**SLUG: OBITUARY**

**TITLE: Dr P M Bhargava: a combination of humanism and excellence**

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Indian scientists are, by and large, known to lead dual lives – a life in the lab that demands a rigorous scientific attitude of questioning and critical analysis, and a diametrically opposite one in their private sphere where the same scientific attitude is thrown to the four winds without any compunction while engaging in the most ridiculous superstitions. One scientist who stood out as a torchbearer of rationalism and humanism in this milieu of so-called scientists was Dr Pushpa Mittra Bhargava, fondly called PMB by friends and colleagues, who died on August 1, 2017, at the age of 89.

PMB was a visionary, scientist par excellence, writer, thinker, institution builder, administrator, a strong proponent of scientific temper, a great patron and supporter of all forms of art, a proactive citizen who took his duties as a citizen seriously, and above all a fearless man. He loved calling a spade a spade -- even when he was a government scientist-- without a care for consequences.

Widely regarded as the architect of modern biology and biotechnology in India, PMB built and directed the prestigious Centre for Cellular and Molecular Biology (CCMB) in Hyderabad, considered a jewel in the crown of Indian science. Besides being one of the best equipped laboratories in the world, what made CCMB unique and different was its culture of sharing, openness, a 24x7 working institution, a hierarchy-free environment and an emphasis on all round excellence, be it research or the ancillary services. PMB scouted for talent from all over the world to set up the lab and resisted every pressure by recommendation from the highest quarters. A strong voice in favour of basic research, his voice will be specially missed in today’s frontal and severe attack on basic science.

Besides CCMB, he set up the unique Guha Research Conferences (GRC) a prestigious club of biologists in India, more than half a century ago and biologists still vie to be elected to it. The Department of Biotechnology or the Centre for DNA Fingerprinting (CDFD) would not have come into existence if it were not for his efforts. In 1995, PMB set up The MARCH (The Medically Aware and Responsible Citizens of Hyderabad), a voluntary organisation that brought together doctors, hospital administrators, scientists, pharma industry personnel, and social workers to take up medical and health issues in Hyderabad. He was troubled by the practice of rampant kickbacks to doctors and the complete absence of self-regulation. Through the efforts of The MARCH, Hyderabad today has a biomedical waste handling system and the country has in place, a system of accreditation of diagnostic laboratories that ensures reliable test results, besides a draft bill to regulate and supervise infertility clinics that practise Assisted Reproductive Technologies, an area of medicine that has, unfortunately, seen rampant malpractice.

On one hand, PMB had the privilege of interacting with over 60 Nobel Laureates, with more than half of them having visited CCMB, and a large number of them being close friends. On the other hand, he was a people’s scientist. He was ever ready to propagate scientific temper to fight obscurantism, shoulder-to-shoulder with activists of various people’s science movements across the country.

Known as a crusader against irrationality, PMB’s contributions towards the development of scientific temper, education and science policy in the country have also been significant. The famous exhibition on The Method of Science he set up in Delhi in the late 1970s, shook the establishment and threatened those in power. The exhibition was filmed and serialised in several periodicals. It has been estimated that two million people in the country saw this exhibition.

He played an important role in having scientific temper incorporated as a duty of the citizens of our country through Article 51A(h) in the 42nd constitutional amendment in 1976. He was also one of the key architects of the widely known *Statement on Scientific Temper*, issued jointly by a group of liberal, committed and rational high achievers of the country. In his crusade against superstition, he did not spare well-known and powerful godmen, be it Maharishi Mahesh Yogi and his claim of levitation, or Sathya Sai Baba and his third-rate magic. Neither did he spare people occupying the highest positions in the country who openly paid obeisance to charlatans.

PMB’s firm stand against irrational practices such as homeopathy and astrology are well known. His office was vandalised by homeopaths but it did not deter him. When in 2003, vedic astrology was attempted to be introduced in our universities for BSc and MSc degrees, under the BJP-led NDA Government, PMB hauled the government to the Supreme Court. He also threw open challenges to astrologers which they did not ever take.

As a conscientious scientist and citizen, he questioned the commercial release of GMOs (genetically modified organisms), always asking inconvenient questions on safety regulations, its impact on health, the environment, agro economy and food sovereignty.

While scientists clamour to be elected to the three science academies in the country, PMB resigned from all the three because the academies showed little concern for societal issues and had never taken an informed stand on any raging public issue, even against the utter lack of scientific temper among those holding responsible and highly visible positions. He even returned his Padma Bhushan to the government in protest against the growing intolerance, the shrinking space for dissent, and the targeted killings of rationalists in the country.

But PMB was hardly the angry young man. Soft spoken and gentle but firm, he was a connoisseur of the arts, who felt that propagating a “temper of art” was just as important as propagating scientific temper. CCMB, thus became the first government scientific institution in the country to have an art gallery. He collaborated with his friend and legendary painter, MF Husain, to produce two publications that had Husain’s paintings alongside PMB’s writings.

Saddened by the recent happenings in the country, PMB wrote:

“An important biological maxim is that variety leads to evolution and homogeneity leads to extinction. One of India’s greatest strengths is the variety it has in all areas ­­­— be it religion or climate or food or biodiversity or customs or dress. We need to preserve this variety, which the present dispensation wishes to destroy. “

In PMB’s passing away a sane and important voice of reason has gone silent forever.