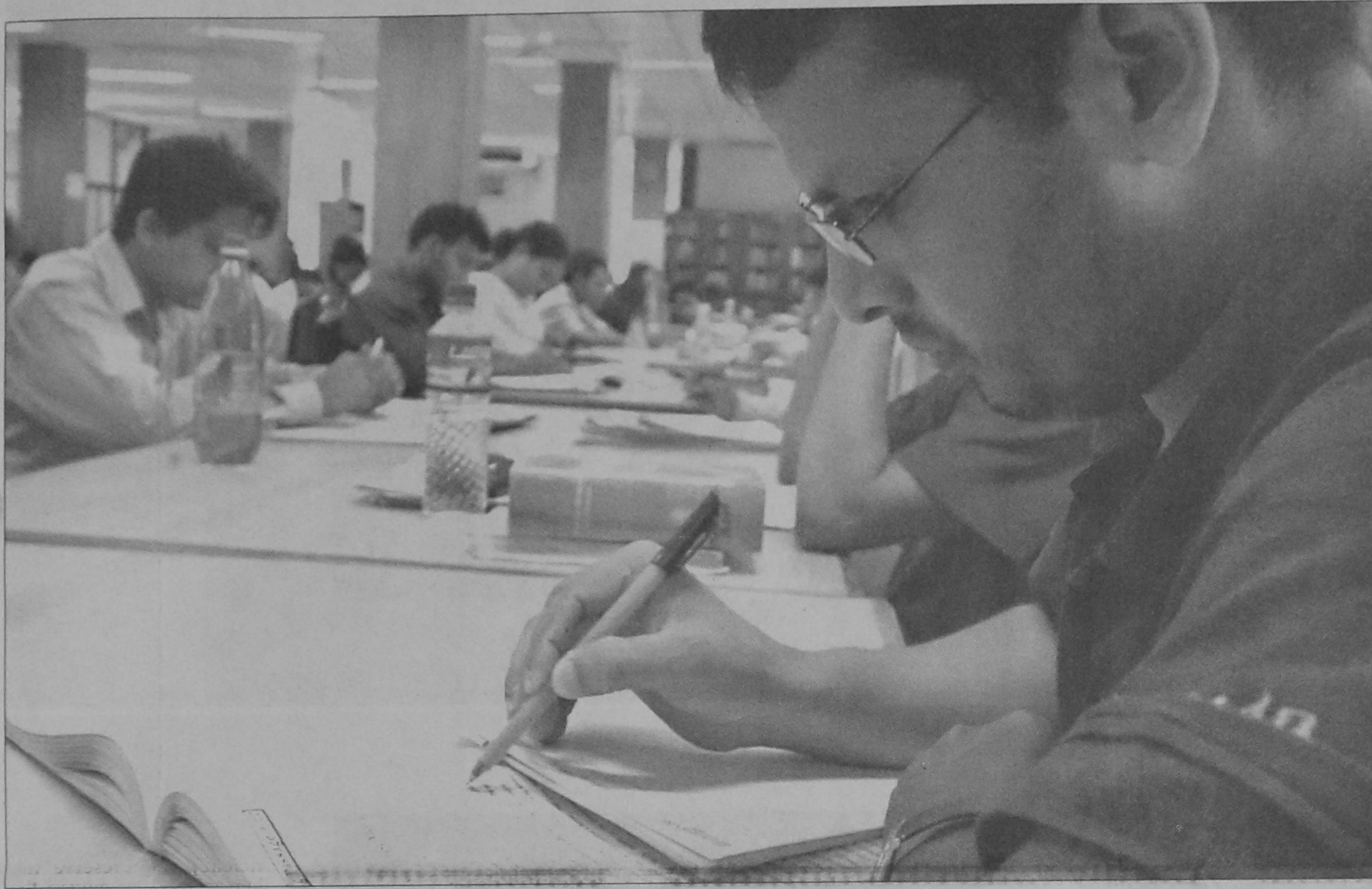


# ...national development



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believe this could happen again, in regions including the Indian subcontinent. Ryle's message seems to be that we must not allow this to happen again. There appears to be a Frankenstein in human beings, which surfaces now and then, which we must learn to recognise and control. It is almost as if we are pawns at the hands of some malevolent deity, playing out a sort of Hessian "glass bead game" turned sinister!

