Dr. Debraj Biswal

Designation: Assistant Professor of Zoology
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Brief introduction:

After completing my Masters in Zoology from The University of Burdwan in 2006 I cleared S.E.T. examination in 2007. I joined as a Junior Research Fellow at The University of Burdwan in January, 2008. The topic of my research was aligned with my specialization in the Masters (i.e., Parasitology). I cleared W.B.P.S.C. in the same year and was selected as Assistant Professor under the West Bengal Education Services. Eventually, I was posted at Chandernagore College where I served from November, 2008 to July, 2016. Simultaneously, I continued my research and was awarded with my Doctoral Degree in 2014 [**Ph.D. research topic:** "On some aspects of biochemistry and histochemistry of *Cotugnia cuneata* (Meggit, 1924) (Cestoda: Davaineidae) and its interaction with the bacterial flora of the host, *Columba livia domestica*."] In July, 2016 I was transferred to Government General Degree College, Mangalkote when I served till January, 2025 after which I joined Maulana Azad College on being transferred.

My teaching career spans for more than 16 years during which I served an urban and a rural college helping me gain knowledge about the differences in teaching-learning environment between the two set-ups. During the same period, I have also been involved in research with regular publications and participation in seminars or conferences.

My research interests include areas in Helminthology, Parasitology, Microbiology, Vector Biology, Ecotoxicology, Ecology, Biodiversity, Environmental Parasitology, Urban Ecosystem, Urban Birds, Educational methods and Teaching-

learning environments.

SELECTED PUBLICATIONS

1. Chatterjee, S., Sarkar, B., Bag, S., **Biswal, D.**, Mandal, A., Bandyopadhyay, R., Sarkar (Paria), D., Chatterjee, A. & Saha, N. C. (2023). Mitigating the public health issues caused by the filarial vector, *Culex quinquefasciatus* (Diptera: Culicidae) through phytocontrol and larval source marker management. *Applied Biochemistry and Biotechnology*. https://doi.org/10.1007/s12010-023-04747-9

2. Chatterjee, S., Bag, S., **Biswal, D**., Sarkar Paria, D., Bandyopadhyay, R., Sarkar, B., Mandal, A., & Dangar, T. K. (2023). Neem-based products as potential eco-friendly mosquito control agents over conventional eco-toxic chemical pesticides-A review. *Acta Tropica, 240*, 106858. https://doi.org/10.1016/j.actatropica.2023.106858

3. **Biswal, D.** (2022). Soil Nematodes as the Silent Sufferers of Climate-Induced Toxicity: Analysing the Outcomes of Their Interactions with Climatic Stress Factors on Land Cover and Agricultural Production. *Applied Biochemistry and Biotechnology*. https://doi.org/10.1007/s12010-022-03965-x.

4. Bag, S., **Biswal, D.**, Roy, A., Sarkar, B., Mondal, A., & Chatterjee, S. (2022). Diversity of soil bacteria in some sacred patches of Purba Bardhaman District, West Bengal, India. *Ecology, Environment and Conservation, 28*, S269-S279). http://doi.org/10.53550/EEC.2022.v28i01s.038.

5. **Biswal, D.** (2022). Nematodes as Ghosts of Land Use Past: Elucidating the Roles of Soil Nematode Community Studies as Indicators of Soil Health and Land Management Practices. *Applied Biochemistry and Biotechnology, 194*(5), 2357–2417. https://doi.org/10.1007/s12010-022-03808-9.

6. **Biswal, D.** (2021). Impact of Climate Change on the Livestock Sector: An Overview. *Uttar Pradesh Journal of Zoology, 42*(22), 117-132.

7. **Biswal, D.** (2021). Urban growth and the population of house sparrows [*Passer domesticus* (Linnaeus, 1758)] and house crows [*Corvus splendens* (Vieillot, 1817)]: Is the dynamics of urban ecosystem undergoing a radical change? *Uttar Pradesh Journal of Zoology, 42*(17), 17- 35.

8. **Biswal, D.**, & Chatterjee, S. (2020). Fish Parasites as Biological Indicators: A Systematic Review. Bioscience *Biotechnology Research Communications, 13*(4), 1743-1755. http://dx.doi.org/10.21786/bbrc/13.4/16.

