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EDITORIAL

WHY NAME A BACTERIUM AFTER TAGORE?



From the 'Chitkala' of Santiniketan, where Rabindranath Tagore's lyrical verses of humanitarian unity and cultural harmony once waved in the sky, an avant-garde melody is composed by the discovery of *Pantoea tagorei*, a bacterium capable to supply plant vitality even where

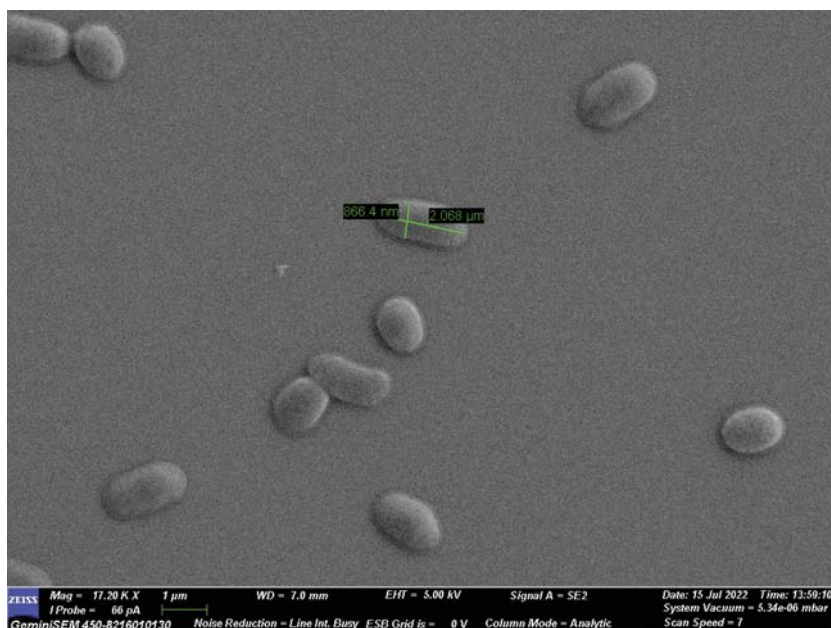
"The land is desolate and barren" ("The Hero" by Rabindranath Tagore). Named after the Nobel laureate himself; this microscopic life-form has mastered in the symphony of soil and plant, and able to compose a harmonious ecosystem with greener and fruitful future.

Discovery of this new strain has ignited the unbound curiosity and excitement in the scientific realm. The revelation of *Pantoea tagorei* by the intricate investigation of a research team comprised of the Team Leader, Dr. Bomba Dam and lab members Raju Biswas, Arijit Misra, Sandip Ghosh, Abhinaba Chakraborty and Puja Mukherjee in Microbiology Laboratory, the Department of Botany at Visva-Bharati, marks a footstep in understanding the tiny-world previously concealed from our naked eye. The novel strain was isolated by continuous exploration of microbial life from diverse soil environments. With the scientific consciousness and cutting-edge techniques in microbiology, a new folio

in bacterial taxonomy has been added, leading to the identification and characterization of this unique species.

The novel micro-maestro is a skilled performer in unlocking potassium; one of the essential macronutrients often trapped in the soil's hidden vault and makes it readily available for the starving plant. However, its endowment is not limited to this only. This bacterium can also solubilize phosphorous and fix nitrogen in the soil, providing a perfectly balanced musical note for the plant nutrition. The uniqueness of *Pantoea tagorei* is not merely for its genetic makeup but the poetic significance embedded in its nomenclature-a nod to Tagore's legacy of intertwining nature, literature, science, and philosophy.

The implication of this microbial virtuoso extends beyond the confines of the laboratory. As the study



Field-emission scanning electron microscopic image of *Pantoea tagorei* MR1

extends deeper into its characteristics, we have seen its potentiality in plant growth promotion (PGP). *Pantoea tagorei* can nurture the rhizospheric environment in such a way that plants could burst with emerald joy. Application in paddy field indicates its true potentiality to improve crop yields and establishment of interconnectedness between the soil microbial world with the plant health. The strain acts like a thread, lacing together the essential nutrients and protection mechanisms to felicitate the plant. The ability of *Pantoea tagorei* to unlock soil nutrients naturally reduces the need for chemical fertilizers, a discordant note in the symphony of sustainability.

In the pursuit of knowledge, scientists not only unravel the mysteries of life but also find inspiration in the world's cultural richness. The homage to Rabindranath Tagore infuses a sense of artistry into the realm of microbiology, bridging the gap between the analytical and the poetic. The study represents a future where agriculture isn't just about exploitation, but about collaboration, where we work with nature's own processes to unlock its bounty.

The discovery of *Pantoea tagorei* is a crescendo of Indian scientific achievement, a testament to the power of local ingenuity, and a booming echo of hope for a greener tomorrow. It resonates with Tagore's words, "Where the mind is without fear and the head is held high," for it is in such spaces that innovation like this flourish. Its discovery invites us to appreciate the intricacies of life at the smallest scale and inspires a continued exploration of the microbial wonders that shape our world. In the spirit of Tagore's philosophy, let us embrace the poetic essence embedded in scientific discovery and continue to unveil the mysteries that connect us to the vast universe of microbes. □

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Editor's Note:

This editorial reflects the true respect and homage to great poet Rabindranath Tagore-the first Nobel Laureate in Asia and Africa in 1913 (in Literature for his book- Gitanjali – song offerings), who established Visva-Bharati in 1921. Dr. Dam working at Visva-Bharati paid due acknowledgement in his own style of culture by naming a bacterium (*Pantoea tagorei*) after Tagore. Dr. Dam hails from North Bengal securing Gold Medalist (First Class First) at B.Sc.(Hons.) and M. Sc. (Botany) course and further nurtured scientifically at the Bose Institute, Kolkata availing CSIR JRF-NET, SLET and GATE. He is an Alexander von Humboldt Fellow and performed his Post-doctoral research in the field of Methane Biology at the Max Planck Institute for Terrestrial Microbiology, Germany. Four times he received MPI-PDF for short stay at Germany. He joined Visva-Bharati in 2008 and is teaching Microbiology at Undergraduate and Post-graduate level. He is trained in microbial physiology, molecular biology, genomics, transcriptomics and metagenomics. His research interests are: Understanding structure and function of microbes in different environments and tap their biotechnological potential, particularly from extreme saline lakes; Develop organic feed supplements for Poultry and Aquaculture using probiotics, prebiotics, and phages minimizing the use of antibiotics; and Establish potential Plant growth potential Rhizobacteria. He received “6” projects from Govt funding agencies like, DBT, SERB, CSIR, UGC and WB-DST. Dr. Dam is a rising scientist having significant contribution in the field of Microbiology, supervised 6 PhD and >40 MSc Dissertation work. He published a number of quality research papers in high impact International reputed journals. He is the Scientific Mentor of a Newly Start up Poultry Feed Company.