

ACHARYA PRAFULLA CHANDRA RAY: A REVISIT TO HIS LIFE AND WORK

(PART-3)

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Continuing from Part-2 [Sci. Cult., 88 (3-4), 108-118 (2022)], this concluding part embodies the activities of P.C. Ray as a social reformer (against casteism and for women's freedom and education), on education, philanthropy, charka and khaddar, insurance, his munificence, patriotic and nationalistic activities, as a historian of science, on Gandhian philosophy, the awards and honours he received, felicitations and personal habits and some miscellaneous issues. His last life, the sobriquets he earned and some important quotes on him are at the end of the article.

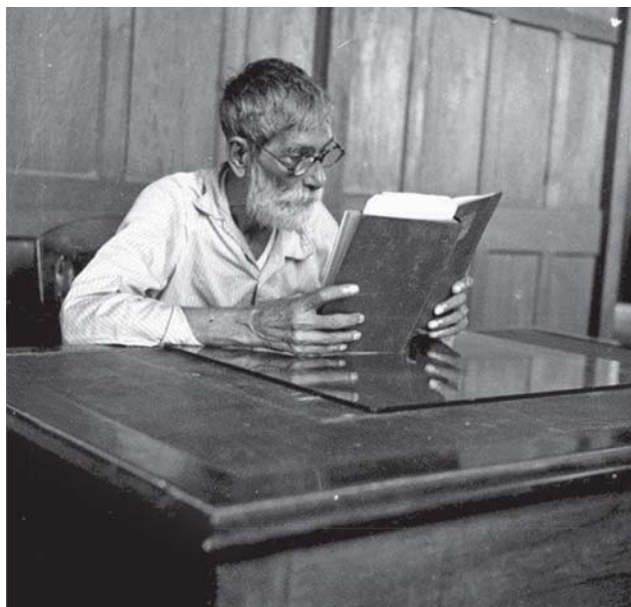
P.C. Ray: Miscellaneous Activities

A Social Reformer^{34h, 35h} :

P C Ray was out and out a social reformer. Casteism and untouchability moved him most, which is evident from what he wrote, “*The disadvantages of the caste system appear here (in Bengal) in their naked deformity³⁵ⁱ. ...In a word, more than anything else it has been a chief stumbling block in the growth of Indian nationality^{35j}. ...the caste system is to a large extent responsible for the misfortune of Bengal^{35k}...*”

His anonymous student rightly stated, “*The so called talk of nation-building will, in his (P.C. Ray's) opinion, end in smoke until this black spot is removed from the social fabric. ...The problem of untouchability has assumed a scientific aspect in these days³⁴ⁱ.*” In his Presidential Address in the 31st Indian National Social Conference (Dec. 30, 1917) in Calcutta, P.C. Ray strongly decried “*the inhuman hatred, fraud and falsehood that have been reigning supreme in our society in the shape*

of caste system^{34j}.” He highlighted the immensely detrimental effect of casteism and superstition on the growth of a nation in his article ‘Nation building and its obstacles’^{34k}.



Acharya P.C. Ray: Wikimedia Commons

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On Education^{69a} :

Regarding education, P.C. Ray was of the view that “If mass education were to develop on right lines, the enrichment of the vernacular was an absolute necessity^{69b}”. In his speech on ‘National Education: the Vernacular Medium’ at Wardha in 1937, P.C. Ray said, “If our object is to diffuse our knowledge and improve the minds of the natives of India as a people, it is my opinion that it must be done by importing that knowledge to them in their own language⁷⁰.”

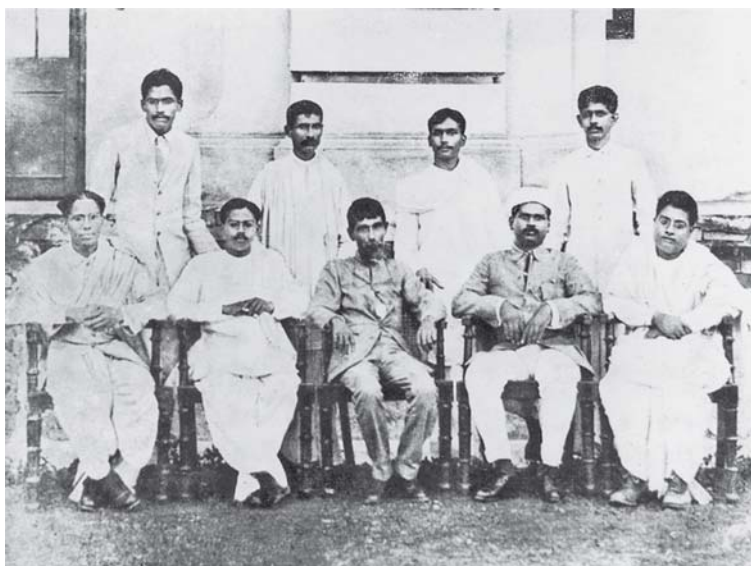
P.C. Ray believed that education should be a two-tier system – while the primary education must be taught through mother tongue, “freedom first, freedom second, freedom always’ should be the watchword of a University” education⁷¹. By ‘freedom’ he meant freedom of mind. But he was against the abolition of English language in Govt. schools. For a curious reader, Sunanda Sanyal’s article in the ISNA book is suggested.⁷²

P.C. Ray never approved of the craze of students for University degrees despite their facing increasing difficulty in getting employment. He lamented that all the trades and industries in Bengal were “slipping into the hands of Europeans and non-Bengalis.” He considered it as “a terrible loss, nay, a catastrophe, - this wastage of the energies of the people^{69c}.”

