

Crusader for the Scientific Temper

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Dr Pushpa Mittra Bhargava passed away on 1 August 2017, aged 89 years. Straddling the period that witnessed the making of modern India, PMB, as we knew him, was very conscious of what directions modernity should take, and of the ethical pre-conditions to embark on the important task of nation building. He never saw himself as a scientist alone but rather as a man of science who would be an architect of and an important voice in the newly independent nation, with a distinctive contribution to make in drawing and realising a vision for the country and its future. And he set upon his task with single-minded diligence and resolve, building long-standing partnerships and charting far-sighted strategies across disciplinary locations and public action for responsible citizenship.

PMB received his PhD from Lucknow University in synthetic organic chemistry at the age of 21, founded the Centre for Cellular and Molecular Biology in Hyderabad and was also responsible for the setting up of the Department of Biotechnology (DBT), in the Union Ministry of Science and Technology in the 1970s. He received the Padma Bhushan in 1986 and the French *Legion d'Honneur* in 1998 and was the vice-chairperson of the National Knowledge Commission during 2005–2007. He was Chairperson of the Sambhavna Trust in Bhopal set up to treat survivors of the Bhopal Disaster—a position he occupied till his death, and was till the end a Life Member of the Council for Social Development, and Chairperson of its Southern Regional Centre in Hyderabad, an institute of advanced research in the social sciences and humanities recognised by the Indian Council for Social Science Research. He was also the founder of Medically Aware and Responsible Citizens of Hyderabad (MARCH) established in 1995, bringing a wide cross-section of medical practitioners in Hyderabad together to commit

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themselves to ethics in healthcare and healthcare administration. This is of course a very short list. Even so, what sets this list of positions PMB held apart is the fact that none of them was a token position to which he lent his name. He was deeply committed to each, and took the responsibility that the position placed on his shoulders with total seriousness, humility and the resolve to make a difference.

With PMB's passing we have lost a rare public intellectual who was committed to building knowledge, institutions, movements, arts and aesthetics, the scientific temper, science, the humanities, democratic governance and resistance strategies. He loved music, the arts and aesthetics—and was a most committed patron of the arts insistent on bringing art, performance and scientific endeavour together in unusually creative ways.

The depth with which he engaged with each of these fields was breathtaking: the connections he was able to make between them, and his sustained, unwavering involvement over decades with issues and concerns that tested the determination and strength of thought and action. PMB believed in ethical dissent and in his practice pointed to the ways in which disagreements and divergent viewpoints could be debated, negotiated and aired publicly, never suppressed.

What is less well known, especially to the post-1990s generation in India, is his commitment to rationalism, atheism and the scientific temper, and his belief that the pursuit of science is inseparable from the propagation of the scientific temper, an endeavour citizens in India, especially scientists, must commit themselves to. PMB believed in walking the talk especially on rationalism and the scientific temper: his sustained emphasis on rationality and the methods of science led to his collaboration with artists, scientists and intellectuals to create the Methods of Science Exhibition in 1975, an idea that sprang from a conversation with Rais Ahmed, then Director of NCERT. This was to be part of the annual National Science Exhibition. This was during the Emergency. In his typically meticulous manner, PMB contacted over a hundred people with expertise in different areas of science, instrumentation, art, photography, film making and student volunteers, and spent the next two years putting together this historic exhibition. The material was ready for display in 1976, and shifted to the Polish Pavilion area of Bal Bhavan, Delhi. Prime Minister Indira Gandhi was to inaugurate the exhibition in April 1977. In March 1977, ironically in a twist, with Indira Gandhi's defeat in the general election owing to the unprecedented abuse of power and state repression, the Methods of Science exhibition had no takers in the Government of India. The Andhra Pradesh government, after some persuasion came forward to purchase the exhibition on 7 August 1978; on the same night, the entire exhibition was stolen and vandalised under the watch of the Janata government and the NCERT, which now had a new director, dragging the irrepressible PMB and his lawyer, the indomitable K. G. Kannabiran, through a long and infructuous court case. In PMB's words,

