Editorial

N Mukunda, Chief Editor

When we inaugurated ***Resonance*** in January 1996, our opening article was the first of a six-part series by Jayant Vishnu Narlikar titled "Origin(?) of the Universe." In the present issue he brings this well planned and beautifully structured series to an interesting and intriguing conclusion. He has covered the historical background of the subject starting from ancient times, and in successive stages taken readers through the discovery of the expanding universe, the big bang cosmology, nucleosynthesis, relic radiation, and the delicate problems of observation and interpretation in this challenging field. He (almost) started the series with a bang, and ends it now with a question, decidedly not a whimper. We would like to thank Narlikar for having so readily accepted our early invitation to him to contribute to ***Resonance***, and hope to see his writings again in these pages in future.

The general subject of biological rhythms has featured in several ***Resonance*** articles and news items. In this issue we present Erwin Bünning - the first chronicler of chronobiology - on the back cover. Also a delightful tongue-in-cheek article by Maroli Krishnayya Chandrashekaran on his days as a Ph.D. student at Madras in the early sixties, when he discovered the tidal rhythms of the mole crab. He tells us that in those days there was general skepticism world wide about biological rhythms, and that even his guide confided to him: "between you and me, I say, I don't really believe there are rhythms." Now you seem to find them all over the biological world, but not, as Chandrashekaran says, if you work 9 to 5!

V Shankar Sunder contributes an article on the mathematical problems of knots and their properties. In common with Pati's piece on "The Punctured Plane" a few months ago, this may be

slightly demanding, but also rewarding for an interested reader with a mathematical bent of mind willing to work a little bit and appreciate new ideas. If you end up feeling tied up in knots - dont worry, Sunder's formulae will help you come untied as well!

Finally, our Reflections section carries this time the complete text of a lecture on "Science - its Philosophy and Spirit" given a few months ago under the auspices of the Indian Academy of Sciences by Professor Sir Herman Bondi, who occupied the Raman Chair at the Academy during December 1995 - February 1996. Bondi is very well known in the physics and astronomy community, and well beyond, for his pioneering work with Thomas Gold and Fred Hoyle on the steady state model of the universe almost a half century ago; and equally for his razor-like sharpness and clarity of expression in lectures and writings. Here he dwells on some general questions of the philosophy of science, the relationship between science and technology, the problems of communication and teaching - all interspersed with witty comments and anecdotes. He explains why he follows the Popperian approach to science - the scientific value of a statement consists in the possibility of its being tested and disproved. "I tell you something valuable only if I may turn out to be wrong." And the image of the person walking in a swamp-with one leg labelled science and the other technology - illustrates in an unforgettable way how interdependent they are. Bondi also carefully explains how Popperian criteria remain valid in those sciences which have a historical character and are not subject to repeatable experiments. He stresses the self-correcting character of science, and students and teachers alike will find his remarks on research and communication "so serious that you can only joke about them."