Association with National Council of Education (NCE)^{73a-d}

NCE, Bengal was formed in March, 1906 to organise a system of education on national lines and under national control. It set up the Bengal National College and School in 1906, where R.N. Tagore, amongst others, voluntarily taught. Sri Aurobindo joined this college as the first Principal on a meager salary of Rs. 150/- p.m. (leaving his job at Baroda College with a monthly salary of Rs. 710/-). In the same year, the Society for Promotion of Technical Education in Bengal set up the Bengal Technical Institute (BTI) to spread particularly technical education. J.C. Bose, P.N. Bose, B.N. Seal and others taught in BTI. The two societies merged in 1910. NCE was ultimately ‘reincarnated as Jadavpur University’. Pertinently, several national schools were founded throughout Bengal during that period.

P.C. Ray could not be officially involved with NCE at the early stage, but he took interest in BTI. In 1921, BTI formed a Syllabus Revision Committee with P.C. Ray as its Chairman. He was also a Paper-setter and an Examiner of



Seated (L to R): P.B. Sarkar (1), P.C. Ray (3), S.N. Bose (5)
Standing (L to R): M.N. Saha (1), J.C. Ghosh (3), J.N. Mukherjee (4)

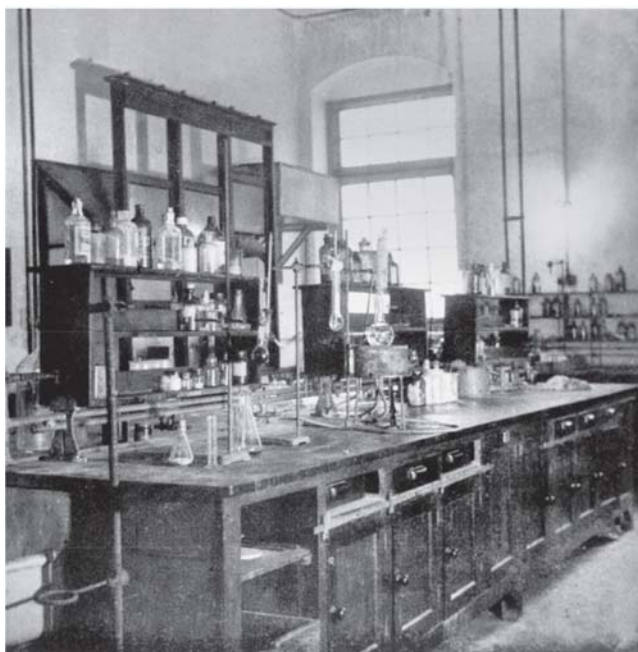
Chemistry. In 1922, P.C. Ray became the President of NCE and continued till death. P.C. Ray strongly advocated education in national institutions, but he also opposed the abolition of Govt. schools. An article by Anil Bhattacharya in the ISNA book is suggested for further reading^{73e}.

On Education, Early Marriage and Freedom of Women

P.C. Ray was an ardent advocate of education for women^{34l}. P.C. Ray said, “The need for women education was essential for the upliftment of children. Then schooling started from the wombs of their mothers. ...So women education contributed to many folds than others⁷⁴.” P.C. Ray was as “an uncompromising opponent of early marriage” of women^{34m}. He knew that early marriage of girls, caused by societal pressure and poverty, and lack of education led to the then high rate of child mortality in India. He realised that the lack of freedom of our women crippled the society. He held illiteracy, early marriage, lack of freedom and poverty of women largely responsible for “the prevalence of hysteria, puerperal (postpartum infection) and consumption (TB) among the women of Bengal³⁴ⁿ.”

Philanthropic P.C. Ray

P.C. Ray’s philanthropy is well documented. Since his boyhood, whenever P.C. Ray used to go to village, he used to distribute sugar candy, sago and barley to the sick and needy villagers^{75a}. He always actively participated in the relief work in drought, famine and flood. He



P.C. Ray's laboratory, Science College, Calcutta
The Telegraph file picture, 28.11.2018

expressed his sentiment in this regard as follows: “*Social service also has had a peculiar attraction for me. The distress caused by the famine, the flood, or the earthquake strikes a sympathetic chord in my heart and my never-failing colleagues and co-workers are not only by my side, but take care to drag me to the forefront*^{69d}.” He said, “*The aim of Swami Vivekananda was not only to obliterate all distinctions of caste, but also to uplift the Daridra Narayana*^{76a}.” P.C. Ray followed this ideal throughout his life.

P.C. Ray condemned the attitude of the British rulers that the Indians should not acquire human qualities of “*self-help, relief, resourcefulness, (and) adaptability to altered conditions*” and should look forward to the British rulers for help in the case of any calamity. In support, he cited the instances of the earthquakes in Bihar (1934) and Quetta (now in Pakistan) (1935)^{69e}.

In 1922, there was a severe drought, leading to famine in Khulna. Inaction from the Govt. triggered P.C. Ray to organise a relief work. *Manchester Guardian* highly praised P.C. Ray's relief work: “*In these circumstances, a professor of Chemistry, Sir PC Ray, stepped forward and called upon his countrymen to make good the Government's omission. His call was answered with enthusiasm. The public of Bengal, in one month gave three lakhs of rupees*^{76b}.” P.C. Ray also actively participated in Malaria Prevention Cooperative Committee in 1923⁷⁷.

On his first day at Presidency College in 1901, Charuchandra Bhattacharya, a student of P.C. Ray (and later a Professor), noticed that P.C. Ray was wearing a coat exactly akin to one worn by a bearer. On enquiry, he learnt that P.C. Ray had made four coats from a piece of cloth, of which he used to wear two and other two coats were given to the bearer for his use^{75a}. Charuchandra was just overwhelmed at this humane face of P.C. Ray.



P.C. Ray's Talk in All India Radio (1940).
Photo: Parimal Goswami

P.C. Ray: Doctor of Floods

P.C. Ray's active involvement in relief work following natural disasters is a remarkable signature of his philanthropy. During July-Aug., 1870 to Sept.-Oct., 1922, North Bengal (undivided) witnessed as many as 25 floods – slight, medium, severe and catastrophic - which resulted in loss of crops, properties, and lives of cattle and human beings^{78,79}.

