# Editorial

*N Mukunda, Chief Editor*

Like the soaring snow clad peaks of the Greater Himalay, the upper reaches of the world of mathematics are accessible to very few indeed. In both cases it takes long hard training and enormous (mental) discipline to reach the greatest heights. But in both cases what a view it must be from the top! Yet the inability of most of us to scale such peaks should not become a reason for ignorance about them or their existence. Quoting the astrophysicist Subrahmanyan Chandrasekhar from a 1985 address to The Indian Academy of Sciences:

> *"The pursuit of science has often been compared to the scaling of mountains, high and not so high. But who amongst us can hope, even in imagination, to scale the Everest and reach its summit when the sky is blue and the air is still, and in the stillness of the air survey the entire Himalayan range in the dazzling white of the snow stretching to infinity? None of us can hope for a comparable vision of nature and of the universe around us. But there is nothing mean or lowly in standing in the valley below and awaiting the sun to rise over Kanchenjunga."*

I may well advise most of our readers to approach our tribute to the mathematician André Weil in this spirit. Weil – who passed away last year – was one of the most influential mathematicians of this century, a product of the remarkably vital French mathematical tradition that has shown the way to the world for so long. It happened that he was an Indophile, having spent the period 1930–32 at the Aligarh Muslim University, and was well versed in Sanskrit. In 1936 he had said this of us:

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"The intellectual potentialities of the Indian nation are unlimited and not many years would perhaps be needed before India can take a worthy place in world mathematics"

*André Weil*

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Kapil Paranjape and Vasudevan Srinivas try between them – through an Article-in-a-Box and a general article – to give us a glimpse into the kind of mathematics that Weil did. For those to whom these things are somewhat distant, it is atleast important to appreciate the insistence of Weil on quality in mathematical work, and his view of the subject as a form of art. Kapil describes Weil as possessed of an acerbic tongue. Perhaps the physicist's answer might be Wolfgang Pauli whom we 'covered' last month.

The Vishnu Purana – one of our millennia-old epics – estimated the age of the earth to be close to two billion years. More recently, a well-known cleric in the West declared on the basis of Biblical evidence that the earth was created roughly 6000 years ago. He was of course much more precise in his statement. Ramesh Chander's article on this question describes the fierce debate between geologists and physicists during the 19$^{th}$ century on their respective estimates. The figure of Lord Kelvin based on thermodynamic arguments – and the assumption that there is no continuous generation of heat in the earth's interior – came to around 25 million years. This was completely unacceptable to the geological fraternity. Chander describes most lucidly the effect of the discovery of radioactivity on this debate, and the influence all this had on Charles Darwin and his evolving ideas about biological evolution. Today we are on much surer ground when we say that the earth is about 4.6 billion years old; and we also know that the earliest forms of life appeared three billion years ago, some 700 million years after conditions suitable for it had already been in existence.

Let me end with a take off on that other French mathematician Fermat – this editorial is too small to tell you about all the other interesting things in this issue!