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EDITORIAL

Sivaraj Ramaseshan

*When I go from hence let this be my parting word,
that what I have seen is unsurpassable.
I have tasted of the hidden honey of this lotus
that expands on the ocean of light, and thus
am I blessed – let this be my parting word.
In this playhouse of infinite forms
I have had my play and here
have I caught sight of him that is formless
My whole body and my limbs have thrilled
with his touch who is beyond touch;
and if the end comes here, let it come—
let this be my parting word.*

Rabindranath Tagore, *Gitanjali*
Translation by the author from the
original Bengali, UBSD Publishers, 2003

Sivaraj Ramaseshan, editor of this journal and one of India's most accomplished scientists, died in Bangalore on 29 December 2003, at the age of 80. The end came after a long and valiant struggle against failing health. In Ramaseshan's passing this journal has lost its most devoted champion and Indian science one of its most distinguished practitioners. In a career spanning over half a century Ramaseshan carried out front-line research in physics and materials science. Optics, crystallography, and high pressure physics were among the disciplines where Ramaseshan made decisive and influential contributions. But he was far more than a researcher lost in the technicalities of his chosen discipline. Ramaseshan was a builder of groups, institutions, scientific organizations and academies. He was the prime architect of a movement to enhance the prestige, visibility and content of scientific journals published from India. He was among the foremost popularizers of science in this country. To every sphere of his diverse activities Ramaseshan made a distinctive and lasting contribution.

Ramaseshan was incurably romantic about science. Growing up in the heady days of India's freedom movement and entering research in the early 1940s under the tutelage of his legendary uncle, C. V. Raman, was to make an indelible impact on the youthful Ramaseshan. Many years later, in 1978, while delivering the first C. V. Raman

Memorial Lecture at the Indian Institute of Science he recalled: *'To Raman, scientific activity was the fulfillment of an inner need. His approach to science was one of passion, curiosity and simplicity. It was an attempt to understand. To him science was based on independent thought, combined with hard work. Science was a personal endeavour, an aesthetic pursuit and above all a joyous experience.'* In full measure, these words describe Ramaseshan's approach to science. Ramaseshan was also greatly influenced by two of the great figures of 20th century science, the English crystallographer Dorothy Hodgkin and the astrophysicist Subrahmanyan Chandrasekhar. In 1990, writing in *Current Science* he quoted Chandrasekhar: *'The pursuit of science has often been compared to the scaling of mountains, high and not so high. But who amongst us can hope even in imagination to scale the Everest and reach its summit when the sky is blue and the air is still, and in the stillness of the air survey the entire Himalayan range in the dazzling white of the snow stretching to infinity? None of us can hope for a comparable vision of nature and of the universe around us. But there is nothing mean or lowly in standing in the valley below and awaiting the sun to rise over Kinchinjunga.'* Ramaseshan was thrilled by the touch of science and to the very end it was talk of science and scientists that made him sparkle, even when the ravages of illness had begun to take their toll.

Ramaseshan's academic career began at the Indian Institute of Science, Bangalore, where he worked for his doctoral degree and also as a member of the faculty of the physics department in the 1950s and early 1960s. He was to return nearly two decades later to serve as the institution's Joint Director (1979–81) and Director (1981–84). In the intervening years, he established the physics department at the Indian Institute of Technology, Madras (now Chennai) and the Materials Science Division at the National Aeronautical Laboratory (NAL, presently the National Aerospace Laboratories). The world-class materials program built by him at NAL has been a critical element in the development of indigenous capabilities in aerospace research. His personal research contributions, most notably his early work on anomalous dispersion

methods in crystallography and his later research on condensed matter physics and materials, were characterized by deep physical intuition and a unique ability to see the heart of a problem. But, most remarkably, Ramaseshan was to make the most significant contributions to many institutions, at a time when his formal academic career drew to a close. He collaborated closely with M. S. Valiathan and his colleagues at the Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram in the development of the Chitra heart valve, a triumph of multidisciplinary research in India. He was also closely involved in the successful transfer of technology for blood bag production, developed at this institute. In 1984, Ramaseshan retired from the Directorship of the Indian Institute of Science, to begin a remarkable post-retirement phase.

