

International Multidisciplinary Research Journal

Golden Research Thoughts

Chief Editor
Dr.Tukaram Narayan Shinde

Publisher
Mrs.Laxmi Ashok Yakkaldevi

Associate Editor
Dr.Rajani Dalvi

Honorary
Mr.Ashok Yakkaldevi

Golden Research Thoughts Journal is a multidisciplinary research journal, published monthly in English, Hindi & Marathi Language. All research papers submitted to the journal will be double - blind peer reviewed referred by members of the editorial board. Readers will include investigator in universities, research institutes government and industry with research interest in the general subjects.

Regional Editor

Dr. T. Manichander

International Advisory Board

Kamani Perera
Regional Center For Strategic Studies, Sri Lanka

Mohammad Hailat
Dept. of Mathematical Sciences,
University of South Carolina Aiken

Hasan Baktir
English Language and Literature
Department, Kayseri

Janaki Sinnasamy
Librarian, University of Malaya

Abdullah Sabbagh
Engineering Studies, Sydney

Ghayoor Abbas Chotana
Dept of Chemistry, Lahore University of
Management Sciences[PK]

Romona Mihaila
Spiru Haret University, Romania

Ecaterina Patrascu
Spiru Haret University, Bucharest

Anna Maria Constantinovici
AL. I. Cuza University, Romania

Delia Serbescu
Spiru Haret University, Bucharest,
Romania

Loredana Bosca
Spiru Haret University, Romania

Ilie Pinteau,
Spiru Haret University, Romania

Anurag Misra
DBS College, Kanpur

Fabricio Moraes de Almeida
Federal University of Rondonia, Brazil

Xiaohua Yang
PhD, USA

Titus PopPhD, Partium Christian
University, Oradea, Romania

George - Calin SERITAN
Faculty of Philosophy and Socio-Political
Sciences Al. I. Cuza University, Iasi

.....More

Editorial Board

Pratap Vyamktrao Naikwade
ASP College Devrukh, Ratnagiri, MS India Ex - VC. Solapur University, Solapur

Iresh Swami

Rajendra Shendge
Director, B.C.U.D. Solapur University,
Solapur

R. R. Patil
Head Geology Department Solapur
University, Solapur

N.S. Dhaygude
Ex. Prin. Dayanand College, Solapur

R. R. Yaliker
Director Management Institute, Solapur

Rama Bhosale
Prin. and Jt. Director Higher Education,
Panvel

Narendra Kadu
Jt. Director Higher Education, Pune

Umesh Rajderkar
Head Humanities & Social Science
YCMOU, Nashik

Salve R. N.
Department of Sociology, Shivaji
University, Kolhapur

K. M. Bhandarkar
Praful Patel College of Education, Gondia

S. R. Pandya
Head Education Dept. Mumbai University,
Mumbai

Govind P. Shinde
Bharati Vidyapeeth School of Distance
Education Center, Navi Mumbai

G. P. Patankar
S. D. M. Degree College, Honavar, Karnataka

Alka Darshan Shrivastava
Shaskiya Snatkottar Mahavidyalaya, Dhar

Chakane Sanjay Dnyaneshwar
Arts, Science & Commerce College,
Indapur, Pune

Maj. S. Bakhtiar Choudhary
Director, Hyderabad AP India.

Rahul Shriram Sudke
Devi Ahilya Vishwavidyalaya, Indore

Awadhesh Kumar Shirotriya
Secretary, Play India Play, Meerut (U.P.)

S. Parvathi Devi
Ph.D.-University of Allahabad

S.KANNAN
Annamalai University, TN

Sonal Singh,
Vikram University, Ujjain

Satish Kumar Kalhotra
Maulana Azad National Urdu University



“DIVERSITY OF GASTROPODS IN THE BORI RIVER DAM, AT TAMASWADI, TAL- PAROLA, DISTRICT JALGAON (MS), INDIA”.

Ahirrao K. D.¹ and Patole S.S.²

¹Dept of Zoology, Rani Laxmibai College, Parola, Dist-Jalgaon , India.

