

ANNIVERSARY ADDRESS—1977

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DR RAMANNA, LADIES AND GENTLEMEN,

For two years I have enjoyed the high honour of being President of the Indian National Science Academy. I wish to again express to the Council and the Fellows of the Academy my deep debt of gratitude for this distinction which they bestowed upon me.

As I remarked when I addressed the General Body Meeting last year, Presidential Addresses have varied a great deal in their subject—some Presidents have delivered strictly scientific addresses while others have discussed either the progress of the Academy or other matters of importance to scientists. When one attempts to do any kind of stock-taking on the termination of a tenure of office, one is reminded of the saying, “*Everybody sets out to do something, and everybody does something, but no one does what he sets out to do*”. Put in other words, this statement implies that it is never possible for one to completely achieve the target which was set for accomplishment. There is perhaps much truth in this but at the same time this does not mean that sometimes quite a lot cannot be successfully accomplished and some of my distinguished predecessors have certainly left a record of work for the Academy for which this learned body should be grateful.

The work of the Academy has been expanding and becoming diversified. For some time, in its earlier history, the Academy, in the words of Dr. Atma Ram, “*was perhaps more concerned with preserving the scientific chastity, than getting involved in functions which would bring the Academy face to face with various social problems and governmental responsibilities in the field of science*”. However, to be fair it must be pointed out that at that time not only were the financial resources more limited but the Academy had not been given a charter to take up wider responsibilities. In due course the position of the Academy improved and the landmarks in its history have included the recognition by the Government of India that this was the premier Science Academy of the country, the decision of the Government to transfer the adhering function with International Scientific Unions under the aegis of ICSU from the Government departments to the Academy, the naming of the Academy as the body responsible for implementing the Indo-Soviet Joint Programme for Research in selected areas of Basic Sciences, and the introduction of the exchange programme with the Royal Society of London. The Academy also developed a relationship with the National Academy of Sciences of the USA, and an important Symposium on “*Water in Man's Life*” was organised a few years back.

Other important new activities were the financing of a number of projects in the Basic Sciences, and an attempt of popularising science by arranging a series of lectures including some especially for school children. During the term of office of my distinguished predecessor, Dr. D. S. Kothari, a significant scheme of identifying and

giving recognition to young scientists was initiated and has been widely welcomed.

During the two-year period with which I have been President, the strengthening of activities of the Academy has continued but I do not propose to go into details as these are contained in the reports which are submitted by the Secretaries to the Council at each meeting. I will only mention in passing that, first of all, steps were taken to improve the condition of the building and gardens of the Academy Headquarters so that they may be worthy of the Academy. Then action has been taken to prepare a proper scheme for the strengthening of the Office of the Academy as an adequate infrastructure is essential to support the rapidly increasing activities of the Academy. Plans have also been discussed for a new building which has become necessary in the context of the greatly increased responsibilities of the Academy, and taking advantage of its very central location, to develop it as a major centre for the holding of scientific meetings, conferences, and generally speaking, of scientific activities. I must admit that at the moment these plans are castles in the air, but we have had a sympathetic response from the Department of Science & Technology through which we receive our grants-in-aid from the Government.

The Basic Sciences Project is making progress and criteria have been established for selecting multi-disciplinary, multi-institutional schemes worthy of support by the Academy. International activities have been intensified and during 1976, I had the privilege of leading the Academy's delegation to the USSR in response to the invitation of the Academy of Sciences there. The delegation was received with the utmost cordiality and friendliness and as a result of the contacts established there is reason to hope that the joint Indo-Soviet scientific programmes will be strengthened still further. Again, during 1976, our Academy signed a protocol with the Japan Society for the Promotion of Science under which scientific collaboration between the two countries will take place. Several scientific delegations from foreign countries have visited the Academy and some of them have expressed strong desire to establish relationships between their National Science Academy and our Academy. The Council of the Academy has welcomed such developments and has also expressed a hope that relationships with the Science Academies or equivalent bodies in the developing countries, and especially in our neighbouring countries, would be strengthened in the near future.

One matter in which I have been personally very much interested has been the cooperation with the other scientific bodies in the country. I am glad to say that we were able to organise, a few months ago, a Symposium on '*The Quality of Indian Scientific Publications*' under the joint sponsorship of this Academy, the Indian Academy of Sciences, Bangalore and the National Academy of Sciences, Allahabad. Scientific Academies are developing in some of the States and I believe that the Indian National Science Academy should take the opportunity to build up fraternal relationships with them and assist them, if necessary. We should also similarly strengthen our links with the learned scientific societies.

