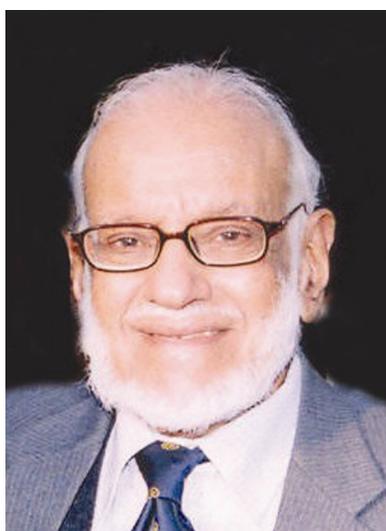


M. G. K. Menon (1928–2016)

During the morning hours on Tuesday, 22 November 2016 Mambillikalathil Govind Kumar Menon passed away at his residence in New Delhi with his wife, Mrs Indumati Menon (née Patel) attending by his bedside. My heart goes out to Indubehn who had been his partner and companion for over 65 years – mere words cannot express our deep feelings of this loss or assuage the pain of separation. Indubehn and their two children, Preeti and Anant Kumar are feeling at this time. Children who called him Goku-dada, friends and fellow scientists, administrators, entrepreneurs, industrialists, ecologists, and indeed innumerable men and women are saddened by this loss. It is only the alchemy of time, during which his great contributions to science and to the nation are recalled repeatedly, that will transform our feelings into a celebration of the remarkable life of achievement and service of Menon. A noble soul has given up the corporeal frame emaciated by decades of toil in the service of humanity – his spirit lives on.

In his own time he was a legend; there was no responsibility he could not bear and there was no impasse that he could not resolve, that he was affectionately called by his friends and colleagues as Magic-Menon, – he could make anything happen, if it was for the general good. He was born at Mangalore (Karnataka) on 28 August 1928, had his early education in Tamil Nadu, and obtained his Bachelor of Science degree studying at Jaswant College, Jodhpur (Rajasthan), affiliated to Agra University. Thence, he moved to the Royal Institute of Science, Bombay and earned his Master of Science working under the tutelage of the famous spectroscopist Tawade, at whose instance he went on to work with Cecil F. Powell (N.L.) at the University of Bristol, England. There he discovered several events in nuclear emulsions exposed to cosmic rays, showing that the same particle decayed into either two or three pions. This discovery caught the attention of Homi J. Bhabha, then the director of the Tata Institute of Fundamental Research (TIFR), Bombay. Bhabha, in his lecture and in the ensuing discussions, emphasized the importance of the discovery in the context of the need for the violation of fundamental symmetries of ‘charge con-

jugation’ and ‘parity’ at the International Conference of Theoretical Physics, Kyoto and Tokyo (1953) – a discovery that stimulated the theoretical work of Nobel laureates T. D. Lee and C. N. Yang. After holding prestigious post-doctoral fellowships in the United Kingdom for three years, Menon joined TIFR, Bombay, at the invitation of Bhabha and integrated himself effectively with the research groups working in the field of cosmic rays. His expertise, energy and enthusiasm added considerably to the productivity of these groups, who were



already very active with programmes initiated by Homi Bhabha. With G. S. Gokhale he rapidly enhanced the capabilities in scientific ballooning; this sub-orbital programme was the precursor for the initiation of the highly successful space programme in India. Along with B. V. Sreekantan and his group he was responsible for the discovery of first interaction of a cosmic-ray neutrino in the deep underground detector at the Kolar Gold Fields, and for setting strong bounds on the lifetime for the decay of protons, violating baryon-number conservation. It is not surprising that he was honoured with the S. S. Bhatnagar Prize and with the election as a Fellow of the Royal Society (London) early in his career.

The close rapport that was established initially between Bhabha and Menon because of their shared interests in *K*-meson physics became progressively deeper as Bhabha observed how Menon

could easily integrate himself into several different groups and play the leadership role not by any authority vested in him but by his focus on the objectives and his desire to serve. As Bhabha’s responsibilities grew with developing the atomic energy programme in India and in channelling international attention towards peaceful uses of atomic energy, progressively greater responsibilities pertaining to TIFR fell on Menon’s shoulders, and he soon became the main force to implement Bhabha’s vision for the growth of fundamental research and a variety of technologies, not only within the portals of TIFR but also in the wider arena of independent India. Upon the untimely demise of Bhabha in an air crash over Mont Blanc in 1966, the responsibility increased multifold on Menon’s shoulders, first as the Director of TIFR, then progressively as the protégé of Bhabha working for development of the infrastructure for science and technology across the country.

