Sir C. V. Raman and the story of the Nobel prize

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In 1930, C. V. Raman was the first ‘non-white’, Asian and Indian to receive the Nobel prize in physics for his work on scattering of light and discovery of the Raman effect. The documents were obtained from the Nobel Committee connected with the proposal and selection of C. V. Raman for the Nobel prize and the results of the studies are reported in this paper.

The Nobel prize is one of the prizes known to a great part of the non-scientific public and is considered as the highest honour to be awarded to scientists. A short life sketch of the founder and the foundation of the Nobel prize is included in this article. The statutes of the Nobel Foundation (SNF) which were approved by the Crown on 29 June 1900 had been decreed by the Swedish Government on 27 April 1905. The rules and regulations quoted here are taken from these statutes.

Raman received the Nobel prize in a record time of two years after his prize-winning discovery. Several questions have been raised about not sharing of the prize by Raman either with his colleagues or the Russian scientists. It will be shown here that it was not in Raman’s hand to take this decision. The reasons for these are elaborated in this paper.

Chandrasekhara Venkata Raman (1888–1970)

India’s only Nobel Laureate and the first Asian to be awarded the Nobel prize for physics, C. V. Raman was born on 8 November 1888 in Madras. Later, the family moved to Visakhapatnam, where his father was appointed a lecturer. Raman was a brilliant student. In 1907, he joined the Financial Civil Services, as an Assistant Accountant-General in Calcutta.

In his spare time, Raman started working on some problems in the field of acoustics at the Indian Association for the Cultivation of Science, founded by Maharaja Lal Sare J (1833–1904) based on the model of the Royal Institution in London. For nearly ten years, he worked independently and established his reputation as a scientist in India as well as in Europe. In 1917, he was appointed professor at the University of Calcutta. His first trip outside India was to Oxford in 1921 to represent the University of Calcutta.

During his voyage, he conducted some experiments and published a note in Nature entitled ‘The Colour of the Sea’. It was a generally held belief that the blue colour of the sea is due to the reflected sky-light as well as due to absorption of the light by the suspended matter in the water. Raman showed that the blue colour of sea is independent of sky reflection as well as absorption, but rather it is due to the molecular diffraction. These initial experiments opened up a new field of research in Calcutta. Further work on the scattering of light led to the discovery of the Raman effect in 1928. The effect does with the change in the frequency of the monochromatic light after scattering. The spectrum of the scattered light gives clues about the molecular structure of the material under study, thereby helping to understand its properties.

The list of honours bestowed on Raman for his scientific findings is long. However, in this paper we have restricted ourselves to a discussion of the reasons for his being awarded the Nobel prize, as well as some of the questions that have been raised on his receiving of this award. A short biography of the founder of the Nobel prize has also been included.

Alfred Bernhard Nobel (1833–1896)

Alfred Nobel was born on 21 October 1833 in Stockholm, Sweden. His father, Emmanuel Nobel, was an engineer who built bridges and buildings. In connection with this, he experimented with different techniques for blasting rocks. In 1837, he had to declare himself bankrupt. He left Stockholm and moved to Russia. In 1842, the rest of family joined him in St. Petersburg, where Alfred and his brothers were tutored privately till 1850. After the Crimean War (1853–1856), once again, Emmanuel Nobel had to declare himself bankrupt and he returned to Sweden in 1859.

In Paris, Alfred Nobel worked in the private laboratory of a famous chemist T. J. Pelouze, and came in contact with an Italian scientist, A. Sobrero, an inventor of highly explosive nitroglycerine. This idea was extended further by Alfred Nobel to conduct experiments under controlled conditions. After a long period of experimentation he was able to turn liquid nitro-glycerine into a dudely explosive and patented this material as dynamite in the year 1867. He also invented a detonator which could be ignited with a fuse. These inventions helped to reduce the costs for drilling tunnels, building canals and other construction works.

At the end of his life, he had as many as 355 patents. Some of his industrial enterprises still exist, e.g. Imperial Chemical Industries, UK; Dyno Industries, Norway, and AB Bofors, Sweden.

Through his skill as industrialist, and his number of patents he became one of the wealthiest men in the world. Alfred Bernhard Nobel died in Italy on 10 December 1896. This day is taken as the Nobel prize ceremony day to honour the inventor.

The last WIIS - The Foundation of the Nobel prize

The Nobel Foundation is established under the terms of the Will of Alfred Bernhard Nobel, drawn up on the 27 November 1895, which in its relevant parts runs as follows: If the whole of my remaining realizable estate shall be dealt with in the following way: the capital, invested in safe securities by my executors, shall constitute a fund, the interest on which shall be annually distributed in the form of prizes to those who during the preceding year, shall have conferred the greatest benefit to mankind. The said interest shall be

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