

Kanigel's book. We appeal for any information that would add to our knowledge and understanding of Ramanujan and those whose lives were touched by this remarkable mathematician.

1. Srinivasan, P. K., *Ramanujan Letters and Reminiscences*, vol. 1, Muthialpet High School, Madras, 1968.
2. *The Lost Notebook and Other Unpublished Papers of S. Ramanujan*, Narosa, New Delhi, 1988.
3. Kanigel, R., *The Man Who Knew Infinity*, Charles Scribner's Sons, New York, 1991.

4. *Collected Papers of S. Ramanujan*, Cambridge University Press, Cambridge, 1927; reprinted by Chelsea, New York, 1962.

BRUCE C. BERNDT

*Department of Mathematics
University of Illinois
1409 West Green Street
Urbana, IL 61801
USA*

ROBERT A. RANKIN

*Department of Mathematics
University of Glasgow
Glasgow G12 8QW
UK*

The whys and wherefores of our science

The article by Satish and others on the problems of industrial researchers (*Curr. Sci.*, 1991, 61, 376) makes thought-provoking reading. They have raised a pertinent question in respect of the scientific (and this implies technological as well) research that is going on in our country. Perhaps they posed the question in sheer despair, attempting to seek an identity for themselves. Perhaps they feel that scientists in industrial R&D establishments have not been able to enjoy the sort of freedom available to their counterparts in academic institutions and research laboratories. Perhaps they think that their counterparts elsewhere are given more importance and receive recognition relatively easily. Perhaps they want to gather the satisfaction of having put their own attitude towards research to rigorous scrutiny and thereby having expressed their concern for society.

Whatever the finer details of the objective, the questions Satish *et al.* raise must be answered by the scientific community of this country. What is the social good that we want to accomplish by engaging in scientific research? What are the research problems that really must be solved, and with what priority? Who is the actual benefactor—an individual, an organization, or the nation? And how?

The unfortunate aspect of our scientific

research activity is that those involved in it are not in the habit of giving serious thought to its relevance. The fact that scientific research of every kind is being done the world over, particularly in the West, is itself made the strongest and sometimes the only argument in favour of research in our own country. In effect imitating the West has become a scientific religion for us.

The question of relevance is serious and deserves to be the first point to be considered, because our socioeconomic conditions differ drastically from those in the West. But we evade talking about this relevance except when we must observe some formality while applying for a research grant. The justification of the demand for a grant is often vague and unrealistic, and rarely based on society's needs. Justifying any research activity using the most general terms is not difficult, because, after all, scientific investigations do add to human knowledge. But when adding to human knowledge becomes a costly business, it becomes imperative to rethink carefully, because the country's resources are limited and could be better used in other, more urgent, fields of national activity. One might ask if it is wise to put a great deal of effort and resources to conducting research that is already rigorously being pursued elsewhere and whose results will definitely be available

to us. The real emphasis should have been on putting such knowledge to practical use. This is perhaps where we have failed.

An attitude of finding a compromise between personal gain and fulfilment of social goals is perhaps missing. We devote ourselves to solving problems that interest us purely for academic and intellectual pleasure. It is true that intellectual pleasure has some value, but at what cost? We engage in an activity that best suits our convenience and is in conformity with the training received by us—a training that is rarely designed with any specific purpose in mind. One of our major objectives is to enhance our saleability in the international market, so that we can manage to be in the West. That professional advancement is perhaps the only objective in many cases becomes obvious when one looks at aimlessly designed PhD programmes in our academic institutions. Why should we produce more scientific manpower without first assessing where and how we are going to use it? Once they are produced, work must be found for them. Then the question of professional survival becomes more important than the relevance of the problems they study, and research plans end up so designed that these scientists can be kept busy—whether usefully or otherwise is of little concern.

When the scientific community becomes isolation from society the consequences can be disastrous. We are perhaps nearing that stage. That is why there is no attempt of self-assessment of what we have really accomplished. The fact that, in spite of being the third largest scientific community in the world, we have hardly any breakthroughs to our credit speaks for itself. Even today we are borrowing from the West technology of every nature—an act that we would have been committing had there been no scientific research at all. How much then have we really achieved?

Y. P. JOSHI

*Department of Physics
Banaras Hindu University
Varanasi 221 005*