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Studies on glycogen profile avaian cestodes

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ABSTRACT

The present investigation deals with the content of glycogen in avian Cestodes *viz., Cotugnia orientalis* Sp. Nov., *Railleitina microscolenia* Fuhrmann, 1908, *Davenia yamaguti* Sp. Nov., *Vampirolepis indica* Sp. Nov. and its host tissue *i.e.* infected and normal intestinal tissue. The present study indicates that the amount of glycogen was lower in the body of parasites that infected and normal intestinal tissue of the host. As well as the amount of glycogen present in all cestode parasites are some variable due to its size and its habitat.

Key words : Avian cestodes, Glycogen profile

Carbohydrates are the chief energy source in parasitic cestodes. In view of the importance of carbohydrates in helminthes any difference in their carbohydrate metabolism and that of their hosts might be usefully exploited in helminth control. The cestode parasites utilize the food from the intestinal gus of hosts. The metabolism depends on the feeding habits and the rich nourishment available in the guts of the hosts. The parasites use this nourishment for their normal development and growth. A major part of energy source utilized by the parasite is from carbohydrates, the percentage and location of carbohydrates in the host, where the environment is rich for nourishment and normal development and reproduction of the parasite is accounted in the host diet. The host carbohydrate also has an effect of growth; worms grow better in a host, feed on protein free diet containing carbohydrates.

Glucose is very important enrgy source for many helminthes in habiting the gut of vertebrates. It is generally belived that helminthes absorb glucose against a concentration gradient and use their endogenous carbohydrates as an energy source only when it is unobtainable from outside. Similarly, glycogen in most of the cestodes provides a significant reserve store of energy, particularly in forms which are parasitic in animals and which exist in environments of low oxygen tension.

Some workers have previously experimented on the carbohydrate metabolism of *Oochoristica, Moniezia expansa, Moniezia benedinia, Taenia sagineta, H.nana, H. utelii, H. diminuta Phylobothrium folliatum, Echinococcus, Diphylidium canium, Taenia pisiformis, Taenia crossiceps* and *Bothriocephalus gowkongensis*. The quantative values found in previous and of many the recent literature *viz.,* Woodland (1923) Read *et al.* (1956), Read and Rothmam (1958), Read and Simmons (1967), Von Brand (1950, 1966) and others have been obtained by rather unspecific chemical method, there often given higher values than those obtained by means of an enzymatic procedure (Glucose oxidize); Daughtry and Taylor (1956) studied regional distribution of glycogen in cestode of rat, Goodchild (1961) studied carbohydrate content of cestode *H.diminuta* from rat, Cheng and Dyckman (1964) described glycogen deposition in *H. diminuta*, Chopra (1981) studied glycogen contents and its distribution in cyclophyllidean cestode of sheep, Singh *et al.* (1987) described total carbohydrates and glycogen in Cestodes, Hiware and Jadhav (1994) studied quantitative studies of glycogen in some Cestodes, Pappas *et al.* (1999) studied glucose and glycogen gradient in *H. diminuta* and Ramalingam *et al.* (2004) studied Carbohydrate profile in relation to growth and differentiaationn of proglottids in *Avitellina lahorea.*

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MATERIALS AND METHODS

Some avian hosts and their intestine (Six hundred and forty eight intestines) were brought and these intestines were dissected for the collection of parasites. Three hundred seventy intestines were heavily infected with cestode parasites. The identical parasites are sorted, few of them fixed in 4% formalin for identification. The taxonomc observation turns then to a species of the genus Cotugnia orientalis Sp. Nov., Raillietina microscolcina