

The Journey of NASI

(1930-2005)



**B.N.Dhawan
Niraj Kumar**



The National Academy of Sciences, India, Allahabad
राष्ट्रीय विज्ञान अकादमी, भारत, इलाहाबाद

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POSTAL ADDRESS

The National Academy of Sciences, India
5, Lajpatrai Road, Allahabad-211002, India

TELEGRAPHIC ADDRESS

NATACADEMY

FAX

091-0532-2641183

E-MAIL

nasi@sancharnet.in
nasi@nde.vsnl.net.in

WEBSITE

www.nasi.org.in



Prof. M.N. Saha, Founder President

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FOREWORD

The Platinum Jubilee is a historic event for the National Academy of Sciences, India, and oldest Science Academy of the country. It is an occasion not only for celebrations but also for serious introspection to chart future course of action. This Academy embraces the richest scientific base in its Fellows and Members spread all over the country and abroad. The Fellows and Members are elected based on academic excellence, technology of high national relevance or popularizing S&T in the society. The Academy is successfully fulfilling its mandate of taking S&T to society through its science communication programme for students, teachers and public.

The activities of the Academy have been published in Annual Reports since its inception. Late Prof. U.S. Srivastava undertook the first effort to put the data together in the year 2000. It was felt necessary not only to update it at the time of Platinum Jubilee but also to incorporate new facts about the earlier years of the Academy that had since then come to light.

I hope the present volume will be able to provide a more comprehensive and crisp account of the growth, trial and tribulations as well as the successes of the Academy. The documentation of past experiences should be of considerable help to the Academy and its local chapters in more effectively planning their activities for educating the society about the merits of scientific temper and use of S&T knowledge for ushering in food, agriculture, health, environment and economic security as we march towards the centenary year of the Academy.

I am grateful to Prof. B.N. Dhawan for bringing out the **Journey of NASI (1930-2005)**. I pray for the success of Academy's endeavours.

V.P. Kamboj
President

The National Academy of Sciences, India

NASI

PREFACE

History is socio-economic and geo-political interpretation of an event in chronological order. The interpretation becomes difficult when values, ideas and ethics of science are also added. The task of retracing the journey of an Academy founded 75 years back has not been easy, more so because of the short and rigid time schedule. The Academy had to pass through many vicissitudes but the foresight of the founders, and the devotion and tenacity of its Fellows, Members and staff have contributed to its attaining the present status of a flourishing Academy.

The late Prof. U.S. Srivastava, chronicled the first history of the Academy and named it the 'Stepping Stones'. He had the advantage of very long and close association with the Academy and had a ringside view of the development of Academy and major landmarks during that period. Unfortunately we did not have that privilege. We had to rely heavily, therefore on Prof. Srivastava's book, the Annual reports and other literature available in the Academy and personal discussions with senior Fellows. Naturally, that was a difficult task as it involved searching the hidden treasure. The present document will lack the personal first person touch of Prof. Srivastava's narrative. We hope that it will be able to provide a more holistic and objective picture.

We are grateful to the Council of the Academy for assigning this task to us and their constant help and guidance. We have had constant interaction with Prof.V.P. Kamboj and Prof.P.K. Seth and it is not possible to adequately acknowledge their contributions. We would like to thank Prof. M.G.K. Menon, Prof. P.N. Tandon, Prof. V.P. Sharma and Prof.(Mrs.) Manju Sharma for valuable inputs. Several Fellows and Members have helped us in the collection of material. We are especially thankful to Prof. G.K. Srivastava, Prof. C.B.L. Srivastava and Prof. U.C. Srivastava.

We would also like to thank the Executive Secretary, Dr. M.S. Sinha and other staff of the Academy for their help. Mr. Jamil Khan of National Graphics, Allahabad has helped us in formatting the book.

It has been a labor of love for us and we have enjoyed and cherished every moment of it. We hope the Readers also equally enjoy 'The Journey'.

B.N.Dhawan

Niraj Kumar

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1. CONCEPTION & BIRTH

The National Academy of Sciences, India came into existence in 1930. It may be worthwhile to briefly recall the development of science education and research in the country under the British rule since second half of the 19th century.

The British rulers had established three major universities in 1857 - the Universities of Calcutta, Bombay and Madras. The University of Allahabad was the next to be established, 30 years later, in 1887. These universities had not only started teaching science subjects but significant, though small, centres of research had developed there. Jagdish Chandra Bose, working around the same time as Rutherford, Hertz and others had blazed new trails through his work in electromagnetic waves of 5 to 25 mm wavelengths as well as his famous work on plant growth and behaviour. C.V. Raman had discovered, what subsequently came to be known as the Raman effect, in 1928, for which he was later awarded the *Nobel Prize*. Acharya Prafulla Chandra Ray had not only made important contributions in Chemistry, he was also the first Indian to realise the importance of starting indigenous scientific industries. In fact, he did start the once well known Bengal Chemical and Pharmaceutical Works in Calcutta. Saha's theory of Thermal Ionisation had been internationally recognised and he was elected a Fellow of the Royal Society of London. N.R. Dhar, S.N. Bose, S.S. Bhatnagar and several others had earned international reputation and respect through their original contributions.

In the meanwhile, the Government of India had established the Geological Survey in 1851, the India Meteorological Department in 1875, the Botanical Survey of India in 1890 and the Zoological Survey of India in 1916. Breakthrough researches in Malaria and Kala-azar had been reported from India. More significantly, these governmental efforts were supplemented by major initiatives by Indian scientists themselves. The Indian Association for Cultivation of Science was founded by Mahendra Lal Sircar in Calcutta in 1876 to provide opportunities to Indian students for training in science by Indian scientists themselves. The Indian Institute of Science was established in Bangalore in 1911. The first Session of the Indian Science Congress was held under the auspices of the Royal Asiatic Society of Bengal in 1914, providing a platform on which scientists and science workers in various disciplines from different parts of the country could come together once a year to interact with each other. In short, a stage had been set for education and research in modern science, and despite extremely limited facilities available for higher education and rampant illiteracy and orthodoxy, the country had started on a path of scientific pursuits.

It was also during this period that the First World War had been fought. Although it ended in 1919, it had dealt a severe blow to the economy of most countries in Europe, especially Germany, Great Britain and France and their

colonies, including India. The unprecedented world-wide economic depression, continued well in the thirties. It affected all spheres of activity, including science education, research and publication. Science journals the world over were faced with a severe resource crunch while there was a large backlog of papers accumulated over the years of the War and thereafter. With research papers of authors of their own countries awaiting publication, journals in Britain or Germany - where most of the Indian researches were sent for publication - could hardly be expected to encourage publication of papers emanating from other countries, including India.

Apart from the economic depression, India, during the same period, was witness to the unique and unparalleled movement for political reform, which eventually took the shape of the struggle for complete independence from colonial rule. The British had clamped the infamous Rowlett Act and a protest against this Act had led to the massacre of over 350 persons and injury to thousands in the firing in Jalianwala Bagh in Amritsar which shook the entire country. The Indian National Congress, under the leadership of Mahatma Gandhi, had given a call for non-violent non-cooperation with the British Government and the boycott of foreign goods in 1920. The movement had engulfed the whole country within a year. For obvious reasons, the educated middle class citizens were most attracted into the movement. Apart from being a political struggle, the movement also helped to inform the public in general and the educated class in particular about the miserable conditions in which a very large part of the Indian population lived and to sensitize them to their many perpetual problems like epidemics, floods, frequently recurring famines and abysmal poverty.

The University of Allahabad was reconstituted as a residential university in 1921 and Prof. Meghnad Saha joined as a Professor of Physics in 1923. In 1927, at the young age of 34 years, he had been elected Fellow of the Royal Society of London. He was deeply disturbed about the problems faced by Indian scientists in the publication of their scientific work and even more by the fact that in the current set up there was no role that scientists could play in solving the many problems of their countrymen apart from such work as the government organizations may choose to undertake. It was in this background that Prof. Saha wrote an article which was published in the December, 1929 issue of the Allahabad University Magazine, entitled 'A Plea for an Academy of Sciences'. In this article, he traced the history of the establishment, mode of functioning and the roles which the more important science academies of the world, specially the Royal Society of London, the French Academic des Sciences and the Prussian Academy of Sciences played in their respective countries. He also wrote about the few learned societies which then existed in India. He observed that except for the Indian Chemical Society founded by Sir P.C. Ray in

1925, there was no scientific society of an All India character and indeed, very few facilities for publication of Indian scientific research work and more specially for scientists in the United Provinces. The foreign societies to which Indian authors sent their papers for publication were "very courteous", but he said, "owing to enormous increase in the output of scientific work in every country after the War, they find it extremely difficult to cope with the demand in their own country". He, therefore, proposed the establishment of an Academy, initially "to meet this complaint", but "its ultimate aim ought to be to organize the scientific workers to persuade them to take more interest in scientific matters of national interest, to found studentships for deserving workers, medals in recognition of good work and research professorships devoted to special branches." He said further that this Academy "ought to exercise a healthy influence on the Government in its administrative policy regarding scientific matters".

Prof. Saha had specific plans for the establishment of such an Academy. To start with, he wanted the Academy to bring scientific workers of the United Provinces on a common platform. Once this happens, it would "be apparent to all interested in the welfare of the country that an Academy of Sciences for the United Provinces will fill a real want in the progressive national life of the country", and then, "If we succeed in forming a provincial Academy, probably the other provinces will follow our lead and organize their own Academies. The Provincial Academies may then combine to form an All-India Academy which will enjoy the same power and status as the celebrated Academies of other countries".

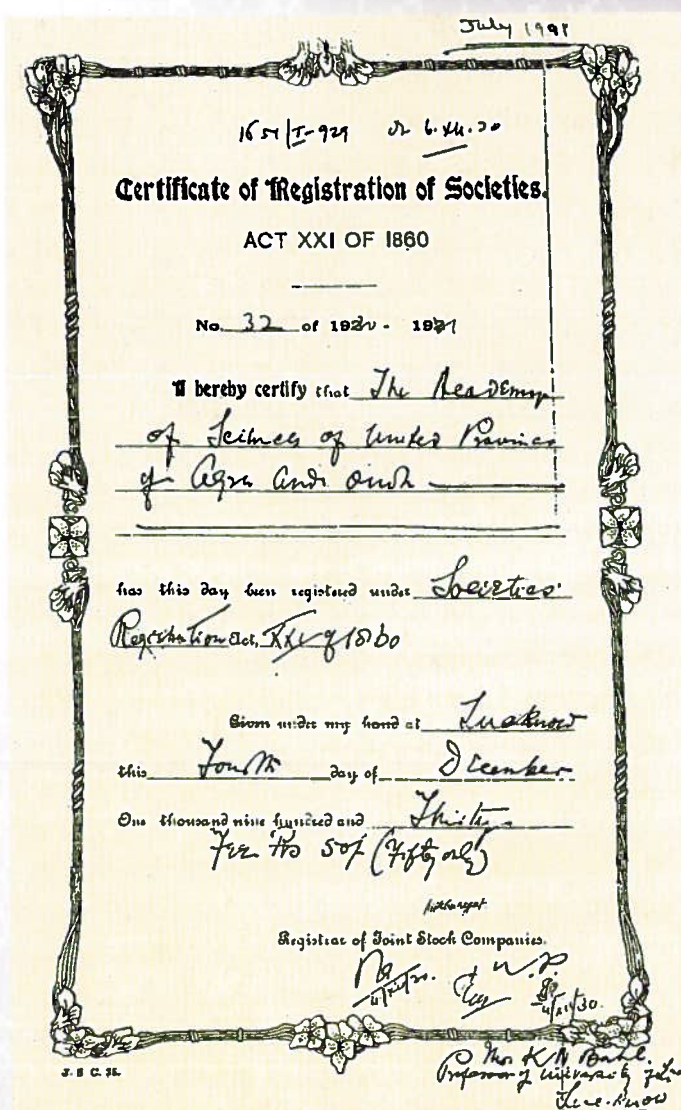
Prof. Saha had already decided to put these plans before the scientists who were due to gather within a month for the Indian Science Congress and arrive at a conclusion regarding the nature of the Academy, its objects, rules, etc. The seventeenth session of the Indian Science Congress was held on January 2, 1930 under the auspices of the University of Allahabad. Prof. Saha's proposal to start an Academy was enthusiastically welcomed at the Congress by all. Sir William Malcolm Hailey - the Governor of the United Provinces of Agra and Oudh, emphasized in his inaugural address the necessity of starting an Academy of Science in the following words:- "Now I am well aware that there are definite limits to the extent to which the efforts of our research workers or students can be directed to these problems (of economic and utilitarian value), and I am also well aware that coordination of their labours cannot be directed from outside. It must be voluntary effort, or at the most, it must be advice given by some Academy of Science...." A Committee was set up "to draft the Constitution and Rules and Regulations of the Academy and also to approach the Government for a suitable grant." Several meetings of this Committee were held and a Memorandum of Rules and Regulations was drawn up which were

generally on the pattern of the Royal Society of London and the Royal Asiatic Society of Bengal. The stage was thus fully set to formally launch the Academy in 1930.

The finances involved in running the Academy were a matter to be seriously considered in context of the prevailing financial situation in the country. Hence it was decided that a delegation consisting of Prof. Saha, Prof. K.N. Bahl, Professor of Zoology in the Lucknow University and Prof. MacMohan, Professor of Chemistry, Lucknow University would meet the Governor to request him to become the Patron of the Academy and sanction a suitable grant. Sir Malcolm agreed to become the Patron and promised an annual grant of Rs. 4,000. However, the Academy received a grant of Rs. 2,000 only. For several years this was the amount which the U.P. Government was able to provide. The Academy was finally registered under the Societies Registration Act XXI of 1860 on December 4, 1930 in the name of 'The Academy of Sciences of the United Provinces of Agra and Oudh'.

It is worth recording that from the very beginning, the rules of the Academy provided for a two-tier membership scientists would initially join as members of the Academy from amongst whom a certain number could be elected fellows. This two-tier system continues to exist in the Academy till date (with direct election to fellowship becoming possible) and is a unique feature of this Academy. The two other Science Academies in the country viz. the Indian National Science Academy, New Delhi and the Indian Academy of Sciences, Bangalore elect only Fellows.

The Academy started with 19 Founder Fellows including Prof. Saha. These were:



Prof. A.C. Banerji, Allahabad
 Dr. Luxmi Narayan, Lucknow
 Prof. Andre Weil, Aligarh
 Prof. Chaudhary Wali Mohammad, Lucknow
 Mr. G. Chatterji, Agra
 Prof. N.R. Dhar, Allahabad
 Prof. P.S. MacMahon, Lucknow
 Prof. D.R. Bhattacharya, Allahabad
 Prof. K.N. Bahl, Lucknow
 Prof. J.H. Mitter, Allahabad
 Prof. Birbal Sahni, Lucknow
 Prof. K.C. Mehta, Agra
 Prof. K.K. Mathur, Benaras (now Varanasi)
 Mr. G. Clarke, Lucknow
 Mr. P.B. Richards, Cawnpore (now Kanpur)
 Mr. R.L. Sethi, Cawnpore
 Prof. H.D.H. Drane, Cawnpore
 Prof. C.A. King, Benaras
 and Prof. Meghnad Saha, Allahabad

The membership grew to 87 within less than a year, including the 19 Founder Fellows. These included persons from different parts of the United Provinces as well as other cities like Bombay, Calcutta, Jaipur, Lahore, Mysore, Poona, etc.

Prof. M.N. Saha was the natural choice for the first President of the Academy. Prof. Nil Ratan Dhar and Prof. K.N. Bahl were elected the two Vice-Presidents; Dr. D.R. Bhattacharya, the Treasurer. Prof. P.S. MacMahon and Prof. A.C. Banerji were elected General Secretaries and Prof. Chaudhary Wali Mohammed became the Foreign Secretary. There were five other members on the Council. These were Prof. K.C. Mehta from Agra, Prof. G. Clarke from Lucknow, Prof. H.D.H. Drane from Harcourt Butler Technological Institute, Cawnpore, Prof. K.K. Mathur from Benaras and Prof. Luxmi Narayan from Lucknow.

The founding of the Academy was warmly welcomed by eminent scientists from all over the world who sent Messages of Goodwill. These included Prof. Albert Einstein (then in Germany), Lord Rutherford (England), Sir E.S. Eddington (Cambridge), Prof. James Walker (Scotland), Prof. A. Somerfeld (Germany), Prof. M. Seigbahn (Sweden), Prof. E.S. Goodrich (Oxford), Prof. R.S. Millikan (America).

Prof. Einstein wrote- "Mr. M.N. Saha, to whom Physics, particularly, Astrophysics, is indebted for many valuable contributions, has reported to me about the Academy of Sciences, which has been called into existence at

Allahabad with a high object. I welcome this inauguration with the warmest sympathy, and with great expectations. Within the short period of time since individual Indians have turned their attention to modern exact sciences, science has received much valuable stimulus from them."

Prof. R. Goldschmidt said in his message that- "I wish sincerely that the youngest academy will become a centre of that lofty enthusiasm for spiritual performance, so characteristic of the Indian people, without which no human progress is possible." Sir C.V. Raman, Sir J.C. Bose and Sir P.C. Ray also conveyed their best wishes for the success of the Academy.

The first meeting of the Council of the Academy was held in the Muir Central College of Allahabad University on January 20, 1931. The first Annual Meeting of the Academy was held on November 27, 1931 and was addressed by Sir C.V. Raman who spoke on the 'Spin of Light'. The formal inauguration of the Academy had to be postponed because the Patron, Sir Malcolm Hailey had gone to England. It was finally held on March 1, 1932.

In his Presidential Address, Prof. Saha traced the history of science from early days to the current times. Referring to the neglect of the scientific approach in dealing with the many problems in India, he said: "In India, unfortunately, Science evokes no hope in the hearts of her political leaders. Millions of our people live a miserable life of poverty and semi-starvation, but the causes of poverty have never been investigated. Whatever the factors may be, the fact remains that there is an under-production of foodstuffs, and other main necessities of life and whatever is produced is very unequally distributed. A competent economist has estimated that in India, where primitive methods are still applied, the outturn of agricultural products per acre is scarcely a fourth of that in countries like Belgium or Java, where scientific methods are applied on an intensive scale." Lauding the founding of the Agricultural Research Council by the Government of India, which stimulated research in agriculture, he stated that "Notable results have already been achieved particularly in the field of sugarcane cultivation but it is a matter of great regret that the Agricultural Research Council has been the first victim of the policy of retrenchment."

Discussing the role of the Academy, Prof. Saha said: "An Academy of Science can do a great deal by educating public opinion, undertaking particular problems, and bringing out scientific workers in various fields for discussion and cooperative research. But the main function of the Academy should be towards cultural improvement by contributions to human knowledge." Saha also advocated the formulation of a 5 or 10 year plan "for constructive national development" and wished that the government would "possess the will power to carry it through." Regarding the manner in which the problems of the country could be tackled, he stated that "For the development

of industries and agriculture in the country, the natural resources of power must be fully developed and exploited" for which, he thought, "there must be more intelligent and well equipped politicians."

In his address, Sir Malcolm expressed complete agreement with the idea of the formation of the Academy of Sciences and defended the rationale behind it as well as the idea of autonomy in scientific pursuits. He stated : "All you really want to secure is that the men of a real scientific bent have full sway for their activity; that institutions for research are properly supported and adequately equipped; and that scientists themselves can be put in the way of such organisation of their energies as will avoid wastage of effort. I agree that there must be autonomy of science; much of what the scientist is doing is so far beyond the comprehension of the lay mind that any form of dictation or even direction from outside is unthinkable."

The founding of the Academy made news abroad. *Nature* (London) in its issue of October 8, 1932 while welcoming the successful inauguration of the Academy, hoped that it would do a great deal to stimulate science in India.

The University of Allahabad allotted a room in the Muir Central College, in which various science departments were then located - as they are now, to the Academy for its office. One more room was given later and these two rooms continued to accommodate the 'Superintendent', the records and office until the Academy could construct its own building in 1954.

During the initial period of the Academy, monthly meetings were held in which research papers were presented and discussed. In his article in the Allahabad University Magazine, Prof. Saha had proposed that the first task which the proposed Academy may undertake should be to receive short articles or papers from scientific workers in India, and publish them in the form of "bulletins" so as "to ensure the workers priority in their work". The first publication of the Academy was named 'Bulletin of the Academy of Sciences, U.P.' which was published in December 1931. However, it contained many full articles in all science disciplines. During those early years, the Academy's publications became increasingly popular and earned great international recognition. This is evident from the fact that in 1935, the Academy was receiving 152 foreign and Indian journals, in exchange for its own publication. There were few Indian journals of science at that time and the exchange mostly was with foreign journals. The Secretary's Report for 1935 mentions that the Academy was unable to go in for exchange of more journals even though many foreign journals had "shown eagerness for such exchange" because of shortage of finances. Famous foreign scientists also sent their original papers for publication in the journal.

Sir J.P. Srivastava, then Education Minister of U.P., offered a Gold Medal to be awarded to the author of the best paper read before the Academy. Later this

was changed into an award to the author of the best paper published in the Bulletin. The early recipients of the Medal included Dr. N.R. Dhar and Dr. K.N. Bahl. The Bulletin attracted the attention of Nature (London) also. In its issue of September 23, 1933, it wrote: "The original memoirs published in the issues of the Academy represent a high degree of achievement." Writing about these very early publications, it would be interesting to observe that a Judge of the High Court of Allahabad, (Sir) Shah Muhammad Sulaiman, who later became the Chief Justice of the High Court of Allahabad and subsequently a Judge of the Federal Court, had a strong and abiding interest in Mathematics in particular and in science in general. He had enrolled himself as a Member of the Academy and presented a paper in one of the meetings of the Academy on "The Mathematical Theory of Relativity". An appreciative note on the theory propounded in this paper was published in the famous American Journal Science. Sir Sulaiman was elected a Fellow of the Academy in 1935 and became its President in 1938. He was also elected a Fellow of the National Institute of Sciences, India (now Indian National Science Academy).

2. THE 'REGIONAL' BECOMES 'NATIONAL'

Saha's reasons for starting with the establishment, first, of an Academy of Sciences of the United Provinces were evidently based on prudence, but his next objective of forging an All India body was also equally clear. Hence the men who mattered contemplated changing the Academy of U.P. into an Indian Academy within two years of its establishment. The move was helped by the fact that an increasing number of scientists from other provinces were getting elected to the Academy. Further persons of eminence like Dr. Shanti Swarup Bhatnagar from Lahore and Dr. L.L. Fermor, Director of the Geological Survey of India from Calcutta had been elected Fellows. Many of these scientists also wished this change to be brought about soon.

Prof. K.N. Bahl succeeded Prof. Saha as the second President of the Academy in 1935. The council, under his stewardship decided to rename the Academy as 'The Indian Academy of Sciences'. The same year, the General Body of the Academy approved this decision, and resolved to give the Academy a visibly national character. The resolution of the Council, read : "Provided the Government of U.P. have no objection, the name 'The Academy of Sciences of United Provinces of Agra and Oudh' be changed to 'The Indian Academy of Sciences'." The year of taking decision was significant because of the controversy regarding the Academy's nomenclature which cropped up later. It appears that the consent of the Government of U.P. was necessary because it was the only agency financing the Academy and also because the Governor of U.P. had agreed to be the Patron of the Academy when it was founded. Before going ahead with the necessary formalities in this connection, the Council decided to request Prof. Meghnad Saha, who was elected the General President of the Indian Science Congress for 1934, to bring this decision to the notice of the scientists at the Congress and if necessary, discuss the whole question of its name, objects and constitution with them. The Council felt that this was the democratic way to proceed with a matter as important as creating an All-India science organization and making a significant change in the status of the Academy which originally had been approved at the Congress.

In the meanwhile, another development had taken place to which the Academy was apparently not privy - certainly not officially. Sir C.V. Raman had moved to Bangalore and a group of scientists under his leadership decided to start another Academy with its headquarters at Bangalore. This Academy was also proposed to be named- The Indian Academy of Sciences. Thus evidently the task before the scientists at the Congress now was not only to consider the proposal for the change in the name and character of the Academy at Allahabad but also to take into account the founding of the Academy at Bangalore. The Congress was expected to consider keeping in view the claims of one established and another nascent Academy in the country.

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The General Committee of the Indian Science Congress agreed that the country should have an All-India Academy of Sciences and all other questions, including the constitution of such an Academy were entrusted to a Committee set up for the purpose. The Academy at Allahabad was requested to send one more representative to this Committee apart from Prof. Saha.


It may be mentioned here that in the early thirties, the Government of India also had initiated steps to seek the opinion of various learned bodies, scientific organisations, universities and individual scientists as well as the various Provinces and the Indian Science Congress about the desirability of forming an Indian Research Council which may adhere to and cooperate with the International Research Council and its affiliated Unions. As a sequel to this effort, the then Editor of *Nature*, Sir Richard Gregor had been invited to visit India and he held discussions with the Editor of *Current Science*. One of the important matters before them was the promotion of an Academy of Sciences in India. Thus a whole range of questions came up before the Indian Science Congress - the formation of an All-India Academy of Sciences with the general approval of the community of Indian scientists, the proposal of the Academy at Allahabad to become the All India body and finally also to consider the claims and aspirations of the Academy at Bangalore. It was also necessary to deliberate on the composition, constitution and functioning of the All-India Academy, when it came into being. Prof. Saha strongly pushed for the formation of a National Academy or Council and a formal resolution accepting the proposal was passed. As the General President of the Congress, he was requested to bring the resolution to the notice of the scientists at the next Session of the Congress at Bombay. A special meeting was held in Bombay in January 1934 to consider the scheme. In response to the plea made by Prof. Saha, the General Committee of the Congress unanimously accepted the proposal for the formation of a national scientific society and an 'Academy Committee' was formed to prepare a detailed report, including the draft constitution as well as the various steps to be taken for the formation of such a Society. This report was placed before the Congress by Sir Lewis L. Fermor, the next President of the Congress, on January 3, 1935 at its Bombay Session. The report was accepted and led to the founding of The National Institute of Sciences of India (NIS), which was later renamed as the Indian National Science Academy (INSA). The two academies with their headquarters at Allahabad and Bangalore respectively, were to become Cooperating Academies of NIS. Incidentally, Sir Lewis L. Fermor was invited to preside over the next Annual Meeting of the Academy at Allahabad held on February 27, 1935. Dr. Fermor had also been chosen the first President of the newly founded NIS.

The decision regarding the founding of NIS received mixed reactions from the U.P. Academy. In one of its meetings, the Council resolved that "in the

opinion of the members of the Academy, the name of the central body should be The National Academy of Sciences of India instead of the proposed name viz. The National Institute of Sciences (India). The Council also resolved to lodge a protest against the use of the name Indian Academy of Sciences by the Bangalore Body and sought that its name be changed. It also resolved "to represent strongly" that proper consideration was not given by the Academy Committee of the Indian Science Congress Association to the claims of the scientists of the United Provinces and Punjab for adequate representation in the matter of Fellowship of the proposed Institute. The three resolutions passed by the Council were unanimously confirmed by the General Body of the Academy.

Prof. Nil Ratan Dhar was elected President of the Academy for 1935 and 1936. Despite the founding of the National Institute of Sciences, the idea of changing the name of the Academy so as to emphasize its All-India character was again actively pursued when he took over. During 1935 itself, the Academy completed the formalities to change its name to the National Academy of Sciences, India. Some of the observations, made by Prof. N.R. Dhar in the course of his Presidential Address, delivered at the Anniversary Meeting held on December 19, 1935, are significant. They reveal the strong feelings which the Academy then entertained. Prof. Dhar said : "It is well known that this Academy of Sciences was the first to be established in India with an All-India outlook with Fellows and Members residing outside the United Provinces of Agra and Oudh; but it was not made an All India institution in the beginning in view of the fact that the Indian Science Congress took up the task of organising an All-India Academy. Subsequent events have shown that this sacrifice of aspirations on our part and

No. 3062/1-23. Dated 10th December 1936.





Certificate of Registration of Societies.
ACT XXI OF 1860.

No. _____ of 19 - 19

I hereby certify that the name of the Society
hereto "The Academy of Sciences of the United Provinces
of Agra & Oudh." has this day been altered to "The National
Academy of Sciences, India" and registered under the
~~Registration Act, XXI of 1860.~~ Societies
Registration Act, XXI of 1860. ✓

Given under my hand at Lucerne
this Fifth day of December
One thousand nine hundred and thirty-six.

Deputy Registrar of Joint Stock Companies,
United Provinces of Agra and Oudh.

(Signature)
(Signature)

J. S. C. 30.

The Regional Becomes 'National'

IASI

our cooperation with the Indian Science Congress has not helped the establishment of an All-India Academy As our sacrifice has brought no unity amongst the scientists in India, we have unanimously decided to form ourselves formally into an All-India institution and have accordingly changed our rules and regulations; this decision was taken by our Council as early as in 1933. We shall, however, be always willing to cooperate with any other responsible body in the formation of a central institution of a really All-India nature and shall gladly relinquish our position for the cause of unity amongst scientists in India”.



Prof. N. R. Dhar

As a consequence of this decision, formally changing the original name and structure of the Academy, its journal was rechristened as the *Proceedings of the National Academy of Sciences, India*. The first volume of the journal under this name appeared in 1936. The last volume under the name Bulletin of the Academy of Sciences (United Provinces of Agra and Oudh, India) was published in 1935. The scientific community of the country had developed a strong sense of affiliation to the publication of the Academy within a very short period. This is evident from the fact that senior scientists published their work in the journal of the Academy. Thus, Prof. H.R. Mehra, Dr. S.B. Dutt, Prof. D.S. Kothari and Prof. M.R. Siddiqui respectively were awarded the Academy's Education Minister's Gold Medal in 1934, 1935, 1936 and 1937. Prof. Birbal Sahni and Prof. N.R. Dhar received the medal in 1938 and 1940 respectively. Prof. M.N. Saha himself was the author of two papers published in the first volume of the Bulletin. So did the name of Prof. Andre Weil appear as the author of one paper.

The Annual Meeting of the Academy, held on December 19, 1935 in which Sir Lewis Fermor was present, was important. It was in this meeting that the Secretary Dr. P.L. Srivastava formally announced the new name of the Academy. The Governor of U.P. Sir Harry Haig was also present and evidently the approval of the Patron to change the name had been obtained. Prof. Dhar had devoted the major part of his Address to the use of mollases in improving the fertility of soil and Sir Haig commented that it is necessary to examine most carefully the economics of their application to practical agriculture.

In the next five years (1935 to 1940), the Academy consolidated itself in its new form. Rules and regulations were changed to suit an All-India body, although financial difficulties continued to plague the Academy. The number of

total members in the Council had already been raised from 12 to 16 in 1933. The ceiling on the number of Fellows was raised from 30 to 150 and it was decided that in the following year up to 100 Fellows may be admitted. About 80 Fellows were actually admitted. Some senior and distinguished scientists could not be inducted as Fellows because the rules required that fellows be elected from amongst the members.

The Annual Meeting of 1937, held under Prof. Dhar's Presidentship, was addressed by Sir John Russell, Director of Rothamsted Experimental Station, U.K. Dr. Dhar's address contained a very forceful plea to enrich the nitrogen content of the soil for augmenting food production by the use of molasses and other such substances. Incidentally molasses were produced in enormous quantities in the sugar industry as waste. The government wanted an economically viable solution for its disposal, which Dr. Dhar thus provided. It may be stated that Dr. Dhar's conclusions in regard to soil fertilization remain valid even now. The interest of the Academy in measures for improvement in crop production continued and in the next Annual Meeting held on March 5, 1938, Rao Bahadur V. Vishwanath, Director of the Imperial Agricultural Research Institute, Delhi, delivered an illuminating address on Modern Developments in Soil and Plant Nutrition.

Prof. Birbal Sahni, eminent Botanist, and the first F.R.S. from India in Biological Sciences, took over from Dr. Dhar as the President of the Academy for the years 1937 and 1938. The most important event of his period unquestionably was Pt. Jawaharlal Nehru's presence as the Chief Guest in the Annual Meeting held on March 5, 1938. On this occasion, the Academy organised a symposium on the 'Problems of Power Supply in U.P.' and Pt. Nehru presided over this symposium as well. In fact, he attended the entire proceedings of the Session. The Academy also passed a resolution incorporating the main recommendations arrived at in the symposium and sent it to the Government requesting the appointment of an expert committee to consider the needs of electricity in the U.P. and problems related to its generation. A short booklet containing the report of this symposium was also later published. Had serious attention been paid to this matter by the Government then, we may not have been in the kind of mess on the power front today.

This period also saw Prof. Meghnad Saha's return to Calcutta. Sir Jagdish Chandra Bose passed away on November 23, 1937, Prof. Santimay Chatterjee, then Palit Professor in the University of Calcutta joined as the Director, Bose Institute in April, 1938. In the vacancy thus caused, Saha was appointed Palit Professor. Undoubtedly the offer must have been a great attraction. Calcutta offered much greater academic opportunities compared to

Allahabad, with several excellent institutions already existing there. Moreover, he was also elected President of the National Institute of Sciences of India which functioned from the premises of the Asiatic Society of Bengal in Calcutta. Saha's departure from Allahabad was a great blow to the Physics Department of Allahabad University and a greater blow to the Academy, which owed its very birth to his vision and which he had literally nursed until his departure to Calcutta.

Prof. Birbal Sahni resigned in 1938, because he had to go abroad, and Sir Shah Muhammad Sulaiman was elected the President. He remained President for the residue of Prof. Sahni's term and was re-elected President for 1939 and 1940. The eighth Annual Meeting of the Academy, held on February 4, 1939, was presided over by Dr. Sampurnanand, who was then the Education Minister in the first popular government of U.P. with Pt. Govind Ballabh Pant as the Chief Minister. Sampurnanand was a man of great learning and erudition. Although he had the degree of B.Sc. only, he kept himself abreast of the many developments in science. He lauded the interest which the Academy was taking in scientific matters of societal importance and promised to help the Academy. He also advocated research in Astronomy and in ancient Indian medicines and suggested that ancient knowledge in these fields be vigorously verified with the help of modern scientific tools and methods and to update the scientific information.

The Second World War broke out in September, 1939 and soon started casting its shadows all over the world, India not excluded. The Academy, however, zealously continued to pursue its objectives uninterrupted. Like the Royal Society of London, the Academy offered its services to the Government of India to undertake special researches which may help in the war effort. Recognition was given to several fellows of the Academy. Knighthood was conferred on Dr. Shanti Swarup Bhatnagar and Col. R.N. Chopra of Indian Medical Service and C.I.E. on Dr. H.G. Champion of the Indian Forest Service. More importantly, in 1940 the Government of India constituted the Board of Scientific Research to advise the Government on industrial research and development of Indian industry. Dr. Shanti Swarup Bhatnagar was appointed its Director. This was the first step towards the organization of what may be called 'Government Science' in India apart from the establishment of the Agricultural Research Council earlier. The Board, which was then directly under the Department of Commerce, was the precursor of the present Council of Scientific and Industrial Research (CSIR) in the same way as the Agricultural Research Council was transformed into the Imperial (later Indian) Council of Agricultural Research (ICAR). Dr. Bhatnagar also became subsequently the first Director General of CSIR.

The ninth Annual Meeting of the Academy, during the tenure of Sir Shah Muhammad Sulaiman, then Judge of the Federal Court of India, was held on January 13, 1940 at Allahabad in the Mayo Hall, now part of the Allahabad Sports Complex. Sir Maurice Hallett, Governor of U.P. and Patron of the Academy, presided. Pt. Amarnath Jha, Vice-Chancellor of Allahabad University was the Chairman of the Reception Committee. The Education Minister's Gold Medal was awarded to Prof. Mohammad Abdul Hamid Siddiqi, Professor of Anatomy at the King George's Medical College, Lucknow on his paper 'The Genito-Urinary System of the Indian Squirrel (*Funambulus palmarum*)'.

