

Morphological Intra specific Variation of *Tremiorchis ranarum* from *Rana tigrina* in District Sidhi (M.P.) India

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Abstract- The aim of this paper is to increase the knowledge of the diversity of digenean parasites from *rana tigrina* collected in sidhi district madhya Pradesh, India. About 200 parasites representing *Tremiorchis ranarum* were collected from the intestine of *Rana tigrina* from different places of Sidhi (M.P.). They were critically analyzed for their intra specific variations. Measurements of various organs of 50 parasites were recorded for study. The body length was measured 2.100 mm. to 4.874 mm. The oral and ventral sucker range were 0.140 – 0.210 mm. X 0.175 – 0.246 mm. and 0.175 – 0.315 mm X 0.175 – 0.316 mm respectively.

Index Terms- Digenean, *Trimiorchis ranarum*, India.

I. INTRODUCTION

The knowledge of helminths in India is very old. Helminthology is one of the most significant branches of parasitology, which constituent a large number of worms, free living as well as parasitic occurring widely, in invertebrates and vertebrates. [1] It is an established phenomenon that a parasite is always under the influence of two types of environments - viz; the internal environment in which the host lives. It is the interaction of the influence of these environments and the strategy adopted by the parasites of counter influence that develops the host specificity and host parasite relationship. Thus the establishment and survival of helminths in their hosts is controlled by the internal environment of the host as well as its external environment. [2]

Sidhi is one of the important district, head quarters of Rewa commissionerary of Madhya Pradesh. It lies between longitude 81⁰-15' and 82⁰-49' East and latitude 24⁰-42' and 24⁰-42' North, almost in the East corner of the Rewa Division. [3]

In the present investigation, *Tremiorchis ranarum* were collected from the intestine of *Rana tigrina* from different places of Sidhi (M.P.) India for examine morphological intra specific variations.

II. MATERIALS AND METHODS

The present study was done in several areas of District Sidhi. The study was conducted between the months May 2011 to December 2011. During this time period average temperature

was 30.4 °C (maximum) and 15.61 °C (minimum) and rain fall 88.8 mm. 50 parasites were selected for study. Specimens were carefully collected without any contamination, and were carried to laboratory for examination. The worms thus obtained from the hosts were cleaned thoroughly by saline water or ordinary tap water, killed and fixed quickly by under pressure of the cover glass. Fixatives and preservatives were used: (1) Worm A.F.A. Solution (2) Mercuric chloride Acetic acid (3) 5% Formalin (Commercial) and Preservations 70% Ethyl alcohol.

Fixed worms brought to either water of 20% alcohol and stained in Gower's Carmine Stain for 12-35 hours. They were washed in one or two changes of water and dehydrated through series of alcohols, cleared in Methyl salicylate and Benzene then mounted whole in Canada balsam.

III. RESULTS AND DISCUSSION

Helminthology is only one of the significant branches of parasitology. Parasitism figures prominently in the Zoological curriculum at the present time. A large number of vertebrate hosts ranging from fishes, amphibia, reptiles, birds and mammals from different part of Sidhi region were collected then cut in saline water and a through examination of not only the alimentary canal but whole of the body was made for digenetic trematodes. [4]

In the present study we investigated morphological characters of *Tremiorchis ranarum* collected from the intestine of *Rana tigrina* like body length, oral sucker, ventral sucker and the ratio of oral and ventral sucker. The body length range was measured 2.100 mm. to 4.874 mm. The oral and ventral sucker range were 0.140 – 0.210 mm. X 0.175 – 0.246 mm. and 0.175 – 0.315 mm X 0.175 – 0.316 mm respectively. The ratio of oral and ventral sucker range was 1:1 - 1:1.56. (Table 1)

Mehra and Negi, 1926 [5] described the species *Tremiorchis ranarum* from the small intestine of *Rana tigrina*. Bhalerao, 1942 [6] described the same form, which he placed in a new genus *Centrovitus* and a new species *C. pentadelphi*.

Bharadwaj, 1963 studied intraspecific variations in *Tremiorchis ranarum*. He touched the characters of the suckers, intestinal caeca, and position shifting of gonads, size of gonads, cirrus sac and also of vitelline follicles. [7]

Table-1 : Measurements of various organs of 50 parasites of *T. ranarum*.

