



Contribution of Sir P.C. Rây in preparing chemical bombs and explosives for Indian freedom fighters

Rajarshi Ghosh¹

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Abstract

Sir Prafulla Chandra Rây (P.C. Rây) had a pertinent contribution in the preparation and characterization of chemical bombs and explosives for the Indian revolutionaries in British India. His secret but active cooperation in militant nationalism should be respectfully remembered. He had a very good relationship with moderate leaders like Mahatma Gandhi and extremist leaders like Pulin Bihari Das and others. He along with some of his students helped the revolutionaries to understand the proper scientific way behind the preparation, characterization and safe handling of chemical bombs as well as explosives, which in turn paved the way to our long-cherished independence in a very silent way.

Keywords Bombs · Explosives · Indian revolution · Sir P.C. Rây

1 Introduction

Sir P.C. Rây, the patriot-scientist, once declared, "Science can afford to wait but Swaraj cannot" (Ray 1996, p. 228). Moreover, he records, "Although as I have said I did not openly join the political movement yet I could not live quite apart from it" (Ray 1996, p. 229). The reason for not joining politics 'openly' may be of two fold. Firstly, he was serving the British Government in the capacity of a Professor of Chemistry at Presidency College, Kolkata. Secondly, a good number of students were then working under his supervision with Government fellowships. If he was suspected by the British Government for this kind of anti-Government activities both the career of his students and future of his research might have suffered, which was ultimately the suffering of our own country in an indirect way. Sir Rây quoted few lines in his autobiography from a local daily regarding a mass meeting of C.R. Das at Kolkata Town Hall, where he was also present, "Dr. Rây repeated that he felt that there are occasions which demanded that he should leave his test-tube to attend to the call of the country" (Ray 1996, p. 231).

The political involvement of Sir P.C. Rây was nicely described by the noted journalist of *Bande Mataram*

Hemendra Prasad Ghosh in a memoir, "But he (P.C. Rây) was fully aware of the fact that in India methods to attain independence had been as many as three—the constitutional agitation (with its protest, prayer and petition), the physical force movement (with its cult of the bomb and the revolver) and the non-violent non-cooperation movement originated in Bengal to combat the oppression of the indigo planters and adopted by Mohandas Karamchand Gandhi for mass-movement in politics (with *Satyagraha* as its weapon). Acharya Rây lent his support to all these methods and those who had the good fortune to know him intimately cannot but admit that the great scientist had great and unstinted appreciation of the bravery, the determination and the sacrifice of those who adopted the second method to achieve the end" (Ghosh 1962, pp. 173, 174). From this description of Hemendra Prasad Ghosh, it is very easy to understand that Sir P.C. Rây always had sympathy for the revolutionaries, who along with their several firearms like revolver, rifle, gun and bomb came forward to expel the British from India. The dedication of scientists like Stanislao Cannizzaro, Henry Mosley and many others for the cause of their own motherland always inspired him (Ray 1996, p. 228).

It is now historically true that Sir P.C. Rây sympathized with the cult of the bomb (Majumdar 1963, p. 440). He secretly met with the leader of *Dacca Anushilan Samiti* Pulin Bihari Das and agreed to take charge of preparing explosives with some of his trusted students (Majumdar 1963, p. 440). His feelings for these active revolutionaries, a few of them

✉ Rajarshi Ghosh
rghosh@chem.buruniv.ac.in

¹ Department of Chemistry, The University of Burdwan,
Burdwan 713 104, India

were his students also, became transparent in several incidents. One to mention, after the discovery of bomb factory of the Indian revolutionaries led by Barindra Kumar Ghose, Ullaskar Dutt and others by the British police in Muraripukur garden, Kolkata in the year 1911, Sir Rây asked one of his close associates "Have the police been able to arrest all the members of the party" (Ghosh 1962, p. 174)? The Name of Sir P.C. Rây was recorded in the British police documents as 'Revolutionary in the garb of a scientist' (Ray-Chaudhuri 1962, p. 272). It is now established that despite having very strong nominations P.C. Rây was not elected as the Fellow of Royal Society (FRS) because of his anti-British political connections in India (Choudhuri & Singh 2018).

In this present article an attempt has been made to show that Acharya Rây had an important role to play in training revolutionaries in the science of bomb-making and in providing them with a laboratory to prepare chemicals to be used in bombs.

2 Preparation of bombs and explosives in Bengal in British India

As mentioned earlier, the extremist leaders of British India started to use firearms and explosives to fight the British from the front as early as the early twentieth century. In the formative period of this militant nationalism, Bhupati Chakrabarti and Ullaskar Dutt were assigned the work of preparing explosives in Bengal. The former started to prepare bombs on the request of Jatindranath Mukhopadhyay (*Bagha Jatin*) (Mukhopadhyay 1960, p. 103). Ullaskar along with a few of his fellow friends started to prepare explosives at Deoghar (presently in the state of Jharkhand) which was far away from Kolkata (Majumdar 1963, p. 258). The first testing of the explosives in Deoghar had a tragic end. One of the young revolutionaries was dead. Later on, these 'illegal' bomb factories were established in several places of Kolkata which included 32, Muraripukur Road.

