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*Krishna the Boatman*, water colour on paper by **Abanindranath Tagore**
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**THE ASIATIC SOCIETY**
**(AN INSTITUTION OF NATIONAL IMPORTANCE)**
**1 PARK STREET ● KOLKATA-700016**

# Contents

# From the Desk of the General Secretary

## Birthday Mark of the Luminaries in the Month of August

Acharya Prafulla Chandra Ray

Sri Aurobindo

William Carey

Mother Teresa

Georg Wilhelm Friedrich Hegel

Leo Tolstoy

**Dear Members and Well-Wishers,**

Nearly five months have rolled down since the declaration of the Lockdown to combat the massive onslaught of COVID-19 in our country. This is continuing in various phased manner with restricted relaxations in between.

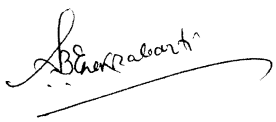
We will observe our 74th Independence Day this year amidst such pandemic situation. Under these circumstances new areas of challenges have opened up before the nation. We have to evolve our innovative steps in the areas of our priority programmes to follow.

The month of August stands for many significant events in the world at large. Many pioneering thinkers and visionaries were born in this month. To cite a few instances, Acharya Prafulla Chandra Ray (02.08.1861), Sri Aurobindo (15.08.1872), William Carey (17.08.1761), Mother Teresa (26.08.1910), Georg Wilhelm Friedrich Hegel (27.08.1770) and Leo Tolstoy (28.08.1828) made immense impact in the world of philosophy, science, literature and human welfare through their valuable contributions. The grave human killing in Hiroshima (06.08.1945) and Nagasaki (09.08.1945) marked the cruel use of atom bomb for the first time in world history. Rabindranath Tagore laid the foundation stone of Mahajati Sadan (19.08.1939) which symbolised the creation of a centre of integration of human culture and civilization.

Friends, you are aware that during recent period, apart from our online publication of Monthly Bulletins, the Society organised a number of panel discussions through the webinar and also launched virtual exhibitions. For example, 'Treasures of Museum' and 'Acharya Prafulla Chandra Ray and His Endearing Relationship with The Asiatic Society' were organised as virtual exhibitions. Panel discussions were held on Library in Higher Education against a Background of Pandemic Sick Global Scenario; Print Books versus E-Books; Rabindranath Tagore and Patrick Geddes on Environment : Confluence of Minds. All these events are available on modern mode of dissemination. Many other such programmes are being planned for next phase of execution.

Let me conclude with a note of concern for the Senior Citizens of the country. The 8th of August is observed as the World Senior Citizens' Day. The recent pandemic situation and its resultant compulsion have been a limiting factor for the participation of Senior Citizens in various activities. Our senior citizens should come out of such imposed limitations by their own imagination and initiative as far as practicable even remaining at home.

Please keep well and keep safe.



# India Independent : Gandhi In Beliaghata, Calcutta : 15 August 1947

## *Weaving New History* [1]

**Suparna Gooptu**
Professor, Department of History, University of Calcutta

The house of Nawab Abdul Gani at Beliaghata where Gandhiji and Mr. Suhrawardy in their joint peace mission have taken up residence.

Source: *Amrita Bazar Patrika,* 14 August 1947

At the stroke of the midnight of 14th August 1947 when India awoke to freedom Mohandas Karamchand Gandhi, the Father of the Nation, was in Calcutta to stem the tide of communal strife that had been plaguing the city for the last one year. Gandhiji shifted on the afternoon of 13 August (Wednesday) from Sodepur Ashram to Hydari Manzil, the garden house of Nawab Abdul Gani. He was accompanied by Professor Nirmal Kumar Bose, his Acting Secretary, his granddaughter Manu Gandhi, his granddaughter-in-law Abha Gandhi and H.S. Suhrawardy, who was widely believed to have masterminded the Great Calcutta Killings of August 1946.

The Hydari Manzil was located in a surrounding where abandoned huts, charred roofs, broken domestic materials were a mute witness to the communal violence. Upon their arrival Gandhi and his colleagues received a hostile reception from an angry mob of youth, dissatisfied with the outbreak of communal violence in the city. But the 78-year-old 'pilgrim of peace' remained undeterred, 'refusing to go back alive.' The crowd was ultimately persuaded to give Gandhi a hearing and he responded to an avalanche of questions. Gandhi stressed the futility of avenging what had happened one year earlier, affirming that he had come to the city

An inside view of the house at Beliaghata showing Gandhiji and Mr. Suhrawardy and others holding

Source: *Amrita Bazar Patrika,* 14 August 1947

to serve Hindus and Muslims alike. *Amrita Bazar Patrika* vividly reported the 'ugly' and 'unseemly' scenes at the Hydari Manzil on 14 August 1947.

Throughout the day on 14 August 1947 Gandhi had a stream of visitors, which included leaders of the two communities. At 6 p.m. he addressed a large prayer meeting where Muslims were present in good numbers. Addressing a packed audience, which listened to him without slightest disturbance, he reminded that the next day (15 August, Friday) is the day of deliverance from foreign yoke, and it needs to be celebrated. But he reminded those present, that from that day both the dominions will have to shoulder heavy burden of responsibilities. He thus urged everyone to fast on that day for 24 hours, hold prayer for the well-being of the sub-continent as a whole, and organise spinning since it was hand-spinning that had knit the country's poor and the rich together in their struggle for independence.

After the prayer meeting a large crowd followed Gandhiji and assembled in front of his room. They demanded to see Mr. H. S. Suhrawardy, and hear an explanation from him, for all that had happened. Gandhiji appeared at the window and addressed the crowd, advising them not to lose patience. He once more explained to them that Hindu-Muslim unity was one mission of his life for which he would not hesitate to die. Gandhiji then explained to the people that his visit to Noakhali has been postponed to contain communal violence in Calcutta, and mentioned how Saheed Sahib had promised to accompany him to tour the city's affected areas and stay with him under the same roof till communal amity is restored. Gandhiji stressed that if Calcutta returned to sanity and mutual friendship, Noakhali and

the rest of India would be safe. He insisted, that it would be best to live unprotected by police or military, approach the people in a brotherly fashion, argue with them and convince them that since the Partition had already taken place by agreement, there was no longer any reason why they should quarrel. Addressing the gathering, Suhrawardy reiterated that he would devote his life to the cause of Hindu-Muslim unity, remarking:

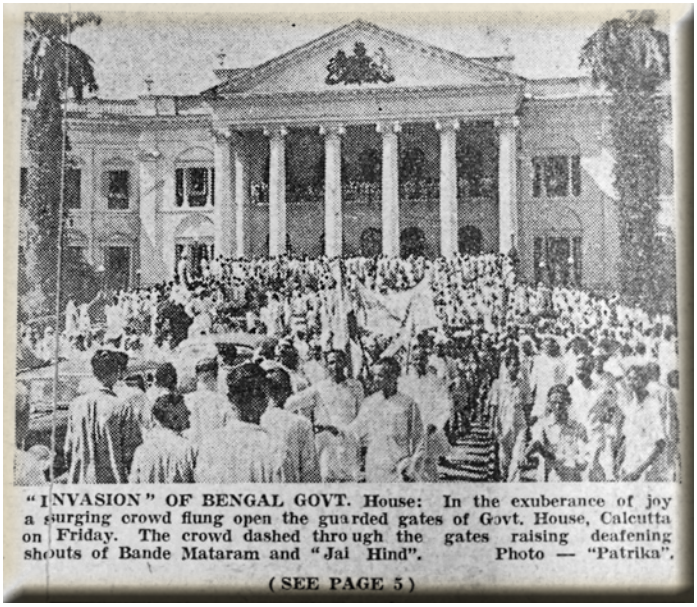
> Now is the time that we Hindus and Muslims begin to live again side by side as brothers, in the same spirit of mutual friendship towards one another as we used to have before this mutual strife.

Gandhi spent 15 August fasting, spinning and praying for communal peace. When Manubehn asked him: "Bapuji, people will celebrate in a different manner, while you ask us to observe fasting and silence and to spin yarn. Is not today a day of rejoicing?" Bapu replied:

> … You know that I ask people to observe a fast even on occasions of marriage and child-birth. Today we have to consider with a calm mind how far our responsibility has increased. It is the Charka which has given us freedom. How can we forget it? And when we fast we purify our bodies..[2]

This remark of Gandhi demonstrated how spinning and fasting, symbolising self-reliance and self-purification, was integral to his notion of freedom of the individual and of the nation.

Unbelievably, Calcutta on 15 August did not witness any violence. Instead, Hindus, Muslims and other religious groups jointly celebrated the coming of Independence. Gandhiji was particularly happy that at the Chittaranjan Seva Sadan the tri-colour was hoisted by an elderly Harijan *Methrani* (sweeper woman), who was faithfully serving the institution. Similarly, when he heard that in one of the celebrations organised by a district Congress Committee, a Harijan girl had hoisted the tri-colour, he felt, it reflected the fraternal spirit of Calcutta, cutting across class, caste, religion and gender. He was confident that if this spirit spread throughout India there would be no fear of disturbance in Noakhali or in Punjab. When the newly appointed ministers of West Bengal came to see him, he told them:



"INVASION" OF BENGAL GOVT. House: In the exuberance of joy a surging crowd flung open the guarded gates of Govt. House, Calcutta on Friday. The crowd dashed through the gates raising deafening shouts of Bande Mataram and "Jai Hind". Photo — "Patrika".

(SEE PAGE 5)

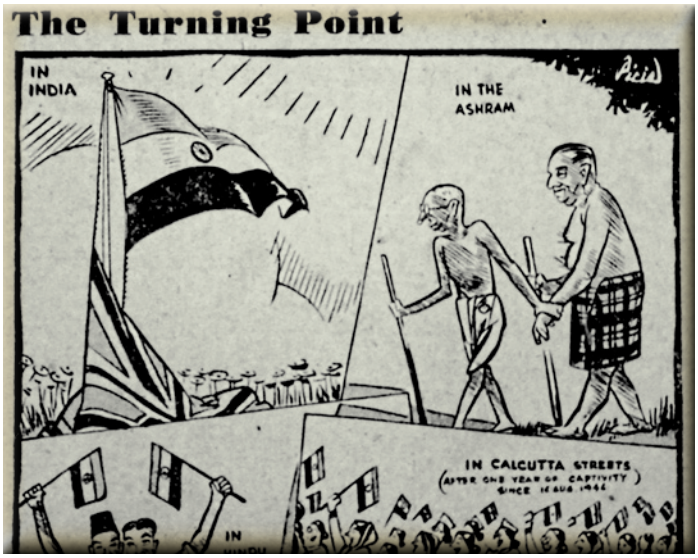
Source: *Amrita Bazar Patrika*, 16 August 1947

> The seat of power is a nasty thing… You have to be more truthful, more humble and more forebearing…Do not fall a prey to the lure of wealth… You are there to serve the villages and the poor.[3]

At the same time, Gandhi disapproved of the crowd forcing into the Government House, on the Independence Day and virtually taking possession of it. He regretted that

the military had to clear the crowd. Bapu told the gathering at his evening prayer meeting:

> It is a good thing that the people are aware that all have equal right to enter the (Government) house. But it is painful that they seem to think that now that the British have gone away, they are fee to do what they like and break and destroy things. I hope no one will indulge in such barbarism[4]




Source: *Amrita Bazar Patrika,* 16 August 1947

He was grieved to learn that some plates in the Government House was pilfered and urged their return.

At 8 p.m after the prayer meeting Gandhi and Suhrawardy drove round the city. Suhrawardy wanted to show Gandhiji the illuminations and the atmosphere of unity between Hindus and Muslims. However, Gandhi realised that mere urgings and persuasions would not go far in containing communal violence. Accordingly, he created an institutional mechanism dedicated to the task of bringing back people to their abandoned homes and restoring confidence between the two communities. A Central Peace Committee with Mr. Sudhir Chandra Roy Choudhury, the Mayor of Calcutta as Chairman, was constituted to realise this goal. Under the auspices of the Central Peace Committee, *Mohalla* Peace Committees were formed in every locality. The *Mohalla* Peace Committees were to provide every possible assistance for the rehabilitation of the dispossessed. The way in which Gandhi laid down the structure and functioning of the Central and *Mohalla* Peace Committees demonstrated his pragmatism in addressing the issue of the post-riot rehabilitation process. In a letter to Gandhi, the Acting Secretary of the Bengal Provincial Muslim League Mohd. Habibullah Bahar congratulated him for his efforts in restoring peace in the city:

> My dear Mahatmaji, let me avail of this opportunity to congratulate you on your miraculous achievement in restoring peace in the city of Calcutta. The contribution of Mr. Suhrawardy in this respect will also be remembered by the people with gratitude.

Gandhiji, however, remained perturbed by the isolated spots in Calcutta where Hindu residents were not prepared to welcome back the Muslim residents, who had been forced to leave their dwellings. He apprehended:

> It is like a bad boil in an otherwise wholesome body. If the boil is not looked after in time it might poison the body.