Apparently they did not want it to be shown anywhere. After all, the method of science is all about questioning, and no totalitarian government wants people to be told that it is their right to question and what the conditions are under which they may exercise this right. [The Government of India] felt... that the Exhibition ... argued against the development of the kind of fundamentalist society that they were working towards in the

country. The Government wanted us to go back 2,500 years in history; the Exhibition impelled you to go forward. (cited in Premanand, 2005, p. 12)

Two other instances come to mind. His questioning of the belief in the immaculate conception of Christ in the 1970s: I learnt a new word in that time from PMB at a rationalists' meet in Hyderabad when I was barely out of school—'parthenogenesis' or asexual reproduction by females without the genetic contribution of a male, as the only plausible scientific explanation and there is no evidence of this possibility in humans. The second was his questioning of the 'divinity' of Satya Sai Baba of Puttaparthi and his claims to rebirth (*The Hindu*, 14 May 2011) as going against all science triggering an unprecedented storm of irate letters (over 300) to the daily's editor, several from scientist-devotees. He remained unruffled and steadfast in his assertions. It is important to assert in our time that the right not to believe, and the right to question the fundamental premises of religious belief cannot be taken away, just as the right to practice religion cannot be taken away. And PMB was a fearless conscientious resister, vocal and vociferous in his opposition to any belief that did not withstand the test of rationality and the scientific temper.

Article 51A of the Indian Constitution says, 'It is a fundamental duty of every citizen "to develop the scientific temper, humanism and the spirit of inquiry and reform"'. PMB made this his life's mission. As a co-founder in 1963 (with Satish Dhawan and Abdul Rahman) of the Society for the Promotion of Scientific Temper he invited citizens to join this society which had as its basic premise that 'knowledge can be acquired only through human endeavours and not through revelation, and that all problems can and must be faced in terms of man's moral and intellectual resources without invoking supernatural powers'. His commitment to this premise was unswerving. In 1981, PMB, along with Raja Ramanna and P. N. Haksar, released the *Statement on the Scientific Temper*, a document which defined his intellectual pursuits right till the end. The argument that the statement had no *programschrift* (one of its major criticisms) does not take away the significance of the pioneering effort to build a consensus on the constitutional commitment to the scientific temper.

Scientific laboratories were not (could not afford to be) ivory towers. A founder of the Association of Scientific Workers in India, of which Jawaharlal Nehru was president, PMB argued that scientists are workers who have a collective interest and pursue a common good and therefore needed to organise themselves into a trade union. And he persuaded the Prime Minister of the country to head the trade union. Associational freedoms, in his view, must be learnt and imbibed by the educated, intellectual elite—scientists especially. An isolated, individualistic pursuit of science could not, in his view, go further than the limits prescribed by individual lives and their specific circumstances.

Particularly in the times we live in today, his conduct in public life—both in terms of the wide canvas he straddled as well as his methods of engagement—holds important lessons for our present and our collective futures.

Importantly, PMB did not see science in India as a purely technical tradition, but rather one that had the potential to synthesise long traditions of humanism

and human values from a plurality of traditions and civilisations, which could be ‘a major contribution to world civilisation, leading to the creation of new values in science’. He marked unique boundaries of science in India through his engagements with campaigns to protect food sovereignty and biodiversity and his vociferous resistance to GM crops, on the one side, and his total and absolute commitment to justice for the victims of the Bhopal disaster, on the other.

At a time when we are witnessing the assertion in national congresses of scientists that mythological figures and stories are evidence of our ‘scientific’ forbears and endeavours, PMB’s far-sightedness in drawing the contours of science and tirelessly reiterating its premises can scarcely be understated. Justice was a goal that had to relentlessly pursued, and the resistance to the combined depredations of state and multinational corporations in the global south was at the core of this pursuit of justice. It was also at the core of his understanding of the methods of science in an unequal world. In the delegitimisation of trade unions under neoliberalism, and the widening chasm between the intellectual elite and ‘workers’, the assertion five decades ago that ‘scientific workers’ must unionise was prophetic and ever more urgent for our times.

In leaving this legacy behind, PMB’s unparalleled work and indefatigable energies should guide us out of the morass of our present predicament into an India that is plural, just, free, tolerant and an India where reason and justice prevail over all else.

An abridged version of this tribute was published as ‘A Champion of Reason’ in The Indian Express, 5 August 2017.

Reference

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