For the first time since the Academy was founded, Fellows and Members and many eminent scientists from different parts of the country presented original papers in the scientific sessions which followed the Annual Meeting. The practice is being followed since then.

In order to "come into closer contact with other institutions by arranging, under the aegis of the Academy, meetings and conferences and thus provide intellectual and inter-social opportunities for cementing those contacts", the Academy also, for the first time, organized an Ordinary Monthly Meeting during the session of the Indian Science Congress held in Varanasi. It was agreed that the practice be continued the following year too.

Due to the War, financial difficulties of the Academy increased. The U.P. Government did pay Rs. 2,000 as in the past. The Nizam of Hyderabad donated Rs. 1,000 in 1938 but the donation for 1939 remained unpaid. How precious money was, may be guessed from the fact that a grant of Rs. 237.80 by the Allahabad Municipal Board was acknowledged by the Secretary, Dr. Shri Ranjan in his Annual Report.

Despite financial difficulties, it was decided to split the Proceedings of the Academy into two sections, one containing Physical Sciences papers and the other containing Biological Sciences papers. Although the contents of the Proceedings were thus split, both sections, in all the 4 parts of the Proceedings for 1939, were bound in a single cover. At this time, the Academy was on the exchange list of 170 scientific journals of which 148 were foreign, covering most countries from Japan to Sweden and from U.S.A. to U.S.S.R.



Presidents



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2.



3.

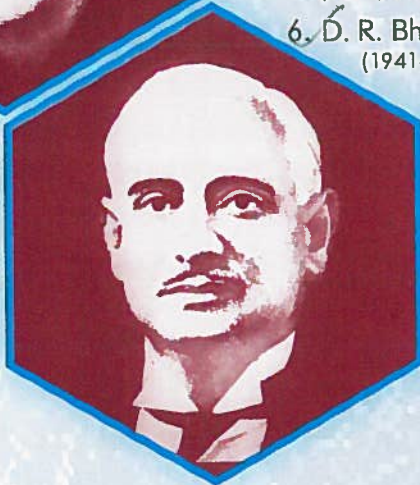


4.



1. M. N. Saha
(1931 & 1932)
2. K. N. Bahl
(1933 & 1934)
3. N. R. Dhar
(1935 & 1936)
4. B. Sahni
(1937 & 1938, 1943 & 1944)
5. S. M. Sulaiman
(1938; 1939 & 1940)
6. D. R. Bhattacharya
(1941-1942)

5.



6.



3. PRECOCIOUS GROWTH

The tenth Anniversary meeting, second in the regime of Sir Sulaiman, was held on February 22, 1941 in Delhi in the Old Viceregal Lodge. This was the first time that the Academy held its meeting outside Allahabad, indeed outside U.P. Sir Maurice Gwyer, then Chief Justice of India and also the Vice-Chancellor of Delhi University, presided over the function. The Chairman of the Reception Committee was Lala Shankar Lall, senior Vice-Chairman of Delhi Municipality and a well known industrialist (Shankar Lall Memorial Hall in the Delhi University is named after him). In his Welcome Address, he spoke of the Academy as "the first attempt at cooperative science research at once synthetic and syndicated" and described it as "a pride of creation". The same thought found echo in the address of Sir Maurice Gwyer when he said "your Academy will give a corporate sense to all its members as men striving in a common cause". He further remarked "I can think of few countries in which modern science has so vast a field in which to play its beneficent part". Sir Sulaiman delivered a learned lecture entitled 'The Dilemma in Physics' in the course of which he spoke of a 'Rotational or Binary theory of light', on the mathematical development of which he had published papers in the Proceedings of the Academy earlier in 1936 and 1937.

The 'Education Minister's Gold Medal for 1940 was awarded to Prof. N.R. Dhar in absentia for his paper on "Influence of Temperature and Light Intensity on Photosynthesis and Respiration and an explanation of 'Solarisation' and 'Compensation point'. It may be stated that Prof. Dhar was a member of the Indian Education Service and was called upon to take over as the Dy. Director of Public Instruction, U.P. during the War.

As in the previous year, the Anniversary Meeting was followed by technical sessions for presentation of papers on the following two days. Sir Shanti Swarup Bhatnagar presided over the section of Mathematics, Physics and Chemistry and spoke on the present position of scientific research in Indian Universities and industries. He advocated the introduction of courses in aeronautics, ship building, minerology, metallurgy, radio engineering, industrial chemistry and such other subjects in Indian universities and paid tributes to industrialists J.N. Tata, Sir Shri Ram and the Birlas for their pioneering efforts in establishing modern technology based industries. Dr. Rao Bahadur B. Vishwanath, Director, Imperial Agricultural Research Institute, Delhi chaired the section of Botany, Zoology, Agriculture and Geology and delivered his Presidential Address on 'Recent developments in the science of plant and animal nutrition and their significance to national nutrition and health'.

The financial woes of the Academy had increased further. There was 100% increase in the cost of printing. Although four issues of the Proceedings were published, a large number of papers could not be accommodated; and the

exchange of journals was restricted due to the war and censor besides financial hardship.

Within a month of this meeting, unfortunately Sir Sulaiman passed away on March 12, 1941. He was an amazing person combining an uncommon zest for scientific pursuits and a strong legal acumen. He had taken Mathematical tripos, Law tripos and M.A. degrees from Cambridge and LL.D. degree from Cambridge and Aligarh Universities. He was knighted in 1929 and was Honorary Vice-Chancellor of Aligarh Muslim University for two years. While he was at Allahabad, he had requested Prof. Saha to keep him informed of the recent progress in Physics. Prof. Saha had deputed Dr. D.S. Kothari to do so.

The University of Allahabad was looking for an eminent replacement after Prof. Saha's departure. Prof. Erwin Schrodinger was appointed Professor of Physics. He had shared the Nobel Prize with Prof. P.A.M. Dirac for his discovery of "new fertile forms of atomic theory" in 1933. The Academy elected him President in anticipation of his arrival. Dr. Shri Ranjan and Prof. D.S. Kothari continued as the General Secretaries. The Council included Sir S.S. Bhatnagar and Prof. Birbal Sahni. Unfortunately, Prof. Schrodinger could not come to India due to worsening war conditions and hence withdrew from the Presidentship. Prof. D.R. Bhattacharya, Vice-President and Head of Zoology Department, Allahabad University was then elected President. He remained President in 1941 and 1942.

The eleventh Annual Session was held at the University of Agra on February 13-15, 1942. Dr. Panna Lall, I.C.S., Advisor to the Governor, inaugurated the Session. Beginning his address with a message from the Governor, he spoke at considerable length, as one may have expected at the height of the war, on science and horrors of war and the war effort. Prof. Bhattacharya devoted his Presidential speech to a review of the latest work in the field of animal cytology.

Dr. Homi J. Bhabha presided over the meetings of the Physical Sciences section and delivered his address on 'Radiation reaction in relation to scattering phenomenon'. Dr. George Mathai, Professor of Zoology, Punjab University (then at Lahore), presided over the meetings of the Biological Sciences section. Several public lectures were delivered, one of which by Prof. W. Burridge, Head of the Department of Physiology, King George's Medical College, Lucknow was on the unusual subject of the Mechanism of a Sense of Proportion.

Prof. D.R. Bhattacharya was succeeded by Prof. Birbal Sahni (1943, 1944), Prof. K.S. Krishnan (1945, 1946), Prof. A.C. Banerji (1947, 1948) and Prof. H.R. Mehra (1949, 1950) as the President of the Academy. This was a turbulent and critical period in our country's history. The Quit India Movement, started in August 1942, spread throughout the country, engulfing, specially, the students and others from the universities, colleges and schools. Not only all top leaders

of the Indian National Congress but numerous local activists and sympathizers of the movement were put behind bars. At the same time, the Second World War was at its peak and abruptly came to an end when America dropped atomic bombs on the Japanese cities of Hiroshima and Nagasaki in August 1945, killing thousands and maiming many more in a flash. An Interim popular government was installed with Pt. Jawaharlal Nehru as the Prime Minister and finally India became independent on August 15, 1947 with the partition of the country which resulted in one of the largest human migrations in human history, accompanied with the communal holocaust.

These developments could not but severely affect the academic life and activities in the country and the Academy was not left untouched. Its publications and library activities were particularly affected. The Government had imposed rigid control over all kinds of printing and publications including even the scientific journals. Permits were needed for purchase of paper and clearance was required for the number of pages as well as the number of copies of the Proceedings to be printed. In the year 1946, for instance, the Government had allowed, printing of 650 pages and 525 copies of the journal although thankfully the Government of U.P. had increased annual recurring grant of the Academy from Rs. 2,000 to Rs. 3,000.

There was, however, a very welcome development when Prof. Birbal Sahni took over as the President for the second time in 1943. The thirteenth Annual Meeting took place, at the invitation of the Osmania University, at Hyderabad on December 27, 1943. This was a Joint Meeting of the National Academy with the Indian Academy of Sciences and it was but in the fitness of things that Sir C.V. Raman preside over this Joint Meeting. His Highness the Prince of Berar was the Chief Guest. It was hoped that this was only the beginning and better things were to follow.

The fourteenth Annual Meeting of the National Academy was again held jointly with the Indian Academy of Sciences at the Forgusson College, Poona (Pune) on December 29, 1944. Alongwith this meeting, a two-days symposium, also under the joint auspices of the two Academies, on 'The Age of the Saline Series in the Salt Range of the Punjab' was held. Sir C.V. Raman presided over the joint Annual Meeting while Prof. Sahni presided over the Symposium. The Vice-Chancellor of the University of Poona, Mr. M.R. Jayakar, inaugurated the Meeting. Sir Raman was present throughout. Prof. K.S. Krishnan, President and many of his senior colleagues from the National Academy attended both the Annual Meeting and the Symposium. Prof. S. Bhagavantam and Prof. T.R. Seshadiri of Andhra University, Guntur, Prof. T. Sadasivan of Madras University and Dr. R.S. Krishnan of the Indian Institute of Science, Bangalore and renowned geologists, including Drs. K.R. Ramanathan and L.A. Ramdas of Meteorological Observatory at Poona, Mr. D.N. Wadia of

the Department of Minerology, Colombo (who had then joined as Mineral Advisor to the Government of India), Dr. E. Lehner of Anglo-Iranian Oil Company, Mr. M.J. Coates, Senior Geologist of Burma Oil Company, Digboi, Assam, and others attended and spoke in the symposium. There were many papers from foreign authors also. So successful was the whole exercise that it was decided at Poona itself that the Symposium would be continued in the joint meeting of the two Academies the following year. The Proceedings of the Poona Symposium were published in a Supplement to the Proceedings of the National Academy of Sciences, India in June 1945 and contained papers by F.A.C. Read (Cambridge), E.H. Roscoe (Harpenden), L.M. Davis (Edinburgh), C.S. Middlemiss (Crownborough), besides papers from many famous Indian participants.

As decided at Poona, the two Academies again held their Annual Meetings jointly on December 26 to 28, 1945 at Bhupal College, Udaipur alongwith the Symposium. Maharana Sahib Bahadur, Ruler of Udaipur State, inaugurated the meetings. Sir C.V. Raman presided on the meeting and Prof. Sahni on the Symposium. The Symposium, once again, was a huge success and all the papers could not be presented in the limited time of two days. Prof. Sahni, therefore, presented the highlights of the remaining papers before a general discussion took place. The proceedings of the second Symposium were also published the following year by the National Academy of Sciences, India.

The practice of the two academies holding joint meetings continued in 1946 also when the Session was held on December 26 to 28 at Allahabad. Mr. Kamala Kant Verma, the Chief Justice of Allahabad High Court, was the Chief Guest. Unfortunately, Sir Krishnan could not attend and Prof. A.C. Banerji delivered the Presidential Address. A sentence from the address of the eminent historian Prof. Tara Chand, who was the Chairman of the Reception Committee, reflected the sense of joy of the participants at the two Academies joining their programmes. He said "I consider it a happy augury that the two eminent and learned bodies of scientists have chosen Allahabad to meet in a joint Conference, for Allahabad is endowed with a special significance in the cause of promotion of adjustment and harmony in the history of our country." At the end of the inaugural meeting, votes of thanks were proposed by Prof. Sahni on behalf of the National Academy of Sciences and Prof. S. Bhagavantam on behalf of the Indian Academy of Sciences. Sir C.V. Raman delivered a popular lecture in the afternoon of the 26th on 'Gems'. A symposium on the Theory of Colours was also held.

Unfortunately the spirit of "promotion of adjustment and harmony", witnessed in the last few years did not last. However, in 1949, the Annual Meeting of the National Academy was held on January 1, alongwith the session of the Indian Science Congress at Allahabad. Smt. Sarojini Naidu, Governor of

U.P. and Patron of the Academy, presided. Again no attempt to hold the Academy meetings with the Indian Science Congress seems to have been made after 1949. The Education Minister's Medal was awarded to Dr. B.N. Srivastava, one of the earliest disciples of Prof. Saha at Allahabad. His famous book on Heat, co-authored with Prof. Saha, was for long indispensable for students of Physics.

The Academy got a rude shock with Prof. Sahni's sudden demise on April 10, 1949, a week after the foundation stone of the Institute of Palaeobotany was laid at Lucknow by Pt. Jawaharlal Nehru on April 3, 1949. Prof. Sahni was the father of Palaeobotany in India. He was responsible for the establishment of the Palaeobotanical Committee to coordinate Palaeobotanical research in India and was its Chairman. He also established the Geology Department in Lucknow University. His palaeobotanical work infringed on the geological domain at every stage. His many contributions, including those on Saline Series of Salt Range, were of fundamental importance. Prof. Sahni was twice elected President of the Academy and was a pillar of strength to it. His scientific stature and attitude were reflected in the way in which he dealt with any matter. The joint meetings of the National Academy and Indian Academy were due to his belief that the two organizations with similar objectives, should work together even if in a limited way. Prof. Sahni was a very charming person and a fascinating teacher. Immaculately dressed in white achkan and churidar and with a Gandhi cap to match, he bore great physical resemblance to Pt. Jawaharlal Nehru. Only a few months earlier, Prof. Arnold Heim, a famous geologist of Zurich, who had carried out extensive geological surveys in India in 1936, was elected an Honorary Fellow of the Academy on his recommendation. Prof. Heim delivered a lecture at Allahabad about six months after Prof. Sahni's death in October 1949 in which he described the experiences of his Himalayan expedition. The lecture was illustrated with excellent movie films.

Prof. Shri Ranjan was the Treasurer but for some reason resigned from office. Prof. N.R. Dhar was then appointed Treasurer by the Council and in the two vacancies caused by Prof. Sahni's death and Prof. Dhar's election as Treasurer, Dr. N.K. Sur and Prof. K.C. Mehta were inducted into the Council.

In the meanwhile in 1944, the Academy had elected 12 distinguished foreign scientists as its Honorary Fellows. These were Prof. Albert Einstein (Princeton), Prof. P.A.M. Dirac (Cambridge), Prof. Jacques Hadamard (Paris), Academician Peter Kapitza (Moscow), Sir Robert Robinson (Bucks), Prof. L. Ruzicka (Zurich), Prof. E.S. Goodrich (Oxford), Prof. V.M. Goldschmidt, (Oxford), Academician N.I. Vavilov (Moscow), Academician V.L. Komarov (Leningrad), Prof. G.H. Hardy (Cambridge) and Prof. T.G. Halle (Stockholm).

The publication work remained fettered due to scarcity of paper and

governmental control. Thankfully, however, the U.P. Government allowed purchase of paper for Rs.2000 instead of the earlier Rs. 1000!

The nineteenth Annual Session was held again at Allahabad on January 22 to 24, 1950 on the invitation of Prof. D.R. Bhattacharya, who had taken over as the Vice-Chancellor of Allahabad University. Dr. Sampurnanand inaugurated the Session. In his address, he laid stress on the need for efforts by scientists and industrialists towards removal of poverty and ignorance. "Poverty", he said, "in one country is a menace to prosperity in every country. The same is true of ignorance". He referred to the establishment of the Scientific Research Committee of U.P. three years ago with Prof. K.S. Krishnan as the Chairman and lamented that during these three years no industry had approached the Committee with any problem. He wanted scientists to take initiatives in awakening the interest of industry in science. Prof. H.R. Mehra delivered his presidential speech on the Evolution of Blood Flukes and Strigied Trematodes.

Prof. P. Parija, a famous Botanist from Cuttack, took over as President for 1951 and 1952. Thanks to Dr. Sampurnanand, the Government of Uttar Pradesh sanctioned a recurring annual grant of Rs. 6000 in 1951. Since then the Academy has been on the recurring grant list of the U.P. Government. The Ministry of Natural Resources and Scientific Research, Government of India also gave a non-recurring grant of Rs. 4,000 to meet part of the deficit. The two grants together gave some respite in working, but otherwise the years 1951 and 1952 were rather depressing.

The Banaras Hindu University hosted the twentieth Annual Session on January 22 and 23, 1951. Sri Hare Krishna Mahatab, Central Minister of Industries and Commerce, was to inaugurate the Session but he could not come and Sri Govind Malviya, Vice-Chancellor welcomed the delegates and also inaugurated the Session. The paper reading sessions were held as usual and Prof. N.R. Dhar organized a symposium on 'Applications of Solar radiation to some agriculture problems'. The publication activity was slightly boosted because of the grants received and 10 parts of Section A and 7 of Section B were published.

The next Session was held at the University of Lucknow on February 9 and 10, 1952. The Governor of U.P., Sri H.P. Mody, was invited to inaugurate the Session but he did not come, probably because of the demise of King George VI, Head of the Commonwealth. Prof. Parija also could not come and Prof. D.R. Bhattacharya, Vice-Chancellor of Allahabad University and senior Vice-President, delivered the Presidential Address. He reviewed the researches done in India on cytoplasmic inclusions in animal cells - a field in which he had been a leading worker for a long time. Besides presentation of papers in the technical meetings, a symposium on Chemistry of Hydrous Oxides was held. The speakers of the symposium included Prof. K.H. Gayer and A.B. Carret from

U.S.A. Two popular lectures were also delivered during the Session. Prof. P.S. Gill, Physics Department, Muslim University, Aligarh delivered the lecture on particles of Cosmic Rays, while Prof. N.R. Dhar spoke on World Food Situation. Prof. Y. Bhardwaja of Banaras Hindu University presided in the meetings of the Biological Sciences section. The Education Minister's Gold Medals were awarded to Dr. A.K. Bhattacharya of Saugar University and Prof. P.N. Mehra of Punjab University. The Twenty second Annual Session was held on 25-26 January, 1953 at Muslim University, Aligarh. Dr. Zakir Husain, Vice-Chancellor, Muslim University, Aligarh welcomed the Fellows, Members and guests. The Session was chaired by Sri Hargovind Singh, Minister of Education, U.P. The Biological Sciences Section was presided over by Prof. H.R. Mehra and Physical Sciences Section, by Dr. A.N. Singh. During the Session, five popular lectures were also delivered.

The twenty-third Annual Session was again held at Allahabad on February 7 to 9, 1954 during which, apart from presentation of papers in the two sections, two symposia on 'Chemical Kinetics' and 'Structure of Chromosomes with special reference to chromosomal matrix and lampbrush chromosomes' were held. Both were very well attended.

Prof. R.P. Tripathi, eminent historian and formerly Professor at Allahabad became the Vice-Chancellor at the Saugar University. He invited the Academy to hold its twenty-fourth Annual Session there on December 27 and 28, 1954. Prof. Shri Ranjan delivered his Presidential Address dealing briefly on the role of Plant Physiology in crop production. Sri Ravi Shankar Shukla, Chief Minister of Madhya Pradesh, inaugurated the Session and impressed with the objectives and activities of the Academy he announced, a non-recurring grant of Rs. 3000 and a recurring grant of Rs.2500 to establish a branch of the Academy at Saugar. Profs. P.S. Gill and R.K. Saxena presided over the meetings of the Physical and Biological Sciences sections and lectures were delivered, among others, by Profs. W.H. Presnall and G.H. Dungeon. A symposium on Recent Trends in Soil Research was organized by Prof. N.R. Dhar.



Presidents



7.



8.



9.



10.



7. K. S. Krishnan
(1945 & 1946)

8. A.C. Banerji
(1947 & 1948)

9. H.R. Mehra
(1949-1950)

10. P. Parija
(1951 & 1952)

11. S. Ranjan
(1953 & 1954)

12. P.L. Srivastava
(1955-1956)

11.



12.



4. THE ACADEMY MOVES TO ITS OWN HOME

The initial office of the Academy was located in a couple of rooms in the Muir Central College which housed the Science Faculty of Allahabad University. The space was grossly inadequate for the growing activities of the Academy. The Academy had been desperately trying to secure a suitable piece of land to construct a building of its own and a Building Fund had been created. The Fund had about Rs. 30,000 by 1951, collected entirely from private donations, most of it due to the efforts of Dr. M.S. Randhawa, who later became a President of the Academy. However, efforts to procure the land did not succeed. Prof. N.R. Dhar then came to the rescue of the Academy and he made a gift of a piece of land, measuring approximately 1500 sq. yards on Lajpatrai Road in the locality called New Katra, barely a kilometer away from the Allahabad University. The land was then valued at about Rs. 13,000 but may have actually been worth much more. The gift deed was registered on May 1, 1951. Dr. R.K. Saksena, General Secretary signed the deed on behalf of the Academy.

As soon as the formalities regarding the registration of the land were completed, plans for the building were drawn out and approval for the same from the local authorities was obtained. Dr. Sampurnanand was invited to lay the foundation stone of the building in September 1951, but the function had to be postponed because a permit was required from the Government for purchase of construction material and the same could not be arranged in time. The Foundation Stone was finally laid by Dr. Sampurnanand, some 15 months later, on January 22, 1953. On this occasion, he delivered a very erudite speech. He drew pointed attention to the urgent need for undertaking research in space science. He announced, on the spot, an annual prize to be given to the

author of the best paper published in the journals of the Academy in this field.

Prof. Shri Ranjan, Head of Botany Department, Allahabad University took over as the President in 1953 for two years and he persuaded Dr. R.K. Saksena to continue as the Headquarter General Secretary. Prof.



Academy's First Home-Muir Central College

R.C. Majumdar of Delhi University became the outstation General Secretary. Soon construction work was started. The building plan provided for

considerable space but due to paucity of funds only a part of the planned building could be constructed at an approximate cost of about Rs. 3,50,000. The whole of this amount had been collected as donations. Although applications had been made to the Government of India and also the U.P. Government, no grant came from either.

One must record one's gratitude to the local officers of the Academy for the deep personal interest taken by them in the construction work, specially Dr. R.K. Saxena who used to spend hours on end - whether it was summer, winter or rains - supervising the construction, ensuring that there was no pilferage or loss of building material and the construction was of good quality.

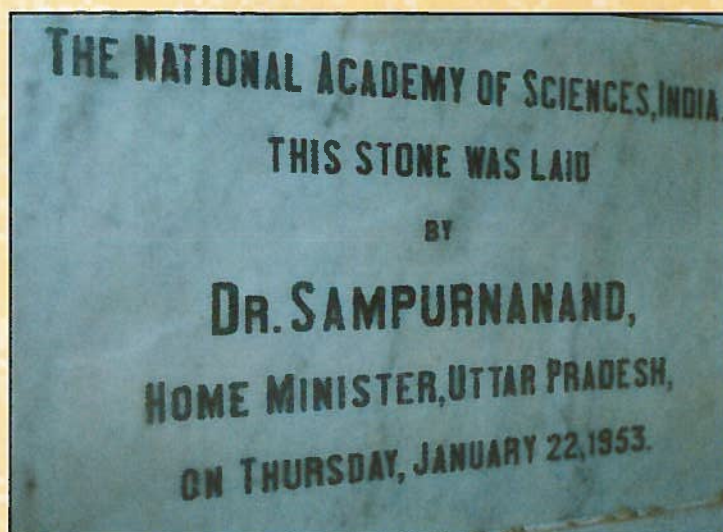
The opening ceremony of the building was performed by Sri Chandra Bhan, the then Chairman of the Legislative Council of U.P., on November 21, 1954. Soon the office of the Academy was moved from the Muir Central College to the Academy's own home. It may be noted that no change or addition to this building was made for almost 33 years since it was originally constructed in 1953-54 even though the staff and the library had increased and there had



First Home

organized in it as a matter of compulsion.

The building served the purpose of the Academy for several decades. The constraints of space, started to hamper the increasing activities of the Academy



Foundation Stone of the First Home

been both qualitative and quantitative addition to the Academy's responsibilities due to marked increase in membership and fellowship. It was only in 1987 when, because of the commendable personal efforts of late Sri Maheshwar Dayal, the Singhanias donated a library block. This significantly ameliorated the shortage of space for the library. Several activities, including some lectures, workshops and meetings had to be

in 1990's. The Council of the Academy ultimately decided that it was necessary to have another building or work place with adequate facilities. Several serious attempts by several succeeding groups of office bearers, however, proved futile. It was finally decided to demolish the existing building, except the library block, and construct a multi storey structure in its place.



Library Hall-Foundation Stone Laying Ceremony

The long cherished need of the Academy to be housed in a bigger and functional building, was realised with the approval of the budget by the Ministry of Science and Technology, Govt. of India. The Bhoomi Poojan for the construction of the new building of the Academy at its existing site was performed by Prof. M.G.K. Menon, on October 19, 2001 in the presence of Prof. S.K. Joshi and Prof. H.C. Khare, President and General Secretary of the Academy respectively, Fellows, Members of the Academy and elite of the town.

The construction of the new building, designed by Kanvinde Rai and Chowdhury, Architect, New Delhi, having office space, guest rooms and auditorium was started by the demolition of the old building except Dr. Sir Padampat Singhania Library Hall. The Contractor, Nagarjuna Construction Co. Ltd., promised to complete the construction at the earliest. The total cost of the project was about Rs. 300 lakhs.



A view of the Library



Bhoomi Poojan for the New Building

/ Senior Fellows including Prof. B. N. Dhawan, Prof. Asis Datta, Prof. Kasturi Datta, Dr. V.P. Kamboj, Dr. P.K. Seth, Dr. Amit Ghosh, Dr. Vijayalakshmi Ravindranath, Prof. Suresh Chandra, Prof. Shyam Lal Srivastava, Dr. Ashok Misra, Prof. Girjesh Govil, Prof. S. Dattagupta, Dr. S.E. Hasnain, Prof. M. Vijayan and other distinguished scientists, Teachers of Allahabad and other universities and Institutes attended the function.

Prof. J.P. Mittal welcomed Prof. Murli Manohar Joshi, Prof. M.G.K. Menon and other distinguished guests. He thanked Prof. Joshi for sparing time to inaugurate the new building and for his kind and constant help, interest and blessings due to which this building could be constructed. Prof. Mittal also thanked Prof. Menon for giving valuable guidance to the architect to give the desired shape to the building and to get it completed in time. Prof. H.C. Khare, while welcoming Prof. Joshi, distinguished scientists and others present there on this occasion, gave a brief account of Academy's gradual development. He thanked the architects, contractors and other associated with the construction of the building. Prof. Menon also expressed his deep sense of gratitude for Prof. Joshi's generosity. He narrated in brief the whole exercise and contributions of the Council Members. Prof. Joshi congratulated the Council Members, Fellows, Members and others for having nice new building of the Academy at Allahabad. This was a dire need as the Academy's activities are increasing. He specifically praised the efforts made by Prof. Menon and other Council Members and appealed to utilize the facilities of the new building for the

The construction was completed in about 2 years. It was inaugurated by Hon'ble Professor Murli Manohar Joshi, Union Minister for Human Resource Development, Science & Technology; and Ocean Development, Govt. of India, on August 2, 2003. The Secretary, Department of Science and Technology (Dr. V.S. Ramamurthy), several Past Presidents of the Academy (Prof. M.G.K. Menon, Dr. (Mrs.) Manju Sharma, Prof. P.N. Tandon, Dr. V.P. Sharma, Prof S.K. Joshi), Prof. J.P. Mittal, President of the Academy, Prof. H.C. Khare and Prof Pramod Tandon, General Secretaries of the Academy and Council Members



The Inaugural Function

promotion and communication of science to the maximum extent. Prof. Joshi honoured the Past Presidents of the Academy present on this occasion. Prof. Pramod Tandon gave the vote of thanks on behalf of the Academy.

5. SILVER JUBILEE AND AFTER YEARS

Prof. P.L. Srivastava took over as the President in 1955, which was the Silver Jubilee year of the Academy. To commemorate the occasion, the Academy elected 24 Honorary Fellows including Prime Minister, Pt. Jawaharlal Nehru, Pt. Govind Ballabh Pant, then Home Minister in the Government of India, and Dr. Sampurnanand, Chief Minister of U.P., who had established a special relationship with the Academy. The Foreign scientists elected as Honorary Fellows included Prof. Linus Pauling from Caltech, Pasadena, U.S.A.; Prof. Neils Bohr, Director, Institute of Theoretical Physics, Copenhagen, Denmark; Sir John Russell, Director, Rothamsted Experimental Station, U.K.; Prof. Otto Hahn, President, Max Planck Society for Advancement of Science, Gottingen, Germany; Dr. D.H. Menzel, Director, Harvard Observatory, U.S.A.; Prof. E.C. Titchmarsh, Oxford University, U.K.; Prof. Gabriel Bertrand, Hon. Professor, University of Paris and Pasteur Institute, France; Prof. S.A. Walksman, Director, Institute of Microbiology, University of New Jersey, U.S.A.; Prof. Wilhelm Klemann, Director, Institute of Inorganic Chemistry, Munster, Germany; Prof. Theodor Svedberg, Director, Gustaf Werner Institute of Nuclear Chemistry, Uppsala, Sweden; Prof. Paul Karrer, University of Zurich, Switzerland and other luminaries.

The elected fellows included Prof. W.D. West of Saugar University, Mrs. Savitri Sahni, Director, Birbal Sahni Institute, Lucknow and Dr. S. Hussain Zaheer, Director, Central Laboratory for Scientific and Industrial Research, Hyderabad who later became the Academy's President in 1973 and 1974.

The Silver Jubilee Session was held in the University of Lucknow. Prof. Radha Kamal Mukerjee was then the Vice-Chancellor. For the first time in the Academy's history, it organized a Session for four days from December 26 to 29, 1955. The Session was addressed by Prof. Meghnad Saha. He traced the history of the Academy, discussed the role of the governments in the development of science and technology in the country and also the role of the Academies in developing human scientific resources. Dr.



Prof. Meghnad Saha addressing the Silver Jubilee Session.
Dr. Sampurnanand, Chief Guest is seated in the centre

Sampurnanand, Chief Minister of U.P., inaugurated the Session. In his address, he touched upon many areas in which, in his opinion, science and scientists were destined to play a crucial role. Speaking about Space Science, which had been his pet theme for several years, he remarked that it should be entirely possible to make artificial

satellites and undertake a journey to the moon within the next 10 years. Neil A. Armstrong landed on the moon in 1969, about four years later than Dr. Sampurnanand had prophesied. He wanted researches on fuels and alloys to be undertaken in India as well as in meteorology to help agriculture. Prof. P.L. Srivastava, President of the Academy, briefly spoke about the achievements of the Academy in the last 25 years. He expressed happiness at the presence of the founder President of the Academy Prof. Saha in the function and then spoke at length on 'Dirichlet's Series'.

The following five symposia were held during the Session :—

1. Floods and their control : Presided over by Prof. M.N. Saha.
2. Physics of solid state : President Prof. K.S. Krishnan.
3. Role of hormones in growth and reproduction : Presided over by Prof. S. Ranjan.
4. Constitution of stars : President Prof. A.C. Banerji.
5. Role of phosphates in soil, plant and animal kingdom : President Prof. N.R. Dhar.

The two sectional meetings were presided over by Prof. A.C. Chatterjee, Professor of Chemistry, Lucknow University and Prof. A.C. Joshi, Former Professor of Botany, Punjab University and currently Director, Public Instruction, Government of Punjab. About 175 scientists attended the session and presented papers in the symposia and sectional meetings. Among those who sent their papers from abroad were Linus Pauling (Pasadena), P. Karrer (Zurich), H. Bondi (Cambridge), Z. Kopal (Manchester), A.G. Mashevich (Moscow), W.A. Wooster (Cambridge), M. Leela and K. Lonsdale (London), Masanobu Momotani and collaborators (Osaka), W. Cochran (Cambridge), J.E. Steckel and D.H. Selling (Amherst, Mass.), A. Kaila (Helsinki), F. Carbone and J.L. Cuzin (Paris), Alfred Aslander (Stockholm).

Messages of good will and felicitation were received from science academies and organizations from all over the world, including the Royal Society of London; National Academy of Sciences, U.S.A.; Academy of Sciences, USSR; Institut de France Académie des Sciences, Paris; National Research Council of Canada; Academia Sinica, Peking (Beijing); Royal Societies of New Zealand and Western Australia; Polish Academy of Sciences; Royal Academy of Belgium; Hungarian Academy of Sciences, Budapest; Colombian Academy and others. In fact 53 foreign academies and organizations sent their tributes and greetings. Messages were also received from Dr. S. Radhakrishnan, Vice-President of India, Pt. Jawaharlal Nehru and a large number of distinguished foreign and Indian Scientists. The Education Minister's Gold Medal was awarded to Dr. S.P. Mitra of Chemistry Department, Allahabad University, and Jubilee Medals were presented to all Fellows and Members attending the Session.

Unfortunately for the country and specially for the scientific world and the Academy, Prof. Saha expired on February 16, 1956, less than two months since addressing the Academy. Sir Shanti Swarup Bhatnagar and Sir Jwala Prasad, former Education Minister of U.P. and a benefactor of the Academy, had passed away in 1955. Prof. D.R. Bhattacharya also expired in 1956.

Prof. P.L. Srivastava continued as President in 1956. Dr. M.S. Randhawa, then Vice-Chairman of the Indian Council of Agricultural Research, was taken in the Council in place of Dr. H.J. Bhabha who resigned after his appointment as Chairman of the newly founded Atomic Energy Commission.

The Proceedings of the Academy continued to be widely recognized. Apart from senior scientists of the country, many reputed foreign scientists published their papers in the Proceedings from time to time. These included Linus Pauling, E.C. Titchmarsh, A.H. Compton, K. Lansdale, A. Aslansler, G.H. Dungen and many others. As a result, about 200 foreign journals had entered the Proceeding's exchange list. Unfortunately, regular and timely exchange or a proper use of the journals was not done largely due to absence of adequate library staff. A decline in the recognition of the Academy's journal started. This, perhaps, was compounded by easier access of Indian authors to foreign journals.

The twenty-sixth Session was held at the Aligarh Muslim University on February 3 to 5, 1957. It was inaugurated by Sri C.D. Deshmukh, then Chairman of the University Grants Commission, New Delhi. In his address, he paid his tributes to Prof. Saha by making detailed reference to his burning zeal for science, intense patriotism and uncompromising advocacy of truth, besides his scientific achievements. He also mentioned about the biennial Runford Premium Award to S. Chandrashekhra, about Dr. Homi Bhabha presiding over the Geneva Conference on the Peaceful uses of Atomic Energy and the establishment of the Atomic Energy Reactor at Trombay. He spoke at considerable length regarding the role which universities could play in industrial and economic development of the country. Prof. D.S. Kothari presided over the meetings of the Physical Sciences section and Dr. M.S. Mani, Deputy Director, Zoological Survey of India on the Biological Sciences section. A very well attended symposium on 'Molecular Spectra and Molecular Structure' was organised under the Presidentship of Prof. P.S. Gill. A large number of teachers and students attended most of the academic programmes. Dr. C.L. Dhawan of the Irrigation and Power Research Institute, Amritsar was awarded the Education Minister's Gold Medal.

Prof. P.S. Gill took over as President in 1957. This year Prof. G. Herzberg, Director, Division of Physics, National Research Council of Canada was elected an Honorary Fellow. Prof. R.E. Grim, Research Professor of Geology, University of Illinois at Urbana, Prof. S.N. Bose, then Vice-Chancellor, Vishwa Bharati

University, Santiniketan and Sri C.D. Deshmukh, Chairman, University Grants Commission, visited the Academy and delivered lectures.