Narayan Gangopadhyay's autobiographical novel ‘Shilalipi’ refers to the devastating flood in the Rajshahi Division caused by heavy rainfall throughout North Bengal during September 22-26, 1922^{80a,b}. This flood was “*the most terrific of its kind in the memory of the living generation*³⁵¹.” A few days later, Netaji Subhash Chandra Bose visited the affected areas. Various organizations together formed the **Bengal Relief Committee** with P.C. Ray as its President and Science College (Rajabazar campus) as its Headquarter. Nearly 200 volunteers, including students, teachers (P.C. Mitter, J.N. Ray *et al.*) and others worked round the clock on war footing. Meghnad Saha, then a Professor of Physics at Allahabad

University, was made the Publicity Officer, and P.C. Ray was the soul of this enormous relief work.

Charles Freer Andrews, a special correspondent of *Manchester Guardian*, remarked: “It has been one of the noblest efforts made in modern India on behalf of distressed humanity^{35m}.” The Committee collected around Rs. 25 Lakh in cash and kind which was distributed amongst the affected people. The *Manchester Guardian* attributed this huge response of the Bengalis “largely to Sir P.C. Ray’s remarkable personality and position.”

In the 1929 flood in the Pabna district (now in Bangladesh), P.C. Ray arranged for relief with the help of students from the BTI where he was the President. In the 1931 flood in the same area as in 1922, P.C. Ray organised a ‘Sankat Tran Samiti’ and rendered relief work. During the Midnapore flood in 1940, P.C. Ray, unable to act physically, appealed to the masses for generous donation to the Midnapore Central Flood Relief Committee. It is not surprising that Mahatma Gandhi called P.C. Ray a ‘**Doctor of Floods**’.

Charity of P.C. Ray

P.C. Ray’s list of donations is simply remarkable. At least 45 Institutions used to receive his donations^{75a}. During his teaching at Presidency College and later at Science College, P.C. Ray used to keep only a paltry sum out of his salary for his livelihood and used to donate the rest to the poor and the needy. His student N.R. Dhar recalled, “I gratefully acknowledge his help of 40 pounds (Rs. 5000) when I proceeded to Europe for research work as a State Scholar in 1915^{75a}.” In 1918, P.C. Ray donated his honorarium, received for delivering two Lectures at the University of Madras, back to the University for instituting the Wedderburn Prize of that University. He also made a similar donation to the Punjab University^{34o}.

When P.C. Ray’s service was extended at the age of 60, he donated in advance all his salary, Rs. 1,000/- p.m. for the rest 15 years (Rs. 1.8 Lakh) of his service at the University College of Science for the modernisation of its chemistry laboratory and for the creation of a monthly research scholarship. Additionally, he donated to the University a sum of Rs. 10,000/- in 1922 to institute the Nagarjuna Prize (for Chemistry) and an equal amount in 1936 to create Sir Ashutosh Mukherjee Memorial Prize (for Biology – especially Zoology and Botany). He also made a handsome donation to ‘Jenana’, a Society in Jessore to promote women’s education.

Once P.C. Ray donated Rs. 3,000/- to Dr. Prafulla Ghosh for his ‘Abhay Ashram’ and then Rs. 500/- for the

school at Baghil (the village of the ‘mesho’ of Sri Aurobindo), which wiped out his bank balance completely. He never took salary from Bengal Chemicals and spent it largely for the welfare of its employees. He used to donate his earnings from his shares in Bengal Chemical and other companies for orphans, poor widows and for the production of Khadi and spinning of Charkas. He also made handsome donations to City College, Calcutta, Sadharan Brahma Samaj, Brahma Girls’ School and the High School in Raruli founded in his father’s name^{81a,b}. His contribution helped the establishment of Bagerhat College (renamed Prafulla Chandra College, 1918; renamed Govt. P.C. College, 1979) in Bangladesh^{34o,81c}. His donation of Rs. 10,000/- to the ICS has been stated earlier.



Sculpture of P.C. Ray inside Govt. P.C. College, Bagerhat, Khulna, Bangladesh.

P.C. Ray’s selfless sacrifice has been aptly paralleled to that of Rishi Dadhichi^{75a}.

P.C. Ray: Advocate of Charka and Khaddar^{34p,35n}

It was P.C. Ray who pointed out that the credit of introducing the concept of Charka as the ‘poor man’s standby’, especially for the Indian peasantry, goes to an Englishman, Henry Thomas Colebrooke (initially a ‘Writer’ of the East India Company at the age of 18 and later a Civil Servant), seventy five years earlier than when M.K. Gandhi was born^{35o}.

P.C. Ray initially “scoffed at the very idea of this primitive, uncouth instrument (i.e. Charka) competing with machinery” but eventually became a strong advocate of Charka and Khaddar (hand-spun and hand-woven cloth) for the economic salvation of especially the agricultural labourers, the helpless widows and unmarried girls trying

to earn their own bread. He appreciated that Charka has been called “*the poor man’s insurance against famine.*”

In his address at the Khaddar Exhibition at Cocanada, Dec., 1923, P.C. Ray strongly identified Charka as “*An easy, healthy and natural process of increasing the wealth of the country...*” In an article, he wrote: “*Khaddar stands for the habit of industry, for a deeper and significant type of National Organisation and in fact for a democracy without the venom of envy*^{34q}.” In the 1920s, P.C. Ray frequently toured throughout India to seek support for Khaddar and national schools and against untouchability^{75b}. In 1924, P.C. Ray made a general appeal in *The Forward* to buy and use Khadi^{82a}.