Correct he was. The last day of August witnessed a resurgence of communal violence in the city. Even Hydari Manzil was subjected to stone throwing. Gandhi stayed back in Calcutta and commenced an indefinite fast, vowing to end it only when `sanity' was restored. The fast worked as a miracle. By 4 September peace returned to the city and on that day both Hindu and Muslim leaders

of the rioting crowd submitted to Gandhi, begging forgiveness and laying down arms in front of him. At 9.15 p.m. after a prayer, on that day, Gandhi broke his fast, accepting a lemon juice from Suhrawardy. Gandhi had accomplished one of his greatest missions of his life. He left for Delhi on 7 September.

On 15 August. 1947, three different scenes were enacted on the Indian stage simultaneously. In New Delhi state power was handed over to a new Indian ruling elite. At the frontiers, the country was agog with the horrors of partition. Across the length and the breadth of the sub-continent mutual trust and faith between communities were being severely shaken. Dispossession and displacement of people became the order of the day. Such was the time, when Gandhi was weaving a new history in the streets of Calcutta: He could never accept the political division of the country, that too on communal lines. He was well aware of the difficulties that were to plague the sub-continent in the near and distant future. In a psychological denial of the event, he in fact, was determined to stay either in West or East Pakistan on 15th August. But alas! Destiny brought him to Calcutta. And here, through his actions, he created a new narrative of history. The history that Gandhi was trying to etch in the minds of the people was one of reconciling conflicts between people, of restoring peace, harmony and goodwill, making people tolerant through self-purification, urging them to be self-reliant and self-disciplined, abstaining from the use of force. When messages were pouring in, from various parts of the country and outside, wishing the *Mahatma* a long life and congratulating him on the attainment of India's Independence, Gandhi was still trying to give shape to his notion of *Swaraj* and Independence. He was still in search of the *touchstone* that could transform the very foundations of modern civilisational discourse. Thus when Horace Alexander, the British Quaker and a friend of Gandhi, remarked that to restore peace in the city someone had to touch the spring he was referring not just to Gandhi as the man of the hour but the values, ethics, and principles, for the establishment of which, he staked his life. He wrote:

> The Mahatma's decision to take Suhrawardy into close and affectionate partnership was the symbolic act that touched the spring. But he knows better than any man that the work of reconciliation is only just begun.[5]

## Endnotes

1. This reconstruction of Gandhiji's stay in Calcutta from 13 to 16 August 1947 is essentially based on the reports available in *Amrita Bazar Patrika* (Calcutta) and Suparna Gooptu ed. *Gandhi In Bengal: Places In History 1896-1947* (Gandhian Studies Centre, Department of History, University of Calcutta: Kolkata 2014).
2. Manubehn Gandhi, *The Miracle of Gandhi* (Navajivan Publishing House: Allahabad 1959) p.32.
3. Manubehn Gandhi, *The Miracle of Calcutta*, p.33.
4. Manubehn Gandhi, *The Miracle of Gandhi*, p.33.
5. Horace Alexander, 'India Achieves Freedom and Gandhi Starts on a New Adventure', cited in Ramachandra Guha, *Gandhi: The years that changed the world 1914-1918* (Penguin Random House India: Gurgaon 2018) p.840.

# Re-visualising of the Future

**Arunendu Banerjee**
Life Member, The Asiatic Society

"What could have been the probable response of Visva-Bharati in Rabindranath's time, if such unthinkable present world- crisis of epidemic and endemic diseases, would have occurred in that period?..."– recently asked by one friend from abroad who is a Professor of environmental planning and urban design in a reputed university in US. I thought this is quite an interesting enquiry in this unprecedented critical stage of world-wide fighting against corona disease and also from the land of Pete Seeger!

Covid19 - Corona virus - is global pandemic with spreading spikes, causing major human disasters in massive scale in the world. Uncertain future of human and nature wellbeing and loss in life and livelihood - sustainability has brought big challenges in world's civilization. Probably Rabindranath's practised philosophy of reconstruction in all sense with high moral values and humanity, by the renewal of self-sustained life and livelihood with co-operative principle would be emerged as one of the united creative ways to better alternative of living in future - 'new-normal' society.

Couple of years ago, this Professor with his colleague-teachers and students from US came to Santiniketan. They had sincere urges in finding futuristic solutions for a possible ideal built environmental planning and urban design with defined place, work and folk-culture, where learning centre and urban-rural re-construction including health and hygiene work had the common sitting in environmental broader-lands. Creative and dedicated personalities from East and West had once jointly worked in Visva-Bharati – the world's nest of green peace in defined scale. Objectives of the US institute's project were for re-tracing the essence of Tagore time- glories of living design and work on rural reconstruction with the participation of local villagers.

After their site specific field work and interactive studies they were extremely happy and at the same time was with full of 'amazing experience' on Santiniketan-Sriniketan humanistic built environmental ideals and rural reconstruction, where health co-operatives were also given timely priority.

In this paper we will discuss particularly Visva-Bharati's work during Rabindranath's time, on Malaria epidemic and other spreading diseases by 'Sriniketan-Institute of Rural Reconstruction' group. Rural reconstruction is human reconstruction – this was the centered truth of this institute, inspired by the vision of Poet, where best of experts worked in combined head, heart and hand. At that time malaria and other diseases were spreading deadly wings of spikes in villages. People suffered with deaths and diseases in wide scale, fragile health and loss of livelihood resulted to dire poverty. Objectives of Sriniketan from earliest period were for improvement of living condition and livelihood of poor villagers. In bulletin published in 1922, objectives were detailed as, '…no improvement in the condition of the villages could be so vital as that of improving the health of the people… carefully studying the problem and trying out different methods of placing the benefits of medical science within reach of the poverty-stricken masses… The problem was to devise a scheme of health work which could be Health improvement work from this core objectives progressed steadily over next few decades with humanist and scientific approach of 'Curative and Preventive'. In spite of

limited financial resources and many obstacles the work continued with the ideas and ideals of Rabindranath. Understanding and studies of Rabindranath and Santiniketan would be incomplete without the knowledge of his Sriniketan work. In the contemporary situation, world over, this model may be wisely useful.

Villages including Surul were then infected by dying diseases— cholera, chicken pox, viral fever, water borne diseases and most devastating malaria. Villages of Bengal had constant fear and uncertainty of health hazards primarily due to malaria fever, painfully earmarked as 'demon'. Millions of people were dying due to malaria in places. Some important steps taken by Sriniketan were : a. actual documentation of village health conditions (also with Spleen Index) by close contact with villagers, b. analyzing the sources of disease in first stage- micro level, c. medical survey reports on cause and effects of disease, d. establishing 'Health Co-operative' for remedial measures.

Rabindranath in Halokarshana in Santhal Village

Village and pond cleaning, clearing the unwanted bushes (breeding nests of mosquitoes) and proper drainage construction were taken up in regular intervals. Nursing centers, dispensaries, clinics, medicine distribution centers, vaccination and sanitary inspections were in operation. Regular health education, awareness program with environmental communication work, travelling with magic lantern in distant villages were undertaken as part of advance communication for alerting the people of spreading malaria and methods to safe living with necessary measures of protection. With the people's active participation including founding the clinical laboratory, 'Anti- Malaria Co- operative Society' was created with the help of renowned experts. Such scientific- humanistic model of epidemic management from Sriniketan (once successfully practised in reality) with assessment and preparedness in advance, is still relevant to contemporary world in crisis.

Graphic Medical Reports, Cardex records and physical mapping systems were introduced for each village under malaria control work. Ante-natal clinics, demonstrations in the proper nourishment of growing children, conducting regular malaria survey were undertaken with the guidance of malaria experts. Village workers, students and local youths also joined this Society actively, for inspired human-service physically reaching every possible door. Health Co-operative Society also actively worked in Santhal villages, for pond cleaning, drainages. Distribution of quinine medicine and vaccination were arranged in health care centers. 'Santhal Welfare Society' was formed for regular work of rural reconstruction in Santhal villages.

In the very recent lockdown period due to covid-19, these villages have shown their self-restraints, mutual co-operation, and sustained social isolation. They had used traditional method of village communication by drumming 'Nagra' for creation of health alerts. They are part of Visva-Bharati's environmental society. In 1937 Halokarshan and Briksaropana ( Ploughing ceremony and tree planting ceremony) festival was organized here and Rabindranath opened this festival by ploughing in

Rabindranath in Briksharopana festivals

his own hand. Santhals performed with their traditional songs, dance and drums. Conservation of green life festival was designed by Kala Bhavana. First grocery shop in this village in earliest period was created by co-operative principle inspired by the Poet.

In World covid-19, we are witnessing active role and data analysis from The Johns Hopkins University, USA. Interestingly Harry Timbers the malaria eradication specialist came from USA with his wife Rebecca (well trained in nursing work) to Sriniketan's ongoing work on malaria eradication and joined the team with Kalimohon Ghosh, Rathindranath, Gopal Chandra Chatterjee and others for active support in this mission. Earlier Elmhurst, Patrick and Arthur Geddes, Gretchen Green had successfully contributed in rural reconstruction work.

Harry Timbers was Doctor of Medicine from The Johns Hopkins University. Worked in Biostatistics, was also Doctor in School of Hygiene and Public Health. As a reputed public health specialist and untiring service to humanity he was honored by the public health division of League of Nations. He was also the founder member of 'American Tagore Association' (1931).

Harry Timbers worked several years in Sriniketan for malaria eradication program, had the support of his wife in nursing and ably assisted by Dr. D. N. Roy, Dr. J. K. Bhattacharya, from School of Tropical Medicine, Calcutta. They dissected almost one lakh mosquitoes for research in malaria. The malaria findings were further enriched by his published technical papers. Reported to Rabindranath on the finding as, a. Anopheles philippinensis are the Chief Carrier of malaria in this area; b. they prefer room-interiors of home dwellers instead of cattle sheds; c. requirement on distribution of Plasmoquine as medicine during months of June- July, only quinine may not work; d. use of mosquito nets; e. breeding ground is in the edge-hedges-mosses of clean water pond beyond the area of village where ponds are not in daily use; e. need for regular cleaning with disinfectants before monsoon and again in September-October.

In the present World's devastating diseases and dynamics of spikes - everyone, every citizen in every corners of the world is almost frantically looking for the return of 'New Normal' world order of humanity. There is and will be urgent need to restore the 'Safe Home-World' by reconstruction methodology suiting to 'place, work and folk' with sincere combination of 'head, heart and hand' in united world of renewed life and livelihood in immediate future. Truly holistic co-operation, medication and mutual human engineering service may possibly bring back the desired renewed meeting place of world culture for urgent re-visualization of future.

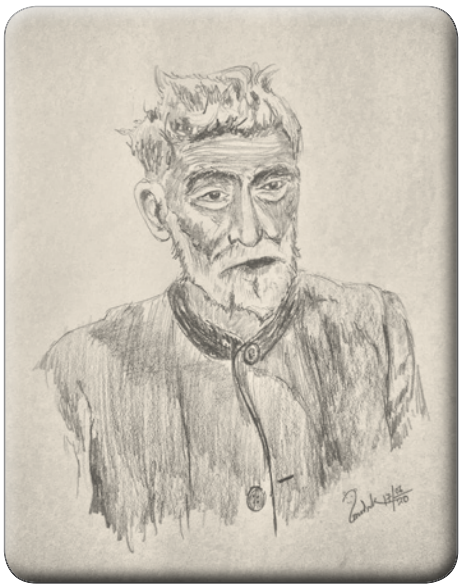
Rabindranath's practised vision and mission of united creativity- the 'fundamental unity' would be more relevant now to bring back 'New Normal' humane global society. Poet's call of return to mother-soil is the return to life, as expressed in his song 'phire chal matir tane…'. This is the world-song not in isolation but for greater unification without any 'physical and mental barriers'.

Photo Courtesy: Visva-Bharati

# Self-reliance Personified

**Sabyasachi Chatterjee**
Department of History, University of Kalyani

All of us are listening the terms like *atma-nirbharata*, *vocal for local* from the Prime Minister of our country during the present pandemic situation. In this context one may remember the life of works of an Indian scientist, who stood for both the *atma-nirbharata* or self-reliance and development of local industry. Truly speaking the self-reliance is personified in his life. He is Prafulla Chandra Ray, the man who tried to make science social and to make society scientific. It is appropriate to focus on the multi-faceted works of this great scientist in the present situation as he was born in this month in 1861 on August, 2.



*Sketch*: Ritwik Modak

One may face a great problem to add a single tag to identify this great person; which identity of him is more important – the inventor of Mercurous nitrite, the pioneering figure in the field of research on chemistry in India, a dedicated practising scientist who tried to develop nationalism through his scientific works, entrepreneurship and activism? It is not very easy to answer this question in a monolithic way.