²Dept of Zoology, V,V,M's S.G.Patil Arts Science and Commerce College, Sakri, District-Dhule.

ABSTRACT

Freshwater Gastropods diversity and its abundance status were studied from Bori river dam, Tamaswadi, Tal-Parola, District Jalgaon. The Snails and slugs were collected during the tenure of academic year 2001-2002. The samples were collected at every month from Two different sites of Bori river dam. A total of 10 Gastropod species were recorded throughout the year, which belonged to 4 orders, 7 families and 8 genera. Maximum species were collected in winter season at both sites and the dominant order was found to be Basommatophora.

KEYWORDS: Gastropoda diversity, Bori river dam, Jalgaon.

INTRODUCTION :

Molluscs are extremely important communities among other ecological communities. They constitute the second largest invertebrate and



most successful group next only to insects, (Abbott, 1989; Bouchet, 1992). Basically all molluscs are aquatic but they move on the land and still dependent on a moist ground, in an excess of hot(summer) or cold(winter) dry climate they enter in the state of aestivation and hibernation respectively for about 2 to 3 years without any arousal. The Phylum Mollusca are classified into seven classes viz. Aplacophora, Polyplacophora, Monoplacophora, Gastropoda, Scaphopoda, Pelecypoda, and Cephalopoda. Gastropoda is the largest class having approximately 85,000 to 1,00,000 species are recorded throughout the world (Hyman, 1967;

Strong et al., 2008). The molluscan diversity all over the world of molluscan species recorded in the terrestrial ecosystem (24503) and fresh water ecosystem (8765). Out of these only 171 species of Gastropods are recorded (Punithavelu and Raghunathan, 2005). The malacofaunal check list and considerable work has been done from Abroad (Todd and Gary, 1990; Ruano, 1997). The information available on molluscan species diversity in India is not in focused, hence chosen for study.

They are beneficial to man from their ancient time by both way economically and medicinally (Wosu,

2003). Like all animals, the molluscs are not considered by men to be either useful or destructive. Gastropod plays an important role in balancing the nature. The shells were used in Unani and Ayurvedic medicine system and for meditation, in the production of humus, in the control of fungi, algae, lichens and also as predators and parasites; but, in nature the molluscs are hunted and eaten by predators (Ahirrao, 2003).

In scientific studies, molluscs are important in study of drug action on heart, hormones, enzymes and antitoxins- especially in relation to immunological hematology. These are suitable bio-indicators for some radio-active and chemical pollution in the coastal areas of water bodies. The snails and slugs are important to man because of the damage they do in agriculture, horticulture and forestry. Furthermore, they are of

importance in medical and veterinary practice, since they serve as intermediate host for certain parasitic worms of man and domestic animals viz. Schistosome parasites (Ahirrao, 2003).

MATERIALS AND METHODS:

Study area:

Bori river dam is 20 km away from Parola, Tal-Parola, District-Jalgaon(MS) India. It is an earthen dam, having height of the dam above lowest foundation is 66 feet and the length is about 11040 feet. The average rainfall ranges from 77 cm to 80 cm. The major rivers passing from Parola city is the Bori and other tributaries. The average minimum temperature 10⁰ to 12⁰ C and maximum temperature was 42⁰ to 45⁰ C of the year. The longitude and the latitudes of Parola are 20.8822⁰N 75.1253⁰E respectively.

Fig:-1. Map Showing Study area Bori river dam, Tamaswadi, near Parola, Dist-Jalgaon MS, India.



SAMPLING AND PRESERVATION:

The Molluscan species were collected from Bori river dam, Tamaswadi, Tal-Parola District-Jalgaon. All specimens were brought to the laboratory, washed thoroughly and preserved in 4% formalin. The shells were dried at room temperature, and then separated and kept in separate tray. Identification was done (Preston, 1915; Rao, 1989; Tonapi, 1980). The unidentified molluscan shells are identified and classified up to species level by Zoological survey of India, Pune, Maharashtra State, India. Data were collected at every month from April 2001 to Mar 2002.

