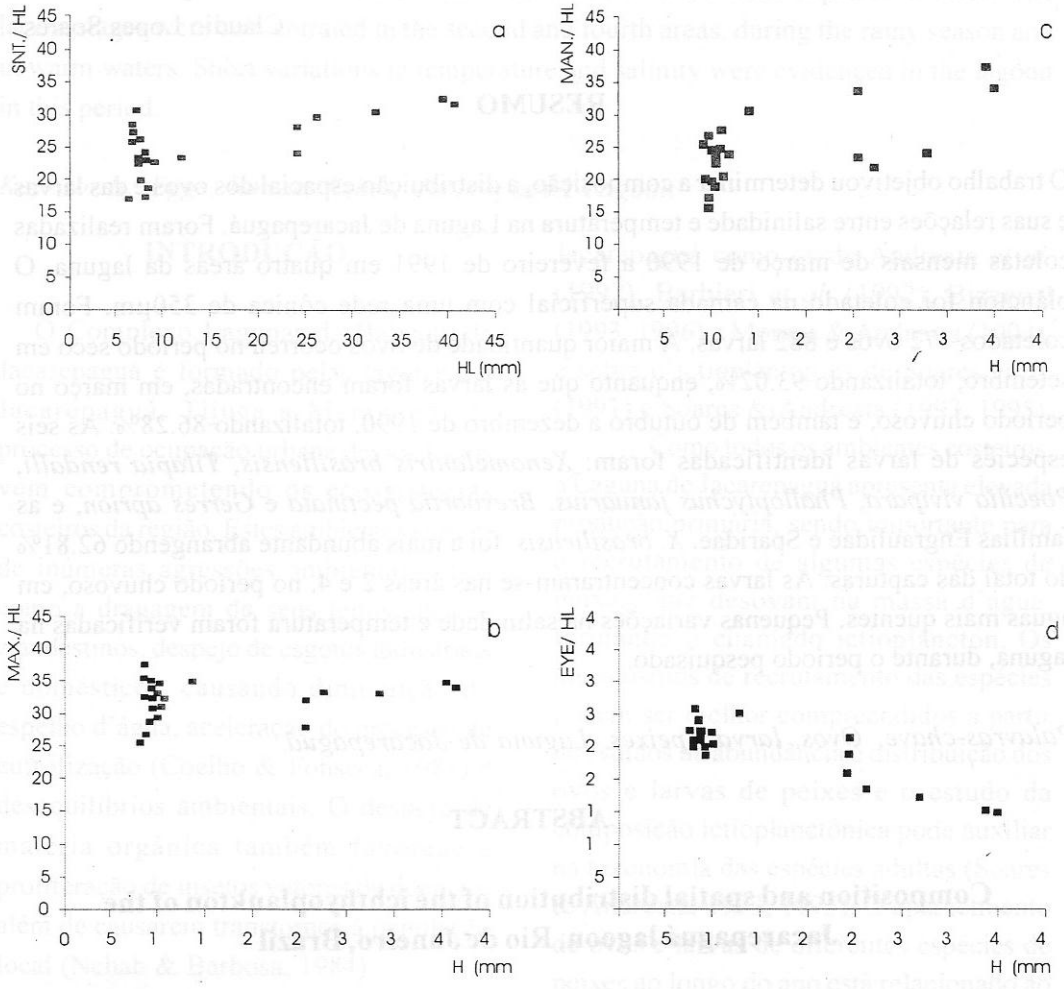

Figure 1. Ontogenetic changes of the percent ratios between snout, eye, maxilla, mandible and head length. a : SNT % vs HL. b : MAX % vs HL. c : MAN % vs HL d: EYE % vs HL. SNT= snout, HL= head length.