Basically he was a person, who tried to make science social and to make society scientific in outlook and practice. Probably that's why Prafulla Chandra, a practising scientist initiated his research on a subject which was very much a social problem. In 1890s when the problem of adulteration became a major one Prafulla Chandra tried to face it through the application of science. He collected some samples of oil and milk and then examined the adulterant in those samples. Later he wrote an article namely 'On the chemical examination of certain Indian foodstuff, Part I : Fats and Oils', [1] where he elaborately discussed the result of his research. It is my pleasure to note here that his first research correspondence on this important social issue was published in the pages of none other than the *Journal of the Asiatic Society of Bengal*. This research showed his deep concern for the society. That concern was also evident in his memoirs[2], where he explained the reason for taking up of this research.

Prafulla Chandra is one of the pioneers of chemical industry in India. To combat the

import-based drug industry in the colonial period, he established *Bengal Chemical and Pharmaceutical Works* in the year of 1892. The initial capital of this company was not other than the personal savings of Prafulla Chandra himself. He always encouraged the development of small-scale industry based on people's technology. Besides Bengal Chemical, he was the main person in establishing the industrial units like *Bengal Enamel*, *Bengal Potteries*, *Bengal Salt* etc. He tried to make people conscious about the prospect of immense opportunity of employment by utilising science.

His patriotism was so strong that even when he was doing research in Edinburg University, United Kingdom availing the Gilchrist scholarship he wrote an essay in a competition where he did not dare to expose the oppression of British colonial rule. The subject of that essay was *India before and after the Mutiny*.[3] It was not easy for a *native* young scholar to criticize the rule of the colonial power in the place of the ruler, where he went to study. That was done by Prafulla Chandra.

Prafulla Chandra wrote a lot on science in Bangla. According to Buddhadev Bhattacharya, his scientific writings could be divided in two categories – general scientific literatures and scientific literature of the scientists.[4] He wrote as many as twenty-three books. Among these books, the books on zoology, nutrition, chemical terminology deserve special mention. He also wrote as many as thirty-seven articles in the contemporary periodicals such as *Prabasi, Basumati, Bangabani, Bharatbarsa*, where he emphasized on using science for the social development.

Besides writing scientific literature and encouraging scientific temper and popularising people's technology, Prafulla Chandra spoke of human development by using science in different science conferences. He declared his optimist views in his presidential address of the *Bangiya Sahitya Sammelan* at Chattagram in 1914, address of the *Bangiya Pradesik Sahitya Sammelan* at Jessore in 1916 (there he proposed for science education through mother tongue.), presidential address of the thirty-first session of the *Bharatiya Jatiya Samaj Samskar Samiti* at Kolkata in 1917, presidential address of the *Indian Science Congress Association* at Kolkata in 1920. He was the first president of the *Indian Science Congress Association*. He was associated with the *Swadeshi Melas* or *fairs of indigenous articles.* Those *Swadeshi Melas* were organized during the anti-partition of Bengal—*Swadeshi* Movement. Various goods made of *Swadeshi* technology were displayed in those fairs. This type of *Swadeshi* fair was started in 1906; on 21st December Indian industrial and agricultural fair was held in Kolkata. Later, he also delivered speeches in different *Swadeshi Melas* – at Madras in 1930, at Pune in 1931etc. He actively participated in the flood-relief work at north and east Bengal in 1931.

Prafulla Chandra formed a number of associations. For the study of chemistry he founded *Indian Chemical Society*. To make a bridge between science and culture he played a pivotal role in publishing the journal *Science and Culture*; he established Indian Science News Association (1935), the publisher of the journal.

Prafulla Chandra was sincere to make society scientific in attitude. In this regard, his effort of writing the history of the study of science in India may be mentioned. In the famous *History of Hindu Chemistry* (Two volumes, published in 1901 & 1909), his meticulous research aptitude and rational outlook can be seen. He has divided the entire period of the growth of Hindu Chemistry in four phases, the first is up to 800 AD, second phase is the period between 800 AD and 1100 AD, the third is 1100 AD-1300 AD and the time period of the last phase is 1300 AD-1550 AD. He has tried to trace the reason behind the decline of the study of chemistry in particular and science in general. To trace the reason behind decline, he focused on caste system in Indian society and the attitude of difference between mental work and physical work. He

pointed out that this indifference to physical work acts as a hindrance to the path of the development of our country. He therefore gave much emphasis on the utility of physical labour. Prafulla Chandra thought of applying science in applied technology. For that reason, he mentioned that the caste system of ancient society had acted as an obstacle to the study of experimental science in that period. Generally surgical instruments were made by the blacksmiths and those were used by the medical physicians. But in ancient India the co-ordination between the medical physicians and blacksmiths was gradually lost. He showed the superstitions related to dead bodies prevented the growth of medical science. A medical student has to dissect human dead body for getting the true knowledge regarding human body. A budding surgeon has to dissect the dead body first. Only thereafter, the surgeon can dissect a living human being. But the then Hindu society did not allow an upper caste like *brahmin* or *vaidya* to dissect the dead body; to them that was the work of *dom*, the lower caste people. Physical labour was hated by those who did mental labour. Hence the study of surgery & medical science in particular and technical subjects in general suffered badly.

In the colonial period, he wanted to make science more social. The key-spirit behind his multi-dimensional work was proper utilization of science for the welfare of the people. He strongly felt that the ego of having a golden past could not lead the country to anywhere. He believed that one could do something for the people of our country only by using the composite power of the people in the study of science. This thought of him was a reflection of his democratic and humane attitudes towards science. He was one of the great scientists of India who did not think of confining science within the laboratories only. To him, science is meant for achieving self-reliance.

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3. P.C.Ray, *India before and after the Mutiny* is now available with the edition published by Publications Division, Government of India, New Delhi, 2012.
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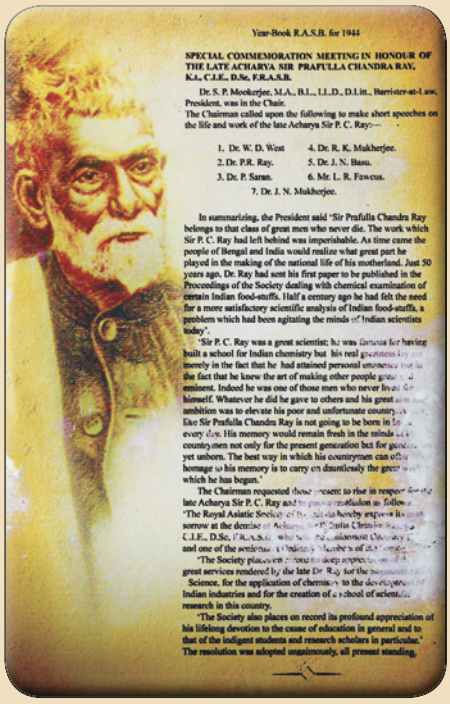
**Special Commemoration Meeting of The Asiatic Society in Honour of The Late Acharya Sir Prafulla Chandra Ray**



Year-Book R.A.S.B. for 1944

SPECIAL COMMEMORATION MEETING IN HONOUR OF THE LATE ACHARYA SIR PRAFULLA CHANDRA RAY, K.t., C.I.E., D.Sc, F.R.A.S.B.

Dr. S. P. Mookerjee, M.A., B.L., LL.D., D.Lit., Barrister-at-Law, President, was in the Chair.

The Chairman called upon the following to make short speeches on the life and work of the late Acharya Sir P. C. Ray:—

1. Dr. W. D. West
2. Dr. P.R. Ray.
3. Dr. P. Saran.
4. Dr. R. K. Mukherjee.
5. Dr. J. N. Basu.
6. Mr. L. R. Fawcus.
7. Dr. J. N. Mukherjee.

In summarizing, the President said "Sir Prafulla Chandra Ray belongs to that class of great men who never die. The work which Sir P. C. Ray had left behind was imperishable. As time came the people of Bengal and India would realize what great part he played in the making of the national life of his motherland. Just 50 years ago, Dr. Ray had sent his first paper to be published in the Proceedings of the Society dealing with chemical examination of certain Indian food-stuffs. Half a century ago he had felt the need for a more satisfactory scientific analysis of Indian food-stuffs, a problem which had been agitating the minds of Indian scientists today".

"Sir P. C. Ray was a great scientist; he was famous for having built a school for Indian chemistry but his real greatness [illegible] merely in the fact that he had attained personal eminence but in the fact that he knew the art of making other people great [illegible] eminent. Indeed he was one of those men who never lived for himself. Whatever he did he gave to others and his great [illegible] ambition was to elevate his poor and unfortunate country. [illegible] like Sir Prafulla Chandra Ray is not going to be born in [illegible] every day. His memory would remain fresh in the minds [illegible] countrymen not only for the present generation but for gene[illegible] yet unborn. The best way in which his countrymen can offer [illegible] homage to his memory is to carry on dauntlessly the great [illegible] which he has begun."

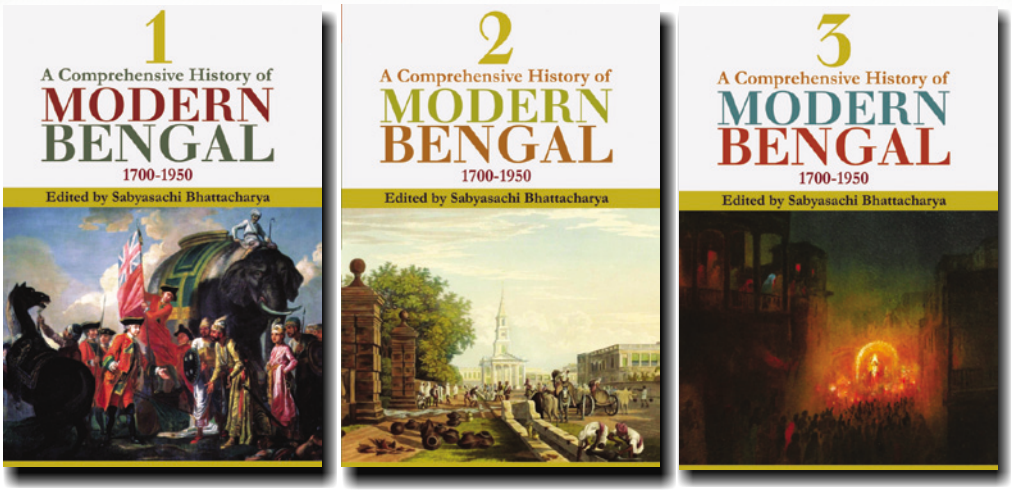
The Chairman requested those present to rise in respect during the late Acharya Sir P. C. Ray and to pass a resolution as follows:

"The Royal Asiatic Society of [illegible] hereby expresses its sorrow at the demise of Acharya [illegible] Chandra [illegible] C.I.E., D.Sc, F.R.A.S.B., who [illegible] and one of the senior [illegible] Members of the Society.

"The Society places on record its deep appreciation of the great services rendered by the late Dr. Ray for the [illegible] Science, for the application of chemistry to the development of Indian industries and for the creation of a school of scientific research in this country.

"The Society also places on record its profound appreciation of his lifelong devotion to the cause of education in general and to that of the indigent students and research scholars in particular."

The resolution was adopted unanimously, all present standing.




# A Big History for a Long Lockdown

**T C A Raghavan**
Former High Commissioner to Pakistan and Singapore

I vividly remember Professor Sabyasachi Bhattacharya from my university days — a tall, slightly stooped figure. As a historian he was regarded by many as a committed empiricist but in fact he was to engage with the broadest possible questions and encourage his students to do so too. I recall a seminar on Indian economic history that he transformed into a counterfactual discussion on "what if" the British had not succeeded in colonising India.

A massive work that Bhattacharya edited has just appeared. Long lockdowns make for long reads and I was lucky to be able to procure this three volume set — in all almost 3,000 pages — entitled *A Comprehensive History of Modern Bengal 1700 – 1950*. Bhattacharya died earlier this year before the volumes appeared but he ensured the completion of the project. His foreword ends: "Faced with intimations of mortality, I leave three volumes as a legacy for future generations of students and scholars alike."

The scope of these volumes is staggering — covering of course political and economic history and focussing also on the communal polarisation that steadily accumulated from the early 20th century. Yet alongside are themes that entered history writing in the past half century and now form part of its mainstream — gender relations, literature, art, cinema and music, law, environment and ecology, science, medicine and public health and many others.

The volumes build on Bengal's rich past of history writing and especially big history writing and bring to a successful end an ambitious project of the Asiatic Society in Kolkata which has given us this splendid collection. An earlier two-volume history of Bengal was edited in the 1940s by a formidable duo — R C Majumdar and Jadunath Sarkar. Sarkar encountering the editor's perennial problem of contributors reneging on or delaying submissions ended up writing virtually half of his volume himself. Bhattacharya notes he faced no such difficulty but collected a formidable array of historians to work together in a genuinely multi-disciplinary enterprise.