S.No.	Body length	Oral sucker	Ventral sucker	Sucker ratio OS : VS
1.	2.100	0.140×0.175	0.210×0.245	1 : 1.44
2.	2.170	0.175×0.175	0.175×0.175	1 : 1
3.	2.275	0.175×0.175	0.175×0.245	1 : 1.2
4.	2.410	0.140×0.175	0.210×0.210	1 : 1.33
5.	2.415	0.175×0.210	0.245×0.245	1 : 1.27
6.	2.660	0.140×0.245	0.175×0.280	1 : 1.18
7.	2.765	0.161×0.161	0.175×0.175	1 : 1.08
8.	2.925	0.175×0.210	0.175×0.210	1 : 1
9.	2.975	0.175×0.175	0.175×0.175	1 : 1
10.	3.010	0.175×0.210	0.175×0.175	1 : 0.90
11.	3.080	0.140×0.210	0.245×0.280	1 : 1.5
12.	3.080	0.175×0.210	0.280×0.280	1 : 1.45
13.	3.080	0.175×0.175	0.210×0.210	1 : 1.2
14.	3.150	0.175×0.175	0.175×0.175	1 : 1
15.	3.185	0.210×0.246	0.280×0.280	1 : 1.23
16.	3.220	0.175×0.175	0.210×0.210	1 : 1.2
17.	3.325	0.175×0.210	0.210×0.245	1 : 1.18
18.	3.360	0.175×0.210	0.210×0.210	1 : 1.09
19.	3.360	0.210×0.245	0.315×0.280	1 : 1.30
20.	3.395	0.175×0.210	0.210×0.245	1 : 1.18
21.	3.430	0.210×0.210	0.280×0.316	1 : 1.41
22.	3.465	0.196×0.196	0.245×0.245	1 : 1.25
23.	3.465	0.210×0.210	0.210×0.210	1 : 1
24.	3.500	0.175×0.210	0.210×0.245	1 : 1.12
25.	3.535	0.175×0.210	0.210×0.210	1 : 1.09
26.	3.605	0.175×0.210	0.245×0.280	1 : 1.36
27.	3.675	0.125×0.210	0.245×0.280	1 : 1.56
28.	3.710	0.140×0.175	0.210×0.245	1 : 1.44
29.	3.745	0.175×0.210	0.224×0.224	1 : 1.16
30.	3.745	0.175×0.175	0.210×0.210	1 : 1.2
31.	3.745	0.175×0.210	0.245×0.245	1 : 1.27
32.	3.780	0.210×0.245	0.315×0.350	1 : 1.45
33.	3.7850	0.175×0.175	0.210×0.210	1 : 1.2
34.	3.780	0.210×0.210	0.245×0.245	1 : 1.19
35.	3.815	0.175×0.210	0.210×0.245	1 : 1.18
36.	3.850	0.175×0.210	0.210×0.245	1 : 1.18
37.	3.850	0.210×0.210	0.210×0.245	1 : 1.08
38.	3.850	0.210×0.210	0.210×0.280	1 : 1.19
39.	4.025	0.175×0.210	0.245×0.280	1 : 1.36
40.	4.060	0.175×0.210	0.245×0.245	1 : 1.27
41.	4.060	0.210×0.210	0.245×0.245	1 : 1.19
42.	1.095	0.140×0.175	0.245×0.245	1 : 1.55
43.	4.095	0.210×0.210	0.245×0.215	1 : 1.19
44.	4.200	0.175×0.210	0.210×0.215	1 : 1.18
45.	4.865	0.175×0.175	0.245×0.245	1 : 1.4
46.	4.874	0.174×0.172	0.246×0.247	1 : 1.5
47.	4.753	0.178×0.175	0.253×0.248	1 : 1.9
48.	4.637	0.180×0.173	0.260×0.218	1 : 1.30
49.	4.613	0.189×0.175	0.271×0.215	1 : 1.35
50.	4.710	0.175×0.165	0.231×0.214	1 : 1.36

IV. CONCLUSION

In the present course of investigation, we have to explore the helminth fauna belonging to the host ranging from fishes to mammals and their ecology of Sidhi Distt. and its adjoining areas. The increasing international interest of these groups, due to their economic importance, makes it necessary in different regions, to revise the systematic status of already known taxa as well as the unknown forms.

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