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## PHYSICS SYMPOSIUM 1979

The utility of physics is unequivocal, but the investments are not enough to create even a sound physics base for the country. The recently held Physics Symposium asked for increased financial commitments. AHMED FAZL writes on

# Physicists looking for greater role

Some 150 physicists of the country, both theoretical and experimental, assembled at Dhaka in mid-January for a Physics Symposium. The result was a brilliant array of fifty papers presented on subjects ranging from ultrasonic studies of hydrocarbon and the scattering of high energy nuclear particles to search for suitable materials for solar energy technology and the formation of tropical cyclones.

The symposium organised by the Bangladesh Physical Society and co-sponsored by the Dhaka University, Bangladesh Academy of Sciences and the Atomic Energy Commission was imparted a distinct international dimension by the participation of twenty physicists from abroad.

The foreign scientists who presented some of their research works at the symposium include such luminaries as Prof. E. Kroener of the University of Stuttgart in the FRG, Prof. D. W. Palmer of the University of Sussex, Dr. E. Davies of the University of Cambridge, Dr. L. Hasselgren of the Swedish University of Uppsala, Prof. G. Shiffrer of the Italian University of Catania, Prof. Shigehiro. An of the University of Tokyo, Prof. M. A. K. Lodhi of King Abdul Aziz University of Saudi Arabia, Prof. A. N. Mitra of the University of Delhi, Dr. N. K. Ganguly of the Barc project of Calcutta, Prof. V. Lakshmi Narayan of the Indian University of Andhra Pradesh, Dr. Farhad Faisal, a Bangladeshi, who is a professor at the University of Bielefeld in the FRG.

Nobel Laureate Dorothy Hodgkin, O. M. F. R. S. of the University of Oxford, was expected to take a leading role in the symposium, but the British scientist

could not later participate because of a sudden illness of her husband. In a letter she regretted her inability to attend in spite of all the preparations she had taken to visit Dhaka and wished the conference all success.

The local participants and the scientists from abroad dealt with contemporary, solid state, nuclear, and high energy physics. Their deliberations constituted the mainstream of research in these fields and the exchange of ideas and experiences brought new understanding of these problems.

The horizons of physics have expanded more rapidly in this century than in the previous one thousand years. But the most significant aspect of modern development of physics is that it is becoming increasingly interdisciplinary permeating genetics, medicine, environment etc. This, Prof. A.K.M. Siddiq, chairman of the organising committee of the Physics Symposium and the outgoing president of the Bangladesh Physical Society says, makes it difficult for scientists to pursue the subject in an isolated manner within national boundaries. Increased international collaboration should not only be in research but also in physics education.

For the layman, physics is a closed book and a subject containing such mathematical mumbo jumbo and weird Green hieroglyphs that it should best be left to those walking the corridors of the Curzon Hall. On the contrary, this branch of knowledge is very much relevant to our needs and our peculiar development problems. The usefulness of physics research cannot be stressed more, but the problem is that there is always a gap between research and tech-

nology in our country. By the time we think of applying a certain research finding to practical uses through the acquisition of relevant technology, the advanced countries design and manufacture the equipment for export, says Prof. A. K. M. Siddiq, Dean of the Faculty of Science of Dhaka University.

Prof. Siddiq is convinced that the technological gap between scientifically advanced countries and ours is widening because of what he terms the lack of a technological infrastructure.

"A factor which hampers the growth of physics is the slogan of 'budget cut' in the advanced countries. Our administrators tend to adopt a similar attitude little realising that the total annual budget of physics is only a fraction of the budget cuts of other countries."

There is a continuous necessity of emphasising the utility of physics research and greater financial commitments to it as also of giving physicists their due status and scope for a moderately decent living. A brain drain in physics now exists, possibly because of the fact that financial benefits offered by other countries outstrip those obtained here.

But Prof. Siddiq, who led the Physical Society during its last three formative years, believes that the slight of physicists will decline, if research programmes in the universities and national laboratories are expanded and there are greater economically meaningful and academically satisfying employment opportunities.

Investments so far in physics, it was noted at the symposium, had not been enough to build a sound base for physics research at least not strong enough to create an