Strangely, P.C. Ray’s open advocacy of ‘Charka’ as the only means of the economic salvation of the poor and the peasantry was openly criticised by even R.N. Tagore and B.N. Seal. R.N. Tagore wrote, “*To glorify the role of charkha in isolation was tantamount to the distrust of human nature and disrespect for India’s people*^{82b}.” B.N. Seal expressed his disapproval of Charka by cryptically tagging P.C. Ray as ‘**Charkarishi**’^{82c}. Some of P.C. Ray’s friends addressed him as ‘**Sir Khaddar**’^{82d}.

P.C. Ray’s Views on Insurance Companies⁸³

Regarding the activities of insurance companies operating in India, P.C. Ray opined that the policyholders’ money should be invested safely and partly for developing national industries. P.C. Ray strongly condemned the newly introduced Insurance Act (1938) of India since it was likely to lead to losses. He advocated for the freedom of the insurance companies to choose their investment plan, keeping their investment safe. In an article published in *Insurance World* in 1939, P.C. Ray “*analyzed different aspects of insurance with the command of an economist*⁸³.”

‘Ambivalent P.C. Ray’: Ananda Kentish Coomaraswamy⁸⁴⁻⁸⁶

The patriotism of P.C. Ray was frowned upon in one instance. In an article in International Congress of Applied Chemistry (1901), P.C. Ray highly praised the Germans because of their development of synthetic alizarin dyes although he knew that “*The cultivation of the various species of the Rubiaceae for the purpose of the dyer, which has continued for thousands of years down to our own times is now practically at an end.*”

This ambivalence of P.C. Ray was dealt with at length by A.K. Coomaraswamy, a well known philosopher (of Ceylonese origin) and historian of art, in his book ‘Art

and Swadeshi’ (Ch. 4). This was in contrast with an European authority on dyes who condemned this aggression of synthetic dyes: “*...their discovery, ...has terribly injured the art of dyeing, and for the general public has nearly destroyed it as an art*⁸⁴.” Coomaraswamy wrote, “*...those who would truly serve their country and serve humanity, will devote themselves rather to the preservation of old arts and industries...*” and felt sorry that P.C. Ray failed in this regard.

Referring to P.C. Ray’s aforesaid paper, Professor Otto Nikolaus Witt, a Russia-born German chemist, strongly pleaded for a study of old, rather crude methods (of dyeing) before these are lost entirely to humanity⁸⁵. This so called ‘fascinating debate’ between P.C. Ray and Coomaraswamy on the usefulness of synthetic dyes in India was highlighted by Natasha Eaton, a historian of art, in her book on colour, art and empire⁸⁶.

P.C. Ray: A Hindu Fundamentalist?⁸⁷⁻⁸⁹

A famous historian, Dr. Benzamin Zachariah (who studied History at Presidency College, Calcutta and later at Trinity College, Cambridge) cited some published allegations that P.C. Ray was a Hindu fundamentalist⁸⁷.

He referred to Dr. Joya Chatterji’s (a well known historian and a Fellow of Trinity College) allegation that P.C. Ray’s signature appeared on a Memorial (1936) by the ‘Hindus of Bengal’, seeking protection as a minority community and drawing attention to the great contribution of the Hindus to the development of Bengal (thereby tacitly ignoring the contribution of the Muslims or medieval Indian science)⁸⁸. Conspicuously, even eminent persons like R.N. Tagore, B.N. Seal and Ramananda Chatterjee (Editor, *Modern Review*) were also signatories on that Memorial.

Pradip Kumar Datta, a man of English literature but with interest in history and politics, pointed out that, in his book on Hindu Chemistry, P.C. Ray allegedly showed an ‘apparent distrust of Muslims’ and appeared to consider Marwaris as ‘the unacceptable outsiders’⁸⁹. Zachariah, however, made it amply clear that P.C. Ray never indulged in ‘ancestor-worship and sectarianism’ in his writings – he never contributed to the view that a glorious Hindu past had been disrupted by the Muslim invasion⁸⁷.

P.C. Ray: A Pioneer in the Social History of Science in India⁹⁰⁻⁹²

In a 1997 article, Dhruv Raina, a philosopher and historian of science, portrayed P.C. Ray as a historian of science. Raina wrote: “*Ray’s history of Indian alchemy*

must be seen as a major historiographic landmark⁹⁰.” S. Chatterjee (then of ISNA) and Debiprasad Chattopadhyaya, a famous Marxist philosopher and historian of science, also considered P.C. Ray as a pioneer in the writing of social history of science in India^{91,92}.

Patriotic and Nationalist P.C. Ray^{34j,75b}

The patriotic and nationalist faces of philanthropic P.C. Ray are hard to distinguish. Amartya K. Dutta, a biographer of P.C. Ray, wrote: “*An intense love for the country and her people was the fountain spring from which flowed the various streams of the Acharya’s activity. Indeed, patriotism vibrated through every fibre of his being. This patriotism was ‘not loud but deep’^{75b}.*”

P.C. Ray’s admission into Metropolitan Institution and his harsh criticism of the British misrule in India in his essay ‘India: Before and After the Mutiny’ at the University of Edinburgh in 1885 bear testimony to his nationalistic spirit right from his student life.

P.C. Ray wrote (1921) to C.R. Das’s wife, Sm. Basanti Devi: “...in serving my favourite science I have only one idea in mind, namely, that through her I should serve my country^{35p}.” **His lifelong pursuit of science was thus a service to his nation.** P.C. Ray’s association with the NCE, Bengal, discussed earlier, and his admiration and direct and/or tacit support for all kinds of political activists, including the revolutionaries, constitute a pointer to his patriotism.

In a public meeting of C.R. Das (Town Hall, Calcutta, 1919), P.C. Ray stated that even a scientist should leave his laboratory to attend the call of his country. His famous statement “*Science can afford to wait but Swaraj cannot*”, made during the 1924 non-cooperation movement, is, so to say, an epitome of P.C. Ray’s nationalistic being.

