Seasonal Variation of *Oncodiscus* Sp. in *Trygon sephen* from Ratnagiri District, West Coast of Maharashtra State

Sandeep Anarse[1], Dnyaneshwar Bhutekar[1] and Amol Thosar[2]

[1]Department of zoology, Anandrao Dhonde Alias Babaji Mahavidhayalaya Kada, Tal: Ashti, Dist: Beed- 414202.

[2]Department of Zoology and Fishery Science, Dayanand Science College, Latur

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ABSTRACT

The present communication deals with the prevalence of cestode parasite of Oncodiscus Sp. in Trygon sephan from different places of Ratnagiri District. In this study 87 species the cestode parasites were collected from the intestine of Trygon sephen at Ratnagiri District West cost of Maharashtra, in the period of June 2011 to May 2012. The collected parasites were of Oncodiscus genus.

Keywords: Oncodiscus, Ratnagiri, Seasonal variation, Trygon sephan.

INTRODUCTION

Yamaguti, 1934 erected the genus Oncodiscus for a new species O. sauridae from the small intestine of Saurida argyrophanes (synodontidae) from the sea of Japan and later (1952) from the same host in East China sea and Tosa Bay. Subhapradha (1955) described O. fimbriatus from S. tumbil from Madras coast, Bay of Bengal, India and later Devi (1975) reported the same species from the same host and locality. Shinde (1975) described O. walteirensis from S. tumbil from Maharashtra from stingray, Trygon sephen (Dasyatidae) form Bombay coast; O. Maharashtrii species described Shinde**,** in 1975. These are the only identified species so far reported for the genus.

Khail (1982) reported the presence of Oncodiscus sp. Among parasite found in Saurida undosquamis from Kuwait. These specimens are now identified as O. sauridae. Further specimens belonging to the same species were collected by Dr. R. lester of the university of Queensland, Australia form the related fish Saurida tumbil (Bloch) in Australian coastal water. A detailed descriptions of this species based upon these specimens is provided here to verify some of the characters and to point to the variations that can occur within the same species.

The quantitative analysis of helminths and structural grouping was studied during one annual cycles i.e. June 2011–May 2012. It revealed that the cestode population was potentially dynamic with more or less durability, regularity and cyclic periodicity in the hosts under investigation. Annual cycle comprises of Rainy Season (June to September), Winter Season (October to January) and Summer Season (February to May).

On the basis of incidence of the infection the influence of annual season on the population of cestode parasites of Fishes was carried out. It was observed that the incidence of infection by helminthic parasites increased with host age. The infection levels were low in young hosts and showed remarkable infection rise in adults.

The environmental conditions and host behaviour are influenced by habitat and season, while physical state reflects internal conditions, through this may also be affected by external factors. Population investigations can provide data for the prediction of integrated methods to achieve the regulation of numbers of harmful parasites according to Kennedy (1958, 1975).

Since much of work is not undertaken to study the nature of cestode population in certain marine water fishes of various places of West coast of Maharashtra State. (India). The data are shown in the tables further with month and year wise with their different hosts during study period June 2011- May 2012.

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MATERIALS AND METHOD

The marine water fishes were collected from different places of Ratnagiri District during the period of June 2011 to May 2012. The intestine of marine water fishes were dissected longitudinally, parasites kept in normal saline (0.9%) solution. Then cestode were collected, flattened and preserved in 4% formalin. These cestodes were stained by Harris haematoxyline washed in distilled water, dehydrated in ascending grades of alcohol cleared in xylene mounted in D.P.X. and drawing are made with the aid of camera lucida. Identification was made with the help of "Systema Helminthum" vol.II. "Cestode of Vertebrates".

Population dynamics of cestode parasites were determined by following formula

$$\text{Prevalance (Incidence) of infection} = \frac{\text{No of Infected host}}{\text{Total No of hosts examined}} \text{ X } 100$$

RESULTS AND DISCUSSION

Table No. 1: - Seasional Variation of Oncodiscus Sp. from intestine of Trygon sephen during June 2011 - May 2012.