Although the Proceedings were being published regularly - six parts each of the two sections were released in the year - there was a large backlog of accepted papers. The Academy approached the Ministry of Natural Resources and Scientific Research and a grant of Rs. 10,000 was given for publications. The Chief Minister of Madhya Pradesh also revived the grant for maintenance of the M.P. Branch of the Academy opened at Saugar two years ago. But the Branch does not seem to have survived for long. No record of its activities, office bearers or demise could be found.

The twenty-seventh Session was held at the Mahakaushal Mahavidyalaya, Jabalpur on December 26-28, 1957. Dr. Kailash Nath Katju, Chief Minister of M.P., inaugurated the Session. Sri Kunji Lal Dubey, Vice-Chancellor of Jabalpur University and Chairman of the Reception Committee, welcomed the delegates. In his presidential address, Prof. Gill spoke on the problem of training scientists and the role this Academy could play in fostering cooperation among universities in several areas of research. He then, switched over to the New Particles of Physics. Prof. A.K. Bhattacharya of Saugar University and Prof. R. Misra of Banaras Hindu University respectively presided over the Physical and Biological Sciences sections. The Education Minister's Gold Medal was awarded to Dr. S.M. Das of Zoology Department of Lucknow University. A symposium on Photochemical Reactions was held under the Presidentship of Prof. N.R. Dhar.

In 1958, for the first time, the prize announced by Dr. Sampurnanand on the occasion of the foundation stone laying of the Academy's building in 1953 for the best paper in space research published in the Proceedings was awarded. The recipient was Prof. S.N. Ghosh of Department of Applied Physics of Allahabad University.

The twenty-eighth Session was held at the University of Agra on February 6, 7 and 8, 1959. The President, Prof. Gill, could not come due to sudden indisposition and, Sri Humayun Kabir, Minister of Scientific Research and Cultural Affairs, Government of India, who was to inaugurate the Session, was also held up in Delhi. As a consequence, Prof. P.L. Srivastava, Vice-President, presided over the inaugural function and Sri K.P. Bhatnagar, Vice-Chancellor, Agra University inaugurated the Session. Sri Humayun Kabir, however, arrived in the afternoon and addressed the meeting in the evening. Prof. S.N. Das Gupta, Professor of Botany, Lucknow University, President of the Biological Sciences section, also could not come and Prof. R.N. Tandon officiated for him. Prof. S. Ghosh, Professor of Chemistry, Allahabad University, presided over the Physical Sciences section and delivered his address on Kinetics of Coagulation. A symposium on Chemistry of Coordination Compounds was held under the

Presidentship of Prof. P. Ray, formerly Director, Indian Association for the Cultivation of Science, Calcutta. This became the most important event of the Session. About a hundred papers were received for this symposium, many from abroad - U.S.A., U.S.S.R., U.K., Czechoslovakia, Japan, Hungary, the Netherlands, Sweden,, etc. Five foreign authors attended and presented their papers alongwith many Indian authors. Dr. A.K. Dey of Chemistry Department, Allahabad University was awarded the Education Minister's Gold Medal.

Dr. M.S. Randhawa took over as the President in 1959. Dr. R.N. Tandon (Allahabad) and Dr. K.N. Mathur (Delhi) assisted him as General Secretaries. The Academy pursued its normal activities except that due to acute shortage of paper in the market, publication of the Proceedings again went into arrears.

The twenty-ninth Annual Session was held at the University of Gorakhpur from February, 7 to 9, 1960. The Session was inaugurated by Sri Mohanlal Gautam, Minister of Agriculture, U.P., but Dr. M.S. Randhawa himself could not attend it. Prof. P.L. Srivastava presided in the Inaugural meeting. Dr. Randhawa's address on 'Science to our Aid : Increasing Agricultural Production in India' was read out in his absence. Dr. B.N. Prasad, Professor of Mathematics, Allahabad University and Prof. P.N. Mehra Professor of Botany, Punjab University presided over meetings of the Physical and Biological sciences respectively. Their addresses were entitled, 'The absolute summability of Fourier series' and 'Antiquity of land plants'. Dr. R.S. Kushwaha was awarded the Education Minister's Gold Medal. A short symposium on the Nitrogen Problem was also held.



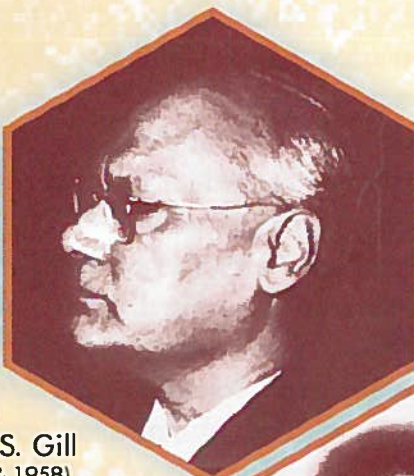
Presidents



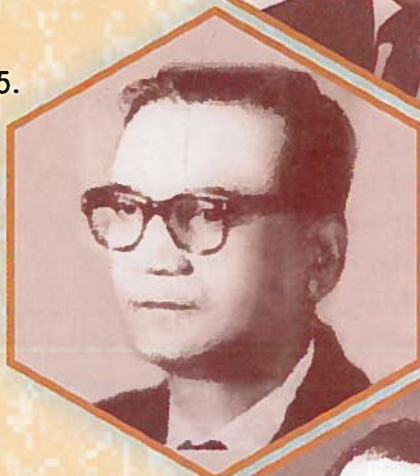
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14.



15.



16.



13. P. S. Gill
(1957 & 1958)

14. M. S. Randhawa
(1959 & 1960)

15. S. Ghosh
(1961-1962)

16. P. Maheshwari
(1963 & 1964)

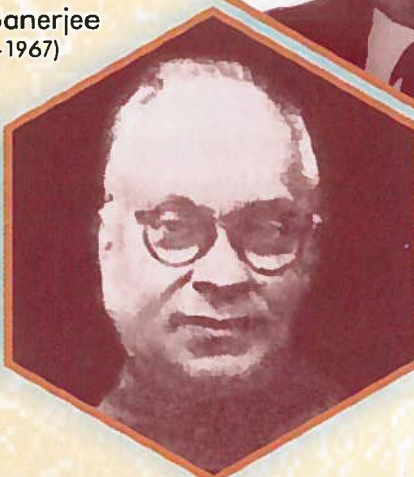
17. B. N. Prasad
(1965)

18. K. Banerjee
(1966-1967)

17.



18.



Silver Jubilee And After Years

NASI

6. SOME MIDDLE AGE GLOOMS

The decade starting from 1960 was one of the most difficult period in the history of Independent India. In 1962, a war was forced on the country by China, which was considered as one of the most friendly countries by India. As a result of the war, a National Emergency was declared and the country had to go through many hardships. Not ready for this war, the country did badly and Pt. Nehru, could never get over the shock. The first Prime Minister and the builder of modern India breathed his last on May 27, 1964. Sri Lal Bahadur Shastri succeeded Pt. Nehru as the Prime Minister and within months of his assuming office, war broke out with Pakistan. The whole country rallied behind a highly respected and dedicated Prime Minister to meet the challenge. Shastriji gave a call to the nation to forego one meal every week to prepare for the possible shortage of food in case the war prolonged and the country responded to the call whole heartedly. The nation came out with flying colours in this war. Soon afterwards, during a visit to Tashkent, where he signed an agreement with Pakistan, he suddenly died on January 11, 1966. Smt. Indira Gandhi, took over the onerous responsibility of the office of the Prime Minister.

These events could not but have impact on the working of most institutions of the country, including the Academy, the normal activities of which were severely disrupted. But apart from that, the Academy suffered the loss of several of its founders, past presidents, fellows and well wishers. These included Sir Malcolm Hailey, Governor of the United Provinces and the first Patron of the Academy; Dr. Sampurnanand, former Chief Minister of U.P. and former Governor of Rajasthan, who had laid the foundation stone of the Academy's building; Founder Fellows Prof. P.C. MacMahon and Prof. Julian Mitter; former Presidents Prof. K.S. Krishnan, Prof. A.C. Banerji and Prof. Shri Ranjan; the Immediate Past President Prof. Panchanan Maheshwari; President-elect Prof. B.N. Prasad and Honorary Fellows Dr. Otto Hahn and Dr. Paul Pascal. The loss of so many illustrious persons, so closely associated with the Academy and within a short span of a few years, naturally caused a setback to the progress of the Academy.

Although the Academy had been functioning from its own building for about six years, it remained severely handicapped by shortage of staff. Only one temporary assistant was employed in addition to the existing staff for the library and other routine work. Consequently, it had to depend heavily on help from the local officers, specially the General Secretary, and other teachers of Allahabad University to shoulder the burden of day-to-day work. The publication work was also affected because of the difficulty in obtaining paper and in 1960 the number of issues of the Proceedings was reduced from twelve to eight.

The thirtieth Annual Session was held at Allahabad University on February 3-5, 1961 with Dr. M.S. Randhawa as the President. Prof. S.N. Bose, F.R.S. and

National Fellow, inaugurated the Session. Dr. Randhawa delivered his address on the Recent Advances in the Study of the Structure of the Chromosomes and Mechanism of Photosynthesis. The two Sectional Presidents were Sri S. Basu for Physical Sciences and Prof. M.D.L. Srivastava for Biological Sciences. However, Sri Basu could not attend and his address on 'Tropical Storms' was read out in his absence. There was a good gathering of young scientists and around 120 papers were presented in the two sections. A successful symposium on 'Ecological Problems of the Tropics' and another on 'Spectroscopy' was organised during the Session. The proceedings of both the symposia were later published in special numbers of the Proceedings. Popular lectures, delivered by Prof. S.N. Bose, Dr. A.T. Vagramyan and Prof. N.R. Dhar attracted a large number of citizens from Allahabad, besides the delegates to the Session.

Prof. S. Ghosh, Rector in the University of Jabalpur and formerly Professor of Chemistry at Allahabad University, was elected President for 1961 with Prof. R.K. Saksena and Prof. K. Banerjee as the two General Secretaries. This was the second time Prof. Saksena was elected General Secretary. Prof. Krishnan passed away on June 14, 1961. He had been deeply involved in the affairs of the Academy since joining Allahabad University and had been its President during 1945 and 1946. He continued to take interest in the affairs of the Academy even when he moved to Delhi as Director of the National Physical Laboratory and found time to attend the Annual Sessions. His death struck a severe psychological blow to the Academy.

The thirty-first Annual Session was held at Dehradun on March 10 to 12, 1962. Prof. M.S. Thacker, Director General, Council of Scientific and Industrial Research, New Delhi inaugurated the Session and spoke on the importance of science education and research in context of the prevailing situation in the country. Prof. Ghosh, the President, prefaced his formal address with a few remarks on the need to strengthen science research in the universities and then spoke on 'Stability of Colloids'. Prof. A.C. Banerji presided over the Physical Sciences Section. He delivered an address on the Origin of the Planetary System. Prof. A.G. Jhingran of the Geology Department of Delhi University presided over the Biological Sciences Section and spoke on 'Copper - a Resume of our Resources'. The two scientific sessions attracted many young scientists. The Biological Sciences Section was particularly busy where over a hundred delegates patiently waited for an opportunity to read their papers. It would not be out of place to mention that even though most of the presentations were made by younger persons, their teachers and other senior scientists made it a point to remain present during the entire scientific sessions, participated in the discussions and made valuable suggestions. This gave a wonderful opportunity to young scientists to learn from and interact with senior scientists.

An eminent animal embryologist, Prof. P.D. Niewkoop, Director of the International Embryological Institute at Utrecht the Netherlands, attended the Session and delivered two lectures on (i) Causal analysis of the pattern formation in the neural plate in the amphibians, and (ii) Significance of the field concept in experimental embryology.

A symposium on 'Collisional Processes' was convened by Prof. S.N. Ghosh, the deliberations of which were held in four sessions. Twenty-eight papers were presented, including fourteen from foreign authors. The symposium was a great success. Popular talks were delivered by Prof. P. Maheshwari, Dr. B.K. Bakshi, Prof. N.R. Dhar and Dr. U. Fano from Japan.

The Punjab University had invited the Academy to hold its thirty-second Annual Session at Chandigarh in November 1962 but due to the war with China and the declaration of National Emergency, the Session was cancelled. The Annual Meeting was held for a day on February 16, 1963 at Allahabad mainly to transact essential business. Prof. Ghosh could not attend this Meeting and in his place Dr. B.N. Prasad presided. Prof. D.S. Kothari, then Chairman of the University Grants Commission, was present as the Chief Guest. He delivered a lecture on Science and Human Progress. He also delivered a popular lecture on Elementary Particles the same afternoon.

Prof. Panchanan Maheshwari was elected President for the years 1963 and 1964. Dr. R.K. Saxena and Dr. A.G. Jhingran, Director of Geological Survey of India were the two General Secretaries in 1963. The thirty-third Annual Session was also cancelled under the prevailing abnormal national situation and the Annual Meeting took place at Allahabad on February 15 and 16, 1964. There were no paper reading sessions but it was possible to hold two symposia - one on 'Chemistry of Natural Products' and another on 'Land Fertility, Improvement and Reclamation by Blue Green Algae'. Several outstation scientists participated in both the symposia. A botanist from New Zealand, Dr. (Ms.) E.C.M. Segar attended the symposium on Blue-green algae. Prof. S. Bhagavantam, Scientific Advisor to the Ministry of Defence, Government of India was the Chief Guest and he delivered a lecture on Physics of the Earth. Prof. P. Maheshwari delivered his Presidential Address on 'Science and Government' in which he made observations on the conditions under which science was practiced in India. He made several suggestions for improvement in science teaching and research so that these became more relevant to the immediate needs of the country.

The availability of paper caused problems again and only four issues of each section of the Proceedings, including the proceedings of the symposia on Ecological Problems in the Tropics and Collisional Processes held in 1961 and 1962 respectively could be published. Dr. K.S. Bilgrami, then in the Jodhpur University, received the Education Minister's Gold Medal.

Prof. P.L. Srivastava, in the meanwhile had joined the Bihar University in Muzaffarpur as its Vice-Chancellor. With his sustained interest in the Academy, it was only to be expected that he would invite it to hold a Session in his University. The thirty-fourth Annual Session was held at Muzaffarpur on February 13 to 15, 1965. The Session was being held after a gap of two years and many members and others were looking forward to attend it. Incidentally, Dr. U.S. Srivastava had also joined Bihar University as University Professor and Head of the Department of Zoology and he was asked to take over as the Local Secretary.

The University of Bihar was young and had rather small science departments of its own but there were many affiliated colleges controlled by it and located all over North Bihar. This turned out to be a great asset in making the Session an unusual success. There was great enthusiasm at the prospect of listening to reputed scientists. Science teachers from all over Bihar, along with their many students, attended the Session. The State Government was very supportive. In an unprecedented gesture, the then Education Minister of Bihar, Sri S.N. Sinha agreed to become the Chairman of the Reception Committee. He was present in the inaugural session and on most other important occasions. The Rajyapal, Sri M. Ananthashayanam Ayyangar, inaugurated the Session. The President, Prof. P. Maheshwari, delivered his presidential address on Biology and Human Welfare. Prof. Kedareshwar Banerji presided over the Physical Sciences Section and spoke on the Problem of utilisation of scientific man power and the need to revitalise scientific research. The Biological Sciences Section was presided over by Prof. R.N. Tandon. He delivered his address on 'Carbon nutrition of some isolates of *Colletotrichum gloeosporioides*'. About 150 papers were presented in the two sections. Three popular lectures were delivered - on Plants and Human History by Prof. Maheshwari, the Nature of Mathematics by Prof. John L. Kelley and Energy Sources of the World by Prof. N.R. Dhar. The Pandal and the lecture rooms were packed in all the programmes. The Education Minister's Gold Medals were awarded to Dr. R.D. Tiwari (Allahabad), Dr. D.B. Saxena (Kashmir) and Dr. D.P. Baneiji (Sagar). A Book Exhibition was organised on the occasion and an excursion was taken to Vaishali which is said to be the seat of the first-ever republic in the world.

Dr. B. N. Prasad, Ex-Professor of Mathematics, University of Allahabad and a Member of the Rajya Sabha, was elected President for the year 1965. Unfortunately, he expired on January 18, 1966 even before he could address any meeting of the Academy. The next Annual Session had already been planned to be held on February 26 to 28, 1966 at Agra where another former President of the Academy, Prof. Shri Ranjan, had taken over as the Vice-Chancellor. There was little time to elect a new President and, therefore,

Prof. N.R. Dhar presided over the Session. Justice M.C. Chagla, then Minister of Education in the Government of India, was the Chief Guest. In his address, Justice Chagla expressed the view that under the circumstances then prevailing in the country, there was need for a greater stress on applied science without, of course, neglecting basic sciences. More importantly, he felt that Government must ensure a greater involvement of the country's scientists in giving shape to its policies. The two Sectional Presidents were Prof. R.S. Mishra of Allahabad University (Physical Sciences) and Prof. Usha Nath Chatterji of Jodhpur University (Biological Sciences). A large number of papers were presented in the two sections. A symposium on Non-linear Optics was organised and several popular lectures were delivered, including one by Dr. Atma Ram, the then Director General of C.S.I.R. Prof. Shri Ranjan took great pains to make the Session a success but there was palpable effect of the recent demise of Dr. B.N. Prasad.

Prof. Kedareshwar Banerji, who had by then shifted from Allahabad to take over as the Director of the Indian Association of Cultivation of Science, Jadavpur, Calcutta, was elected President for 1966 with Prof. M.D.L. Srivastava and Dr. B.S. Chauhan as the two General Secretaries. The same year, Prof. P. Maheshwari died on May 18, 1966. Prof. Maheshwari has been one of the most distinguished botanists of this country. After Prof. Birbal Sahni, he was the second biologist to be elected a Fellow of the Royal Society. He was a student of Allahabad University and Prof. R.N. Tandon was his classmate in M.Sc. He was a Professor at the University of Dacca before moving to the Delhi University. His work on plant morphology and embryology had earned him world-wide fame.

The Banaras Hindu University was the venue of the thirty-sixth Annual Session, which was held on February 24 to 26, 1967. Dr. Triguna Sen was the Vice-Chancellor. Prof. K. Banerji presided over the Session. Prof. Balbhadra Prasad, Emeritus Professor of Chemistry at Utkal University, and earlier the Vice-Chancellor of Allahabad University, presided over the Physical Sciences Section while Prof. R.K. Saxena presided over the section of Biological Sciences in the absence of Prof. S.M. Das, Professor of Zoology in Kashmir University. More than a hundred papers were presented in each of the two sections. A symposium on Soil Fertility was organised by Prof. N.R. Dhar.

Among the six Fellows elected during the year was Prof. P.L. Bhatnagar who was, then the Head of the Department of Applied Mathematics in the Indian Institute of Science, Bangalore and later became the President of the Academy.

The University of Gujarat at Ahmedabad hosted the thirty-seventh Annual Session of the Academy which was held on February 1 to 3, 1968. The Inaugural meeting was presided over by the Chief Minister of Gujarat, Sri Uma Shankar Joshi, while the Rajyapal of the State, Sri Shriman Narayan, was the Chief Guest. Unfortunately the President of the Academy Prof. K. Banerji could

not attend the Session due to indifferent health and his Presidential Address was read out by Dr. K.N. Mathur of the National Physical Laboratory, New Delhi and President of the Physical Sciences Section. Prof. V. Puri, Head of the School of Plant Morphology, Meerut University presided over the Biological Sciences Section. This was the first time that the Academy had held a Session in Gujarat and the local scientific community was very enthusiastic about it. The Sessions were very well attended. About 200 papers were presented in the Biological Sciences Section and over 100 papers in the Physical Sciences Section. A symposium on 'Diversity in Plant and Animal Populations' was organised by Prof. S.C. Pandya of Gujarat University and a large number of ecologists attended it.

Prof. R.K. Saxena presided over the destiny of the Academy in 1968. Prof. M.D.L. Srivastava, Professor of Zoology at Allahabad University and Prof. A.C. Chatterji, Formerly Head of Chemistry Department Lucknow University and currently Vice-Chancellor, Gorakhpur University, were the two General Secretaries.

Prof. A.C. Banerji, one of the Founder Fellows and a Past President of the Academy passed away on May 5, 1968. For 38 long years, since the Academy was founded, Prof. A.C. Banerji had stood by the Academy through thick and thin. He had occupied various offices of the Academy and was President in 1947 and 1948. Even during the periods when he was the Vice-Chancellor of Allahabad University and later of Jadavpur University, Calcutta, his active interest in the Academy had not diminished. Two distinguished Honorary Fellows of the Academy Prof. Otto Hahn and Prof. Paul Pascal also passed away in 1968.

The thirty-eighth Annual Session under the presidentship of Prof. Saxena was held from March 17 to 19, 1969 at the Ranchi University. Prof. R.K. Saxena presented a review of the work done on Mycology in India. Prof. P.L. Bhatnagar, then at the Indian Institute of Science Bangalore, presided over the Physical Sciences Section and Prof. U.S. Srivastava, then in Bihar University, presided over the Biological Sciences Section. The Session drew a very good gathering. More than 350 delegates attended the Session and over 250 papers were presented in the two sections. The Session was inaugurated by Prof. A.C. Joshi, Vice-Chancellor of Banaras Hindu University. Several popular lectures were delivered which drew large crowds.

Prof. P.S. MacMohan, Prof. Julian Mitter and Lord Malcolm Hailey passed away during 1969. The same year, death also occurred of Prof. Shri Ranjan who had served the Academy as a General Secretary from 1939 to 1942 and as President in 1953 and 1954. Dr. Sampurnanand and Dr. D.N. Wadia, a renowned geologist and Fellow of the Academy, also died the same year.

Prof. R.K. Saxena would have continued as the President in 1969, but fate

cut his tenure short. He died suddenly during a journey in a railway coach, causing gloom in the Academy. As, a result of the sudden demise of Prof. R.K. Saxena, Prof. A.C. Chatterji was elected President for 1969 with Prof. S.P. Tandon, Professor of Chemistry at Allahabad and Prof. J.J. Chinoy, Head of the Department of Botany in Gujarat University as the two General Secretaries.

The first Session under Prof. A.C. Chatterji's Presidentship was delayed and was held in the University of Roorkee on March 6 to 8, 1970. He delivered his address on Oxidation of Simple Organic Compounds. Prof. R.C. Misra, Head of the Department of Geology, Lucknow University and Prof. W.V. Bhagwat, Head of the Department of Chemistry, Vikram University, Ujjain were Presidents of the Biological and Physical Sciences sections respectively. The Session was made lively because of the participation of a large number of young scientists who presented about 250 papers, and the presence of the Vice-Chancellor Prof. M.R. Chopra on most of the occasions. One of the enthralling events was the variety entertainment programme, which was organised and led by Mrs. Chopra on the stage.

On July 13, 1970, Prof. P.L. Srivastava, Past President and a sitting Vice President expired after prolonged illness. Prof. P.L. Srivastava was greatly involved in the affairs of the Academy since it was founded and had served the Academy in almost all official capacities. The Council appointed Prof. N.R. Dhar as Vice-President in his place for the rest of the year.



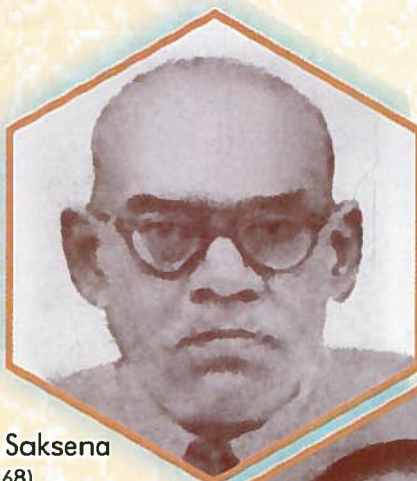
Presidents



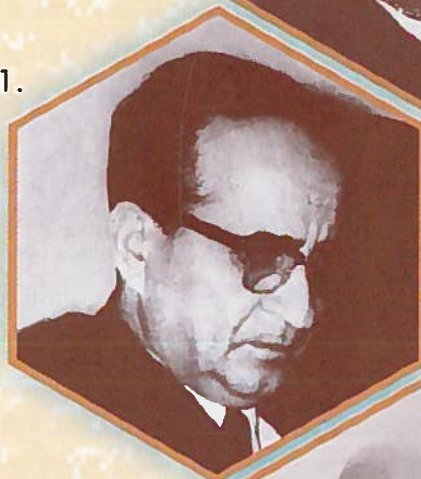
19.



20.



21.



22.



19. R.K. Saksena
(1968)

20. A.C. Chatterji
(1969 & 1970)

21. M. L. Dhar
(1971 & 1972)

22. S.H. Zaheer
(1973 & 1974)

23. R. N. Tandon
(1975 & 1976)

24. B.D. Nag Chaudhuri
(1977 & 1978)

23.



24.



Some Middle Age Grooms

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7. THE CHALLENGING TIMES

In spite of the many vicissitudes during the last ten years, the Academy's membership more than doubled - from around 300 in 1960 to more than 750 in 1970. The number of Fellows had also risen significantly. It was being recognised that existing mechanisms did not encourage Fellows and Members from distant places to take meaningful interest in the affairs of the Academy. The Council had 16 members, of which, besides the posts of one Vice-President, one General Secretary, the Foreign Secretary and the Treasurer, four places were reserved for Fellows from the headquarters. This rule was justified when originally framed : a large number of Fellows were from Allahabad; the Academy could not afford to pay travel expenses to Council members to attend Council meetings; and the meetings were held every month, except in May and June. But the changed situation in all these respects needed a restructuring of the council. Three major decisions were, therefore taken. The strength of the Council was increased from 16 to 23. Further, the country was divided into five zones and each of these five zones was to be represented on the Council by at least one member while four places were still given to the headquarters. It was also felt necessary to ensure continuity in activities of succeeding councils. Hence it was decided that two Past Presidents will be members of the council by rotation. These changes came into effect from the year 1971 and brought about a degree of resurgence of interest among Fellows from different parts of the country in the Academy.

The fortieth Annual Session was again delayed and held on February 26 to 28, 1971 at Vikram University, Ujjain with Prof. A.C. Chatterji as the President. Prof. D.S. Kothari, then Chairman of the University Grants Commission, inaugurated the Session. He also delivered a popular lecture on Science and Society. Several other special and popular lectures were delivered, covering very diverse subjects. Dr. Shiv Mangal Singh 'Suman', a reputed Hindi poet, was the Vice-Chancellor and virtually omnipresent, taking care of every programme and every delegate. There was a large gathering and about 200 papers were presented in the two scientific sessions.

Dr. M.L. Dhar, Director of the Central Drug Research Institute, Lucknow was elected President of the Academy for 1971 when the reorganized Council came into existence. Prof. N.R. Dhar and Prof. H.R. Mehra, came in as the two senior most Past Presidents. Prof. S.P. Tandon and Dr. V. Puri continued as the General Secretaries. During this year, Prof. Paul Karrer, Honorary Fellow and Prof. H.R. Mehra, Past President passed away.

Dr. M.L. Dhar's first Annual Session was held at the Banaras Hindu University on February 24 to 26, 1972. The Session was inaugurated by Prof. W.D. West, famous geologist and Vice-Chancellor of Saugar University, Sagar. Prof. R.S. Kushwaha, Professor of Mathematics, Jodhpur University and Dr. H.D. Srivastava, formerly Director of Indian Veterinary Research Institute,

Izatnagar, presided over the Physical and Biological Sciences sections respectively. Besides, several invited lectures, a symposium on Soil Productivity was organised by Prof. N.R. Dhar. This symposium was later continued at the College of Agriculture, Calcutta for which six papers from foreign scientists and 57 from Indian scientists were received. The symposium became the main attraction of the Session at Banaras.

The forty-second Session - when Dr. M.L. Dhar continued as the President for the second year - was to be held at Ludhiana under the auspices of the Punjab Agricultural University in December, 1972 but due to student unrest at Ludhiana, it had to be cancelled. The University of Allahabad then offered to host the Session which was held on March 4 to 6, 1973. Although some student trouble had broken out at Allahabad also, the Vice-Chancellor Prof. B.R. Saksena and the district administration handled the situation with tact and firmness. The Session turned out to be very successful despite the delay and the change of venue. Prof. Vachaspati and Prof. U.S. Srivastava were the two Local Secretaries. The Rajyapal of Uttar Pradesh, Sri Akbar Ali Khan, inaugurated the Session. Prof. S. Nurul Hasan, Minister of Education in the Government of India, was the Chief Guest. Dr. M.L. Dhar delivered a very informative address on the state of science in the country and how science can be used for its development. Prof. R.P. Rastogi, Head of the Chemistry Department at the University of Gorakhpur, and Prof. K.S. Thind, Senior Professor of Botany at the Punjab University Chandigarh, presided over the Physical and Biological Sciences sections. Special and popular lectures were delivered by Prof. L.S. Kothari and Prof. S.N. Biswas, from the Department of Physics and Astrophysics, University of Delhi; Prof. P.L. Bhatnagar, Dean of Studies, Himachal Pradesh University, Shimla; Prof. P.N. Srivastava, Head of the Department of Zoology, Rajasthan University, Jaipur and others. A symposium on Chemical Kinetics was held on March 3, a day before the inauguration of the Annual Session, so that it did not encroach upon the time for presentation of papers. Prof. R.P. Rastogi was the Convenor of the Symposium. A Hindi drama was staged, courtesy Allahabad Artists Association with which several teachers of the Faculty of Science were closely associated. Also on this occasion, the newly constructed building of the Vigyan Parishad, Allahabad was inaugurated and an exhibition of books on different science subjects in Hindi was organised.

Thanks to the efforts of the President Dr. M.L. Dhar, in 1973 an *ad hoc* grant of Rs. 25,000 was received from the Department of Science and Technology, Government of India.

Dr. S. Hussain Zaheer, formerly Director General of the Council of Scientific and Industrial Research, New Delhi succeeded Dr. M.L. Dhar as the President in 1973 for two years. Profs. U.S. Srivastava and R.S. Kushwaha took over as the

General Secretaries. The forty-third Annual Session was held on October 20-22, 1973 at the University of Jodhpur where Prof. P.N. Masaldan, formerly from Lucknow University was the Vice-Chancellor. Sardar Joginder Singh, Rajyapal of Rajasthan, was to inaugurate the Session but due to the sudden demise of Sri Barkatullah Khan, Chief Minister, he could not come. Dr. B.D. Nag Chaudhuri, Scientific Advisor to the Ministry of Defence Government of India, was the Chief Guest. He spoke on science and natural resources of India and the policy of the Government of India to promote scientific and technological researches. The President, Dr. Hussain Zaheer, delivered his address on the Energy Crisis, which was very well received. Messages of goodwill were received from Sri V.V. Giri, President of India; Sri G.S. Pathak, Vice-President of India; Smt. Indira Gandhi, Prime Minister and many other dignitaries. Dr Hari Narain, Director of National Geophysical Research Institute, Hyderabad and Prof. G.K. Manna, Head of the Zoology Department, Kalyani University, West Bengal were Presidents of the Physical and Biological Sciences sections. Special and popular lectures were delivered by Prof. B.M. Udgaonkar, Professor of Theoretical Physics, Tata Institute of Fundamental Research; Dr. Nitya Anand, Director of Central Drug Research Institute, Lucknow; Prof. N.R. Dhar; Prof. R.C. Mehrotra, Head of Chemistry Department, Rajasthan University, Jaipur and others. About 150 outstation delegates attended the Session.

Prof. N.R. Dhar was to complete 80 years of age on January 2, 1972 and the Council had decided to celebrate the occasion suitably and to publish a Volume to commemorate the occasion. Somehow this was inordinately delayed. When Prof. U.S. Srivastava took over as General Secretary, his first task was to see this work through. The Volume was finally published as a special issue of the Proceedings and formally presented to Prof. Dhar in the Session at Jodhpur. Interestingly, when letters were sent out inviting authors, specially former students of Dr. Dhar requesting them to contribute papers, many of them sent articles felicitating Dr. Dhar and expressed great keenness that these be published, even though Commemoration Volumes, as a rule, contain only one article on the life and work of the person being felicitated. Consequently, a 'Supplement' to the Commemoration Volume containing 18 articles on Prof. Dhar by students or admirers of Prof. Dhar was published along with the main Commemoration Volume. The author of one such article was Dr. Dharam Vira, former Governor of W. Bengal and Karnataka, and an old pupil of Dr. Dhar.

The University of Bhagalpur invited the Academy to hold its forty-fourth Annual Session and preparations had been made to organize it in November, 1974. Unfortunately the Nav Nirman agitation led by Sri Jayaprakash Narain had spread in large parts of the country and Bihar was particularly affected. As a result of this, the Session was finally held on April 22-24, 1975. However, as a consequence of rescheduling the Session, the President, Dr. Hussain Zaheer,

could not attend it. The Rajyapal of Bihar, who had agreed to inaugurate the Session, also could not come. Nevertheless, over a hundred delegates came from outside Bhagalpur. Prof. Krishnaji, Pro-Vice Chancellor at Allahabad University, presided over the Physical Sciences Section and Prof. S.P. Ray Chaudhury, Head of the Division of Plant Pathology, Indian Agricultural Research Institute New Delhi, over the Biological Sciences Section. The participation of teachers and students from Bhagalpur and elsewhere in Bihar, despite the ongoing agitation, was a matter of great satisfaction. Some very lively cultural programmes were arranged and in one of them Prof. P.T. Narasimhan, then Professor of Chemistry at I.I.T., Kanpur gave a wonderful flute recital. Prof. Narasimhan was, in fact, an accomplished musician and loved classical music, both north Indian and Karnataka, and often performed on the All India Radio - a fact not generally known.

In 1974, the Academy elected 23 Fellows including Dr. Y. Nayyudama, Director General C.S.I.R., Prof. C.N.R. Rao, Dr. Sivaraj Ramaseshan, Prof. P.N. Tandon, Dr. Akhtar Hussain, Dr. P.M. Bhargava and Dr. Ajit Ram Verma.

Past Presidents Dr. S. Hussain Zaheer and Prof. Kedareswar Banerji expired in 1974.

Prof. R.N. Tandon, Ex-Professor and Head of the Department of Botany, Allahabad University, became President in 1975. During this year, the Council elected five Honorary Fellows. These were Prof. M.G.K. Menon, then Scientific Advisor in the Ministry of Defence, Government of India; Dr. Raja Ramanna, then Director, Bhabha Atomic Research Centre, Bombay; Dr. H.N. Sethna, Chairman, Atomic Energy Commission; Dr. B.D. Nag Chaudhuri, then Vice-Chancellor of Jawaharlal Nehru University, New Delhi and Prof. M.S. Swaminathan, then Director General, Indian Council of Agricultural Research, New Delhi.

The forty-fifth Annual Session was held at the Rajkumar College, Rajkot, Gujarat under the auspices of the Saurashtra University. On April 24 to 26, 1976. Sri H.M. Trivedi, Central Minister of Shipping and Transport, inaugurated the Session and Prof. R.N. Tandon presided. Prof. Chandrika Prasad, Head of the Department of Mathematics, Roorkee University and Prof. H.S. Chaudhary, Head of Zoology Department, Gorakhpur University presided over the Physical and Biological Sciences sections respectively. Over a hundred papers were presented in the two sections taken together. Excursions were held to the Gir forest and Somnath.

