



The Unsung Indian Behind Ronald Ross's Success

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During the colonial period, European scholars had to take assistance of Indian talents to achieve success. But they seldom gave due credit to them for their efforts. Kishori Mohan Bandyopadhyay's story is similar.



OFTEN those associated with great people go unnoticed. According to an article by Dr. Biesel and Dr. Boete, this is what happened with Kishori Mohan Bandyopadhyay, associated with Dr. Ronald Ross, honoured with the Nobel Prize for the discovery of the malaria parasite ("The Flying Public Health Tool: Genetically modified Mosquitoes and Malaria Control" published in *Science as Culture*, Volume 22, No 1, p. 38-60, 2013).

They have written: "Even though Ross was the sole recipient of the Nobel Prize he was by far not the only one who hypothesized that mosquitoes transmit malaria. The importance of his Indian research assistant Kishori Mohan Bandyopadhyay is acknowledged by many. The fact that he was not a co-recipient of the prize, but merely received a Gold Medal, is read by many as an effect of colonial relations."

Very little information is available regarding the life and works of Kishori Mohan Bandyopadhyay. His family moved from Jessore, Bangladesh, to Calcutta like other Bengali families during colonial times. They settled in Panihati, 24 Pargana, West Bengal, near Kolkata. His father Nanilal Bandyopadhyay was a teacher in Sanskrit and Persian literature and languages.

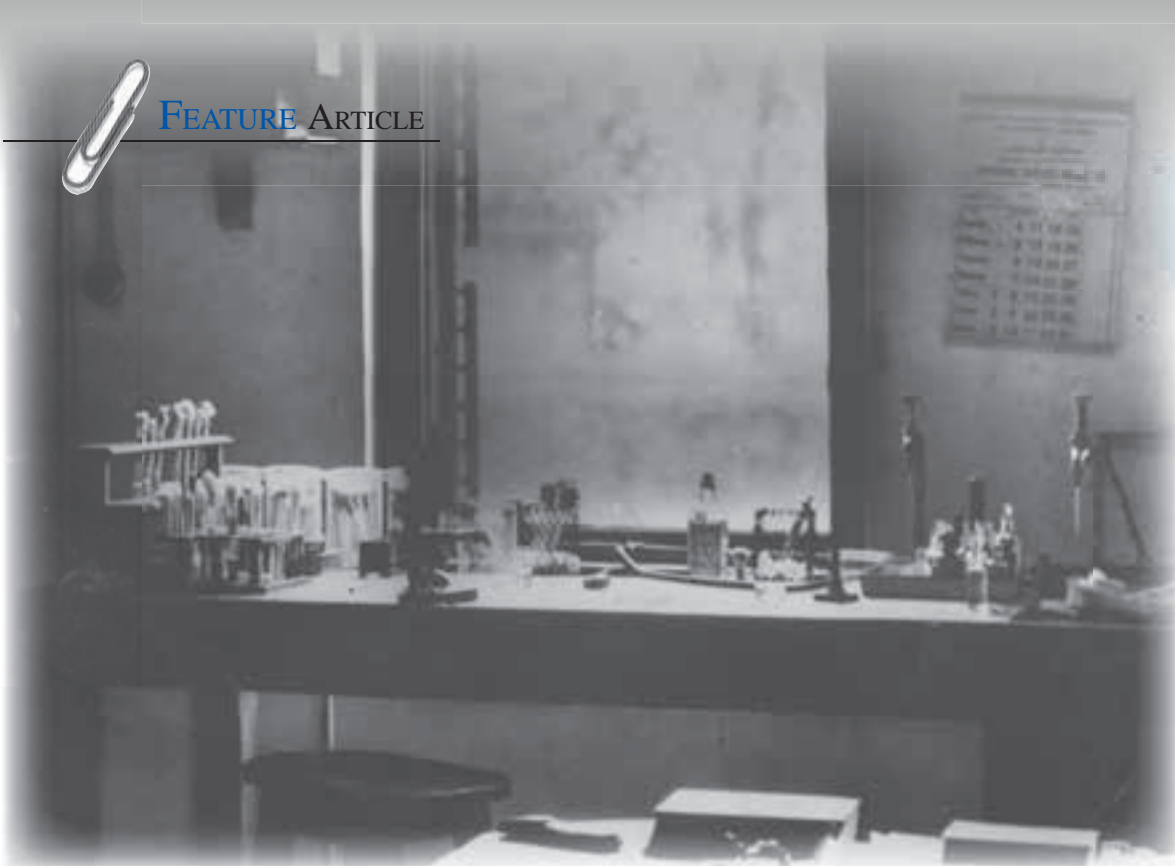
Kishori Mohan was born in Entally area of Kolkata at his maternal grand parents' home. Their family was educated and two elder brothers, Lalmohan and Haridas, were teachers in Bengali and Sanskrit. Till date their family house called "Nilambati" is in Panihati. Though part of the house is demolished, the original plaque is still preserved.

