

## The Swadeshi Internationalism of Jagadis C. Bose and Abala Bose

### Sugata Bose

I am deeply grateful to the J.C. Bose Trust for inviting me to be their Chief Guest at the celebration of Abala Bose's birth anniversary.

Let me begin with Sister Nivedita's assessment of Jagadis Chandra Bose with whom she had a most productive and rewarding intellectual relationship. In Nivedita's view, Swami Vivekananda and Jagadish Bose had not only served their country, but as she put it in a letter to Josephine McLeod, "in Religion, Vivekananda and in Science, Bose had **made offerings to the World**". If Vivekananda was for her King, Master and Father, Nivedita adopted Jagadis Chandra Bose, nine years older than her, as her "bairn", the Celtic word for child. Yet beyond the personal bond, Nivedita's stout support for Jagadis Bose must be understood in the context of her conception of nationalism. She believed in a version of nationalism that instilled a spirit of service for fellow-beings and inspired the creative faculties of a people. That conviction let Nivedita to encourage artists like Abanindranath Tagore and scientists like Jagadis Chandra Bose. She was outraged by the race prejudice and discrimination to which a genius of the order of Jagadis Bose had been subjected to in his professional life. He had been the first in 1895 to give a public demonstration of electromagnetic waves in Calcutta, before Marconi demonstrated wireless communication at longer wavelengths. Yet as the first Indian Professor of Physics at Presidency College since 1885 he was paid much less than his British colleagues, given punishing teaching schedules, and denied research facilities.

Bose was a hundred years ahead of his time in conducting inter-disciplinary research that straddled the disciplines of physics, biology and chemistry.

Of great significance was Jagadis Chandra Bose's work on electrical conductivity in the realm of physics and biology. He worked on the polarization of electricity by crystals, and on the wireless transfer of telegraphic electric signals. Jagadish's "magnetic crescograph" magnified and recorded the magnetic impulses within plant life. If European scientists tended to insist on the analogy between the physiological and the psychological, the historian Kris Manjappa has shown how Jagadis Bose insisted on a different parallel between the ecological and psychological. Bose claimed that observation with the crescograph could record a plant's response to the "trauma" of having been cut, or exposed to narcotics, or the shock of change in temperature. The magnetic conduction in the plant was analogous to the nervous response in animals. Girindrasekhar Bose was greatly influenced by this teaching about psychic "electricity". The unstopped flow of psychic energy was Girindrasekhar's criterion for mental health.

We need to remember today that Swadeshi nationalism was not inward-looking but had a fascinating international trajectory. Two nephews of Jagadish Chandra Bose, traveled to Berlin to begin PhDs in Physics in 1913. Debendra Mohan Bose became the first chair of physics at the University Science College upon his return after the war. And, of course, he served as the Director of the Bose Institute for decades after 1937. A Presidency College student, Shankar Agharkar, originally from Bombay, was selected by the National Council of Education to study chemistry at Berlin University in 1914. Agharkar returned to Calcutta as Chair of Botany at Calcutta University in 1921.

Nivedita helped Jagadis write his book *The Response in the Living and Non-Living* in London during 1901. A few years later Nivedita once more served as scribe and editor of Jagadis Chandra's books *Plant Response* and *Comparative Electro Physiology*. Finally, in 1911 Nivedita goaded him on to compose twelve chapters of his book *Irritability of Plants* as an original work without unnecessary citations.

Nivedita also arranged for Jagadis Bose much needed funding for his scientific work. It was at Nivedita's urging that her dear friend Sara Ole Bull gave critical financial support to Jagadis Bose. It was from Cambridge, Massachusetts, that the scientist set out on his triumphant lecture tour in the Fall of 1908 to Chicago, Madison, Ann Arbor and Urbana-Champaign, much to Nivedita's delight. Sadly, the generous provision in Sara Bull's will for Jagadis Bose's scientific work was challenged by her daughter after her death.