Because of P.C. Ray’s admiration for Bagha Jatin, “...several thought-leaders of the future collaborated with him (Bagha Jatin)...^{75b}.” P.C. Ray’s deep sadness at the news of the discovery of the bomb factory at Muraripukur by the police, as witnessed by H.P. Ghosh, an Editor of *Bande Mataram*, explains why he earned the moniker ‘a revolutionary in the garb of a scientist’⁹³. As stated by H. P. Ghosh, the true history of P.C. Ray’s contribution to the freedom movement of India “*must remain necessarily a mystery hidden and lost*^{75b}.”

P.C. Ray and Mahatma Gandhi: Mutual Impressions

P.C. Ray’s intellectual engagement with the Gandhian thoughts on good science, economics and politics was

perused critically a decade ago⁹⁴. P.C. Ray first met Gopal Krishna Gokhale in 1901, and they became fast friends within a few days. Towards the end of 1901, P.C. Ray first met M.K. Gandhi when the latter came to Calcutta, as a guest of Gokhale, for the first time with a view to letting Calcuttans know about the plight of the British-Indians in South Africa. P.C. Ray arranged for a public meeting at the Albert Hall on Sunday, the 19th January, 1902. Since then, P.C. Ray and Gandhiji had a rather long association.

P.C. Ray openly expressed his reverence for Gandhi in his autobiography, “*I was attracted to him (Gandhi) from the very first by his magnetic personality and our common devotion to asceticism. My esteem for and intimacy with him have grown in intensity as the years have rolled on*^{35q}.” “*The frequent conversations that I used to have with Mr. Gandhi made a deep and lasting impression on me. ...Truth lived is far greater than truth merely spoken*^{35r}.”

In contrast, Gandhiji’s impression of P.C. Ray was ‘less effusive’⁹⁵. Gandhiji said: “*It is difficult to believe that the man in simple Indian dress wearing simple manners could possibly be the great scientist and professor*^{76b}.” But Gandhiji’s depiction of P.C. Ray was ambivalent in some cases. Thus, while “...stalwart figures (like P.C. Ray) were beginning to look ‘puny’ to him⁹⁵,” he admired Ray for his simultaneous advocacy for Khadi and vigorous pursuit of scientific research⁹⁶. Clearly, the presence of ‘good science’, as conceived by Gandhiji⁹⁷, in the major activities of P.C. Ray is the reason behind Gandhiji’s admiration.

Awards and Honours

P.C. Ray received Honorary Ph.D. (University of Calcutta, 1908) and Honorary D.Sc. degrees (Durham University, 1912; Banaras Hindu University, 1920; Dhaka University, 1920, 1936; Allahabad University, 1937). The Vice-Chancellor of Durham University commented: “...his (P.C. Ray’s) fame chiefly rests on his monumental *History of Hindu Chemistry*...^{98a}.”

He received (i) Faraday Gold Medal of the University of Edinburgh (1887), (ii) the honour of the CIE (1912), and (iii) Knighthood (1919). After being honoured with CIE, he said to the police: “*Now you will not be able to do anything to me. I am placed higher than you. You are CID but I am CIE*^{75b,98b}.” After being Knighted, he told his grand-nephew Sunit K. Ghosh that instead of leaving him in delight, the honourable Govt. wanted to plunge him into the darkness of the ‘night’^{75b}. Clearly, P.C. Ray had a refined sense of humour.

He was (i) a Fellow of the Chemical Society (FCS; 1902) and the Royal Asiatic Society of Bengal, Kolkata (FRASB; 1910), (ii) an Honorary Member of the Deutsche Akademie, Munich (1919), (iii) a Foundation Fellow of the National Institutes of Sciences of India (FNI; 1935; renamed as FNA since 1970) and (iv) a Fellow of the Indian Association for the Cultivation of Science, Kolkata (FIAS; 1943).

In view of P.C. Ray's realisation of the importance of metallurgical findings of Sarasvati-Sindhu Civilisation and his pioneering the documentation of ancient Indian knowledge systems, S. Kalyanaraman submitted that August 2 every year should be celebrated as the 'Materials Technology Day' across the globe^{98c}.

In 1920, P.C. ray was elected the President of the Indian Science Congress. In order to commemorate the Birth Centenary of P.C. Ray, the Indian Science Congress Association (ISCA) instituted P.C. Ray Memorial Award, which carries a Gold Medal and a Certificate, to be given in every alternate year.

Many academic institutions (schools, colleges, polytechnics) and science clubs have been named after P.C. Ray.

Nomination of P.C. Ray for FRS⁹⁹⁻¹⁰¹

P.C. Ray was the **first Indian scientist** to be nominated for the 'Fellowship of the Royal Society' (FRS) although a Bombay-based shipbuilder, Ardaseer Cursetjee, had earlier (1841) been elected a FRS. Following prescribed rules, P.C. Ray was nominated for the first time by as many as 17 scientists in writing in December, 1912.

P.C. Ray was quite famous by then for his discovery of mercurous nitrite and for his History of Hindu Chemistry. Additionally, his student N.R. Dhar (then in London) also lobbied with influential British chemists for P.C. Ray's election as a FRS. Yet, **P.C. Ray was not elected**. Ray's nomination continued to be under consideration, but without success, until it lapsed in 1917 (since nominations used to remain valid for five years). He was duly re-nominated in 1917 (valid till 1922) and again in 1933 (valid till 1938) **but again without success**.

William Blanpied, a Staff Scientist of N.S.F., USA at New Delhi, identified (1986) six 'tribal leaders' who played pioneering roles in establishing scientific institutions in India⁹⁹. The nickname 'tribal leaders' had in fact been coined much earlier by Abdus Salam, the then Director of ICTP, Trieste, Italy¹⁰⁰. The six tribal leaders were J.C. Bose,

P.C. Ray, C.V. Raman, S.N. Bose, M.N. Saha and H.J. Bhabha. Ironically, all but one (P.C. Ray) of them were elected FRS. For details of the issue of nomination of P.C. Ray for FRS, one may go through a recent authoritative article¹⁰¹.

