https://doi.org/10.33451/florafauna.v32i1pp105-109
FLORA AND FAUNA ISSN 2456 - 9364 (Online)
2026 Vol. 32 No.1 PP 105-109 ISSN 0971 - 6920 (Print)

Occurrence and seasonal variation of a new parasite species (Family-Hemiuridae) in fresh water fish, *Amphipnous cuchia*

***Sabhyata and Pankaj Tandon**

Department of Zoology,
D.A.V. College, KANPUR-208001 (UP) INDIA
*Corresponding Author
E-mail : dr.sabhyatasingh@gmail.com

Received **:** 20.02.2026; ***Accepted*** : 11.04.2026

How to cite : Sabhyata, Tandon P. Occurrence and seasonal variation of a new parasite species (Family-Hemiuridae) in freshwater fish, *Amphipnous cuchia Flora and Fauna* 2026. 32(1) : 105-109.

ABSTRACT

The present paper deals with the study of the Occurrence and Seasonal Variation of a new digenetic trematode parasite, *Genarchopsis varunai* sp. nov., belonging to the family Hemiuridae, in the intestine of the freshwater fish *Amphipnous cuchia* from the River Varuna (tributary of the River Ganges), Varanasi. About 401 specimens of *Amphipnous cuchia* were examined, of which 79 were infected, and 136 mature parasites were collected from March 2024 to February 2025. In this paper, the key to the species of the genus *Genarchopsis* is also provided.

Figures : 03 References : 10 Tables : 02
KEY WORDS : *Amphipnous*, Hemiuridae, Parasite, River Varuna, Seasonal variation.

Introduction

Since the human race settled and flourished adjacent to the aquatic reservoirs, fish have attracted their attention. The growing human population has increased food problems in our Country, due to which fish has become a valuable and easily accessible source of food, and is used to overcome the food problems to a certain extent. The majority of fish carry heavy parasitic infections, which reduce the growth and create problems for fish culturists. Fish also acts as an intermediate source for transmitting helminthic infections to human beings through its consumption. Considerable work has been done on the helminth parasites of freshwater fishes[9,10], but only a few Indian workers have tried to make seasonal observations of digenetic trematodes of freshwater fishes. In this paper, it is expected to highlight the incidence and intensity of infection of these parasites, belonging to the family Hemiuridae[7], so that proper measure may be taken in time to control them.

Methodology

The fish were collected from the River Varuna (tributary of the River Ganges), Varanasi, during the period of March 2024 to February 2025. For the collection of digenetic trematodes, visceral organs of the fishes were dissected out separately in the petri-dishes containing 0.7% saline. The organs were slit opened with the help of scissors and forceps, so as to allow the worms to lose contact with the tissues and come out to settle down at the bottom of the petri-dish. The worms were picked up with the help of a dropper, washed thoroughly in the saline solution, and finally fixed in 70% alcohol under the slight pressure of a cover glass for twenty-four hours to prevent curling. After fixation, the parasites were removed from the cover glass, washed in 70% alcohol to remove excess fixative, and finally preserved in 70% alcohol containing 5% glycerin. For permanent preparation, the worms were stained in acetic alum carmine, differentiated in acid water, dehydrated in an

ACKNOWLEDGEMENTS : 1st author conveys her deep gratitude and regards to parents and family members for their inspiration, understanding and support. We sincerely by thank the Principal, D.A-V. College, Kanpur, Prof. Arun Kumar Dixit for providing the necessary research facilities. Special thanks to the fishermen who provided the fish throughout the year, along with all the colleagues and non-teaching staff for their constant encouragement and suggestions.

TABLE -1 : Key to the species of genus *Genarchopsis*[5]

(1)	Oesophageal pouch present	…….(2)
	Oesophageal pouch absent	…….(7)
(2)	Receptaculum seminist present	*G. punctati* [1]…….
	Receptaculum seminist absent	(3)
(3)	Mehlis gland present	…….(4)
	Mehlis gland absent	…….(5)
(4)	Genital pore anterior to intestinal bifurcation in the mid-level of pharynx	*G. ophiociphali*[6]
	Genital pore far behind intestinal bifurcation	*G. cuchiai*[3]
	Genital pore on the ventral side of the left intestinal bifurcation	*G.faruquis*[2,10]
(5)	Vittelaria in the form of two unlobed masses	*G. singularis*[8]
	Vittelaria in the form of two lobed masses	…….(6)
(6)	Uterus far from vitellaria	*G. lobatum*[2,9]
	Uterus near to vitellaria	*Genarchopsis varunai* sp. nov.
(7)	Uterine coil intercaecal	*G. dasus*[2,10]
	Uterine coil extracaecal	…….(8)
(8)	Genital pore in the level of pharynx	…….(9)
	Genital pore not in the level of pharynx	……(10)
(9)	Testes intercaecal	*G. cameroni*[3]
	Testes extracaecal	*G. piscicola*[4,8]
(10)	Extension of uterine coil posteriorly upto vitelline region	*G. ovocaudatum*[4,8]
	Extension of uterine coil anterior to caecal union posteriorly	*G. indicus*[2,10]

