

# Editorial

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*N Mukunda, Chief Editor*

Abdus Salam was an outstanding theoretical physicist who was born and grew up in the subcontinent – West Punjab of prepartition days – but who did all his scientific work living in the West. He was honoured in 1979 – along with Sheldon Lee Glashow and Steven Weinberg – with the Nobel Prize in physics. His life and career bear comparison to those of Subrahmanyan Chandrasekhar (who was featured in our April 1997 issue) and Har Gobind Khorana. We present an article-in-a-box on Salam's life and achievements. In the Reflections section we give the complete text of a lecture by Salam titled *Einstein's Last Dream: The Space-Time Unification of Fundamental Forces* delivered during the UNESCO Einstein Centenary celebrations; and an excerpt from his Nobel Prize acceptance speech where he pointed out that the scientifically developing and developed countries of the world have exchanged places during the course of history.



In 1988 Salam made these comments comparing the great physicists of the century, while recalling a 1968 lecture Werner Heisenberg had given at the International Centre for Theoretical Physics at Trieste in Italy:

*"If one may make a list of the standing of each one of the great physicists of the twentieth century in the eyes of the others, the list would read something like this – Einstein – Bohr – Heisenberg – Dirac (and Pauli). From Heisenberg's lecture, it is quite clear that Bohr felt happy if he could convince Einstein of the correctness of his ideas. Heisenberg had the same feelings towards Bohr as Bohr had for Einstein, while Dirac considered Heisenberg as the ultimate master. (Pauli, I know, had similar veneration for Dirac)."*

Now there is a well-ordered set for you!



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Last month we concentrated on the electron and its multifarious activities. This time we have a wide spread in our material. Ramesh Chander's account of 19th century geodetic survey work in India shows how such text book principles of physics as Archimedes' Law for floating bodies and Newton's Law of Gravitation led to the conclusion that the mighty Himalaya were *apparently* hollow ! See the article for the interesting resolution of this puzzle. S R Madhu Rao in a Classroom contribution (first of two parts) gives a beautifully simple explanation of one of the startling kinematic effects of special relativity, the Lorentz length contraction. He titles his piece 'An Exoteric Narrative'. Exoteric? A rarely used word, whose meaning you must look up. One other place where it is used is in Erwin Schrödinger's beautiful little book *My View of the World*, where one of the chapters is 'An exoteric introduction to scientific thought.'

K N Ganeshiah describes what are to us some of the most bizarre behaviour patterns in the insect world, all designed to achieve evolutionary fitness. Actually, if you think of it, in the words of the old Annie Oakley song they are just "doing what comes naturally." The same basic evolutionary drive can result in such varied behaviours in flies, bugs and beetles!

Vivek Borkar in his article on Collective Learning is inspired by a different kind of beetle – one George Harrison who sang and musicked his way to glory as a 'great 20th century philosopher'. Borkar explains how apparently independent individuals end up 'falling in line' and adopting a uniform behaviour, as though collectively guided by an unseen hand.

Recently there has been much news of long over due credit and recognition being accorded to Jagadish Chandra Bose, the pioneer Indian scientist, for his work leading to wireless communication. We will tell you all about this in a forthcoming issue.