Jagadis Bose in turn served as pre-publication adviser and critic for Nivedita. If Romesh Dutt spurred her on to write *The Web of Indian Life*, it was the "Man of Science" who advised Nivedita to bring out "very strongly the element of struggle between myself and Him" in her religious classic *The Master as I saw Him*. And it was at Jagadis Bose's initiative that Nivedita came to be the first translator into English of his friend Rabindranath's short stories – Kabuliwalah, Chhuti and Dena-Paona. But there could be no "dena-paona" or a balance sheet of her give and take with the scientist for Jagadis and his wife Abala were in a true sense Nivedita's family. When Nivedita was struck down by meningitis in 1906 the Boses had helped nurse her back to health. It was on a trip to Darjeeling with Jagadis and Abala Bose in 1911 that Nivedita fell ill with

blood dysentery. Jagadis Bose read her favorite passages to her during her final illness. The stoic Nivedita died at dawn on October 13, 1911, in the loving care of her Indian family.

This brings me to Abala Bose – a rock of support for her scientist husband, a trail-blazer in her own right in the field of girls’ and women’s education in India, and a pioneer in the art form of travel writing in Bengali. Dr. Saptarshi Mallick must be congratulated for overcoming the double bias of language and gender to bring Abala Bose’s essays and letters to the attention of the English-reading public. He wrote to me some time ago seeking permission to quote a few lines from my own translations of Rabindranath Tagore’s songs. Translation at its best can aspire to the status of literary creation.

“All my humble endeavors for my country,” Abala Bose wrote, “have been the outcome of my experiences gathered from travelling abroad.” Of the dozen essays published in *Mukul* edited by Shibnath Shastri, I found the one on Japan to be the most fascinating. Abala visited Japan in 1915 – a year before Rabindranath’s 1916 voyage – and the same year that Benoy Kumar Sarkar also went there crossing the Pacific from the United States. In November 1914 Jagadis and Abala Bose had boarded the *Philadelphia* to cross the Atlantic from Liverpool to New York along with the Swadeshi leader Lala Lajpat Rai and the talented young scholar Benoy Sarkar. How one wishes Abala had written about her impressions of Lajpat Rai and Benoy-babu. Benoy Sarkar wrote a magnificent work based on his travels in Japan in 1915 titled *Nabin Asiar Janmadata Japan* which I have analyzed in some detail in my book *Asia after Europe*. “In

Asia, and only in Asia,” Abala Bose wrote, “Japan is reckoned and revered as an enlightened race by the civilized world in this entire planet.” Having traveled on English ships before, she found it “enthraling to observe the courtesy and suavity in the hospitality of every member of the crew on the Japanese ship”.

“Japan is the land of the picturesque!”, Vivekananda had exclaimed in the summer of 1893 on seeing Tokyo, Kyoto and Osaka. He was much impressed with Japan’s modernization of its army and navy, its factories, its steamers and other engineering feats. He wanted a number of Indian young men to visit Japan and China every year. In Japan he found India to be “still the dreamland of everything high and good”. He saw Japan’s temples, but this man of religion launched into a tirade against India’s priest craft and its abominations of untouchability and prejudices regarding food habits and travel. He urged India’s youth to come out of their “narrow holes and have a look abroad”. Twenty-two years later Abala Bose found Japan to be “a graceful garden of Nature” and the Japanese to be “reverent to and devoted towards Mother Nature”. “According to law,” this educationist noted, “it is imperative for every boy and girl in Japan to attain primary education. As a result, everybody in Japan can read and write.”

Abala’s correspondence with Rabindranath nicely complements her travel accounts. “Do not permit my friend to return home until he completes his work,” Rabindranath urged Abala on June 4, 1901. In this country his life will be ineffective. We can find the means to support him in Europe – may he extend us the opportunity to do this small favour to him.” Abala proudly reported on July 26, 1901, that Dadabhai Naoroji and Romesh Dutt were present at a gathering in the Holborn Restaurant to

felicitate Jagadis. It is interesting to note that at this time Nivedita helped Romesh Dutt in London when he was writing his scholarly *Economic History of India in the Victorian Age* just as she had supported Jagadis Bose in his project on *The Response in the Living and Non-Living*. Abala did not hesitate to criticize British conservatism and the proneness of British scientists to “intrigue and envy”. It was the lack of interest on the part of British physicists in Jagadis’s work, Abala explained to Rabindranath on March 27, 1902, that had prompted their visit to France and Germany.