The next Annual Session during the Presidentship of Prof. Tandon was hosted by the University of Delhi. This was the second time the Academy met in Delhi after 1941, thanks to the initiative taken by the Vice-Chancellor Prof. R.C. Mehrotra. The Session, held on February 5 to 7, 1977, was inaugurated by Prof. S. Nurul Hasan, then Minister of Education, Government of India. In his

Address, he drew attention to several pressing problems of the country which could be solved only with the cooperation of scientists and for this he felt that science education needed reorientation. Prof. Mehrotra deplored the drift of talented students away from science. Prof. Tandon delivered his Presidential Address on 'Fungi - ideal tools for Physiological Research'. Prof. P.T. Narasimhan, Senior Professor of Chemistry, IIT, Kanpur and Prof. R.P. Roy, Head of the Botany Department, Patna University were Presidents of the Physical and Biological Sciences sections respectively. Popular lectures were delivered by Prof. B.D. Nag Chaudhuri (New Delhi), Prof. R.C. Paul (Chandigarh), Dr. Manju Sharma (Delhi), Dr. S.P. Ray Chaudhury (Delhi) and Prof. R.P. Kanwal (Pennsylvania State University). About 200 delegates participated.

Prof. P.L. Bhatnagar, a distinguished Mathematician, took over as the Director of the recently established Mehta Research Institute of Mathematics and Mathematical Physics at Allahabad after resigning from the Membership of Union Public Service Commission. The Academy elected him Foreign Secretary. Later, the Council nominated him to the office of President for the year 1977. Sadly, he suffered from a serious heart attack on October 5, 1976 while he was on his way to the Institute and expired before any medical help could reach him. Prof. B.D. Nag Chaudhuri was then elected President for 1977. Prof. Krishnaji and Prof. P.T. Narasimhan assisted him as General Secretaries. The Academy decided to bring out a Volume in memory of Prof. Bhatnagar.

The Council elected six Honorary Fellows this year : Prof. Paul Neergaard (Copenhagen), Sir James Lighthill (Cambridge), Prof. E.C. George Sudarshan (Texas and Bangalore), Prof. Satish Dhawan (ISRO, New Delhi), Prof. A. Ramachandran (Delhi) and Prof. G.N. Ramachandran (Bangalore).

Dr. Ravi Prakash, who was the first and a very dynamic Vice-Chancellor of the recently founded Bhopal University, invited the Academy to hold its forty-seventh Annual Session under its aegis. The Session, held on March 4 to 6, 1978, was inaugurated by the Rajyapal of Madhya Pradesh, Sri N.N. Wanchoo. He exhorted scientists to help conquer poverty, ignorance and superstition and to spread scientific temper in the country. Prof. Nag Chaudhury devoted his Presidential Address to the 'Problems and Prospects of Energy for Domestic Purposes'. Prof. Ajit Ram Verma, Director of National Physical Laboratory, New Delhi and Prof. P.N. Srivastava, Rector, Jawaharlal Nehru University, New Delhi presided over the Physical and Biological Sciences sections. Two short symposia on 'Integrated Rural Development: Science and Society for Economic Growth' and 'The Changing Environment' were also held.

The response to the Session can best be guessed from the fact that about 360 research papers had been received for presentation and about 200

papers were actually presented. The Biological Sciences section had to be split into two parallel sessions. The large turn-out of the delegates and immense personal interest taken by Dr. Ravi Prakash contributed to the success of the Session. Students and teachers from the Regional College of Education and the Medical College at Bhopal and colleges affiliated to Bhopal University, besides the University Departments, attended most programmes.

During the 1977, the Academy lost two of its senior Fellows - Prof. P. Parija, a former President of the Academy and former Vice-Chancellor, Utkal University and Prof. J.J. Bhoy Chinoy, Director of University School of Sciences, Gujarat University, Ahmedabad and Academy's former General Secretary.

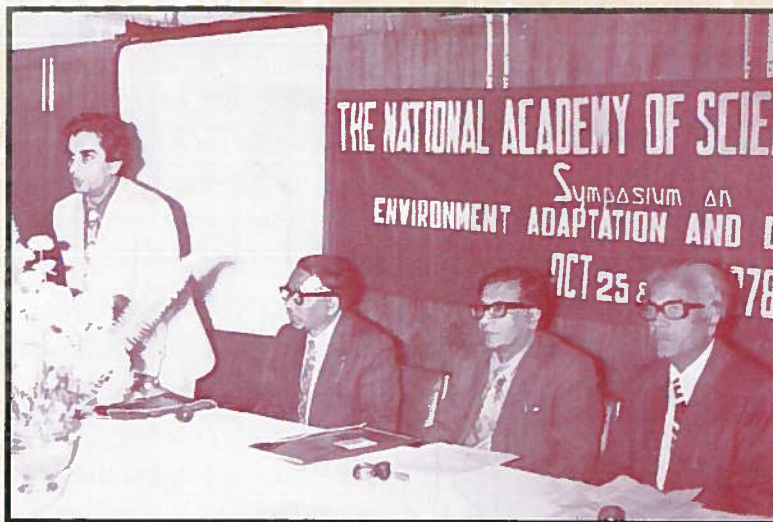
The Academy continued to attract young and senior scientists alike in large numbers. The total strength of Members came close to 1900. New Members came from all parts of the country and a sprinkling also from abroad. The list of Members from October 1979 to October 1980, for example, included scientists from Andhra Pradesh, Bengal, Bihar, Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Nagaland, Punjab, Rajasthan, Tamil Nadu, besides some from abroad. In fact, every Session stimulated more scientists to join the Academy.

The Vice-Chancellor of the University of Gauhati, Prof. H.K. Barua, an eminent Botanist and a Fellow of the Academy, invited the Academy to hold its forty-eighth Annual Session in his University. This was the first time that the Academy went to a North-Eastern State. The Session was held from October 22 to 24, 1978. Prof. B.D. Nag Chaudhuri presided over the Session which was inaugurated by Sri Lakshyadhar Choudhury, Minister of Education and Cultural Affairs, Government of Assam. Befitting the location of the Session, Prof. Nag Chaudhuri devoted his address to issues relating to ecology, specially of the north-east and the need for an integration of different disciplines for the study of the natural systems.

The sections of Physical and Biological Sciences were presided over by Prof. R.P. Bambah, Head, Centre of Advanced Study in Mathematics, Punjab University, Chandigarh and Prof. M.S. Swaminathan, Director General, Indian Council of Agricultural Research, New Delhi. Prof. Bambah spoke on 'Scientific Research - the Challenge of Hard Unsolved Problems'. Prof. Swaminathan's address dealt with 'Plant Breeding and Conquest of Hunger'. About 450 papers were received for presentation at Gauhati and despite the deterrence of distance, a large number of delegates attended the session. The University had made excellent arrangements. About 200 papers could be presented in the two sections.

North-Eastern Hill University, Shillong had requested the Academy to hold a symposium on 'Environment, Adaptation and Distribution' at Shillong on October 25 and 26, 1978 in continuation of the Session at Gauhati.

Prof. George Michael, Prof. P.S. Ramakrishnan and Prof. M.K. Khare—who unfortunately died very young—had taken the responsibility of making arrangements for the symposium. More than 75 delegates went from Gauhati to Shillong and attended this symposium. Apart from the presentation of papers, special lectures were delivered by Prof. U.S. Srivastava and Prof. K.S. Bilgrami.



Symposium on 'Environment, Adaptation and Distribution'

January, 1978 saw the publication of the first issue of a new monthly journal launched by the Academy, *National Academy Science Letters* with the objective of speedy publication of short papers of current importance. The proposal for its publication had come from Prof. Krishnaji. Prof. H.L. Nigam was the first Editor of this journal. A few months later, a Local Chapter of the Academy was opened in Delhi. Dr. A.R. Verma, Director, National Physical Laboratory was the first Chairman of the Chapter while Profs. R.C. Mehrotra, P.N. Srivastava and M.S. Sodha were the Advisors. In 1979, the P.L. Bhatnagar Commemoration Volume, edited by Prof. Krishnaji, Prof. H.C. Khare and Prof. M.K. Singal was released. The Volume contained 45 invited articles on various areas of pure and applied mathematics, and on teaching of mathematics.

The increasing activities of the Academy also needed larger financial inputs. The *ad hoc* grant of the Department of Science and Technology was raised from Rs. 25,000 to Rs. 35,000 due to sustained effort of the Officers of the Academy. The U.P. Council of Scientific and Industrial Research also gave a grant of Rs. 12,000 in addition to the grant of Rs. 6,000 from the Government of Uttar Pradesh. The Academy had difficulty in meeting its commitments even with this additional funding. Moreover their uncertainty was a source of constant worry.

Dr. Hari Narain, then Vice-Chancellor of Banaras Hindu University, was elected President for the years 1979 and 1980. The Academy immediately entered into the Golden Jubilee Celebration mode and all office-bearers, including the President, the two Past Presidents Prof. N.R. Dhar and Prof. B.D. Nag Chaudhuri, Vice-Presidents Dr. H.D. Srivastava and Prof. R.S. Kushwaha, General Secretaries Prof. Krishnaji and Prof. P.T. Narasimhan, Treasurer Prof. U.S. Srivastava and Foreign Secretary Prof. H.L. Nigam got involved in planning for the Jubilee.

In the meanwhile, the Academy held its forty-ninth Annual Session on October 27 to 29, 1979 for the first time in Maharashtra on the invitation of Prof. V.M. Kalmegh, Vice-Chancellor of Nagpur University. The Rajyapal of Maharashtra, Sri Sadiq Ali, inaugurated the Session. Dr. Hari Narain, presided over inaugural meeting and delivered an address on 'Education, Science and Technology for Development'. Dr. Nitya Anand, Director of Central Drug Research Institute, Lucknow and Prof. A.K. Sharma, Head of the Department of Botany, Calcutta University presided over the Physical and Biological Sciences sections respectively. About 175 papers out of about 400, included in the 'Abstracts of Papers', were presented. An inspiring excursion to Wardha was organized which included visits to Gandhiji's Sewagram, Vinoba Bhave's Pawar Ashram, Duttapura Kushta Sansthan, All-India Village Industries headquarter at Magan Wadi and the Centre of Science for Villages.

GOLDEN JUBILEE SESSION

October, 23, 1980



A Group Photograph of Golden Jubilee Session

8. GOLDEN JUBILEE AND WIDENING HORIZONS

The major event of the Golden Jubilee year of the Academy was the Golden Jubilee Session held at Allahabad from October 23 to 27, 1980. The Session was inaugurated by Shrimati Indira Gandhi, Prime Minister of India, at a glittering function. Shrimati Gandhi was welcomed by Sri Vishwanath Pratap Singh, the Chief Minister of Uttar Pradesh. The Session was also addressed by the Patron of the Academy, the Governor of U.P. Sri C.P. Singh, Prof. Nurul Hasan the Vice President of CISR and Prof. M.G.K. Menon, Secretary, Department of Science and Technology, Government of India. Dr. Hari Narain, Vice-Chancellor, Banaras Hindu University, Varanasi was the President.

In her address, Shrimati Gandhi stressed that the need of the hour was to ensure that science does not remain confined to laboratories or universities but that it must form a part of life of every Indian citizen in the home, in the farm and in the factory. Science could not afford to be a follower; it has to be a pace-setter, not only reacting to problems and issues as they arise but anticipating these and taking initiatives in advance. She was convinced, she said, that science had become a great force in society and its development and use must be planned and executed by scientists themselves, who should be free from bureaucratic control. She also recalled the hoary traditions of the Academy, the University of Allahabad and the city of Allahabad and her own personal association with the city. She expressed happiness that the Academy was located in Allahabad and was making steady progress in its many activities.

The Inaugural Session was held in the Mehta Auditorium of the Prayag Sangit Samiti attended by a large and distinguished gathering, including over four hundred delegates from various parts of the country and more than a dozen invited foreign scientists from U.K., U.S.A., France, West Germany and Canada. A Golden Jubilee Commemoration Volume, containing articles by eminent scientists from India and abroad was released on the occasion by Prof. M.G.K. Menon. The volume was edited by Prof. U.S. Srivastava. It was the first occasion when Prof. Menon was associated with an important function of the Academy. It was followed by an increasingly closer association between him and the Academy in the years to come. Looking back to the events of the last two decades, it can be stated that Prof. Menon has continued to make significant contributions to the growth of the Academy.

Dr. Hari Narayan, while delivering his Presidential Address on "Earth Resources and an approach to rural development", talked about our natural resources and environment. Two symposia were held during the Session - one on Renewable Sources of Energy and another on Recent Advances in Experimental Zoology. The symposium on Renewable Sources of Energy was also inaugurated by Prof. Menon. A comprehensive keynote paper on 'Energy Policies and the Place of Renewable Sources in these' was presented by Sri Maheshwar Dayal, Advisor, Science and Technology, Government of India.

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The Physical and Biological Sciences Sections were presided over respectively by Prof. B. Ramachandra Rao, Vice-Chairman, University Grants Commission, New Delhi and Prof. J.P. Thapliyal, Professor of Zoology, Banaras Hindu University. Special lectures were delivered by Prof. M.G.K. Menon, Prof. John Laker Harley, Prof. Roy D. Wilcoxon, Prof. Jurgen Kranz, Prof. Karl Maramorosch, Prof. Gautam Mathur and Prof. N.R. Dhar.

The Academy instituted "Professor Meghnad Saha Memorial Lecture Award and Professor A.C. Banerji Memorial Lecture Award to be given in the areas of 'Physics and its applications' and 'Pure or applied mathematics, astrophysics and related subjects', respectively. Prof. Krishnaji, General Secretary and Prof. U.S. Srivastava, the Local Secretary and their many colleagues and students had worked tirelessly for months to make the Golden Jubilee Session a success. Doordarshan (the only channel then in the country), telecast 15 minutes duration feature on the Session several times from its various stations. Letters of appreciation and thanks were received from a large number of participants and dignitaries, including foreign scientists.

The activities of the Academy were pursued with fresh vigour. The Golden Jubilee year turned out to be a watershed year for the Academy. There was a discernible shift in the activities of the Academy. The societal concerns were more sharply focussed in its various programmes.

Dr. Hari Narain was succeeded as President in 1981 by Prof. B. Ramachandra Rao, Prof. H.C. Khare and Sri Maheshwar Dayal were the two General Secretaries. Prof. N.R. Dhar's attaining the age of 90 years was celebrated by the Academy by organising a symposium on 'Chemistry, Agriculture and Man', to cover the many facets of scientific activity in which Prof. Dhar had been engaged for nearly 65 years. About a hundred scientists from all over the country including many students of Prof. Dhar participated in the symposium. The Allahabad Chapter of the Indian National Science Academy, the Indian Science Congress Association and the University of Allahabad also co-sponsored the symposium. It was inaugurated by Prof. M.G.K. Menon who paid glowing tributes to Prof. Dhar not only as a scientist, but also as one of the builders of the Academy and as a great philanthropist.

The Cochin University was the venue of its fifty-first Annual Session held on October 5, 6 and 7, 1981 under the Presidentship of Prof. B. Ramachandra Rao. This was Academy's first scientific meeting in Kerala. Prof. Nurul Hasan, Vice President of CSIR inaugurated the Session. A symposium on 'Computers in Education, Research and Industrial Development' was inaugurated by Mr. K.P.P. Nambiar, Chairman and Managing Director of KELTRON and a Member of the Science Advisory Committee to the Union Cabinet.

Prof. G.N. Ramchandran of the Mathematical Philosophy Group of the Indian Institute of Science, Bangalore and Dr. P.M. Bhargava of the Centre for

Cellular and Molecular Biology, Hyderabad were Presidents of the Physical and Biological Sciences Sections, respectively. Four invited talks were given by Prof. T.N. Ananthakrishnan, Director, Entomology Research Institute, Madras, Prof. George E. Andrews, Pennsylvania State University, USA, Prof. U.N. Singh, Vice-Chancellor, University of Allahabad and Dr. Kurien Jacob, Member, Board of Management, Geological Survey of India, Bangalore. An informative exhibition was set up by the Indian Space Research Organisation, highlighting its development of rockets and satellites.

A far reaching amendment in the Rules regarding election to Fellowship was made in 1982. The original Rules framed in 1930 required that Fellows be elected only from amongst Members. Many senior and distinguished scientists of the country did not like to be enrolled first as Members and then wait for election to Fellowship. The amended Rule permitted direct nomination of scientists for election as Fellows. Members, of course, remained eligible for nomination to Fellowship as before. In the coming years, this change radically transformed the composition of Fellowship of the Academy.

The fifty-second Annual Session was held at Bhavnagar under the joint auspices of the Central Salt and Marine Chemicals Research Institute and the Bhavnagar University on November 2 to 4, 1982. Most of the meetings took place in the campus of CSMCRI. Dr. S. Zahoor Qasim, Secretary, Government of India, Department of Ocean Development and Prof. H.L. Nigam of the University of Allahabad were Presidents of the Biological and Physical Sciences Sections, respectively. Dr. Qasim had led the first Indian expedition to the Antarctica and his interesting and profusely illustrated lecture on 'Impressions of Antarctica Visit' drew a large and appreciative crowd.

Dr. S.Z. Qasim was elected President for the years 1983 and 1984. Prof. H.C. Khare, Sri Maheshwar Dayal (1983) and Prof. K.N. Mehrotra (1984) were the General Secretaries. The first Annual Session in Dr. Qasim's regime - the fifty-third - was held at the National Institute of Oceanography (NIO), Goa on October 27 to 29, 1983. Dr. Qasim had been the Director of NIO for several years. He kept his bonds with the Institute and Goa intact. His successor Director, Dr. V.V.R. Vardachari did everything possible to make the Session a grand success. The Session had a record attendance of over 600 delegates, most of them young scientists. 407 Abstracts in Physical Sciences and 358 in Biological Sciences had been received for presentation. Both the Sections had to have parallel sessions to provide opportunity to maximum number of scientists to present their papers. The Session was inaugurated by Lt. Governor of Goa, Sri K.T. Satarawala. Dr. Qasim delivered his Presidential Address on the Role of Universities in the development of Marine Sciences in India. The Presidents of the Physical and Biological Sciences Sections were Dr. Raja Ramanna, Chairman Atomic Energy Commission and Dr. T.N. Khoshoo,

Secretary, Department of Environment, Government of India. A Seminar on 'Ocean and Climate' was also held. Dr. Raja Ramanna also gave a memorable piano concert in the evening preceding the inauguration.

During this year Smt. Indira Gandhi, Prime Minister of India was elected Honorary Fellow of the Academy. In December, 1983, a symposium on Science and Technology Policy of India was organised in Delhi with a view to focus attention on the impact of the current Science Policy on various aspects of national development, its achievements and deficiencies and to suggest changes, if necessary. Proceedings of this symposium were published soon after with Prof. Krishnaji as the Editor.

Dr. Qasim took the Academy once again the South when the fifty-fourth Annual Session was held on October 11-13, 1984 at the Madurai Kamraj University, Madurai. Dr. S.Z. Qasim delivered Presidential Address on "Marine environment and strategies of its protection." Prof. J.N. Kapur and Prof. P.N. Tandon were Presidents of the Physical and Biological Sciences Sections, respectively but Prof. Kapur could not come. Prof. A.S. Paintal, then Director of Patel Chest Institute, New Delhi, delivered a special lecture on 'Sensations from the Human Lung'. An interesting symposium on the Interface of Physical and Biological Sciences was inaugurated by Prof. P.N. Srivastava. The symposium was divided into three sessions and well known scientists, including Prof. P.N. Tandon, Prof. Anjali Mookherjee, Dr. B. Ramamurthi, Prof. M.K. Chandrasekharan, Prof. P.T. Narasimhan delivered informative lectures. The Proceedings were published by the Academy with Prof. S.L. Srivastava as Editor. About 250 delegates attended the Session and about 120 research papers out of about 460 submitted could be presented.

During the year Sri Hari Govind Singhania of M/s J.K. Synthetics Ltd., Kanpur offered to construct in the Academy a Library Complex with a Hall and adjunct rooms as their donation to the Academy mainly due to the efforts of senior members of the Academy, specially Sri Maheshwar Dayal, General Secretary.

Dr. T.N. Khoshoo took over as the President in 1985. Prof. U.S. Srivastava was persuaded to take over as the Headquarter General Secretary once again with Prof. K.N. Mehrotra of Indian Agricultural Research Institute, New Delhi as the outstation General Secretary. The total membership by this time had reached around 2700 and the number of Fellows was over 450. The meetings of the Academy in places like Cochin, Bhavnagar, Goa and Madurai attracted scientists from distant places to the Academy. The association of increasing number of distinguished scientists as the Fellow of the Academy contributed to improvement in functioning of the Academy.

The fifty-fifth Annual Session was held at the Jiwaji University, Gwalior on November 3 to 5, 1985. Dr. K.M. Chandi, Rajyapal of Madhya Pradesh,

inaugurated the Session. Dr. Khoshoo delivered his Presidential address on 'Environmental Education for Conservation and Development'. After several years, the Education Minister's Gold Medal was awarded to Dr. C.B.L. Srivastava of Zoology Department, Allahabad University. Prof. M.M. Taqui Khan, Director, Central Marine Salt Research Institute, Bhavnagar and Prof. (Mrs.) Archana Sharma of Calcutta University presided over the Physical and Biological Sciences Sections, respectively.

A three-days symposium on 'Short term and Long Term hazards of Pesticides and Strategies for their Safe Use' was organized by the Academy in Delhi on February 24 to 26, 1986 with Prof. K.N. Mehrotra as the Convener. It was a very productive symposium, attended by a large number of leading agricultural scientists, entomologists, plant protection specialists and environmentalists and was inaugurated by Prof. M.G.K. Menon, Scientific Advisor to the Prime Minister and Member, Planning Commission.

The Academy also organized a National Seminar on 'Electronics for Teaching and Mass Education' in New Delhi on May 29 and 30, 1986. It was inaugurated by Sri Shivaraj V. Patil, Union Minister of State for Science and Technology. Scientists from Universities, Departments of Telecommunication and Space, and Ministry of Agriculture of the Government of India as well as representatives from the private enterprises participated. The recommendations of the Seminar were sent to concerned organizations and its proceedings were published by the Academy with Prof. S.L. Srivastava as the Editor.

The Foundation Stone of the new Library Complex, donated by M/s J.K. Synthetics Ltd., Kanpur, was laid by Prof. M.G.K. Menon on March 29, 1986 in the presence of Sri Gaur Hari Singhania and a large number of distinguished persons, including the President Dr. T.N. Khoshoo; Immediate Past President Dr S.Z. Qasim; Sri Maheshwar Dayal, Secretary, Department of Additional Sources of Energy; the Chairman, Central Ganga Authority Sri Shivarama Krishnan and Prof. N.R. Dhar. On this occasion, a two-days Workshop on 'Ganga as a Resource- Prospects and Problems' was also organized in which scientists engaged in river ecology, fisheries, hydropower, and Central and State government officers connected with the Ganga Action Plan participated.

The next Session was held on October 25 to 27, 1986 at the Rajasthan University, Jaipur where Prof. R.P. Agrawal, a Fellow of the Academy was the Vice-Chancellor. Dr. Yash Pal, Chairman, University Grants Commission, inaugurated the Session while the President, Dr. T.N. Khoshoo delivered his address on 'Ecosystem versus socio-economic system'. Dr. R.G. Rastogi, Director, Indian Institute of Geomagnetism, Bombay and Prof. K.N. Mehrotra, Scientist of Eminence, Indian Agricultural Research Institute, New Delhi presided over the Physical and Biological Sciences Sections, respectively. It was

a very successful Session, largely due to the personal interest taken by the Vice-Chancellor and the Local Secretary Prof. A.S. Kapoor, Head of the Zoology Department. Two symposia were held during the Session - one on Desert Ecology in collaboration with the University of Rajasthan convened by Dr. Ishwar Prakash and another on Recent Trends in Geomagnetism in collaboration with the Indian Institute of Geomagnetism, convened by Dr. R.G. Rastogi. Both the symposia were very well attended. The proceedings of the symposium on Desert Ecology were published in 1987 by Scientific Publishers, Jodhpur. Dr. Ishwar Prakash edited the book. Three popular lectures were also delivered by Dr. N.P. Gupta, Dr. V.P. Sharma and Prof. P.N. Tandon during the Session. Prof. Prasanna K. Mohanty of the Department of Life Sciences, Jawaharlal Nehru University was awarded the Education Minister's Gold Medal.

The year 1986 saw the demise of Prof. Nil Ratan Dhar on November 5 after a brief illness at the age of about 95 years. He was not only one of the founders of the Academy but identified himself totally with it right till his end. He was President of the Academy in 1935 and 1936 and it was during his regime that the Academy acquired its present name. He would attend every session, symposium and meeting of the Academy, except in the last few years when he was not allowed to travel. He was a source of great attraction among the young and the old alike and had a word of advice or gratitude for everyone. The plot of land on which the present building of the Academy stands was gifted by him. In his death, the Academy lost one of the most ardent and deeply attached Fellows, a great benefactor and a constant source of inspiration. The Academy paid tribute to Prof. Dhar by instituting the prestigious "Prof. N.R. Dhar Memorial Lecture Award", in 1990 to be given in the area of chemistry.

Dr. P. Sheel, a well known chemist and a Benefactor of the Academy, also died in the same year. His wife, Mrs. Radhika Sheel, gave an endowment in 1989 to institute "Dr. P. Sheel Memorial Lecture Award", to be given for significant contributions in science and technology for rural development.

In the six years since the Golden Jubilee, the Academy had displayed a new vigour and was keen to find a President who could take the Academy to new heights. The Academy successfully persuaded Prof. M.G.K. Menon to take over the Presidentship of the Academy in 1987. Under his stewardship, the Academy took a new direction and initiated several important changes. To begin with, he noticed that a large number of eminent scientists of the country were still not associated with the Academy. Therefore, the number of fellows to be elected during 1987 was fixed at sixty. As a result of this decision, many distinguished scientists were elected Fellows. The Academy also decided to set-up Fellowship Scrutiny Committee to scrutinize future nominations for the fellowship.

The Scientific Instruments Company Allahabad (SICO) had instituted in 1986 an annual award of Rs. 5,000/- entitled 'The Scientific Instruments Company - National Academy of Sciences, India Award'. SICO celebrated its Platinum Jubilee in 1987 and agreed to give five awards that year. They were given at a special function held at Delhi on January 13, 1987. The Managing Director, Sri B.N. Sinha and other officials of SICO hosted the function. The awards were given away by Dr. K.R. Narayanan, Minister of State for Science and Technology. The recipients were Dr. George Joseph, Ahmedabad and Dr. R. Hridayanath, Dehradun (Instrumentation), Dr. Kunthala Jayaraman, Madras and Dr. Sushil Kumar, New Delhi (Biotechnology) and Prof. P.S. Ramakrishnan, New Delhi (Environment). Dr. Narayanan expressed great happiness that Industry was coming forward to encourage excellence in Science. Prof. Menon spoke about the increasing need for close industry-science relationship for national self reliance. Prof. U.S. Srivastava, General Secretary, thanked SICO for the awards and hoped that its relationship with the Academy would continue and blossom.

Dr. Sir Padampat Singhania Library Complex, the foundation stone of which was earlier laid on March 29, 1986 by Prof. M.G.K. Menon, was completed in 1987. It was inaugurated on April 3, 1987 by Sri Gaur Hari Singhania, Managing Director of M/s J.K. Synthetics Ltd., Kanpur in the presence of Prof. Menon, many eminent scientists and Fellows and Members of the Academy. A symposium on 'Inputs of Science and Technology in the Development of Wastelands' was held on the occasion. The symposium was inaugurated by Dr. (Mrs.) Kamala Chowdhury, Chairperson of the National Wastelands Development Board, Government of India and a large number of specialists took part in it. The proceedings of this symposium were published by the Academy with Dr. Manju Sharma, T.N. Khoshoo and U.S. Srivastava as the editors.

The fifty-seventh Annual Session under Prof. Menon's Presidentship was held on October 8 to 10, 1987 at the Bharatidasan University, Tiruchirapalli; whose Vice-Chancellor was the well known plant scientist Prof. A. Gnanam. The Session was very well attended and students and scientists from neighbouring districts and academic centres had assembled to hear the speakers coming from far off places. Prof. Menon's Address dealt with Science and Technology for National Development - Role of the Science Community. A symposium on New Materials was held in which 30 scientists, representing different new materials ranging from superconductors to biomaterials had participated. The proceedings of this symposium were published by the Academy with Dr. Manju Sharma and Dr. A.K. Chakravarti as Editors.

Prof. Prem Narain, Director, Indian Agricultural Statistics Research Institute, New Delhi and Dr. S.K. Jain, formerly Director, Botanical Survey of India



Presidents



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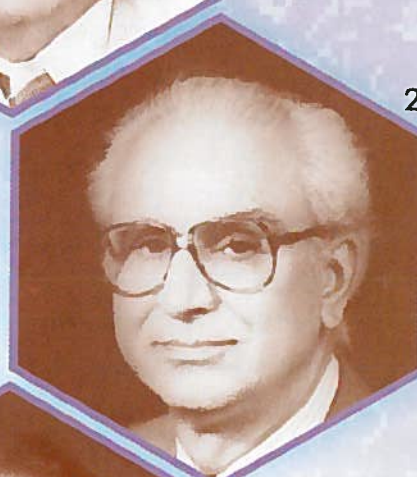
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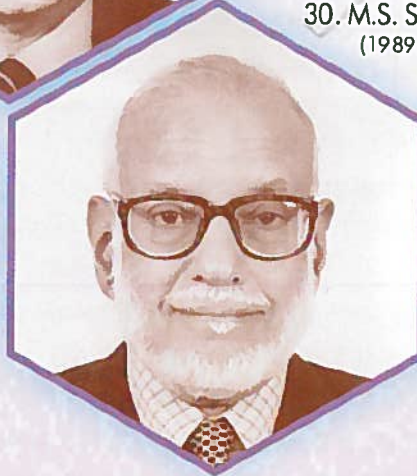
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28.



29.



30.



25. Hari Narain
(1979 & 1980)
26. B. Ramchandra Rao
(1981 & 1982)
27. S. Z. Qasim
(1983 & 1984)
28. T. N. Khoshoo
(1985 & 1986)
29. M.G.K. Menon
(1987 & 1988)
30. M.S. Swaminathan
(1989 & 1990)

presided over the Physical and Biological Sciences Sections, respectively and delivered addresses on 'The Role of Random Process in Genetics' and 'Endangered Plant Species'. Prof. S. Ramaseshan of Raman Institute, Bangalore delivered the Srinivasan Ramanujan Birth Centenary Lecture. The lecture was inspiring and informative.

On December 19-21, 1987, a symposium on 'the Utilization of Living Resources of the Indian Seas' was organized at Bombay in collaboration with the Central Institute of Fisheries Education, Bombay to review research and development in marine fish production. It was inaugurated by Dr. N.S. Randhawa, Director General, Indian Council of Agricultural Research and Secretary, D.A.R.E.; Government of India, New Delhi. The symposium was attended by fishery scientists from all maritime States, entrepreneurs, university professors and representatives of the Ministries and others interested in marine fisheries. Prof. M.G.K. Menon presided over the inaugural session. Dr. S. Zahoor Qasim, Secretary, Department of Ocean Development was the Chief Guest. The keynote Address was delivered by Dr. S.N. Dwivedi, Dy. Secretary, Department of Ocean Development. The recommendations arrived at in the symposium were sent to concerned authorities and organizations. The proceedings of this symposium were published under the editorship of Prof. U.S. Srivastava by the Academy in 1989.

The stress laid on scientific activities of societal value, started by Prof. Menon, continued with greater vigour in 1988. Dr. (Mrs.) Manju Sharma took over as the outstation General Secretary. She took keen interest in all activities of the Academy and vigorously pursued strengthening its financial condition. Her efforts resulted in a significant enhancement in the grant from the Department of Science and Technology, Government of India.

The first Prof. Meghnad Saha Memorial Lecture, instituted by the Academy, was delivered at Allahabad on January 23, 1988. Prof. Govind Swarup, an alumnus of Allahabad University and a famous astrophysicist and Professor at Tata Institute of Fundamental Research was invited to deliver the Lecture. The Lecture was held in the Physics Department of the University which was Prof. Saha's theatre of activity for several years. Prof. Swarup spoke on 'Universe and its Puzzles - Giant Metrewave Radio Telescope'. Later the work on the Giant Metrewave Radio Telescope brought the fellowship of the Royal Society of London to Prof. Swarup. Several old timers of the University of Allahabad, specially those connected with the Science Faculty, attended the lecture. Prof. Menon presided over the lecture.

A two-days Workshop on 'How to Sustain the Green Revolution' was held on April 22 and 23, 1988 at Allahabad to discuss the trends in production and productivity of major crops. It focussed attention on measures required to sustain a growth rate higher than the population increase. The symposium was

inaugurated by Prof. M.S. Swaminathan in the newly constructed hall of Vigyan Parishad and it was attended by a large number of agricultural scientists, besides those connected with the Academy and the University. The recommendations were sent to all concerned organizations and institutions. Another symposium on 'Science & Technology for National Development - Vision, Opportunities, Challenges and Implementation' was organised on July 1 and 2, 1988 at Delhi in which about 25 scientists and science administrators participated on invitation and covered a wide range of subjects. The proceedings of the symposium were published by the Academy in early 1989 under the editorship of Prof. U.S. Srivastava, Dr. Manju Sharma and Dr. A.K. Chakravarti.

The University of Jammu invited the Academy to hold its fifty-eighth Annual Session on November 7-9, 1988. This was the first meeting of the Academy in Jammu and Kashmir. Prof. M.G.K. Menon presided over the Session which was inaugurated by Sri Jag Mohan, Governor of Jammu and Kashmir. Prof. Menon spoke on 'Global Science - An Urgent Need'. Prof. K.S. Valdiya, Head of the Department of Geology, Kumaun University, Nainital presided over the Physical Sciences Section and Prof. G. Padmanaban, Professor of Biochemistry, Indian Institute of Science, Bangalore presided over the Biological Sciences Section. The present water crisis was realised by Prof. Valdiya even then. His address was entitled "Dwindling water resources of India and their conservation". He pleaded that the country should give top priority to the management of water. The Session was preceded by a symposium on 'Frontiers of Modern Biology' which was inaugurated by Dr. Farooq Abdullah, Chief Minister of Jammu & Kashmir. The speakers included Prof. M.S. Swaminathan, Prof. G.S. Venkataraman. Prof. A.K. Sharma, Dr. P.M. Bhargava, Dr. S. Ramachandran, Prof. P.N. Tandon, Dr. T.N. Khoshoo, Dr. S.Z. Qasim, Dr. V.P. Sharma and Dr. S.K. Basu. Prof. S. Ramaseshan, former student of Sir C.V. Raman and Distinguished Professor at the Raman Research Institute, Bangalore, delivered the Sir C.V. Raman Birth Centenary Lecture.

Prof. M.S. Swaminathan succeeded Prof. Menon as the President of the Academy in 1989. He carried forward the process of strengthening the Academy in its scientific endeavours as well as in its Fellowship. Another 60 distinguished Fellows were inducted in 1989. During the year, the first Prof. A.C. Banerji Memorial Lecture was delivered at Allahabad on November 6, 1989 by Prof. A.K. Raychaudhuri, INSA Senior Scientist and former Professor of Physics at Presidency College, Calcutta. The first Dr. P. Sheel Memorial lecture was delivered by Sri S.P. Gon Chowdhury of the Department of Environment, Government of Tripura on July 29 at Allahabad. A lecture was also delivered at Allahabad by Prof. Peter John Wyllie, F.R.S. of California Institute of Technology.

An important activity in 1989 was a South Asia Regional Seminar on 'Public Policy Implications of Biotechnology for Asian Agriculture' which was organised, under the joint auspices of the Academy, the Asia Pacific Development Centre, Kuala Lumpur and the IV Genetic Conference Trust, New Delhi. The Seminar took place at Delhi on March 6-8, 1989 under the Chairmanship of Dr. M.S. Swaminathan. More than 45 scientists from the Phillipines, Malaysia, Thailand, Germany, U.S.A., the Netherlands, China and India participated in the Seminar.

