

# First Reporting of a Red Sea *Lagocephalidae* Species Accidentally Caught in Adriatic Sea

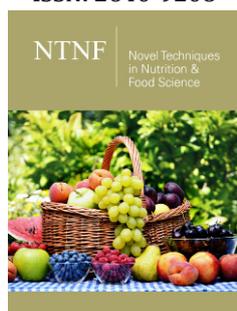
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## Abstract

A species of *Lagocephalidae*, *Amblyrynchotes nigropunctatus diadematus* (RUPPEL) 1828, living in Red Sea, casually caught in the middle part of Adriatic Sea, is reported and described. The authors emphasize the poisonous substances contained in gonades in this species.

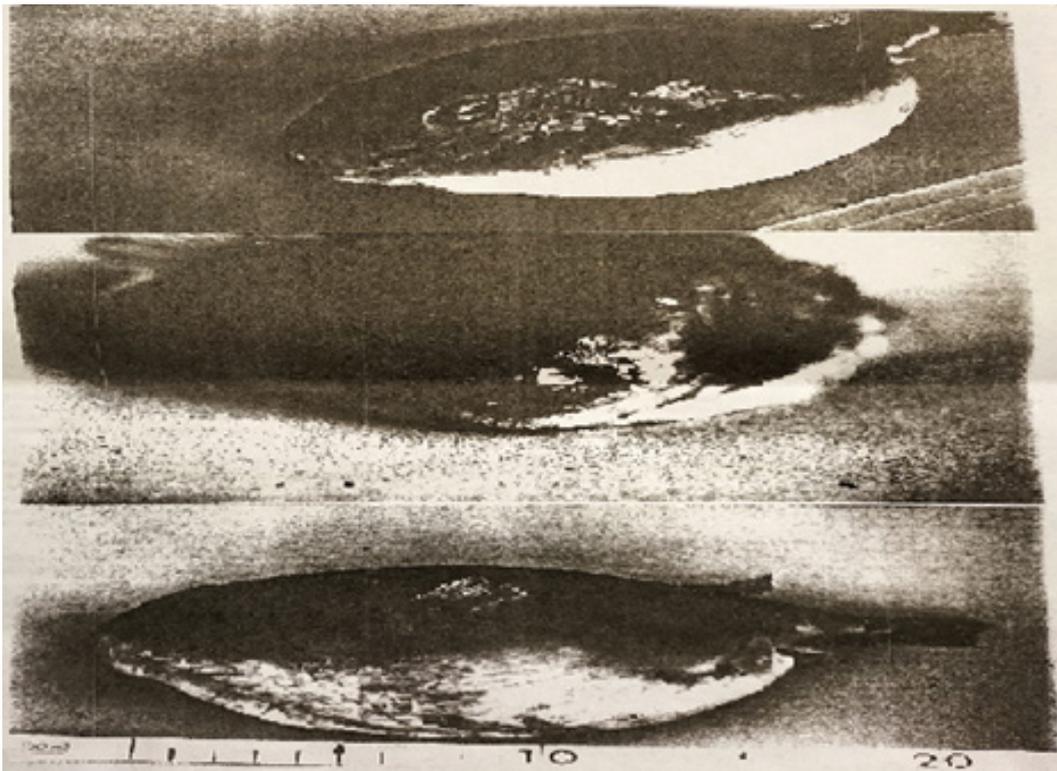
**Keywords:** Tetraodontiformes; *Lagocephalidae*; *Amblyrynchotes*; Adriatic sea; Puffer fish poisoning