Bhattacharya's great ability to be

empirically grounded while addressing the grand questions that we can ask of the historical record comes through in the emphasis on ecological and environmental history in this collection. Our current concerns about ecology, climate change and environment are reflected in the chapters that explore the intimate links between demography, agrarian change and ecological transformations in this deltaic region. In the second half of the 18th century new rivers — and often very violent ones — rose and some existing ones declined leading to a "revolution" in Bengal's river system. The new rivers — the Tista, the Jamuna, the Jelangi, the Mathabhanga, the Kirtinasa and the Naya Bhangini — remoulded Bengal's economic history. In the milestones of Bengal history the battle of Plassey (1757) and the award of the Diwani of Bengal by Shah Alam to Robert Clive (1765) after the battle of Buxar naturally figure. But riverine history is there to remind us that "[b]oth geography and history were remade in Bengal as the eighteenth century drew to a close".

Inevitably a fair bit of biography comes into many chapters: Thus Rammohan Roy, Ishwarchandra Vidyasagar, Bankim Chandra, Vivekananda and, of course Tagore, plus many others — talented and gifted individuals situated within a context of a tradition-modernity conflict with all the ambiguities related to the fact that a principal agent for social change was an alien colonial power. What adds depth to the treatment is also that Bengal's 19th century renaissance has now been studied in India for many decades and current historians introspecting on their and others' earlier treatments is fascinating. For instance, a 1971 book on the fiery rebel Derozio (1809-1831) called him "the most important left wing leader" of his era!

One cannot but wonder when other states or regions will have similar histories but it is useful to think about what we mean by region and regional identities. Bhattacharya in his introduction to the collection raises questions that go beyond conventional treatments of regional history. He writes "sometimes a kind of regional chauvinism may lead the layman to assure that they are everlasting, but historians know how history in the long run makes and unmakes regions… regions can arise and disintegrate, expand and contract, and the idea of Bengal is a good example".

Alongside is the even larger question of the relationship between region and nation and the role that nationalism played in developing "a discourse of civilization which made the conceptual leap from regional histories to a national history thinkable ….. and the idea that the civilization of India unites diversities, including various regional differences, began to play an important role from about the beginning of the last century".

Yet Bhattacharya also ends with a historian's warning: "We are witnessing in our times the development of regionalism as a political force in a direction that might threaten the integrity and unity of the larger entity of which each region is a part."

Courtesy: *Business Standard*, New Delhi, 9 July 2020

# Implications of the COVID-19 Pandemic on Future Population Growth in India

**Saswata Ghosh,** Institute of Development Studies Kolkata
**Arup Kumar Das,** WISH Foundation, New Delhi
**Kakoli Das,** Institute of Development Studies Kolkata

## Introduction

COVID-19 is a group of viruses affecting human beings through the zoonotic transmission. By 13th March, the COVID-19 outbreak had spread to 114 countries with more than 118,000 cases and 4,291 deaths, leading WHO to declare it a pandemic (WHO 2020). The major reason for concern with COVID-19 is global scale of transmission, a significant number of deaths, infection and mortality of healthcare providers, and a higher risk of death in vulnerable or susceptible groups (Chatterjee et al. 2019). In the absence of licensed vaccine or effective therapeutics for COVID-19, like many other countries, India has also adopted lockdown of the economy as a strategy to slowing or breaking the transmission dynamics through quarantining and social distancing (MoHFW 2020). The overall effect of lockdown seems to be the modest in reducing the spread and intensity of pandemic in India, though some positive effects at the regional level were found (Husain et al. 2020). As of July 18, 2020, India has witnessed 10,38,716 infections and 26,273 deaths with a recovery rate of 63%.

In this paper, we would like to understand the plausible implications of the current pandemic on three aspects of population growth – fertility, mortality and migration – in India by using existing data on various indicators of population and health from the fourth round of National Family Health Survey (NFHS), 2015-16, and Health Management Information System (HMIS) of the Government of India. HMIS is a web-portal, which captures service statistics from public health facilities across all the major states of India. In this paper, we have compared the HMIS data for April and May for the year 2019-20 and 2020-21. We have computed a service disruption statistics/index to measures the percentage reduction of various services between the two-points of time.

## Implications for Future Fertility and Reproductive Health

A cursory look into the existing data ascertain that the fertility response to the COVID-19 pandemic in the states of India would likely to vary according to their stages of fertility transition and access to the reproductive health services, primarily, the contraceptive services (Table 1).The group of states, which have already attained a Total Fertility Rate(TFR) less than the replacement level of fertility (TFR <2.1), the excess of observed TFR over wanted TFR was only about 16.2% on an average. These states have a higher proportion of demand for contraception, which was satisfied by the modern methods (81.3%), and the reliance is more on the permanent method of contraception (77%). The second group of states, which are at the replacement

Authors acknowledge Mr. Anand Bhusan Tripathi for helping them in compiling HMIS data.

**Table1:** Family planning indicators from NFHS-4 (2015-16) and Service disruption statistics (Computed from HMIS) 2020-21, according to states classified by level of fertility transition

| Level of fertility | mCPR: Any modern method | Proportion of demand satisfied by modern methods | % permanent method | % excess fertility over wanted TFR | Average Service -Disruption of | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Female Sterilization | IUCD* | Condoms | Pills | Injectable contraceptive |
| Above Replacement (3) | 44.2 | 63.5 | 66.5 | 29.9 | 82.7 | 58.9 | 26.2 | 24.8 | 92.6 |
| At Replacement (2) | 51.0 | 71.7 | 58.3 | 25.5 | 66.9 | 43.5 | 27.8 | 23.1 | 95.3 |
| Below Replacement (1) | 56.3 | 81.3 | 77.0 | 16.2 | 66.9 | 49.3 | 24.8 | 11.3 | 96.0 |
| Total | 51.7 | 74.0 | 68.7 | 22.4 | 70.9 | 49.9 | 26.1 | 18.2 | 95.0 |

Source: NFHS-4 (2015-16) and HMIS 2020-21

**Note:**

* Intra-uterine Contraceptive Device (IUCD)

(1) Kerala, Punjab, Tamil Nadu, West Bengal, Andhra Pradesh, Karnataka, Telangana, Himachal Pradesh, Maharashtra

(2) Gujarat, Jammu & Kashmir, Haryana, Uttarakhand, Odisha, Chhattisgarh

(3) Madhya Pradesh, Rajasthan, Jharkhand, Uttar Pradesh, Bihar

level of fertility (TFR=2.1), the excess of TFR over the wanted TFR, was 25% on an average, while in the third group of states with the pre-transitional level of fertility (TFR > 2.1), the excess of observed TFR over wanted TFR was 30% on an average. In these states, the prevalence of modern contraceptive methods (mCPR) was low (44%), and the proportion of demand satisfied by the modern method was also low (64%) in comparison to other two categories of states.

Point-to-point comparison of the utilization of family planning services from public sectors suggests although there was a disruption in contraceptive services, the nature and extent of such disruptions vary across states as well as method-types (Table 1). We found that the extent of service disruption was the highest for all the methods in the states with the pre-transitional level of fertility. This indicates that the initial effect of service disruption will be more in the states that already have a higher burden of unintended pregnancies and higher unmet need for modern contraception. As a result, there is a higher likelihood that these groups of states would experience more unintended pregnancies during the COVID-19 pandemic and contribute further in the pre-existing burden of high TFR, particularly in the absence of safe and timely abortion services.

### Implications for Future Mortality

The COVID-19 pandemic would likely to have direct and indirect implications for future trajectory of mortality in India. It is well established that mortality due to COVID-19 is higher among the adults, particularly among the elderly with pre-existing non-communicable diseases (NCDs)–conditions such as hypertension, diabetes, common obstetric pulmonary diseases (COPD) – are more susceptible to infection as compared to others. Reliable information on these NCDs

in India is not available due to the absence of demographic and health surveillance system. However, available data from NFHS-4 suggest that the prevalence of diabetes among middle-aged adult was less than 5%, while it was less than 20% for hypertension in 2015-16. Thus, these groups of adults are highly susceptible to COVID-19 mortality. It seems that the states of southern and western India, and, the eastern Indian state of West Bengal, who had already undergone demographic transition and currently undergoing epidemiologic transition (transition from communicable to non-communicable diseases) are more likely to have COVID-19 related deaths compared to other states of India.

Although the incidence of under-five mortality due to COVID-19 is negligible; they are likely to bear the indirect effect of the COVID-19 because of service disruptions at the various levels of health care. To understand the extent of such effect, two indices – service coverage index and service disruption index due to COVID-19 in last two months – were computed (Table 2). Full immunization rate, and, treatment rates for acute respiratory infections (ARI) and diarrhoea among children were considered while computing the indices. It was found that among the states with a low burden of under-five mortality rate the average service coverage index was 52%, while it was 45% in the states with moderate, and, 42% in the states with a high burden. A significant negative correlation between the service coverage index and under-five mortality implying higher the service coverage, lower is the level of under-five mortality. At the same time, it was also found that the average service disruptions were high among the states where under-five mortality was also high. It indicates that the under-five mortality rate would likely to increase in the near future because of service disruption in those states where the burden of under-five mortality was already high. Moreover, the neo-natal and maternal related deaths would also likely to enhance in these states because of the disruption of delivery services in institutions. Prevalence of wasting among under-five children would likely to increase due to the closure of *Anganwari Centres* and accentuates malnutrition-related morbidities and mortality among children.

### Implications for Future Migratory Movements

**Table2:** Child health services form NFHS-4 (2015-16) and composite service disruption statistics (Computed using HMIS) 2020-21 by state categories classified according to the level of under-five mortality

| Classification | Full immunization | % for children with ARI[a] receive advice or treatment | % of children who were treated with ORS and zinc for treatment of diarrhoea | Service Coverage Index | Composite Service -Disruption Index[b] |
|---|---|---|---|---|---|
| High (3) | 60.2 | 52.5 | 15.6 | 42.8 | 48.8 |
| Moderate(2) | 65.5 | 53.5 | 18.2 | 45.7 | 36.6 |
| low(1) | 73.1 | 61.3 | 20.6 | 51.7 | 30.4 |
| Total | 66.3 | 55.8 | 18.1 | 46.7 | 38.6 |

Source: NFHS-4 (2015-16) and HMIS 2020-21

**Note:**

[a] Acute Respiratory Infection (ARI)

[b] Composite service disruption index includes full immunization, diarrhoea and ARI

(1) Kerala, Tamil Nadu, Maharashtra, Karnataka, Telangana, West Bengal, Punjab

(2) Himachal Pradesh, Jammu & Kashmir, Andhra Pradesh, Haryana, Gujarat, Uttarakhand, Odisha

(3) Rajasthan, Jharkhand, Bihar, Chhattisgarh, Madhya Pradesh, Uttar Pradesh

The migration in India is one of the important livelihood strategies. As per 2011 census, almost half the urban population was migrant and primarily concentrated among eight mega cities (Bhagat et al 2020). The study also found that the majority of the migrants in these cities are from Bihar, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Rajasthan, Odisha and West Bengal. Because of the lockdown of economy and society at large, many of the migrant population, primarily those who were engaged in the informal sector activities were 'forced' to return their origin because of future uncertainty and lack of proper social security networks at the destinations. The consequences of migration during and the aftermath of COVID-19 pandemic in India could have short- and long-term implications on migratory movement, which are likely to be different from migratory movements took place before the pandemic.

The type problems faced by these migrant population can be viewed from two perspectives – at the place of origin and the destination. At the place of origin, which are largely rural areas and lacks functioning public health system, epidemic started to penetrate. These returned migrants and their families were stigmatized and largely isolated from rural society. According to various anecdotal pieces of evidence, this has resulted in an upsurge of mental health problems among returned migrants and their family members. Further, in the absence of clear policies around migrants and migration, once they came out of home isolation, they were forced to earn their daily livelihood and faced steep competition from the local labourers.

On the other hand, at the destination, the migrants are always considered as a second-class citizen and without recognizing their contributions in the economy at the place of destination, they are labelled as an outsider who encroached into the urban resources. However, many of the return migrants have already started returning to their place of destinations because of lack of opportunities at their place of origin, low wage rates, and, competition from local labourers. At the same time, they would likely to face new challenges at the place of destinations such as sheer competition and low wages due to increase in labour supply in the 'new normal' situation because many of the firms and industries will not be able to function in the new environment, while some industries need to be scaled down to strict adherence of the social-distancing norms. A social-unrest at the place of destination cannot be ruled out in the 'new-normal' situation.

**Concluding Remarks**

In this paper, we have tried to highlight the implications of COVID-19 on future population growth in India. It seems that the states which have not undergone demographic transition would be the worst sufferer due to COVID-19 pandemic as both – fertility as well as under-five mortality rates – would likely to increase in these states in near future. Such an increase could disrupt the pace of demographic transition in these states and would have negative implications for the larger goal of population stabilization in India by 2045. At the same time, mortality due to COVID-19 would likely to be higher in the states which already have undergone demographic transition, through its implications to the future population growth would be minimum. Lastly, a clear policy and programme are required for inter-state migratory movement so that both – the place of origin as well as the place of destination – can be benefited in future, apart from the well-being of the migrants.

