SEASONAL VARIATION OF MOLLUSCAN DIVERSITY OF RICE FIELD IN LOVEKUSH NAGAR TEHSIL OF CHHATARPUR DISTRICT (M.P.)

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Abstract: **The present investigation reveals monthly collection of molluscans in Rice field between May2011 to April 2013 As many as 18 species of Molluscans comprising 13 species of gastropods and 5 that of bivalves were collected. The gastropods were grouped under 5 different families (Viviparidae, Lymnaeidae, Thiaridae, Planorbidae and Pilidae), while the bivalves belonged to 2 different families (Unionidae and Corbiculidae). Among the gastropods, the Thiarids were common and their number constituted about 38% of the total collection of the snails. Further the following species of snails, viz., Thiara (Melanoides) tuberculata, Lymnaea auricularia and L. acuminata have been found to carry larvae of trematode parasites.**

Keywords: Molluscan, Lavkush Nagar and rice

I. INTRODUCTION:

Perusual of available literature reveals that several investigations have been undertaken on molluscan fauna of different areas of the country (Satyamurti 1960; Vasisht & Bhandal 1979; Metcalf & smart 1972; Dalatt & Pandya 1973; Subbarao 1989), while an intimate relationship between gastropod density and vegetation has been recorded by Kaul et al. (1980) and Sinha and Sinha (1993). Not only on the gastropods but also on the bivalve species density, a due attention has been given (Pennak 1978; Prasad and Manjula 1980; Burch 1984), Amanullah and Shahul (1996) undertook a study on the molluscan diversity in Kaveri river system, giving reference to the vector snails of trematode parasites. Pokhriyal et al. (1998 a) made a study on the occurrence of recognised helminthic vector snails viz. different habitate in Dehra Doon Valley. In the same year Pokhriyal et al. (1998 b) collected as many as 18 species of mollusces from Asan river system in Doon valley.

II. MATERIALS AND METHODS :

A study on the molluscan fauna of the Rice fields in Lovekush Nagar Tehsil of Chhatarpur district was carried out for a period of two year from May 2011 to April 2013. The molluscan were collected from by hand picking using gloves to prevent cercarial infection. The collected snails were then transported to the laboratory in polythene bags along with weeds and water. The snails were kept alive separately in specimen tubes at room temperature for the emergence of cercariaes up to 48 hours and after that they were fixed in Bouin's fluid for 24 hours.

The genera of the snails were identified in the laboratory with the help of the keys for identification of snails as given by Annandale (1925) and the fauna of British India (1915).

Regular studies were made to examine the snails for larval trematods cercariae, redia and sporocyst. The live snails were also examined for larval trematods by squeezing their digestive gland under a dissecting microscope. Some of the cercariae were fixed in 10% formalin stained with eosin or methylene blue mounted in DPX and identified the type of cercariae on the basis of their diagnostic features.

III. OBSERVATIONS:

Table – 1 shows the species of gastropods and bivalves of the Rice fields in Lovekush Nagar Tehsil of Chhatarpur district. From this study, as many as 18 species of molluscs comprising 13 of gastropods and 5 species of bivalves were collected. The gastropods have been grouped under 5 different families, while the bivalves collected from Rice fields, belonged to 2 different families' viz., Unionidae and corbiculidae.

Table – 1 : Occurrence & Distribution of Gastropods and Bivalves at Rice fields in Lovekush Nagar Tehsil of Chhatarpur district.

S.No.	Name of the Molluscan species	Maximum	Moderate	Low	Nil
1.	*Bellamya bengalensis*	-	-	-	✓
2.	*B. dissimilis*	-	-	✓	✓
3.	*B. crassa*	-	-	✓	✓
4.	*Thiara (Melanoides) tuberculata*	-	✓	-	-
5.	*T. (Mainwaringia) paludomoidea*	-	-	-	-
6.	*L. (Pseudosuccinea) acuminata*	-	-	-	✓
7.	*L. (Radix) auricularia*	-	✓	✓	-
8.	*L. luteola Lamark*	-	-	✓	-
9.	*Indoplanorbis exustus*	-	-	-	-
10.	*Planorbis (P.) tangitarensis*	-	✓	✓	-
11.	*Pila globosa*	-	-	-	-
12.	*Gyraulus convexiousculus*	-	-	-	✓
13.	*G. rotula*	-	-	✓	-
14.	*Lamellidens consobrinus*	-	-	-	✓
15.	*L. corrianus*	-	-	✓	✓
16.	*Parreysia favidens*	-	-	-	✓
17.	*Corbicula striatella*	-	-	✓	-
18.	*C. regularis*	-	-	✓	✓

✓ = Present And - = Absent

IV. **DISCUSSION**:

A number of workers have carried out their studies on different species of snails from various parts of the country. The present findings resemble with the observations made by Choubisa and Sharma (1983); Dhar et al. (1985) and Pokhriyal et al. (1998 a, b) with regard to occurrence of some species of snails but in different water bodies. Although, there is slight difference with regard to occurrence of species of the snail in the present findings with those of earlier studies. Our results further resemble with Amanullah and Hameed (1996), who recorded 13 species of molluscans including 5 species of bivalves. In fact our studies records the

availability of the following species of snails **viz.,** *B. bengalensis, B. crassa, T. (M.) tuberculata, P. Planorbis tangitarensis, L. (P.) acuminata, L. (R.) auricularia* and *L. luteola* not recorded by Amanullah and Hameed (1996). The similarity is with regard to occurrence of *B. dissimilis, I. exustus* and *T. (M.) tuberculata*. Moreover with regard to occurrence of bivalves *L. corrianus* was not recorded by Amanullah and Hameed (1996). Other species of bivalves as recorded by them exhibit close resemblance to the finding of present study.

Distribution of gastropods were very limited at Rice fields in Laundi Tehsil. *Thiara (Melanoides) tuberculata, L. (Radix) auricularia* and *Planorbis (P.) tangitarensis* were found to be at moderate level, While *T. (Mainwaringia) paludomoidea, L. luteola Lamark, Indoplanorbis exustus, Pila globosa, G. rotula, Corbicula striatella* were at minimum level. *Bellamya bengalensis, B. dissimilis, B. crassa, L. (Pseudosuccinea) acuminate, Gyraulus convexiousculus, Lamellidens consobrinus, L. corrianus, Parreysia favidens, C. regularis* were totally absent.

The present finding were similar to Raut (1981) according to which at Rice fields variation in the snails population is according to temperature.

Water temperature and other abiotic factor are found to be major factor control the distribution of different molluscan species. Agrawal 1983 pointedout that population of snails is inversely proportional to the temperature. However, Dhar et al. (1985) considered the temperature of 20 ^{0}C – 25 ^{0}C as optimum for growth and feeding of snails in their natural habitats.

Because stenothermal species have very narrow range of distribution, while eurythermal species have wide range distribution.

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