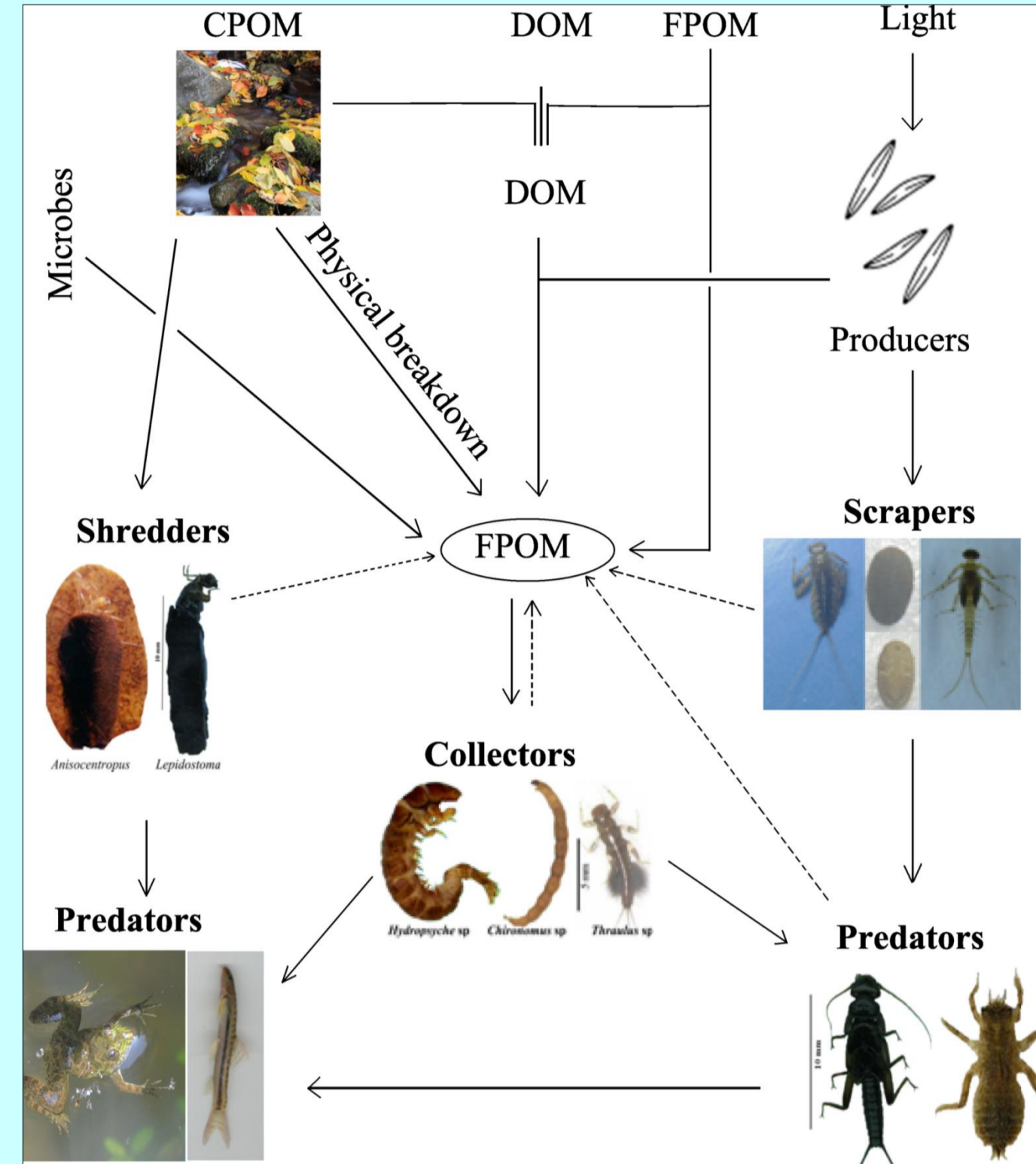


# OUR LITTLE KNOWN INSECT FRIENDS AND FOES FROM THE MOUNTAIN STREAMS OF UTTARA KANNADA

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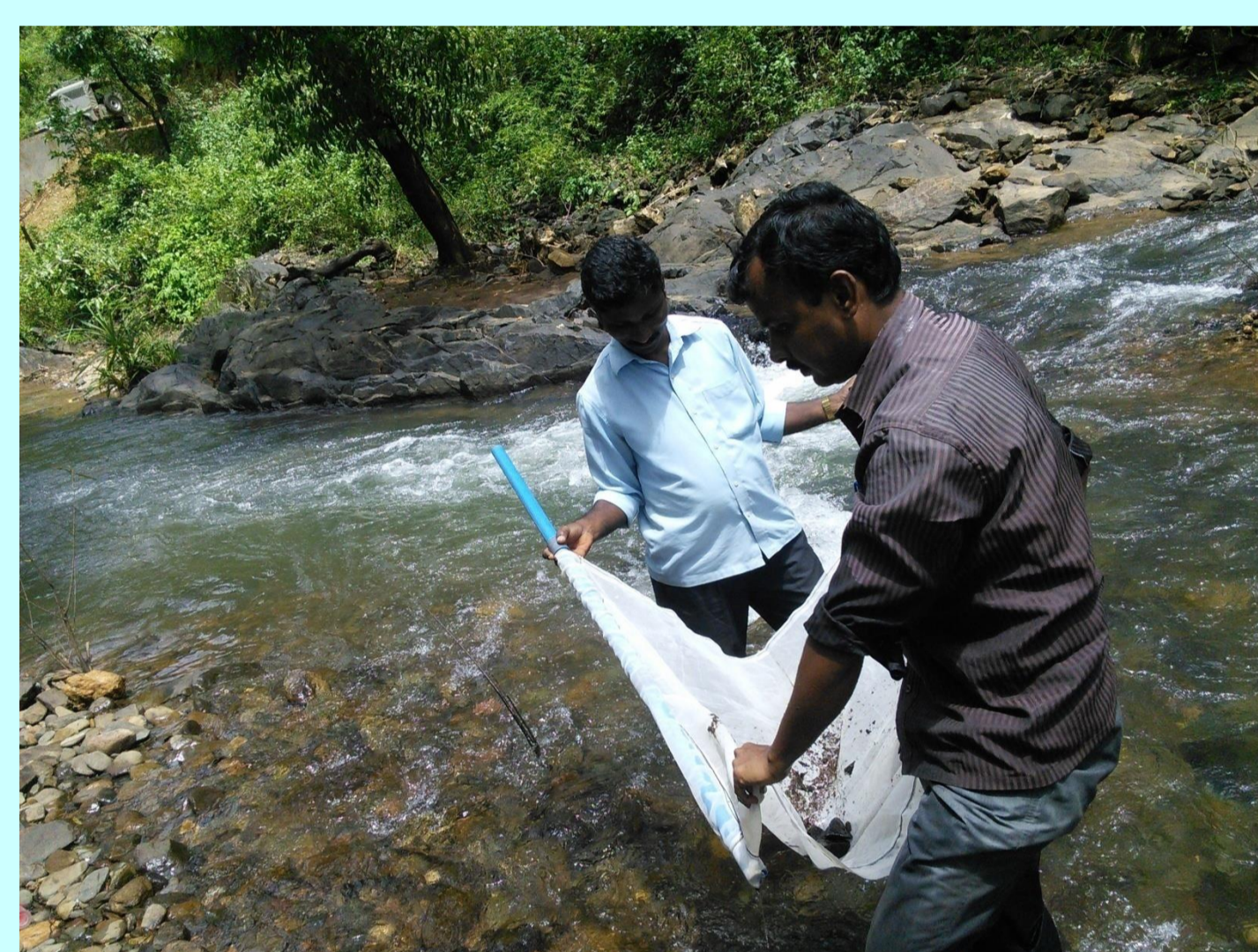