RSC's International Chemical Landmark Plaque to P.C. Ray

The Royal Society of Chemistry (U.K.) bestowed upon P.C. Ray a rare honour - the award of '**International Chemical Landmark Plaque**' for the first time outside Europe. Following a proposal (46th IUPAC Council Meeting, San Juan, Puerto Rico, August 3-4, 2011) that each member country should honour its national hero in Chemistry in the International of Chemistry, followed by lobbying by some Indian Members, Professor Lesley Yellowlees, the first woman President-elect of the RSC and herself a Ph.D. of the University of Edinburgh, decided for the aforesaid special award^{102a,b}.

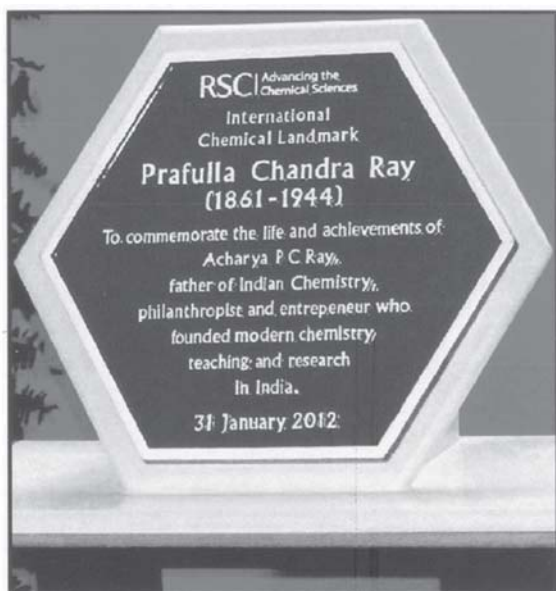


সংগঠকদের স্বীকৃতি। সার্বশতাব্দে বিজ্ঞানী রত্নরত্ন রায়কে সম্মান জানাতে মূল্যবান রেসিডেন্সি বিশ্ববিদ্যালয়ে একটি ফলক স্থাপন করল রায়ের জন্মের ১০০তম বার্ষিকীতে। ইউরোপের বাইরে এই প্রথম। সংস্থার চিফ এক্সিকিউটিভ রবার্ট পার্কার এ ফলক প্রদান, রায়ের ব্যবস্থাপনা বিশেষ অবদানের স্বীকৃতি হিসেবে ২০০১ থেকে এই ফলক নিচ্ছে রায়ের সোসাইটি। এই ফলক প্রদানের কাজে উৎসাহে জোগাতে বলে উপচার্য মালভিকা সরকারের আশা। — নিমিত্ত চিত্র

Handing over (31.01.2012) of Plaque to V.-C., Presidency University, Kolkata

RSC's Chief Executive Robert Parker first made the official announcement in India on 29th Sept., 2011^{102c}. On the 31st January, 2012, Parker handed over the Blue Plaque to Malabika Sarkar, the then Vice-Chancellor of Presidency University and said, "This is just a small selection of his achievements and I am delighted to announce this award — our first outside Europe to such an eminent scientist^{102c,d}." The Plaque reads: "To commemorate the life and achievements of Acharya P. C. Ray, father of Indian

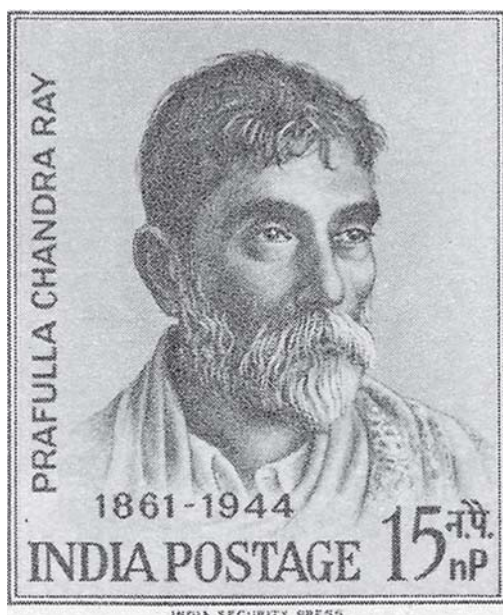
Chemistry, philanthropist and entrepreneur who founded modern chemistry teaching and research in India.’



RSC International Chemical Landmark Plaque

Postage Stamp in Honour of P.C. Ray

On August 02, 1961, the India Post released the following 15 nP postage stamp to commemorate the Birth Centenary of P.C. Ray¹⁰³.



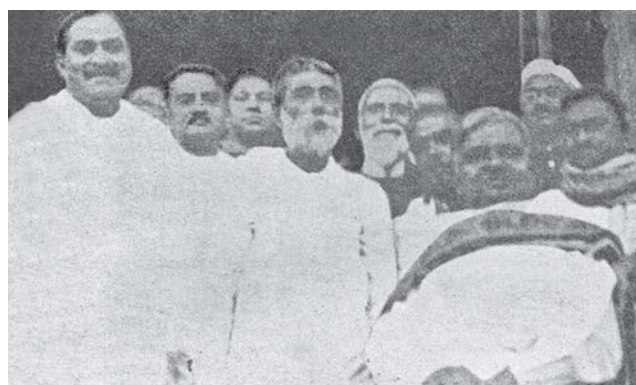
Released by the India Post on August 02, 1961, Birth Centenary of Acharya P.C. Ray. Wikipedia

Felicitations to P.C. Ray

Numerous felicitations were given to P.C. Ray on various occasions, more notable ones being given on his

70th and 80th birthdays and by the Corporation of Karachi in 1933.