“I have had the opportunity to befriend a Japanese through Nivedita,” Rabindranath wrote to Abala on April 6, 1902, – “they are very much eager to make the respected Professor extend his stay in Japan.” The Japanese mentioned was none other than Okakura Tenshin. Nivedita served as a unique bridge between the Rammohun and Ramakrishna streams in Bengali intellectual and social history represented by Rabindranath and Vivekananda. She was a Swadeshi internationalist, who helped connect Indian nationalism with Asian universalism. Okakura Tenshin’s 1903 book *The Ideals of the East* had a memorable first sentence: “Asia is one”. Sister Nivedita, added a further embellishment in her introduction to the book. “Asia, the Great Mother,” she wrote, “is forever One.” Okakura first came to India in December 1901. It was Nivedita who introduced Okakura to the Tagore family in Calcutta. A cultural and political bridge between East and South Asia was forged. During his eleven-month stay lively conversations animated the Tagores’ Jorasanko mansions in north Calcutta. Rabindranath Tagore later recalled that it was from Okakura that “we first came to know that there was such a thing as an Asiatic mind”. The book titled *The Ideals of the*

*East* was very substantially a collaborative effort of Okakura and Nivedita, both interested in variants of Asian spirituality. Nivedita lauded Okakura for having shown Asia “not as the congeries of geographical fragments that we imagine, but as a united living organism, each part dependent on all the others, the whole breathing a single complex life”.

After his return to Japan Okakura did not forget to send precious gifts back to India. He dispatched the famous Japanese artists Taikan Yokoyama and Shunso Hishida to Calcutta by early 1903. Abanindranath Tagore, Rabindranath’s nephew, learned the Japanese wash technique from Taikan, and painted the iconic image *Bharatmata* (Mother India, 1905) in that style. The painting had been originally titled *Bangamata*. Nivedita regarded it as a masterpiece and urged Abanindranath to retitle it and offer it for the larger cause of the Indian nation in the making. Shunso Hishida’s rendering of that image on a giant silk scroll was paraded around in procession in the streets of Calcutta. Indian nationalism had come to be fused with Asian universalism.

In the first decade of the twentieth century Nivedita served as a unique bridge between the scientist Jagadish Chandra Bose and the sannyasi Vivekananda, the so-called moderate and extremist strands in India’s anti-colonial politics, and, above all, the Rammohun Roy and Ramakrishna Paramhansa streams in Bengali intellectual and social history represented by Rabindranath Tagore and Swami Vivekananda. “I was unaware that Nivedita is sick and is residing at your place,” Rabindranath wrote to Abala on October 17, 1906. A few days back I have written her a letter requesting for a book at her Kolikata address. Kindly make sure that Nivedita does not know about this letter.

Please convey my namaskar to her; please let her know that I am optimistic about her recovery.”

Perhaps the most poignant letter from Rabindranath to his Bouthakurani was written on July 19, 1906. “I had a *bouthakuran* and during my boyhood days I yearned for her affection. After losing her I grew up very quickly and I became weary of earning deference and veneration.” It was not reverence but affection that the poet craved and he was able to extract it from Abala. By November 20, 1908, writing from 168 Brattle Street, Cambridge, Massachusetts, she was scolding Rabindranath for allowing the publication of a photograph in which he looked under strain. “After returning home, I will make you promise me that you will never hand over any of your photographs to anyone without showing them to me.” Now that Rabindranath had set up a school for boys, she would not let him retire before “initiating something for the girls”. Condoling the untimely death of Rabindranath’s son Shami, she wrote: “happiness and misery are different manifestations of life. And all the people of Bengal are your children”. When it was time in 1937 for Rabindranath to condole the passing of Jagadis Chandra, he wrote to Abala, “The nobility of the phenomenal attention and caution with which you have taken care of him, will render the rest of your life precious.”

