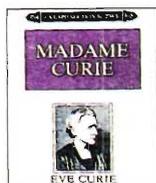


Madame Curie

C S Yogananda



Madame Curie
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Marie Sklodovska-Curie's basic instinct was to fly from publicity and she devised ingenious ways to avoid reporters, interview seekers, autograph hunters, ... , which the Noble Prize for Physics, shared with Henri Becquerel and Pierre Curie, in 1903 brought in its wake. Quickly wrapping up the conversation which an energetic reporter managed with her after tracking her to a cottage in a remote village she said '*In Science one must be interested in things and not in persons.*' She followed this dictum sincerely and so her own life was not known to even her close friends/students. It is in this context that a biography of Madame Curie by her daughter Eve Curie-Labouisse assumes significance. Thanks to the intimacy which is a daughter's privilege, Eve managed to extract details of Marie's life and has recorded it. Of course, such proximity of the author to the subject of her biography makes it difficult for her to be dispassionate and objective, so to an extent her account may suffer. Indeed, the early part of Marie's life till the death of Pierre Curie in 1906 when Eve was 2 years old, which Eve pieced together from her conversations with Marie herself

and other members of her family seems to suffer the least on this count, possibly because here Eve herself was a non-participant observer. But the last part seems to present a narrower view of Marie's life and activities.

Marya (Maria) Salomea Sklodovska was born on November 7, 1867, to Bronislawa Boguska-Sklodovska and Wladislaw Sklodovska, both belonging to impoverished minor nobility. Being the fifth and youngest child she had many nick names, among which Manya was the most popular. Wladislaw was a professor of mathematics and physics at a gymnasium (European equivalent of Higher Secondary School) and Bronislawa was a pianist, singer and teacher. At that time Poland was under the oppressive rule of the Russian Tsars.

Catastrophes struck Sklodovska's household one after the other. Soon after Manya was born her father changed his job due to which her mother had to give up her job as a teacher and soon she contracted tuberculosis. In 1873 Wladislaw was demoted and his salary was reduced since he was not servile enough towards his Russian bosses. Manya's eldest sister, Sophie, died of Typhus in January 1876 and her mother Bronislawa succumbed to tuberculosis after a long illness in May 1878. Thus once happy and contented household was reduced to a family of a father without much income to look after his three daughters and a son. In spite of these hardships the children fared brilliantly in their schools. Manya finished her secondary studies in June 1883 with a gold medal emulating Joseph and Bronya.

Joseph and Bronya wanted to study medicine while Hela was interested in singing and music. Marie, who had been fascinated since her childhood by the physics apparatus that her father had kept in the house, wanted to study physics and mathematics. Unfortunately at that time Polish universities did not admit girls and the only option available to those who wanted to study was to go to other places in Europe, principally Paris. So Bronya and Manya had to go to Paris if they wanted to continue their education. But where was the much needed financial support? They gave private tuitions and started saving money for their study in Paris. Also, Bronya being the eldest girl in the house had to look after the household as well. As time went by it became clear to the two sisters that at the rate they were saving it would not be possible for both to go to Paris and study. Manya hit upon a brilliant plan which was an act of supreme sacrifice – she would take up the job of a governess, Bronya would go to Paris and enroll herself in the medical school and would receive support from her father and Manya; when she finishes her studies and starts practising she will support Manya in Paris.

After initial protests Bronya accepted the plan and left for Paris in 1885 while Manya took up the job of a governess. Promptly enough in March 1890 Bronya wrote to Manya inviting her to stay with them (she had married and her husband was also a doctor) and study in Sorbonne. But it was seven years since Manya had been away from studies and though she had gamely tried to keep at

mathematics and physics in correspondence with her father the dreary job of a governess had dulled her desire to study science. So she wrote back to Bronya refusing her offer: *Dear Bronya, ... I dreamed of Paris as of redemption, but the hope of going there left me a long time ago.* But luckily she returned to Warsaw soon after and got opportunities of working in a makeshift laboratory which rekindled her desire and she left for Paris in late 1891 and enrolled in Sorbonne as *Marie Sklodowska*. Here I am reminded of a parallel in Raman's life. He had joined the Accountant General's office soon after his studies and may have been lost to science but for the contact with the Indian Association for Cultivation of Science in Calcutta. This kept alive his desire in science and when an opportunity of shifting to academics was offered he jumped at it.

With a single minded devotion she pursued her studies while leading a very difficult life on forty rubles a month. In 1893 she graduated in physics topping her class and returned to Poland. But she was awarded the 'Alexandrovitch Scholarship' which allowed her to go back to Sorbonne and in 1894 she took second honors in mathematics.

