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**First record of a stranded specimen of *Masturus lanceolatus* (Molidae) from the central coast of Peru.**

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**Abstract.** Molids are a widely distributed family, but they are rarely encountered and their distribution and abundance have poorly been documented. *Masturus lanceolatus* (Liénard, 1840) has recently been recorded in Peru, as a by-catch in longline and purse seine fisheries. We mention here the stranding of a large individual of this rarely encountered species on the north-central coast of Peru, probably resulting from fishing discards.

**Keywords:** Peru, new record, sunfish, morphology, marine biodiversity

## INTRODUCTION

Molas, also known as ocean sunfishes are widely distributed in tropical and temperate seas. They are large-sized bony fishes, attaining over 2 m in length and  $\approx 2,000$  kg in mass (Froese and Pauly 2018), characterized by a highly compressed body, absence of a caudal fin and presence of large dorsal and anal fins (Johnson and Britz 2005). The caudal fin is replaced by a broad rudder-like lobe called the clavus.

Despite their strange appearance and unique shape, which stimulated scientific interest since the XVIth century (Rondelet 1554), little attention has been paid to ocean sunfishes and their abundance among fisheries. Recently, growing interest on their taxonomy led to the resurrection of a species of *Mola* (Sawai et al. 2017) and the description of a new species of *Mola* (Nyegaard et al. 2017). In parallel, reports of the extent of ocean sunfish by-catch have been given by Nyegaard et al. (2017).

Currently, Molidae includes five extant species in three genera (Nyegaard et al. 2017): *Masturus* Gill, 1884 (1 species); *Mola* Koelreuter, 1766 (3); and *Ranzania* Nardo, 1840 (1). For long, only two of them, *Mola mola* (Linnaeus, 1758) and *Ranzania laevis* (Pennant, 1776) had been recorded from Peru (Chirichigno and Cornejo 2001), but the third species *Masturus lanceolatus* (Liénard, 1840) has been recently added to the Peruvian ichthyofauna (Mangel et al. 2019). This species was considered almost absent from the eastern Pacific, the only records being from Mexico (Balart et al. 2000), Galápagos Islands (McCosker and Rosenblatt 2010), and northern Chile (Pequeño 1997). Here we present the record of a stranded specimen of this rarely encountered species on the north-central coast of Peru.

## MATERIAL AND METHODS

On December 5th 2018, fishermen from Puerto Morín informed one of us (AMM) that a strange fish had been washed up on the shore close to “Cerro negro” ( $8^{\circ}25'56.09''$  S -  $78^{\circ}55'19.59''$  W) (Fig. 1).

The stranded individual was photographed and measured in the beach, but due to its large size, isolated position, and poor state of preservation, the specimen could not be transported and deposited into an ichthyological collection. Measurements of the individual were taken following Nyegaard et al. (2017).

## RESULTS

The unique shape of the sharptail mola, *Masturus lanceolatus*, especially the long projection on its clavus, allowed recognizing quite easily the species. The images are given in Figure 2 and the main body measurements in Table 1.

## DISCUSSION

*Masturus lanceolatus* is globally distributed in tropical to subtropical waters (Froese and Pauly 2019), and occur widely in the western Pacific Ocean (Nyegaard et al. 2018). However, its presence in the northeastern Pacific has been ignored until recently (Balart et al. 2000), and only known from one specimen caught in the southeastern Pacific, off Iquique (Chile) on 9 March 1985 (W. Sielfeld, pers. comm.). It is quite surprising that this species has only been reported in Peru very recently.

Accidental entanglement in fishing gear is one of the main threats to molid populations, as species from the family are often reported as by-catch in long-line (e.g. Joung et al. 2005, Nyegaard et al. 2018) and surface gillnet fisheries (Mangel et al. 2019). In Peru, *Mola mola* and *Masturus lanceolatus* have been reported as by-catch in both fisheries, which essentially target dolfinfish (*Coryphaena hippurus*) and sharks (Alfaro-Shigueto et al. 2010).

Recent data confirm that *M. lanceolatus* might be more common than previously assumed (Nyegaard et al. 2018). Mangel et al. (2019) found *M. lanceolatus* as the second most common

ocean sunfish, next to *Mola* spp., in the surveys on Peruvian small-scale pelagic gillnet fishery. They mention that most of the ocean sunfishes are discarded, alive or dead, so the specimen observed at Cerro Negro well could be a result of a discard of by-catches.

Stranding of *M. lanceolatus* has already been observed in Mexico by Balart et al. (2000) on 25 May 1999, soon after the 1997-98 very strong El Niño. The specimen from Iquique was caught by an anchovy purse seiner on 9 March 1985, not very long after the 1982-83 very strong El Niño. The present specimen was found stranded on 5 December 2018, during the weak 2018-19 El Niño. Hence, the abundance of *M. lanceolatus* in the eastern Pacific could be linked with anomalous oceanographic conditions as the ENSO events. Changes in distribution of fishes during ENSO events, including *Mola mola*, are well documented (e.g. Sielfeld et al. 2010). It is likely that ENSO has an impact on molas distribution in Peruvian waters.

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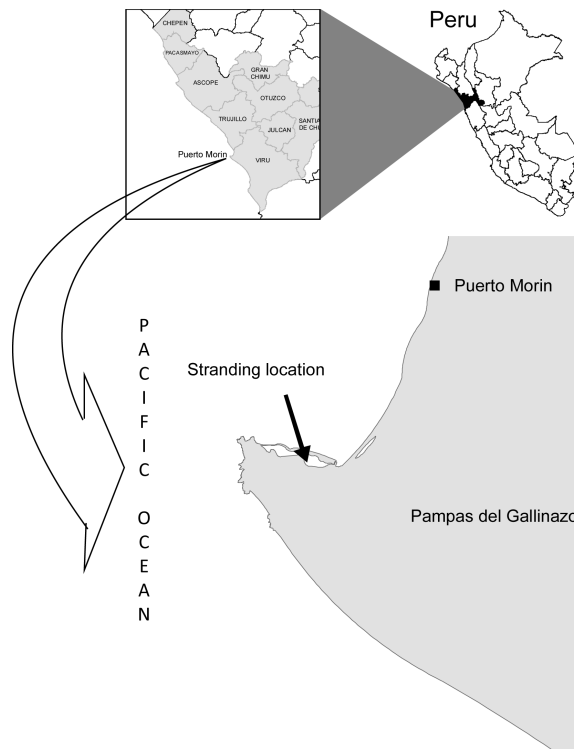


Fig. 1. Location of the stranding of *Masturus lanceolatus* in “Cerro Negro”, La Libertad, Peru.



Figure 2. *Masturus lanceolatus* stranded on the beach at Cerro Negro, Peru. Before (A) and after (B) cleaning.

**Table 1**

Morphometric data of the stranded individual of *Masturus lanceolatus* (see Nyegaard et al. 2017).

<b>Measurement</b>	cm	Abbreviation
Total length	202	TL
Head depth	46	HD
Snout length	20	SnL
Head length	24	HL
Pre-anal fin length	114	PAFL
Pre-pectoral fin depth	74	PPFD
Body depth	86	BD
Total body depth	207	TBD
Pre-clavus band length	144	PCBL