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# Semblanzas Ictiológicas
## Alejandra Vanina Volpedo

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y
Justina Ponte Gómez

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# Semblanzas Ictiológicas

# Alejandra Vanina Volpedo

**Hugo L. López y Justina Ponte Gómez**

**ProBiota**
**División Zoología Vertebrados**
**Museo de La Plata**
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**2013**

**Imagen**

Alejandra Volpedo muestreando en la Bahía de San Blas

*El tiempo acaso no exista. Es posible que no pase y sólo pasemos nosotros.*

**Tulio Carella**

*Cinco minutos bastan para soñar toda una vida, así de relativo es el tiempo.*
**Mario Benedetti**

## Semblanzas Ictiológicas

A través de esta serie intentaremos conocer diferentes facetas personales de los integrantes de nuestra "comunidad".

El cuestionario, además de su principal objetivo, con sus respuestas quizás nos ayude a encontrar entre nosotros puntos en común que vayan más allá de nuestros temas de trabajo y sea un aporte a futuros estudios históricos.

Esperamos que esta iniciativa pueda ser otro nexo entre los ictiólogos de la región, ya que consideramos que el resultado general trascendería nuestras fronteras.

***Hugo L. López***

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## Cuestionario

-**Un libro**: Cien años de soledad de Gabriel Garcia Márquez
-**Una película**: Los puentes de Madison de Clint Eastwood
-**Un tema musical**: “Amo tanto, la vida” de Ismael Serrano/Música celta en general
-**Un artista**: Joaquín Sorolla /Paul Gauguin
-**Un deporte**: natación/buceo
-**Un color**: azul/verde
-**Una comida**: arroz con leche
-**Un animal**: albatros
-**Una palabra**: utopia
-**Un número**: 7
-**Una imagen**: ver a mi hijo dormido / bucear en Grand Case (Saint Marteen)
-**Un lugar**: Cabo de Finisterre (España)
-**Una estación del año**: primavera
-**Un nombre**: Jacques I. Cousteau
-**Un hombre**: Leonardo Da Vinci
-**Una mujer**: Teresa de Calcuta
-**Un personaje de ficción**: Vieja Kush (del Libro la Saga de los confines de Liliana Bodoc)
-**Un superhéroe**: (no tengo)

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Short communication

# Ecomorphological patterns of the sagitta in fish on the continental shelf off Argentine

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**Abstract**

Morphology and morphometry of the sagittae otolith were studied in fish associated with different substrates. The shape, margins and rostrum of three groups of otoliths from several species were analyzed: group 1 (fish associated with soft substrates, $N = 10$ species), group 2 (fish associated with hard substrates, $N = 10$ species) and group 3 (pelagic fish, not associated with the bottom, $N = 6$ species). $E$ and $R$ indexes were calculated for each species. The value of $E$ = maximum width of the sagitta (WO)/maximum length of the sagitta (LO)%, expresses the relative tendency in the shape otolith (from circular to elongate). The value of $R$ = length of the rostrum (LR)/LO%, expresses the percentage in the total length of the otolith that corresponds to the rostrum. The sagittae of group 1 were circular or polygonal with rounded borders. The rostrum can be absent or poorly developed. The sagittae shape of group 2 was elongated, with ornamented borders and a rostrum. The sagittae of group 3 possessed a prominent rostrum, a deep V-shaped cisure and ornamented borders. Statistical analysis showed no significant differences in the $E$ index of groups 1 and 2, while $R$ values of the three groups were significantly different. These results were compared with 80 other species, belonging to 12 families, from the publisher literature. $E$ and $R$ values could be used to characterize the sagittae of the marine fish and could be considered a useful tool for fish ecology studies.



*Keywords:* Otolith; Ecomorphology; Morphometry; Ecotypes

## 1. Introduction

Several authors recognized different ecomorphologic types of fishes from the Argentine shelf (Ringuelet and Aramburu, 1960; López, 1963; Cervigón, 1972; Menni, 1983). These authors assigned each species to a certain ecomorphologic category, based on its external morphology, diet and distribution area.