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# Epidemic and Ancient Indian Wisdom

**Anjalika Mukhopadhay**
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We were familiar with the word "epidemic" meaning a wide outbreak of some fatal disease such as cholera, plague, yellow fever, pox etc. But we did not know a "Pandemic" nor we know a lethal virus "Corona" which literally locked down the whole world! This invisible unidentified virus has put down a shutter on our deep conceit that the power of human intelligence will rule over the world. Its victorious journey pathetically stopped short before the fury of this virus.

In such a situation, we inevitably tend to look back, grope 'into the darkness of forgotten knowledge, desperately try to find a sort of answer to our bewildered question now what to do.'

It is astonishing and at the same time reassuring that our ancient seers and sages had the answer! The medical texts of ancient India- the Caraka Saṃhitā, the Śusruta Saṃhitā and the Aṣṭāṅga Hṛdaya Saṃhitā, discussed epidemic from every possible angle. The cause, effect and solution of such a calamity have been recorded for posterity and it is their prerogative to read between the lines or perish.

We have many a times speculated about the cause of complete destruction of ancient civilizations. A severe epidemic as a probable cause has been considered also. It is gratifying to note that the Caraka Saṃhitā and other similar texts were aware of this phenomenon. They have studied it thoroughly and the findings are on record in these texts. Let's examine these findings.

The Caraka Saṃhitā, a treatise of pre Christian era, devoted a whole chapter to this topic of epidemic. It is named जनपदध्वंस: and found in the Vimānasthāna (III). Here we find preceptor Ātreya explains to his disciples that a major cause of an outbreak or epidemic is pollution. It affects general natural elements like Air, Water, Land and Time.[1]

Dust, smoke, bad smell etc. are present in polluted air, similarly bad smell, discolouration, lack of taste, absence of aquatic plants and creatures are noticed in polluted water. Polluted land will show a marked deterioration in productivity of soil, plants and creatures as well as an overall degradation of moral standard. Abnormality in time (कालविकार:) means seasonal abnormality like excessive or remarkably less cold, heat, rain or storm. If we look back and study the environmental reports of the whole world, we'll find that pollution limits have crossed over even the 'most dangerous' levels and disastrous signs are staring in the face everywhere. Avarice, arrogance and apathy to moral values have upset the very balance of the world and the inevitable has happened. Renowned Ayurvedist Dr P. V. Sharma in his book 'Public Health and Environmental Science' in Caraka Saṃhitā summarises the point in this way- "In this connection, Caraka points out that the natural elements of environment, such as air (Vāyu) water (Udaka) land (Deśa) being polluted and time (kāla) being abnormal give rise to an epidemic, which ultimately may lead to the destruction of a country".

The Caraka Saṃhitā further assigns the main reason of an epidemic to "adharma" which is not vice but 'wrong-doing' or 'mal

practice'.[2] Excessive felling of trees, too much waste of water, extreme misuse of natural resources, unlimited pollution in the name of development without a thought for nature- are the causes for this havoc.

Restraint is the only measure which can arrest this degeneration. The world must be brought to a balanced condition. The Caraka Saṃhitā has drawn upon the comparison of an axis (अक्ष) of a car. As an axis maintains the balance of a loaded car and helps it move smoothly, so control and moderation helps the boat of life sail safely even in rough weather.[3] Excessive greed, desire, ambition and vindication must be controlled.

The Śusruta Saṃhitā also mentioned contagious diseases (औपसर्गिकाः रोगाः). It specifies Kuṣṭha (leprosy) jvara (infectious fever) śoṣa (consumption) and netrabhiSyanda (eye disease) as very infectious and human contact is responsible for its spread.[4]

Śusruta's observation further explains that such viruses enter a man's body, multiply there and infect other people if they come into contact with the victim's faeces, urine, vomit, sweat, saliva (or any sort of droplets) etc. It also spreads through proximity like sitting, eating, talking with infected persons. Sometimes it infects a certain part of the body (as in the case of eyes) or sometimes the whole body (as in the case of plague). Rate of fatality in the case of epidemic is very high. [5] The study clearly shows that mixing is totally prohibited, distancing from and isolation of the victim is the only answer to escape infection.

Specific rules and regulations are found in the text to contain spread of such contagious diseases.[6] It says- i) Doctors should enter the patients's house with their whole body covered, ii) When coming out they should wash their hands thoroughly, iii) The attendants must not come out without changing their clothes. The clothes should be cotton-made (for easy wash), iv) Those who would come there for visiting the patients, they should also cover their bodies before entering. Before coming out one should thoroughly wash their hands and face, v) Those who would come in any sort of contact (giving or taking) with an affected person should be barred from going beyond the limits of the hospital, vi) When they would be free from the disease, they should bathe in warm water, adorn fresh clothes and then only can leave the hospital.

It is really surprising that epidemic causing viruses were identified by physicians.

Mainly three types of viruses were isolated-

1. अणुकीटः, (looks like a dot) बिन्दुसदृशाकारः,
2. तनुकीटः (शलकाकारः)
3. वक्रकीटः (वक्रः कुण्डलाकारो वा)

Type C can be of two classes-

i) जीविताश्रयिणः who survive on living persons or plants.

ii) मृताश्रयिणः who survive on dead bodies of human beings or animals.

Another type which can survive on both living and dead creatures is called उभयाश्रयिणः. For this, the cremation of the corpse of an infected person should be handled very carefully.

An observation of the Aṣṭāṅga Hṛdayam (4th century C. E approx), in the section of poison treatment seems very significant. While discussing spider poison, it comments that any poison, if does not kill, will get mitigated completely by twenty one days. It automatically suggests that the efficacy of a poison is lost after twenty one days,[7] and then the quarantined person is safe for any community.

Lets proceed to highlight the important points from the above study on epidemics–

1. Epidemics are mainly caused by pollution of air, water, land and abnormality of time.

2. Random attack on natural elements must be prevented.

3. Caution to be taken during outbreak.

4. Classification of viruses.

5. Duration of a poison to remain effective.

Now I shall try to match the data in the present context of pandemic of COVID-19. In the recent years, we are experiencing frequent outbreak of animal poisons like SARS etc. On top of that, pollution of air, water, soil has reached a disastrous level. There is no control on deforestation, dust and fume have made breathing painful. So even if we keep the question of chemical weapons aside, a pandemic was inevitable. All the warning bells were ringing but no body listened. Everybody wanted more development, more achievement. In the process nature shrieked, danger signs flashed, yet we paid no heed. So when Corona virus struck, whole world was devastated. Nobody knew what to do.

But ancient texts had the answers. The first requirement is to isolate the infected persons, while treating them, the doctors, nurses and other attendants should be very careful. They should cover themselves, wash hands and sanitize. Isolation and quarantine must be practised at least for twenty one days. Contacts are absolutely prohibited. But if unavoidable , all sorts of precautions must be taken. A cured person is to be thoroughly sanitized before release.

Here a question arises, what will happen if the virus is totally unknown? What measure should a doctor take? The Caraka Saṃhitā comes up with the answer in the Vimāna Sthāna (III). it says, the physician, before the start of treatment, should examine the course of events immediately preceding the sickness, study the background of the diseased person. He should adopt the method of first hand information (प्रत्यक्ष), inference(अनुमान) and advice from experts(आप्रोपदेश). By investigation and examination, the doctor should be sure of the actual condition of the disease and then he will be able to treat properly.[8]

I conclude with a touch of regret that certain inconveniences leading to non-availability of books have compelled me to depend on several secondary sources. At the same time, I gratefully acknowledge the immense help of Prof Dr. Mridula Saha, without which it would have been difficult for me to write this article.

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2. वाय्वादीनां यद् वैयुण्यमुत्पद्यते तस्य मूलमधर्मः।
3. यथा च स एवाक्षोद तिभाराधिष्ठितत्वाद्विषमपथाद पथादक्षचक्रभंगाद्वाह्यवाहक दोषादणिमोक्षादनुपांगात् पर्यसनाच्चान्तराऽवसानमापद्यते. . . ।
4. कुष्ठश्च ज्वरश्च शोषश्च नेत्राभिष्यन्द एव च।
औपसर्गिक ऐगाश्च संक्रामन्ति नरान्नरम्।।
5. प्रसंगाद् गात्रसंस्पर्शान्निः श्वासात् सहभोजनात्।
सहशय्यासनाच्चापि वस्त्रमाल्यानुलेपनात्।। स्वस्थवृत्तम्।
6. संक्रामकरोगिगृहे चिकित्सकादयः आच्छादितशरीरावयवाः
प्रविशेयुः। बहिर्गमनसमये च हस्तौ सम्यक् प्रक्षालयेयुः। परिचारकाः स्ववस्त्रपरिवर्तनादन्तरेण न स्वापि ततो बहिर्गच्छेयुः। परिधानवस्त्राणि कार्पासमयान्येव भवेयुः। रोगिणां निरीक्षणार्थं ये
तत्सम्बन्धिनः तत्र समागच्छेयुः, तेऽप्यपावृतशरीरा एव प्रविशेयुः।
निर्गमनकाले तु हस्तमुखौ प्रक्षालयेयुः। यैः सह दानादान–
व्यवहारः स्यात् ते चिकित्सालयसीम्नो बहिर्गन्तुं नाऽऽज्ञाप्याः।
मुक्तरोगा जना उष्णोदकस्नाता निर्मलाम्बरा सन्त आतुरालयात् पृथक कार्याः।
7. एक विंशतिरात्रेण विषं शाम्यति सर्वथा।
8 तस्माद भिषक् कार्यं चिकीर्षुः प्राक् कार्यसमारम्भात्।
केवलं परीक्ष्यं परीक्ष्य कार्यं समारभेत कर्तुम्।।
द्विविधा तु खलु परीक्षा ज्ञानवताम् - प्रत्यक्षम् अनुमानं च। . . .
त्रिविधा वा सहोपदेशेन।
परीक्षायास्तु खलु प्रयोजनं प्रतिपत्तिज्ञानम्। प्रतिपत्तिर्नाम यो विकारो यथा प्रतिपत्तव्यस्तस्य तथाऽनुष्ठानज्ञानम्।।

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# Concept of Disaster Management in Early India: Reflections in the Inscriptions

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With the rapid increase of natural and man-made hazards, the study of disaster and disaster management has become an indispensable part of socio-technical exercise in recent times. Reappraisal of early texts, inscriptions and archaeological findings helps reconstruct the concept of disaster and disaster management in early India. The term *utpāta* is used frequently in grammatical and encyclopaedic works to denote a natural calamity. The *Tattvabodhinī* commentary on Pāṇini's *Aṣṭādhyāyī* explains the term as "*prāṇināṁ śubhāśubhasūcakabhūtavikāraḥ utpātaḥ*" in the context of "*utpātena jñāpite ca*",[1] a *vārttika* used for the fourth case ending. Sometimes the term *īti* refers disaster. In Kauṭilya's *Arthaśāstra* (3rd century BCE) the terms *upanipāta*, *vyasana*, *nipāta, pīḍana, āpat* etc. (AŚ 4.3, 8.4, 8.8, 9.7) are often used to indicate disasters. Kauṭilya has categorised disaster into two broad heads viz. *daiva* i.e. natural disaster and *mānuṣa* viz. man-made disaster.[2] It will be not very wrong to take the expression '*upanipāta-pratīkāra*' (AŚ 4.3) as synonymous to disaster management. Kauṭilya classifies natural calamities into eight categories arising from fire, flood, epidemic, famine, rats, beasts, snakes, demons/tribes and prescribes different measures for mitigation of disaster in the chapter *upanipāta-pratīkāra.*[3] Chapters 8.4 and 9.7 of AŚ suggest five and seven divisions of natural or providential disasters respectively. *Kāmandakīyanītisāra* (4th century CE) categorises disasters into fifteen divisions e.g. excessive rain, drought, locusts etc.[4]

