

Women in science

I very much appreciated the editorial on the subject of 'Women in science' in the 10 October 1999 issue of *Current Science*. I think it really brings out many basic facts (even rudimentary ones about things such as rest rooms) which, I am sure, are known but most of us find convenient to 'forget'. The great sensitivity and perception of issues the editorial displays must also be complemented.

What intrigued me most was how closely the different scenarios in the personal lives of women scientists, as outlined in the editorial (a supportive spouse, ploughing a lonely furrow, a supportive family), are reflected in the lives of three of the (perhaps) most well-known and most accomplished women mathematicians of the 19th and 20th century – Mary Somerville (1780–1872), Sofia Kovalevsky (Kovalevskaya) (1850–1891) and Emmy Noether (1882–1935).

Mary Somerville, who never went to a university and was self-taught, wrote a book bringing Laplace's work on Astronomy in English, which became a textbook for students at Cambridge. She had an extremely supportive spouse in William Somerville, who searched out books in library for her and recopied her manuscripts in order to correct any errors in spelling, punctuation and grammar, and was very proud of her.

On the other hand, Sofia Kovalevsky who got first into a marriage of convenience so as to be able to get to Germany where she could study mathematics at a university (then not possible in her native Russia), and went on to become the first woman professor of Mathematics and Physics in Europe at the University of Stockholm, had a miserable personal life. On the day of her greatest triumph, when she won the famous 'Prix Bordin', she wrote 'I am as miserable as a dog. No, I hope, for their sake, that dogs cannot be as unhappy as human creatures, especially as women!'

Emmy Noether, an absolutely brilliant mathematician, who was only the second woman in the history of the Uni-

versity of Erlangen to receive a doctorate in Mathematics, came from a family of mathematicians. Her father was a professor of Mathematics at the University of Erlangen and her brother too studied mathematics there. She certainly had an extremely supportive family which lent her a helping hand in her pursuit of mathematics. In the later stages of her life she had an extended family of the 'Noether Boys' at Göttingen and the 'Noether Girls' in her days at Bryn Mawr, a Women's college in USA, where she had had to move after fleeing from Germany due to the cultural upheaval and events preceding the Second World War there.

In addition to some of the most distinguished women scientists that were mentioned, I also want to point out one more woman scientist (a physicist) whose work did not quite get its due; Madam C. S. Wu, who designed an innovative and difficult experiment to look for parity violation in weak interactions. Two theorists, C. N. Yang and T. D. Lee, who postulated the possibility of parity violation in weak interactions, got the Nobel Prize as a result of the findings of her experiment. Even though Madam Wu got a lot of professional recognition, including the presidency of the American Physical Society, she never got the greatest recognition, viz. the Nobel Prize, which many thought she deserved. The stated reason was that an experiment had seen parity violation before hers. However, it is also accepted that Yang and Lee would not have got their Nobel Prize without her experimental findings. Even more relevant was the fact that her experiment, in addition to demonstrating the effect of parity violation postulated by the theorists, also showed that it is violated maximally; a fact which has had profound implications on the development of our understanding of weak interactions.

To turn to things more mundane, modern and Indian, I would like to add a few more things. While it is true that the prejudices that are mentioned in the

editorial do not affect the selection of women at the entry level research positions any more, the existence of family responsibilities (or existence of a family itself) of a woman candidate can become an issue of discussion while hiring women at the postdoctoral level or in permanent jobs. To be fair, the issue does not necessarily always prove to be the decisive one. But the mindset is still such that for most of us these responsibilities still fall within the purview of the woman of the family.

Coming to a seemingly much more trivial matter, it is somewhat irritating to be invited to be a member of some committee or other after being told, even jocularly, that this way the committee will have token women representation! I am sure this is an experience shared by many colleagues too. While attempts to compensate for the past prejudices are indeed made and are welcome, application of merit as the sole criterion needs to be emphasized. Professional recognition received by women scientists in terms of awards, fellowships of the academies, etc., if seen as emerging from a quota system, will not only lead to a feeling of disgust among women, but also to that of resentment among their male colleagues.

At this point I must also say that I am quite ashamed that offhand I myself cannot list names of very many Indian women scientists, other than the contemporary ones, apart from some noteworthy exceptions such as the atmospheric physicist Anna Mani, the anthropologist Irawati Karve, etc. Maybe the Academy/*Current Science* can think of establishing a website which will serve as a repository of information about the Indian women scientists: both famous and not so well known/recognized!

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