

First Record of *Planorbella Duryi* (Wether by, 1879) (Gastropoda: Planorbidae) (= *Helisoma Duryi* Wether by, 1879) in Jutiapa, Guatemala

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Abstract

The presence of the freshwater mollusk *Planorbella duryi* (Gastropoda Planorbidae) (= *Helisoma duryi* Wetherby, 1879) in Jutiapa Department (Guatemala) is reported for the first time. The seven specimens with different stages of growth were captured in the Güüja Lagoon belonging to the "El Güayabo" Village, Asunción Mita municipality.

Keywords: Freshwater Mollusk; Jutiapa; *Planorbella duryi*; Specimens

Introduction

Several species of freshwater molluscs intervene in the biocycle of parasitizes that cause human diseases, such as fasciolosis, angiostrongilosis, paragonomosis and schistosomosis [1-4], without forgetting the importance that they have from the veterinary point of view when serving as intermediate hosts of diseases that cause affectations to cattle and sheep, such as the cases of fasciolosis and paramfistomosis [5,6].

Planorbids are generally associated with certain types of freshwater habitats in which many other vector species can be found [7], and in which there is significant anthropic activity as occurs in the Department of Jutiapa.

The freshwater malacofauna of Guatemala has received very little attention, starting these studies intensively from 2017 in the Department of Jutiapa, as there is a great lack of knowledge of the biological impact that species cause in natural nursery [8]. Therefore, as a result of the malacological surveys carried out in 2019, this first report of the species is made for the department and the country.

Materials and Methods

A small population of *Planorbella duryi* (Wetherby, 1879) (Gastropoda Planorbidae) (= *Helisoma duryi* Wetherby, 1879) (Figure 1) consisting of seven specimens with different growth stages (Reg. = No.52-2019-Jut), was discovered on November 11, 2019, in a freshwater reservoir known as Laguna Güüja from the "El Güayabo" village (Figure 2), Asunción Mita municipality, Department of Jutiapa (Figure 3).



Figure 1: *Helisoma duryi* shell.



Figure 2: Lagoon Güija from the “El Güayabo” village, Asunción Mita municipality, place was captured specimens of *Helisoma duryi*.

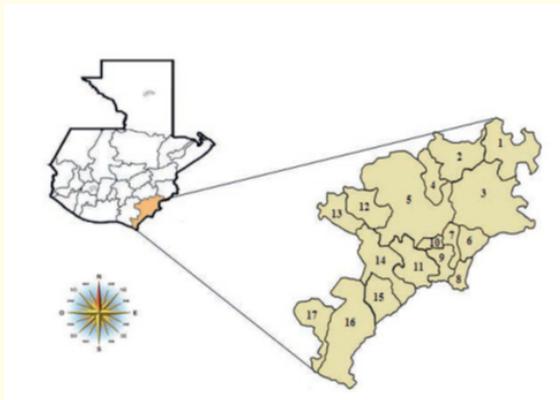


Figure 3: Map of Guatemala showing the different municipalities of Jutiapa Department. 1: Agua Blanca, 2: Santa Catarina Mita, 3: Asunción Mita (place were captured of specimens of *Helisoma duryi*), 4: El Progreso, 5: Jutiapa (capital of Department), 6: Atescatempa, 7: Yupiltepeque, 8: Jerez, 9: Zapotitlan, 10: El Adelanto, 11: Comapa, 12: Quesada, 13: San José Acatempa, 14: Jalpatagua, 15: Conguaco, 16: Moyuta, 17: Pasaco.

This lagoon is used for public baths and commercial fishing. In the collection of the samples, a bronze strainer (15 cm diameter with 1 mm mesh pitch) was used to remove the different substrates and once sieved; the entire content was poured into a white plastic tray on which the specimens were separated with the help of a soft copper clamp. The method consisted of capture per unit of effort for 30 min without replacement. A total of 25 bodies of natural fresh water of the lentic and lotic type, shallow with and

without aquatic vegetation, floating and adjacent, were surveyed. As a result, a body of water resulted in the presence of the species (4.00%).

Morphological and microscopic criteria

The *P. duryi* mollusk is characterized by presenting two different shapes in the shell (discoid and scalar), as well as a straight spiral apex and a mantle with a thick renal crest [6].

Ethic aspects

This investigation was subject to ethical norms that facilitated to reduce to the minimum the damage possible to the gathered specimens, to the breeding places, as well as to the technical personnel involved in the identification of the gathered samples, for this way, to be able to generate new knowledge without violating the established ethical principles for these cases. All the authors involved in the investigation, publication and diffusion of the results, we are responsible for the dependability and accuracy of the show results [9].

Results, Discussion and Conclusion

As a result of the studies carried out in Jutiapa, eight genera and ten species had been registered; some of great medical and veterinary relevance with *Drepanotrema* being the most abundant group [8]. Shells of *Biomphalaria helophila* had been collected from the genus *Biomphalaria* [10] to which *P. duryi* belongs, which are being studied through their internal anatomy.

Another important data was the finding of invasive species that have a marked relevance as bioregulators of other mollusk species, such as the cases of *Tarebia granifera* (Lamarck, 1816) and *Melanoides tuberculata* (Müller, 1774) [8].

From this new report, it is recommended to deepen ecological studies on the relationships of this species with those already reported, as well as its influence on population dynamics and probable departmental distribution patterns, in order to have evidence that allows us to design and implement surveillance strategies and control of molluscs of sanitary relevance more successful in this Central American country.

Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

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