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REDISCOVERING SCHOOL SCIENCE

Editorial

As a child growing up in rural Kerala, my chief entertainment was reading: mostly science, history of science and, also, biographies of scientists. To me, science seemed pure and uncluttered by politicking. I thought of scientists as completely rational beings, driven only by a desire to uncover the mysteries of the universe. In my mind, they were impartial observers, experimenters and thinkers, untouched by personal prejudices.

But, as I grew up, I came to realise that this was far from the truth. No doubt, the history of science has many examples of cooperation between scientists, often from multiple disciplines, working together to uncover the mysteries of nature. But, it is also peppered with examples of prejudice, power play, factionalism, politics and one-upmanship. One such example is the exciting story of the uncovering of the structure of DNA shared in this issue's 'Discovering the Helical Staircase'. Every time I dwell on this path-breaking discovery, I am left with deep sadness at how one of the scientists who contributed significantly to this achievement – Rosalind Franklin – received hardly any credit for it. This is a reflection of how women scientists were systematically relegated to the background in those days. The men who dominated science wanted to keep it that way – dominated by men. How much more would science have progressed if women had been given their rightful say and encouragement?

An equally heart-breaking story, for me, is that of Subrahmanian Chandrasekhar. As a young man of twenty five, he was given an opportunity to present his path-breaking theory on the evolution of massive stars to the august gathering of members of the Royal Astronomical Society in London. I can well imagine how apprehensive and, at the same time, excited Chandrasekhar must have been on this occasion. To his shock and dismay, his presentation was ripped apart by none other than his mentor and friend – Arthur Eddington. A colossus in the field of astrophysics in those days, it was Eddington who had, in fact, encouraged Chandrasekhar to make the presentation in the first place. But, he chose to ridicule Chandrasekhar's ideas rather than counter it scientifically. Eddington's stature ensured that Chandrasekhar's theory, which had to wait for almost half a century for a Nobel Prize, wasn't taken seriously by his peers for decades. Even if some of them did see merit in it, they lacked the courage to express it. Imagine how much more astrophysics would have progressed if it was not set back by several decades due to this incident. And, how much more Chandrasekhar himself may have contributed to his chosen field if he had not left it in frustration. How many young scientists across the world may be afraid to come up with original theories because of some version of Eddington in their own lives? How much more, and faster, can science progress if every mentor, every senior scientist, is nurturing and encouraging as opposed to being dismissive?

As science educators, it is essential that we keep in mind that inculcating wonder and curiosity in young minds is only one part of igniting their scientific temperament. We must also inculcate respect for individuals, fairness of mind, courage to break out of stereotypes, a collaborative mind-set, and even kindness. Science, like any other aspect of life, can progress best when people respect each other's abilities and differences, and support and nurture each other unstintingly.

RamG Vallath
Editor

