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SESONAL HISTOPATHOLOGICAL CHANGES IN LAMELLIDENS MARGINALIS

A. V. Suryawanshi*

Research Scholar Dept. of Zoology & Fishery Science N.E.S .Science College Nanded. (M.S.) 431605.

Corresponding Author: A. V. Suryawanshi
Research Scholar Dept. of Zoology & Fishery Science N.E.S .Science College Nanded. (M.S.) 431605.

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ABSTRACT

The Histopathological study of gonads showed that in *Lamellidens marginalis* is a prolific breeder, breed throughout the year. During study period maximum number of oocytes was seen in October to November that indicates Peak period of spawning was from October to November. In spawning season maximum numbers of mature oocytes and spermatocytes were seen.

KEYWORDS: *Lamellidens marginalis*, spawning, Histopathology.

INTRODUCTION

Phylum molluscum includes bivalves, bivalvels means **Bi – Two,** molluscs possess two shells they protect and prevent mussel from dehydration. They are having hatchet footed which has function of locomotion, support, fixation, and digging. molluscs have soft body and protected externally by calcium containing shell, which is secreted by animals as it grows. Freshwater mussels have a highly specialized life history that includes a life stage called a glochidium larva that is a non-lethal obligate parasite of fish. Freshwater mussels compensate for this uncertainty by producing very large numbers of glochidia ranging from 200,000 to 17,000,000 per reproductive season (Kat, 1984; Bauer, 1994). The mussel fish relationship is often species-specific. In that only certain fish species can serve as hosts for a particular freshwater mussel species (Brunderman and Neves, 1993; Haag and Warren, 1997; O'Brien and Brim Box, 1999). Mussels depend on fish to reproduce and replenish population. Bivalves form an important component at lower level of food chain in aquatic ecosystem; can play a significant role in local food webs by increasing the flux of organic and inorganic matter to river beds, which in turn influences macro invertebrate assemblages (Howard and Cuffey, 2006).

MATERIAL AND METHODS

For the histopathological study of gonads of *Lamellidens marginalis* seasonally they were collected at regular interval from river Godavari from Nanded region and kept in laboratory for acclimatization for few days. Mussels were dissected and gonads were removed and kept in Bowen's fluid for 24 hr for hardening. Water content was removed by dehydration process, in different concentration of ethyl alcohol ranging from 30%, 50%, 70%, 90%, to 100% and xylen. After dehydration process tissues kept in xylen wax for half an hour then blocks were made in L- shaped steel blocks. With the help of microtome sections were taken.

RESULT AND DISCUSSION

During study period temperature were recorded ranged from 19°c to 35°c winter and summer season. Externally it is difficult to differentiate both sexes in mussels because there are morphological similarities between two sexes. Internally they showed different color of gonads. Colure of gonad in mature female is pale yellow and mature male is white. On the basis of color we can easily differentiate the sexes of mussel. Microscopic examination of gonads it gives details information about the reproductive stages of gonads. Male and female attained sexual maturity at the same time and breeding was from February to August. Histopathological study showed different stages of maturation in *Lamellidens marginalis* such as Growing stage, maturing stage, mature stage, partially spawned stage, spent and recovery stage. Seasonal Histopathological study of gonads of *Lamellidens marginalis* showed that spawning was occurred throughout the year. Peak period of spawning was in rainy season from October to November. Maximum numbers of mature oocytes were seen in rainy season. Female shows ogenesis in all season throughout the year and male shows development of spermatogonia, spermatocytes, developing sperms, spermatozoa along with spermatids as mature sperm. Maximum amount of sperm was recorded during rainy season. In male peak of maturity stage was from June to September.