Name of Months	No. of host examined	No. of infected host	No. of parasite collected	Prevalence %
June 2011	08	01	02	12.5
July 2011	10	02	04	20
Aug 2011	09	02	03	22.22
Sep 2011	10	02	02	20
Oct 2011	08	04	06	50
Nov 2011	10	03	06	30
Dec 2011	11	03	05	27.27
Jan 2012	13	02	04	15.38
Feb 2012	12	08	17	66.67
Mar 2012	15	09	09	60
Apr 2012	12	07	10	58.33
May 2012	14	09	17	64.29
Total	**132**	**52**	**85**	**39.39**

Graph No. 1: - Seasional Variation of Oncodiscus Sp. from intestine of Trygon sephen during June 2011 - May 2012.

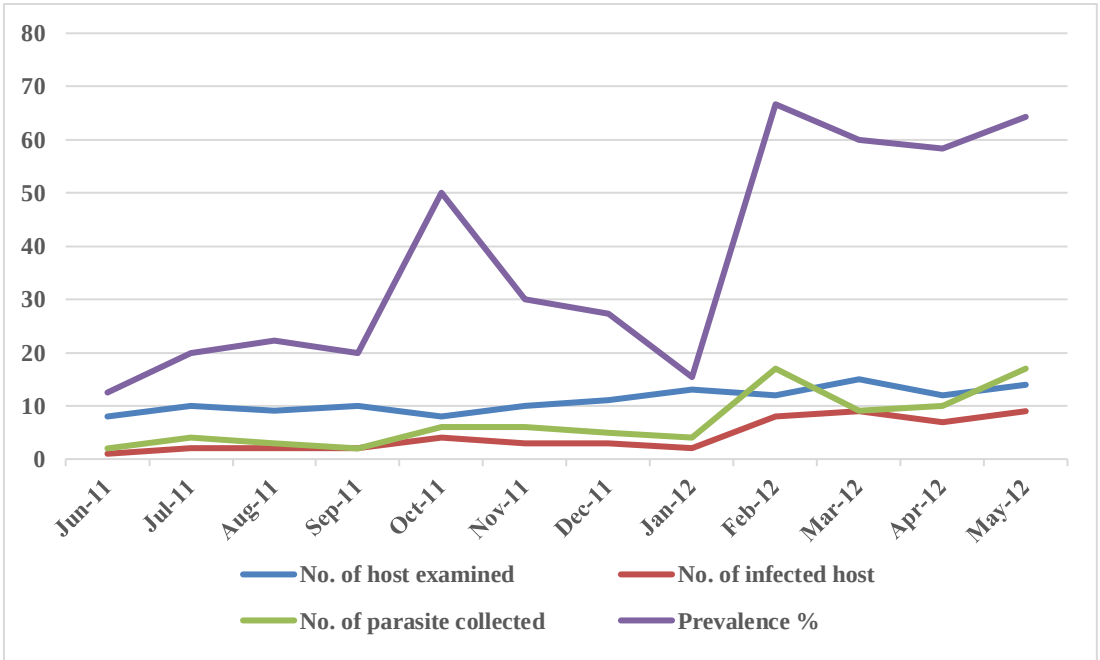

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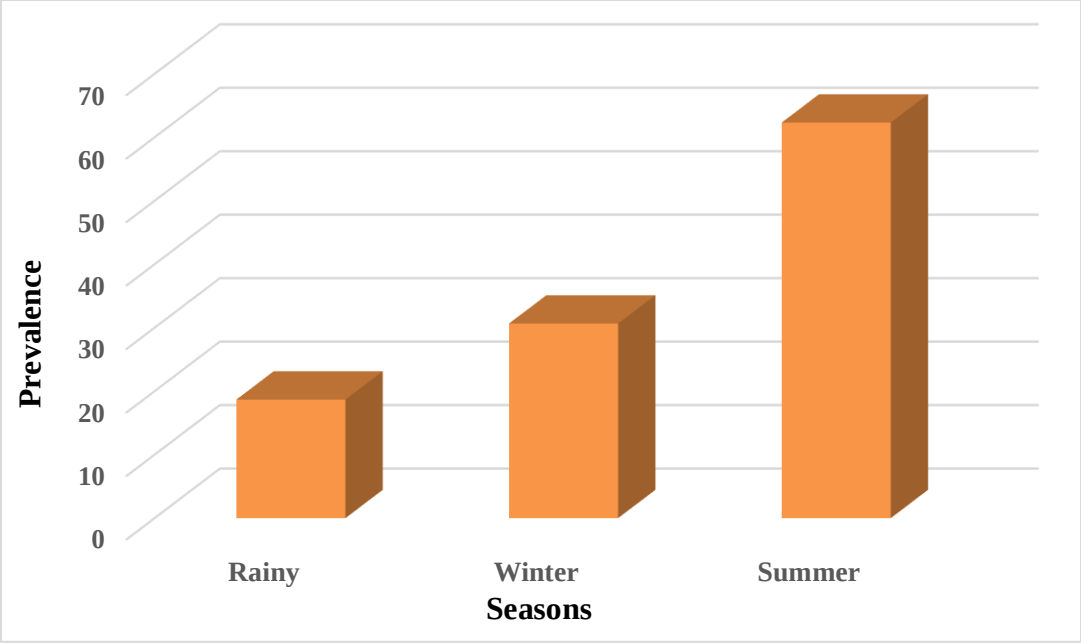
Table No. 2: - Seasonal fluctuation of Oncodiscus Sp. from intestine of Trygon sephen during June 2011 - May 2012.

Season	Incidence% (Oncodiscus Sp.)
Rainy	18.68
Winter	30.66
Summer	62.32

Graph No. 2: - Seasonal fluctuation of Oncodiscus Sp. from intestine of Trygon sephen during June 2011 - May 2012.



Seasonal Prevalence of Cestode Parasites (Oncodiscus sp.) in the intestine of Trygon sephen from Ratnagiri District, Maharashtra (June 2011 – May 2012)

A year-long investigation (June 2011 to May 2012) was conducted to assess the prevalence of cestode parasites (Oncodiscus sp.) infecting the intestines of Trygon sephen in various coastal locations of Ratnagiri district, situated along the west coast of Maharashtra, India. The incidence of infection was quantified and is presented in Table 1 and Graph 1.

The data analysis revealed noticeable seasonal variation in parasite prevalence. The highest infection rates were recorded in February 2012 (66.67%) and May 2012 (64.29%), followed by March 2012 (60%) and April 2012 (58.23%). In contrast, the lowest prevalence was observed in June 2011 (12.50%) and January 2012 (15.38%).

These results suggest that infection by Oncodiscus sp. was most prominent during the summer season, moderately prevalent in winter, and least during the monsoon period. This seasonal trend is further illustrated in Graph 2.