The present study underscores the concept of disaster and disaster management policies reflected in inscriptions of early India. Technical literature like the *Arthaśāstra* or the *Bṛhatsaṁhitā* have only the prescriptive approaches on the subject. A researcher has to strip off the hyperboles for constructing the disaster history from creative or technical literature. But the epigraphs are more reliable in this case as they have both the prescriptive and practical approaches for disaster management. Early inscriptions can be studied from the parlances of different phases like mitigation, preparedness, post-disaster rehabilitation, royal policy etc. The earliest references of disaster management are found in the Sohgaurā Bronze Plaque Inscription[5] and Mahāsthān Fragmentary Stone Plaque Inscription.[6] Although both the inscriptions are partly broken and illegible but they have immense importance regarding post-disaster rehabilitation or mitigation measures like storing and rationing of crops and essential commodities, government's policy towards re-employment etc. The inscriptions can be dated back to 3rd century BCE on the basis of palaeography. They are written in Prakrit language and Brāhmī script of 3rd century BCE. In the

first inscription it is seen that an order was issued for the *Mahāmātra*s from the camp of Manavasiti to disburse grains to the four villages namely Matura, Cañca, Modama / Mayudāma and Bhallaka at the time of famine. All the vendors were ordered to carry goods/ grains from the two three-storied store-houses situated at Śrīmān and Vaṃśagrāma in abnormal or emergency situation. There was an injunction over taking grains from the said store-houses during normal period. There is also an illustration above the text which clearly indicates the two store-houses. The Mahāsthān inscription records an order, issued by some rulers to the *Mahāmātra*s stationed at Puḍanagala (Puṇḍranagara, now Mahasthangarh in Bangladesh) with a view to help the people of *Saḍvargīya* sect by distributing sesame (*tila*), mustards (*sarṣapa*) and grains (*dhānya*) at the time of dire need. It was also instructed to *mahāmātra*s to keep the treasury and store-house filled with requisite provisions like *gaṇḍaka,* coins and paddy. The inscriptions neither have description of famine-stricken state nor the wretched condition of its people owing to outbreak of famine. Rather, they convey some cautionary messages or precautionary measures which should be implemented by the administration if famine or any kind of disaster falls upon the state. They focus the system of proper rationing of food staff from the royal granary. In the present pandemic situation, the rationing has become one of the important policies of administrative bodies and NGOs to help the unemployed populace. Further, in the Mahāsthān inscription, instruction to distribute unhusked rice (*dhānya*) in place of boiled rice (*anna*) had served dual functions. The unhusked rice could be used for preparing both food and agricultural field in post-disaster phase. The mention of cash contingency is also significant one in the light of rehabilitation measure of disaster management as it pulls the disaster-stricken people out from the deep hole of financial crisis and improves their psychological strength. The term '*ātyayika*' mentioned in both inscriptions, may be taken as synonymous to emergency or disaster. Further, the Mahāsthān inscriptions adds three types of disasters viz. *udakātyayika* (flood, inundation of land etc.), *devātāyika* or *agnyātyayika* (fire accidents) and *śukātyayika* (destruction of grains by parrots).

Rehabilitation phase is a transitional stage between immediate relief and long-term development. Reconstruction of the damaged physical structures and revitalisation of socio-economic life of the society are the primary goals of this phase. The phase restores more or less normal (pre-disaster) life to the disaster-hit people. The Junāgaḍh inscription of Rudradāman I and Skandagupta document the reconstruction of the dam over the Lake Sudarśana with the initiative of the administration. A disaster history can also be traced out from the scrutiny of these inscriptions. Both the inscriptions were found on the rock at the Girnar Hill, near Junagadh town of Kathiawar District of Gujarat state. The inscription of Rudradāman (circa 152-53 CE) might be the earliest epigraphic evidence of post-disaster reconstruction effort. Written in Brāhmī script and Sanskrit prose the inscription records the reconstruction of the dam (*setu*) of the Sudarśana Lake devastated by a destructive storm and rain on the first day of the black fortnight in the month of Mārgaśīrṣa of *Śaka* era 72 (probably November month of 150 CE). The non-seasonal rain might happen owing to low pressure formation in the Arabian Sea (approximately 75 km. away from the find-spot). It can be inferred from the description of the rain that a large amount of soil, silt, trees and creepers were deposited in the bed of the lake blown away by the storm and created immense pressure on the base of the dam. As a result, the dam broke

away with all water escaped from the lake. It gave birth to a drought like situation in the area. Then, ignoring all the conflict of opinions among ministers and executives Rudradāman decided to get it repaired with the help of Suviśākha, an administrator of Ānartta and Saurāṣṭra region without much delay (*anatimahatā kālena*).[7] On the other hand, the inscription of Skandagupta mentions that the dam over the Sudarśana Lake had collapsed against the swelling up of the rivers by torrential rain at the night of the sixth of *Prauṣṭhapada* (= *Bhādra* / August) month of 136 Gupta era i.e. circa 455 CE. The rise in the water level of the rivers created excessive pressure on the walls of the dam and caused wide breaches through which all the water escaped. As the lake was the lifeline of Saurāṣṭra a calamitous condition broke out in the city and people became helpless. At this time of emergency, Cakrapālita, administrator of the city of Surāṣṭra got the dam repaired within two months.[8] In both the inscriptions it is seen that wretched condition of country devoid of water had accelerated the preparedness of the administrators for restoration of the dam. Besides reconstruction effort, these two inscriptions demand sharp examination of evaluating the nature of the storm and its causative factors, water technology etc. The Hāthīgumpha Cave Inscription of Khāravela (later half of 1st century BCE) also records the king Khāravela's initiative for reconstruction of state properties devastated by a storm. The king got repaired gates, walls and buildings of the city after the disaster. He also caused the construction of the embankment of the lake named after Khibīra Ṛṣi and tanks of the city. These public works were done at the cost of rupees thirty-five hundred thousand (may be 35 lakh).[9] These types of efforts to mitigate disasters are scattered in the inscriptions of early India and have quite similarities with the mechanism of modern disaster management.

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A report on the colloquium on

# The Role of Library in Higher Education against a Background of Pandemic-Sick Global Scenario

**Tapati Mukherjee**
Library Secretary, The Asiatic Society

On 24 July, The Asiatic Society Library organised a colloquium on "The role of Library in higher education against a background of pandemic-sick global scenario. "

In her introductory remarks, Professor Tapati Mukherjee, Library Secretary of The Asiatic Society and coordinator of the seminar explained the objective of the colloquium. She emphasised that since the world is passing through a crisis, thrust upon us by a fierce pandemic COVID-19, education is in total disarray with educational institutions closed., examinations stalled and higher research in jeopardy. Under this trying situation, the libraries may come to the rescue by furnishing online access to books and journals, even manuscripts to the researchers. Students can have information about their required study materials through email, WhatsApp and other electronic devices of Communication through assistance from the library. She then introduced two speakers of the programme.


The first speaker Dr. Pritam Gurey, Librarian, The Asiatic Society, Kolkata, in his informative speech on "The Asiatic Society Library : At the Crossroads" spoke in details about the history of The Asiatic Society Library, its collections as well as the treasures of the museum which is also a part of the Library. In this context, he also mentioned the digitisation drive, undertaken by the Library. The most important part of this presentation centres round the services provided during the pandemic scenario viz. online access to books and journals of reputed publishers besides Society publications, Museum Day celebration, organising Virtual Exhibition of the museum etc. Dr. Gurey concluded with a brief description of the future programmes, to be organised by the Library.

The second speaker of the Programme was Dr. Narayan Chandra Ghosh, Librarian, Indian Institute of Management, Kolkata. The title of his presentation was "Shifting from normal to new normal: Future of academic libraries." Dr. Ghosh discussed in details about the paradigm shift of libraries and the mode of work in Virtual environment. While discussing the activities of the IIM library, he also spoke about the process of accommodating with the new normal. He concluded with an exposition of future plans related to the functioning of the academic libraries.

The programme ended with concluding remarks from the coordinator Tapati Mukherjee where she kindled a glimmer of hope with the expectation that the present crisis will be over and normalcy will be restored shortly.

This programme has been viewed by a huge number of spectators through YouTube.

# The Asiatic Society, Kolkata

[An Institution of National Importance declared by an Act of Parliament]

## Names of the Recipients of different Lectureships , Medals and Plaques of the Asiatic Society for the year 2019

### LECTURESHIP

**1. PANDIT ISWAR CHANDRA VIDYASAGAR LECTURESHIP**

**Ms. Ela Gandhi,** Eminent Academician, Peace Activist and Former Member of Parliament in South Africa, for her Scholarship in the Field of Humanities.

**2. RAJA RAJENDRALAL MITRA MEMORIAL LECTURESHIP**

**Professor Malavika Karlekar,** Eminent Academician, for her Notable Contribution in the Field of Indological Studies.

**3. INDIRA GANDHI MEMORIAL LECTURESHIP**

**Professor Rajmohan Gandhi,** Eminent Scholar and Former Member of Parliament [Rajya Sabha], for his Important Contribution to National Integration.

**4. PROFESSOR SUNITI KUMAR CHATTERJI LECTURESHIP**

**Professor Ramkrishna Bhattacharya**, Eminent Scholar on the Ancient School of Indian Materialism, for his Important Contribution in the Field of Comparative Philosophy of Language.

**5. ABHA MAITI ANNUAL MEMORIAL LECTURESHIP:**

**Professor Nirmala Banerjee,** Former Professor of Economics at the Centre for Studies in Social Sciences, Calcutta, for her Significant Contribution in the Field of Economic Development vis -a -vis the Question of Women.

**6. DR. BIMAN BEHARI MEMORIAL LECTURESHIP**

**Shri Amitav Ghosh,** Eminent Indian Writer and the Winner of the 54th Jnanpith award, for his Notable Contribution to Literature and History.

**7. DR. SATYENDRANATH SEN MEMORIAL LECTURESHIP**

**Dr Asim Dasgupta,** Eminent Economist, for his Important Contribution in the Field of Economy, Society and Development.

**8. DR. PANCHANAN MITRA MEMORIAL LECTURESHIP**

**Dr Anungla Aier,** Principal, Kohima Science College, for her Important Contribution in the Field of Anthropology in North East India.

### 9. G.S.I. SESQUICENTENNIAL COMMEMORATIVE LECTURE

**Professor Somnath Dasgupta**, Former Vice-Chancellor of Assam University, for his Outstanding Contribution in the Field of Earth Science.

### 10. SWAMI PRANAVANANDA MEMORIAL LECTURE

**Professor Achintya Kumar Biswas**, Eminent Academician, for his Important Contribution to Social Development.

## MEDAL/PLAQUE

### 1. RABINDRA NATH TAGORE BIRTH CENTENARY PLAQUE

**Professor Amitendranath Thakur,** Eminent Academician, for his Creative Contribution to Human Culture.

### 2. PANDIT ISWAR CHANDRA VIDYASAGAR GOLD PLAQUE

**Professor Suranjan Das,** Eminent Historian of Modern India and currently Vice-Chancellor, Jadavpur University, for his Significant Contribution to Contemporary Social issues.

### 3. INDIRA GANDHI GOLD PLAQUE

**Professor Jayanta Vishnu Narlikar,** Padma Vibhushan, Eminent Astrophysicist, for his Significant Contribution towards Human Progress.

### 4. ANNANDALE MEMORIAL MEDAL

**Professor Ravindra. K. Jain,** Former Professor of Social Anthropology and Dean, School of Social Sciences, Jawaharlal Nehru University, for his Significant Contribution to the Study of Anthropology in Asia.

### 5. SIR JADUNATH SARKAR GOLD MEDAL

**Professor Sumit Sarkar,** Eminent Historian of Modern India, for his Significant Contribution in the Field of History.

### 6. PROFESSOR SUKUMAR SEN MEMORIAL GOLD MEDAL

**Professor Alok Ranjan Dasgupta,** Eminent Bengali Poet based at Germany, for his Conspicuously Important Contribution in the Academic Field.

### 7. DR. BIMALA CHURN LAW GOLD MEDAL

**Professor Pradyot Kumar Mukhopadhyay**, Former Professor of Philosophy, Jadavpur University, for his Important Contribution in the Field of Philosophy.

### 8. DURGA PRASAD KHAITAN MEMORIAL GOLD MEDAL

**Professor Amalendu Bandyopadhyay,** Eminent Astronomer and Former Director, Positional Astronomy Centre, Kolkata, for his Notable Contribution to Science [To be awarded posthumously since Professor Bandyopadhyay died on 22.06.2020] .

### 9. DR. PRABHATI MUKHERJEE MEMORIAL GOLD MEDAL

**Professor Kumkum Roy**, Professor at Centre for Historical Studies, Jawaharlal Nehru University, for her Creative Contribution to the Subject of "Women Question from Ancient Times to Date".

### 10. PROFESSOR HEM CHANDRA RAYCHAUDHURI BIRTH CENTENARY GOLD MEDAL

**Professor Ranabir Chakrabarti,** Former Professor of History, Jawaharlal Nehru University, for his Important Contribution in the Field of Indian History.

### 11. JOY GOBIND LAW MEMORIAL MEDAL

**Professor Asim Kumar Chakraborty,** Former Professor of Zoology at North Bengal University, for his Important Contribution to the Knowledge of Zoology in Asia.

### 12. PROFESSOR NIRMAL NATH CHATTERJEE MEDAL

**Dr Pranjit Hazarika,** Assistant Professor at Department of Geological Sciences, Gauhati University, for his Important Contribution to the Knowledge of Economic Geology.

### 13. PAUL JOHANNES BRUHL MEMORIAL MEDAL

**Professor Sampa Das,** Professor and Head of the Division of Plant Biology at Bose Institute , Kolkata, for her most Meritorious Piece of Original Research in the Branch of Botany.

### 14. PRAMATHA NATH BOSE MEMORIAL MEDAL

**Dr Kiyoo Mogi,** Eminent Seismologist based at Japan, for his Important Contribution to Geology with Special reference to Asia.