ascending series of alcohol, cleared in clove oil, and mounted in Canada balsam.

Photographs were taken with the help of a DSLR camera; diagrams were made with the aid of a camera

TABLE-2 : Data showing incidence and intensity of infection of *Genarchopsis varunai* sp. nov.

Months	Fishes examined	Fishes infected	No. of parasites	% of infection	Mean no. of parasites / infected fishes
Mar.'24	35	14	34	40.00	2.43
Apr.	40	07	13	17.50	1.86
May	37	06	10	16.22	1.67
Jun.	34	04	06	11.76	1.50
Jul.	27	05	07	18.52	1.40
Aug.	25	04	05	16.00	1.25
Sep.	34	07	12	20.59	1.71
Oct.	42	06	09	14.29	1.50
Nov.	38	07	10	18.42	1.43
Dec.	31	06	11	19.35	1.83
Jan.'25	28	05	07	17.86	1.40
Feb.	30	08	12	26.67	1.50
Total	401	79	136		

lucida; graphs were drawn with the help of MS Excel, and all the measurements (in mm) were taken by using a stage micrometer.

Result and Discussion

The present form is referred to the genus *Genarchopsis*[5], of which, so many species *G. ovocaudatum*[4,8]; *G. piscicola*[4,8]; *G. singularis*[8-10]; *G. lobatum*[8-10]; *G. faruquis*[2,9,10]; *G. dasus*[2,9,10]; *G. indicus*[2,9,10]; *G. punctati*[1]; *G. cuchiai*[3]; *G. cameroni*[3] and *G. ophiocephali*[6] have been described so far from freshwater fishes of India. This form differs from all these species; hence, it is regarded as a new species with the specific name *Genarchopsis varunai* sp. nov.

Seasonal Variation in the incidence and intensity of infection of *Genarchopsis varunai* sp. nov. in freshwater fish *Amphipnous cuchia*.

The 401 specimens of *Amphipnous cuchia* examined include 79 infected fishes, from which 136 mature *Genarchopsis varunai* sp. nov. were collected. This represented an overall percentage of infection of 19.70% and 1.72 worms per infected fish.

The incidence and intensity of infection were recorded during the period from March 2024 to February 2025 (Table-2). The fluke occurred throughout the year, but in varying intensities. Over the period of 12 months, the percentage of infection varied from 11.76% to 40.00%. The highest infection was recorded in March, 2024, when 40.00% of the fish were found infected with the fluke. The infection was minimal during June 2024, when 11.76% of the fish examined were infected. In the remaining months, the infection fluctuated between 14.29% to 26.67%.