9. Chatterjee, S., Mukhopadhyay, P., Bandyopadhyay, R., Paltu, D., **Biswal, D.**, & Bandyopadhyay, R. (2017). Molecular characterization and phylogenetic analysis of *Plasmodium vivax, Plasmodium falciparum, Plasmodium ovale, Plasmodium malariae* and *Plasmodium cynomolgi*. *Journal of Parasitic Diseases, 41*, 230–236 (2017). https://doi.org/10.1007/s12639-016-0783-4.

10. **Biswal, D.** (2016). Helminth infections and gut microbiota: The futuristic study of pathogen virulence and gut ecosystem. *Journal of Molecular Biomarkers & Diagnosis, 7*(3), 1000283. https://doi.org/10.4172/2155-9929.1000283.

11. **Biswal, D.,** Nandi, A. P., & Chatterjee, S. (2016). Helminth–bacteria interaction in the gut of domestic pigeon *Columba livia domestica*. *Journal of Parasitic Diseases, 40*, 116–123. https://doi.org/10.1007/s12639-014-0459-x.

12. **Biswal, D**., Nandi, A. P., & Chatterjee, S. (2014). Biochemical and molecular characterization of the Cyclophyllidean cestode, *Cotugnia cuneata* (Meggit, 1924), an endoparasite of domestic pigeons, *Columba livia domestica*. *Journal of Parasitic Diseases, 38*, 106–110. https://doi.org/10.1007/s12639-012-0203-3.

13. **Biswal, D.**, Nandi, A. P., & Chatterjee, S. (2015). Temporal variation of the cestode, *Cotugnia cuneata* (Meggit, 1924) in their host, domestic pigeons, *Columba livia domestica* (Gmelin, 1789). *Journal of Parasitic Diseases, 39*, 194–199. https://doi.org/10.1007/s12639-013-0312-7.

BOOK CHAPTERS

1. **Biswal, D**. (2023). Urbanization and the Mosquito Population: Threats to Human Health. In P.A. Azeez, P.P. Nikhil Raj & R. Mohanraj (Eds.), Ecological and Evolutionary Perspectives on Infections and Morbidity, (pp. 43-57). IGI Global. https://doi.org/10.4018/978-1-7998- 9414-8.ch004.

2. **Biswal, D.**, & Sarkar (Paria), D. (2023). Biofuels From Macroalgae: A Sustainable Alternative to Conventional Energy Resources. In A. K. Rathoure & S. M. Khade (Eds.), Biomass and Bioenergy Solutions for Climate Change Mitigation and Sustainability, (pp. 148- 169). IGI Global. https://doi.org/10.4018/978-1-6684-5269-1.ch009.

3. **Biswal, D.** (2023). Introduction. In A. Karmaoui (Ed.), Climate Change and the Economic Importance and Damages of Insects, (pp. 1-12). IGI Global. https://doi.org/10.4018/978-1- 6684-4824-3.ch001.

4. **Biswal, D.** (2023). Honey Bees as Environmental Biomonitors and Effects of Climate Change on Their Population. In A. Karmaoui (Ed.), Climate Change and the Economic Importance and Damages of Insects, (pp. 174-205). IGI Global. https://doi.org/10.4018/978- 1-6684-4824-3.ch008.

5. **Biswal, D.** (2023). Use of Nanofertilizers in Agriculture: Advantages, Disadvantages, and Future Implications. In R. Lone & J. A. Malik (Eds.), Implications of Nanoecotoxicology on Environmental Sustainability, (pp. 102-133). IGI Global. https://doi.org/10.4018/978-1-6684- 5533-3.ch006.

6. **Biswal, D.** (2022). Sacred Groves: The Indigenous Tools of Conservation. In N. Islam et al. (Eds.), Wisdom of the Scientific Research (Volume 2) (pp. 1-7). Weser Books, Germany.

7. **Biswal, D.** (2022). Challenges of Zoological Gardens in Conservation of Biodiversity. In H. R. Dhundhwal et al. (Eds.), Emerging Global Issues and Challenges, (pp. 187-193). Shriyanshi Prakashan, Agra, India.

8. **Biswal, D.** (2021). Recent Advancements in Eco-Friendly Mosquito Control Strategies. In D. Ghosh & S. Saha (Eds.), Recent Trends in Environmental Science and Applied Ecology, (pp. 124-129). Bhumi Publishing, Maharashtra, India.