Another major activity, was a Project Design Workshop on 'Natural and Cultural Sites along Ganga' for inscription in the World Heritage List. The Workshop was held under the Chairmanship of Prof. M.G.K. Menon in Delhi on April 7 and 8, 1989. President of the Academy, Prof. Swaminathan, initiated the discussion while Smt. Pupul Jayakar, Advisor to the Prime Minister on Heritage and Cultural Resources, delivered the Keynote address. Sri L.P. Shahi, State Minister for Education and Culture, inaugurated the Workshop. Dr. (Mrs.) Kapila Vatsyayan, Dr. C.R. Krishna Murti and Prof. Virendra Kumar made very valuable contributions. The objective of the exercise was to prepare a Project Report for securing the status of Natural and World Heritage Sites for the sites or regions identified in the Workshop. As a follow-up of this Workshop, another symposium on 'Cultural and Natural Sites along the Ganga: Our Unique National Heritage' was held at Allahabad on November 5, 1989. On the occasion of the Workshop at Allahabad, an exquisite Dance Drama *Akshayadhara* performed by Smt. Chitra Visweswaran and her party of Chennai in the spacious Mehta Auditorium, was widely appreciated.

The efforts to bring into the Academy more distinguished scientists as Fellows continued and this year also 60 Fellows were elected including Dr. A.P.J. Abdul Kalam.

For the first time, the Academy organised a week long Science Popularisation Programme as part of the Jawaharlal Nehru Birth Centenary Celebrations from November 6 to 11, 1989. The programme, specially targeted to school students, ran simultaneously in the Academy and educational institutions and consisted of popular talks, video/slide shows, street science plays, demonstrations of and training in low cost science experiments, field work, science quiz and quest, etc. About 2500 students and teachers, belonging to about 30 schools and colleges in and around Allahabad benefited from the programme. The programme was inaugurated by Prof. M.S. Swaminathan, President of the Academy, and conducted under the overall direction of Prof. U.S. Srivastava with the assistance of local Fellows as well as resource persons from Calcutta, Delhi, Kanpur, Indore and Eklavya (Bhopal). The field work consisted of visits by students to the Yamuna river and testing its water, specially to determine the nature and level of pollution. A

major attraction at the Yamuna was a hovercraft which was manufactured by Scientific Instruments Co. Ltd. It provided students free ride and helped them understand its working.

The fifty-ninth Annual Session was held on January 6 to 8, 1990 at the Osmania University, Hyderabad. The Governor of Andhra Pradesh, Ms. Kumud Ben Joshi inaugurated the Session. Prof. M.S. Swaminathan, President spoke about the challenges faced by the country and suggested concrete measures to improve agricultural and industrial productivity to ensure a life full of dignity for the country's millions in the new millennium. He recommended a closer integration of environmental, economic and technological policies; partnership between industry, universities and R & D institutions in the development and dissemination of green technologies; greater support for basic science research and education; steps to attract gifted students to science and ensuring a better quality of life to scientists; and forging a strong symbiosis between the government, academia and industry. According to Ms. Joshi, scientists and technologists were destined to play an important role in leading the country to prosperity in the twenty-first century. She laid special stress on the need to evolve and use Science & Technology to improve the lot of the rural poor. Prof. S.K. Joshi, Director, National Physical Laboratory, New Delhi and Dr. S.N. Dwivedi, Additional Secretary, Department of Ocean Development, Government of India presided over the meetings of the Physical and Biological Sciences sections.

A symposium on Indian Geosphere and Biosphere Programme was held at the same venue on January 5, preceding the Annual Session and continued the next day. Prof. M.G.K. Menon inaugurated the Symposium and delivered the keynote address. The speakers included Prof. R.R. Daniel, Prof. A.P. Mitra, Dr. R. Sreedharan, Dr. R.K. Pachauri, Prof. U.R. Rao, Prof. Meher Homji, Dr. T.N. Khoshoo, Prof. R.P. Agarwal, Dr. M.A. Chitale, Dr. Anna Mani, Dr. C.R. Krishna Murti, Prof. B.L.K. Somayajulu and the President Prof. Swaminathan.

Another symposium on Sustainable Management of Natural Resources was held later at the Pondichery University on September 14 and 15, 1990. Prof. M.S. Swaminathan presided over the symposium while Prof. M.G.K. Menon inaugurated it. Dr. T.N. Khoshoo delivered the key-note address. The speakers included Prof. V. Ramalingaswami, Professor - Emeritus, All India Institute of Medical Sciences, New Delhi, Prof. K.S. Gill, Vice-Chancellor, Punjab Agricultural University, Ludhiana, Sri Maheshwar Dayal, Secretary, D.N.E.S., Government of India, Prof. B.B. Dhar, Roorkee University, Dr. S.K. Choudhuri, Controller General, Indian Bureau of Mines, Dr. S.N. Dwivedi, Additional Secretary, Department of Ocean Development, Dr. A.L. Agrawal, National Environmental Engineering Research Institute, Nagpur and Dr. J.P. Pascal, French Institute, Pondicherry. The proceedings of this symposium, edited by

Dr. T.N. Khoshoo and Dr. (Mrs.) Manju Sharma, were published by Malhotra Publishing House, New Delhi under the title 'Sustainable Management of Natural Resources' in 1992.

The second Professor A.C. Banerji Memorial Lecture was delivered by Sir Hermann Bondi, F.R.S., at the National Physical Laboratory, New Delhi on "Relativity" on 19th November.

9. DIAMOND JUBILEE AND BEYOND

An elaborate Diamond Jubilee celebration programme was planned for 1990. The President of India, Hon'ble Sri R. Venkaraman, had agreed to inaugurate the Diamond Jubilee Session which was proposed to be held at Allahabad in February, 1991. A National Organising Committee with Prof. M.G.K. Menon as Chairman and a Local Organising Committee with Prof. U.S. Srivastava as Chairman were set up by the Council. It was also decided to hold a symposium on 'Science & Technology in the year 2000 and Beyond' and the President Prof. M.S. Swaminathan was requested to organize it.

Unfortunately, the Gulf War broke out and this necessitated the continued presence of the President of India in Delhi. An unusual step was taken under these unusual circumstances. It was, decided to split the Session in two parts. A two-days Diamond Jubilee Session was held at Delhi on February 13 and 14, 1991 in the campus of the Indian Agricultural Research Institute for which Prof. Anupam Varma was made the Local Organizing Secretary. Sri Venkataraman formally inaugurated the Session on February 13. Also present on this occasion were Sri Yashwant Sinha, Minister of Finance; Sri Mohan Dharia, Deputy Chairman of the Planning Commission and Sri Vikramaditya Pandey, Minister of State for Science and Technology, Government of Uttar Pradesh. Prof. M.G.K. Menon welcomed the President of India, other dignitaries, members of the Council, Fellows, Members of the Academy and guests.

The address delivered By Sri Venkataraman was a timely reminder to scientists of the great role they were destined to play in the resurgence of the nation and in the socio-economic uplift of the country's large population. He spoke of the vision of the late Pt. Jawaharlal Nehru, the architect of modern India, and the great pains he took to lay a sound scientific infrastructure in the country. The thrust given by Pt. Nehru was continued by Mrs. Indira Gandhi for the next two decades. This resulted in outstanding achievements in the fields of agriculture, space science, defence research, electronics, environment, biotechnology, ocean development and renewable energy. He urged the scientific community to help in evolving a Science and Technology Policy which would integrate science with the lives of the people, and also to blend science with wisdom to ensure a bright future for the country and a better world for the posterity. Felicitating the Academy and those associated with it, he hoped that the Academy would continue to play an important role in the service of Science and the Nation.

Prof. M.S. Swaminathan, in his Presidential Address, observed that poverty was at the top of all problems of the country and millions of our countrymen lived a miserable life of semi-starvation; yet the causes of poverty have not been scientifically investigated. He proposed that the new paradigm of research and development should be based on an integrated approach to

DIAMOND JUBILEE
NATIONAL ACADEMY OF SCIENCES, INDIA
FEBRUARY 13, 1991



A Group Photograph of Diamond Jubilee Session

NASI

Diamond Jubilee and Beyond

ecological sustainability, equity-based self-sufficiency and partnership with local communities. It should be the concern of bodies like this Academy to develop and promote such a paradigm.

A Diamond Jubilee Commemoration Volume, entitled 'Glimpses of Science in India' edited by Prof. U.S. Srivastava was released during the meeting by Sri Mohan Dharia. The book contained more than thirty articles, describing the success stories, problems and challenges in different areas of Science and Technology, contributed by specialists in various fields and published by Malhotra Publishing House, New Delhi.

Three SICO-NASI Awards in Biotechnology, Instrumentation and Environment were given away by Sri Yashwant Sinha to Dr. P.M. Bhargava, formerly Director of the Centre for Cellular and Molecular Biology, Hyderabad (Biotechnology); Dr. S.C. Gupta, Director, Vikram Sarabhai Space Centre, Thiruvananthapuram (Instrumentation) and posthumously to the late Dr. C.R. Krishna Murti, formerly Director of Industrial Toxicology Research Centre, Lucknow (Environment).

During the Jubilee Session at Delhi, three memorial lectures instituted by the Academy, were also delivered. Prof. A.P. Mitra, Director-General of the Council of Scientific and Industrial Research, New Delhi delivered the second Prof. Meghnad Saha Memorial Lecture, Prof. M.S. Swaminathan, Chairman, M.S. Swaminathan Research Foundation, Madras delivered the first Dr. B.P. Pal Memorial Lecture and Prof. R.C. Mehrotra, Chemistry Department, University of Rajasthan, Jaipur delivered the first Prof. N.R. Dhar Memorial Lecture. Prof. V.G. Bhide, Professor of Physics, Pune University and Dr. V.P. Sharma, Director, Malaria Research Centre, New Delhi, Presidents of the Physical and Biological Sciences Sections, respectively, delivered their addresses.

The main attraction of the second part of the Diamond Jubilee Session which took place at Allahabad on May 3 and 4, 1991 was the National Symposium on 'Science and Technology in 2000 A.D. and Beyond'. The symposium was held under the Presidentship of Prof. A. P. Mitra. Sri Chandra Shekhar, Prime Minister of India, was to inaugurate the symposium but he could not come and his address was read out by Dr. (Mrs.) Manju Sharma. Prof. M.G.K. Menon delivered the key-note address. The speakers included Prof. U.R. Rao; Dr. V.S. Arunachalam; Dr. V.K. Gaur, Prof. S.K. Joshi, Prof. Yash Pal, Chairman, Prof. P.N. Tandon; Dr. N. Seshagiri; Dr. A.V. Rama Rao; Prof. B.N. Dhawan; Dr. P.K. Iyengar; Dr. S.K. Rangarajan and Prof. B.K. Bachhawat. A large number of scientists from universities and research establishments from all over the country attended the sectional meetings and over 300 papers were presented in the Physical and Biological Sciences sections under the Chairmanship of the two Sectional Presidents.

Dr. Salig Ram Sinha Memorial Award Lecture, was delivered by Prof. K.S. Bilgrami of the University of Bhagalpur during the Session at Allahabad.

There was good news on the financial side too. The Department of Science and Technology, Government of India included the Academy on its regular grant list and a total amount of more than Rs. 18 lacs was released by it to the Academy during 1990-91.

A separate provision for election of Foreign Fellows was made in 1990. Until then, foreign scientists were elected either as Fellows or as Honorary Fellows. It was decided that the category of Foreign Fellows be introduced for them. The Honorary category should be restricted to exceptionally outstanding Indian or foreign scientists.

The sixty-first Annual Session of the Academy, with Prof. A.P. Mitra as the President, was hosted by Meerut University on December 19-21, 1991. Keeping in view the oncoming U.N. Conference on Environment and Development (UNCED) in Rio de Janeiro in June 1992, Prof. Mitra focused his Address on critical environmental and developmental issues, specially those relating to climate change and the work being currently carried out in India on emission of methane gas. Dr. R.A. Mashelkar, Director, National Chemical Laboratory, Pune and Prof. S.K. Sinha, Director, Indian Agricultural Research Institute, New Delhi were the two Sectional Presidents. Dr. Mashelkar could not come. His address, entitled 'Indian Chemical Engineering 2000 A.D. :New Vistas, Opportunities and Challenges' was read out *in absentia*. Prof. Sinha spoke on 'Food Security in the Changing Environment'. Popular lectures were delivered by Prof. J.N. Kapur, Hon. Professor, Jawaharlal Nehru University, New Delhi and Prof. Bimla Buti of Physical Research Laboratory, Ahmedabad.

For the first time, the Academy celebrated the National Science Week in February 1992 in which lectures were delivered by several eminent scientists including Prof. M.G.K. Menon, Dr. P.M. Bhargava and Dr. E.S. Rajagopal, Director, National Physical Laboratory, New Delhi.

M.L. Sukhadia University, Udaipur was the venue of the sixty-second Annual Session held on February 9-11, 1993. President, Prof. A.P. Mitra, delivered an address on 'Science at Crossroads' in which he laid special stress on the increasing crisis of confidence between the scientific community and the Government and inadequate appreciation of the contributions which science could make in all round national development. Prof. C.L. Khetrapal, Indian Institute of Science, Bangalore presided over the Physical Sciences Section and Prof. Sipra Guha-Mukherji presided over the Biological Sciences Section. A large number of oral and poster presentations, were made in the two sections and several special lectures were delivered. A symposium on 'Science and

Technology for Development — New Directions in the Changing Scenario', was held during the Session which covered areas of Agriculture and sustainable development, Health, Engineering, Energy, Human Resource Development, Biotechnology, Modern Biology, Cleaner Technologies and S & T for Rural Development. A summary of the Proceedings of the Symposium, including the recommendations, was subsequently published and sent to concerned ministries and organisations for their consideration. The third Prof. A.C. Banerji Memorial Lecture was delivered by Prof. S.M. Chitre of Tata Institute of Fundamental Research, Bombay.

'Space - In Pursuit of New Horizons : A Festschrift for Prof. U.R. Rao' on his Sixtieth Birthday was published at the initiative of Prof. R.K. Varma, Director, Physical Research Laboratory, Ahmedabad. The book, containing 22 articles by eminent foreign and Indian scientists, was edited by Drs. R.K. Varma, K. Kasturirangan, U.S. Srivastava and B.H. Subbaraya. It was presented to Prof. Rao in a function organized at Ahmedabad.

Prof. U.S. Srivastava was elected President of the Academy for 1993. This was the Birth Centenary Year of the Founder and first President of the Academy, Prof. Meghnad Saha, who was born on October 6, 1893. The Academy decided to pay tributes to his memory during the year. A symposium on 'Meghnad Saha's Contributions and the Journey Beyond' was consequently organised at Allahabad on September 11, 1993, covering some of the major areas of his contributions and subsequent developments in these fields. Eminent scientists including Prof. M.G.K. Menon, Prof. A.P. Mitra, Prof. K.D. Abhyankar, Prof. N. Kameshwara Rao, Prof. S.M. Chitre, Prof. K.R. Sivaraman and Prof. L.R. Pandit spoke in the symposium. Prof. Srivastava, paid his tributes to Prof. Saha at the outset. On the day preceding the symposium, the third Meghnad Saha Memorial Lecture was delivered by Prof. M.G.K. Menon. The second Dr. B.P. Pal Memorial Lecture was delivered by Prof. H.K. Jain, former Director of the Indian Agriculture Research Institute, New Delhi on the same day. He spoke on 'Plant Genetic Resources and Policy Implications for Changing Agriculture'.

At the request of the Academy, the Department of Atomic Energy, Government of India agreed to provide the Academy an endowment for creating a fellowship in memory of Prof. Saha, named the Meghnad Saha Distinguished Fellowship. The Department of Science and Technology, New Delhi also contributed a sum towards this Fellowship. The Council decided to honour Prof. M.G.K. Menon with the Inaugural Fellowship.

The sixty-third Annual Session was hosted by the Indian Institute of Science, Bangalore on November 24 to 26, 1993. This Session was dedicated to the memory of late Prof. Nil Ratan Dhar, whom the Academy would forever

remember fondly. In his Address, Prof. U.S. Srivastava first paid tributes to Prof. Dhar and then spoke on the State of Science in Indian Universities. He lamented that over a period of time there had been a steady decline in the quality of science teaching and felt that the new economic policy calls for a sense of urgency in forging participatory links between scientific institutions, universities, industry and society. He also urged the country to formulate a national scientific manpower policy at the earliest and felt that the prevailing heavy subsidization of education in general and science education in particular needed to be reviewed. He also wished that steps be taken to ensure that the talent among the economically disadvantaged section of the society does not continue to be ignored and wasted. The Session was inaugurated by Prof. C.N.R. Rao, Director, Indian Institute of Science, Bangalore. He critically analyzed the rapidly changing geopolitical- economic scenario in India and the world generally and its impact on the development of S & T in the country. He also stressed the immediate need of developing close linkages between industry and higher educational institutions devoted to science and technology.

The SICO-NASI Awards were presented to Group Captain R.S. Sivaswami, Former Managing Director, Marine and Communications Electronics Ltd. for Instrumentation, Prof. H.G. Sharat Chandra, Head of Microbiology and Cell Biology Department, Indian Institute of Science, Bangalore for Biotechnology and Prof. A.N. Purohit, Director, G.B. Pant Institute of Himalayan Environment and Development, Almora for Environment.

Dr. K. Kasturirangan, Director, ISRO Satellite Centre, Bangalore and Prof. Anupam Varma, Head of the Division of Mycology and Plant Pathology, Indian Agricultural Research Institute, New Delhi presided over the Physical and Biological Sciences Sections respectively. Several special lectures were delivered in addition to a large number of excellent presentations from younger scientists in each section. In view of Prof. N.R. Dhar's life long devotion to soil science, a National Workshop on 'Soil and Environment' was held in which several renowned scientists dwelt in length on subjects like soil diversity and productivity, problems of soil degradation, retention and movement of water in soils, biofertilizers and organic fertilizers, gaseous loss of nitrogen from rice fields etc.. Prof. Anupam Varma was the Convener of the Workshop. The second Prof. N.R. Dhar Memorial Lecture was delivered by Dr. N.S. Randhawa, former Director General of the Indian Council of Agricultural Research, New Delhi.

Prof. R.N. Tandon, who was President of the Academy during 1975 and 1976 and had served the Academy in various capacities, had attained the age of 90 years and the Council decided to celebrate the occasion by organizing a Lecture in his honour during the Annual Session at Bangalore. The lecture was

delivered by Dr. C.R. Bhatia, Secretary to Government of India, Department of Biotechnology. Prof. Tandon's sons had made donation towards this lecture. On return from Bangalore, several members of the Council, including Prof. M.G.K. Menon, Dr. (Mrs.) Manju Sharma, Prof. U.S. Srivastava and several of Prof. Tandon's former students paid a visit to him at Delhi to offer their good wishes and felicitations.

On December 17-19, 1993, a symposium was organised at Delhi on 'Science and Law' in which apart from eminent scientists representing different disciplines like agriculture, environment, drugs and pharmaceuticals, fisheries, biotechnology, forensic sciences, health etc., legal experts, sociologists, economists, diplomats and journalists also participated. It was generally felt that since developments in science and technology are rapidly impacting social norms, basic human rights, international concerns, investigative tools and evidences, there is need for continuous review of many existing laws. Dr. P.M. Bhargava had organized this symposium.

The Jammu Chapter organized a Symposium on 'the Roles of Government and the Society in protecting the Environment', and a Workshop on 'Radio-chemistry and Applications of Radioisotopes', and several popular lectures.

A significant change, with potential of long term implications, was made in the Rules of the Academy at this point. Thus far, apart from the positions of one Vice-President, one General Secretary, the Foreign Secretary and the Treasurer, four places in the Council were to be filled in from amongst Fellows at the headquarters. Under the revised Rules, all places of Councils members were thrown open to Fellows from any part of the country.

Science Communication activities were held at local level at Allahabad. Several Fellows and Members delivered lectures at schools and colleges, and competitions for students of plus two level in Science Quiz, essay writing on scientific topics and debate were held. The National Science Day was celebrated with enthusiasm and prizes to students were given away in the function. A running shield was introduced for the institution winning in the Quiz.

The sixty-fourth Annual Session of the Academy was held at Chandigarh from September 29 to October, 1, 1994 and was hosted jointly by the Panjab University and the Institute of Microbial Technology (IMTECH). Prof. U.S. Srivastava delivered his Presidential Address on the Role of Science Academies in India. He felt that although scientists of all disciplines pursue a common goal but sufficient, concerted and sustained effort has not been made to stimulate a commonality of purpose. In view of the policy of the government to liberalise and privatise the economy, it was the obligation of the Academies to evolve

mechanisms to elicit and formulate opinions of scientists and bring about consensus on matters which affect S & T or where S & T may help in solving national problems and place these before the Government and other relevant bodies and organizations.

Dr. R. Chidambaram, Chairman, Atomic Energy Commission, inaugurated the Session. Prof. S.K. Malik of the Department of Mathematics, Punjab University and Prof. Asis Datta of the School of Life Sciences, Jawaharlal Nehru University presided over the Physical and Biological Sciences Sections respectively. Apart from the usual presentation of papers, special lectures were delivered by Prof. S.K. Sopory, Dr. Rama Mukerji, Prof. Kasturi Datta, Prof. N.K. Ganguly, Dr. Amit Ghosh, Prof. Bimla Buti, Prof. B. M. Deb and Prof. M.P. Khanna. A Symposium on 'Industrial Biotechnology : An Industrial Scenario' was held during the Session. It was addressed, among others, by Dr. C. R. Bhatia, Prof. P. N. Tandon, Prof. A. K. Sharma, Dr. V. P. Sharma, Dr. R. K. Datta, Prof. N. K. Ganguly, Dr. S. Anand Kumar, Dr. S. N. Singh, Dr. M.L. Madan, Dr. S.V. Ramakrishnan, Dr. C.M. Gupta, Dr. N.C. Sharma and Dr. S.N. Dwivedi. Some of the papers presented during the symposium were later published in a special issue of the Proceedings of the Academy (Biological Sciences) in 1995.

Later in the year, on December 12 to 14, 1994, a symposium on 'Mantle Dynamics and its Relation to Earthquake and Volcanism' was organised by the Academy, with Prof. Alok K. Gupta as the Convener, at the S.N. Bose National Centre for Basic Sciences at Calcutta. The participants included Prof. W.S. Fyfe, President, International Geological Congress; Prof. Kenzo Yagi of Hokkaido University, Japan; Prof. S. Uyeda of the Universities of Tokyo and Texas at Houston; Prof. Dean Presnall of the University of Texas at Dallas; Prof. E.G. Lidiak of the University of Pittsburgh, Pennsylvania and Prof. Peter John Wyllie of California Institute of Technology, Pasadena, besides about 150 earth scientists from different organizations in India. Prof. M.G.K. Menon inaugurated the symposium. Two felicitation volumes in honour of Prof. W.S. Fyfe and Prof. Kenzo Yagi respectively, containing articles from earth scientists from all over the world, were presented to them by Prof. U.S. Srivastava. These articles were later published under the titles: 'The Dynamic Geosphere', edited by Prof. Alok K. Gupta and Prof. Robert Kerrich; and 'Geochemical Studies on Synthetic Rock Systems', edited by Prof. Alok K. Gupta, Prof. Kosuke Onuma and Prof. Makoto Arima by Allied Publishers Ltd., New Delhi in 1997 and received international attention.

Dr.(Mrs.) Manju Sharma, Secretary to the Government of India, Department of Biotechnology, New Delhi, succeeded Prof. U.S. Srivastava as President in 1995. During this year, the Academy elected 5 Foreign Fellows : Dr. Robert Herman, L.P. Gilvin Centennial Professor Emeritus in Engineering, University of

Texas in Austin, Texas, USA; Dr. Andre Martin, Senior Staff Emeritus, CERN, Geneva, Switzerland; Prof. Eugene Nester, Chairman, School of Medicine, Department of Microbiology, University of Washington, Seattle, USA; Prof. Peter Neville Robson, Director SERC, Department of Electronic & Electrical Engineering, University of Sheffield, UK and Prof. James B. Sinclair, Plant Pathology Department, University of Illinois, Urbana, USA. Two distinguished Honorary Fellows, Dr. J.R.D. Tata and Prof. S. Chandrasekhar (USA) passed away in 1995.

The second Prof. Salig Ram Sinha Memorial Lecture on 'Plants as Modulators of Mutagenesis' was delivered by Prof. (Mrs.) Archana Sharma, CAS in Botany, University of Calcutta, Calcutta on January 28, 1995 at Allahabad.

Sri Venkateswara University, Tirupati was the venue of the sixty-fifth Annual Session of the Academy, which was held on November 3 to 5, 1995. The Vice-Chancellor, Prof. R. Ramamurthi, a Fellow of the Academy, made every effort to make the Session a success. A symposium on 'Water Resources: Scientific Management' was held during the Session. The Session and the Symposium both were inaugurated by Prof. M.G.K. Menon. In her Presidential Address on 'Biofuture : the Challenges Ahead' Dr. (Mrs.) Sharma dealt with the new bio-strategies which may be profitably used in the country in the areas of agriculture and health to meet the demands and aspirations of the increasing numbers of our countrymen. In his inaugural speech, Prof. Menon first spoke on the history of the Academy and expressed happiness at the renaissance experienced by the Academy during the last decade or so and then, he threw light on a wealth of facts and ideas concerning the various issues and problems relating to water scarcity in different parts of the country and the management options for dealing with the problems. The key-note lecture in the symposium on 'Water Resource Development' was delivered by Sri M.A. Chitale, Secretary General, ICID, New Delhi. The distinguished speakers at the symposium included Dr. K. Kasturirangan, Chairman, Space Commission; Dr. N.N. Sen Roy, Director General, India Meteorological Department; Sri A.D. Mobile, Director General, National Water Development Agency; Dr. C.R. Bhatia, Secretary, Department of Biotechnology; Dr. M.S. Reddy, Chairman, Central Water Commission, New Delhi; Dr. H.P. Singh, Director, Central Arid Zone Research Institute, Jodhpur; Dr. A.R. Reddy, Director, Defence Research Lab, Jodhpur; Dr. B.L. Deekshatulu, Director, NSRA, Hyderabad; Dr. Sri Ram Krishnayya, Chairman, A.P. Drainage Board; Sri Z. Hasan, Former D.G., NWDA, New Delhi; Sri Dilip Biswas, Chairman, Central Pollution Control Board, New Delhi; Dr. P. Khanna, Director, National Environmental Engineering Research Institute, Nagpur; Prof. V. Ramalingaswami, National Professor, All India Institute of Medical Sciences, New Delhi; and

Dr. V.P. Sharma, Director, Malaria Research Centre. The discussion, which followed, showed the amount of interest, evoked by the talks in the audience.

Prof. Govardhan Mehta, Vice-Chancellor, University of Hyderabad, was the President of the Physical Sciences Section and spoke on the new forms of molecular carbon. Prof. Madhav Gadgil of the Centre of Ecological Sciences, Indian Institute of Science, Bangalore and the Biodiversity Unit of J.L.Nehru Centre for Advanced Scientific Research, Bangalore, presided over the Biological Sciences Section and delivered his Address on Conservation of Wild Relatives of Cultivated Plants. In the scientific sessions that followed over a hundred research papers were presented.

Two Memorial Lectures were delivered during the Session : Prof. A.C. Banerji Memorial Lecture by Prof. Ramanath Cowsik, Director, Indian Institute of Astrophysics, Bangalore and Prof. N.R. Dhar Memorial Lecture by Prof. C.N.R. Rao, Director, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore. The SICO-Sponsored NASI Award for Instrumentation for the year 1995 was received by Sri Kunda M.M. Rao, Group Head, Imaging and Image Processing, National Remote Sensing Agency, Department of Space, Government of India, Balanagar, Hyderabad. Dr. B.P. Pal Memorial Lecture was delivered by Dr. R.S. Paroda, Director General, Indian Council of Agricultural Research, New Delhi on January 10, 1996 at Allahabad. He spoke on the Strategies for Sustainable and Profitable Agriculture in India.

It was stated earlier that the Academy had a two-tier structure from the outset, having Fellows and Members. All nominations for membership were usually accepted. Besides, one could be an Annual Member or a Life Member. Annual Members often failed to continue their membership. Both these factors were causes for concern. In 1995, steps were taken to rectify the situation. Firstly, in order to introduce stability, it was decided to abolish Annual Membership and admit only Life Members and Life Fellows. It was also decided that nominations for membership be made only by Fellows. Further, all nominations would be reviewed by a Scrutiny Committee which would be constituted by the Council. The Committee would recommend only those nominations who had demonstrated excellence in research teaching or promotion of science and had the potential to become Fellows later on. All these changes came into effect from 1996.

After three years of organization of Science Communication Activities in 1995, it was decided to make these activities for students and teachers, a regular feature and accordingly provision was also made in the Budget. Prof. U.S. Srivastava was nominated Coordinator of the Science Communication Programmes. As a consequence, programmes were undertaken for the first

time to cover the State of Uttar Pradesh in addition to those for Allahabad city. Institutions from various districts were asked to send selected candidates to take part in science quiz and debate through the District Inspector of Schools. About 50 boys and girls, representing 15 districts came to Allahabad to take part in the competitions during the Science Week in 1996. All the participants, a large number of teachers, local Fellows and Members and invitees attended the National Science Day function in which prizes and certificates were given away. The Academy also organised, for the first time, series of lectures in rural areas of Allahabad - in Bhawan's Mehta Mahavidyalaya, Bharwari, about 45 km west of Allahabad and in Maharshi Krishna Intermediate College, Handia, about 35 km east of Allahabad in addition to lectures delivered in institutions in the city of Allahabad. Lectures, sponsored by the Academy, were also delivered in intermediate colleges in and around Lucknow and Barabanki. These were organised by Dr. V.P. Kamboj, Vice-President of the Academy. The Academy also decided to introduce an Award, known as 'The National Academy of Sciences, India - Science Teacher Award' to be given each year to a science teacher of high school or plus two level institutions from U.P. for all-round promotion of science among students, including innovations in teaching methods and stimulating outside - the class room activities in students. This was the first award for school/college teachers introduced by any Science Academy in India. The Award included a citation, a plaque and Rs. 5000.

The first NASI-Science Teacher Award was given in 1996 on the National Science Day function to Sri Girish Chandra Badoni of Government Inter College, Uttarkashi. Prof. S.S. Katiyar, Vice-Chancellor, Kanpur University was the Chief Guest in the function.

The second Annual Session during the presidency of Dr. (Mrs.) Manju Sharma was organised at Dr. Babasaheb Ambedkar Marathwada University, Aurangabad from October 31 to November 2, 1996. The theme of the symposium was 'Emerging Health Issues in India'. Prof. V. Ramalingaswami inaugurated the Session and also delivered the Key-note Address in the Symposium. He expressed concern at the changing paradigms of various infectious diseases and the re-emergence of old epidemics in the country and spoke in detail about some of these like cholera, dengue, plague, malaria, filaria and AIDS. He also suggested measures to control, restrict or wipe out the diseases. In her Presidential Address, entitled 'Ecosystems - A Sustainable Resource for Humankind', Dr. (Mrs.) Manju Sharma spoke on the characteristics and significance of the ecosystems and their importance in providing the basic necessities of humankind and, in turn, employment and services. She also drew attention to the impact of human intervention on these and pleaded for a long term, holistic, integrated strategy to meet the needs,

and aspirations of the vast Indian population in the next millennium. The speakers in the symposium included Prof. T. Jacob John, Emeritus Medical Scientist, Christian Medical College Hospital, Vellore; Dr. P.R. Narayanan, Dy Director, Tuberculosis Research Centre, Madras; Prof. N.K. Ganguly, Head, Department of Experimental Medicine and Biotechnology, P.G. Institute of Medical Education & Research, Chandigarh; Dr. M.S. Valiathan, Vice-Chancellor, Manipal Institute of Medical Sciences, Manipal; Dr. A.N. Bhisey, Director, Cancer Research Institute, Mumbai; Prof. G. Padmanaban, Director, Indian Institute of Science, Bangalore; Dr. R.C. Srimal, Director, Industrial Toxicology Research Centre, Lucknow; Dr. Sandip K. Basu, Director, National Institute of Immunology, New Delhi; Prof. P.N. Tandon, Bhatnagar Fellow, All India Institute of Medical Sciences, New Delhi and Dr. V. P. Sharma, Director, Malaria Research Centre, New Delhi.

Prof. R. Ramamurthi, Vice-Chancellor of S.V. University, Tirupati presided over the Biological Sciences Section and Prof. R.K. Verma, former Director and Professor Emeritus, Physical Research Laboratory, Ahmedabad presided over the Physical Sciences Section. More than a hundred papers were presented and discussed in the two technical sections. Prof. Meghnad Saha Memorial Lecture, for the year 1995 was delivered by Prof. Virendra Singh, Director, Tata Institute of Fundamental Research, Mumbai. The title of his talk was 'Are large systems always classical?'

Two interesting lectures were delivered later in the year at Allahabad. On November 27, 1996, Dr. R. Chidambaram, Chairman, Atomic Energy Commission, Government of India gave a popular lecture on 'Nuclear Energy: the Inevitable Option for the Country' at the Mehta Research Institute of Mathematics and Mathematical Physics, Jhusi, Allahabad under the joint auspices of the Academy and the Mehta Research Institute. Another talk on 'Recent Advances in Photosynthesis Research' was delivered by Prof. Govindjee of the University of Illinois, Urbana-Champaign, USA on December 18, 1996 under the joint auspices of the Academy and the Local Chapter of INSA at the Department of Botany, Allahabad University. Both the lectures drew large audiences.

Mrs. R. Sheel, who had already established an endowment for a lecture award in memory of her late husband Dr. P. Sheel, created another endowment in 1996 for Dr. P. Sheel Memorial Young Woman Scientist Lecture Award.

In 1996, the Academy lost four senior Fellows: Prof. R.D. Tiwari, Prof. D.B. Chandra, Prof. A.P. Mehrotra, and Prof. S.D. Chopra. Prof. Chandra was Vice-President in 1987-1988 and 1991-1992 and a member of the Council for several years. Prof. Tiwari also was a former member of the Council.

Lecture series were organised in three institutions outside Allahabad - Feroze Gandhi Degree College, Rae Bareli; Mahatma Gandhi Intermediate College, Rae Bareli and Hindalco Higher Secondary School, Renukoot (District Sonbhadra). Lectures were also delivered in several educational institutions in Allahabad under the Academy's Science Communication Programme during 1996-97. Also as in the previous year, U.P. State level contests for students were held during the Science Week in February, followed by the National Science Day function in which prizes to students and the NASI-Science Teacher Award for the year 1996-97 were given away. Sri Amar Jyot Singh Bedi of City Montessori School, Lucknow was the recipient of the Teacher Award. He had distinguished himself, for establishing an electronics lab for his students and for training them so well in Robotics that several of them won prizes in International Robotics Competitions. Prof. P.N. Tandon, who was elected President in 1997, presided over the function. He spoke about the importance of creating scientific temper in the society and felt that much of the social unrest, lawlessness and violence in the country could be checked if young students helped to generate a scientific attitude in the society. A Summer School for selected +2 level students was organized for the first time with the help of faculty members of Allahabad University and Mehta Research Institute of Mathematics and Mathematical Physics in June.

A Workshop on Thermodynamics for young Earth and Material Science researchers was also organized from March 13 to 26, 1997 jointly with the National Centre of Experimental Mineralogy and Petrology, Allahabad University. The Workshop was conducted by Prof. N.D. Chatterji of the Institute of Mineralogy and Petrology, Ruhr University, Bochum, Germany and Prof. Alok K. Gupta of Allahabad University. Fifteen young researchers, drawn from all over the country, participated in the Workshop.