Hem Chandra Das, who was a great revolutionary and considered as the *Guru* of the weapons of that fire age of Indian independence, went to Paris (France) for learning the modern mechanisms of bomb-making (Majumdar 1963, p. 258). Such was the expertise of Ullaskar that he, after doing several risky experiments, prepared the explosive *melinite*, which was composed of picric acid (2,4,6-trinitrophenol) and gun cotton (nitrocellulose), before the return of Hem Chandra Das from abroad (Reymond 1953, p. 336). However, on returning to India, Hem Chandra joined Ullaskar and others for preparing bombs with very high explosion powers. In our country, Sir P.C. Rây, the great scientist, having the very in-depth knowledge of several branches of experimental chemical sciences including explosion chemistry came forward and accepted the sacred duty to train the

revolutionaries secretly in preparing and handling bombs. These kinds of proper scientific lessons saved several lives as well as prevented fatal accidents (from an untimely explosion of the bombs) of the dedicated freedom fighters of our country.

3 Contribution of Sir P.C. Rây

Sister Nivedita was very much respectful to P.C. Rây as she was to J.C. Bose. In a letter to Mr. and Mrs. S.K. Ratcliffe (Mr. Ratcliffe was the then Editor of *The Statesman*) Sister wrote, "Curzon meant to destroy the possibility of science. In Bombay and Madras I am told there is none. Here—the presence of JCB (J.C. Bose) and PCR (P.C. Roy) meant that they could not ignore" (Basu 1960, p. 1033). Sister Nivedita was always generous to help the revolutionaries in various ways. She sent a few of them to the laboratories of J.C. Bose and P.C. Rây for learning the mechanism of bomb-making (Reymond 1953, p. 337). Everyday Sir Rây had the habit to go for an afternoon walk. On his return to home, he usually visited his laboratory and roamed about. He knew well that few of the students in the laboratory worked up to late evening. The only problem was that they (the students) used much acids. Sir Rây himself cleaned the blackboard every day (perhaps several formulae of bombs/explosives were written there) and arranged the desks. He never made any comment. Nivedita was extremely thankful to Sir Rây for all these (Reymond 1953 p. 337).

A few more facts are found in the literature. On most of the days P.C. Rây left the keys of the laboratory outside its door purposely as if it was left by mistake. Then, he (Sir Rây) used to come to the laboratory at late night. He checked every laboratory desk. Several formulae of the bombs were written on papers and those were kept under the other papers on his working table. He took all these papers and made necessary corrections on them (Roychaudhuri 2011, pp. 126, 127). One of his favorite students, Satish Dey who was a militant nationalist outside the college premises worked in his laboratory. One day it was announced that Teggart, the police officer was supposed to visit Presidency College. Before that Sir Rây, himself cleaned the desks of Satish and kept the picric acid bottles and fulminate samples aside (Bhattacharya 2015, p. 181). From this fact it can be assumed that the potential explosive mercury fulminate (which is chemically known as mercuric isocyanate) was usually synthesized in his laboratory.

Another interesting story is that Sir P.C. Rây went to the house of Dr Panchanan Neogi once to attend the marriage ceremony of Dr Neogi's son. Dr Neogi was the student of Sir Rây and taught at Rajshahi Government College (now in Bangladesh), Presidency College (Kolkata) and then became the first Principal of Maharaja Manindra Chandra College



(Kolkata). There, in a conversation with Dr Neogi, Sir P. C. Rây told "Do you remember in the year 1905 ... was recovered from your drawer". P.C. Rây indicated small-sized bomb and Dr Neogi supported that (Bhattacharya 2015, p. 208). We have to remember that there was great political turmoil in 1905 as the British Government announced the partition of Bengal.

4 Conclusion

To the best of the author's knowledge and belief very limited literature is available to investigate the exact contribution of Sir P.C. Rây in preparing bombs and explosives for Indian revolutionaries. The reason may be that most of the documents/letters, etc. related to these kinds of anti-Government activities were destroyed to remain safe from the British detectives/police. Sir Rây did not write anything in his autobiography (both in English and Bengali) which was first published in British India.¹ But few of the memoirs and historical accounts as referred to in the present text are possibly the only sources to find the activities and relations of P.C. Rây with the Indian revolutionaries. Not only P.C. Rây but also few other chemists like Rasik Lal Datta (Demonstrator of Chemistry at Presidency College, Kolkata and then Professor of Chemistry at Calcutta University), Ladli Mohan Mitra (Professor of Chemistry at Bangabasi College,

Kolkata), etc. were extremely active in serving the revolutionaries for preparing bombs and explosives (Bagchi 1974, pp. 7, 8). In the proud history of the Indian freedom movement, the silent participation of these scientists should be regarded with great respect and honor.

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¹ P. C. Rây's English and Bengali autobiographies were published in 1932 (volume one) and 1937, respectively.

