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The Study of Diversity of Molluscs from Arni Region, Yavatmal

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Abstract:

Mollusca are considered the most diverse and dominant benthic fauna both from lentic and lotic aquatic ecosystems. They are the environment indicators and thus plays an very important role in maintaining aquatic ecosystem by recycling nutrients and surviving as nutrition for aquatic aquatic organisms. Also they are an important source of food for other animals i.e. fishes, birds and mammals even for human being Present study is an attempt to study diversity of fresh water molluscs from Arni region ,Yavatmal district of Maharashtra state. In present study, 10 species belongs 02 classes were recorded. 06 species belongs to class gastropods and 04 species from class bivalvia.

A rapid survey method was used for careful visual estimation, handpick collection and recorded the molluscan species from selected habitats of the study area.. This study shows that the potential and importance of such habitats to diverse molluscan species and support many more species. It is a preliminary study on the molluscan diversity. Further studies are needed for detailed exploration of the molluscan fauna, its habitat and threats being experienced by these animals.

Key words : Molluscs, Diversity ,Fresh water, Aquatic ecosystem

Introduction:

Mollusca are comprised by about 120 000 species (80% Gastropoda, 15% Bivalvia) and thus is the second most diverse animal phylum occurring in all major environments except the aerospace. It is also the leading phylum concerning endangered and vulnerable species.Biodiversity is one of the important lives supporting system on the earth. Molluscs are found in various habitat and are divided into freshwater, marine and terrestrial forms. The freshwater Mollusca play an important role in water ecosystem. The phylum Mollusca have a large group of animals having varied size, shape, habits & occupy different environment (Subba Rao1993). The freshwater molluscs have a shell, in which the soft parts are enclosed. Most species can be suitably recognised by their shell characters. Freshwater gastropods are either herbivorous or detrivore or they may passively consume small invertebrates associated with periphyton (Tyagi, 2015). Many species spent their entire lives in few square meters of habitat; making them extremely vulnerable to localised environmental habitat degradation. Although most species prefer clean stable and bottoms, some prefer soft substrates more common to ponds and lakes. beside this a few wide-ranging Snail species can easily survive in polluted habitat our knowledge on Indian freshwater mollusc is based on contributions made by several earlier workers in the monograph “Freshwater molluscs of India” mention in brief about the general aspects of Habitat distribution zoogeography significance importance of malacological studies their role in medical, veterinary, public health, aquaculture etc. (Ramakrishna and Day ,2007)

However, in some groups the conchological characters have to be complemented by their structural characters which are used for study of molluscan taxonomy. The taxonomic survey of Indian freshwater Mollusca has been done by Zoological Survey of India (Subba Rao 1989) Indian gastropod studied by many workers Annadale (1919), Prasad (1925), Hora (1925 & 1926). Satyamurthi (1952), studied the diversity of molluscs from the Gulf of Mannar and recorded 450 species of gastropod and 156 species of bivalves. Durga Prasad et.al., (2001) recorded 48 species of molluscs from Gasthani estuary of which 27 species were gastropods and 21 species were pelecypods. Dahegoankar et.al., (2011) studied mollusc from Wardha and Zarpat river and shown their dominance by contributing, six species from the

Gastropods and two from Pelecypods. Suryawanshi et.al., (2012) studied biodiversity of molluscs from river Godavari, reservoir and pond, reported 24 species of fresh water molluscs. Maximum species were collected from Derla tank. The main objective of the present study was to document the molluscan diversity of the freshwater from Arni region of Yavatmal. The identification, taxonomic account and distribution of molluscs found in freshwater reservoirs will serve to keep complete record for further study.

Material and Methods:

a. Study region.

Study of molluscan fauna was carried out Arunavati river and surrounding water bodies during August 2022 to October 2022. The sampling stations, are close to the Arni place. **Arni** is a town with (Administrative Division) & tehsil in Yavatmal district of Maharashtra State in India. It is situated on the banks of the Arunavati River.The exact location of Arni With Latitude is = 19.99615 and Longitude is = 77.92975 .

b. Collection of molluscan Shells

Mollu can species were collected using a simple hand-picking method .Collected shells we cleaned with water and sun-dried. Dry shells then packed in plastic pouches and brought to the laboratory for further identification. . Specimens were identified by using the standard methods (Subba Rao N (1993),(Subba Rao N V and Mitra S C (1975)Mollusca base website was used to confirm the most recent taxonomic nomenclature (Mitra *et.al* 2004)

Table 1: The occurrence of gastropod species with class and family

Sr.no	Class	Family	Species
1	Gastropoda	Vivipadae	*Falopaludina martensi*
2		Vivipadae	*Bellamya bengalensis*
3		Vivipadae	*Bellamya dissimilis (Mueller)*
4		Thiaridae	*Melanoidestuberculatatuberculata (*
5		Thiaridae	*Thiara lineate (Gray)*
6		Pilidae	*Pila globosa*
7	Bivalvia	Helicaidea	*T.pisana*
8		-Unionidae	*Parreysia corrugata(Mueller)**
9		-Unionidae	*Lamellidens marginalis (Lamark)*
10		-Unionidae	*Lamellidens corrianus(Lea)*

RESULTS AND DISCUSSION :