### 15. PRIYABRATA ROY MEMORIAL GOLD MEDAL

**Shri Arun Mukhopadhyay,** Eminent Bengali Actor-Director and Playwright associated with the Bengali theatre group 'Chetana', for his Creative Contribution in Drama.

### 16. R P CHANDA BIRTH CENTENARY MEDAL

**Professor Arjun Appadurai,** Eminent Anthropologist and the Goddard Professor in Media, Culture and Communication at New York University, for his Important Contribution in Anthropology.

### 17. SAILENDRA NATH AND MANJULA DEY MEMORIAL MEDAL

**Dr. Subir Kumar Dutta,** Former Professor and Head, Department of Pathology, University College of Medicine, University of Calcutta and formerly Dean of Medical Faculty, University of Calcutta, for his Important Contribution in the Field of Medical Science.

### 18. SARATCHANDRA ROY MEMORIAL MEDAL:

**Dr Nilay Basu** for his Outstanding Anthropological Contribution on Transgender Research.

# Vaccines and COVID-19: A Snapshot of the Global Race

**Suman Hazra**
Research Fellow, The Asiatic Society

Vaccine and immunization have recently gained immense interest worldwide in the milieu of COVID-19 pandemic. Vaccines represent an efficient as well as the most cost-effective public health intervention known to prevent death and disease. "With the exception of safe water, no other modality, not even antibiotics, has had such a major effect on mortality reduction and population growth" (Plotkin & Plotkin, 2008). Currently, the entire world is united to develop vaccines against the coronavirus SARS-CoV-2.

**Vaccination and Immunization:**

Vaccine is an immuno-biological substance designed to produce specific protection against a given disease (Park, 2015). Vaccination is the administration of the vaccine that stimulates the production of protective antibody and other immune mechanisms. On the other hand, immunization is the process whereby a person is made immune or resistant to disease. However, in practice, the terms vaccination and immunization are often used interchangeably.

Traditionally, vaccines may be prepared from live modified organisms, inactivated or killed organisms, extracted cellular fractions, toxoids, or combination of these. Based on several such factors, researchers decide which type of vaccine they will make.

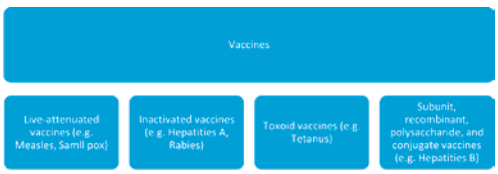


Figure 1: Different types of vaccines

Molecular biology and modern technologies are combining to devise novel approaches to vaccine development such as DNA vaccines, mRNA vaccines, and recombinant vector vaccines. The multiple strategies for vaccine development for COVID-19 include both traditional methods and next-generation techniques.

**Incredible Success Stories of Vaccines:**

The practice of vaccination dates back hundreds of years. It has now entered its fourth century of development. Stanley Plotkin (2014) analyzed the chronological development of the vaccines through the centuries in the following way: 1) the genesis of the first vaccine in the late 18th century; 2) laboratory production of vaccine in the late 19th century; 3) production of vaccines based on immunologic markers in the 20th century; 4) introduction of molecular biology to produce advanced vaccines in the 21st century.

That very word, 'vaccine', is derived from the Latin word *Vacca*, stands for the cow. In 1798, Edward Jenner, an English physician who was considered the 'Father of Immunology', first time introduced the smallpox vaccine. This was the beginning of vaccination, live and attenuated, in its modern form. Eighty years later, Louis Pasteur gave birth to vaccines made in the laboratory. Since then, throughout the last two centuries, vaccines have eliminated smallpox, reduced child mortality rates, and prevented illness, disability, and death from various diseases such as diphtheria, pertussis, tetanus, measles, polio, hepatitis B, rotavirus, rubella, and many others.

However, there are no existing vaccines or other proven therapeutic options to prevent or treat COVID-19. Scientists across the globe have joined the quest to find a vaccine at breakneck speed. Thus, in the editorial of *The New England Journal of Medicine,* Heaton (2020) rightly said, "a vaccine is urgently needed to prevent COVID-19 and thereby stem complications and deaths resulting from transmission of the disease."

**Race for a COVID-19 Vaccine:**

Over the past decade, the scientific community and the vaccine industry have been asked to respond urgently to epidemics of H1N1 influenza, Ebola, Zika, and now SARS-CoV-2 (Lurie et al., 2020). Given the worldwide magnitude of the COVID-19 pandemic, the vaccine development effort is unprecedented in terms of both scale and speed. The pandemic has created exceptional public-private partnerships. Various nations, global funding agencies, and multilateral bodies are pouring money into the efforts to fund projects and providing other necessary supports. "Unparalleled data sharing and collaborative team efforts are breaking down barriers in an attempt to reduce the time from the usual 10+ years for an approved vaccine down to 12–18 months" (Funk et al., 2020).

Presently, there are nearly 200 vaccine candidates to combat the coronavirus SARS-CoV-2 in the different stages of the trial across the world (Lurie, Sharfstein, & Goodman, 2020). According to the World Health Organization news release (as of 15 July 2020), more than 150 countries have engaged in the COVAX facility, a mechanism designed to guarantee rapid, fair, and equitable access to COVID-19 vaccines. The New York Times Corona Vaccine Tracker (Corum et al., 2000) reveals the following update (as of 27th July 2020):

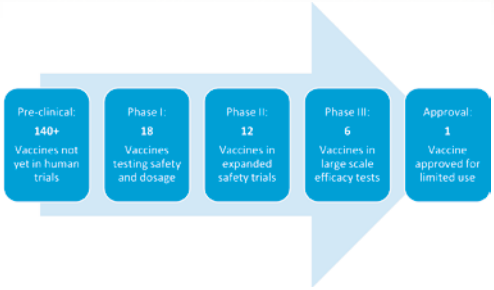


Figure 2: An array of COVID-19 vaccines under development

Vaccines normally require years of testing and additional time to produce at scale. The testing for a vaccine is a four-stage process. However, in the accelerated response to COVID-19 pandemic, "current efforts shorten development timelines by compressing and overlapping the stages, accelerating the transition between clinical phases, powering efficacy studies to yield results in a short time frame, and pursuing large-scale manufacture of vaccines before regulatory approval" (Deming et al., 2020).

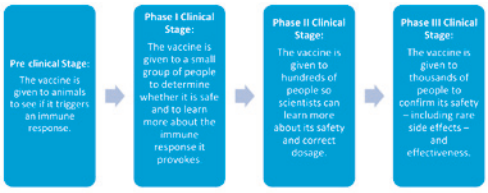


Figure 3: Phases of a clinical trial

Currently, around thirty leading vaccine candidates are now being tested on humans in clinical trials with results rolling in. Although, many additional programmes have yet to disclose development timelines. These researches span the globe, with different phases of human trials in countries such as the US, UK, China, Russia, Germany, and India. The frontrunners in the race for a vaccine have already produced early human results and are moving into larger trials. According to The New York Times Corona Vaccine Tracker (as of 27th July 2020), the speediest programs are as follows (Corum et al., 2000).

| COVID-19 Vaccine Forerunners | Pre- clinical | Phase I | Phase II | Phase III | Approval |
|---|---|---|---|---|---|
| CanSino Biologics Inc. | ✓ | ✓ | ✓ | ✓ | ✓ (limited) |
| AstraZeneca/ Oxford University | ✓ | ✓ | ✓ | ✓ | |
| Sinopharm | ✓ | ✓ | ✓ | ✓ | |
| Sinovac Biotech | ✓ | ✓ | ✓ | ✓ | |
| Murdoch Children's Research Institute | ✓ | ✓ | ✓ | ✓ | |
| Moderna Therapeutic | ✓ | ✓ | ✓ | ✓ | |
| Pfizer/BioNTech | ✓ | ✓ | ✓ | ✓ | |

Table 1: Top seven COVID-19 vaccine contenders in various stages of development

As of now, there are five COVID-19 vaccine candidates that are at the final stage of trials. It's still too early to determine whether the vaccine candidate effectively protects against infection. However, all eyes are on the vaccines being developed by the University of Oxford-AstraZeneca, Moderna, Sinovac, CanSino Biologics, and Pfizer-BioNtech candidates, as multiple news outlets reported.

The most promising of them is a chimpanzee adenovirus vaccine vector called 'AZD1222' (previously 'ChAdOx1') developed by the UK's Jenner Institute, University of Oxford along with British-Swedish pharmaceutical company AstraZeneca. According to preliminary results from the trial published in The *Lancet*, clinical trials involving 1,077 participants showed the vaccine led to them making antibodies and T-cells that can fight coronavirus (Folegatti et al., 2020). The large-scale phase III human trials of this vaccine have already started in England, Brazil, and South Africa. The findings are hugely promising, but it is still too soon to know if this is enough to offer protection and larger trials are underway.

American biotech company Moderna's experimental vaccine 'mRNA-1273' showed it was safe and provoked immune responses in all participants in Phase I trial, as published in the *New England Journal of Medicine* (Jackson et al., 2020). Moderna proceeds to phase final-stage human trials on July 27. The ongoing trials in 30,000 volunteers in a real-world setting will give experts a comprehensive look at its effectiveness and feasibility.

China-based private pharmaceutical firm Sinovac Biotech has reported positive preliminary results of phase I/II clinical trials for inactivated vaccine candidate against COVID-19, 'CoronaVac'. Previously, a pre-clinical study tested in monkeys showed 'partial or complete protection', according to an article published in the journal *Science* (Gao et al., 2020). Sinovac started its third phase of trials in China and Brazil in July.

CanSino Biologics's recombinant novel coronavirus vaccine 'Ad5-nCoV' was developed in partnership with China's Academy of Military Medical Sciences. The phase I trial showed a promising result in a mid-stage clinical study, according to a paper published in *The Lancet* (Zhu et al., 2020). On June 25, it received approval for limited use in Chinese military.

Coronavirus vaccine 'BNT162', a modRNA candidate, is being jointly developed by German biotech firm BioNTech and the US pharmaceutical major Pfizer. According to a report on the non-peer-reviewed preprint server medRxiv (Mulligan et al., 2020), researchers have reported positive early data from a Phase I/II clinical trial of their COVID-19 vaccine candidate, being conducted in Germany. On July 27, they announced the launch of a Phase II/III trial with 30,000 volunteers in the United States, Argentina, Brazil, and Germany.

Nevertheless, many countries have supported their indigenously developed vaccine candidates into human trials such as Canada's Medicago, Russia's Gamaleya research

institute, South Korea's Genexine and Medytox, Japan's Takara Bio, Australia's University of Queensland, India's Bharat Biotech and Zydus Cadila and so on. All these programs have completed pre-clinical or animal trials and started Phase I and II of clinical or human trials (Corum et al., 2000).

'COVAXIN', an inactivated vaccine, India's first homegrown candidate developed by Bharat Biotech in collaboration with the National Institute of Virology and the Indian Council of Medical Research has shown encouraging results from the first part of the human trials. On the other hand, India's second vaccine under development, Zydus Cadila's novel 'ZyCoV-D', a plasmid DNA vaccine, has initiated Phase I/II clinical trials in healthy subjects (Corum et al., 2000).

**Hope and Looking Forward:**

The quest is now on for the development of both a safe and effective vaccine against SARS-CoV-2. The world is anxiously waiting for it to resume a normal, unlocked and fearless living. Researchers are making good progress in developing vaccines against COVID-19, but their first use cannot be expected until late 2020 or early 2021.

Which vaccine will make it successfully through clinical trials first? It's too early to say, several look promising, and one or more may bear fruit. Once an effective vaccine is available, the next challenge will be manufacturing and distributing the much-anticipated vaccine around the world. At present, we need to celebrate the efforts of scientists, doctors, nurses, and other frontline warriors working around the clock to find a solution to this COVID-19 pandemic.