DATA ANALYSIS:

At every month four quadrat (1 X 1m) were sampled from two different sites and the average of those were considered as abundance/rareness shown in the table no.1:

Table: 1: The Gastropoda specimens found in the Bori river dam, Tamaswadi, Parola, Dist-Jalgaon

Order	Super Family	Family	Sr No	Name of the snail	Freque./ Abund.
Meso-gastropoda	Cerithioidea	Thiaridae	1	<i>Thiara lineata</i>	+++
			2	<i>Thiara tuberculata</i>	++
		Viviparidae	3	<i>Bellamyia bengalensis</i>	+++
Basomma-tophora	Planorboidea	Planorbidae	4	<i>Indoplanorbis exustus</i>	++
			5	<i>Gyraulus sp.</i>	++
	Lymnaeoidea	Lymnaeidae	6	<i>Lymnea accuminata</i>	++
			7	<i>Lymnaea luteola</i>	+
Stylomma-tophora	Veronicelloidea	Veronicellidae	8	<i>Leviculis alte alte</i>	++
		Cerrastidae	9	<i>Cerrastus mossonianus</i>	++
Pulmonata	Achatinoidea	Sublinidae	10	<i>Zootecus insularis</i>	+

Where, + = Less no. of animals found in the above collection site;
 ++ = Moderate number of animals;
 +++ = Abundant animals are available throughout the year.

RESULTS AND DISCUSSION:

During the study period, total 10 species were recorded from Bori dam, Tamaswadi during April 2001 to Mar 2002, which belongs to 4 orders, 7 families and 8 genera. Class Gastropoda, possesses 4 orders i.e. Basommatophora, Mesogastropoda, Stylommatophora and Pulmonata. Mesogastropoda includes 2 families, Thiaridae and Viviparidae. Out of which the family Viviparidae has one species and Thiaridae includes 2 species. Basommatophora with 2 families i.e. Lymnaeidae and Planorbidae have two species each. Stylommatophora has two families Veronicellidae and Cerrastidae each with single species while Order Pulmonata has only one family Sublinidae include, Zootecus insularis.

Among all these specimens Thiara lineata and Bellamyia bengalensis species were abundant throughout the year. Because the members of family Thiaridae and Viviparidae are quick colonizers, tolerant to habitat diversity and variability due to a very strong and thick shell. Many forms are parthenogenetic females capable of multiplication in a short time and Thiaridae as the most persistent and abundant macro-invertebrate family, Contreras-Arquieta (1998).

A number of workers have carried out their studies on various species of snails from different part of the country. The existence of molluscs is highly necessary because they constitute food for many aquatic organisms (Subba Rao, 1989 and 2003; Begum and Narayana, 2006). Sharma et. al., (2013) studied bottom sampling for 12 months from the banks of the stream and registered a total of 11 species of mollusca, while Patil et. al.,(2016) Studied, Malacofaunal distribution, abundance and diversity of the Nakane Lake reported 13 species of molluscs, out of which 10 species are Gastropods and 3 species of Pelecypods, belongs to 4 orders and 10 families and 12 genera.

CONCLUSION:

In general, the present study revealed that species abundance and diversity of molluscan species depends upon rich ecosystem of Tamaswadi dam. All recorded molluscan species are indigenous.

ACKNOWLEDGEMENT:

The author is grateful to the Principal, Shri. B. V. Patil, Rani Laxmibai Mahavidyalya, Parola Dist. Jalgaon (M.S), India, for providing laboratory facilities during tenure of research work and also thankful to ZSI, Pune, for scientific identification of Molluscan species.

