



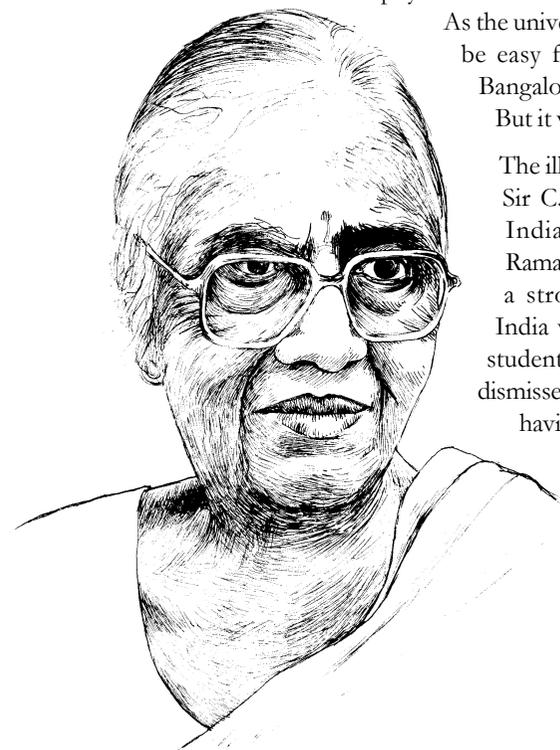
Kamala Sohonie was the first Indian woman to get a PhD in a scientific discipline. She carried out detailed biochemical studies on three major groups of food items consumed by the rural poor and established their nutritive values.

Kamala was born in 1912. Her father Narayanrao Bhagwat and his brother Madhavrao were distinguished chemists. They were amongst the first to pass out from the Indian Institute of Science, Bangalore. Kamala did her BSc, with physics and chemistry from the Bombay University.

As the university topper she thought it would be easy for her to get admission in the Bangalore institute for further research. But it wasn't a cakewalk.

The illustrious scientist Nobel Laureate Sir C. V. Raman who established the Indian Institute of Science (IISc), Raman Research Institute (RRI) and laid a strong foundation for journals in India was dead against having women students. So in 1933, Raman summarily dismissed Kamala's application despite her having topped the university merit list!

Kamala was not the one to be cowed down. She confronted Raman who later relented.



After her *satyagraha* in Raman's office Kamala was admitted on probation – with a rider – that her presence should not prove a disturbance to the male researchers! Kamala was deeply hurt. But she had no choice but to accept.

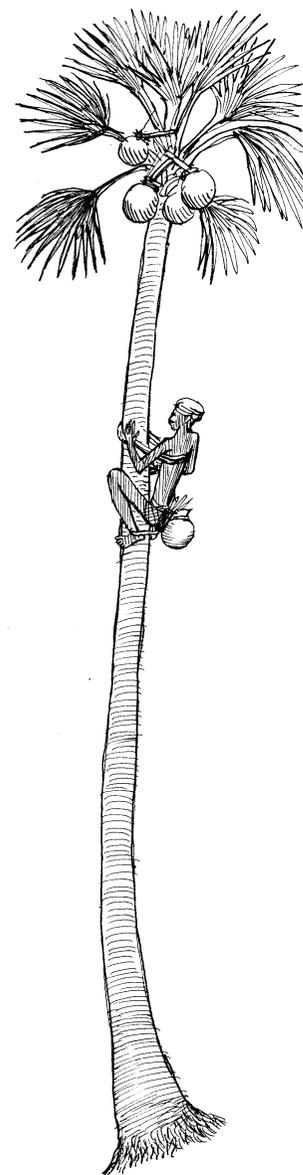
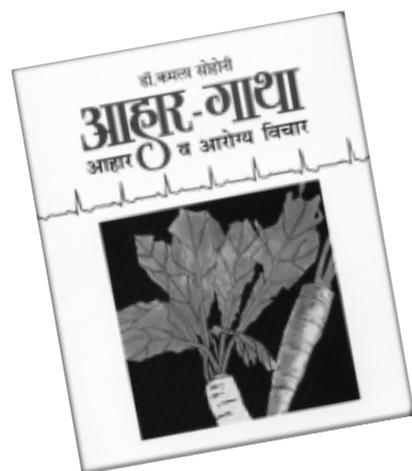
Kamala was to later recount. *“Though Raman was a great scientist, he was very narrow-minded. I can never forget the way he treated me just because I was a woman. Even then, Raman didn't admit me as a regular student. This was a great insult to me. The bias against women was so bad at that time. What can one expect if even a Nobel Laureate behaves in such a way?”*

After a year Raman was satisfied with Kamala's sincerity and allowed her to do regular research in biochemistry. From then on he started admitting lady students to the institute. This was a landmark victory for Kamala. Her struggles made life considerably easier for other aspiring women scientists.