## Introduction

It is now known the presence of fish species entered in Mediterranean Sea by Suez Passage from Red Sea, i.e., from indo-pacific region. About 130 of these species, the so-called “*lessepsiane*” are of particular interest for competition problems unleashed between indigenous and immigrant species. We remember, by way of example, the strong competition existing between the common mullet of mud, *Mullus barbatus*, and the yellow-striped goat fish, *Upeneus moluccensis*, or between the common hake *Merluccius merluccis* and *Saurida undosquamis*. Other species, instead, are interesting from a hygienic-sanitary point of view, for a permanent or a temporary muscle mass or internal organs toxicity (puffer-fish poisoning). Accordingly, the above, the purpose of this note is the description of a specimen belonging to the family *Lagocephalidae* and characteristic of the Red Sea, of which is not apparent from the bibliography in our possession no previous signaling in the Adriatic Sea. We also wanted to ascertain the possible muscle masses and some internal organs toxicity of this specimen [1-5].

## Materials

For our research we used a Tetraodontiforme accidentally caught on December 23, 1990, from a trawling boat, about 5 miles from the coast of Ortona (CH), in the Central Adriatic Sea, brought into vision to one of us and actually preserved in the Ittico Museum, Pescara. This specimen has an elongated, expandable body, a total length of 26 centimeters and a weight of 500 grams. The teeth of the two jaws are welded together to form two dental plates, each of which has an evident central suture. The caudal fin is homocercal, with a slightly hollowed posterior margin and, therefore, such as to seem “straight-cut”. The nostrils, two on each side, are very close together and clearly visible (Figure 1). The skin has a uniformly greyish background color and has no scales and no thorns; it has numerous dark specks that are considerably attenuated until they disappear completely with the freezing of the specimen [6,7].



**Figure 1**

### Toxicity

Biotoxicological exams were carried out at Istituto Zooprofilattico of Abruzzo and Molise “G.Caporale” in Pescara, using gonads, liver and muscle tissue of the Tetraodontiforme specimen. Gonads were hypertrophic, with eggs not ripened yet. For the toxicity evaluation the method for the screening of indrosoluble biotoxins was followed, a method adopted for the biotoxicological checks of fish products imported or nationally produced, issued by the Minister of Health, General Directorate of Veterinary Services, with note 600.2/24438 on 15 May 1984. The extracts’ supernatants obtained from samples of gonads, liver and muscle masses of the Tetraodontiforme were respectively and separately used [8,9].

### Results

The morphological and anatomical characters we previously described allow us to believe that the specimen we examined may refer to the common *Amblyrynchothes nigropunctatus diadematus* (RUPPEL) 1828 species, typical of the Red Sea. Biotoxicological tests were performed by intraperitoneal inoculation of 1ml of supernatant to n.10 Swiss mice, weighing 20 grams +1.

We obtained the following results:

1. n.4 mice inoculated with 1ml of gonad extract supernatant died within 60 minutes of inoculation, while the remaining 6 mice did not die during the observation time: they had evident toxic symptoms characterized by sedation, posterior paresis

and dyspnea, but they also presented, after a few hours, a total remission of the symptoms.

2. Mice inoculated with 1ml of liver extract supernatant and muscle tissue extract respectively have not reported obvious signs of illness or cases of death, during the entire observation time.

The scarce availability of gonadal tissue, as obtained from a single specimen, did not allow us to send a sample of the aforementioned tissue to the Institute of Pharmacology (Faculty of Medicine and Surgery of the University of Pavia) for further investigations. with more specific methodologies such as research with the phrenic-diaphragmatic preparation of guinea pigs *in vitro* and *in vivo*.

### Conclusion

The present research seems to clearly demonstrate that the entry of fish belonging to notoriously poisonous species from the Indo-Pacific region into the Mediterranean Sea is far from rare to occur and, above all, the phenomenon deserves particular attention due to the serious consequences that it can give to the consumer. We believe that the toxicity of the examined specimen is detectable only in the gonads and it is, however, rather low considering that the fish was caught in the winter season: in fact, in the poisonous species of Tetraodontiforms the toxicity of the meat and tissues varies very much during the year, i.e., it gradually increases from December to June, resulting higher at the time of spawning (May-

July), just when their meat is tastier and therefore more sought after.

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