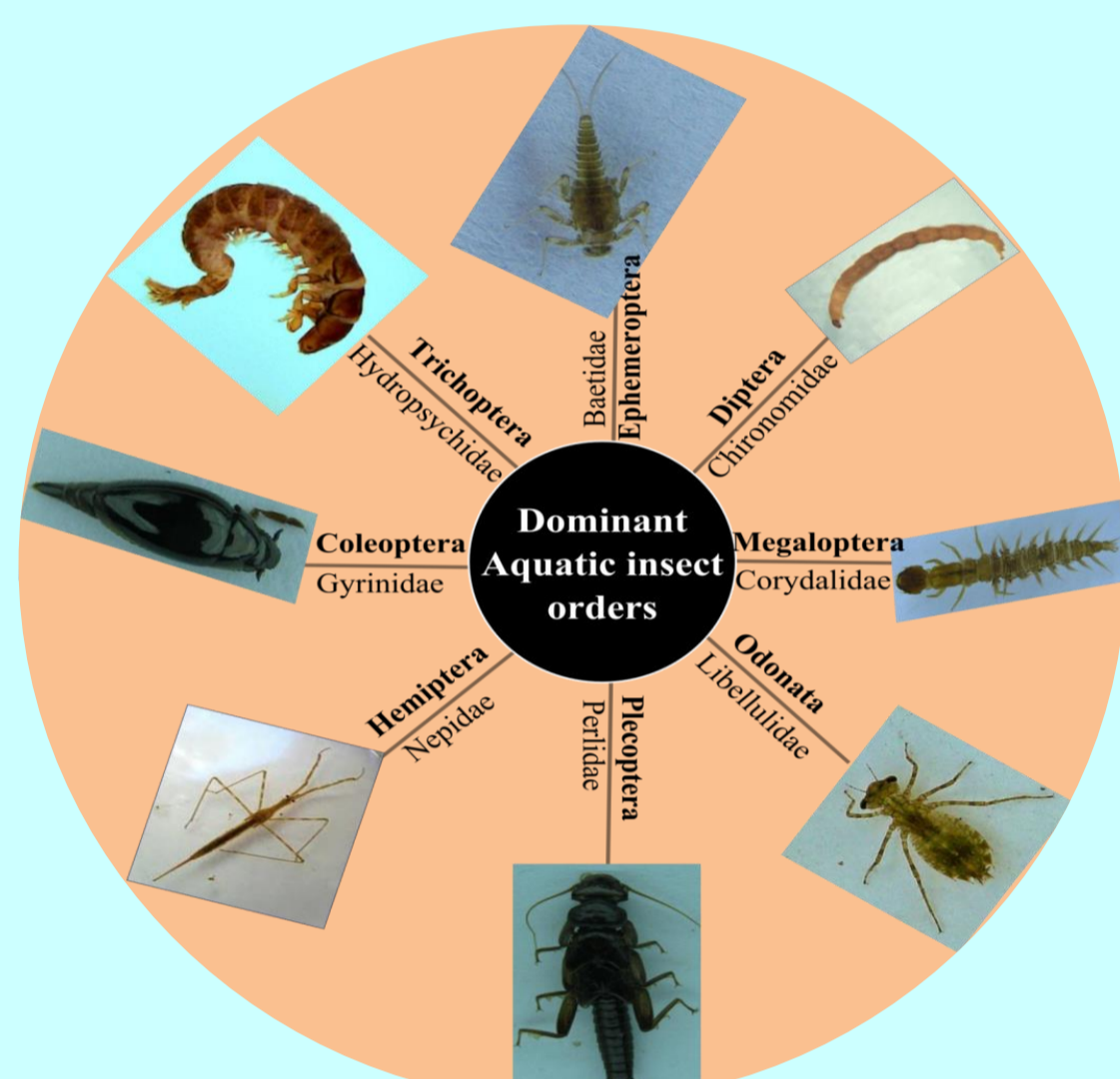
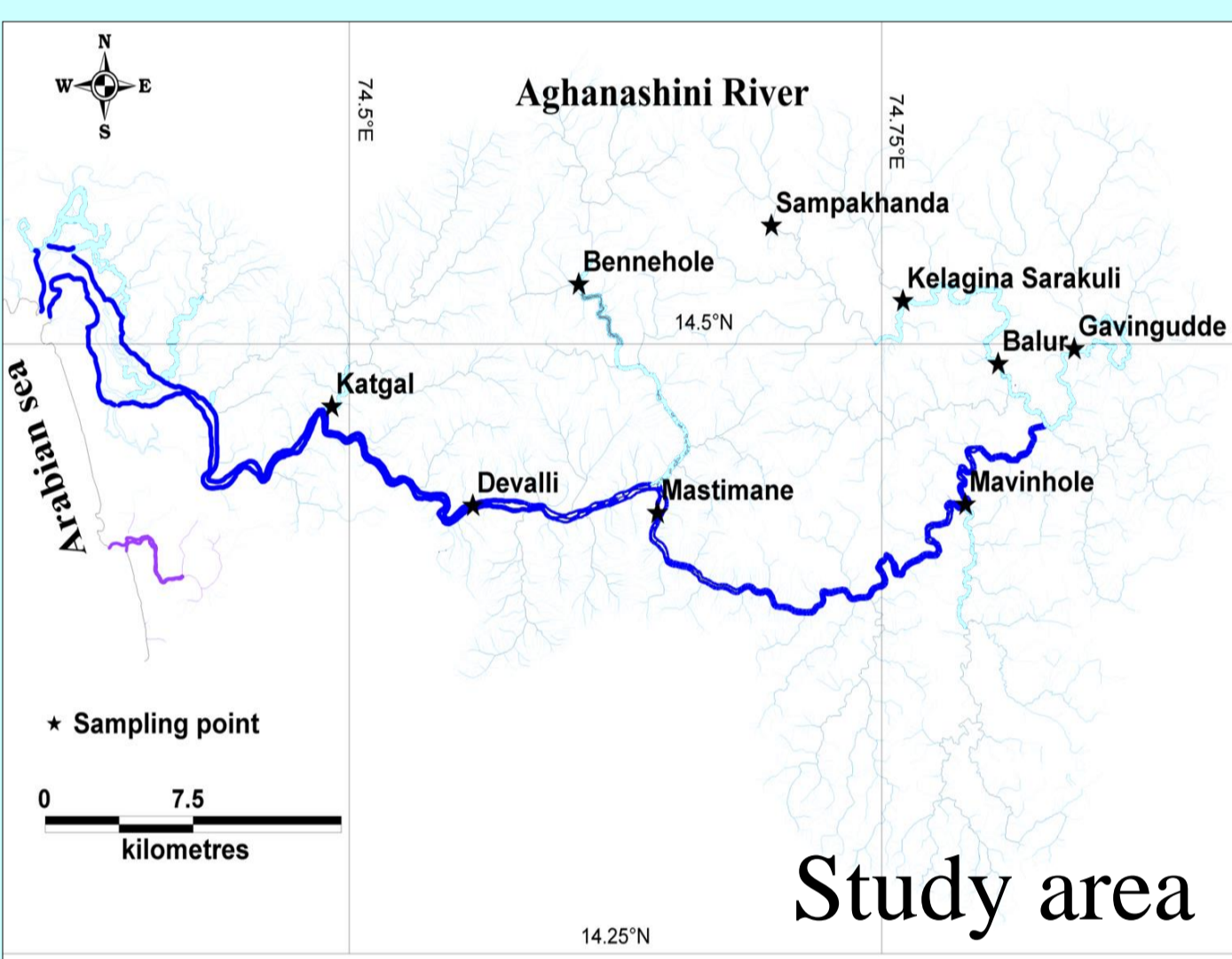
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- Freshwater bodies have many kinds of insects or their earlier developmental stages.
- Insects are conduits for energy flow in aquatic food webs.
- They are important indicators of stream and river health and water quality.
- Many of the insects like mosquitoes (*Aedes* sp., *Culex* sp., *Anopheles* sp., etc.) growth and development, of which happen in the polluted water transmit diseases such as dengue, malaria and chikungunya.