At the IISc, Kamala worked very hard under her teacher, Shri Sreenivasayya – who had an abiding influence on her. He encouraged her to read the works of great masters in biochemistry and even to correspond with them. Here she worked on proteins in milk, pulses and legumes, which had important implications for malnourished India. In 1936, as a graduate student, she was the first person to work on pulse proteins. She submitted her research to the Bombay University and received her MSc degree. She then went to Cambridge University and first worked in the laboratory of Dr Derik Richter who offered her a spare table to work during the day, on which he himself slept at night.

When Dr Richter left to work elsewhere, Kamala continued her work under Dr Robin Hill, on plant tissue. While working on potatoes she found that every cell of a plant tissue contained the enzyme ‘cytochrome C’ which was involved in the oxidation of all plant cells. This was an original discovery which embraced the entire plant kingdom.

Her dreams to work with great masters soon materialized when she got two scholarships. The first one was in the Sir William Dwan Institute of Biochemistry at the Cambridge University with the



*Neera, also called Sweet Toddy or Palm Nectar is a sap extracted from inflorescence of various species of Toddy palms. It is sweet, oyster white, and translucent like water. It is widely consumed in India. It is highly nutritious.*

Nobel Laureate Prof. Fredrick Hopkins. Here she worked in the areas of biological oxidation and reduction. The second scholarship was an American travelling fellowship which enabled Kamala to meet eminent scientists in Europe.

Kamala sent a short thesis describing her finding of ‘cytochrome C’ in respiration of plant tissue, to Cambridge University for her PhD degree. Her entire PhD – research and writing took only 14 months and consisted of just 40 typed pages! She was the first Indian women to get a PhD in a science discipline!

In 1939 she returned to India, and worked as the head of the newly opened Department of Biochemistry at the Lady Hardinge College, New Delhi. Later she became the Assistant Director of the Nutrition Research Laboratory, Coonoor. Here she researched on the effect of vitamins. In 1947, she married Sri M. V. Sohoni, an actuary by profession and moved over to Bombay.

In Bombay she joined the newly opened Biochemistry Department at the (Royal) Institute of Science. She inspired her students to do relevant research. Many of her research students later became distinguished scientists. Kamala along with her students carried out detailed biochemical studies on three major groups of food items consumed by the rural poor and thus established their nutritive values. These studies involved leguminous proteins, trypsin inhibitors and other compounds which reduce the digestibility of Indian legumes, *Neera*, *palm gur* and *palm molasses*, and *dhanata* paddy flour—formed during milling and polishing rice. The subjects of her research were of great relevance to Indian societal needs as these food items were consumed by the poorest people. She started her pioneering work on *Neera* at the suggestion of the first Indian President Dr. Rajendra Prasad.

She advised the Aarey Milk project on improving the quality of their products. The introduction of *Neera* in the diet of tribal malnourished adolescent children and pregnant women caused significant improvement in their overall health. Kamala Sohonie received the President's Award for her pioneering work on the nutritional value of *Neera*.

CONSUMER GUIDANCE SOCIETY OF INDIA



शास्त्र सेवा युद्धा संतोष

She was an active member of the Consumer Guidance Society of India (CGSI) where she worked with double vigour. In 1982-83 she was elected President of the CGSI and wrote many articles on consumer safety for their magazine *Keemat*.

Though she was very happy with her research work, Kamala was quite distressed with the jealousies and politics at the Institute where the Directorship was denied to her for many years. She attributed her successful scientific career to her father, teacher— Sreenivasayya and her loving husband.

When she finally became the Director, Dr Derik Richter - her first guide at Cambridge, remarked that she, *“made history by being the first lady Director of such a big science institute.”*

Kamala Sohonie's life symbolized the struggle waged by the pioneering Indian women scientists. Brilliance and family support alone did not ensure a woman's entry into male dominated science. When Dr Satyavati – the first woman Director General of the Indian Council of Medical Research (ICMR) learned of Kamala Sohonie's struggles and her work she decided to make amends. She invited Kamala, who was then 84 and felicitated her in an impressive ceremony in New Delhi. Kamala Sohonie passed away in 1998, at the age of eighty six.