The intensity of infection during the same period

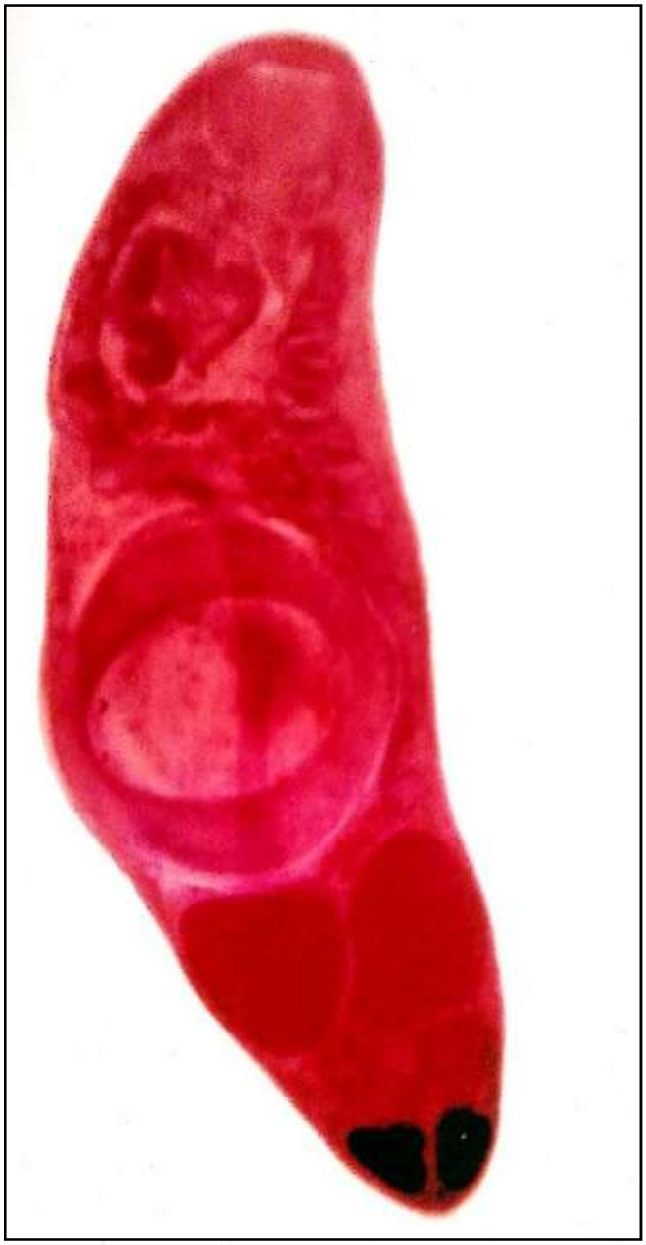

Fig. 1 : *Genarchopsis varunai* sp. nov.

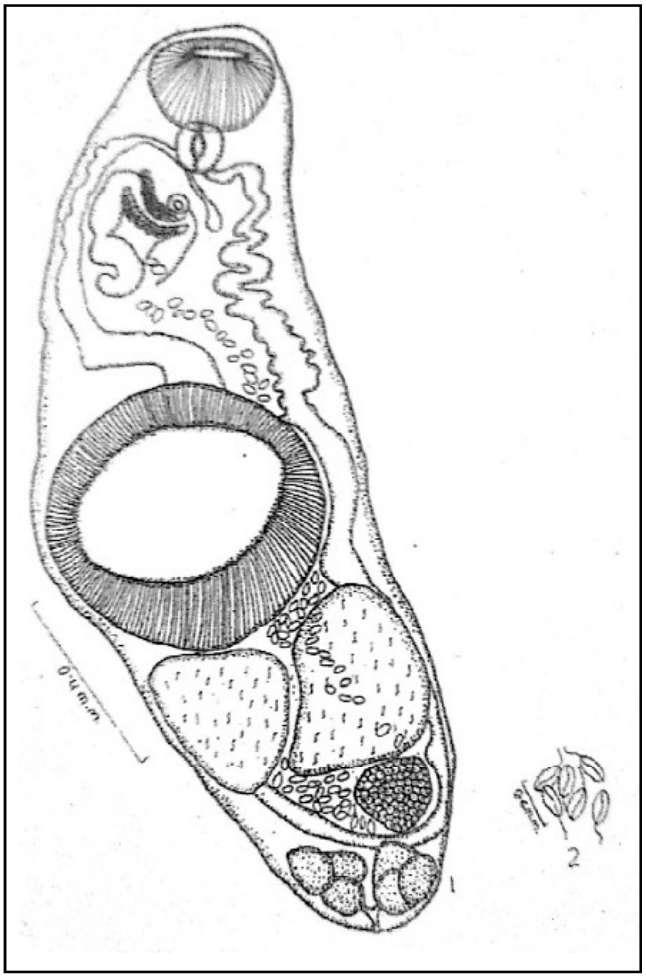

Fig. 2 : *Genarchopsis varunai* sp. nov.