9. **Biswal, D.** (2018). Impact of climate change on parasitic diseases: Do we need to bother? In M. Bose, S. A. Bandyopadyay & S. Poddar (Eds.), Contemporary Health Issues and Environmental Impact, (pp. 32-40). Malaysia: Lincoln University College. https://doi.org/10.31674/books.2018.chiei.ch05.

10. **Biswal, D.** (2017). Mosquito bio-control by indigestible green algae: Securing humans in a non-traditional way. In M. Gupta (Ed.), Non-traditional security: Problems and Prospects, (pp. 184-193). W.B., India: Avenel Press.

11. **Biswal, D.** (2016). Virtual learning in Life Sciences and the New Role of Teacher and Student: An analysis. In B. Guha (Ed.), Virtual Study and Virtual Laboratory: A Boon in Distance Learning, (pp. 53-76). W.B., India: Royal Holftone Co.

PAPERS PRESENTED IN SEMINARS/CONFERENCES

1. **Tourism as a Threat to Avifaunal Diversity**. Presented at "Two Days National Level Webinar on A Glimpse of Animal Diversity: A Legal Perspective." Organised by: Jointly by Department of Zoology and Department of Geography, Belda College, W.B., India. 03.10.2021 – 04.10.2021.

2. **Organoids: Innovative tools for studying helminth infections**. Presented at "National Conference on Science and Technology: Rural Development". Organised by: ISCA, Kolkata Chapter and Surendranath College, Kolkata, W.B., India, 20.01.2020 – 21.01.2020.

3. ***All they need is a helping hand*** - **Elucidating the parents'-teachers' role and the importance of 'Watch and Learn' technique in the social development of children with Down Syndrome.** Presented at "Two days International Conference on Down Syndrome Research – Indian Initiative In Global Perspective". Organized by: Department of Zoology, University of Calcutta jointly with Trisomy 21 Research Society, Netherlands and The Zoological Society, Kolkata, W.B., India, 11.02.2020 – 12.02.2020.

4. **Study of parasites in Zoo animals and its importance in the conservation of biodiversity.** Presented at "National Seminar on Diversity in the era of globalization: Challenges and Management". Organized by: Bidhannagar College, Govt. of W.B., India, 22.02.2020 – 23.02.2020.

5. **Urban growth and its effect on avifaunal diversity.** Presented at: Third International Conference on the theme 'Mother Earth: Environmental Crisis and Sustainable Strategies.' Organized by: Department of Environmental Science, The University of Burdwan, Burdwan, W.B., India, 11.01.2018 – 13.01.2018.

6. **Urban Growth and its effect on Pollinators: A threat to food security.** Presented at "International Conference on Indigenous People, Human Security and Sustainable Development: Emerging Challenges in the Present Global Context". Organized by: Commission on Human Rights, International Union of Anthropological and Ethnological Sciences and Department of Anthropology, West Bengal State University, Barasat, Kolkata, India. 19.01.2018 – 21.01.2018.

7. **Does a symbiotic relationship exist between the helminth and bacteria in the gut of animals?** Presented at "2nd Regional Science and Technology Congress (Western Region),

2017". Organized by: The University of Burdwan and Department of Higher Education, Science and Technology and Biotechnology, Government of West Bengal, W.B., India, 16.11.2017 - 17.11.2017.

8. **Phylogenetic affinities of the Cestode, *Cotugnia cuneata*.** Presented at "National Symposium on Advances in Biology: Exploitation of Phyto-resources". Organized by: Department of Botany, Dr. A.P.J. Abdul Kalam Govt. College, New Town, Kolkata, W.B., India, 02.11.2017 – 03.11.2017.

9. **Biochemical and molecular characterization of non-pathogenic strain of *Staphylococcus* sp. from the gut of *Columba livia domestica***. Presented at "International Science Seminar". Jointly organized by: Burdwan Raj College, Burdwan, W.B., India and Indian Chemical Society, Kolkata, W.B., India, 10.10.2017.

LINKS TO MY SOCIAL ACADEMIC PROFILES

ResearchGate Profile: https://www.researchgate.net/profile/Debraj-Biswal

Google Scholar:
https://scholar.google.com/citations?hl=en&user=k4EF1aUAAAAJ

Scopus: https://www.scopus.com/authid/detail.uri?authorId=55449939300