Fish inhabit different depths of the water column, according to the environmental factors (Menni, 1983). Fish that live associated with soft (sand and mud) or hard (rocks and rock shells) substrates have different morphology and physiological specializations of the internal and external structures (Todd, 1973). Species of soft substrates are the most dependent of the substrate (Menni, 1983; Cousseau and Perrota, 2000), while those of the hard substrates are more independent of the substrate and are usually active swimmers (Lindsey, 1978). Pelagic fish usually have a high growth and may have a high swimming speed (Menni, 1983; Lindsey, 1978). Sagittae permit the analysis of

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# White croaker (*Micropogonias furnieri*) paleodistribution in the Southwestern Atlantic Ocean. An archaeological perspective

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ABSTRACT

This paper presents strong and well dated evidence of the presence of *Micropogonias furnieri* in areas that are currently out of distribution. This evidence comes from hunter–gatherer archaeological sites along the north Patagonian coast (Argentina). Our results allow us to determine a change in the spatial distribution of *M. furnieri* during the Holocene, which are possibly linked to biogeographic changes in a set of species at regional level. Finally we discuss the potential for archaeological evidence in the service of spatial and biogeographic studies of different species.



## 1. Introduction and research problem

Zooarchaeological research provides us a perspective to study the biogeographic dynamics of different species over a long time scale (Grayson, 2000). It constitutes a compromise between the paleontological record (of great time depth) and current biology. We can determine changes in the behavior, dispersal and distribution patterns of a species that are not currently observable (Lyman and Cannon, 2004; Lyman, 2011). Thus, it is possible to study the distribution of any species in terms of process and not as the result of a particular or isolated event. However, we have to consider that the archaeological record only represents the selection that human groups made of past biotic communities (Daly, 1969; Lyman, 1994, 1996; Klein and Cruz-Uribe, 1984). This "cultural filter" sometimes fails to reflect the past biotic variability, yet this does not imply the rejection of archaeological faunal data in modern resource management research (See Peacock et al., 2012). This paper presents an extensive analysis of the spatial and temporal distribution of the white croaker (*Micropogonias furnieri*) during the mid and late Holocene in the northern Patagonian coast, based on archaeological assemblages. On this basis, we identify patterns of distribution that do not respond to specific local events or to individual or community behaviors (Beitz et al., 2009; Wolverton et al., 2011; Zangrando and Martinoli, 2011). We evaluate multiple factors involved in the formation processes of the archaeological record, their preservation potential, and methodological issues associated with sample recovery, identification and quantification (Behrensmeyer et al., 2000; Reitz, 2004; Lyman, 2010).

Initial results of archaeological research carried on in the San Matías Gulf Coast (Río Negro Province, Argentina) present evidence of intensive and systematic consumption of fish from the middle Holocene (ca 6000 years BP) to the late Holocene (ca 400 years BP) (Favier Dubois et al., 2009; Scartascini et al., 2009; Scartascini, 2010). The diversity of fish remains recovered reflects the typical species of the Patagonian coast: argentine sea bass (*Acanthistius brasilianus*), patagonian blennie (*Eleginops maclovinus*), and South American silver porgy (*Diplodus argenteus*) (Scartascini, 2010). However, archaeofaunal studies have shown a marked predominance of white croaker (*M. furnieri*—diagnosed mainly by otolith sagitta) over the other taxa (Favier Dubois and Scartascini, 2012; Scartascini et al., 2009; Scartascini, 2010). Despite this, *M. furnieri* is not currently present in the area. The southern limit of its current distribution is along the Buenos Aires coast (San Blas Bay 40° 33' 00" S, 62° 14' 00" W), about 200 km northwards (Fig. 1).

The aim of this work is to determine temporal changes in the distribution of *Micropogonias furnieri* based on the

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Campaña de Muestreo Chasicó, 2011
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