Let me confess at this stage what prompted me to accept your invitation with alacrity. Abala Bose was a pioneer in both women’s education and travel writing. My own mother Krishna Bose spent forty years teaching and eight years as Principal at a women’s college, the City College South, named after Shibnath Shastri. As I was reading

Abala Bose's essay on her visit to the United States, I thought of my mother's essay "American Charitra Charcha" and her serialized "Boston Prabasher Dinguli" based on her observations in America during 1958-1959. Her two literary classics blending vivid travel accounts with history – *Itihaser Sandhane* and *Charanarekha Taba* – flowed from her journeys to Europe and Asia with my father Dr. Sisir Kumar Bose in 1971 and 1979 respectively. While her book *Harano Thikana* and her major essays on Netaji have been translated by my younger brother Sumantra, we still need to render *Itihaser Sandhane* and *Charanrekha Taba* into English.

The remainder of what I have to say today before this august audience has to do with my views on the proper relationship between science and culture as well as science and politics. In the course of a conversation with Meghnad Saha, one of Jagadis Bose's star students at a meeting of the Indian Science News Association in August 1938, Subhas Chandra Bose called for "far-reaching cooperation between science and politics". Saha tried to put him on the spot by asking a loaded question: "May I enquire whether the India of the future is going to revive the philosophy of village life, of the bullock-cart – thereby perpetuating servitude, or is she going to be a modern industrial nation which, having developed all her natural resources, will solve the problems of poverty, ignorance and defense and will take an honored place in the comity of nations and begin a new cycle in civilization?" Netaji answered truthfully that there was some difference of opinion in the Congress on this question, but that "the rising generation" were in favor of industrialization. It was deemed to be essential for solving the problem of unemployment, establishing socialism, competing with foreign industries, and raising

the standard of living of the populace. Netaji admired Saha's journal *Science and Culture* for its articles on electric power supply, flood control and river physics. He recognized the need for a permanent National Research Council and a thorough economic survey to generate data for the National Planning Commission.

Subhas Chandra Bose, reckoned in his speech as Congress President at Haripura in 1938 that 'how to eradicate poverty' was the principal problem of reconstruction that faced the country. It would require radical land reforms, including 'the abolition of landlordism' as well as the liquidation of agricultural indebtedness and the provision of 'cheap credit to the rural population'. But to solve the problem of poverty, agricultural improvement 'would not be enough', and a plan of state-led industrial development would be necessary. 'However much we may dislike modern industrialism and condemn the evils which follow in its train,' Bose declared, 'we cannot go back to the pre-industrial era, even if we desire to do so.' (Bose 1997: 49)

After further consultation at Congress Working Committee meetings Bose convened a conference of industries ministers of Congress-ruled provinces in Delhi on October 2, 1938, Mahatma Gandhi's birthday. The goal he set for the Congress was to see that "everybody – man, woman and child, is better clothed, better educated and has sufficient leisure for recreation and for cultural activity". India, Netaji noted, had "resources similar to those of the United States of America". What was required was the intelligent and equitable utilization of these resources in the best interests of the nation. He did not see any necessary conflict between cottage industries and large-scale industries. He reassured Gandhi and Gandhians that he was firmly believed in

developing cottage industries, but felt it was necessary to embrace the idea of industrialization. Bose's potential ally in this endeavor, Jawaharlal Nehru, was away in Europe for six months during 1938. "You cannot imagine how I have missed you all these months," Subhas wrote to Jawahar on October 19, 1938, in Spain. He recognized the valuable work Nehru was doing in Europe of the sort he himself had done to win supporters of Indian independence abroad. Bose needed Nehru in India, however, as he moved to announce the formation of the National Planning Committee. "I hope you will accept the Chairmanship of the Planning Committee," Subhas wrote. "You must if it is to be a success."