A significant activity during the first year of Prof. P.N. Tandon's presidency was an international symposium on 'Ethical, Legal and Social Implications of Human Genome Research', held in Goa from May 23 to 25, 1997. The symposium, convened by Prof. M.G.K. Menon, was dedicated to the memory of late Prof. Bimal K. Bachhawat, a Fellow of the Academy who had, sadly, expired only some time before. Fourteen foreign scientists - from developed and developing countries - and thirty-two Indians gathered to exchange views on the global developments and perceptions, concerns and imperatives of human genome research. They also discussed the ethical, social and medical approaches which individual countries, taking note of their social, cultural, economic and legal environments, should try to evolve. The deliberations focussed particularly on (1) the human genomic programme-origins, goals, current achievements and societal implications; (2) genetic screening, testing

and counselling; (3) gene therapy, its current status and related ethical, legal and social concerns; (4) Intellectual Property Rights and Patents issues; and (5) education, awareness and information dissemination. The spirit of the deliberations was aptly depicted in a message from the *Nobel Laureate* Prof. James Watson which said "I believe that genetic knowledge has the power to transform for the better all aspects of human life, and that individuals have the right to make choices based on genetic information. But this must be done responsibly and with due regard for differing needs of different people." The proceedings of the symposium were published under the title "Human Genome Research : Emerging Ethical, Legal, Social and Economic Issues" by Allied Publishers, New Delhi in 1999. Prof. M.G.K. Menon, Prof. P.N. Tandon, Prof. S.S. Agrawal and Dr. V.P. Sharma edited the book.

The Academy lost a respected Fellow and a sitting member of the Council, Prof. Krishnaji on August 14. He expired after a very brief illness. Prof. Krishnaji was elected member of the Council for the first time in 1968. He served as the Foreign Secretary in 1973 and 1974 and again in 1983 and 1984. He was the General Secretary from 1977 to 1980 and had significantly contributed to the success of the Golden Jubilee celebrations. It was mainly because of his initiative that the monthly *National Academy Science Letters* was launched in 1978. He took over as a Vice President in 1981. When Dr. S.Z. Qasim was the President, he persuaded Prof. Krishnaji to again take over as the Treasurer. He left Allahabad in 1987 and was again inducted in the Council in 1995 on his return. He was greatly dedicated to the Academy and put his heart in whatever he did. He was a tremendous support in the various Science Communication programmes. He would never, say no if requested to go to a school or college to speak to students whether in Allahabad or elsewhere.

The sixty-seventh Annual Session, held at the Utkal University, Bhubaneswar on October 24 to 26, 1997, was dedicated to the Golden Jubilee of India's Independence. A symposium on 'Science and Technology for Sustainable Development' was held during the Session. Both the Session and the Symposium were simultaneously inaugurated by Prof. M.S. Swaminathan. Sri Janaki Ballabh Patnaik, Chief Minister of Orissa, was the Guest of Honour. In his inaugural address, Prof. Swaminathan dwelt at length on alternate strategies of development which would simultaneously be helpful in conserving both the living and non-living resources of the earth and lead to sustainable development. Prof. P.N. Tandon devoted his Presidential address to 'Sustainable Development and Health'. He described the current scenario in the health sector in the country, particularly emphasizing the effects of under-development or illplanned development, poverty and illiteracy on health. Emphasizing that our objective should not only be economic development but



Presidents



31.



31. A.P. Mitra
(1991 & 1992)

32. U.S. Srivastava
(1993 & 1994)

33. Manju Sharma
(1995 & 1996)

34. P. N. Tandon
(1997 & 1998)

32.



34.



33.



human development, he observed that science and technology should help in measuring, monitoring and mitigating the negative effects of development and provide ways and means to promote sound, sustainable development.

The Key-note address in the symposium was delivered by Dr. T.N. Khoshoo. Others who spoke included Prof. S.K. Sinha, National Professor, Indian Council of Agricultural Research; Dr. J.C. Katyal, Director, Central Research Institute of Dryland Agriculture, Hyderabad; Prof. R. Gadagkar, Chairman, Centre for Ecological Sciences, Indian Institute of Science, Bangalore; Dr. Suman Sahai of Gene Campaign, New Delhi; Prof. B.N. Dhawan, former Director, Central Drug Research Institute, Lucknow; Dr. Mehtab Bamji, Hyderabad; Prof. A.N. Purohit, Garhwal University, Sringar, Garhwal and Dr. R.P. Sharma, Advanced Centre of Biotechnology, New Delhi. The speakers drew attention to the enormous natural resources, the variety of agroclimatic conditions, rich biodiversity and scientific and technological expertise available in the country and called for their appropriate utilization for sustainable development in different sectors. Prof. H.Y. Mohan Ram, INSA Senior Scientist, Department of Environmental Biology, University of Delhi presided over the Biological Sciences Section and Prof. J.P. Mittal, Director, Chemistry Group, Bhabha Atomic Research Centre, Mumbai presided over the Physical Sciences Section. A large number of young scientists presented their papers in both the section.

Three memorial lectures were delivered during the Session at Bhubaneswar : Dr. B.P. Pal Memorial Lecture by Dr. T.N. Khoshoo, Prof. A.C. Banerji Memorial Lecture by Prof. Thanu Padmanabhan of Inter University Centre for Astronomy and Astrophysics, Pune and Dr. P. Sheel Memorial Young Woman Scientist Lecture by Dr. Rajani S. Nadgauda of Tissue Culture Pilot Plant Division, National Chemical Laboratory, Pune.

Two memorial lectures were delivered earlier at Allahabad. Prof. S.K. Joshi, former Director General, Council of Scientific and Industrial Research, New Delhi delivered the Prof. Meghnad Saha Memorial Lecture on 'Strange Metals' on July 25, 1997; and Prof. Rajinder Kumar, Department of Chemical Engineering, Indian Institute of Science, Bangalore delivered the Prof. N.R. Dhar Memorial Lecture on 'Modelling of a Sonochemical Reactor' on July 26, 1997. Prof. Saligram Sinha Memorial Lecture was delivered by Prof. Deepak Pental, Professor of Genetics and Director, Centre for Genetic Manipulation of Crop Plants, Delhi University at Allahabad on January 10, 1998.

The Academy had decided to organize a series of lectures by eminent scientists to celebrate the Golden Jubilee Year of Independence. These lectures were delivered by Prof. A.K. Ray Chaudhuri of the Centre of Relativity and Cosmology, Jadavpur University; Prof. K.D. Broota, former Professor of Psychology, Delhi University; Prof. K.A. Padmanabhan, Director, Indian

Institute of Technology, Kanpur; Dr. S.M. Lee, Indira Gandhi Centre for Atomic Research, Kalpakkam; Prof. M.K. Chandrashekar, J.L. Nehru Centre for Advanced Scientific Research, Bangalore; Prof. Sneh Bhargava, former Director, All India Institute of Medical Sciences, New Delhi and Dr. V.P. Kamboj, former Director, Central Drug Research Institute, Lucknow at Allahabad; and by Dr. Ishwar Prakash of Central Arid Zone Research Institute, Jodhpur at Lucknow. The Local Chapters also organized several programmes in celebration of the Golden Jubilee of India's Independence.

The Academy also organized a five-days Workshop, in collaboration with the Mehta Research Institute of Mathematics and Mathematical Physics, Allahabad on 'B and Neutrino Physics' from January 4 to 8, 1998. The Workshop focussed on the current experiments being conducted at CERN Switzerland, Fermi Lab Chicago, KEK Japan, SLAC Stanford and other major Centres. The latest findings and their implications as well as the Indian participation in various proposed experiments were discussed in depth. Prof. M.G.K. Menon inaugurated the Workshop and delivered a special lecture.

After several years, the sixty-eighth Annual Session was again held in Lucknow under the auspices of the Central Drug Research Institute, Lucknow on October 23 to 25, 1998. A two-days symposium on 'Science and Technology Education : Concerns and Perspectives' was held during the Session. In keeping with the theme of the symposium President Prof. P.N. Tandon delivered the Presidential Address on the 'State of Science and Technology Education in the Country since Independence'. He observed that although there has been a dramatic increase in all-round enrolment and the numbers of institutions of all kinds, illiteracy still abounds, percentage of student enrolment in science streams has remained static for several years and the ratio of S & T manpower to population is appallingly low, compared to developed countries and so is the case with R & D personnel. But what caused still greater concern is the poor quality of education being imparted at all levels. He also suggested measures to improve this state of affairs, specially for boosting R & D.

The symposium was held in four technical sessions; (1) School and College Education; (2) University Education; (3) Job-oriented Science and Technology Education and (4) Perspectives of Teachers. Eminent scientists and educators, including Prof. Arvind Kumar of Homi Bhabha Science Centre, Mumbai; Prof. S.P. Mukherji, Centenary Professor of Statistics, Calcutta University, Calcutta; Prof. Asis Datta, Vice-Chancellor, Jawaharlal Nehru University; Prof. P.N. Bhatt, Chairman, Task Force on Animal and Aquaculture Biotechnology, New Delhi; Sri Anil Sadgopal, New Delhi; Dr. C.L. Kaul, Director, N.I.P.E.R., Chandigarh; Prof. A.N. Purohit, H.N. Bahuguna University, Srinagar, Garhwal; Prof. Harish Varma, Indian Institute of Technology, Kanpur; Prof. P.R. Sengupta, Kalyani

University and several teachers spoke in the symposium. A Panel Discussion followed in which Prof. M.G.K. Menon, Prof. U.S. Srivastava, Prof. M. Vijayan, Prof. D.V. Singh, Prof. S.K. Joshi, Dr. V.P. Kamboj and Prof. Kasturi Datta participated. A report embodying the conclusions and recommendations was prepared and sent to concerned authorities.

Prof. D.V. Singh, Vice-Chairman, All India Council for Technical Education, New Delhi and Prof. M. Vijayan of the Molecular Biophysics Unit of Indian Institute of Science, Bangalore presided respectively over the meetings of Physical and Biological Sciences Sections. About 85 papers were presented. Dr. P. Dashora of the Department of Physics, Rajasthan University, Jaipur and Sri Prem Prakash Srivastava of the Central Institute of Fisheries Education, Mumbai received the newly introduced NASI-Swarna Jayanti Puraskar. These awards, introduced in the Golden Jubilee Year of Independence, carry a sum of Rs.5,000 and a certificate and are given to the best paper presented in each of the two Sections by a young scientist.

Under the Science Communication Programme, extension lectures were organized during 1997-98 in five institutions outside Allahabad - K.N. Institute of Physical and Social Sciences, Sultanpur; K.N. Institute of Child Education, Sultanpur; H.A.L. School, Korwa; Government P.G. College, Obra and Cement Factory Inter College, Dala as well as in several institutions in Allahabad. The President, Prof. P.N. Tandon, delivered a largely attended lecture to students at Allahabad in the Maharishi Patanjali Vidyamandir School. State and Local level competitions were held as usual. On the National Science Day Function in February 1998, Dr. V.P. Sharma was present as the Chief Guest. The NASI - Science Teacher Award was given to Mrs. Shefali Saxena of Kendriya Vidyalaya, Dehradun. In the Summer School for +2 level students, held in June 1998, besides the faculty of Mehta Research Institute of Mathematics and Mathematical Physics and Allahabad University, Prof. Dayal Saran and Prof. H.C. Varma from Indian Institute of Technology, Kanpur and Prof. T.S. Krishnamurthy of M.L.N. Regional Engineering College, Allahabad acted as resource persons.

On the demand of school and +2 level students, the Academy started a Students Wing in the library in 1998. This has been widely welcomed and an increasing number of students have been taking advantage of the facility.

A series of lectures covering various aspects of geology, paleontology and environment was organized on November 16, 1998 at Allahabad. The speakers included Prof. Ravi Korisetter of Karnataka University, Dharwar, Dr. G.L. Bardam and Dr. P.K. Thomas of Deccan College, Pune and Dr. Alok Tripathi of the Institute of Archaeology, New Delhi.

In 1998, the last surviving Founder Fellow of the Academy, Prof. Andre Weil passed away in U.S.A.

Before the end of the year 1998, a symposium on 'Condensed Matter Physics' was organized in collaboration with the Department of Physics of Allahabad University on December 4 to 6, 1998 to commemorate the Birth Centenary of a distinguished Past President, late Prof. K.S. Krishnan. The symposium was inaugurated by the Rajyapal of U.P. Sri Suraj Bhan. The key-note address was delivered by Dr. Raja Ramanna and a number of famous physicists from all over the country participated in the symposium.

Dr. V.P. Sharma, former Director, Malaria Research Centre, Delhi was elected President for 1999 and 2000. Prof. Alok K. Gupta resigned as General Secretary due to increasing pressure of work as Director of National Centre of Experimental Mineralogy and Petrology in Allahabad University. The Council appointed Prof. H.C. Khare as the General Secretary in his place. Prof. M.P. Tandon took over as the Treasurer in place of Prof. Khare. Prof. J.P. Mittal took over as the Foreign Secretary. Six Foreign Fellows elected this year were : Prof. Albert Bruce, President, National Academy of Sciences, Washington, USA; Prof. A.G. Bose, MIT, Cambridge, Mass., USA; Prof. Franz Durst, University of Erlangen-Nuremberg, Germany; Prof. G.I. Marchuk, Russian Academy of Sciences, Moscow and Prof. J.I. Vargas, President, Third World Academy of Sciences, Trieste, Italy.

Prof. R. Borlaug, Mexico, the father of Green Revolution in the world; and Prof. James D. Watson, New York, the discover of the chemical structure of DNA, were elected honorary Fellows of the Academy.

A symposium on Role of Measurements in Science and Technology was organized jointly with the Indian Association of Productivity, Quality and Reliability in New Delhi on October 11, 1999. Prof. S.P. Mukherjee, Centenary Professor of Statistics, Calcutta University was the Convenor. The symposium was divided into three technical sessions which were chaired respectively by Prof. S.K. Joshi, Dr. A.R. Verma and Prof. P.N. Tandon. Several eminent scientists participated in the symposium. The President Dr. V.P. Sharma presided over the Inaugural Session.

The sixty-ninth Annual Session was held on November 11 to 13, 1999 at the Barkatullah University, Bhopal. A symposium on "Information Technology and its Applications" was held on the occasion. The President Dr. V.P. Sharma delivered his address on 'Malaria Control in the next Millennium : Challenges and Opportunities'. He called for a holistic approach in malaria control and stated that everything about malaria is so moulded by local conditions that it has become "A thousand epidemiological puzzles". He strongly advocated the

use of bioenvironmental methods, integrated with other methods of vector and parasite control, to deal with the problem. Prof. M.G.K. Menon who was the Chairman of the Task Force appointed by the Government of India for the introduction of Information Technology (IT) in the country, delivered the key-note address in the symposium. He provided an overall perspective of the rapidly developing scenario in IT which involved a convergence of systems dealing with information in various modes - aural, visual, textual and their different combinations - and then spoke in considerable detail on the means which latest science and technology have provided to achieve this convergence. Prof. S. Krishnaswamy (Madurai), Dr. H.K. Kaul (New Delhi), Prof. M.M. Pant (New Delhi), Dr. Vijay P. Bhatkar (Pune), Sri R. Chandrasekhar (Hyderabad), Sri M. Tambe (Bangalore), Dr. N. Seshagiri (New Delhi), Prof. P.N. Tandon (New Delhi), Dr. Y.K. Sharma (New Delhi), Dr. A.K. Chakraborty (New Delhi) and others spoke on various aspects of IT and its applications.

Dr. H.S. Mani, Director, Mehta Research Institute of Mathematics and Mathematical Physics, Allahabad and Prof. N.K. Ganguly, Director-General, Indian Council of Medical Research, New Delhi presided over the Physical and Biological Sciences Sections respectively. Over a hundred papers were presented. Dr. K.K. Sharma of Zoology Department, Maharshi Dayanand University, Ajmer received the NASI - Swarna Jayanti Puraskar for the best paper presentation.

Under the Science Communication activities, a workshop on Robotics was conducted for two days at Allahabad by Sri A.S. Bedi, NASI-Science Teacher Awardee from Lucknow, on February 23-24, 1999. The exhibits and demonstrations were witnessed by over 800 students while 36 students participated in robot model building exercises. Also a two-days Teachers Training Programme for school teachers in Mathematics was organized at Lucknow on August 6 and 7, 1999. Thirty-three teachers participated in the Workshop which was conducted by Prof. R.P. Agarwal, Prof. H.C. Khare and Dr. S. Ahmad Ali.

A five-days intensive programme for students and teachers of schools and colleges was conducted at Allahabad by Dr. B.R. Sitaram, Director and his colleagues from the Vikram A. Sarabhai Community Science Centre Ahmedabad, under the auspices of the Academy. The programme included (1) an interactive exhibition for students and teachers, (2) demonstrations in physics and mathematics for students, (3) a workshop for science teachers in which they learnt to prepare low cost working and non-working teaching aids, (4) demonstration of model rocket launching and (5) lectures by Dr. Sitaram on teaching methods. The exhibition and demonstration in physics and mathematics were visited by more than 1200 students and teachers while the

model rocket launching was witnessed by more than 2000 members of the public, including students and teachers. The entire programme was as useful as it was exciting.

A one-day demonstration-cum-lecture was also arranged at Allahabad on December 24, 1999 on water pollution, its hazards, as well as water testing and purification by scientists of Industrial Toxicology Research Centre, Lucknow. Besides many teachers and students, members of the public were also attracted to the programme.

In the week preceding the National Science Day in February, 1999, local and U.P. State level contests for students were organized as in the past. The subject for the Inter-District Debate was 'Biotechnology is a boon for India's Development' and for the Oration, it was 'Information Technology and India's Development in the next century'. Prizes were given away to successful participants in the very well attended National Science Day Function in which Prof. Raj Baveja, Director, Kamala Nehru Memorial Hospital, Allahabad was the Chief Guest. The NASI-Science Teacher Award for 1998-99, was given during the function to Sri Anand Singh Bisht of Government Intermediate College, Nainital.

Several public lectures were also arranged at Allahabad. Dr. P.C. Pandey, Director, Antarctica Study Centre, of the Department of Ocean Development, Goa spoke on the findings in the Antarctica on June 23, 1999. Dr. R.A. Mashelkar, Director-General, CSIR, delivered a very largely attended lecture on 'Indian Science and Technology into the 21st Century' on September 5, 1999. The lecture was arranged in collaboration with the Allahabad University.

The Summer School for students held in June, 1999 was enriched by the participation of Dr. K.S. Venkatesh from Indian Institute of Technology, Kanpur, Dr. Annapurni from Delhi University, Mr. Atul Kulkarni and Mr. Arun Patil of the Indian Institute of Geomagnetism Mumbai, Dr. Rakesh Tuli and Dr. D.B. Amla from National Botanical Research Institute Lucknow, besides scientists and teachers from the Mehta Research Institute and Science Faculty of Allahabad University, as resource persons. Students were also taken to the Kamala Nehru Memorial Hospital where Dr. B. Paul Thaliath, Deputy Director, demonstrated the working of several diagnostic and therapeutic gadgets like CT Scan, Ultrasound machine, Computerized Radiation equipments etc. and explained their working principles. The Science Week witnessed boys and girls from all over U.P. participating in various activities with enthusiasm.

Mention was made earlier about streamlining of the procedure for election of Members in 1995 - that nominations of Members were to be made by Fellows only, that Screening Committees would look into the eligibility of the

nominations and that enrolment of Annual Members was discontinued. In 1999, the entire list of Members of the Academy was reviewed and the Council recommended that henceforth Members may write 'M.N.A.Sc'. after their names. The proposal was unanimously approved in the Annual General Meeting and thus about 70 years after the Academy was founded, this privilege was extended to Members of the Academy.

N.A.S.I

Diamond Jubilee and Beyond



Presidents



35.



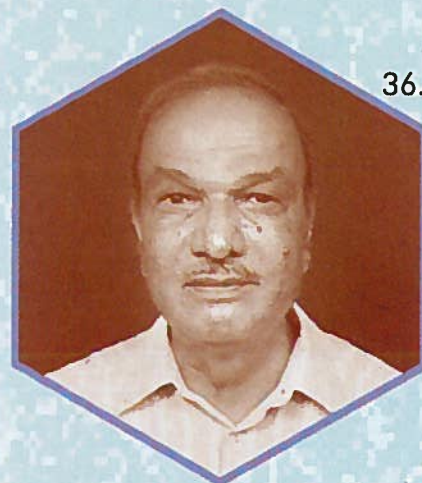
35. V.P. Sharma
(1999 & 2000)

36. S.K. Joshi
(2001 & 2002)

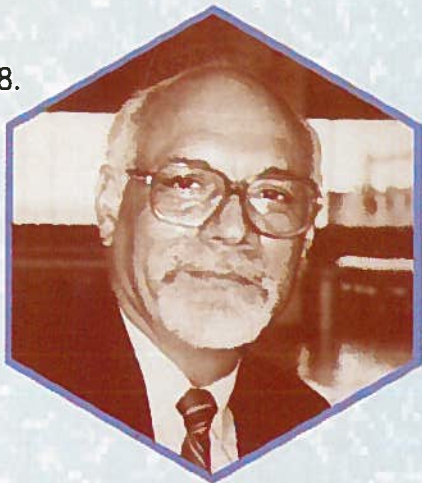
37. Jai Pal Mittal
(2003 & 2004)

38. V. P. Kamboj
(2005)

36.



38.



37.



10. THE ACADEMY IN 21ST CENTURY

The Academy entered the new millennium under the stewardship of Dr. V.P. Sharma. Two important events took place in the month of January. First, Dr. N.H. Antia, from Foundation for Research in Community Health, Bombay gave the P. Sheel Memorial Lecture at Allahabad on January 22, 2000 before a large gathering. He spoke on 'Science, Philosophy and Spirituality'. Secondly, a series of three illustrated lectures on different aspects of Indian wild life was delivered at Allahabad by the wild life photographer Sri V.R. Sinha, formerly Additional Secretary, Defence Productions, Government of India, to packed audiences.

In February, during the National Science Week, students of several districts of U.P. and those of Allahabad participated in quiz, exhibition, debate and oration. The subjects for the Debate and Oration respectively were 'Construction of large dams in India would prove disastrous to the country' and 'The dream of Indian scientists for India of the new millennium'. Participating students had prepared themselves well. In the National Science Day function, Dr. S.Z. Qasim, a former President of the Academy, and also former Secretary, Department of Ocean Development and Member, Planning Commission was the Chief Guest. He gave away prizes to the successful student contestants. Earlier in the same month, several lectures were delivered by eminent scientists and teachers in M.D.P.G. College, Pratapgarh; Degree College, Patti and Ram Raj Inter College, Patti, Pratapgarh and several institutions at Allahabad.

The Lucknow Chapter organized seven lectures in different venues during the Brain Awareness Week in March. The speakers were Prof. U.K. Mishra, Dr. Deepak Goel, Dr. R. Bansal, Prof. R.K. Dalal, Prof. A.K. Agrawal, Dr. P.K. Seth and Prof. Devika Nag. A lecture on 'Headache and epileptic syndrome' by Dr. Sunil Pradhan of Neurology Department, Sanjay Gandhi P.G. Medical Institute Lucknow (SGPGI) was organized by the Allahabad Chapter.

A two-days symposium on 'School Science for India of Tomorrow', sponsored by the National Council of Educational Research and Training, New Delhi, was held at G.B. Pant Institute, Allahabad on April 10 and 11, 2000 to identify the strengths and weaknesses in the present science teaching in schools and to recommend measures to improve it. The participants were Prof. V.G. Bhide and Prof. A.W. Joshi (Pune University); Prof. V.S. Varma, Prof. P.K. Srivastava and Prof. Amitav Mukerji (Delhi University); Dr. Rajesh Kochhar (National Institute of Science, Technology and Development Studies, New Delhi); Prof. Partha Sarathy Ghose (S.N. Bose National Centre of Basic Sciences, Calcutta); Prof. R.P. Agarwal (formerly Vice-Chancellor, Rajasthan University); Prof. R.S. Ambast (Banaras Hindu University); Prof. B.N. Dhawan and Dr. D.S. Bhakuni (formerly of C.D.R.I., Lucknow); Prof. G.K. Srivastava (Member, Higher Education Service Commission, U.P., Allahabad); Prof. S.L. Srivastava and Prof. Suresh Chandra (Physics Department, Allahabad

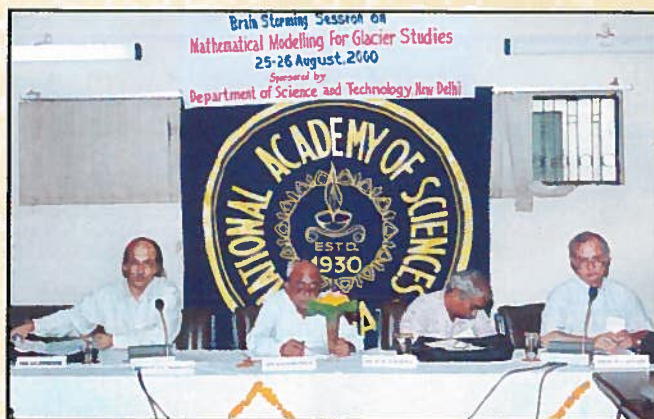
University); Prof. H.C. Pradhan and Dr. K. Subramanian (Homi Bhabha Centre for Science Education, Mumbai); Dr. Vinod Raina and Dr. Kamal Mahendru (EKLAVYA, Bhopal); Dr. B.R. Sitaram (Vikram A. Sarabhai Community Science Centre, Ahmedabad); Prof. H.S. Mani (Mehta Research Institute of Mathematics and Mathematical Physics, Allahabad) and several members from the University of Allahabad and from different N.G.Os. Prof. J.S. Rajput, Director, National Council of Educational Research and Training (NCERT), New Delhi delivered the opening lecture, which helped to identify the issues to be discussed. The report and recommendations of the symposium were published and sent to concerned authorities and agencies. The symposium was organized by Prof. U.S. Srivastava and was preceded by a Workshop in which about 45 science teachers of schools and colleges and the staff of the U.P. State Science Institute participated. The Workshop formulated their views on science syllabi to be placed before the above symposium.

In June, a Summer School for +2 level students was held as usual.

Prof. Meghnad Saha Memorial Lecture was delivered at Allahabad on July 29, 2000 in the presence of the President, Members of the Council and a large audience of local scientists, teachers and students by Dr. R. Chidambaram, Chairman, Atomic Energy Commission. Prof. P.N. Tandon, Past President of the Acadmy was awarded Prof. Meghnad Saha Distinguished Fellowship on 1st April, 2000 for five years.

The Council of the Acadmy also constituted 2 more lecture Awards during 2000—Prof R.C. Gupta Endowment History of Science Lecture Award, from the endowment given by Prof. R.C. Gupta, Ganita Bharati Academy, Jhansi, on 'History of Science'; and Prof. R.N. Tandon Memorial Lecture Award from the endowment given by the family and students of Late Prof. R.N. Tandon, for 'Plant Sciences'.

Another important activity was Brain Storming Session on Mathematical Modeling for Glacier Studies, held in collaboration with the Department of Science and Technology (DST), Government of India on August 25 and 26, 2000 at Allahabad. The Session,



A Symposium on Mathematical Modeling for Glacier Studies

organized by Prof. H.C. Khare, concentrated on modeling studies, based on the data available on Indian glaciers in the context of their dynamics and taking into account the rapidly changing environmental parameters. Well known geologists like Dr. Ravi Shanker, Senior Deputy Director General,

Geological Survey of India, Lucknow; Prof. Shri Niwas and Prof. P.K. Gupta of Geology Department, Roorkee University; atmospheric scientists, including Prof. U.C. Mohanty, Head of the Centre for Atmospheric Sciences, Indian Institute of Technology, New Delhi and Sri N.Y. Apte, India Meteorological Department, New Delhi; modelling experts like Dr. Malay Mukul of the Centre of Mathematical Modelling and Computer Simulation, Bangalore and Dr. Pratap Singh, Head, Mountain Hydrology Division, National Institute of Hydrology, Roorkee; Dr. S.C. Sud, Chief Engineer, Indian Basin Organization, Central Water Commission, Chandigarh; Dr. P.C. Pande, Director, National Centre for Antarctic and Ocean Research, Goa and many other experts took part. An important recommendations made was that a Centre for these studies be established, preferably at Allahabad.

National Brain Research Centre (NBRC), Gurgaon, with the National Academy of Sciences, India as one of the co-sponsors, organized round table discussion on consciousness on October 12-13, 2000 at Allahabad. It was inaugurated by Prof. Murli Manohar Joshi, Union Minister for Human Resource Development (HRD), Science and Technology, and Ocean Development. Dr. (Mrs.) Manju Sharma, Chairperson, Governing Body, NBRC welcomed the guests and Prof. P.N. Tandon, President NBRC Society, delivered the Presidential Address. Theme Address and Keynote Address were delivered by Prof. B. Ramamurthy and Dr. D.P. Chattopadhyay, respectively.

The first Annual Session of the Academy in 21st Century, i.e. the Seventieth Annual Session, was hosted jointly by the University of Allahabad, U.P. Rajarshi Tandon Open University, Agricultural Institute (Deemed University) Naini and Indian Institute of Information Technology (Deemed University), Allahabad, from November 3 to 6, 2000. A Symposium on "Harnessing Science and Technology for the New Era" was also organized during this session. Prof. Murli Manohar Joshi, inaugurated the Session and the Symposium. Prof. Joshi was conferred with the Honorary Fellowship of the Academy by Dr. V.P. Sharma, President of the Academy.

Dr. V.P. Sharma, delivered the Presidential Address on "Harnessing Science



70th Annual Session : A view of the dais

and Technology for a New Healthcare Regime in the 21st Century". The Keynote Address was delivered by Dr. S.E. Hasnain, Director, Centre for DNA Fingerprinting and Diagnostics, Hyderabad. Prof. N.K. Sanyal, Vice-Chancellor, U.P. Rajarshi Tandon Open University; Prof. R.B. Lal, Vice-



Dr. (Mrs.) Manju Sharma, Prof. P. N. Tandon, Prof. M. G. K. Menon
 and other distinguished scientists attending the 70th A. Session

Chancellor, Allahabad Agricultural Institute (Deemed University); Prof. H.C. Khare, General Secretary of the Academy and Dr. M.D. Tiwari, Officer-on-Special Duty, Indian Institute of Information Technology also spoke on the occasion.

The History of the National Academy of Sciences, India (1930-2000) entitled "Stepping Stones" was released during the inaugural session, by Prof. Joshi. The history was compiled by Past President of the Academy, Prof. U.S. Srivastava, who had been associated with the Academy for last fifty years. This



Prof. M. M. Joshi giving Millennium
 Award to Prof. U.S. Srivastava

was the first publication on the history of the Academy and only he could do justice to the subject because a long and active association with full devotion was necessary to complete such a difficult task.

Prof. U.S. Srivastava, was also given the Millennium Award of the Academy (Senior Scientist Category) by Prof. Joshi. The award carried Rs. one lakh and a citation. Prof. Joshi also gave Millenium Awards (Young Scientist Category) to Dr. S. Ramaswamy, Associate Professor, Department of Physics, Indian Institute of Science (IIS), Bangalore; and Prof. Satish Jain, Department of Neurology, All India Institute of Medical Sciences, New Delhi, for their notable contributions in the fields of Physical and Biological Sciences, respectively. These awards carried Rs. 50,000/- and a

citation. SICO sponsored - National Academy of Sciences, India Award in the field of Instrumentation was given to Dr. R.P. Bajpai, Scientist G and Head, Microelectronics Division, Central Scientific Instruments Organisation, Chandigarh.

Prof. L.M. Patnaik, Microprocessor Application Laboratory, Department of Computer Science and Automation, IIS, Bangalore, presided over the Physical Sciences Section and delivered his Presidential Address on 'From Transistors to Teraflop Computing and Beyond : The Marvels of Solid State Electronics'. Prof. Sandip K. Basu, Director, National Institute of Immunology, New Delhi, presided over the Biological Sciences Section and delivered his Presidential Address on 'Millenium maelstrom in medicine: navigating the vortex'. In the Scientific Sessions of Physical Sciences, invited lectures were delivered by Prof. Maithili Sharan, Indian Institute of Technology, New Delhi; Dr. K.A. Suresh, Raman Research Institute, Bangalore and Dr. R.G. Rastogi, Gujarat University, Ahmedabad. The invited speakers of Biological Sciences Section were Dr. Amitabh Mukhopadhyay, National Institute of Immunology, New Delhi; Dr. B. Ravindra, R.M.R.C., Bhubaneswar and Dr. Vinod Bhakuni, CDRI, Lucknow. Over hundred research papers were read during the Scientific Sessions. Dr. R.K. Sinha of the Department of Zoology, Patna University, Patna and Dr. P.K. Gogoi, Department of Chemistry, Dibrugarh University, Dibrugarh, were given the National Academy of Sciences, India-Swarna Jayanti Puraskar for best paper presentation in the scientific sessions of Biological Sciences and Physical Sciences, respectively.

Prof. Anupam Varma, Indian Agricultural Research Institute, New Delhi and Prof. Ashoke Sen, Harish-Chandra Research Institute, Allahabad, delivered Prof. R.N. Tandon Memorial Award Lecture and Prof. A.C. Banerji Memorial Award Lecture respectively, during the 70th Annual Session.

Extension Lectures were organised in several institutions in Satna (M.P.) and Phaphamau (a suburb of Allahabad) in October - November 2000 and in Mirzapur (U.P.) in February 2001. Under the Science Communication Activities. Speakers included Dr. D.K. Chauhan. Prof. Dilip Jatkari, Professor (Miss) D. Kaul, Professor H.C. Khare, Professor Vinod Prakash, Professor Suresh Chandra Srivastava, Professor U.S. Srivastava, Professor Krishna Swarup and Dr. (Mrs) Sharda Sundaram from Academic Institutions of Allahabad.



**Dv. S. Ramaswamy receiving the Millennium Award
(Young Scientist Category)**



Prof. Satish Jain Receiving the Millennium Award (Young Scientist Category)

“Contributions of Physical Sciences to the progress of Biological Sciences & Medical Sciences”.

The Academy also coordinated an exhibition organized by the Department of Biotechnology, Govt. of India, at the Mahakumbh Mela from 15th January to 10th February, 2001. Large number of *Kalpavasis*, pilgrims and citizens of Allahabad visited the exhibition.

Prof. H.C. Khare, General Secretary of the Academy, arranged a five-day science popularisation programme in collaboration with the Vikram A. Sarabhai Community Science Centre, Ahmedabad at Allahabad on February 23-27, 2001 under the guidance of Dr. B.R. Sitaram, Director of the Centre. The programme included—(a) Interactive Science Exhibition for students; (b) Demonstrations in Aerodynamics, Physics and Mathematics and (c) Workshop for teachers for preparing low cost science teaching aids. Twenty eight teachers from 15 districts of U.P. participated in this workshop. A large number of students and citizens participated in the programme.

Science Day Function on February 28, 2001 was presided over by Prof. S.K. Joshi, President of the Academy. Prof. N.K. Sanyal, Vice-Chancellor, Rajarshi Tandon Open University, Allahabad was the Chief Guest. Prof. Joshi, presented the Academy's Science Teacher Award to Dr. Deepak Sharma of N.A.S. Inter College, Meerut.

The summer school was also organized by the Academy for one and half months; but before its conclusion Prof. U.S. Srivastava, a Past President of the Academy and co-ordinator of Science Communication Programmes passed away after a brief illness on 9th June, 2001. The Council of the Academy paid its tributes to Prof. Srivastava and acknowledged his multifaceted contributions by instituting Prof. U.S. Srivastava Memorial Lecture Award in his honour from 2002.

The seventy first Annual Session was hosted by the University of Pune, from October 5 to 7, 2001. During the Annual Session, the Academy organized a Symposium on “Coping with Natural Hazards”. (October 5 & 6, 2001). Prof.

U.P. State level Science Quiz, Debate, Oration and Exhibition were held in February 2001 in which about 150 students representing 24 districts of U.P. participated. The topics of the Debate and Oration respectively were “Information technology has added to social and economic disparity in the country” and

NASI - Science Teacher Awardees of 1996, 97 & 99.



