



## A DAY OF DISCOVERY – Surveying Aquatic Invertebrates at the WII Campus

– KARMANNYE CHAUDHARY & RITESH GAUTAM

On a sunny yet unhurried morning amidst the verdant expanse of the Wildlife Institute of India (WII) campus, Mr. Ritesh Gautam and I embarked on a quick survey of the aquatic invertebrates inhabiting the tranquil waters of the Campus Lake and streams. Our initial enthusiasm was met with a minor setback – we had forgotten our collection vials! Thankfully, a quick detour allowed us to retrieve the necessary equipment, and soon I was wading into the Lake (Fig. 1). Equipped with the collection vials and clad in our trusty Wellington boots, we approached the lake, where a chorus of spot-billed ducks bid us a fleeting farewell as they soared gracefully into the azure sky.

With each step into the cool embrace of the lake, clouds of silt billowed around us, prompting the retreat of diminutive water boatmen and riffle bugs. A sweep of my D-net through the aquatic vegetation yielded a mixed bag – a healthy population of invertebrates alongside debris and charophytes. After extricating myself from the foot-deep mud, we transferred the net's contents to a spill tray, allowing the copious amount of silt to settle before a visual inspection and analysis.

Amidst the silt, the ubiquitous presence of *Micronecta ludibunda* (Fig. 2), colloquially known as water boatmen, emerged as a prominent feature. They were accompanied by the sleek

forms of backswimmers of the genus *Anisops* (Fig. 3), asserting their role as primary predators within the aquatic ecosystem. Larger water boatmen of the genus *Sigara* were present as well, easily identifiable by their cigar-like shape and dorsal patterning. Drawing closer to the sample tray revealed the delicate forms of *Daphnia* and *Cyclops*, diligently tending to the vital task of nutrient cycling amidst the aquatic milieu.



Figure 2. *Micronecta ludibunda*



Figure 3. *Anisops* sp.

After collecting some backswimmers and boatmen for mounting, we released the remaining organisms back into the lake. My primary interest lies in water beetles, and their absence in the sample was a slight disappointment. However, Mr. Gautam assured me that the streams at the other end of the campus might hold promise. Indeed, the densely vegetated stream, with a small bridge overhead, teemed with life. Water striders or *Gerridae* (Fig. 4), their long legs nimbly navigating the water's surface tension, scattered in a flurry as I approached with my net. We envisioned using a guitar, if one were present, to mimic vibrations and induce a synchronized ripple effect amongst these fascinating creatures.



Figure 4. Water Strider floating around the lake looking for prey.



Figure 5. Zebrafish collected from the WII streams.

Fish collected from the stream initially resembled the invasive *Gambusia*, based on a previous survey. However, a closer look by Mr. Gautam revealed vibrant yellow lateral lines, identifying them as Zebrafish (Fig. 5). This discovery was a welcome surprise compared to the potential presence of invasive *Gambusia*. The stream also hosted a diverse population of water striders, particularly from the genus *Metrocoris*, alongside riffle bugs. The continued absence of water beetles led us to hypothesise several possibilities: competition from backswimmers and water striders, a lack of suitable ecological niches, or simply inadequate sampling. Our findings beckon further investigation, hinting at the possibility of long-term monitoring initiatives to unravel the intricacies of this dynamic ecosystem. This potential project holds immense promise for providing valuable insights into the intricate dynamics of the WII campus's aquatic ecosystem.

#### **About the Authors**

Karmannye is a 20-year old student from Chandigarh, currently studying biology at Queen Mary University, London. His current research interests are waterfowl population dynamics along with wetland ecosystems and water beetle taxonomy.

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