In 1924, Deshbandhu C.R. Das, the then Mayor of Calcutta Corporation (CC), appointed P.C. Ray as the first Chairman of its Education Committee. P.C. Ray prepared the ‘first-ever vision-oriented modern syllabus’ for the primary schools of CC. In recognition, Dr. Bidhan Chandra Roy, the then Mayor of Calcutta, celebrated his 71st Birthday by according a grand Civic Reception to P.C. Ray on Saturday, December 10, 1932 at Town Hall, Calcutta. On this occasion, a silver ‘Charka’ was also presented to P.C. Ray¹⁰⁴.



Civic reception to P.C. Ray at Town Hall, 1932

Source: KMC Blog, 2015

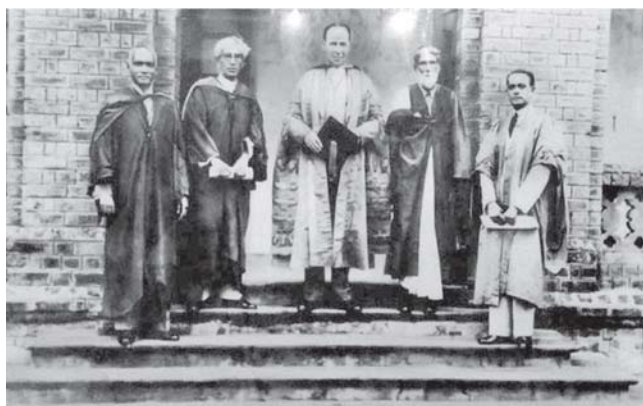
In his Presidential Address in the aforesaid felicitation by the CC, R.N. Tagore, N.L. said: “*It says in the Upanishads that ‘the Supreme one wanted to be many’. The urge of self-disposal is at the root of creation. It was through this kind of creative urge that Profulla Chandra became many in the minds of pupils by diffusing and thereby reactivating himself in many younger minds*^{82a}.”

The Lahore Branch of the Indian Chemical Society celebrated the 70th Birth Anniversary of P.C. Ray. A portrait of P.C. Ray was unveiled at the Library of the University Chemical Laboratory, Lahore¹⁰⁵.

In 1936, P.C. Ray was invited to the Convocation of the Dhaka University¹⁰⁶.

In his 80th Birth Anniversary in 1941, P.C. Ray was felicitated by the University of Calcutta and other organisations at the Senate Hall. In 1943, he was felicitated by the people of Khulna Town and Raruli village, and he **gave the last lecture of his life on April, 24**^{82a}.

‘Acharya Profulla Chandra Ray 150th Birth Anniversary Commemoration’ was held jointly by Presidency University, Vivekananda Vijnan Mission and Calcutta University at the Presidency University and the University of Calcutta, College Street (Main Campus) during



From left: Sir Jadunath Sarkar (Historian), Sarat Ch. Chattopadhyay, Sir John Anderson (Chancellor & Governor of Bengal), Acharya P.C. Ray, Sir A.F. Rahman (Vice-Chancellor, Dacca Univ.). Source: Pinterest

December 17-18, 2011. An exhibition on P.C. Ray was held at Science City, Kolkata in 2011 to commemorate his 150th Birth Anniversary.

The Bengal Chemical Suhrid Samaj celebrated the 75th Anniversary of Indian Independence in front of the gate of BC on the 21st October, 2021 in memory of the contribution of P.C. Ray to our nation.

স্বাধীনতার পঁচাত্তরতম বর্ষশুভ উদযাপন
বিজ্ঞানী শ্রফুল চন্দ্র রায়ের জাতির প্রতি অবদান
স্মরণে বিজ্ঞানী অধ্যাপক গবেষকদের সভা

২১শে অক্টো, বেলা ৩.০০ টা, বেঙ্গল কেমিক্যাল কারখানা গেট, কলকাতা ৭০০০৫৪
 আয়োজক : বেঙ্গল কেমিক্যাল স্টুডেন্ট সমাজ
 ব্যবস্থাপনায় : বেঙ্গল কেমিক্যাল কারখানার শ্রমিক কর্মচারী ও ইউনিয়নবৃন্দ
 E-mail : bcss2021@yahoo.com

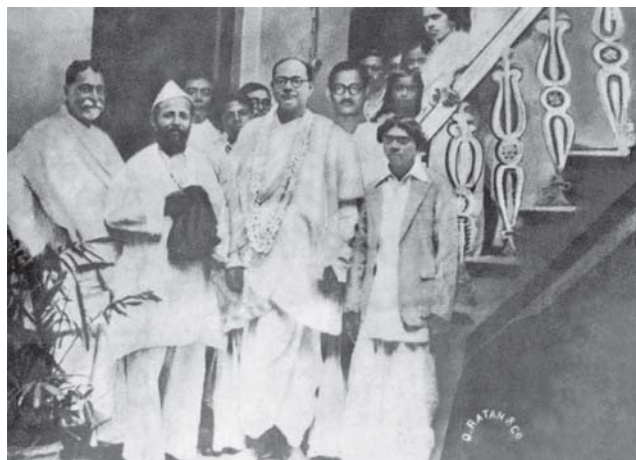
Celebrating the Seventy-fifth Anniversary of Freedom
 A Gathering of Scientists-Professors-Researchers in Remembrance of
 Scientist Prafulla Chandra Roy's Contribution to the Nation
 21st October, Bengal Chemical Factory Gate, Kolkata-700054
 Organizer: Bengal Chemical Suhrid Samaj
 Local Arrangements: Bengal Chemical Factory Workers, Employees & Trade Unions
 E-mail : bcss2021@yahoo.com

A rather rare picture of P.C. Ray, Subhash Chandra Bose and Kazi Nazrul Islam together at Sadhana Aushadhalaya, Dhaka in 1924 is presented herein.

P.C. Ray: A Public property^{34r}

P.C. Ray became associated with so many organisations in Bengal as well as in India that once in

Madras he said out of agony: “I now see that I have made myself the property of anybody and everybody.” In *Nature*, March, 1919, the famous English chemist Sir T.E. Thorpe expressed that sooner or later P.C. Ray was bound to become a public property.