Tata Institute of Fundamental Research was one of the most prestigious institutions in the world and its director Homi Bhabha one of the most respected theoretical physicist and a visionary in the forefront of India’s scientific and technological development. As Menon took over the office of directorship of TIFR, and was faced with the challenge of continuing seamlessly with the wide-ranging initiatives Bhabha had taken, he was as yet unknown to the wider community of scientists, technocrats and high-level administrators in the Government of India. Thus he was viewed with some reserve, with the question whether he can fill-in for such a great man as Homi Bhabha. With the advice and strong backing of J. R. D. Tata, support of his scientific colleagues and by the sheer strength of hard work and perseverance, Menon carried on with Bhabha’s initiatives smoothly. His reputation grew steadily not only within the scientific community but also more broadly, including in the higher echelons of the Government of India. He soon became an esteemed colleague who could be called upon to shoulder multiple responsibilities. His limitless energy, attention to detail aided by an excellent memory and a fine sensibility allowed him to function well.

In 1971 he was appointed as the Secretary, of the newly constituted Department of Electronics, Government of India, a position he held concurrently with the Directorship of Tata Institute of Fundamental Research. He set up the infrastructure for policy-making, research and development and administrative control of this department. The department under Menon funded electronics research in strategic areas, founded the National Centre for Software Development, National Informatics Centre, Computer Maintenance Corporation and several State Electronic Development Corporations to promote manufacture of electronics components, instruments and consumer products. The fruits of these efforts are abundantly visible in India today. A lesser man would have faltered under this burden of responsibilities, but the sudden demise of another Indian stalwart, Vikram Sarabhai added further responsibilities – Menon became the interim Chairman of the Indian Space Research Organization and the Director of the Physical Research Laboratory in January 1972. As soon as Menon took charge he started a quiet search for persons of the right qualifications and temperament. Within a year's time we saw Satish Dhawan at the helm as Chairman, ISRO, and U. R. Rao as Director, PRL. It is appropriate here to note that Menon was also responsible in persuading V. Radhakrishnan, the world famous radio astronomer to take up the Director's position at the Raman Research Institute vacated by C. V. Raman's death. We know that each of these institutions have blossomed wonderfully under the new leadership, bearing ample witness not only to Menon's deep perception of the strengths of his fellowmen but also to his gentle persuasive powers which make people willingly dedicate themselves to public service.

Menon's contributions to our nation, which began so spectacularly, moved from crescendo to crescendo; he was appointed in 1974 as the Scientific Advisor

to the Defense Minister with a charge to serve also as the Director, Defence Research & Development Organization. These responsibilities he would take upon in all earnestness, develop an appropriate policy and profile for their growth, find the right persons to carry out the objectives and quietly withdraw leaving them in the forefront, while his advice and support was always available just for the asking. In 1978 he was appointed as the Secretary, Department of Science and Technology, Director General Council of Scientific & Industrial Research, and subsequently as a member of the Planning Commission (1982–89), which accorded him an opportunity to draft the Technology Policy Statement (1983) and play a wider role in the national development. He was the Chairman, Scientific Advisory Committee to the Cabinet (1982–85) and Scientific Advisor to the Prime Minister (1986–89). He served as the Union Minister for Science & Technology and for Education for a year before he was elected to the Rajya Sabha in 1990 for a six-year term.

His contributions were not limited only towards the growth of science and technology in India but also extended internationally. He initiated along with Abdus Salam (N.L.) the formation of the Third World Academy of Sciences that has been responsible over the last three decades in the growth of scientific temper (note 1) and technological growth in developing countries. It is not possible to capture the measure of this great man within the compass of this brief memorandum. A more comprehensive perspective may be gained of the loving, tireless endeavors of Menon by perusing through the two festschrifts and a few articles written about him cited at the end¹⁻⁵.

At a time when a noble personality has passed away let us not merely be silent witnesses and beneficiaries of his incomparable contributions to our nation and rest content in the warmth of affection and love that he bestowed upon us. But

let us take inspiration from the strength and purity of purpose with which he toiled hard for the betterment of his fellowmen, and do our best to broadcast and emulate his values, and serve society the best way we can.

Note

1. '[What we need] is the scientific approach, the adventurous and yet critical temper of science, the search for truth and new knowledge, the refusal to accept anything without testing and trial, the capacity to change previous conclusions in the face of new evidence, the reliance on observed fact and not on pre-conceived theory, the hard discipline of the mind—all this is necessary, not merely for the application of science but for life itself and the solution of its many problems.'

—Jawaharlal Nehru (1946)
The Discovery of India

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