matters, but are also written in a way that provides no Indian context at all. Surely this will always make science seem like an alien enterprise to young students, and has an adverse effect on acquiring a proper appreciation of the nature of science and engineering. However, my point was this: while it takes a great deal of time and effort to reform our educational system, it should be possible for scientists with much less effort to write attractive but reliable and credible accounts of the history of science and technology in this country. Such books can change the way that students as well as teachers think about the subject of study. Even in India, however, changes do occur (although far too slowly); so I am less pessimistic about the issue than Balasubrahmanyam is.

The question that Balasubrahmanyam raises in his last paragraph is hard to answer, in part because the strength of Indian methods (for example) may lie precisely in the fact that they pursued a path very different from that of Greece and Europe. In the 16th century Francis Bacon realized that the old Greek methods had ceased to be effective, and there is much evidence to indicate (as the quote from Hemann Weyl in the Guest Editorial shows) that it was new ideas from the East that were in part responsible for the emergence and rise of modern mathematics. So if East and West had thought alike, the extraordinary revolution that occurred in Europe some four centuries ago might not have happened at all. Attempts at understanding this sort of question could help in triggering the revolution that India needs but has not yet quite experienced.

I would like to take this opportunity to correct an error in the Guest Editorial. Towards the bottom of p. 471 in the right column, the words '1815 by a British surgeon . . . press reports' should be replaced by '1814 by a British surgeon who had studied the technique for the best part of 20 years, following the excitement triggered by press reports from India in 1794'.

RODDAM NARASIMHA

Jawaharlal Nehru Centre for Advanced Scientific Research,
Jakkur PO,
Bengaluru 560 064, India
e-mail: roddam@jncasr.ac.in

Spreading knowledge of classical India mathematics

Lord Russell wrote that science attempts to establish a causal relation between results and antecedent conditions, while religion promises miraculous results no matter what the antecedent conditions! Indians in the 21st century are afflicted by this latter malaise, i.e. inability to separate the contributions of our ancestors from the myth that surrounds them.

Narasimha envisages a conscious effort by his colleagues to spread this gospel globally. At the risk of beating a dead horse, let me briefly restate the obvious. The industrial revolution skipped India entirely – no steam engine, no printing press, no cotton gin (the three accepted mile-posts of the Industrial Revolution). This circumstance did not prevent India from building the Taj Mahal, Hoysala Temple, Ajanta and Ellora, etc. Can we imagine designing and completing such structures without the aid of laser, e-mail, blueprint or sms today?

Our grade school books should inform children at an impressionable age about the 'real' scientific contributions of our ancestors in a simple way, to neither glorify nor trumpet our greatness – and without launching into a national debate on the language employed. All Indian languages support constructs rich enough to depict the real contribution of our ancestors.

At all high schools in the US and other countries, award an Aryabhata medal for excellence in mathematics, and computer science doctoral thesis with a Panini Medal. They are of Indic contributions to science.

Make students plot planetary positions by placing stones of various heights and thus defining a vector converging on a planet – a procedure devised by Madhava near the Karnataka–Kerala border. (At IIT-Ropar I had my freshmen plot planetary positions using this method and verify the ancient method by a modern telescope.) Plan a field trip to the place.

Indic mathematicians looked upon differential equations as algebra of rates.

Regarding reckoning elapsed time, if a train leaves Jammu on Monday at 6 p.m. and arrives at Kanyakumari on Thursday at 5 a.m., to avoid wrap-around IBM chose arbitrarily 1 January 1960 as the starting point of time, making elapsed time a simple difference without the cumbersome wrap-around. Indic mathematicians chose the occurrence of solar eclipse as the starting point. Incidentally, several fierce debates ensued between the Connecticut Indic School and the Chennai Indic School as to what constitutes a valid eclipse observation (M. D. Srinivasan, IIT-Madras, Chennai, pvt commun.).

Robert Kanigel's book '*The Man Who Knew Infinity*' should be translated into all Indian languages and should be widely circulated. The book has been translated into 21 languages worldwide. And Meera Nair is making a movie on the life of Ramanujan.

This is a movement I propose to make our Indic mathematics a household word globally.

1. Narasimha, R., *Curr. Sci.*, 2015, **108**(5), 471–472.

KRISHNAMACHAR SREENIVASAN

Department of Information Technology,
Central Institute of Technology,
Kokrajhar 783 370, India
e-mail: sreenivasan@cit.ac.in