Erwin Schrodinger, one of the founders of quantum mechanics (with Werner Heisenberg and Paul Dirac), regretted the dichotomy that appears to exist in what he calls "two paths, that of the heart and that of pure reason". In a perceptive analysis of Greek civilisation, he says:

"... it is my opinion that the philosophy of the ancient Greeks attracts us at this moment, because never before or since, anywhere in the world, has anything like their highly advanced and articulated system of knowledge and speculation been established without the fateful division which has hampered us for centuries and has become unendurable in our days."

Here Schrodinger is implying the unity of knowledge, and indeed the unity of all human activity, and the fact that different approaches to the truth and fulfillment of human life that appear to be contradictory are in fact complementary.

## Schrodinger goes on to say

"It was still agreed that the true subject was essentially one, and that important conclusions reached about any part of it could, and as a result would, bear on almost every other part".

## In a famous speech in Athens in 1964, Heisenberg says

"The search for the 'one', for the final source of understanding, has probably been the origin both of religion and of science."

He ends his speech with the following sentence, which is significant coming from a great scientist:

"If harmony in a society depends on the common interpretation of the 'one', of the

unity behind the multitude of phenomena, the language of the poet may be more important than that of the scientist."

## Richard Feynman, a leading physicist of 20th century, says

"The highest form of understanding we can achieve is laughter and human compassion."

It is interesting that Feynman says this after a lifetime spent in examining the most intricate problems of mathematics and physics. "Laughter and human compassion" are not usually regarded as "forms of understanding"! Perhaps Feynman is expressing his discomfort about too much "cerebralisation" or what might be called "intellectualisation". One is reminded of the fact that some of the greatest moral teachers, such as the Buddha, Confucius and Socrates never left behind any writings.

We should recognise that apart from the role of basic and fundamental research to support the science and technology that is needed to improve living conditions, there is another side which helps to ameliorate the negative aspects. It is said that man does not live by bread alone. Improving living standards is not an end in itself but a means to an end. The latter is a life that is fulfilled and complete in every way. One of the noblest pursuits of man over the ages is seeking of truth and knowledge-knowledge about life, and one's surroundings and about the universe that we inhabit. Fundamental and basic research adds to the quality of life by making us aware and perceptive of the multifarious and diverse nature of the world and the universe we live in. Prof. Steven Weinberg writes at the end of his book 'The First Three Minutes' (of the universe!);

"The effort of understanding the universe is one of the very few things that lifts human life a little above the level of the farce and gives it some of the grace of tragedy."

## Rabindranath Tagore says

The truth is difficult, I have loved the difficult; it does not

deceive anyone"

Kazi Nazrul Islam says: "The sustained effort to understand the totality of things is life's greatest pursuit."

Prof. Freeman Dyson, who has been referred to as one of the intellectuals giants of this century, says (this is an excerpt from BBC broadcast):

"I believe in diversity... the one world that summarises my philosophy is 'diversity' ... that applies to technology and to human affairs and to everything else. That is also the characteristic of life... the beauty of life and its robustness comes from the fact that it diversifies itself into millions of different forms. If life had stuck with two or three different species it would not have survived. The way it survives is by trying out millions of different patterns. That is of course the reason why the natural world is so beautiful. I believe the same applies to the universe."

In several of his writings, Prof. Dyson has described the endless possibilities, as he sees them, in the future development of mankind, if proper use is made of our abilities and resources. To realise the potentials, it is necessary to have a thorough understanding of how nature works. Two thousand years ago the Roman poet Virgil said "Blessed are those who know the cause of things." This saying is more relevant today than it has ever been. One sometimes talks about 'controlling nature'; I prefer the expression 'harmonizing with nature.'

I want now to make a few remarks about the gap between the rich and the poor, which appears to be widening here and elsewhere, and which I believe is a threat to the stability of society. Benjamin Disraeli, who was Prime Minister of Britain during 1874-80, published a novel called 'Sybil' in 1845 in which he writes as follows about contemporary British society:

"Two nations between whom there is no intercourse and no sympathy; who are ignorant of each others' habits, thoughts and feelings, as if they were dwellers ... of different planets."

