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First record of *Hislopia malayensis* Annandale, 1916 (Bryozoa: Gymnolaemata) from freshwaters of India

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Freshwater bryozoans are the representatives of periphytic or aufwuch community. They grow on underwater substrata which may be living or nonliving. Bryozoan colonies have multiple subunits, known as zooids. In India Annandale (1911), Rao (1992) and Shrivastava (1981) made significant contribution to this fascinating phylum but further studies are obligatory to understand the real picture of diversity, distribution and the ecology of bryozoans in India.

Class Gymnolaemata includes five freshwater families from which the family Hislopiidae is represented by a single genus, *Hislopia*, with seven described species. Till date, only *Hislopia lacustris* Carter, 1858 and *Hislopia monoliformis* Annandale, 1907 have been documented from India. This is the first report on the occurrence of *Hislopia malayensis* Annandale, 1916 from the fresh waters of India. Formerly the species was only reported from Thailand by Annandale (1916) and Wood et al. (2006), as well as from Cambodia by Hirose & Mawatari (2007). It was initially described by Annandale (1916) from a small lake near Yala in Patani Province, Thailand where collections were made in 1901. Again in 2006 Wood et al. (2010) collected it from the same locality. Wood et al. (2006) reported it again from several sites across Thailand and described it as the "most frequently encountered freshwater bryozoan in Thailand".

Material and Methods: The colonies were collected from Visapur Dam (19^{0}32'N & 74^{0}52'E) and Mula Dam (19^{0}0'N & 74^{0}34'E) Ahmednagar District and Mombatta Lake (19^{0}57'N & 75^{0}15'E) of Aurangabad District Maharashtra State, India. All kinds of hard submerged substrata were examined and colonies were observed under binocular dissection microscope in live condition. The colonies were also maintained in the laboratory as described by Wood (2005) for observing growth patterns.

Result and Discussion: The species is identified by the description provided by Annandale (1916) and Wood et al. (2006). The colonies are flat and zooids radiate in all directions. Zooids are broadly oval, with a wide zone of contact between the daughter zooids. The old zooids are brownish in color while the newly formed ones are transparent (Image 1B). Unlike *H. lacustris* spines are absent around the opening of zooid, the orifice and the presence of distal expansion (Image 1C–E), which later on develops as a daughter zooid. This expansion is a transparent tube, which later starts expanding from

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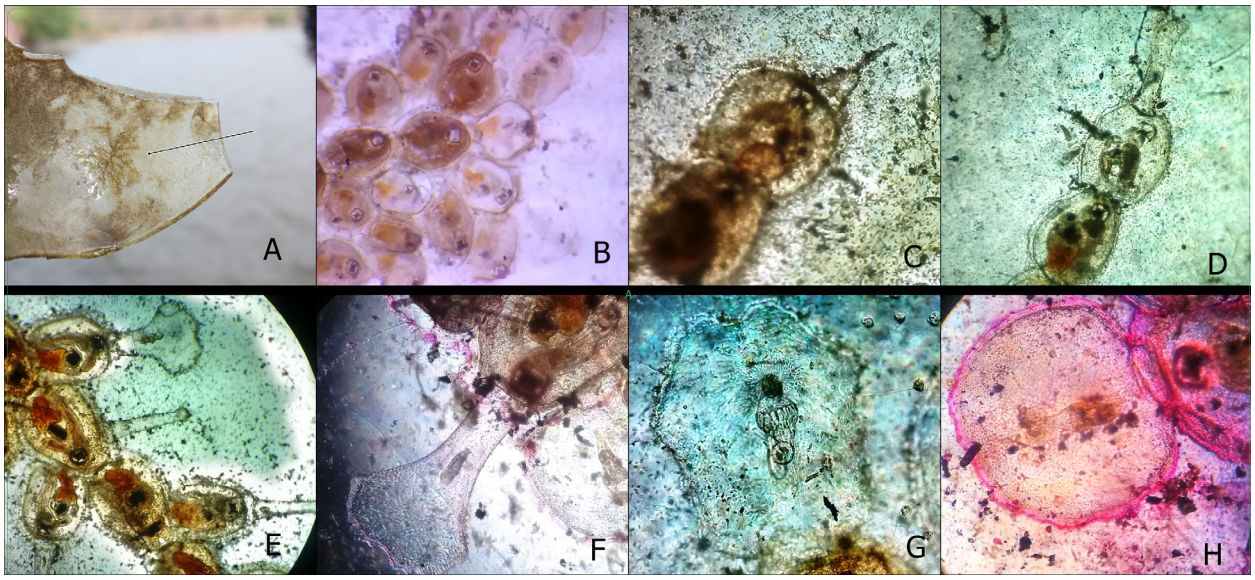

Image 1. A - colony of *Hislopia malayensis* on glass; B - zooids of *H. malayensis*; C–H - shows the development of new zooid through the distal tube and subsequently backward expansion

the tip and moves back towards the parental zooid (Image 1F–H). The distal expansion has a ball like cell mass, becomes spindle-shaped, which possibly forms all the internal organs of the daughter zooid during the development. This distal expansion with spines absent around the orifice of the zooids are the diagnostic characters of *H. malayensis* (Annandale 1916; Wood et al. 2006). In a fully grown colony, the digestive tract is of saffron color, with milky white peristome and a transparent ectocyst.

The colonies are abundant at all sites especially at Mula Dam where each and every submerged substratum, even the plastic boat used to catch fish is densely covered by the colonies. They are observed on rocks, twigs, plastic bottles glass (Image 1A), and clothes present in the water like *H. lacustris*, which is a common freshwater bryozoan across several sites of Maharashtra State.

Conclusion: According to Timothy S. Wood (pers. comm. 2015) there is no serious work on this genus and one has to understand the phenotypic plasticity and molecular taxonomy amongst the species to know the variation and exact number of species in the genus. This report points out the need to undertake further studies on the diversity and distribution of these fascinating animals in India.

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