

# Sir U. N. Brahmachari: A Forgotten Scientist

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**Abstract:** *This article pays tribute to the forgotten genius of Indian Science, Dr. Upendra Nath Brahmachari, on his 150th birth anniversary. Despite saving countless lives by inventing a revolutionary medicine for kala - azar, he was denied the Nobel Prize and remained unrecognized by both the government and the public. Dr. Brahmachari's contributions extended beyond kala - azar to various fields, including his establishment of India's first blood bank and groundbreaking work in diseases such as Malaria and Diabetes. This abstract also highlights the decline in kala - azar cases in recent years while emphasizing the importance of monitoring environmental factors and climate change to ensure safety of human lives.*

**Keywords:** Dr. Upendra Nath Brahmachari, kala - azar, Indian Science, Medical Research

Dr. Upendra Nath Brahmachari is a forgotten genius of Indian Science. Despite saving lakhs of lives from kala - azar, he was denied Nobel Prize after being nominated many a times and went unrecognized by both Government and people. He was just given a Knighthood by the British. He never applied for patent as he wanted the drug for kala - azar to be available to poor rural people. Even he himself gave it free to many of his patients. On his 150<sup>th</sup> birth anniversary this write - up is a small tribute to remember him and acknowledge his works.

Dr. Brahmachari was born in Jamalpur of Bihar on 19<sup>th</sup> Dec.1873. His father Dr. Nilmony Brahmachari was a doctor in East Indian railways at Jamalpur. Brahmachari did his schooling at Jamalpur and then joined Hooghly College. He did his BA in 1893 with honors in Mathematics and Chemistry. He then joined Calcutta Medical College and Presidency College to study Medicine and Chemistry, respectively. In 1894, he passed MA in Chemistry from Presidency College. In 1900, in his MB examination, he stood first in Medicine and Surgery. In 1902, he obtained his MD degree and subsequently PhD degree for his researches in Physiology from Calcutta University. He joined the Provincial Medical Service in 1899. Later in 1905, he joined Campbell Medical School (now NRS Medical College and Hospital) as teacher of Medicine and first Physician. After retirement from the Government service, he joined Carmichael Medical College (now R G Kar Medical College and Hospital) as Professor of Tropical Diseases.

His most outstanding research contribution was invention of medicine for kala - azar or visceral leishmaniasis. In South America and Sicily, doctors successfully treated kala - azar by using tartar - emetic (potassium salt of antimony tartarate). But this compound had severe side effects. Dr. Brahmachari used sodium salt of antimony tartarate instead. Treatment was successful but still had some disadvantages. Then he used metallic antimony for treatment of kala - azar. This compound also gave good results but still with some side effects. He continued his search for better and efficient means to treat kala - azar. Towards the end of 1919, he received a grant from Indian Research Fund Association and he discovered a potent agent against kala - azar and named it Urea Stibamine. It was the urea salt of para - aminophenyl stibnic acid. This was a great success in treatment of the

disease. Using this drug, mortality rate was brought down to 10% and the cure rate was up by 95% by the year 1925. This drug was also used in other parts of the world like Greece, France and China for many years. Thanks to Sir Brahmachari that today kala - azar has drastically reduced. It persists only in some poor and remote areas.

Another discovery of Dr. Brahmachari was the identification of cutaneous leishmaniasis among kala - azar recovered patients. This was named after him as Brahmachari Leishmanoid or the present post - kala - azar dermal leishmaniasis.

Dr. Brahmachari also worked on other diseases like Malaria, Blackwater fever, Cerebrospinal Meningitis, Diabetes, Filariasis, Influenza, Leprosy and Syphilis. He was the first to discover Quartan Fever in Kolkata and Dhaka. He also established India's first blood bank at Calcutta School of Tropical Medicine. He was Fellow of the Calcutta University, member of the senate, the Syndicate and Boards of Studies of Medicine and of Science of the Calcutta University. He was Dean of Faculty of Science (1938 - 40) and Dean of Faculty of Medicine (1938). He was the Chairman of the Blood Transfusion Service of Bengal. He was the Vice President of the St. John Ambulance Association of the Bengal Branch and also its President. He was the President of the Managing body of the Indian Red Cross Society, Bengal branch, He was also a member of the Sanitary Board of Bengal. He was also the Vice Chairman of the Board of Trustees of the Indian Museum. Sir Brahmachari made several donations to The Indian Red Cross Society, The Blood Bank, University of Calcutta, Jadavpur Tuberculosis Sanatorium, Central Glass and Ceramic Research Institute, The Physiological Society of India, Calcutta Medical College, The Indian Association for the Cultivation of Science, Indian Science Congress and many more such organizations.

He received various honours and awards which include Griffith Memorial Prize of Calcutta University, the Minto Medal of the School of Tropical Medicine and Hygiene, the Kaiser - I - Hind Gold Medal and may more. He was awarded the title of *Rai Bahadur* by the British Government. He was knighted in 1914. He was the president of quite a few organizations like The Indian Association for the

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Cultivation of Science, Society of Biological Chemists, Asiatic Society of Bengal, Indian Science News Association. He was a Fellow of Royal Society of Medicine, London; Fellow of Royal Society of Tropical Medicine and Hygiene, London; Honorary Fellow of International Faculty of Science, London etc.

Sir Brahmachari died on Feb.6, 1946. With this the story of a forgotten genius in Indian science who saved millions of lives came to an end. He was mostly forgotten by the government and people; remembered only when a street in Kolkata bearing his name came in existence on Google Maps. Although kala - azar was under control for decades after the discovery of Urea Stibamine by him, but in the last few decades, the incidences have increased in India and elsewhere. Like any other diseases today, the treatment is hampered by drug resistance. Nowadays, Pentavalent antimonials are the first line of drugs for treatment of kala - azar and Pentamidine and Amphotericin B are the second line of drugs.

The silver lining is kala - azar cases in India fell to 834 in 2022 from 44, 533 in 2007 - - - a 98.7% decline, according to Union Health Minister Mr. Mansukh Mandaviya. However, it is a proven fact that climate change and environmental alterations influence vector borne diseases. Hence we should keep constant vigil to the population of the vector of kala - azar and the transmission rate of the parasitic disease in future for making human lives safe and secure.

## References

- [1] Singh, Rajinder; Roy, Syamal (1 March 2019). "U N Brahmachari: Scientific Achievements and Nomination for the Nobel Prize and the Fellowship of the Royal Society of London". *Indian Journal of History of Science*.**54** (1).
- [2] "Vigyan Prasar website – Upendra Nath Brahmachari".
- [3] Brahmachari, U. N. (April 1922). "A New Form of Cutaneous Leishmaniasis—Dermal Leishmanoid". *The Indian Medical Gazette*.**57** (4): 125–127. ISSN 0019 - 5863. PMC 5186533. PMID 29008368.
- [4] "Nomination Archive". NobelPrize. org. Retrieved 6 February 2020.
- [5] Biographical Memoirs of Fellows of the Indian National Science Academy Vol.4., Indian National Science Academy, New Delhi, 1976.