International Archive of Applied Sciences and Technology
IAAST; Vol 6 [2] June 2015: 03-04
www.soeagra.com/iaast.html
Global Impact Factor : 0.522
Universal Impact Factor :1.395
Scientific Journal Impact Factor : 3.95
Index Copernicus Value : 5.09

IAAST
ONLINE ISSN 2277- 1565
PRINT ISSN 0976 – 4828
CODEN : IAASCA

ORIGINAL ARTICLE

Studies on an Early Development of Amphistomatous Parasite Of Buffalo

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ABSTRACT
The aim of the present study is the biometrical and morphological investigation of the eggs of Ceylonoctyle chauhani, n.sp., the study of embroyo formation process was carried out in this paper. During the subsequent division there is a reduction in cell size (e.g. in the octacellular stage one cell measures 21X21 cr. Their shape becomes oval then square, a later period neither cell shape nor can cell size be clearly seen. The development of embryo uniformly rapid under the same external and internal conditions (27° C). There are so many significant changes observed after few days.
Key Words: Amphistoma, Paraamphistoma, Embryo development.

Received 12.05.2015 Accepted 12.06.2015

Citation of this article
Harish K and Heera L. Studies on an Early Development Of Amphistomatous Parasite Of Buffalo.Int. Arch. App. Sci. Technol; Vol 6 [2] June 2015: 03-04. DOI.10.15515/iaast.0976-4828.6.2.34

INTRODUCTION

The large numbers of trematodes have been reported from Indian cattle: viz buffaloes, sheep, goats and other domesticated animals. They belong to three major groups, viz Amphistomes, Schistosomes and liver-fluke. Of these, amphistomes are the most common and at the times cause, as immature worms, heavy morality among the livestock. The life cycle and ecological importance of amphistome have to be done [1]. They are mostly found to parasite either the digestive tract, especially the rumen and reticulum, in the adult stage and infestive the bile duct of the host in immature stage. Vital role in the form of heavy economic loss to the country due to the poor health and heavy mortality of these amphistomes in adult as well as in immature forms. Amphistomysis studied [2]. The development and morphology of the miracidium of one amphisome (*Ceylonetyle chauhani* n-sp.) and the encystment and an early development of the cercaria of another amphistome (i.e. Fischoedirius elongates) in certain experimental animals is described in detail. In amphistomes the lymphatic system of the body is one of the most important systems and has got the taxonomic importance also. Eduardo gave an account of taxonomy of family amphistomidae with reference to morphology [5].

An extensive survey of the nature and seasonal incidence of amphistome infection in aquatic snails and buffaloes was made. A field guide to African fresh water snail [4]. In nature *Lymnea luteola*, *Idophanorbois- exustus, Cyraulus convexisculus, Bulimus pulchellus* and *Helicorbis coenosus* were infected with several species of amphistome cercariae. Pathology of amphistome infection in buffaloes also described and based on naturally infected buffaloes. The histology has been studied in acute form in the buffaloes. The molecular approach for the identification of Paramphistomes (7). An abnormality in buffaloes known as paramphistomiasis [6] and an infection caused by paramphistome, which damage the liver tissues in buffaloes [3].

MATERIAL AND METHODS

The hatched miracidia were pipetted and killed in 2 percent formalin and counted under binocular microscope. Miracidia structures were examined vivo partly in a fixed state. To reduce their movements, a solution of 3-5% methyl cellulose, 3% urethane, or polyvinyl alcohol [8] was used. For the vital staining

material, Nile blue sulphate and methylene – blue and mentralred proved to give the best result. For detecting the epidermal plates or cells, the silver nitrate technique described by Lynch [9] was applied. With the aim of examining the terebratorial papillae, proportions were made by Anderson's method [10].

RESULT AND DISCUSSION

The present study therefore undertaken on the occurrence of adult and larval amphistomes in buffaloes and in aquatic snails, respectively, the Life history of one species of amphistome and the morphology and an early development of some adult & larval amphistomes. The process of embryo formation, the changes enacted in the egg, and the development of some miracidial cells and organs can relatively easily be observed through the colourless envelope. The division of the Oocyte may begin already in the uterus, hence the deposited eggs occasionally contain zygote can be found quite near the operculum, the bicellular morula (2-5 μ) (3-5 μ) and the tri to quadricellular morula (50-60 μ) in the centre of egg. The zygote has round shape (25-32 μ in diameter) of the two cells formed during the first division. The bigger is 26 μ in diameter, the smaller 23 μ in diameter. The development of the embryo is not uniformly rapid even under the same external (27^0C) and internal conditions (the embryo already exists). For instance a difference in 2-3 days occurred between the hatching of worms from ten selected tricellular eggs. The embryo increase in their size is demonstrated. In the first **5-6 days**, no significant change can be observed, except for the growth of embryo and its oval elongation. On the **6 th and 7 th days**, the trebratorum appears and the only apical gland, and the four penetrating glands (situated in pairs laterally along the apical gland) can be followed. On the **8th day**, the flame cells to be found on the joining level of the 2-3 epidermal cells rows, being their activity. The formation of the germinal tissue, situated in the posterior part of the embryo takes place also during this period. Hatching begins, however, only later, when the miracidium becomes not only morphologically but also physiologically capable of hatching and further development. The hatching rate of 3 groups of 1000 eggs, each collected from one-worm-population and incubated under the same conditions is shown in figure 1.During our investigation the process of embryo formation takes 10-25 days at 27^0C. The hatching of the miracidium begins on the **10th & 11th days**, and by the **15 days** 70-80 % of the eggs are hatched [3-6].

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