Most important event during her second stay in Paris was her meeting with Pierre Curie in the beginning of 1894. Attracted to this young lady who matched his devotion to science Pierre fell in love with Marie but she took her time in reciprocating it as that would involve not returning to Poland after her studies as she had planned. Finally, science and Pierre won and they were married on July 26, 1895.



She passed exams which qualified her to teach in secondary schools and continued to work in Pierre's laboratory now and then. They had their first daughter, Irene on September 12, 1897. Towards the end of that year Marie started thinking about the next step in her career, doctor's degree. She and Pierre started discussing possible topics for the degree and converged upon Becquerel's discovery of 'Uranium Radiation' in the beginning of 1896. Marie was to later coin the term *Radioactivity* for this radiation. What followed is a glorious chapter in the history of science (described in the *Article-in-a-box* in this issue) which culminated in the discovery of Polonium and Radium. This brought two Nobel Prizes to Marie, for Physics in 1903 along with Pierre and Becquerel, and for Chemistry in 1911. Curiously, Marie was not nominated in 1902 for the Nobel Prize along with Pierre Curie and Becquerel. Mathematician Mittag-Leffler who was a member of the nominating committee wrote to Pierre advising him of the situation. Pierre wrote to the Swedish Academy stating that a Nobel Prize for research in radioactivity that failed to acknowledge Marie's pivotal role would be a travesty. So the mistake was rectified and Marie was nominated immediately.

Marie gave birth to their second daughter, Eve, author of this biography, in 1904. On April 19, 1906 Pierre Curie was killed in a street accident. Life after she was widowed became very harsh for Marie. The French academic community did not take kindly to the Polish girl who was making great discove-

ries and winning honours. Things took a turn for the worse when the Langevin affair broke out. Langevin was a brilliant pupil of Pierre and his marriage had not been an happy one. Under the circumstances it was natural, because of their common interest in science which drew them together, that they fell in love with each other. Things came to a head when Langevin's wife started proceedings for legal separation. This did lot of damage to the public image of Marie which lead to public protests and mob attacks on their house. But to the credit of Marie and Langevin they managed to come out of the incident honourably. This incident is missing from Eve's biography and so one is left to wonder, as I was, as to the reason for such public demonstration which is described in the book.

Marie and Pierre Curie could have patented the process of extraction of radium which



Marie and Pierre Curie

they invented and amassed a fortune as its possible use in curing cancer became known. When Pierre explained the situation and asked Marie if they should go for it her reply was “It is impossible. It would be contrary to the scientific spirit.” Nothing could lure Marie away from the path of science. The Nobel Prize money received was spent not for personal property but for gifts: “to Polish students, to a childhood friend of Marie’s, to laboratory assistants, to a Sevres girl in need,” Most touching was her remembering a poor woman who had once taught her French back in Poland. The teacher was from France but who had migrated to Poland in search of job and was too poor to visit the land of her birth again. Marie paid for her trip, received and looked after her in her house.

When she became a widow she had to decide on the attribution of the gram of radium which they had extracted, which was her private property now. But, “Against the advice of Dr. Curie (Pierre’s father) and of several members of the family council, she decided, sharing the views of him who was no more, to make her laboratory a gift of this precious particle, which was worth more than a million gold francs. In her mind, if it was inconvenient to be poor, it was superfluous and shocking to be very rich. The necessity of her daughters to earn their living later on seemed healthy and natural to her.”

She was fortunate enough to see her and Pierre’s work continued by their daughter and son-in-law, Irene Curie-Joliot and Frederic Joliot; but not enough to see them

win the Nobel Prize for Chemistry in 1935 for she passed away on July 4, 1934 in Sancellemoz, France. Nobel Prize was to cross the family again – Eve married the American diplomat H R Labouisse and both took keen interest in social problems, and as Director of UN’s Children’s fund he received on its behalf the Nobel Peace Prize in 1965!

Marie Curie’s single minded devotion to science which did not waver either in the face of adversities or in the face of wealth which accompanied the Nobel Prizes or while spurning the fortune which could have been theirs if they had patented extraction of radium reminds me of the following verse from Skandapurana¹

कुलं पवित्रं जननी कृतार्था
वसुंधरा पुण्यवती च येन ।
अपारसंवित्सुखसागरेस्मिन्
लीनं परेब्रह्मणि यस्य चेतः ॥

Through the birth of one whose consciousness is forever absorbed in the supreme spirit, that infinite ocean of wisdom and bliss, the family becomes sanctified, mother’s life is fulfilled and the very earth itself is blessed.

¹ I am grateful to Shatavadhani Ganesh for help in locating the source.

C S Yogananda, Department of Mathematics, Indian Institute of Science, Bangalore 560 012, India.
Email:yoga@math.iisc.ernet.in