

ORL-D&H-03**Morpho-molecular Characterisation of Six New Species of Monogeneans Platyhelminthes Parasitizing Freshwater Fishes in Mizoram (N.E), India.**

Sneha Prakash*, Amit K Trivedi, and Amit Tripathi

Department of Zoology
 Mizoram University
 Aizawl, Mizoram, India 796 004
 mzusneha@gmail.com

The fish fauna of Mizoram, India, a global hotspot of biodiversity—is reasonably well-documented, with at least 156 known species. However, in sharp contrast, information on monogenean parasites of fish from the region is scanty with only a few species have been described till date. In present study, 50 samples of *Rasbora daniconius* (Hamilton, 1822) and *Salmostoma bacaila* (Hamilton, 1822) were collected and examined to expand the current knowledge of the diversity and distribution of monogenean parasites from Mizoram. Forty (80%) of them were found infected with a total no. of 6 monogenean species. *Rasbora daniconius* (Hamilton, 1822) was the most heavily infected fish presenting four new monogenean species from three genera followed by *Salmostoma bacaila* (Hamilton, 1822), presenting two new species from two genera. This study distinctly established that helminth parasites are endemic in freshwater fishes of Mizoram. Although epidemiological studies were not conducted, the high prevalence and species diversity of helminths recovered suggested that these parasites are an important fish health hazards in the region.

Fish samples were collected from 3 rivers; Mat, Tuikum, and Tuichang in Serchhip District of Mizoram, and examined for monogenean parasites. For morphological examination, parasites recovered were stained with Gomori's trichrome, and dehydrated in an ascending series of alcohol, cleared in xylene, and mounted in DPX; a few other specimens were mounted in Hoyer's medium and glycerine jelly. The mounts prepared were examined, photographed, and measured in micrometres with a light microscope equipped with phase-contrast and differential interference contrast (DIC) optics, a digital camera and image analysis software (Fig.1).

They were identified utilizing traditional morphological criteria employing linear point-to-point measurements of their sclerotised reproductive and haptoral body parts. For molecular examination, the nuclear 28S ribosomal RNA (rRNA) gene, as well as the nuclear internal transcribed spacer 2 (ITS2) region were analysed and variations were observed (Fig. 2). The molecular analyses of specimens collected from three different localities using the 28S rRNA and ITS2 gene showed an identical genotype that did not match any of the known sequences in GenBank, confirming our initial morphological identification.

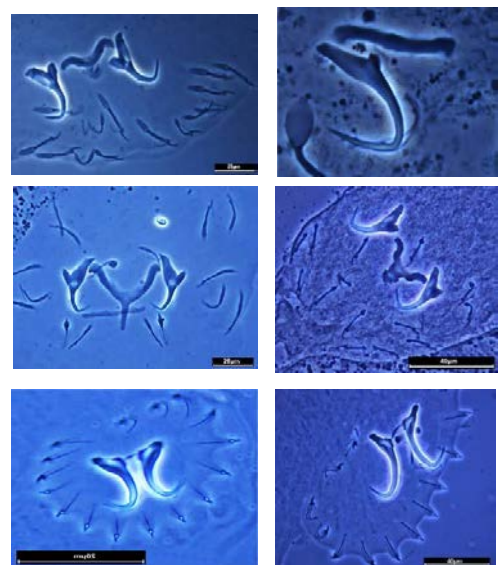


Figure 1. Phase contrast image of haptoral armament (anchor-bar complex and hooks) of monogeneans

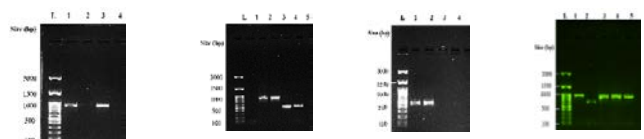


Figure 2. 1.2% (w/v) SYBR safe™ stained agarose gel images of amplified PCR products.