Prof. U.S. Srivastava giving NASI Science Teacher Award to Dr. Girish Chandra Badoni



Prof. P. N. Tandon giving NASI Science Teacher Award to Sri Amar Jyoti Singh Bedi



Dr. Raj Baveja giving NASI Science Teacher Award to Sri Anand Singh Bisht

M.G.K. Menon inaugurated the Session and Symposium in the Chandrashekhar Auditorium, University of Pune Campus. Prof. A.S. Kolaskar, Vice-Chancellor, University of Pune welcomed the guests, Fellows and Members of the Academy and symposium participants. Prof. S.K. Joshi, delivered the Presidential Address on 'Quantum Dots—Some Perspectives and Prospects'. In his illuminating address he said that Nano Science is at the central stage in research today as exciting developments are taking place rapidly. Prof. Joshi said that the prophecy made by Prof. R.P. Feynman in 1959 that 'we can arrange the atoms the way we want' has come true. He enumerated the applications of quantum dots in manufacturing of quantum markers, dot lasers, drug delivery systems and in cell surface interaction, etc.

Prof. M.G.K. Menon, while inaugurating the Session and Symposium, pointed out that a large number of people are being affected by various natural hazards and such instances are increasing very rapidly. The factors promoting, initiating and accelerating sudden harmful events have to be monitored. Since natural hazards are inevitable and inescapable, the planning for environmental security needs to include monitoring of hazards, preparedness measures and emergency operations. Prof. Menon said that the objective of the Symposium is to spell out a strategy for hazard coping plan that would include effective measures for disaster preparedness on basis of appraisal of magnitude of risks in the past and those anticipated in future. The Symposium was divided into four sessions and coordinated by Prof. K.S. Valdiya of Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore. He spoke on "Geodynamic perspective of natural hazards", in the first session. The speakers of second session were Dr. R.R. Kelkar, India Meteorological Department, New Delhi; Prof. P.V. Joseph, Cochin University of Science & Technology, Kochi; Dr. Vishwas S. Kale, University of Pune, Pune, Prof. D.C. Goswami, University of Gauhati, Guwahati; Prof. S.K. Dube, I.I.T., New Delhi and Dr. A.S. Rajawat, Space Applications Centre, Ahmedabad. In the third session, Prof. V.K. Gaur, Indian Institute of Astrophysics, Bangalore; Prof. K.N. Khattri, Dehradun; Prof. D.K. Paul, University of Roorkee, Roorkee; Shri M.K. Bhatt, Disaster Mitigation Institute, Ahmedabad; Prof. Vinod K. Sharma, Indian Institute of Public Administration, New Delhi and Maj. Gen. S.S. Sharma, Snow and Avalanche Study Establishment, Chandigarh, delivered their addresses. The last session was chaired by Prof. P.N. Tandon, AIIMS, New Delhi, in which not only the major points of 3 sessions were highlighted but other issues were also discussed to recommend future actions. Dr. (Mrs.) Manju Sharma, D.B.T., New Delhi dealt with the Biotechnological intervention for rehabilitation of hazard victims, while Dr. S.K. Bhattacharya, N.I.C.E.D., Kolkata, stressed the need to ensure the sanitation and medicare in the hazard-affected areas. Dr. G.B. Pant, IIM, Pune; Prof. U.C. Mohanty, IIT, New Delhi; Dr. S.S. Thigale,

University of Pune, Pune; Dr. B.K. Rastogi, NGRI, Hyderabad; Dr. C.P. Rajendran and Dr. Kusala Rajendran, Centre for Earth Science Studies, Thiruvananthapuram and Prof. J.N. Pande, AIIMS, New Delhi also expressed their views.

The Sectional President's Addresses were delivered on 6 October, 2001. Dr. Gyan C. Mishra, Director, National Centre for Cell Science, Pune delivered the Presidential Address (Biological Sciences Section) on "Dancing the immunological two-step synapse! Who orchestrates the music, the antigen or the costimulation?" Prof. Girjesh Govil, Senior Professor, Department of Chemical Sciences, Tata Institute of Fundamental Research, Mumbai, delivered his Presidential Address in the Section of Physical Sciences on "Expanding Frontiers of NMR: Understanding Chemistry of Intact Cells".

On the last day of the Session 150 scientific research papers were presented. Prof. (Mrs.) R. Parimala, Dean, School of Mathematical Science, TIFR, Mumbai delivered invited talk in the Physical Sciences Section; while Dr. V.S. Kanury Rao, ICGEB, New Delhi and Dr. Amit Ghosh, Director, IMTECH, Chandigarh delivered those talks in the Biological Sciences Section. The Swarna Jayanti Puraskars of the Academy were given to Dr. Shalini Garg, Department of Applied Physics, Delhi College of Engineering and Dr. (Mrs.) V. Kothekar, Department of Biophysics, AIIMS, N. Delhi, in the sections of Physical and Biological Sciences, respectively.

Dr. P. Sheel Memorial Award Lecture was delivered by Prof. Ashoke Jhunjhunwala, IIT, Chennai, on 'Enabling India through Telecom and Internet', on October 5, 2001. Dr. B.P. Pal Memorial Award Lecture was given by Prof. V.L. Chopra, National Professor, B.P. Pal Chair, National Research Centre on Plant Biotechnology, I.A.R.I., New Delhi, on "Genetic alteration of crop Brassicas for improving productivity and oil quality", on October 6, 2001. Prof. N.R. Dhar Memorial Award Lecture was delivered by Prof. J.P. Mittal, Director, Chemistry and Isotope Group, Bhabha Atomic Research Centre, Mumbai on "Excitement in Radiation Research" on January 19, 2002 at Allahabad.

Prof. U.S. Srivastava had managed the Science Communication Programme for many years and his untimely demise created a big void. The Council constituted a Sub-Committee to look into programme and give more emphasis on Science Awareness among the students. A draft vision paper was prepared and circulated to Fellows and Members of the Academy. Later on a meeting of the Chairpersons of the various local Chapters of the Academy was held to evolve a unified approach on Science Communication Programmes. Gradually these programmes will become a major activity of the Academy, in consonance with the vision of the Founder-Late Prof. Meghnad Saha.

Several activities were organised under the Science Communication programme. Dr. V.K. Agarwal, Reader in Chemistry, A.P.S. University, Rewa,

and Member of the Academy, coordinated the extension lectures at Rewa between October 15-20, 2001 in five institutions (A.P.S. University, Govt. Science College, Jyoti Secondary School, Sainik School and Model School, Rewa). The speakers included Prof. H.C. Khare, Prof. S.L. Srivastava, former Head, Department of Physics and Dr. U. C. Srivastava, Department of Zoology, University of Allahabad; Prof. Dipendra Prasad, H.R.I., Jhansi, Allahabad; Prof. S.C. Prasad and Dr. Pankaj Srivastava of Motilal Nehru National Institute of Technology (MNNIT), Allahabad. They covered varied topics such as Mathematics, Electronics, Environmental Degradation and Hormonal Regulation. The lectures were attended by a large number of students and teachers.

Lectures were organized between November 19-23, 2001 at Faizabad, under the coordinatorship of Prof. G.C. Pandey, Head, Department of Environmental Sciences, R.M.L. Awadh University, Faizabad and Member of the Academy. The lectures were delivered at Jhunjhunwala Girls Degree College, M.D. Girls Inter College, Adarsh Inter College, and S.S.V. Inter College. The speakers included Dr. U.C. Srivastava, Dr. V.K. Agarwal, Dr. S. Neraliya, Dr. D.K. Chauhan, Dr. (Mrs.) Sharada Sundaram (Department of Chemistry, E.C.C., University of Allahabad), Prof. K. Swarup (former Head, Department of Zoology, Gorakhpur University), Prof. S.C. Srivastava (former Professor of Physics, University of Allahabad), Prof. (Miss) D. Kaul, (former Professor of Zoology, University of Allahabad) and Prof. Vinod Prakash, (Physics Department, University of Allahabad). The lectures were attended by a large number of students, teachers, press and media personnel. Extension lectures were also organized in 7 Colleges of Allahabad during December 2001.

Extension lectures were arranged in M.G.G. Gramyodaya Vishwavidyalaya and Chitrakoot Inter College, Chitrakoot during February 4-9, 2002. The speakers included Prof. H.C. Khare, Prof. S.L. Srivastava, Dr. D.K. Chauhan, Dr. (Mrs.) Sharada Sundaram, Prof. (Miss) D. Kaul and Dr. Pankaj Srivastava. The valedictory lecture was delivered by Prof. Krishna Swarup.

Teacher's Training Workshop (U.P. State Level) was held at Allahabad from December 12 to 16, 2001. 40 Teachers from 25 districts of U.P. participated in the Workshop conducted by Dr. B.R. Sitaram, Director, Vikram A. Sarabhai Community Science Centre, Ahmedabad and his team. The Workshop was inaugurated by Prof. Suresh Chandra, Emeritus Scientist, Department of Physics, Banaras Hindu University, Varanasi. The teachers were trained to make low cost models for teaching science and mathematics and they were also exposed to experiments designed to make science teaching more interesting and illustrative. In the valedictory function 'Certificate of participation' was given to the participants.

Local and State Level Science Quiz, Debate, Oration, Exhibition and Essay

contests were held at Allahabad in February 2001. The topics of debate and oration were "Energy crisis is the consequence of modern life style" and "Sustainable development in agriculture", respectively. Students from 27 districts of U.P. participated in these activities.

The several month long Science Communication Activities (2001-02) culminated with the National Science Day Function (February 28, 2002) held in the Auditorium of Jagat Taran Golden Jubilee College, Allahabad. Prof. N.K. Sanyal, Vice-Chancellor, U.P. Rajarshi Tandon Open University, Allahabad was the Chief Guest and Prof. H.C. Khare, General Secretary of the Academy, presided over the function. Prof. Khare while welcoming the Chief Guest, Fellows and Members of the Academy and other distinguished guests gave a brief account of the Academy's Science Communication Activities. The winners of the Debate and Oration also spoke on the occasion. Prizes were given to the winners of various activities.

The Science Teacher Award of the Academy for the year was given to Mrs. Chitra Joshi of Dehradun and Dr. N.D. Singh of Kaimganj, Farrukhabad.

The Academy celebrated the National Technology Day on May 11, 2002 in Allahabad. The theme for this year was "Developing the Spirit of Innovation". The function was presided over by Prof. H.C. Khare, General Secretary of the Academy. Prof. S.L. Srivastava coordinated the function and made introductory remarks. Prof. Ravi Kulkarni, Director, Harish Chandra Research Institute of Mathematics and Mathematical Physics, Allahabad, was the Chief Guest and Professor Suresh Chandra, Department of Physics, B.H.U., Varanasi delivered an interesting talk. The function was well attended.

The Academy organised the annual Summer School for plus two level students during June 10-29, 2002 at Allahabad. Students of 15 institutions from Allahabad participated in the School. Several faculty members of Allahabad based Institutions like Harish Chandra Research Institute (HRI), Indian Institute of Information Technology (IIT), Departments of Physics, Botany and Zoology, University of Allahabad and Motilal Nehru National Institute of Technology (MNNIT) served as the resource persons. These included Prof. Pinaki Majumdar, Prof. J.S. Bagla, Dr. M.D. Tiwari, Prof. S.L. Srivastava, Dr. Kailash Uttam, Dr. Pankaj Srivastava Dr. R.K. Srivastava Dr. S.S. Narvi, Dr. R.K. Singh, Er. Amit Dhawan, Er. Anuj Jain, Dr. M.M. Gore, Ms. Pooja Narain, Er. A.K. Singh, Dr. V.K. Srivastava, Prof. G.K. Srivastava, Prof (Miss) Dipika Kaul, Dr. Krishna Misra, Dr. D.K. Chauhan, Dr. U.C. Srivastava Dr. Harbans Kheri, Dr. Sheo Mohan Prasad, Dr. Anita Gopesh, Dr. R. R. Tiwari, Dr. Uma Agarwal, Dr. (Mrs) Manju Sahni.

Prof. S.K. Joshi, President of the Academy, met the students and resource persons of the Summer School on June 19, 2002. He urged the participants to derive maximum benefit out of this endeavour of the Academy. The



Prof. S.K. Joshi (President-NASI), Dr. M.S. Sinha, Dr. Niraj Kumar & Faculty Members of MNNIT with the Summer School Participants

University of Allahabad, Prof. S.P. Misra, Chairman, Allahabad Chapter of the Academy and Dr. M.D. Tiwari, Director, Indian Institute of Information Technology, Allahabad were the Guests of Honour.

The Academy also organised a Workshop for the Science Teachers of the Intermediate Colleges of Allahabad on September 8 and 9, 2002. The basic objective was to motivate the teachers in developing low cost models and planning experiments for making science teaching easier and interesting. The resource persons for the Workshop were Dr. Pankaj Srivastava, Dr. R.K. Srivastava,



Teachers attending the Workshop



Teachers attending the Workshop

valedictory function was held on June 29, 2002. It was attended by the student - participants, resource persons, Members and Fellows of the Academy and invited guests. Prof. H.C.Khare, General Secretary of the Academy Allahabad, presided over the function. Prof. G.K. Mehta, Vice-Chancellor, University of Allahabad was the Chief Guest. Prof. S.L. Srivastava, Former Head, Department of Physics,

Dr. R.K. Singh, Dr. S.S. Narvi, Er. A.K. Singh, Dr. V.K. Srivastava, Er. R. Srivastava, MNNIT; Dr. Kailash Uttam, Physics Department, AU; Dr. U.C. Srivastava, Zoology Department, AU; Dr. R.N. Seth, CIFRI; Dr. R.S. Pawar, CIFRI; Dr. (Mrs) Sharda Sundaram, ECC; and Dr. PC. Srivastava, ECC and Dr. S.N.Singh, T.D.P.G. College, Jaunpur.

Several fellows of the Academy

were honoured for their scientific contributions during 2002. These included Prof. M.G.K. Menon (INSA medal for promotion and service to science), Prof. S.K. Joshi (New Millennium Plaque of Honour ISCA), Dr. Lalji Singh (New Millennium Plaque of Honour ISCA), Dr. (Mrs.) Manju Sharma (B.P. Pal Memorial Award ISCA and D. Sc. (h.c.), Lucknow University), Prof. B.N. Dhawan (Vigyan Gaurav Award of U.P. Government). Prof. H.C. Khare (appointed Chairman, Board of Governors, Motilal Nehru National Institute of Technology, Allahabad).

The year witnessed the sad demise of several distinguished fellows of the Academy including, 2 Past Presidents (Dr. M.L. Dhar and Dr. T.N. Khoshoo, New Delhi), and 3 Fellows-Prof. P.K. Sen-Sharma, Mumbai, Prof. A.K. Ghosh, Kolkata and Prof. S.K. Sinha, New Delhi. The loss was irreparable for the Academy and the scientific community.

The 72 Annual Session of the Academy was held at North-Eastern Hill University (NEHU), Shillong, Meghalaya from October, 25-27, 2002. A National Symposium on "Biodiversity : A Scientific Approach, Agenda for the 21st Century" was also organized During the Session. The Annual Session and Symposium were inaugurated by His Excellency, Dr. A.P.J. Abdulkalam, the President of India and a Fellow of the Academy since 1989, on October 25, 2002.

Prof. Mrinal Miri, Vice-Chancellor, North-Eastern Hill University, welcomed Dr. Abdul Kalam, Governor and Chief Minister of Meghalaya, President, officials and fellows of the Academy, guests, delegates and students. The governor, His Excellency, Sri M.M. Jacob also extended a warm welcome to all those present. Prof. Joshi in his Presidential Address on "nanomaterials" dealt in detail about the Quantum Dots, Molecular Manufacturing, Carbon Nanotubes and Atomic transistors.



A view of the dais during 72nd Annual Session

Hon'ble President, Dr. Abdul Kalam, enthralled the audience with his speech. He congratulated the Academy for organizing a Symposium on Biodiversity. He said that it was most relevant for North-Eastern States of the country, one of the hot centers of biodiversity. He stressed the need for using vast potential of country's biodiversity for upliftment of it's economy and betterment of man kind. He urged the scientists and researchers to

utilize the biotic flora and fauna with ecofriendly approach to ensure a proud

and prosperous future. He hoped that the Academy will play a pivotal role to integrate the people of different and diverse disciplines and culture for achieving this mammoth task. The President later had an interactive session with the school students.

The Keynote Address of the Symposium was delivered by Prof. A.K. Sharma of University of Calcutta. The Symposium was divided into following sessions : (1) Plants and Crops, (2) Live stock and Microbes, (3) Conservation and Germplasm characterization, (4) Policy issues and Regulatory Framework, (5) Bioinformatics, Remote Sensing and Ecosystems, (6) Industry. The proceedings have been published.



Hon'ble Dr. A.P.J. Abdul Kalam delivering Inaugural Address

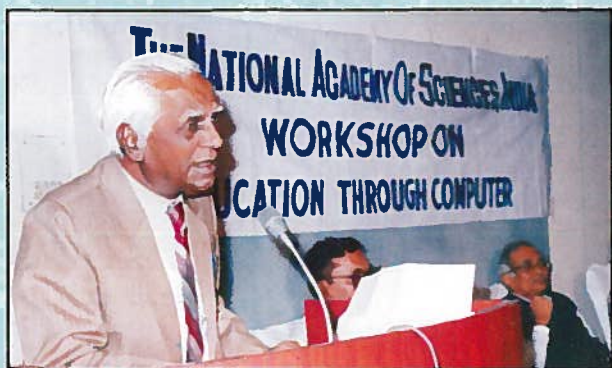
Prof. R.N. Tandon Award Lecture was delivered by Prof. H.N. Varma, Head, Department of Botany, Lucknow University, Lucknow on October 26, 2002. Dr. Vijayalakshmi Ravindranath, Director, National Brain Research Centre, Gurgaon delivered the Presidential Address (Biological Sciences Section) on 'Brain research-recent advances and hope for brain disorders'. Prof. A.K. Sood of Indian Institute of Science, Bangalore delivered the Presidential Address on "Carbon Nanotubes : Paradigm for Novel Condensed Matter Physics" in the Section of Physical Sciences. Prof. (Mrs.) Veena Tandon, Department of Zoology, North-Eastern Hill University, Shillong, and Dr. V. Ravi, NIMHANS, Bangalore delivered invited lectures on "Macroparasitoses in North-East India and their zoonotic potential" and "Recent developments in HIV-AIDS : Pathogenesis to therapy", respectively, in the Section of Biological Sciences. Prof. Abhijit Mookerjee, S.N. Bose National Centre for Basic Sciences, Kolkata and Prof. A.K. Ghosh, Indian Association for the Cultivation of Science, Kolkata delivered invited lectures on "Studies of optical and electrical response in ordered and disordered compounds" and "Fast ion dynamics in disordered materials", respectively, in the Section of Physical Sciences.

The first Prof. U.S. Srivastava Memorial Award Lecture was delivered by Dr. V.P. Sharma, Formerly Additional Director General, I.C.M.R. and Director, Malaria Research Centre New Delhi, on 'Malaria Control in India' on August 2, 2003 in the Auditorium of The National Academy of Sciences, India, Allahabad.



Best Paper Awardees of 72nd A. Session

A workshop on "Education Through Computers" for the teachers of Intermediate College of Allahabad was organised on November 24-25, 2002 at



Prof. H.C. Khare Inaugurating Teachers Workshop

Life, U.S.A. conducted the workshop. About 50 teachers of 20 Intermediate Colleges of Allahabad participated.

The students of the intermediate colleges of 35 districts of Uttar Pradesh (UP) participated in State Level Science Quiz, Debate, Oration and Exhibition during the science week (between 24-28, Feb. 2003). This year the topics of debate and oration were 'Is Cloning Ethical' and 'Global Management of Waste Disposal', respectively. An essay contest on 'Global Warming : Myths & Realities' was also organised. The Summer School (May 27-June 7, 2003) was organized by the Academy for plus two level students and many distinguished scientists were involved in teaching.

Several Fellows of the Academy were honoured in 2003 by different agencies. The Council congratulated them for the Recognition/Awards received by them. These included Prof. Murli Manohar Joshi-Order of the Friends of Mongolia (Highest Award of Mongolia); Prof. M.G.K. Menon-C.V. Raman Award (ISCA); Prof. J.P. Mittal-(a) Padma Shri (b) Humboldt Research Award (c) Prof. R.C. Mehrotra Commemoration Lecture Award (2002-03) (ISCA), (d) Vigyan Gaurav Samman (2003); Prof. S.K. Joshi-(a) Padma Bhushan (b) Ashutosh Mukherjee Award (ISCA); Dr. (Mrs.) Manju Sharma-(a) Special Distinction Award for Life Time Contribution to S & T Application and Promotion (b) Anju Reddy Memorial Award (c) Jawaharlal Nehru Award (M.P. Government) (d) ओजस्विनी अलंकार सम्मान (Ojaswini Alankar Samman) (e) Gujar Mal Modi Award, (f) U.P. Vigyan Gaurav Samman (2003); Prof. P.N. Tandon-(a) Millennium Plaque for Life Time Contribution in Bio-medical Research, (b) Sisodia Award; Dr. P.K. Seth-Life Time Achievement Award in Toxicology; Dr. (Ms.) Vijayalakshmi Ravindranath (a) Stri Samman (b) Fellow of Third World Academy of Sciences.

The 73rd Annual Session of the Academy was held at Physical Research Laboratory, Ahmedabad under the joint auspices of Physical Research Laboratory (PRL) and Gujarat University on October 10-12, 2003. The National Symposium was on 'Astronomy in the New Millennium'. The Annual Session and Symposium were inaugurated by Prof. U.R. Rao, Chairman, PRL

Allahabad. The Academy organized another Workshop on Role of Computer in Education on January 12-13, 2003 in Umrao Singh Memorial Girls Inter College, Allahabad. The Workshop was inaugurated by Professor H.C. Khare. Coordinator of the Workshop was Professor S.L. Srivastava. Sri Balbir Mathur, President, Trees for

Council and Formerly Chairman, Space Commission and Secretary, Department of Space, Government of India, on 10th October.

The introductory session of the symposium was addressed by Prof. M.G.K. Menon. He highlighted the major facilities in the field of Astronomy and Astrophysics in India. The Keynote address was



A view of the dais during 73rd Annual Session

delivered by Prof. G. Swarup, National Centre for Radio Astrophysics, Tata Institute of Fundamental Research, Pune University Campus, Pune, on Cold Gas at High Red Shift. The deliberation of the symposium were divided into four sessions (i) Cosmology and Neutrino Physics, (ii) Low Energy Astronomy, (iii) High Energy Astrophysics, Solar Astronomy, and (iv) New Opportunities and Initiatives. The speakers in these Sessions included Prof. G. Rajasekaran, Institute of Mathematical Sciences, Chennai; Dr.T. Souradeep, Inter-University Centre for Astronomy and Astrophysics, Pune; Prof. A.S. Joshipura, Physical Research Laboratory, Ahmedabad; Prof. S.M. Chitre, University of Mumbai, Mumbai; Prof.J.N.Goswami, Physical Research Laboratory, Ahmadabad; Prof. B.G.A. Rao, Physical Research Laboratory, Ahmedabad; Prof. Ram Sagar, Uttar Pradesh State Observatory, Nainital; Dr. Dipankar Bhattacharya, Raman Research Institute, Bangalore; Prof. K.P. Singh, Tata Institute of Fundamental Research, Mumbai; Prof. P. Venkatakrishnan, Udaipur Solar Observatory, Udaipur; Prof. P.C. Agrawal, Tata Institute of Fundamental Research, Mumbai; Prof. S. Ananthakrishnan, National Centre for Radio Astrophysics, Pune; Dr.T.P. Prabhu, Indian Institute of Astrophysics, Bangalore; Dr. R. Kaul, Bhabha Atomic Research Centre, Mumbai; Prof. N. Bhandari and Dr. H. Dave, Physical Research Laboratory, Ahmedabad.

Prof. R.C. Gupta Endowment History of Science Award Lecture (2002) was given by Prof. B.V. Subbarayappa, IUHPS, Bangalore. He spoke on 'Indian Scientific Tradition/astronomy, mathematics and medicine', on October 11, 2003.

The scientific sessions in Physical and Biological Sciences were held on October 11 and 12, 2003. Prof. Sushanta Dattagupta, Director, S.N. Bose National Centre for Basic Sciences, Kolkata delivered the Presidential Address on 'Friction' and presided over the Physical Sciences Section. About seventy-five research papers were presented through oral and poster modes in this Section. The Presidential Address in Biological Sciences section was delivered by Dr. Dinakar M. Salunke of National Institute of Immunology, New Delhi on 'Molecular Mimicry and Immune Recognition : Structural and Physiological

Investigations'. Ninety-five research papers were presented through oral and poster modes in the Section of Biological Sciences. In the scientific sessions of Physical and Biological Sciences Sections, the following invited lectures were delivered (i) *Free Electron Lasers* by Dr. Srinivas Krishnagopal, Beam Physics and PEL Laboratory, Centre for Advanced Technology,



Prof. Girjesh Govil receiving the Prof. N.R.Dhar Memorial Lecture Award

Indore, (ii) *Structural domains : A role in function and folding of proteins* by Dr. Vinod Bhakuni, Central Drug Research Institute, Lucknow, (iii) *Momentum Spectroscopy for Studying Photoionisation* by Dr. Bhas Bapat, Physical Research Laboratory, Ahmedabad, (iv) *Structural Genomics and Structure Based Drug design* by Prof. T.P. Singh, All India Institute of Medical Sciences, New Delhi and (v) *Role of Osteopontin... tumor growth* by Dr. Gopal C. Kundu, National Centre for Cell Science, Pune. Ms. S. Basu, Physical Research Laboratory, Ahmedabad; Ms. Achamma John Mathai, Department of Physics, Sardar Patel University, Vallabh Vidyanagar; and Ms. D.B. Sadevra, Department of Biotechnology, Amravati University, Amravati were given Swarna Jayanti Puraskar of the Academy for best papers.

The Academy organized several lectures under the Science Communication Programmes, in Allahabad during 2004. Prof. Govindjee, Emeritus Scientist, University of Illinois, Urbana, U.S.A. gave a talk on 'Pioneers of Photosynthesis' to an audience of more than 200 in the Botany Department, University of Allahabad on January 27, 2004. Prof. H.C. Khare, General Secretary (HQ), couldn't attend this lecture due to his ailing health. On 7th Feb. 2004, Prof. Khare died after brief illness and the Academy suffered an irreparable loss. The Council in its next meeting, acknowledged the valuable contributions of Prof. Khare to the Academy. Prof. V.P. Kamboj, took over as the General Secretary (HQ) for the remaining period and Prof. S.L. Srivastava, Treasurer of the Academy was appointed the Co-ordinator of Science Communication Programme.

The science communication programmes were restarted after the mid February. Dr. R.K. Srivastava of MNNIT delivered lecture on "Basics of Computer and Its Scope" in Prayag Mahila Vidyapeeth Inter College, Allahabad on February 20, 2004. Prof. S.L. Srivastava spoke on "Remote Sensing" in Army School, Allahabad on February 21, 2004. Another lecture was delivered on the same day by Dr. (Mrs.) Ragini Mehrotra of Motilal Nehru Medical College, Allahabad in Maharishi Patanjali Vidyamandir on 'AIDS'. On February 23, 2004. Dr. Pankaj Srivastava of MNNIT delivered a lecture on

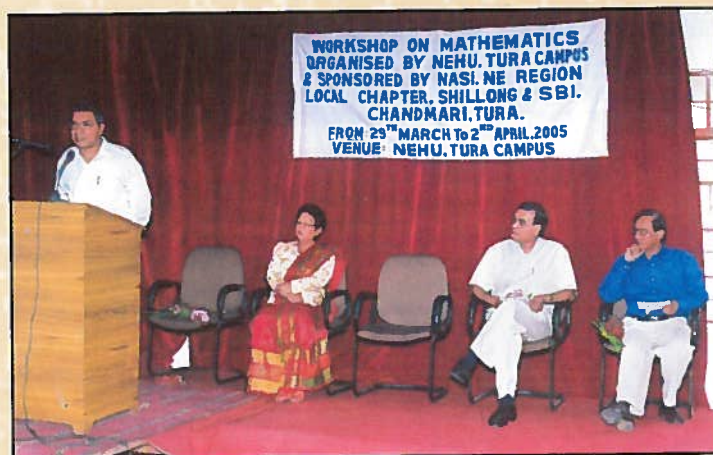
Activities of the Local Chapters



Inauguration of the Patna Chapter



Dr. P.K. Seth giving Prof. Saligram Sinha Memorial Lecture Award to Prof. S.K. Sopory at Lucknow Chapter



Workshop on Mathematics at North - Eastern Region Chapter (Shillong)

"History, Scope & Application of Mathematics" in Kendriya Vidyalaya, Old Cantt., Allahabad. Another lecture on "Evolution of receptors" was given by Prof. U.C. Srivastava of Zoology Department, University of Allahabad in Umrao Singh Memorial Girls Inter College, Allahabad. Prof. (Ms.) Dipika Kaul's lecture on "Genes" on February 28, 2004 was given in Jamuna Christian Inter College. All the lectures were well attended.

'Science Creative Writing and Painting Contest' was organized for the first time on February 21, 2004, during the Science Week, in the Academy. More than 70 students of local schools participated in the contest. The topics were (1) Computer Age and (2) Advancing Pollution.

On the eve of National Science Day U.P. State Level Contests (Science Quiz, Debate, Oration, Essay and Exhibition) were held from February 24-28, 2004. The students participants in these contests were about 240. Sixty teachers from 32 districts of U.P. attended the State Level Teachers Workshop. The National Science Day function was organized jointly with Harish-Chandra Research Institute (HRI) on February 28, 2004 in the Auditorium of the Academy. Prof. Krishna Kumar, Director, MNNIT was the Chief Guest and Prof. R.S. Kulkarni, Director, Harish-Chandra Research Institute, Prof. Abhai Mansingh and Prof. Chandrika Prasad (Senior Fellows) were the Guests of Honour.

The Academy organized a Workshop on 'Computer Generated Lessons' jointly with an American Association "Trees for Life" on March 14, 2004 in Umrao Singh Memorial Girls Inter College, Allahabad for the teachers of intermediate colleges. The workshop was planned by Prof. S.L. Srivastava, Coordinator of the Science Communication Programme of the Academy and was third in the series of Computer Education. The President of "Trees for Life", Shri Balbir Mathur, conducted the workshop. Twenty-five teachers from eleven Intermediate Colleges of Allahabad, participated.

The Patna Chapter of the Academy was inaugurated on 26th April, 2004 by Prof. S.E. Hasnain, CDFD, Hyderabad. On this occasion, a symposium on 'Frontiers of Science' was also organised at Patna.

Two Memorial Lectures were organised in the month of July, 2004. Prof. B.K. Bacchawat Memorial Young Scientist Award (2002) was given to Dr. Pratima Srivastava CDRI, Lucknow on July 19, 2004 at Allahabad. She delivered the lecture on 'Heme Metabolism: An Innovative Approach to Harness Resistance Malaria'. Prof. N.R. Dhar Memorial Lecture Award (2003) was given to Prof. Girjesh Govil, TIFR, Mumbai on July 29, 2004 at Allahabad. He delivered the lecture on 'Metabonomics: A New Frontier of Nuclear Magnetic Resonance'.

The Govt. of India declared the year 2004 as 'Scientific Awareness Year' to cultivate the scientific temper among the students and general masses so that a rational approach towards life is developed. Therefore, the Academy decided to spread the horizon of its science communication programmes through-out

the country. Several activities were planned among the students and rural masses through the twelve local Chapters of the Academy.

Ten Science Extension Lectures were held at Allahabad and several lectures were also organised at Satna (M.P.) and Jaunpur (U.P.) during September to October, 2004. Dr. (Ms.) Sharda Sundaram spoke on August 16, 2004 on 'Atoms, Molecules and Bonds' in Golden Jubilee Jagat Taran Inter College, Allahabad. Prof. (Ms) D. Kaul spoke in Gauri Pathshala Girls Inter College, Allahabad, on 'Basic and Advanced Concepts in Genetics' and Prof. S.L. Srivastava on 'Advances in Certain Novel Materials and Devices' in Narayan Ashram Balika Inter College, Allahabad on 21st August; on 'Several Aspects of Energy' in Hamidia Girls Inter College on 2nd September and on 'Smart Materials and Devices' on September 11, in Maharishi Patanjali Vidyamandir, Allahabad. Dr. Niraj Kumar, Assistant Executive Secretary of the Academy gave lecture on August 23, in M.L. Convent, Allahabad on the 'Basic Concepts in Life Sciences'. Prof. U.C. Srivastava of the Zoology Department, Allahabad University, spoke on 'Endocrine & Diseases' in Govt. Girls Inter College, Allahabad on August 24 and on 'Deficiency Diseases' in Umrao Singh Memorial Girls Inter College, Allahabad on September 6, 2004. Dr. V.P. Kamboj, General Secretary of the Academy and Former Director, Central Drug Research Institute, Lucknow, spoke on 'Intellectual Property Rights' in Ewing Christian College, Allahabad on September 4, 2004. Prof. C.B.L. Srivastava, Formerly Head, Department of Zoology, Allahabad University dealt in detail on 'Brain and its Activities' in Crosthwait Girls Inter College on October 5, 2004. All the lectures were attended by a large number of students and were followed by interactive question-answer session.



Inaugurations of The Extension Lectures at Satna

A series of Extension Lectures was held at Satna (M.P.) from September 29 to October 1, 2004. The speakers included Prof. S.L. Srivastava, Prof. D.K. Chauhan, Prof. P.W. Ramteke, Prof. U.C. Srivastava, Dr. (Mrs.) Sharada Sundaram, Dr. Pankaj Srivastava and Prof. G.L. Tiwari; and institutions at Satna were Govt. P.G. College, Satna Institute of Information Technology, Christukala Convent School, Bonanza School and Kendriya Vidyalaya.

The next series was held at Jaunpur (U.P.) from October 27-29, 2004. The speakers were Prof. C.B.L. Srivastava, Dr. M.S. Sinha, Dr. Pankaj Srivastava, Prof. D.K. Chauhan, Prof. R.K. Srivastava, Dr. R.N. Seth and Dr. Abhai Pandey. The institutions at Jaunpur were B.R.P. Inter College, Shia Degree College and Rizvi Learners.



74th Annual Session : A view of the dais

The 74th Annual Session of the Academy was held at Jaipur under the joint auspices of the University of Rajasthan and the Birla Institute of Scientific Research Jaipur on December 2-4, 2004. The subject of the National Symposium was "Science and Technology for Desert Development". The inauguration of the Annual Session and Symposium was done by Prof. M.G.K. Menon. The address of the Chief Guest, Mrs. Vasundhara Raje Scindhia, Hon'ble Chief Minister of Rajasthan, was read by Sri Ghanshyam Tiwari, Minister of Education, Government of Rajasthan.

The symposium was divided into six technical sessions on Water, Energy, Agriculture & Plant Resources, Health, Environment and Education after the keynote address of Prof. M.G.K. Menon. The sessions were chaired by Prof. S.K. Joshi, Prof. Suresh Chandra, Prof. M.G.K. Menon, Dr. (Mrs.) Manju Sharma and Dr. V.P. Sharma. The speakers included Dr. P.K. Ghosh, CMSWRI, Bhavnagar, Dr. P. Ghosh, BISR, Jaipur, Dr. Pratap Narain, CAZRI, Jodhpur, Dr. N.S. Shekawat, J.N. Vyas University, Jodhpur, Dr. M.S. Sahni, NRCC, Bikaner, Dr. S.R. Dharkar, SMS Medical College, Jaipur, Dr. R.C. Sharma, DMRC, Jodhpur and Dr. K.P. Sharma, University of Rajasthan.