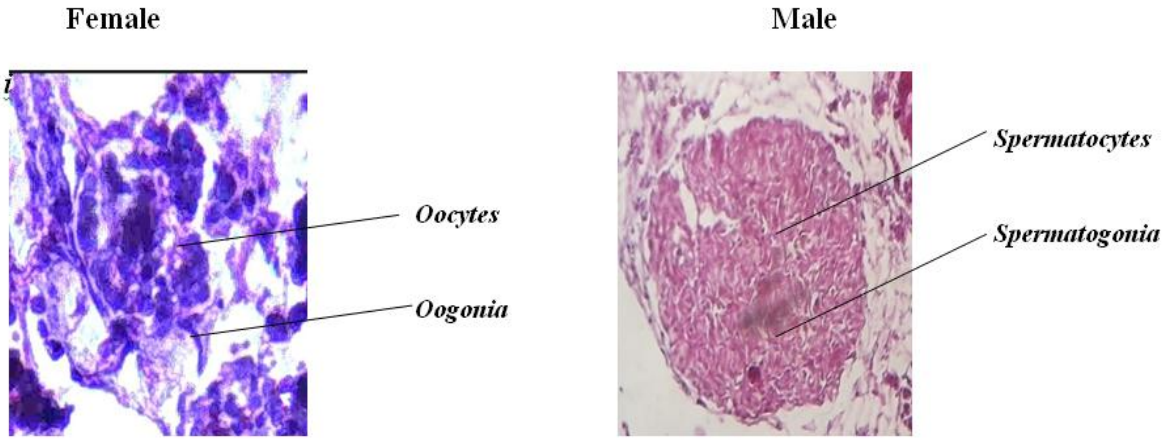

Fig. 1: Lamellidens marginalis **showed histological structure of growing stage of Female and Male.**

Fig.2. Lamellidens marginalis **showed histological structure of maturing stage of Female and Male**

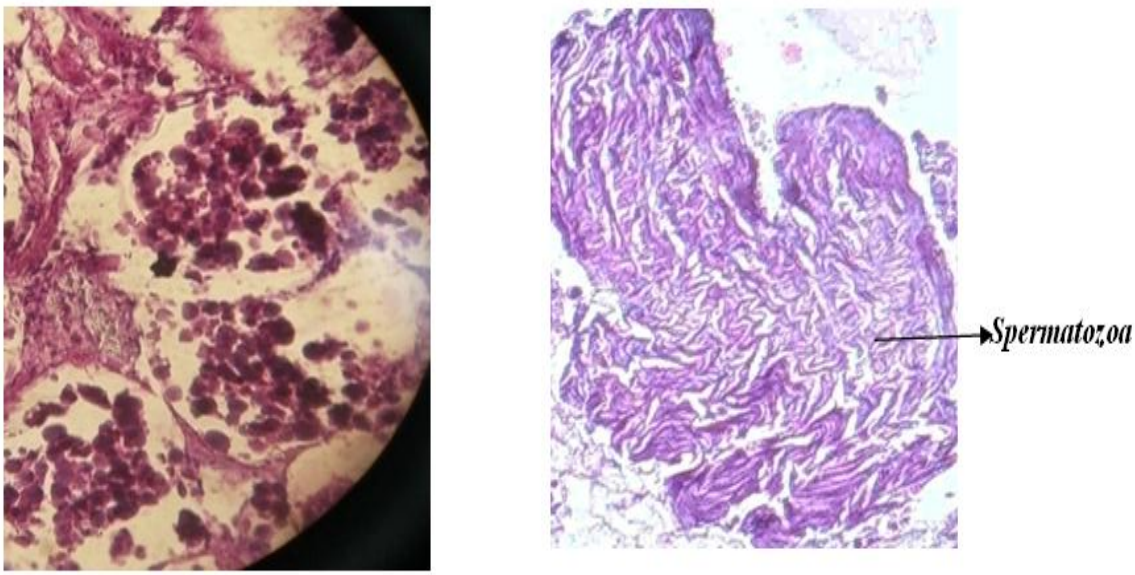

Fig. 3: Lamellidens marginalis **showed histological structure of mature stage of Female and Male.**

