

Contemplating Raman

"If I shut my eyes, I can still see as in a dream the great concert hall of Stockholm, decorated with flowers and flags, filled with more than 4000 thousand people, the King and the Queen of Sweden and the royal family occupying the first seats..."

Lady (Lokasundari) Raman

It was indeed a very special and proud day—not just for the Ramans or the scientific community in India—but for everyone in the entire subcontinent. On December 10, 1930, when the King shook his hand and presented the Nobel Medal, Prize and Diploma, Sir Chandrasekhara Venkata Raman became the first Asian ever to win the prestigious honour in Science.

Minutes earlier, in the presentation speech, Dr H Pleijel, Professor of Electro-Technics, University of Stockholm and Chairman of the Nobel Committee for Physics of the Royal Swedish Academy of Sciences had spoken about Raman's discovery in glowing terms. "The Raman effect has opened new routes to our knowledge of the structure of matter and has already given most important results."

Lady Raman's recollection of the Nobel banquet at Town Hall on the evening following the prize-giving ceremony was also crystal clear. "The Nobel Laureates sat at the royal table... In replying to the toast, Sir Raman spoke of the glories of ancient India. He spoke of the great renunciation of Buddha, the royal ascetic and world teacher, and of his message of non-violence and love which embraced all living creation."

Edward Savage Crocker, Charge d'affairs of the US in Sweden to the US Secretary of State in Washington, reporting on the 1930 Nobel ceremony in which two US citizens had also been awarded, wrote as follows—"The brief addresses made by Dr Carl Lansteiner (winner of the Prize for physiology) and Mr Sinclair Lewis (literature) at the banquet... were both simple in expression but adequate. In this connection it may be interesting to remark that of the prize winners the day was easily carried however by Sir Venkata Raman, the Indian prize winner, who, upon returning to his seat on the platform after receiving his prize from the hand of the King was visibly moved by his emotion and sat with the tears streaming down his face.

"At the banquet that evening his speech was a mas-

GIRIDHAR KHASNIS shares some details of the life of C V Raman and the credo he lived by— 'Science, more science and still more science'.

terpiece of eloquence, which called forth tremendous applause from a banquet-wary gathering not noted for their responsiveness. Less appreciative was, perhaps, the British Minister, who sat one place removed from me, who was forced to listen with equanimity to, Sir Venkata Raman's reference—brief

In a long and distinguished career, Sir Raman published papers on a wide variety of subjects. "My first scientific paper was published ... when I was just 18 years", he once told a correspondent in US. "I am now over 75-years-old and do not recollect any time during this long period when I took my mind off from my scientific interests."

Many international awards, honours and doctorates followed his scientific achievements. He was elected as the Fellow of the Royal Society, London in 1924 and knighted by the British Government in India in 1929. Curzon Research Prize (1912), Woodburn Research Medal (1913), Matteucci Medal—Societa Italiana Della Scienza, Rome (1928) and Hughes Medal of Royal Society, London (1930) were some of the important honours which preceded the Nobel Prize. The Franklin Medal in 1941 and Lenin Prize, USSR in 1957 were among the many honours he gathered

later. The President of India decorated him

with Bharat Ratna, the highest award in the country in 1954.

The discovery of the Raman Effect and the consequent Nobel Prize for his work "on the diffusion of light and for the discovery of the effect named after him" were undoubtedly the brightest feathers in Raman's cap. One might recall that amongst those who nominated him for the Prize were such luminaries as Lord Ernest Rutherford, Neils Bohr, Louis de Broglie, Charles Fabry, and Eugene Bloch.

Feted by luminaries

"The discovery of the Raman Effect is a saga of a single-minded man pursuing the holy grail with a stamina and persistence never before or since seen in this country," said noted scientist, S Ramaseshan (who also happened to be Raman's nephew).

Lord Rutherford observed that "the Raman effect must rank among the best three or four discoveries in experimental physics in the last decade; it has proved and will prove (to be) an instrument of great power in the study of the theory of solids."

