Morphology of the Goby peacock gonad (*Ctenogobius boleosoma*)

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INTRODUCTION

Descriptive and comparative analysis of the fish reproductive system allows evaluating their reproductive process, the viability of the offspring, identifying morphological variations and their implications for the reproductive physiology of the species. Goby (*Ctenogobius boleosoma*) is an estuarine species that adapts to freshwater, where it is cultivated by aquarists. Oviparous, presents very evident sexual dimorphism, differentiating males from females, with territorial behavior. Reproductive behavior reflects the environment in which they live, and can be used as a basis for stock maintenance mechanisms. Therefore, this study aimed to describe the morphology of the gonads of male and female Goby peacock (*Ctenogobius boleosoma*).

MATERIAL AND METHODS

Five adult animals of each sex were selected from the Tanganyika fish farm, located in the city of Aquiraz/CE. After euthanasia with benzocaine by immersion, the gonads were removed from the coelomic cavity and fixed in 4% paraformaldehyde for further histological processing and microscopic analysis.

RESULTS

In males, it was observed that the specimens were able to release the gametes, presenting discontinuous germinal epithelium and dilated seminiferous tubules lumen completely filled by sperm. Moreover, in the seminiferous tubules, large cells were seen, marked by eosinophilic cytoplasm and a distinct nucleus containing condensed chromatin, characteristic of primary spermatogonia. Secondary spermatogonia were smaller than the primary, with large, slightly basophilic nuclei and little cytoplasm. In addition, they grouped together to form an encapsulated cyst. In the testicular interstitium, polymorphic cells with spherical nuclei, characteristic of leydig cells were found. It was observed a continuous germinal epithelium along the entire length of the seminiferous tubules. In females, ovaries with layers composed of germinal and follicular epithelia supported by a vascular connective tissue stroma were observed. Furthermore, it was possible to visualize oocytes in different stages. Stage I and II oocytes were located in the germinal epithelium; respectively with mildly eosinophilic to basophilic cytoplasm. Stage III oocytes were ruptured from the germinal epithelium, being surrounded by a simple squamous follicular epithelium and nucleoli located in the periphery of the nucleus. Stage IV ones were at the beginning of vitellogenesis, with the appearance of yolk granules and fat vacuoles in the ooplasm, presence of a distinct chorion under the follicular epithelium. In stage V, there was an increase in the vitelline vesicles that filled almost the entire ooplasm. In addition, the nuclear envelope was in the process of degeneration and also had a nucleus located in the peripheral region. Showing that females were able to spawn.

CONCLUSION

Therefore, it is concluded that males of Goby peacock have testes organized in cysts and females have ovaries with oocytes in five stages of development.