The aquatic insects functional feeding groups are:

- **Scrapers:** Remove and consume attached algae and associated periphytic material
- **Shredders:** Consume coarse particulate organic matter (CPOM), as decomposing leaf litter, living macrophyte tissue, or dead wood.
- **Predators:** swallow up the living animals.
- **Collectors:** Consume decomposing fine particulate organic matter (FPOM). Collector-gatherers, Collector-filterers.

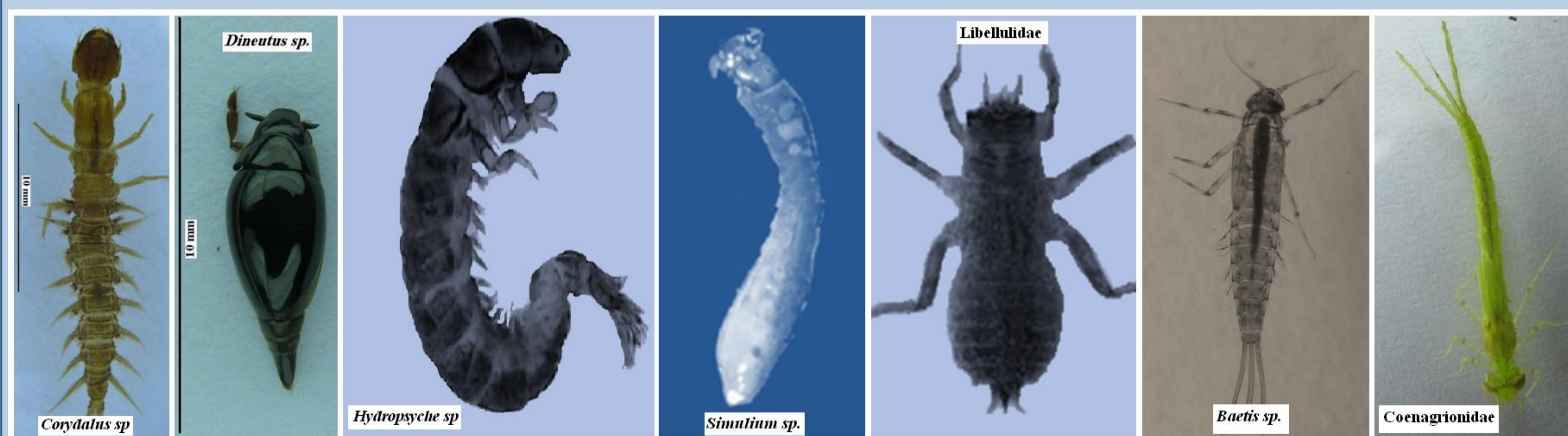


- 38 genera from 28 families and 8 orders were observed.
- Ephemeroptera was the predominant group followed by Coleoptera, Trichoptera, Diptera, Odonata Hemiptera, Plecoptera and Megaloptera.
- The good representation of pollution sensitive organisms like *Isca*, *petersula*, *Isonychia*, *Helicopsyche* and *Ephemerella* emphasizes the pristine condition of upstream Aghanashini and its tributaries.
- Absence of pollution sensitive taxa in the downstream indicates the anthropogenic impacts.
- The integrity of stream insect communities heavily relies upon the structural integrity of the streams and processes associated with their physical habitats which stretch even much beyond them.
- Aquatic insects not only enhance stream nutrient cycling through their feeding strategies, but also support communities of larger organisms like fish, frog and others.