One of the problems in holding International Conferences in India has been the difficulty experienced sometimes regarding free movement of scientists. I am glad to say that through the efforts of this Academy, the General Assembly Meeting of the International Union of Biological Sciences was successfully held at Bangalore this year. This was possible because the Academy after consultation at a high level

with the Government of India, was able to give an assurance to the IUBS that no *bona fide* scientist would have difficulty in entering the country to attend the Conference. This was highly appreciated by the IUBS which passed a resolution commending the facilities made available by the Academy and the Government of India.

The publications of the Academy have received anxious attention and though we have not yet surmounted all the difficulties, one useful step recently taken has been the drawing up of a panel of presses to which the publications of the Academy can be sent, thereby avoiding the delay associated with searching for a new press every time. Library policy has also been given careful consideration. Here I must refer to the valuable contribution made in this respect by the late Professor P. L. Bhatnagar. It is hoped that by following the policy approved by the Council, the Library of the Academy can be recognised as an unusually good reference library for particular groups or disciplines in the Basic Sciences.

I would like to make a special mention of the Seminar organised in 1975 by the Academy on "*Basic Sciences and Agriculture*". This brought together, for the first time, research workers from the Universities and from the Institutes of Agriculture and very useful discussions ensued. The value of the recommendations made at this meeting has been recognised by the Director-General, Indian Council of Agricultural Research, Dr. M. S. Swaminathan, F.N.A., F.R.S. In October 1976, as already mentioned, an important Symposium on '*The Quality of Indian Scientific Publications*' was held with the cooperation of the Indian Academy of Sciences and the National Academy of Sciences. The reason for calling this Conference was to draw attention to the fact that though India has the third largest body of scientists and technologists in the world, and though there is a very large publication programme in the country, yet most scientists find it necessary to send their best papers for publication abroad. There was thus need for giving thought to measures to rectify the situation. One of the recommendations of the Symposium which needs to be followed up with full vigour is that in each major area of science, steps should be taken to have one outstanding Journal in India whose quality could attract the best papers of the country and also possibly some from abroad.

One other matter I must mention is the approval bestowed last year by the Fellowship on the proposal to increase the annual intake of Fellows from 15 to 30. This decision has been widely welcomed as a wise step in view of the large number of very able scientists in the country in the various disciplines of science.

Having said something about the present work and position of the Academy, I would like to point to the future, and begin with a quotation from Mr. R. S. McNamara who has said, "*The poorest quarter of the populations in developing lands risk being left almost entirely behind in the vast transformation of the modern technological society. Can we imagine any human order surviving with so gross a misery piling up at its base?*" Referring to the position in India, Prof. Meghnad Saha in the concluding portion of his Presidential Address in 1938 made the statement : '*If we desire to fight successfully the scourge of poverty and want from which 90 per cent of our countrymen are suffering and lay the foundation of a strong and progressive national life we must make the fullest use of the power which a knowledge of Nature has given us. We must rebuild our economic system by utilising the resources of our land, harnessing the energy of our rivers, prospecting for the riches hidden*

under the bowels of the earth, reclaiming deserts and swamps, conquering the barriers of distance and above all, we must mould anew the nature of man in both individual and social aspects so that a richer, more harmonious and happier race may live in this great and ancient land of ours". In this context what is it that Science can do? Someone has remarked, *"In recent times, modern science has developed to give mankind, for the first time, in the history of the human race, a way of securing a more abundant life which does not consist in taking away from someone else"*.

In an issue of *Nature and Resources* it is stated, *"It has become evident that while there are benefits to be realised from further research, the over-riding need is for refinement of integrated approaches to the planning and management of developmental programmes"*. Again, referring to the food problem someone has said, *"Technically we know how to produce the food the world needs, but do not know how to put our knowledge into practice"*.

