

Developing scientific temper

by Gonit Sora - Friday, October 31, 2014

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One of the most neglected fundamental duties of an Indian citizen is his duty to 'develop scientific temper'. The term 'scientific temper' loosely means an individual's ability to use the scientific method in thinking analytically about all day to day activities. It does not mean using advanced scientific techniques to demonstrate easy phenomena or to use sophisticated mathematical reasoning in coming to any conclusion in day to day life. Rather, it implies that an individual should use his capacity of basic science and mathematics to try and understand everything around us. This is one of the reason why general science and general mathematics are still subjects in every school curriculum in India. The ability to absorb and apply school level science and mathematics is all that is required to develop this 'scientific temper'.

The term 'scientific temper' was first used in the Indian context by Pandit Nehru in his famous book 'The Discovery of India', whereby he encouraged all of his countrymen to indulge in scientific thoughts so that the progress of our great nation is never halted or diminished. We Indians have a rich tradition of science and mathematics in our lineage. Right from the vedic periods to the medieval periods India has had a rich heritage in science, mathematics, medicine and engineering. It is now universally acknowledged that an Indian Susruta was the pioneer of surgery, that an Indian Madhava discovered calculus much before Newton and Leibniz were born and that the greatest mathematician ever, the unknown person who first thought of using '0' for nothing had lived in India. But come to the modern age, and we see a very sharp decrease of this 'scientific temper' in our people. What is to be blamed? Is it our air-tight education system or our pre-conceived notions about how difficult science and mathematics is?

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The recent Mars Mission by ISRO has fired everyone's imagination, and this is what we must do again and again so that the latent scientific minds of Indians are rekindled and rejuvenated. Only when each and every Indian would believe and apply the scientific method will our nation surpass all others. It is really a matter of shame that after so many years of independence India has not been able to produce many distinguished men of science like it had when it was under the British rule. Something somewhere must be seriously wrong. We no longer see an uncouth genius like Ramanujan, or a methodical experimenter like Raman. India is in crying need of inventors to solve its problems. When the entire budget for research and development is a mere 1 percent of the whole it is time to ask a very simple question: what will solve India's problems? Is it developing more and more missiles? Is it all the foreign tours that our bureaucrats do? Or is it science and technology?

The way to bring about a change in our mindset has to come from us, and not by some external means. The want to question everything before accepting it as a fact will go a long way in developing this

scientific temper. India is seeped in age old customs, traditions and superstitions. We cannot abandon them at once and we should never do it too, otherwise our identity as Indian will be in jeopardy. What we must do is try and analyze the scientific basis for each of these traditions, and we will be surprised to see that what looked odd and unpleasant may in fact be based in a simple scientific fact. For instance, the tradition of using turmeric in the skin during Bihu is just a reiteration of the fact that turmeric is very good for the skin and is based on ancient Indian ayurvedic knowledge. As another example, the tradition of staying inside when a solar eclipse occurs is based on the simple fact that during a partial solar eclipse there may be harmful UV radiation which if viewed with the naked eye can be harmful for the eyes. These two things just says a lot about our ancestors who without so many sophisticated instruments had a huge amount of scientific knowledge and had much more of a scientific temper in them then we have now.

The development of scientific temper can also be helpful in eliminating social evils like witch hunting, sati, poverty, etc. If people are educated in the scientific method, I believe India will once again be the pearl in the world map as it was earlier; and no one can stop us from being the best in whatever we do. After all, as the famous theoretical physicist Abdus Salam once remarked, 'Scientific thought and its creation is the common and shared heritage of mankind.'

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