Disraeli warned the wealthy that they must close the gulf in society, if only to protect their basic interests. Disraeli also says about young 'drop outs',

that they had 'exhausted life in their teens and all that remained for them was to mourn, amid the ruins of their reminiscences, on the extinction of (their intellectual) excitement', who is black, and who says the conditions with regard to black Americans is not dissimilar to the situation depicted by Disraeli more than a hundred and fifty years ago in Britain. I would urge you to ponder to what extent these remarks apply to our society, and what we should all do about it. It is said that beyond a certain point injustice in a society becomes a threat to the whole society. So is it with mankind. I believe sufficient and continuing injustice is likely to pose a threat to the entire human race. Two thousand five hundred years ago Confucius said that the human race is a family. At about the same time Buddha expressed similar sentiments. One of the most prophetic sayings of the holy Hadith, I believe, is the following:

"Mankind will not go astray after having found the right path, unless from disputation."

These sayings could help us to find the path ahead.

I want to mention something about the environment, which has been much discussed in recent years. The problem of the green house effect and the ozone layer are well-known, in which much more work is needed which may take years if not decades. It is well said that we should regard the environment as not something that we have inherited from our forefathers, but as something we have borrowed from future generations; we must ensure that we leave it in at least as good a condition as we found it.

It is also clear that to solve the enormous problems of the environment, to devise means of having sustainable development into the indefinite future, it is not enough to do more research and work harder, but it is also a question of inculcating an appropriate ethos and developing a culture and civilization in the true sense, where the primary attitude of mind is that of mutual respect, care for the environment and concern for the well-being and dignity of all human beings, and indeed the well-being of all living creatures, instead of, as at present, the acquisition of

wealth and power through science and other means, and the use of these to dominate over other peoples and nations.

## Postscript

I would like to discuss some further points that relate to science, technology, education and development in a wide sense. As we know, purely scientific questions and problems can be extremely complicated and deep; it is natural that many meetings, conferences and workshops are devoted entirely to such questions and problems. However, as indicated by the above remarks, the importance of science and technology for other fields of knowledge, for various human activities and for society in general is undeniable. We have a series of conferences at the Research Centre in Chittagong on the foundations and philosophy of mathematical and physical sciences, which are meant, in a small measure, and in our humble capacity, to provide a forum in which wider questions relating to science can be discussed, primarily towards philosophy, possibly leading to wider issues. Ilya Prigogine, who was awarded the Nobel Prize for Chemistry in 1977, says:

"The role of philosophy in motivating new avenues of research in science cannot be undermined. Philosophy's objective is to analyse the methods of science, to axiomatize and to clarify the concepts used."

One is, for example, reminded of the circumstance that Einstein (1879-1955) was influenced in his General Theory

of Relativity by the ideas of the philosopher Ernst Mach (1838-1916).

The year 1996 gave us the opportunity, in the third conference of the series just mentioned, to commemorate two important events in the history of ideas, namely, the four hundredth birth anniversary of Rene Descartes (1596-1650), and three hundred and fifty years of the birth of Gottfried Wilhelm Leibniz (1646-1716). They are probably the only examples of a person who is a front-rank philosopher as well as mathematician.

"Descartes was the greatest of French philosophers, who astonishing analytical genius was displayed in the invention of coordinate geometry and in his contributions to theoretical physics, to methodology and to metaphysics." Russell says that Descartes "is usually considered the founder of modern philosophy, and I think, rightly. He is the first man of high philosophic capacity whose outlook is profoundly affected by the new physics and astronomy."

Leibniz was a "German philosopher, mathematician and man of affairs, one of the major systematic thinkers of modern times, important both as a metaphysician and as a logician and distinguished also for his independent invention of the differential and integral calculus". Russell says Leibniz "was one of the supreme intellects of all time." In the preface of his book History of Western Philosophy, Russell says, "With the possible exception of Leibniz, every philosopher of

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SYED ZAKI HOSSAIN