



**TITLE OF THE PH.D. THESIS:** STUDIES ON TOXICOLOGICAL RESPONSE OF CYPERMETHRIN BASED PESTICIDE IN *Pila globosa* (Swainson, 1822).

**Research experience:** More than 5 years.

**Teaching Experiences:**

MANAGEMENT APPOINTED WHOLE TIME CONTRACTUAL TEACHER of Dept. of Zoology, Hiralal Mazumdar Memorial College for Women, Dakshineswar, Kolkata-35; under the West Bengal State University from 23.02.2017.

Guest Lecturer of Dept. of Zoology, Bnagabasi Morning College, 19 rajkumar Chakraborty sarany, Kolkata-9, under the University of Calcutta from 2017 to 2020.

Guest Lecturer of Dept. of Zoology, Brahmananda Keshab Chandra College, Bon-Hooghly, Kolkata-108, under the West Bengal State University from 08.11.2016 to 22.02.2017.

**List of publication**

**Patent filed:**

1. Dye retention by isolated hemocytes of *Pila globosa* (Mollusca:Gastropoda) *in vitro*: a new biomarker of cypermethrin toxicity in aquatic ecosystem of India. S. Ray, M. Ray, **A.S. Bhunia**. Application No-36/KOL/2012 dt. 24.2.2012.
2. A novel method of collection of hemolymph (blood) from *Lamellidens marginalis* by microdrilling of shell. S. Ray. M. Ray. **A. S. Bhunia** and N. S. Bhunia. Application No. 786/KOL/2012 dt.12.7.2012.

**Publications**

1. Ray, M., Bhunia, N.S., **Bhunia, A.S.**, Ray, S. 2013. A comparative analyses of morphological variations, phagocytosis and generation of cytotoxic agents in flow cytometrically isolated hemocytes of Indian molluscs. *Fish and Shellfish Immunology*. **34**: 244-253. Elsevier.
2. Ray, M., **Bhunia, A.S.**, Bhunia, N.S., Ray, S. 2013. Density shift, morphological damage, lysosomal fragility and apoptosis of hemocytes of Indian molluscs exposed to pyrethroid pesticides. *Fish and Shellfish Immunology*. **35**: 499-512. Elsevier.
3. Ghosh, P., Halder, S., Giri, B., Das Gupta, S., Bhunia, N.S., **Bhunia, A.S.**; Ray, S., Ray, M.; Bhattacharya, R., 2014. Effect of cold stress on pyridostigmine pretreated rats exposed to an organophosphorous compound. *Journal of Life Sciences Research*. **1**(1): 10-15,

4. **Bhunia, A.S.**, Ray, M., Ray, S. Ecotoxicological threats of agro and geogenic chemicals in the commercially important freshwater molluscs of West Bengal - a review. In: Wetlands: crisis and options. (Saha, G.K. ed). Astral International Publisher, New Delhi. (Accepted).
5. Ray, S., Mukherjee, S., Bhunia, N.S., **Bhunia, A.S.**, Ray, M. Immunotoxicological threats of pollutants in aquatic invertebrates. In: Emerging pollutants in the environment - current and further implications(Larramendy, M.L. ed). InTech, Croatia.147-165.
6. **Bhunia, A.S.**, Mukherjee, S., Bhunia, N.S., Ray, M., Ray, S. Immunological resilience of a freshwater Indian mollusc during aestivation and starvation. *Aquaculture Reports*.**3**:1-11.Elsevier.
7. Mukherjee, S., **Bhunia, A.S.**, Bhunia, N.S., Ray, M., Ray, S. 2016. Immunomodulatory effects of temperature and pH of water in an Indian freshwaters ponge.*Journal of Thermal Biology*, **59**: 1–12.Elsevier.
8. Ray, M., Bhunia, N.S., **Bhunia, A.S.**, Ray, S. 2016. Expression analyses of interferon gamma, tumor necrosis factor alpha and inducible nitric oxide synthase in the hemocyte morphotypes of two commercially important Indian molluscs. *Aquaculture Reports*, 4:30-35. Elsevier.

#### Workshop attended:

- i) “**Advance Training Course on Cell Sorting (BDFACS Aria III)**”: 2012. CU-BD CoE for Nanobiotechnology, Centre for Research in Nanoscience and Nanotechnology (CRNN), University of Calcutta in association with BD Bioscience (India).
- ii) “**JEOL make Field Emission SEM with EDS and EBDS**”: 2013. University of Calcutta, JEOL INDIA PVT. LTD.
- iii) “**Application of Statistics in Life Sciences**”: 2013. The Zoological Society, Kolkata; Department of Zoology, University of Calcutta; Indian association for Productivity, Quality & Reliability.

#### Abstracts

1. Ray, M., Bhunia, N.S., **Bhunia, A.S.**, Ray, S. 2012. Fenvalerate induced shift in morphology, cytotoxicity and IFN $\gamma$  expression in the flow cytometrically isolated hemocytes of *Lamellidens marginalis*. Global meet of biologists and satellite conference on vector control and management: present status and future strategies. Osmania University, Hyderabad. December 26-28. p 51.
2. Das Gupta, S., Gosh, P., Halder, S., Bhattacharya, S., Ray, S., Ray, M., Bhunia, N.S., **Bhunia, A.S.**, Bhattacharya, R. 2012. Stress factors influencing pharmacodynamics of pyridostigmine pretreatment in rats. Global hypoxia summit and hope international conference on chronic hypoxia promoting quality health and hypoxia, ICCH. New Delhi. August 9-12. pp 84-85.
3. **Bhunia, A.S.**, Ray, M., Ray, S. 2015. Cellular toxicity of cypermethrin in an economically important mollusc with reference to lysosomal and programmed cell death. University Grant Commission sponsored state level seminar on environmental pollution: causes, impacts and control. Kolkata. BESC. April 25. p 2.

4. **Bhunia,A.S.,Ray,M.,Ray,S.**2016. Cypermethrin induced cardiac tissue damage in an amphibian Mollusc o India. 9th NABS National Conference on " New Biological Researches: Opportunities and Challenges for Sustainable Development". Madurai Kamaraj University, Madurai and National Academy of Science (NABS), Chennai. August 11-12. p 208.
5. **Bhunia,A.S.,Ray,M.,Ray,S.**2016. Cypermethrin mediated mortality and hemocytes viability of an edible mollusc of Wet Bengal. UGC sponsored National Seminar: Environmental Awareness: Demand of the Day. The Bhawanipur Education Society College, Kolkata. September 10-11.

### **EDUCATIONAL QUALIFICATION**

**Ph.D.** in Science (**ZOOLOGY**) From University of Calcutta in the year of 2016.

**M.SC.** in **ZOOLOGY** from Guru GhasiDas University in the year of 2007.

**B.SC. (HONOURS)** from University of Calcutta in the year of 2003.

#### **Computer knowledge:**

**LANGUAGE:** PERL, C, JAVA, SQL (preliminary).

**KNOWLEDGE OF BIO INFORMATICS:** Primary knowledge of BI, seq. Database, Proteomics& Genomics.

**Special paper in Zoology (M.Sc.):**- Cytology & Cytogenetics (Mol. Bio, Bio Informatics)

#### **Personal Information**

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