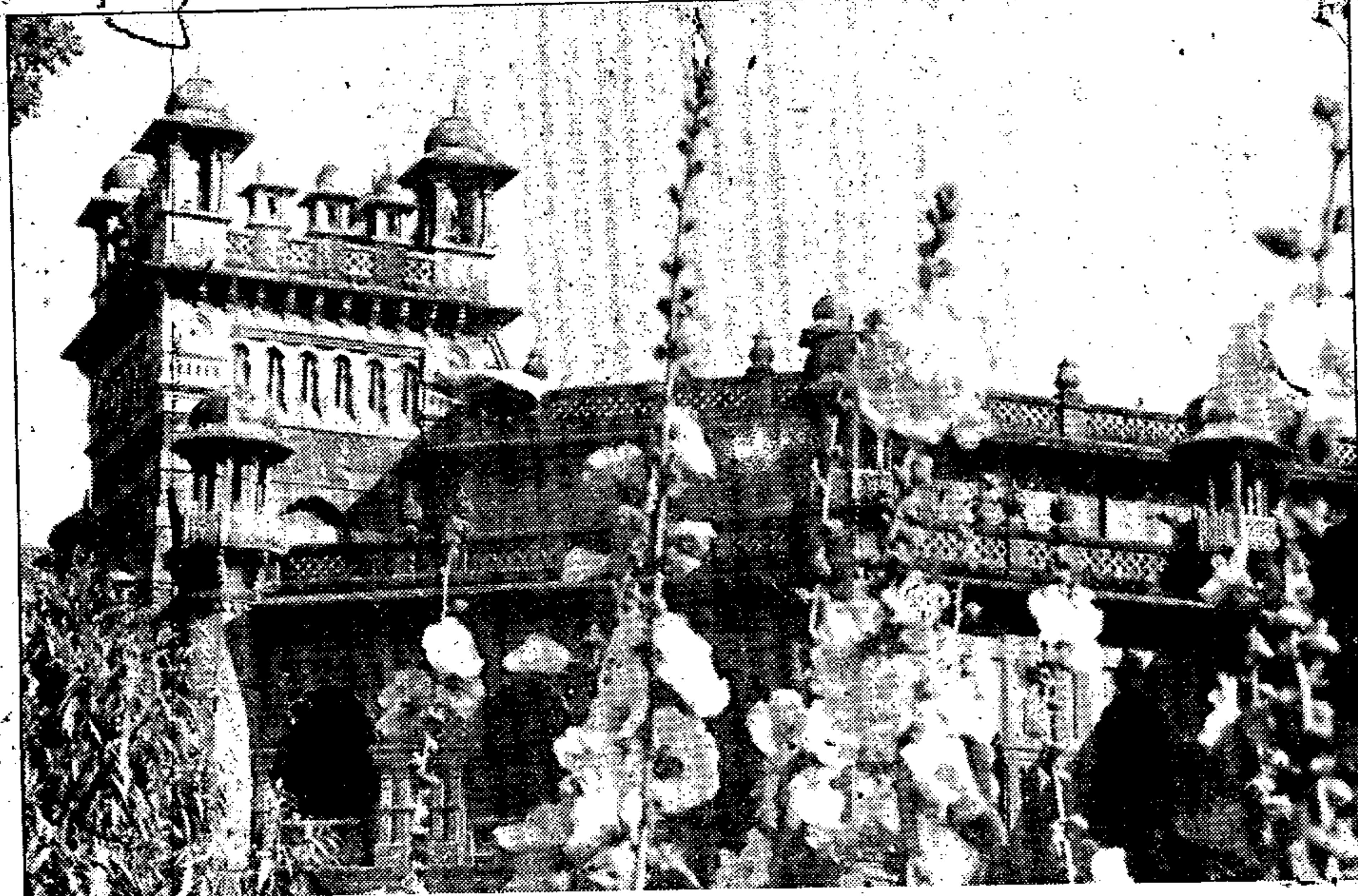
impact on economic growth.

"We have yet to define clearly the national areas of physics applications and restructure the physics curricula so that it can play its due role in the planning and development process," says Prof. Siddiq.

In spite of the drawbacks the universities and the Atomic Energy Commission laboratories have been working on problems of applied nature. The Van de Graaf accelerator at the AEC has been recast towards application oriented programmes. The result of these transformations is that experimental physicists can now work with agriculturists in the determination of protein content of rice and pulses, the estimation of fertiliser intake by plants to find out the optimum level and the analysis of indigenous raw materials for possible industrial use.

While the stress on need-oriented research has to be persistent, basic and fundamental studies must also be promised. For, it is a matter of pride and prestige for the nation when it is able to contribute to the wealth of human knowledge. "Bangladesh science, particularly physics says Prof. Siddiq, "has been known to the outside world due to the contributions made by some of our physicists to the international pool of knowledge."

Inaugurating the symposium, Prof. Innas Ali, a physicist and now member of the Planning Commission and Vice-Chairman of the National Council for Science and Technology, said that the talents in physics could not be utilised to realise the contribution of science and technology in the productive use of our natural resources. He has pointed out that scientists have special knowledge which can assist deci-



Curzon Hall: a tradition of physics.

sion makers in resolving intricate domestic problems and also those related to interconnections in the modern world. A primary task of the scientists in the development process is, therefore, to find ways to apply scientific knowledge and technology for production of goods and services.

Prof. Fazlul Halim Chowdhury, Vice-Chancellor of Dhaka University, paid tributes to the community of physicists. He opined that physics education and research should be made more relevant to our society.

Dr. M. O. Ghani, President of the Bangladesh Academy of Sciences, said that the development of solar energy technology should become a priority interest with the scientists. For the prospects of tapping this energy and its potential

uses are great. While emphasising application oriented research he has underscored that great advances in the former are possible when we have an extensive body of fundamental knowledge developed over years of painstaking basic research.

But these are only possible provided a new programme in physics backed by necessary organisational and financial support is taken. The latter can be in the form of fund allocations.

The Physical Society established in 1973 can provide the organisational support. Although of recent origin, the society enjoying a membership of 300 physicists including 40 working abroad draws its strength from the long tradition of study of physics and its research in this country.

Several decades ago a young physicist Satyen Bose, who later became the Head of the Department of Physics of Dhaka University, spent his time probing the mysteries of matter and the fruits of his labour goes by his name as the Bose-Einstein statistics. Others have also made their mark since then. The experience and confidence gathered by local researchers give good ground for an enhanced programme in physics in different branches of the field.

The Physical Society, which organised the current symposium — the second of its type — is an active body. It has plans to hold such a meeting of physicists every four years apart from regular seminars on relevant issues. The Society also intends to elect eminent physicists from different

countries as fellows. Three honorary fellows currently are professors Abius Salam, F. R. S. E. Kroener and J. B. French.

The greatest achievement of the Physical Society however is its contribution to international collaboration in physics. Another aspect of this cooperation which was manifest in the recent symposium is the financing by different foundations and universities abroad which made the assemblage in Dhaka of the foreign scientists possible.

Says Prof. Siddiq, the bonds of friendship between the physics community here and those abroad have been cemented further during the symposium. The Physical Society, he says, now steers this understanding for even greater tangible benefits.