Albert Einstein showed his admiration saying—"C V Raman was the first to recognise and demonstrate that the energy of photon can undergo partial transformation within matter. I still recall vividly the deep impression that this discovery made on all of us..."

Two instances are often quoted to illustrate Raman's own supreme confidence about his discovery winning the coveted award. As early as in 1925, he wrote to G D Birla, the industrialist and friend of Gandhi, about the need for funds to acquire a spectrograph: "If I have it, I think I can get the Nobel Prize for India," he told Birla. This was five years before he actually won the Nobel Prize!

The second incident which is even more astonishing occurred in 1930 itself. Raman bought two steamship tickets to Stockholm (for himself and his wife), as early as in July though the prizes were to be announced formally only in November!

Inspiring role model

Looking back at his life, one cannot but marvel how Raman steadfastly pursued his scientific goals overcoming diverse challenges and dreadful vagaries of life. Who could have ever imagined the second of the eight children of a humble school teacher, born in a small village near Thiruchirapalli in Tamil Nadu to scale the peaks of scientific and intellectual achievement?

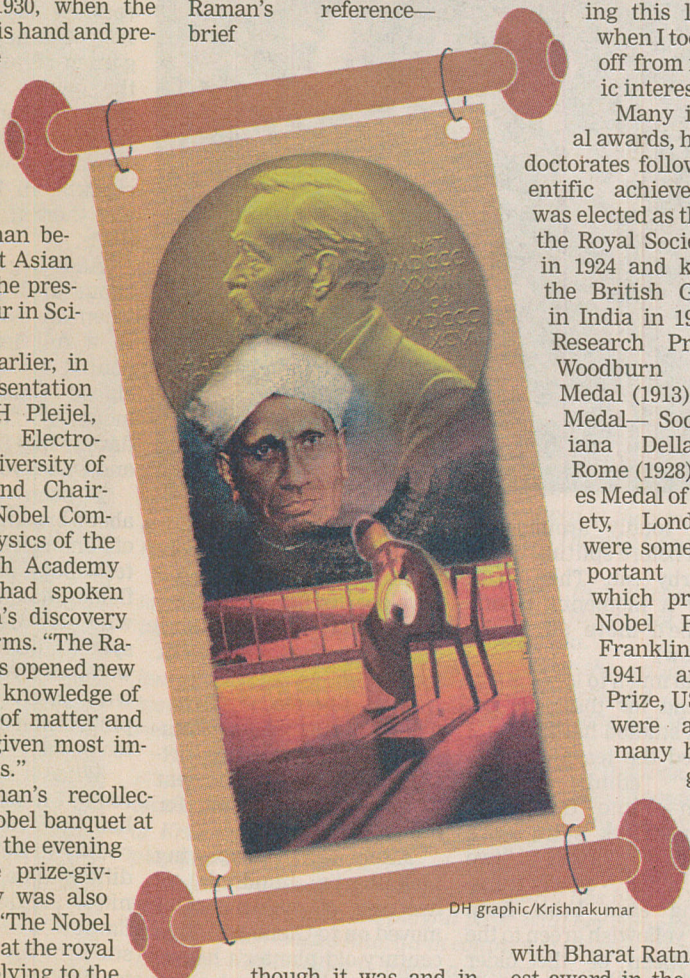
What really motivated the young man to abandon the life of comfort offered by a Government job and choose a vocation of sweat, struggle and uncertain future?

How does one comprehend this genius who, armed only with an intuitive power and a set of most basic instruments, astounded the scientific community world over by his path-breaking discoveries?

What was the secret of his energy which could take on all the trials and tribulations and still make him enjoy the pursuit of science "as an aesthetic and joyous experience"?

What could one say about the stirring remark he made (in 1953, when the Silver Jubilee of the discovery of Raman Effect was being celebrated) that it was the poverty and the poor laboratories that gave him the determination to do the very best he could?

Today, as we bemoan the decline of pure science, scientific temper and research among our students and academia, Raman's life stands as an outstanding and inspiring model of someone who courageously and single-mindedly committed himself to those very factors, till he breathed his last (on November 21, 1970, at the age of 82).



DH graphic/Krishnakumar