In the present investigation the molluscan diversity was done. It is highly essential for the overall productivity and maintenance of aquatic ecosystem, to have rich molluscan population (Subba Rao, 1989). The molluscan fauna of Maharashtra state has no properly being studied, however few workers have attempted in studying the information regarding faunal diversity of the molluscan few workers like Subba Rao and Mitra (1975) studied on the collection of molluscan from Poona and adjacent districts. Tonapi and Mulherkar (1963) have also studied freshwater molluscan from Poona. Patil and Talmale (2005) published a checklist of land and freshwater molluscan from the Maharashtra state. They have reported 142 species of molluscan fewer than 23 families. A similar study was conducted on molluscan community of the Bharathapuzha River in Kerala and thirteen species of molluscs belonging to five orders, eight families and ten genera were reported (Bijukumar et.al., 2001). Farida (1988) recorded 59 species from Layari river. Among them, 31 species belong to class Gastropoda, 27 species belong to Bivalvia and the class Scaphopoda contains only one species. Amanullah and Hameed (1996) studied Kaveri river and reported 13 species of molluscs of which 8 species were gastropods and 5 species bivalves.

In the present study A total of 10 molluscan species were reported from the Arni region Yvatmal district. These listed species belonging to 02 classes, ,07 families.. Out of 10 molluscan species 06 s pecies belonging to class Gastrop-oda and 04 species belonging to class Bivalvia of family Vivipadae, Thiaridae, Pilidae , Helicaidea, -Unionidae

Conclusion:

From the above findings it is evident that freshwater molluscs constituents a major macro benthic organisms and form a major link in food web of fresh water ecosystem. The existence of molluscan is highly necessary because they constitute food for many aquatic birds and inhabitant of the reservoirs. It is highly necessary to preserve and conserve the diversity freshwater molluscan in any given aquatic bodies. Further insight is needed to establish a data base of molluscan diversity from freshwater bodies

References:

1. Amanullah B. and P.S. Hameed (1996): Studies on molluscan diversity in Kaveri river system (Tiruchirappalli, India) with special reference to vector snails of trematode parasites. Current Science, Vol. 71(6): 473-475p
2. Annandale, N. (1919). The fauna of certain small streams in Bombay Presidency. Records of the Indian Museum 16: 117-120.
3. Bijukumar A., S. Sushama andT. Biswas (2001): Molluscs collected from the Bharathpuzha River, Kerala, J. Inland Fish. Soc. India; 33, 2, 68-69p
4. Dahegaonkar N.R., Telkhade P.M., Rohankar I.H. and Bhandarkar W.R. (2011): Studies on diversity of benthic macro invertebrates in two lotic ecosystems near Chandrapur, Maharashtra, India. Golden Research Thoughts, Vol. 1(IV): 4p.
5. Durga Prasad N.H.K., D.V. Rama Sarma and L.M. Rao(2001): Molluscan fauna of Gosthani Estuary-A Systematicsurvey. Journal of Aquatic Biology, Vol. 16(1): 15-17p.
6. Hora, S.L. (1926). On some interesting features of the Western Ghats, Journal of the Bombay Natural History Society 31: 447-44
7. Mitra S.C., Dey A and Ramakrishna (2004). Pictorial handbook of Indian land snails. Zoological Survey of India, Calcutta
8. Molluscabase (2021) https://www.molluscabase.org. Accessed on: 2021-02-15.
9. Patil S G and Talmale S S (2005) A checklis of alnd and freshwater mollusca of Maharashtra state. Zoos' Print J. 20, 1912-1913.
10. Ramakrishna, Dey A (2007) Handbook on Indian freshwater molluscs. Zoological Survey of India, Kolkata, India, 399 pp.
11. Satymurthi, S.T. (1952) : Krusadai Island (in the gulf of Mannar) Bulletin of Madras Government museum . Govt. Press. Madras.

12. Subba Rao N V and Mitra S C (1975) On collection of mollusca from Poona and adjacent districts. Newsletter of the Zoological Survey of India 1, 77-79.
13. Subba Rao N V (1989) Handbook freshwater molluscs of India. Zoological Survey of India, Calcutta, 289 pp
14. Subba Rao N (1993) Freshwater molluscs of India. In: Rao KS (Ed.) Recent advances in freshwater biology 2. Anmol Publications, New Delhi, India, 187–202
15. Sankarappan A, Chellapandian B, Vimalanathan A, Mani K, Sundaram D, Muthukalingan K (2015) Vector ecology of human schistosomiasis in south India and description of a new species of the genus Ferrissia (Mollusca: Gastropoda: Planorbidae). Journal of Vector Borne Diseases 52 (3):
16. Suryawanshi A.V., C.S. Bhowate and A.N. Kulkarni (2012): Freshwater Molluscs from Nanded, Maharashtra, India. Bioinfolet, Vol. 9(4B): 732-733
17. Tonapi G T and Mulherkar L (1963) On the freshwater molluscs of Poona. J. Bombay Natural History Society 60, 104-120
18. Tyagi L.K.(2015)Molluscan diversity with particular emphasis to snail in Gautam Budha Nagar (U.P),India.Journal of Global Biosciences.4(7):2662-2669.201–207