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*রবীন্দ্রনাথ ও কুইনী এবং অন্যান্য*, উষারঞ্জন ভট্টাচার্য, গাঙচিল, কলকাতা, প্রথম প্রকাশ মে, ২০১৯, ISBN 978-93-88380-37-9, পৃষ্ঠা ২৮৬, সাইজ ঃ ডিমাই অক্টাভো, মূল্য ৪৫০ টাকা।

"রবীন্দ্রনাথের সংগে আমার পরিবারের ঘনিষ্ঠ সম্বন্ধ ছিল। রবীন্দ্রনাথকে জানিবার আমার বহু সুযোগ ঘটিয়াছিল - বিশেষত আমার কন্যা কুইনী উপলক্ষে। কুইনী শান্তিনিকেতনের ছাত্রী ছিল। রবীন্দ্রনাথ তাহাকে এত ভালোবাসিতেন যে, একদিন কথা প্রসঙ্গে বলিয়া ছিলেন, কুইনী, তুই তোর বাপের ছোট মেয়ে নতুবা আমি তাঁর কাছ থেকে তোকে চেয়ে নিতুম" (পৃ. ১৪)। কুইনী (অমলা রায়চৌধুরী) যাঁকে প্রমোদচন্দ্র দত্তর রাজকন্যা বলা হত সেই সময়ে। প্রমোদচন্দ্র নামী আইনজীবী, রাজনীতিবিদ, শিক্ষামন্ত্রী, কলকাতা বিশ্ববিদ্যালয়ের সেনেটের সদস্য ছিলেন। বহু অজানা তথ্য ও চিঠিপত্রে আলোচ্য প্রবন্ধ সংকলনটি সমৃদ্ধ। বিশিষ্ট অধ্যাপক ও রবীন্দ্রগবেষক উষারঞ্জন ভট্টাচার্যের বহু দিনের পরিশ্রমের কাজ। অক্ষরবিন্যাস ও ছাপা যথাযথ। রবীন্দ্রনাথের আঁকা চিত্র প্রচ্ছদে ব্যবহার করে গ্রন্থটির ভিন্ন মাত্রা দিয়েছে।

বিষয় রবীন্দ্রনাথ। যিনি অমাপ্য। তাঁর লেখা চিঠিপত্র তাঁর জীবনচর্চা ও যাপনচিত্রেরই পরিচয় দেয়। রবীন্দ্রনাথ আজ ও প্রতিদিন প্রাসঙ্গিক। গ্রন্থের তেরটি রচনাতেই লেখক অনেক গুরুত্বপূর্ণ বিষয় আমাদের জানার সুযোগ করেছেন। প্রতিটি প্রবন্ধই সমগুরুত্বের দাবী রাখে। উষারঞ্জন ভট্টাচার্যের ভাবনা ও বাক্যবিন্যাস সুসংবদ্ধ ও ঝকঝকে। ভাষাভঙ্গিমা আকর্ষক। রবীন্দ্রচর্চার এ এক অমূল্য দলিল।

কুইনী পড়তে ও গান শিখতে এসেছিলেন গুরুদেবের শান্তিনিকেতনে। 'দিনেন্দ্রনাথ ও অমলা তরুণী ওরফে কুইনী' প্রবন্ধে জানা গেল দিনু ঠাকুরের গান শেখানোর পদ্ধতি। 'রবীন্দ্র-সঙ্গীত' এই অভিধাটি দিনু ঠাকুরেরই দেওয়া। কুইনী রবীন্দ্রনাথ ও দিনেন্দ্রনাথ ঠাকুরের কাছে গান শিখেছেন। প্রিয় দিনদার কাছে ও গুরুদেবের কাছ থেকে শেখা তাঁর কুড়িটি গানের সংগ্রহ ধরা আছে 'স্পুলে', রবীন্দ্রভারতী বিশ্ববিদ্যালয়ের 'গানশুনি' সংগ্রহে। 'রবীন্দ্রনাথ-সুভাষচন্দ্র' প্রবন্ধে পরিচিত দেশপ্রেমী ও দেশনায়ক সুভাষ নন, এ এক অন্য সুভাষকে খুঁজে পাওয়া গেল। কবি সুভাষ, ভাবুক সুভাষ এখানে প্রতিভাসিত; সুভাষচন্দ্র বসুর লেখা একটি চিঠিতে। লেখক বলছেন, মেজবউদিদি বিভাবতী দেবীকে লেখা সুভাষচন্দ্রের চিঠিতে প্রকৃতি বর্ণনা যেন পাথুরে স্তরের তলায় এক 'running brook'। আবার এই প্রবন্ধটিতেই পাই রবীন্দ্র-সুভাষের সম্পর্কের শীতলতা বা উদাসীনতার উল্লেখ। রবীন্দ্রবিরোধী প্ল্যাটফর্ম বানাতে চেয়েছিলেন চিত্তরঞ্জন দাশ *নারায়ণ* পত্রিকাকে, কিংবা শরৎচন্দ্র চট্টোপাধ্যায় তরুণ সাহিত্যিকদের নেতা হয়ে উঠেছিলেন রবীন্দ্র-বিরোধিতা আন্দোলনে। এই তথ্যগুলির পাশাপাশি লেখক রবীন্দ্রনাথের গভীর স্নেহ ও গভীর আস্থা যে সুভাষের প্রতি ছিল, দেশের সঙ্কটে জাতির কল্যাণে কবি একমাত্র সুভাষের ওপর ভরসা করেছেন সেই চিঠিও এই রচনাটিতে উল্লেখ্য।

'রবীন্দ্রনাথের হাসনরাজা' প্রবন্ধ মনে করিয়ে দিল মুজতবা আলী সাহেবের 'পঞ্চতন্ত্র' সিরিজের কথা যেটি *দেশ* পত্রিকায় প্রকাশ হয়েছিল এবং তখনই অধিকাংশ পাঠক প্রথম জানতে পারেন রবীন্দ্রনাথের সংগে হাসনরাজার পারস্পরিক পরিচয়ের ইতিহাস। হাসনরাজা ও তাঁর কিছু রচনার এ এক অনবদ্য নিবিড় প্রবন্ধ। হাসনরাজা সম্বন্ধে গবেষকদের মন্তব্য, ঐতিহাসিক তথ্যমূলক আলোচনা করেছেন প্রাবন্ধিক। হাসনরাজার দর্শন বৈদিক ঋষিদের সংগে অনেকভাবেই তুলনীয়। রবীন্দ্রনাথ এক অভিভাষণে বললেন "পূর্ববঙ্গে একটি গ্রাম্য কবির (হাসনরাজা) গানে দর্শনের একটি বড় তত্ত্ব পাই সেটি এই যে, ব্যক্তিস্বরূপের সহিত সম্বন্ধসূত্রেই বিশ্বসত্য।"

"রবীন্দ্রনাথ ও সতীশচন্দ্র" প্রবন্ধটি অতীব

রমণীয়। তিনজন সতীশচন্দ্র রায় রবীন্দ্রনাথের সান্নিধ্যে আসেন। লেখক তিন সতীশের সম্পর্কিত বিভ্রান্তির অবসান করেছেন। এই নিষ্ঠা প্রশংসার্হ। খুবই সংক্ষেপে, -সতীশচন্দ্র (ঢাকা) নিবন্ধকার ও অধ্যাপক, *পদকল্পতরু* রচয়িতা, বঙ্গীয়সাহিত্য পরিষদের সহ-সভাপতি। সতীশচন্দ্র (বরিশাল) শান্তিনিকেতনের অধ্যাপক। যাঁকে প্রমথনাথ বিশী বলেছেন, -বাংলা সাহিত্যের শুক্লা দ্বিতীয়ার চন্দ্রকলা। তাঁর অকালমৃত্যু রবীন্দ্রনাথকে ব্যথিত করেছিল। লিখলেন "সতীশ বঙ্গসাহিত্যে যে প্রদীপটি জ্বালাইয়া যাইতে পারিল না তাহা জ্বলিলে নিভিত না।" সতীশচন্দ্র (শ্রীহট্ট) ছিলেন রবীন্দ্রনাথের মনের মানুষ। প্রথম জীবনে ব্রাহ্ম ও পরে বৈষ্ণব হন। ঢাকা বিশ্ববিদ্যালয়ের দর্শনের অধ্যাপক। শান্তিনিকেতনে যোগ না দিলেও তিনি ছিলেন কবির দূত, বিশ্বভারতীর বার্তাবহ। কিছুটা আড়ালেই রয়ে গেছেন।

'রবীন্দ্রনাথ ও সত্যভূষণ সেন' প্রবন্ধে জানা যায় সংস্কৃতি চর্চাকার সত্যভূষণ সেন বহু চিঠি আদানপ্রদান করেন স্বয়ং রবীন্দ্রনাথ, অমিয়চন্দ্র চক্রবর্তী, সুধীররঞ্জন কর, জগদীশচন্দ্র বসুর সংগে। এই মূল্যবান চিঠিগুলিতে নারীর পদবী নিয়ে, কবির 'তাজমহল' কবিতাটির নাম বদলে 'শা-জাহান' হয়ে ওঠা, রবীন্দ্র ছোটগল্প অনুবাদক সত্যভূষণকে কবির নিরাশাজনক উত্তর ইত্যাদি উৎসাহী পাঠককে বহু তথ্যের সন্ধান দেয়।

'ভবানন্দ দত্তের দৃষ্টিতে রবীন্দ্রনাথ' হয়েছেন জীবনের পরম কথা। এই প্রবন্ধে রবীন্দ্রবিরোধী আন্দোলক ও ব্যঙ্গকারদের উদ্ধৃতি উল্লেখ করে লেখক মানুষ রবীন্দ্রনাথের বস্তুনিষ্ঠ মূল্যায়ণের চেষ্টা করেছেন। সমগ্র রচনা ও চিঠিপত্র থেকে বারে বারেই উঠে আসে কবির 'বিশেষণ'। তাঁর সংজ্ঞা রবীন্দ্রনাথ স্বয়ং।

'রাণু' প্রবন্ধটিতে রাণু ও তাঁর ভানুদাদার পত্রাবলী বহুচর্চিত হলেও লেখক অন্য আঙ্গিকে কিছু পত্রের আলোচনা করেছেন। তা থেকে *বিসর্জন*, *রক্তকরবী*, *নটীর পূজায়* অভিনীত নারী চরিত্র নিয়ে যে সংশয় ছিল তার অবসান হয়। যেমন রাণু (মুখার্জি) কেবল *বিসর্জন* নাটকে অভিনয় করেছিলেন রবীন্দ্রনাথের সংগে। *তপতী* নাটকে অমিতা ঠাকুর। রেবা রায় ও কুইনীকে দিয়ে বিভিন্ন সময়ে *রক্তকরবীর* নন্দিনী অভিনয় করাবেন এই ভাবনা ছিল কবির। এসব অজানা তথ্য সংকলিত এই প্রবন্ধে।

'রবীন্দ্রনাথ ও কুইনী', 'কুইনীর বিয়ে', 'রবীন্দ্র-প্রসঙ্গ ঃ অনালোচিত তথ্যকণা', 'অসমে রবীন্দ্র সমালোচনার পঁচিশ বছর ঃ ১৯১৪-৩৯', 'সুরভি প্রয়াণ ও রবীন্দ্র কবিতা 'মৃত্যুর জন্ম", 'দু'টি রবীন্দ্র কবিতার জন্মকথা', -আলোচ্যগ্রন্থটির বাকি প্রবন্ধগুলিও বহু অজানাতথ্য সন্নিবদ্ধ।

".... রাষ্ট্রীয় ঐক্য সম্বন্ধে রাষ্ট্রসভা মঞ্চে আমরা যে বাগ্মিতা বিস্তার করে থাকি সেটা একটা শোকাবহ প্রহসন"। কবি লিখলেন, - যে সময় কবিকে আসামের সংগে আত্মীয়তার দাবী ওঠে সে সময়ে। এও লিখলেন কবি "বংশঘটিত বিশেষ তথ্য নিয়ে তর্ক চলতে পারে কিন্তু তাই বলে পরস্পরের সম্বন্ধে মনটাকে বিমুখ রাখা অকল্যাণকর।" কবির ভাবনা আজকের অস্থির ভারতবর্ষের পক্ষে অতীব প্রসঙ্গিক। তাঁর চিন্তনের প্রতিধ্বনি তাঁর এই কবিতায়-

> মানুষকে গণ্ডির মধ্যে হারিয়েছি, মিলেছে তার দেখা
> দেশ বিদেশের সকল সীমা পেরিয়ে।
> তাকে বলেছি হাত জোর করে ---
> হে চিরকালের মানুষ, হে সকল মানুষের মানুষ
> পরিত্রাণ করো
> ভেদ-চিহ্নের-তিলক-পরা
> সংকীর্ণতার ঔদ্ধত্য থেকে।

এই গ্রন্থ, লেখকের রবীন্দ্রভাবনা ও রবীন্দ্রচর্চার প্রাতিস্বিক অনুরণন। একটি নির্ঘণ্ট থাকলে ভাল হত।

**সুরঞ্জনা চৌধুরী**

প্রকাশনা বিভাগ, দি এশিয়াটিক সোসাইটি

# WEAR MASK
# COMBAT COVID-19

*Artist:* Anuradha Bysack

# বাইশে শ্রাবণ

ভয় হতে তব অভয়মাঝে নূতন জনম দাও হে।।
দীনতা হতে অক্ষয় ধনে, সংশয় হতে সত্যসদনে,
জড়তা হতে নবীন জীবনে নূতন জনম দাও হে।।
আমার ইচ্ছা হইতে, প্রভু, তোমার ইচ্ছামাঝে–
আমার স্বার্থ হইতে, প্রভু, তব মঙ্গলকাজে–
অনেক হইতে একের ডোরে, সুখদুখ হতে শান্তিক্রোড়ে–
আমা হতে, নাথ, তোমাতে মোরে নূতন জনম দাও হে।।

শিল্পী ঃ সাগরিকা শূর

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