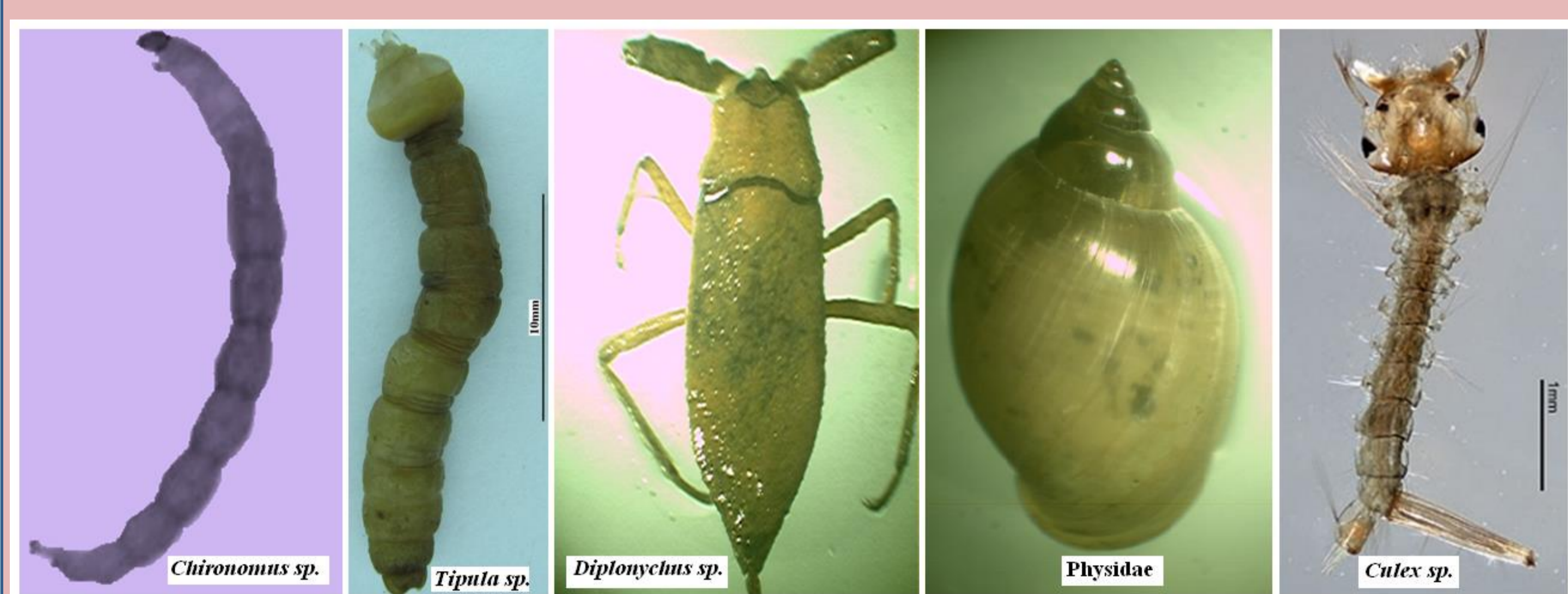
## Group 1: Clean water friendly insects (Pollution intolerant insects)



## Group 2: Moderately pollution tolerant insects



## Group 3: Pollution tolerant invertebrates with disease transmitting vectors



## Applications for future

- Aquatic insects have incredible importance in monitoring the water quality of a stream.
- Learning water quality through insect community observation is cheap and best method
- Students of high schools and colleges need to be trained in monitoring stream insect community. If the composition is unhealthy they can alert municipal or panchayat authorities about the problems
- Look for sources of contamination of water bodies so that timely steps can be taken to maintain water quality and health of humans and livestock .

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