According to the findings of Kennedy (1970, 1974, 1976) and Rohde (1993), several environmental and biological factors such as temperature, humidity, rainfall, the feeding behaviour of the host, the presence of intermediate or infective hosts, and the maturation cycle of parasites play crucial roles in determining the prevalence and intensity of parasitic infections. Kennedy (1974), through experimental research, demonstrated that certain cestode parasites in fish, such as Caryophyllaeus laticeps, exhibited increased survival at lower temperatures. Based on these observations, he concluded that temperature is a key regulatory factor in the seasonal dynamics of parasitic infections. Furthermore, Pennuyick (1971a, b) suggested that the feeding activity of the host is another important factor contributing to seasonal variations in infection rates, as changes in diet and feeding intensity may influence the exposure to and ingestion of parasite larvae.

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CONCLUSION

The study on the prevalence of cestode parasites (Oncodiscus sp.) in the intestines of Trygon sephen from various locations in Ratnagiri district (West Coast of Maharashtra, India) during June 2011 to May 2012 reveals a clear seasonal variation in infection rates. The highest prevalence was observed during the summer months, particularly in February (66.67%) and May 2012 (64.29%), followed by moderately high rates in March and April. Conversely, the lowest prevalence was recorded during the rainy and early winter months, specifically June 2011 (12.50%) and January 2012 (15.38%).

These findings indicate that Oncodiscus sp. infections in Trygon sephen are most prominent in the summer season, less so in winter, and least during the rainy. Seasonal factors such as water temperature, host behavior, and parasite life cycle may contribute to these fluctuations in prevalence.

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