L to R: P.C. Ray (1), (2) A.A. Chowdhury, (3) Netaji Subhash Chandra Bose, (4) Kazi Nazrul Islam

Source: Wikimedia Commons

Habits and Demeanours of P.C. Ray

In his childhood, P.C. Ray was shy and didn't mingle with other children of his age. He enjoyed reading books, engaging himself in 'arboriculture' and doing physical exercise. A disciplined man, P.C. Ray used to follow a regular timetable, never waste anything - time, material and money - and take regular exercises. Almost a 'valetudinarian', P.C. Ray had a strict control over his diets. He used to put on clean but not pressed Khadi clothes (washed by him) and polished (by him) shoes and never allowed others to serve him in any way whatsoever. His simple living style at Science College has been well described by his anonymous student^{34s}.

Epithets of P.C. Ray

P.C. Ray was remarkable in the sense that he was crowned with a number of epithets, some of which are: 'Acharya', 'Savant', 'Master of Nitrites', 'Father of Indian Chemistry', 'Father of Pharmaceuticals in India', 'The Liebig or the Wöhler of India', 'Dr. of Drs.', 'Dr. of Floods', 'St. Francis of Indian Science', 'The Saint of Science and Apostle of Khaddar', 'Charkarishi', 'Sir Khaddar', 'Jnanabaridi', 'Half-naked Fakir of India', etc.

Apparent Contradictions in P.C. Ray's Life and Activities^{75c}

P.C. Ray admitted: “I am what I am and cannot help

being made up of perhaps incongruous elements” and “I confess I am a strange contradiction^{35s}.” Indeed, a few apparent contradictions can be traced in his life and activities. Some of these are: (1) He highly condemned the craze of students for University degrees, but he himself chose to be a D.Sc. (2) A staunch critic of the British rule in India, he (i) served the colonial Government (Presidency College) for 25 years, and (ii) supplied the British Government with large quantities of sulphuric and nitric acids, sodium thiosulphate, caffeine, fire extinguishers, surgical cotton, etc. during the first World War. (3) His first love was history and literature, but he always advocated the pursuit of science. (4) He lived an austere life, yet he pursued and advocated for entrepreneurship. (5) He toiled to usher in a new era of modern scientific India, but he left no stone unturned to unearth the glorious past of Indian chemistry.

The End of a Journey

At the age of 75 years in 1936, P.C. Ray retired from Calcutta University as Palit Professor of Chemistry, and he continued to work there as Emeritus Professor till his death. After retirement, he spent most of his time in literary pursuit and public activities.

When the 2nd World War broke out, his health began to deteriorate. By the end of 1942 he could hardly move out of his quarters, and soon he was confined to bed. On the 16th June, 1944, he breathed his last at around 6.30 p.m. in the midst of his beloved students, friends and admirers in his living room in Science College, Calcutta.



P.C. Ray's body at Science College

Source: *Ananda Bazar Patrika*, June 16, 1944

Courtesy: Subhendu Chattopadhyay, ISNA

Many organisations expressed their profound grief on the demise of P.C. Ray. Excerpts from some published Obituaries are presented here. ISNA: “A saint of science,

a patriot, a philanthropist and a nation-builder has passed away; a truly noble soul, a kind and compassionate figure has disappeared from our midst. ...He came with a great mission to serve his country and has left an imperishable example, which will serve as a light and inspiration to the present and future generations^{107a}.” ICS: “...his personal habits exemplified Spartan simplicity. He was great but he never felt it. ...The most outstanding feature of his greatness was his love for the people^{107b}.” *Nature*: “His (P.C. Ray's) passing will be deeply regretted, not only by his Indian students to whom he was a true guru, but also by his many friends in Great Britain^{107c}.”

A Prediction Belied

Contrary to Sir Edward Thorpe's remark (*Nature*, 1919) that India's elevation will not come in Sir Prafulla Chandra Ray's time, India became an independent country only three years after P.C. Ray's demise^{34t}.

Epilogue

It is time to conclude this write-up by inserting a few quotes on him from his pupils. S.N. Bose: “His saintly life is a beacon light to all who wish to dedicate their lives in the service of humanity^{75a}.” B.C. Guha: “His slogan may be summed up in the words, ‘patriotism, sincerity and hard work. ...Still the star of his life continues to send its beneficent light on the path of our nation. Let us be guided by it in our onward march to build the India of his dreams, India – which he loved so truly and so well^{75a}.” His anonymous student: “In a word, the noblest ideas of the East and the West meet in him and are harmoniously blended^{34u}.”

Swami Vivekananda said: “What my nation wants is pluck and scientific genius^{75c}.” Both of these qualities were present in P.C. Ray. If we can follow the path shown by Acharya P.C. Ray, India is bound to become a dream-nation of Acharya Prafulla Chandra Ray.

The Lament of a Litterateur

Seventy five years have passed by after the independence of India, but does the present India represent what P.C. Ray expected it to be? The famous litterateur **Pramathanath Bishi** said: “I remember the dignity, polite, amicable, affable human being, with the heart of a Bengali mother. He (P.C. Ray)...was a man of vision, courage and indomitable energy. He is Prafulla Chandra Roy, now a forgotten soul¹⁰⁸.” Remember, a similar concern has been voiced by others as well.

Author's Submission

Some important aspects of the life and work of P.C. Ray could not be accommodated even in this three-part write-up. An inquisitive reader is suggested to go through the six-part article in *Mother India*^{75a-f} and some other important articles not covered here^{109a-e}.

Acknowledgement

I am personally thankful to Subhendu Chattopadhyay, a Member of ISNA, for providing me with some useful information and to Professor Sudhendu Mandal, Editor-in-Chief of *Science and Culture*, for inviting me to write this article and for bearing with me during my three-part journey. □

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Note: References 2, 32, 52, 53a have been repeated here for the convenience of the readers.