In 1973, Ramaseshan was the motivating force in launching the physics journal, *Pramana*, published by Indian Academy of Sciences. He noted in an editorial: 'The publication in foreign journals of the major part of the work done in India today is having a deleterious effect on Indian science. Relegating the refereeing of our best scientific work leads to loss of judgement and self-confidence. This process has sapped the inner resources of Indian scientists and, among other things has led them to follow blindly fashions set elsewhere in choosing fields of work'. In its early years *Pramana* attracted some of the best physics papers emanating from India. In 1978, he wrote at length on the problem of scientific journals in India. In a paragraph that will find many echos today, he asked: 'Can our journals help to produce an intellectual ferment so that the highest quality of science is produced in this country?' He added: 'This can be done only if the culture of science is made to percolate deeply into the community. Only then can this metamorphosis take place. Can we help to revive our dying universities? Can we help our bright young students to pursue the excitement of creative science?'

In 1989, Ramaseshan took over the editorship of *Current Science*. This journal, founded in 1932, had an illustrious past as a widely read interdisciplinary science journal. But it had fallen on hard times. Diminished circulation and decreasing visibility in India were problems that Ramaseshan had to contend with. He brought to the task of rejuvenating *Current Science* a remarkable sense of purpose and boundless optimism. As 1988 drew to a close, I entered my somewhat chaotic laboratory not noticing that a student of mine was engaged in conversation with a visitor. She came to my desk a few minutes later to say that there was a senior gentleman waiting for me. This was Ramaseshan. He had conducted a conversation with my student, not revealing that he was a former Director. His mission was to recruit researchers and students to the task of rejuvenating *Current Science*. He charted a course that took this journal from a period of uncertain production and finances to its present state. He was an indefatigable solicitor of manuscripts and financial sup-

port. He wrote at length in the 'In this issue' pages, which were intended to highlight the journal's contents. When the contents were forgettable or obscure, Ramaseshan digressed, drawing on his formidable memory for people and events. He organized special sections and wrote persuasively and entertainingly on men and matters. He had a ringside view of the development of science in India over a period of more than half a century and at times he produced incisive portraits of this country's most influential scientists – Raman, Chandrasekhar, Harish Chandra, Bhabha, Sarabhai, Mahalanobis among them.

In reflecting on the life and times of Ramaseshan, I am drawn inevitably to two of his great contemporaries, G. N. Ramachandran (1922–2001) and Satish Dhawan (1920–2002). For a brief period, in the transition years between the 1970s and 1980s, all three were at the Indian Institute of Science. They were three entirely different personalities, but they all bore the indelible stamp of greatness, collectively contributing to the growth of our science and our institutions. With Ramachandran, Ramaseshan shared deep interests in optics and crystallography. With Dhawan, he shared an abiding commitment to building and fostering the institutions on which this country's progress depends.

When C. V. Raman died in 1970 he left three institutions: the Raman Research Institute, the Indian Academy of Sciences and the Current Science Association—all of which he had presided over for long periods of time. In the years that followed, Ramaseshan, more than anyone else, ensured that these organizations acquired a new and distinctive character, which would ensure a bright and robust future. Ramaseshan served on the councils and governing bodies of these organizations for long periods of time, with great devotion to their welfare. In early 1985, Ramaseshan presided over the Academy's golden jubilee meeting where he spoke of quasi-crystals and Penrose tiling. It was a memorable event at Bangalore's Chowdiah Hall, with Subrahmanyam Chandrasekhar, fresh from his Nobel Prize, reflecting in his inaugural lecture on 'The Pursuit of Science: its Motivations' followed in the evening by a concert by the incomparable M. S. Subbulakshmi.

Ramaseshan was an outstanding lecturer and conversationalist. His self-deprecatory humour and ability to laugh at himself were engaging. A photograph of the audience during his farewell speech when he retired as the Director of the Indian Institute of Science shows a large section of the audience laughing; clearly even formal occasions were lightened by his wit. Sivaraj Ramaseshan lived a full life contributing greatly to his surroundings. Those who knew him personally were immeasurably enriched. We share with his family a great sense of loss. We shall miss him and cherish our memories of him.

P. Balaram