There is a very wide appreciation of the fact that science can transform our lives into something better but quite a few people have raised doubts as to whether the real good of humanity will be fostered by science because of its occasional misapplication or unbalanced applications in relation to the most pressing problems of the human race. Here I would like to quote from that great thinker, Goethe, who stated, *"For what end is served by all the expenditure of suns and planets and moons, of stars and Milky Ways, of Comets and nebulae of worlds evolving and passing away, if at last a happy man does not involuntarily rejoice in his existence?"* Expressing almost a similar thought but in a different way, an American agronomist wrote in an article some time ago, *"Unless mankind is wise enough and compassionate enough to devise a better food-security system, we may be seeing the beginning of the end of our civilisation."*

I think the reference in this quotation to the quality of compassion is one of great significance for we must not confuse compassion with sentimentality. As someone has said, *"Sentimentality is no indication of a warm heart. Nothing weeps more copiously than a chunk of ice"*. Can those of us who deal with science approach the overall problem of the use of science in a warm-hearted manner for the upliftment of our fellow-beings and also for the preservation of plants and animals in the world around us?

While there is a vast sea of misery and want in many areas of the world, in India also there is a very large section of our population which is denied at present even the basic food requirement recommended by nutrition experts. This legacy of poverty and want has come down to us for historical reasons which are known to everybody and a valiant effort is now being made in this country to try and wipe out this backlog, and to initiate and sustain a new era of contentment and prosperity. Though the poverty of the Indian peasant has been heart-breaking, Kusum Nair in one of her books referred to *"the remarkable dignity and courage, despite the mud walls and the often empty cooking utensil"* of this large segment of our population. Though they have seen little of life's comforts, they have been sustained by their faith in religion and the rich legends from a past which is never very far behind them. Surely, they deserve all that modern science could do for them, if it is purposefully used. It was Pandit Nehru's firm belief and hope that science was the key which could open the door to a new and better life for our people.

I have referred to you these excerpts and quotations to provide the background against which the Academy has to function. It is quite true that the Academy does not have the financial and staff resources to carry out large programmes of applied research and extension activity. These are being looked after by a number of our major scientific organisations like the CSIR, the ICAR, and the ICMR besides a great many voluntary agencies. But at the same time the Academy does have the most valuable resource of having within its fold, many of the most able scientists of the country, and it should be able to play a catalytic role in seeing that scientific research is pursued at a high level, and that the fruits of research are channelled, without loss of time and in the most effective way, to the millions in our country who are in dire need of this.

As our great philosopher and statesman, Dr. S. Radhakrishnan said, "*When the wick is ablaze at its tip the whole lamp is said to be burning*". So the Indian National Science Academy with the increased resources and support which it now has, should take up the challenge. There seems to be no reason why it cannot develop itself to perform the functions of a small but inspired brains trust in science.

One of the problems at present is how to obtain the increased participation of the Fellows of the Academy in such activities as organising discussions and lectures on matters of national importance, thereby bringing these to the notice of Government and the people, and for preparing authoritative status reports and special reports, especially on topics which have been relatively neglected because they fall between the boundaries of the major scientific organisations or for any other reason. The Academy will no doubt, as I have said earlier, build up closer relationships with the State Academies of Science and other learned bodies, so that there may be an integrated, overall endeavour to apply science for solving the many pressing problems of our country.

I now come to the end of my address, and I wish to express my warm gratitude for the splendid cooperation I have received from everybody. It has been a wonderful Council to work with, and I am grateful to the Members of the Council and the Office Bearers for their friendly collaboration. I am indebted to Dr. D. S. Kothari, Past-President, to the Vice-Presidents, Dr. K. Venkataraman and Dr. M. R. N. Prasad, to the Treasurer, Dr. A. R. Verma, to the Foreign Secretary, Dr. B. D. Nag Chaudhuri, the two Secretaries, Dr. A. B. Joshi and Prof. A. N. Mitra and to the Editors, Prof. L. S. Kothari and Prof. K. N. Saxena who have all been most helpful to me. I would like to express my gratitude to the Executive Secretary, Dr. B. V. Subbarayappa and the Office of the Academy which though under-staffed in some respects has cheerfully carried the heavy load of work arising from the increased activities of the Academy. I would also like to say how much I appreciate the support I have received from many Fellows of the Academy. Now I would like to welcome the new "Cabinet" and to hand over charge of the office of President of the Academy to Dr. R. Ramanna, one of our most eminent scientists who was handpicked by that great genius, Dr. Homi Bhabha. He is young and dynamic, and I am sure will lead the Academy to greater heights of achievement.