



First Record of *Marisa cornuarietis* (Linné, 1758) in Jutiapa, Guatemala

Lorenzo Diéguez Fernández¹, Milton Vinicio Monzón Muñoz², David del Valle Laveaga³, Néstor Navarro Guerra⁴ and Rigoberto Fimia Duarte^{5*}

¹Faculty Technological, University of Medical Sciences of Camaguey, Cuba

²Vector Control Department. Jutiapa Health Area, Guatemala

³Regional High Specialty Hospital (HARE), Dr. Juan Graham Casasús, México

⁴Camagüey Provincial Center of Hygiene, Epidemiology and Microbiology (PCHEM), Cuba

⁵Faculty of Health Technology and Nursing (FHTN), University of Medical Sciences of Villa Clara (UMS-VC), Cuba

*Corresponding Author: Rigoberto Fimia Duarte, Faculty of Health Technology and Nursing (FHTN), University of Medical Sciences of Villa Clara (UMS-VC), Cuba.

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Abstract

The presence of the freshwater mollusk *Marisa cornuarietis* (Linné, 1758) (Subclase Caenogastropoda) in Jutiapa Department (Guatemala) is reported for the first time. The five specimens with different stages of growth were captured in the Güija Lagoon belonging to the "El Güayabo" Village, Asunción Mita municipality.

Keywords: Freshwater Mollusk; Jutiapa; *Marisa cornuarietis*; Specimens

Introduction

Some species of fluvial mollusks intervene in the transmission of parasites of doctor-veterinary relevance [1-6], however, the wealth of species of this group turns out to be very scarce [7], and even several they have been introduced and they threaten the distribution of other native species of mollusks [8].

The current distribution of the fluvial mollusks in Guatemala and in particular for the Department of Jutiapa, continuous requiring deeper studies, for what is ignored the abundance, dispersion and biological impact of this species in their natural ecosystems [3].

Therefore, as a result of the malacological surveys carried out in 2019, we intend with this study to report the presence of an important specie of freshwater mollusk for the Jutiapa department.

Materials and Methods

A small population of *Marisa cornuarietis* (Linné 1758) (Subclase Caenogastropoda) (Figure 1) consisting of five specimens

with different growth stages (Reg. = No. 54-2019-Jut), was discovered on June 19, 2019 in a freshwater reservoir known as Laguna Güija from the "El Güayabo" village, Asunción Mita municipality, Department of Jutiapa (Figures 2 and 3).



Figure 1: *Marisa cornuarietis* Shell.



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

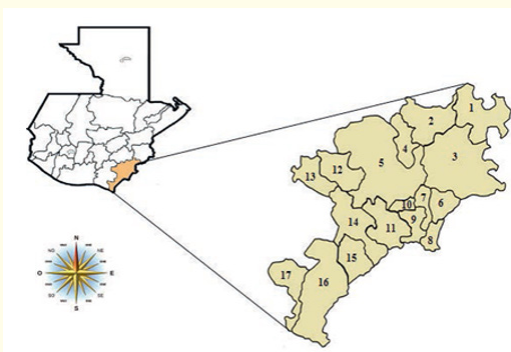


Figure 3: Map of Guatemala showing the different municipalities of Jutiapa Department: 1: Agua Blanca, 2: Santa Catarina Mita, 3: Asunción Mita (place were captured of specimens of *Marisa cornuarietis*), 4: El Progreso, 5: Jutiapa (capital of Department), 6: Atescatempa, 7: Yupiltepeque, 8: Jerez, 9: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

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 specie (4.00%).

Morphological and microscopic criteria

The *M. cornuarietis* (Family Ampullariidae, Order Mesogastropoda, Class Gastropoda, Subclass Caenogastropoda) mollusk is characterized by presenting shell discoidal and concentric operculum. Its distribution in Cuba is scarce. It can constitute plague of aquatic

cultivations, as well as to be used as agent of biological control of other species of mollusks indesirables [7]. It is also a cosmopolitan and omnivorous species.

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].

The authors also indicate that all the procedures ethical standards of the country were continued.

Results, Discussion and Conclusion

The recognition of intermediary host snails is capital to control snail-borne diseases. As a result of the studies carried out in Jutiapa, ten species and eight genera had been registered; some of great medical and veterinary relevance. Destacando a presencia de species that have a marked relevance as bioregulators of other mollusk species [2,3].

To know the adaptations of the species involved in the parasitosis transmission to the man, it is of supreme importance for Guatemala for the design and implementation of strategies directed to the handling of this populations of spineless, for that which is required to know the abundance and distribution in their preferential hatcheries. In this sense, numerous relating experiences exist to the fight integrated in the one that the control measures can be chemical, physical and biological.

Finally, when identifying this new species for the Department of Jutiapa, it is recommended to continue deepening in the ecological studies, as well as in the populational dynamics and patterns of departmental distribution, to have evidences that it allows a more guessed right design of surveillance and control of mollusks of sanitary relevance.

Conflict of Interests

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

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