Kishori Mohan started his education at Panihati vernacular school where his father and brothers were teachers. Naturally, he got special care during his early education. Then he was sent to his maternal grandfather's house in Kolkata where he completed Entrance Examination of University of Calcutta and graduated in science from the Presidency College. After completion of his graduation, he joined as a science teacher in an English medium school following his family tradition.

In February 1898, Kishori Mohan came to know that Ronald Ross was searching for an able assistant. Out of the many applicants Bandyopadhyay was able to impress Ross and was recruited. He joined as one of the laboratory assistants to Ronald Ross in 1898 at the Calcutta Presidency General Hospital.

Ronald Ross was awarded the Nobel Prize in 1902. In his Nobel lecture or in his paper he never mentions the name of his assistant Kishori Mohan anywhere. In fact, there was a lot of controversy regarding his Nobel Prize. The Nobel Prize was given to him for the discovery of the life cycle of the malarial parasite, although he himself considered his epidemiological mathematics as a much more valuable contribution.

Besides, his concept of malarial transmission was not related to humans, but to birds. He got that idea from Sir Patrick Manson. He could not identify the exact species of mosquitoes as he was not



The Work Bench in Major Ronald Ross's Laboratory in Ccutta where Kishori Mohan Bandyopadhyay's researches were conducted.

When Ronald Ross received the Nobel Prize in 1902, to honour the contribution of Kishori Mohan, many Indian Scientists requested Lord Curzon to give recognition to Bandyopadhyay. Lord Curzon took the initiative and Bandyopadhyay was given King Edward VII's Gold Medal in 1903.



Left: Kishori Mohan with Ross and his wife

Whatever savings he had after his success post the Gold Medal, he pulled them together and sold off the gold ornaments of his wife to start Panihati Co-operative Bank with a few like-minded friends in 1927.

a zoologist. Ross simply described those as "grey mosquito with dappled wings".

Before him in 1897, an Italian physician and zoologist Giovanni Battista Grassi, gave a better explanation about malaria transmission. He suggested that there must be some developmental stage of Plasmodium in the white blood cells. In 1897 he along with his other associates, had established the developmental stages of malaria parasites in *Anopheles*

mosquitoes; and they successfully described the complete life cycles of *P. falciparum*, *P. vivax* and *P. malariae* in the following year.

When the 1902 Nobel Prize for Physiology or Medicine was considered, the Nobel Committee initially wanted the prize to be shared between Ross and Grassi. Then Ross made a defamatory campaign accusing Grassi of deliberate fraud, calling him "a mountebank, a

cheap crook, a parasite who survived on the ideas of others." Grassi responded with equally strong polemic.

Finally, the Nobel committee had to appoint Robert Koch as a "neutral arbitrator" in the committee. Koch threw the full weight of his considerable authority in insisting that Grassi did not deserve the honor. However, Koch was disgraced in 1898 when Grassi pointed out flaws in his methodology on malarial research. Ross was definitely the first to show that malarial parasite was transmitted by the bite of infected mosquitoes, in his case the avian *Plasmodium relictum*. But Grassi's work was much more directly relevant to human health as he demonstrated that human malarial parasites were incriminated only by female *Anopheles*.

Indeed, it was Grassi, who both correctly identified the mosquito species as *Anopheles claviger* and in 1898 established the complete life cycle of *P. falciparum*, the first human malarial parasite. Moreover, Ronald Ross was noted to be eccentric and egocentric, described as an "impulsive man". His professional life appeared to be in constant feud with his students, colleagues and fellow scientists. His personal vendetta with G.B. Gracie became a legendary tale of science. He was openly envious of his mentor Patrick Manson's affluence from private practices. This was largely due to his own ineptitude to compete with other physicians.