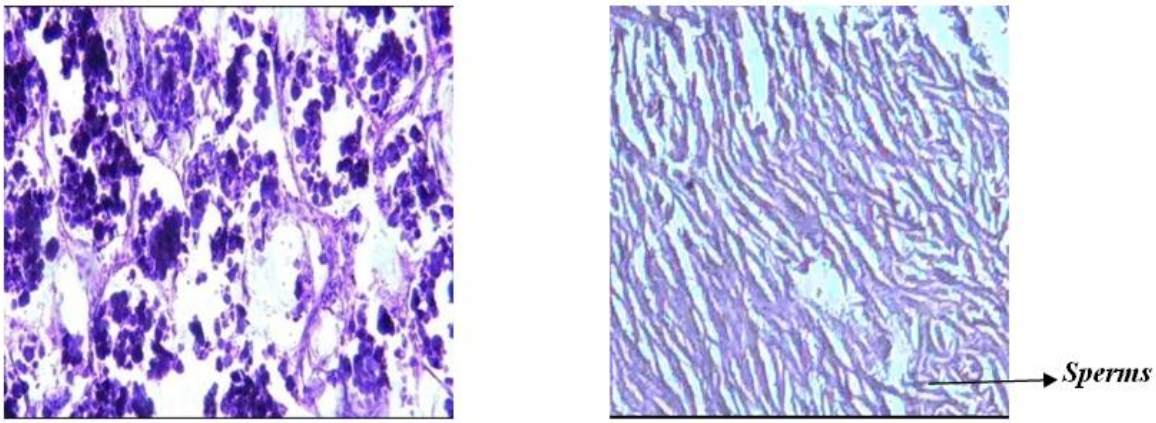

***Fig. 4: Lamellidens marginalis* showed histological structure of partially spawned stage of Female and Male.**

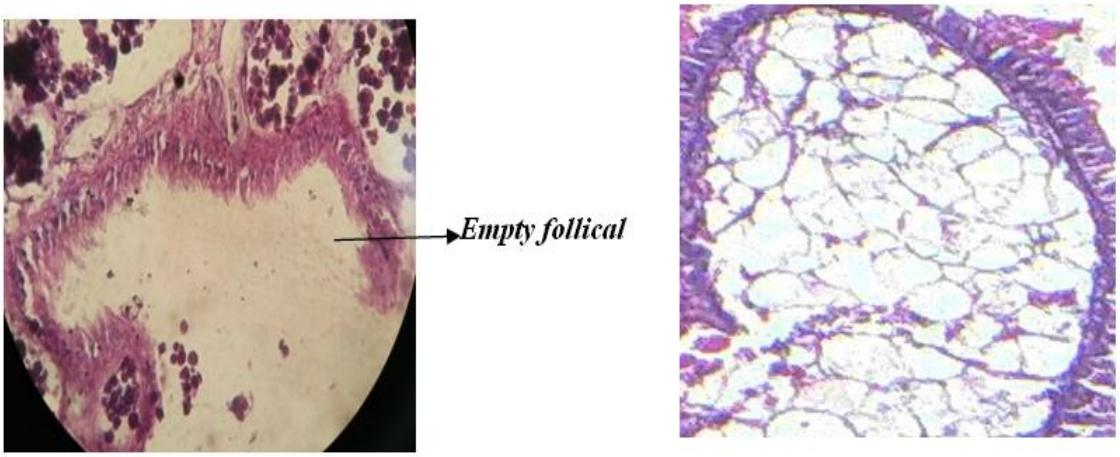

***Fig. 5: Lamellidens marginalis* showed histological structure of spent stage of Female and Male.**

CONCLUSION

Histopathological study of gonads gives the detail information about stages of maturation in *Lamellidens marginalis.* Female and male shows growing, maturing, mature, partially spawned and spent phases. This study helps to identify the spawning season of *Lamelliden marginalis.*

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