1. **Entire view**
2. **Eggs**

showed different trends. The maximum intensity was recorded in March 2024, when the percentage of infection was also at its maximum level. The lowest intensity was recorded during August 2024, when the percentage of infection was 16.00%. In the remaining

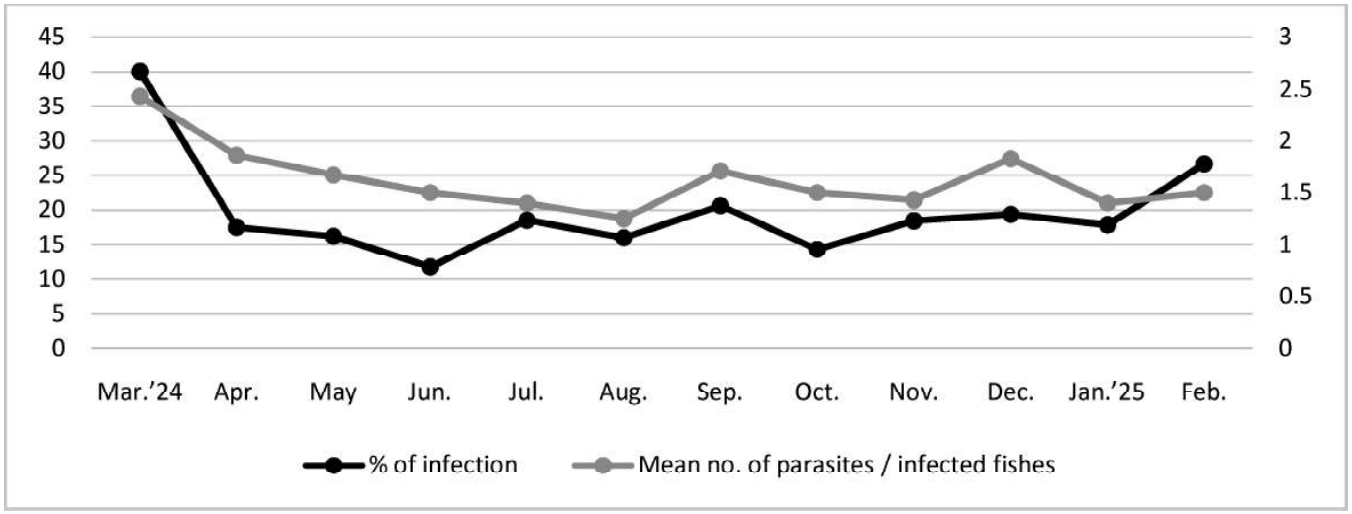

Fig. 3 : Showing incidence and intensity of infection of *Genarchopsis varunai* sp. nov.

months, the intensity varied between 1.40 and 1.86.

Conclusion

As per the above discussion, this paper records the seasonal variation and intensity of infection in *Genarchopsis varunai* sp. nov.and also specifies its key for species identification.

References

1. Agarwal V. Studies of some trematode parasites of freshwater fishes from Lucknow. *Ann. Parasit. Hum. Comp.* 1966; **41** : 217-231.
2. Gupta SP. Three new trematodes of the family HemiuridaeLuhe, 1901, from freshwater fishes of U.P., India. *Ind. Helminth.* 1951; **3** : 41-54.
3. Kakaji VL. Studies on helminth parasites of Indian fishes Part II. Some trematode parasites of freshwater fishes of Uttar Pradesh. *Ind. Helminth.* 1969; **21** : 49-80.
4. Manter HW. A collection of trematodes from Florida amphibian. *Tr. An. Micr. Soc.* 1938; **57** : 26-37.
5. Ozaki Y. On a new genus of fish trematodes, *Genarchopsis* and a new species of *Asymphylodora. Jap. J. Zool.* 1925; **1** : 101-108.
6. Sabhyata, Gundevia HS. A new species *Generchopsis ophiocephali* sp. nov. from freshwater fish *Ophiocephalus punctatus* at Varanasi. Biodiversity and Sustainable Development. 2011; pp 91-96.
7. Sabhyata, Tandon Pankaj Presence of trematode (family HemiuridaeLuhe, 1901) from freshwater fish of the River Ganges, Varanasi and Kanpur region. *International Journal of Fauna and Biological studies.* 2026; **13**(1) : 30-32.
8. Srivastava HD. On new trematodes of frogs and fishes of united Provines. India Part. I. Distomes of the family Hemiuridae from Northern Indian fishes & frogs with a systematic discussion on the family Halopegidae and the genera *Vitellotrema*Guberlet and *Genarchopsis* Ozaki. *Bull. Acad. Sci. UP*. 1933; **3** : 41-60.
9. Yamaguti S. Parasitic worms mainly from Celebes. Part 3. Digenetic trematodes of fishes, II. Acta. Med. *Okayama.* 1954; **8** : 146-198.
10. Yamaguti S. Systema Heminthum. The digenetic trematodes of vertebrates Part I and II. 1958; Interscience Publ. Inc. London. p. 979.