After Nehru's return from Europe in November, Netaji was ready to launch the National Planning Committee. Its first meeting was held in Bombay on December 17, 1938. Inaugurating the work of the Committee, Bose argued that there could be a symbiosis between state planning for heavy industries and private entrepreneurship in setting up light industries and stimulating the revival of cottage industries. He wanted the Committee to pay urgent attention to the building of infrastructure, especially in power and communications. He was quite ecumenical in the composition of the Committee, choosing representatives of industry and labor and eminent persons from different walks of life. He picked his good friend, the scientist Meghnad Saha, but also accommodated J.C. Kumarappa, a Gandhian purist opposed to large-scale industrialization. The 15-member committee formed by Subhas Chandra Bose comprised of five scientists (Nazir Ahmed, V.S Dubey, J.C. Ghosh, A.K. Saha, and Meghnad Saha); four industrialists/businessmen (Walchand Hirachand, Ambalal

Sarabhai, A.D. Shroff, and Puroshottamdas Thakurdas); three social scientists (Radhakamal Mukherjee, K.T. Shah, and M. Visvesvaraya); and three politicians (N.M. Joshi, a labor leader; J.C. Kumarappa, a believer in Gandhian village communities; and Jawaharlal Nehru). “The work of the National Planning Committee which you entrusted to me last year grows bigger and bigger and takes up a great deal of time and energy,” Jawahar wrote to Subhas months later. “It is exhausting business.” It is clear that both Nehru and Bose found this kind of constructive work exhilarating, if exhausting. Netaji showed far-sightedness during his term as Congress President in pioneering an institutional innovation that became the foundation for India’s efforts at achieving economic development for decades to come.

Acquisition of power in a unitary, centralized state was by no means a foregone conclusion. Radhakamal Mukerjee and K.T. Shah were staunch federalists. It was a topic on which self-avowed socialists espoused different opinions as became evident in Meghnad Saha’s powerful critiques of Nehru’s over-centralizing policies in the immediate post-colonial era (Chatterjee 1987). Meghnad Saha, who had been a stalwart of the National Planning Committee during 1938-40, had warned on the eve of independence that “planning” had become a “catchword”. The Bombay Plan of 1944 had been hatched by “a syndicate of capitalists”, the Department of Planning and Development established later that year was the handiwork of “foreign bureaucrats” and in the case of the Bengal Government Plan of 1945 “the Civil Service provided the philosophy and the direction”. In other words, the official version of development had arisen after and in reaction to popular, national efforts. Saha argued in 1953 that if

India's First Five Year Plan were "not altered root and branch, it will perpetuate our 'Colonial Status' in the economic field and greatly jeopardize our hard-won 'Political Freedom'." He denounced the Congress government's renegeing on its long-standing promise of linguistic reorganization of states in the name of the state's integrity and administrative convenience. Most important, he dissented from the state's decision to "concentrate" nuclear physics research, calling for a more decentralized structure so as not to "smother all fundamental research and choke the growth of knowledge".

In dedicating his *Biswa Parichoy* to Satyendra Nath Bose, another of Jagadis Chandra's students, Rabindranath wrote, "*Shiksha jara arambha korechhe, gora thekei bigyaner bhandare nah ok, biganyer anginay tader prabesh kora atyabashyak. Ei jaygay bigyaner shei Pratham parichoy ghotiye debar kaje sahityer sahayota shwikar korle tate agourab nei.*" Scientific research, especially in biology, is inextricably connected with questions of ethics and philosophy. These days we hear of interdisciplinary fields, such as, biophysics and biostatistics. We need to nurture a field called bio-humanities. It is time that we broke down the artificial walls separating science from humanities in our quest for knowledge. That would be a fitting tribute to the life-long companionship of Jagadis Chandra and Abala Bose.