REFERENCES:

1. Abbott, R. T. (1989): Compendium of landshell . American Malacologists, Burlington, M.A.
2. Ahirrao, K. D. (2003): Effects of sevin on some ecophysiological aspects of a Melanoid snail, *Melania scabra*. Ph. D. Thesis submitted to Dr. BAMU, Aurangabad.
3. Begum and Narayana J. (2006). Animal diversity of four lentic water bodies in and around Davangare city, Karnataka, *J. Aqua. Bio.* 21(2):13-18.
4. Bouchet, P. (1992). Extinction and preservation of species in the tropical world: What future for Molluscs? *American Conchologist*: 20; 20-24.
5. Contreras-Arquieta, A. (1998). New record of snail *Melanoids tuberculata* (Muller, 1774) (Gastropoda: Thiariidae) in the Cuatro Ciénegas Basin, and its distribution in the state of Coahuila, Mexico. *Southwest Nat.* 43(2): 283-286.
6. Hyman, L.H., (1967): The invertebrates Vol.6. Mollusca, 1, McGraw Hill, New York.
7. Patil, M. U., S. S. Patole, S. S. Bhoi and K. D. Ahirrao (2016): Malacofaunal distribution, abundance and diversity of the Nakana Lake, Dhule (MS) India, *Journal of research in biology*, vol-6(2): 1977-1983.
8. Prestone, H. B., (1915): The fauna of British India including Ceylon and Burma. Mollusca (Freshwater Gastropoda and Pelecypoda). Taylor and Francis, London, pp i-xi+ 244.
9. Punithavelu, V.R. and Raghunathan, M.B. (2005). Taxonomy and diversity of freshwater gastropods (Mollusca) from southern India. *Pro. Nat. Conf. on Wetland Biodiversity*, Pp.26-27
10. Rao, S. N. V. (1989): Freshwater Mollusca of India. In. Rao K.S. (ED.). *Recent advances in freshwater Biology*. New Delhi. Anmol Publication. 2: 187-202.
11. Ruano, F.D.L. (1997). Fisheries and farming of important marine bivalves in Portugal. *NOAA Tech. Rep. NMFS*, 129:191-200.
12. Sharma, K. K., Komal Bangotra and Minakshi Saini (2013): Diversity and distribution of Mollusca in relation to the physico-chemical profile of Gho-Manhasan stream, Jammu (J & K). *Journal of Biodiversity and Conservation* Vol5(4), pp 240-249,
13. Strong, E.E., O. Gargominy, W. F. Ponder and P. Bouchet (2008) : Global diversity of Gastropods (Gastropoda; Mollusca) in freshwater. *Hydrobiologia* 595: 149-166.
14. Subba Rao, N. V. (1989): Handbook: Freshwater molluscs of India, Zoological Survey of India, Calcutta.
15. Subba, Rao, N. V., (2003). Molluscan checklist of Ghodaghodi Tal area, Kallali District, *Our Nature*, 1: 1-2.
16. Todd, A.C., and Gary, D.S. (1990). Factors determining population density and size distribution of a freshwater snail in streams: effect of spatial scale. *OIKOS*. 59:359-367.
17. Tonapi, G. T., (1980): Freshwater animals of India. An Ecological Approach. Oxford and IBH publishing co., New Delhi, Bombay, Calcutta 341pp.
18. Wosu, L.O. (2003) : Commercial snail farming in West Africa- A guide. Ap. Express Publishers, NSukka - Nigeria.



Ahirrao K. D.

Dept of Zoology, Rani Laxmibai College, Parola, Dist-Jalgaon , India.

Publish Research Article

International Level Multidisciplinary Research Journal For All Subjects

Dear Sir/Mam,

We invite unpublished Research Paper, Summary of Research Project, Theses, Books and Book Review for publication, you will be pleased to know that our journals are

Associated and Indexed, India

- * International Scientific Journal Consortium
- * OPEN J-GATE

Associated and Indexed, USA

- EBSCO
- Index Copernicus
- Publication Index
- Academic Journal Database
- Contemporary Research Index
- Academic Paper Database
- Digital Journals Database
- Current Index to Scholarly Journals
- Elite Scientific Journal Archive
- Directory Of Academic Resources
- Scholar Journal Index
- Recent Science Index
- Scientific Resources Database
- Directory Of Research Journal Indexing

Golden Research Thoughts
258/34 Raviwar Peth Solapur-413005, Maharashtra
Contact-9595359435
E-Mail-ayisrj@yahoo.in/ayisrj2011@gmail.com
Website : www.aygrt.isrj.org