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## The scientist lady

Kamala Sohonie  
(by Vasumati Dhuru)

**K**amala Sohonie was a quiet, unassuming person. A woman of few words. To look at her one would think that the stream of her life also must have been quiet, easy, uneventful. It was not so, she had many hurdles to cross. Many rapids to pass, before she could be known as a 'Woman in Science'. That too when she had full support from her family.

Little Kamala (Bhagwat) was very fat. She had an uncle who was a renowned chemist and also very fat. So the young fat girl decided that she was destined to be a renowned chemist. Her father Narayanrao Bhagwat and his brother Madhavrao were distinguished chemists too. They were among the first to pass out from (Tata) Institute of Science, Bangalore. Therefore after passing her B.Sc (physics and chemistry) from Bombay University and having stood first (in first class) in that exam, she thought that doing research work at that famous institute was a matter of course. She then applied for admission there and received a prompt refusal. The reason cited being that she was a woman. The illustrious director of the institute, Sir C.V. Raman, Nobel Laureate, did not think a woman scientist, to be research material!

Kamala refused to accept this refusal based on gender bias. A firm believer in Mahatma Gandhi, she decided to do Satyagraha

in Raman's office, till she was admitted. Prof. Raman granted her admission on condition that for one full year she would be on probation; meaning that she could work but that work would not be recognized until the director was satisfied about its quality and also that her presence did not distract his male researchers from their work. Kamala accepted these terms, but one can only imagine her indignation at them. The first hurdle in her pursuit of science was crossed (1933).

At the Institute of Science, Bangalore, she worked very hard under her teacher, Shri Sreenivasayya. He was very strict, demanding and at the same time eager to impart knowledge to deserving students. After observing her for a year, Raman was satisfied about her sincerity and discipline. She was allowed to do regular research in Bio-chemistry. He was impressed enough to admit lady students to the institute from then on. This was another victory for Kamala, and through her for other aspiring Indian women scientists.

Here she worked on proteins in milk, pulses and legumes, which in fact had important implications for nutritional practices in India. In 1936, Kamala, then only a graduate student, was the first person to work on pulse proteins. She submitted her research to Bombay University and received her MSc degree. She went then to Cambridge University and first worked in the laboratory of Dr Derik Richter who offered her a spare table to work during the day, where he himself would at night when she left.

When Dr Richter left to work elsewhere, Kamala continued her work under Dr Robin Hill, who was doing similar work, but on plant tissue. Here, working on potatoes she found that every cell of plant tissue also contains the enzyme "cytochrome C" and that cytochrome C is involved in oxidation of all plant cells. This was an original discovery embracing the entire plant kingdom.

Kamala sent a short thesis describing her finding of cytochrome C in respiration of plant tissue, to Cambridge University for her PhD degree. Her PhD degree is remarkable in many ways. Her research and writing of the thesis was done in less than 14 months since arriving at Cambridge. It consisted only of 40 typewritten pages. Those of others sometimes contained more than

thousands of pages. She was the first Indian woman “on whom the title of PhD degree was conferred”.

She was keen on returning to India, and started work at Lady Hardinage College, New Delhi, 1939 as professor and head of the newly opened Department of Bio-chemistry. Later she was Assistant Director of the Nutrition Research Lab, Coonoor. There she conducted important research on the effect of vitamins. However, due to lack of clear avenues for career advancement, (which need not be attributed to gender bias but the possibility cannot be ruled out), she started thinking of resigning. Around this time, she received a proposal of marriage from Mr M V Sohonie, an actuary by profession. She accepted the proposal and moved to Mumbai in 1947.

The Govt of Maharashtra invited applications for the post of Professor of Bio-chemistry in the newly opened Bio-chemistry Department at their (Royal) Institute of Science, Bombay. Kamala applied and was selected. During her tenure at the Royal Institute, she worked with her students on nutritional aspects of Neera, pulse and legume proteins as well as Dhan (paddy) atta. All the subjects of her research were very much of relevance to Indian Societal needs. In fact, her work on Neera was started on a suggestion from the then Rashtrapati Dr Rajendra Prasad.

Further, she also advised the administration of the Aarey Milk project on improving the quality, one can count names of many distinguished scientists among the list of students she trained. Her work conducted by her students showed that introduction of Neera in the diet of tribal malnourished adolescent children and pregnant women, caused significant improvement in their overall health. She made her students (different batches) do this work on samples of neera taken from all over the country. They worked for 10-12 years and always got the same results. Kamala Sohonie received the Rashtrapati Award for this work.

Even here at the Institute of Science, Bombay, she was kept away from her rightful position as Director of the Institute for four full years (maybe due to internal politics). When finally she was given that post, 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.”

In conclusion, Kamala Sohonie lived a full life. She was successful in her chosen career, as a research scientist, and as a teacher.

When Dr Satyavati, then Chairperson of Indian Council of Medical Research (infact the first woman DG of ICMR) learned of Kamala Sohonie 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. Ironically, at this ceremony, Kamala Sohonie collapsed. What better end could one wish for?