Kishori Mohan honoured by countrymen

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He hardly had good ties with the administration of Liverpool School of Tropical Medicine, constantly whining about being underpaid. He resigned twice, and was eventually discharged without any pension. All these evidences indicate that it was very natural for Ross to deliberately drop out Kishori Mohan's contribution in his research work. During the colonial period it was difficult for Europeans to give equal weightage to an Indian.

When Ronald Ross received the Nobel Prize in 1902, to honour the contribution of Kishori Mohan, Upendranath Brahmachari, Acharya Jagadish Chandra Bose, Brajendra Nath Seal, Sivanath Sastri, Surendranath Banerjee, and Acharya Prafulla Chandra Ray requested Lord Curzon to give recognition to Bandhyopadhyay. Lord Curzon took the initiative and Bandhyopadhyay was given King Edward VII's Gold Medal in 1903 during the Delhi Durbar by the Duke of Connaught.

On his return from Delhi after receiving King Edward VII's Gold Medal, Kishori Mohan Bandyopadhyay was felicitated at a function in the Senate Hall of Calcutta (now demolished) by Bengali scientists and doctors. The function was presided over by Chittaranjan Das. The famous physician Upendranath Brahmachari delivered the main lecture eulogizing his work. Other speakers

included Brajendra Nath Seal, Shivnath Sastri and Bidhan Chandra Roy, who later became the Chief Minister of West Bengal.

Even though he was honoured by his own countrymen, Bandyopadhyay was disappointed when Ross published his memoirs, *With a Full Account of the Great Malaria Problem and Its Solution* in 1923 without mentioning his name. He eventually refused to meet Ross, who revisited the Presidency General Hospital in 1927. In a few places he had mentioned his assistants, but not by name.

Later, Bandhyopadhyay became a social worker. He started social campaigns in villages in Bengal for eradication of malaria. Kishori Mohan Bandyopadhyay started touring the villages in Bengal with his Magic Lantern and slides depicting parasites, mosquitoes, patients and steps for prevention of the disease. He organized slide shows in order to educate the village folk about malaria or *Sheet Jwar*, as they called it.

The black-and-white slides were prepared by his photographer friend Lakshminarayan Gangopadhyay who resided in Uttarpara, Hooghly across the Ganges river, and who was the first roving photo-artist in India. The black-and-white plates were coloured by Lakshminarayan with transparent dyes so that the slides became understandable to the villagers. The images on glass were

generally projected on a white cloth hung on the outside wall of a villager's house.

His experience based on visits to various villages in Bengal during the anti-malaria campaigns as well as in connection with his work relating to the freedom movement, convinced Kishori Mohan Bandyopadhyay that the poor and lower middle class people need credit from an alternative source to avoid the stranglehold of moneylenders. Whatever savings he had after his success post the Gold Medal, he pulled them together and sold off the gold ornaments of his wife to start Panihati Co-operative Bank with a few like-minded friends in 1927.

The bank was opened on the same road on which he had his ancestral home 'Nilambati'; the road at that time was called Banerjee Para Road, now renamed as Ramchand Ghat Road. After having spent whatever he had for the co-operative bank, Kishori Mohan was almost penniless. His social work also suffered. He was, in those days, a one-man NGO. The bank was a great success in ameliorating the conditions of the poverty-stricken villagers in and around Panihati, and is still running. He joined politics and later campaigned for Bidhan Chandra Roy, who was his friend and well-wisher.

In 1929, Bandyopadhyay suffered from meningitis. But due to heavy rain it was not possible to call any expert from Calcutta to Panihati. The delay proved to be fatal. He died in July 1929 after continuous rainfall for three days.

The Panihati municipality has a street named Kishori Mohan Banerjee Road.

There is no research till date to claim that Kishori Mohan deserved the share of the Nobel Prize along with Sir Ronald Ross. During the colonial period, European scholars had to take assistance of Indian talents to achieve success. Radhanath Sikdar is a great example.

In his award winning novel, *The Calcutta Chromosome*, based on the life and times of Sir Ronald Ross, Amitava Ghosh talks about how Ross exploited native workers in his quest to find the cause of malaria without giving them due honour.

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