A combined Session of Physical and Biological Sciences Sections was held on December 3, 2004. Prof. Ashok Misra, Director, IIT-Bombay, Mumbai delivered the Presidential Address (Physical Sciences Section) on 'Polymer Blends & Composites - Macro to Nanoscale' while Prof. Amit Ghosh, Director, IMTECH, Chandigarh gave the Presidential Address (Biological Sciences Section) on 'Emergence and Re-emergence of Infectious Diseases : The Cholera Paradigm'. The invited speakers in the Biological Sciences Session were Prof. Raghavendra Gadagkar, IISc, Bangalore and Dr. Rukhsana Chowdhury, IICB, Kolkata. In Physical Sciences Session the invited speakers were Prof. S. Bhattacharya, Director, TIFR, Mumbai and Prof. B. Sharma of

University of Rajasthan, Jaipur.

Special presentations were made by Dr. Rajesh Gokhale, NII, New Delhi, Dr. Grish C. Varshney, IMTECH, Chandigarh, Dr. Shyamala Mani, NBRC, Manesar and Dr. Pushkar Sharma, NII, New Delhi in the Biological Sciences Session.

Around 75 students presented papers in the Oral Sessions. The participation in Poster Session was also very good. Dr. Shipra Singh, Department of Chemistry, University of Allahabad, Allahabad and Dr. Pragya Khanna, Department of Zoology, Govt. Degree College, Jammu were selected for Swarna Jayanti Puraskar for best paper presentation in the Sections of Physical and Biological Sciences, respectively.

Prof. K. Kasturirangan, Director, National Institute of Advanced Studies, Bangalore, delivered Prof. Meghnad Saha Memorial Award Lecture on 'The Emerging Era of Space Science in India' on December 4, 2004 in the Auditorium of Birla Institute of Scientific Research, Jaipur. Before the lecture, Prof. M.G.K. Menon elucidated Prof. Kasturirangan's contributions in science, especially Space Science.

Extension Lectures were held in the month of December 2004 at Allahabad and Deoria and in January 2005 in Pratapgarh, Sahebganj and Lalganj under the Science Communication Activities. Prof. Alok Srivastava, Professor of Chemistry in Panjab University, Chandigarh delivered lecture in Suman Siksha Niketan, Naini, Allahabad on December 8, 2004 on 'Many Facets of Pollution'. After the lecture, many students asked questions related to pollution and also on other topics. In Deoria the lectures were arranged at Prestige Tutorial Intermediate College and Abhayanand Educational Institute and Intermediate College on December 16, 2004. A Science Exhibition and Cultural Programme on 'Pollution Awareness' was organized by Prestige Tutorial Intermediate College. Prof. U.C. Srivastava, Zoology Department, Allahabad University, Dr. Pankaj Srivastava, Motilal Nehru National Institute of Technology, Allahabad and Dr. Niraj Kumar, Assistant Executive Secretary of the Academy interacted with the students and selected the best working model, non-working model and chart. Prof. U.C. Srivastava delivered a lecture on Science and Discipline in Human Life and Dr. Pankaj Srivastava on Elementary Mathematics after the exhibition and cultural programme.

A Vigyan Chaupal was organized for the first time at Abhayanand



Prof. Kasturirangan, Prof. M.G.K. Menon and Prof. Jai Pal Mittal during Prof. Meghnad Saha Memorial Lecture Award giving ceremony

Educational Institute and Intermediate College, Shivdaria, 30 km from Deoria, on December 16, 04. Prof. U.C. Srivastava discussed the Emerging Areas in Biological and Medical Sciences, while Dr. Pankaj Srivastava explained different avenues in Physical and Mathematical Sciences. Dr. Niraj Kumar described the role of Nutrition in Preventive and Promotive Care of Health. A large number of students and teachers as well as local people attended the Chaupal.

Prof. S.L. Srivastava delivered a lecture on 'Science and Society' and Prof. U.C. Srivastava on 'Diseases' in P.B. Inter College, Pratapgarh on 17th January 2005. Prof. S.L. Srivastava also spoke on 'Sun and Energy' in Sukhpati Ram Inter College, Sahebganj, Pratapgarh, while another lecture on 'Nervous System' was delivered by Prof. U.C. Srivastava in Saraswati Vidya Mandir Vigyan and Prodyogiki Mahavidyalaya, Lalganj, Pratapgarh. Prof. S.L. Srivastava talked on 18th January 2005 on Remote Sensing and Disaster Management in M.D. Post-graduate College, Pratapgarh. In the afternoon a talk on 'Human Brain' was given by Prof. C.B.L. Srivastava, Formerly Professor & Head, Department of Zoology, University of Allahabad in Prabhat Academy Day Boarding Public School, Pratapgarh.

The Academy organized science quiz, debate, oration and exhibition both for local students of the intermediate colleges of Allahabad and the students of Uttar Pradesh. An essay contest was also organized for the students of degree colleges of Uttar Pradesh; and creative writing and painting contest as well as talent search (for Biological Sciences students) were organized for the students of intermediate colleges of Allahabad. The teachers accompanying the participating students from different districts of Uttar Pradesh were exposed to the excitement of science through a workshop on the eve of National Science Day (February 28, 2005) under the guidance of Prof. S.L. Srivastava. 'Talent Search' (for Biological Sciences students of Class XI) was organized for the first time on February 12, 2005 in the Academy to select the two best students in Biological Sciences from the Intermediate Colleges of Allahabad. Prof. U.C. Srivastava, Department of Zoology, Allahabad University, Allahabad convened the programme. Science Creative Writing and Painting Contest was organized on February 17, 2005 in the Academy and more than 70 students of local Schools participated. The topic was 'Fresh Water Scenario after 25 Years'. The Convener of this contest was Prof. (Ms.) Anita Gopesh.

U.P. State Level Contests (Science Quiz, Debate, Oration, and Exhibition) were organized from 24 to 28 February, 2005. Around 300 students and 50 teachers from the intermediate colleges of 35 districts of U.P. participated. The inaugural function was held on February 24, 2005 in the Auditorium of the Academy. Prof. S.L. Srivastava, gave a brief account of the various activities of the Academy in his welcome address. Prof. Chandrika Prasad, a Senior Fellow



Prof. S.L. Srivastava announcing the result on National Science Day

of the Academy was the Chief Guest and presided over the function. Prof. C.B.L. Srivastava, deliberated on the importance of Science Day and proposed a vote of thanks. The students of 35 districts of U.P. participated in the Science quiz conducted by Prof. U.C. Srivastava. Science Debate Contest was held under the guidance of Dr. (Ms.) Anjana Pandey, Centre for Biotechnology, Allahabad University on February 25, 2005. The topic of the science debate was 'Genetically Modified Crops are Boon for Indian Agriculture'. Students from 32 districts participated in the contest. Science Oration Contest on the topic 'Present Day Life Style is Responsible for the Health Problems' was held on February 26, 2005. Dr. (Ms) Ragini Mehrotra of Motilal Nehru Medical College, Allahabad convened the contest. Participants from 30 districts took part. The Science Exhibition was held on February 27, 2005. Prof.C.B.L. Srivastava was the Convener. Science Essay Contest for undergraduate students was held on February 26, 2005. The topic of essay was 'Cyber Crime' and the Convener of this event was Prof. R.K. Srivastava of Motilal Nehru National Institute of Technology, Allahabad.

U.P. State Level Teacher's Workshop was held during February 24 - 27, 2005. More than 50 teachers from the intermediate colleges of 35 districts of U.P. participated. The program for the teachers of biological stream included visits to Ganga, Centre for Biotechnology and Department of Zoology of Allahabad and demonstration of several techniques. It was organised by Prof. U.C. Srivastava, Dr. R.N. Seth and Dr. (Ms.) Anjana Pandey. There were special lectures by Prof. C.B.L. Srivastava and Prof. U.C. Srivastava. Demonstration and visits were arranged for teachers of Physical Sciences stream to CAD Laboratory MNNIT, Department of Physics of Allahabad University and Jamuna Cristian College, Allahabad and were organised by Prof. R.K. Srivastava, Dr. (Ms.) Sharda Sundaram, Dr. M. Masood and Dr. K.N. Uttam. Lectures were given by Prof. S.L. Srivastava, Prof. Abhai



Audience on National Science Day

Mansingh of University of Delhi and Prof. M.L. Das of Department of Physics, Allahabad University.

The National Science Day function was organized on February 28, 2005 in the Auditorium of the Academy. Prof. B.B.L. Saxena, who completed 50 years as a Fellow of the Academy, was the Chief Guest. Prof. V.P. Kamboj, President of the Academy, presided over the function. Prof. S.L. Srivastava, welcomed the guests and participants and gave an account of the activities undertaken by the Academy. Prof. B.B.L. Saxena distributed prizes and certificates to the winners of contests. He congratulated all the students and teachers for the participation in these activities. The Science Teacher Award of the Academy was given to Mrs. Meenambika Menon of Cambridge School, Noida by the President of the Academy. Prof. Kamboj discussed the recent developments in the field of health and medicine. Prof. C.B.L. Srivastava, Council Member of the Academy, proposed the vote of thanks.

North-East Region Chapter of the Academy organized a Workshop on 'Mathematics for Higher Secondary Teachers in Garo Hills', in the last week of March, 2005 under the coordinatorship of Prof. S.S. Khare, Pro-Vice-Chancellor, NEHU, Shillong.

The Summer-School for the science students of +2 level of Allahabad was also organized in the month of June, 2005. The school was inaugurated on June 20, 2005 by Prof. Suresh Chandra, Vice-President of the Academy and Prof. S.L. Srivastava welcomed the student participants. The students themselves performed several experiments during the 10 days span of the summer school. They also attended three Memorial Lectures-Prof. B.K. Bacchawat Memorial Young Scientist Award lecture (2004) by Dr. Amita Gupta, University of Delhi, N. Delhi; Dr. P. Sheel Memorial Award Lecture (2004) by Dr. Anil Prakash Joshi, Dehradun and Dr. B.P. Pal Memorial Award Lecture (2003) by Dr. Sushil Kumar, NCPGR, New Delhi, during the summer school.

It may be useful to look back and analyze the development of the Academy as it enters its Platinum Jubilee Year. The founding fathers of the Academy had intentionally adopted the 'Banyan tree' rather than the 'Palm tree' model of growth. In the retrospect this has paid rich dividends. The growth of the Academy has been robust and along expected lines. The policy of spotting the talent early and inducting them as members has been very successful. The senior most National Science Academy of the country has today over 2600 scientists in its fold and it is not an inverted pyramid. It has 1368 Members, 1187 Fellows, 33 Honorary Fellows and 60 Foreign Fellows.

The Academy has 13 local chapters in all the major Academic centres of the country. Further, its scientific fraternity is not only distributed throughout the country but extends from major scientific agencies, national laboratories and

universities to degree colleges. Its Fellows have occupied and continue to occupy the highest positions in Academic and Research Institutions, Scientific agencies and government departments and policy - making bodies. The Academy feels proud that the first citizen of the country - The President of India - is an elected (and not an honorary) Fellow of the Academy. The Academy has developed a working model of Science Communication in Allahabad and gradually extended it to major parts of Uttar Pradesh. The local chapters have been participating in these activities with great sense of commitment and enthusiasm. The Academy is confident that it will soon become a National Programme with the help of its local branches and thus enable it to achieve one of its primary objectives.

SECTIONAL PRESIDENTS OF PAST FIVE YEARS

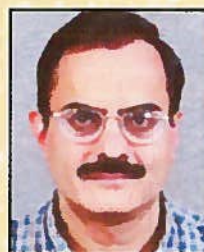
Physical Sciences



L.M. Patnaik
2000



Grijesh Govil
2001



A.K. Sood
2002



Sushanta Dattagupta
2003



Ashok Misra
2004

Biological Sciences



Sandip K. Basu
2000



G.C. Mishra
2001



V. Ravindranath
2002



D. M. Salunke
2003

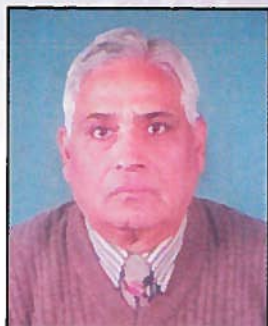


Amit Ghosh
2004

IASI

The Academy in 21st Century

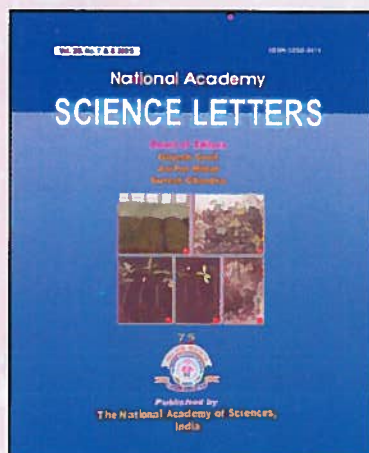
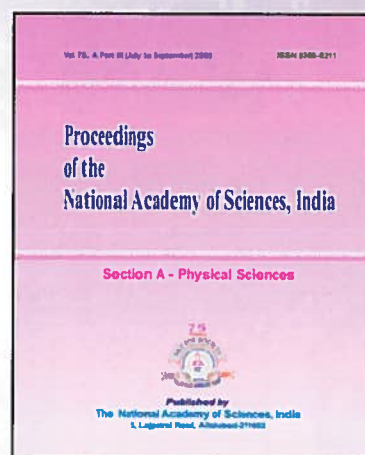
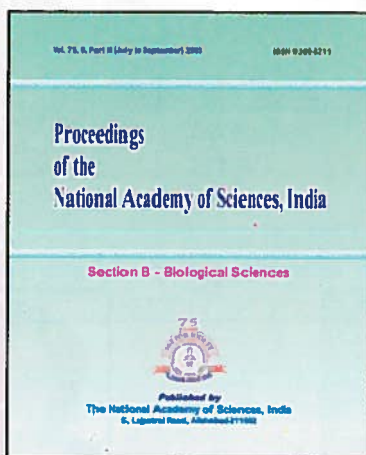
CHIEF EDITORS OF THE PROCEEDINGS OF NASI AND CURRENT PUBLICATIONS

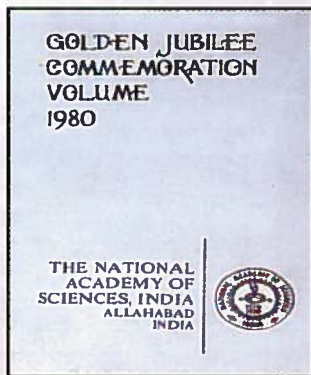
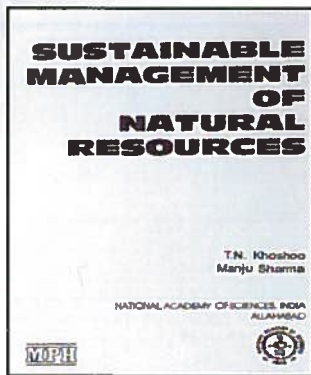
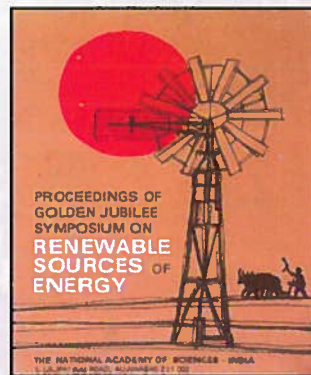
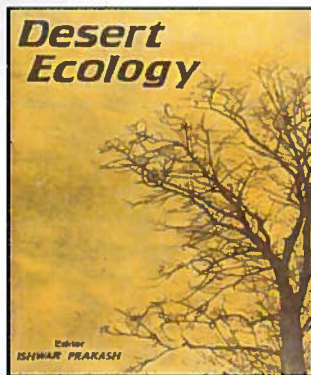
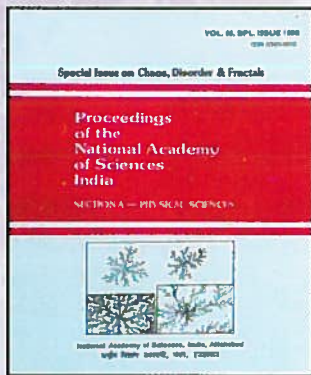
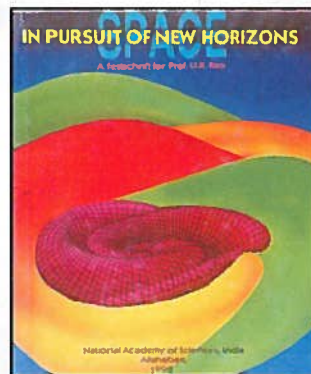
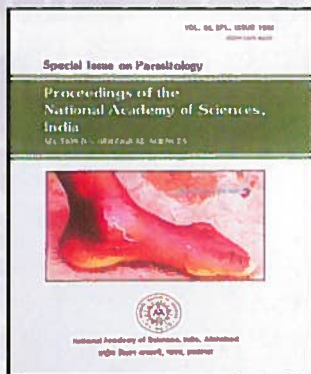
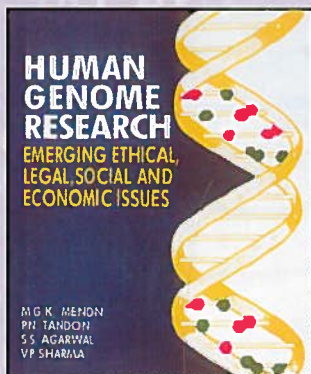
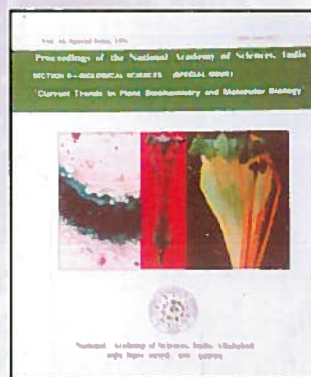
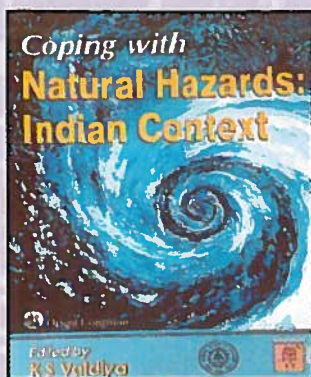
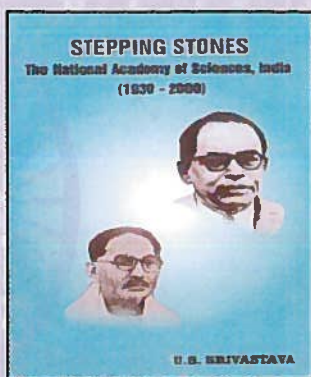


Prof. Suresh Chandra
 (Physical Sciences)



Prof. B. N. Dhawan
 (Biological Sciences)





NASI The Academy in 21st Century

ENTERING THE PLATINUM JUBILEE

The National Academy of Sciences, India is celebrating its Platinum Jubilee with a series of scientific lectures, symposia and science communication activities. The highlights of the programme include -

- (1) The main function of the Platinum Jubilee Celebrations would be the Symposium on 'Excitement of Science' on October, 6-7-2005 at Allahabad. The Symposium will be inaugurated by His Excellency Dr. A.P.J. Abdul Kalam, President of India on October 6, 2005 - the day coinciding with the birthday of Prof. Meghnad Saha, the Founder President of the Academy.
- (2) 21 'Satellite Symposia' to be organized in different parts of the country.
- (3) 'NASI-Platinum Jubilee Lecture Series' - 25 Lectures to be delivered by eminent scientists in different parts of the country.
- (4) Lectures in Colleges for (10+2) level Science students to expose them to the excitement in science by Fellows/Members spread throughout the country.
- (5) Children Science Awareness Programmes.
- (6) Exposition of the three major papers of Einstein viz. on Relativity, Brownian Motion and Photoelectric Effect which have revolutionized Science will be made available to students in Hindi, Bangla and English in the International Year of Physics (2005).
- (7) Publication of the Proceedings of Symposium on 'Excitement of Science'
- (8) Publication of the History of the Academy entitled 'Journey of NASI (1930-2005)'.
- (9) Issuance of Special Cover and Special Cancellation on the National Academy Sciences, India by Department of Posts.



Prof. M.G.K. Menon initiating the Scientific Activities of the Platinum Jubilee Year.
Prof. Pramod Tandon, General Secretary (Outstation) is also present on the dais

The scientific activities were initiated on January 22, 2005 with the lecture of Prof. M.G.K. Menon on 'Excitement of Science (1905 - Miraculous Year of Einstein's Discoveries: The 100 Years since)' in the Auditorium of the Academy at Allahabad. Prof. Menon in his lecture said that persons in the limelight make momentous impact on the Society, but people like Einstein left indelible mark on the history irrespective of time. He also threw light on the life of Einstein and his discoveries and said that Einstein studied Brownian Motion and elaborated the wave nature of light. His famous theory of relativity was written in a lucid style and was full of textual literature and simple equations. The famous theory was based on sheer observations sans any complicated equations and phenomenon. Prof. Menon concluded his lecture with the example of the age old lullaby 'twinkle, twinkle little star' and described the star as a nuclear furnace. The lecture was attended by a large number of University and College Teachers, Fellows and Members of the Academy, Scientists, Students, especially of Schools and Colleges, and other distinguished guests.



Dr. V.P. Kamboj, President and Dr. P.K. Seth, General Secretary (HQ) welcoming Prof. M.G.K. Menon at the opening scientific activities of the Platinum Jubilee Year.

The first Satellite Symposium was organized during the 7th International Symposium on 'Vectors and Vector Borne Diseases' at Patiala, on 18th February, 2005. It was inaugurated by Dr. V.P. Kamboj, who was also the Chief Guest on this occasion; and Keynote Address was delivered by Dr. V.P. Sharma.

Prof. G.C. Misra, N.C.C.S, Pune, organized a Satellite Symposium on 'Stem Cell Research : Potential and Therapeutics', on August 9, 2005 at Pune.

A 2-day symposium on 'Nanotechnology' was organized by Prof. Ashok Misra, IIT Bombay, on September 8-9, 2005. Prof. Misra also organized a Workshop on Science Awareness on July 6, for Class X and XII students of Mumbai.



Dr. V. P. Kamboj inaugurating the Satellite Symposium at Patiala

Some of the NASI-Platinum Jubilee Lectures have already been delivered. Dr. V.P. Sharma delivered 7 lectures on Malaria in Assam and Meghalaya between 16-19 August, 2005. Lectures have also been delivered by Prof. M.G.K. Menon, Prof. Jai Pal Mittal and Dr. (Mrs.) Manju Sharma. at different places.



Dr. (Mrs.) Manju Sharma delivering NASI-Platinum Jubilee Lecture at Lucknow

In the Symposium on 'Excitement of Science', around 20 distinguished scientists have been invited to deliver lectures. They are Dr. R.A. Mashelkar, Dr. A.P. Mitra, Dr. Anil Kakodkar, Dr. M.K. Bhan, Prof. V. Ravindranath, Prof. R. Gadagkar, Prof. Sushanta Dattagupta, Prof. S.K. Joshi, Prof. G. Padmanaban, Prof. P. Balram, Dr. Mehtab Bamji, Prof. A.K. Sood, Prof. Akhilesh K. Tyagi, Dr. Amit Ghosh, Prof. Jai Pal Mittal, Prof. Anuradha Lohiya and Dr. H.K. Gupta. The nine sessions of the Symposium would be chaired by Prof. M.G.K. Menon, Prof. V.S. Ramamurthy, Dr. V.P. Sharma, Prof. N.K. Ganguly, Prof. V.L. Chopra, Prof. Ashok Misra, Dr. (Mrs.) Manju Sharma, Prof. B.N. Dhawan and Prof. P.N. Tandon.

FOUNDER FELLOWS

1. **Prof. A.C. Banerji**, M.Sc.(Cal.), M.A.(Cantab.), F.R.A.S.(Eng.), I.E.S., Professor of Mathematics, Allahabad University, Allahabad.
2. **Dr. Luxmi Narayan**, D.Sc.(Alld.), Reader in Mathematics, Lucknow University, Lucknow.
3. **Prof. Andre Weil**, D.Sc.(Paris), Professor of Mathematics, Muslim University, Aligarh. (Present Address - Professor of Mathematics, Institute of Advance Study, Princeton, N.J., U.S.A.)
4. **Prof. Meghnad Saha**, D.Sc. (Cal.), F.R.S., F.A.S.B., F.Inst.P., P.R. Scholar, Professor of Physics, Allahabad University, Allahabad.
5. **Prof. Ch. Wali Mohammad**, M.A.(Cantab.), Ph.D.(Gottingen), I.E.S., Professor of Physics, Lucknow University, Lucknow.
6. **Mr. G.Chatterjee**, M.Sc., Meteorologist, Upper Air Observatory, Agra.
7. **Prof. N.R. Dhar**, D.Sc.(London), Docteur es Sciences (Paris), F.I.C., I.E.S., Professor of Chemistry, Allahabad University, Allahabad.
8. **Prof. P.S. MacMahon**, B.Sc.(Hons. Oxon.), M.Sc. (Manchester), Professor of Chemistry, Lucknow University, Lucknow.
9. **Prof. D.R. Bhattacharya**, MSc(Alld.), PhD(Dublin), Docteur es Science (Paris), Professor of Zoology, Allahabad University, Allahabad.
10. **Prof. K.N. Bahl**, D.Phil.(Oxon.), D.Sc.(Punjab), Professor of Zoology, Lucknow University, Lucknow.
11. **Prof. J.H. Mitter**, M.Sc., Ph.D.(Lond.), Professor of Botany, Allahabad University, Allahabad.
12. **Prof. B. Sahni**, D.Sc.(Lond.), Sc.D.(Cantab.), F.R.S., F.A.S.B., Professor of Botany, Lucknow University, Lucknow.
13. **Prof. K.C. Mehta**, Ph.D.(Cantab.), M.Sc.(Punjab), Professor of Botany, Agra College, Agra.
14. **Prof. K.K. Mathur**, B.Sc.(Hons.,Lond.), A.R.S.M., Professor of Geology, Banaras Hindu University, Varanasi.
15. **Mr. G. Clarke**, F.I.C., F.C.S., C.I.E., Director of Agriculture, United Provinces, Lucknow.
16. **Mr. P.B. Richards**, A.R.C.S., F.E.S., Entomologist to the Government, United Provinces, Cawnpore.
17. **Mr. R.L. Sethi**, B.Sc.(Agri., Edin.), M.Sc., M.R.A.S.(London), Economic Botanist to the Government, United Provinces, Cawnpore.
18. **Prof. H.D.H. Drane**, M.Sc., Ph.D., A.M.I.E.E., A.M.I., Chem.E., Principal, Harcourt Butler Technological Institute, Cawnpore.
19. **Prof. C.A. King**, B.Sc.(Hons., Eng., Lond.), A.R.C.Sc., M.I.M.E., Principal, Engineering College, Banaras Hindu University, Varanasi.

PRESIDENTS

- 1931-32 : **Prof. Meghnad Saha** (Founder President), Department of Physics, University of Allahabad, Allahabad
- 1933-34 : **Prof. K.N. Bahl**, Department of Zoology, Lucknow University, Lucknow
- 1935-36 : **Prof. N.R. Dhar**, Department of Chemistry, University of Allahabad, Allahabad
- 1937-38 : **Prof. B. Sahni**, Department of Botany, Lucknow University, Lucknow
- 1939-40 : **Dr. S.M. Sulaiman**, Judge, Federal Court of India, New Delhi
- 1941 : **Prof. Erwin Schrodinger**, Nobel Laureate and Professor of Physics
- 1941-42 : **Prof. D.R. Bhattacharya**, Head, Department of Zoology, University of Allahabad, Allahabad
- 1943-44 : **Prof. B. Sahni**, Department of Botany, Lucknow University, Lucknow
- 1945-46 : **Prof. K.S. Krishnan**, Department of Physics, University of Allahabad, Allahabad
- 1947-48 : **Prof. A.C. Banerji**, Department of Mathematics, University of Allahabad, Allahabad
- 1949-50 : **Prof. H.R. Mehra**, Head, Department of Zoology, University of Allahabad, Allahabad
- 1951-52 : **Prof. P. Parija**, Vice-Chancellor, Utkal University
- 1953-54 : **Prof. S. Ranjan**, Department of Botany, University of Allahabad, Allahabad
- 1955-56 : **Prof. P.L. Srivastava**, Head, Department of Mathematics, University of Allahabad, Allahabad
- 1957-58 : **Prof. P.S. Gill**, Head, Department of Physics, Aligarh Muslim University, Aligarh
- 1959-60 : **Dr. M.S. Randhawa**, Vice-President, Indian Council of Agricultural Research, New Delhi
- 1961-62 : **Prof. S. Ghosh**, Head, Department of Chemistry & Dean, Faculty of Science, University of Allahabad, Allahabad
- 1963-64 : **Prof. P. Maheshwari**, Head, Department of Botany, University of Delhi, Delhi
- 1965 : **Dr. B.N. Prasad**, Formerly Professor of Mathematics, Department of Mathematics, University of Allahabad, Allahabad
- 1966-67 : **Prof. K. Banerjee**, Director, Indian Association for Cultivation of Science, Jadavpur, Calcutta
- 1968 : **Dr. R.K. Saksena**, Department of Botany, University of Allahabad, Allahabad
- 1969-70 : **Dr. A.C. Chatterji**, Emeritus Scientist, Lucknow University, Lucknow

- 1971-72 : **Dr. M.L. Dhar**, Director, Central Drug Research Institute, Lucknow
- 1973-74 : **Dr. S.H. Zaheer**, Regional Research Laboratory, Hyderabad
- 1975-76 : **Prof. R.N. Tandon**, Formerly Professor & Head, Department of Botany, University of Allahabad, Allahabad
- 1977-78 : **Prof. B.D. Nag Chaudhuri**, Vice-Chancellor, Jawaharlal Nehru University, New Delhi
- 1979-80 : **Dr. Hari Narain**, Vice-Chancellor, Banaras Hindu University, Varanasi
- 1981-82 : **Prof. B. Ramchandra Rao**, Vice-Chairman, University Grants Commission, New Delhi
- 1983-84 : **Prof. S.Z. Qasim**, Department of Ocean Development, New Delhi
- 1985-86 : **Dr. T.N. Khoshoo**, Secretary to the Govt. of India, Department of Environment, New Delhi
- 1987-88 : **Prof. M.G.K. Menon**, Scientific Advisor to the Prime Minister; Member, Planning Commission, Yojana Bhavan, New Delhi
- 1989-90 : **Prof. M.S. Swaminathan**, Hony. Director, Centre for Research on Sustainable Agricultural and Rural Development, Madras
- 1991-92 : **Dr. A.P. Mitra**, Bhatnagar Fellow, National Physical Laboratory, New Delhi
- 1993-94 : **Prof. U.S. Srivastava**, Formerly Professor & Head, Department of Zoology, University of Allahabad, Allahabad
- 1995-96 : **Dr (Mrs) Manju Sharma**, Advisor, Department of Biotechnology, New Delhi
- 1997-98 : **Prof. P.N. Tandon**, Emeritus Professor, Former Bhatnagar Fellow, Department of Neurosurgery, All India Institute of Medical Sciences, New Delhi
- 1999-2000 : **Dr. V.P. Sharma**, Emeritus Medical Scientist, Formerly Director, Malarial Research Centre, Delhi
- 2001-2002 : **Prof. S.K. Joshi**, Vikram Sarabhai Professor, JNCASR, National Physical Laboratory, New Delhi
- 2003-2004 : **Prof. Jai Pal Mittal**, Director, Chemistry & Isotope Group, Bhabha Atomic Research Centre, Mumbai
- 2005-2006 : **Dr. V.P. Kamboj**, Formerly Director, Central Drug Research Institute, Lucknow

VICE-PRESIDENTS

		1954-1955	Prof. P.S. Gill
1931-1932	Prof. N.R. Dhar	1955-1956	Prof. A.C. Banerji
	Prof. K.N. Bahl	1956-1957	Prof. W.D. West
1933-1934	Prof. M.N. Saha	1957	Prof. N.R. Dhar
	Prof. B. Sahni	1958-1959	Prof. P.L. Srivastava
1935-1936	Prof. K.N. Bahl		Prof. A.C. Joshi
	Prof. A.C. Banerji	1960-1961	Prof. K. Banerjee
1937-1938	Prof. D.R. Bhattacharya		Prof. P.S. Gill
1937	Prof. P.S. MacMahon	1962-1963	Prof. B.N. Prasad
(One Vice-Presidentship remained vacant from July 17, 1938)		1962	Dr. M.S. Randhawa
1939-1940	Prof. H.R. Mehra	1963-1964	Prof. S. Ghosh
	Prof. S.M. Sane	1964-1965	Prof. N.R. Dhar
1941-1942	Prof. A.C. Banerji	1965	Prof. P. Maheshwari
	Prof. B. Sahni	1966-1968	Prof. Ram Behari
1943	Prof. Shri Ranjan	1966-1967	Prof. R.N. Tandon
	Prof. K.N. Bahl	1968-1969	Prof. P.L. Srivastava
1944-1945	Record not available	1967-1970	Prof. R.S. Mishra
1946-1947	Prof. A.C. Banerji	1970	Prof. N.R. Dhar
	Dr. H.R. Mehra	1971-1972	Prof. S.N. Ghosh
1948	Record not available		Prof. A.C. Chatterji
1949-1950	Prof. M.N. Saha	1973-1974	Prof. M.D.L. Srivastava
	Prof. K.N. Bahl		Dr. M.L. Dhar
1951	Record not available		
1952-1953	Prof. D.R. Bhattacharya		
	Prof. H.J. Bhabha		
1954	Prof. N.R. Dhar		

1975-1976	Prof. S.P. Tandon	1991-1992	Prof. D.B. Chandra
1975	Dr. G.S. Sidhu		Dr. P.M. Bhargava
1976	Prof. R.C. Paul	1993-1994	Prof. R.C. Mehrotra
1977-1978	Prof. M.D.L. Srivastava		Dr.(Mrs) Manju Sharma
	Prof. S.N. Biswas	1995-1996	Prof. Alok K. Gupta
1979-1980	Dr. H.D. Srivastava		Dr. V.P. Kamboj
	Prof. R.S. Kushwaha	1997-1998	Prof. H.S. Mani
1981-1982	Prof. Krishnaji		Prof. Sandip K. Basu
	Prof. M.K. Singhal	1999-2000	Prof. C.L. Khetrapal
1983-1984	Prof. U.S. Srivastava		Prof. Asis Datta
	Prof. P.T. Narasimhan	2001-2002	Prof. B.N. Dhawan
1985-1986	Prof. P.N. Srivastava		Dr. Amit Ghosh
	Prof. H.C. Khare	2003-2004	Dr. P.K. Seth
1987-1988	Shri Maheshwar Dayal		Prof. M. Vijayan
	Dr. D.B. Chandra	2005-	Prof. Suresh Chandra
1989-1990	Prof. U.S. Srivastava		Dr. Ashok Misra
	Prof. P.N. Tandon		

TREASURERS

1931-1934	Prof. D.R. Bhattacharya	1969-1971	Prof. M.D.L. Srivastava
1935-1938	Prof. H.R. Mehra	1972	Record not available
1939-1940	Prof. Saligram Bhargava	1973-1974	Prof. S.P. Tandon
1941-1943	Prof. P.L. Srivastava	1975-1976	Prof. Krishnaji
1944-1945	Record not available	1977-1980	Prof. U.S. Srivastava
1946	Dr. Gorakh Prasad	1981-1983	Prof. H.L. Nigam
1947-1948	Record not available	1984-1987	Prof. Krishnaji (Till May 31, 1987)
1949	Prof. Shri Ranjan	1987-1991	Prof. M.P. Tandon (w.e.f. June 1, 1987)
1950-1951	Record not available	1992-1995	Prof. Chandrika Prasad
1952-1953	Prof. N.R. Dhar	1996-1999	Prof. H.C. Khare
1954-1956	Dr. R.K. Saxena	2000-2003	Prof. M.P. Tandon (Till June 15, 2003)
1957-1960	Prof. S. Ghosh	2003-	Prof. S.L. Srivastava (From June 18, 2003)
1961-1964	Prof. R.N. Tandon		
1965-1967	Prof. S.N. Ghosh		
1968	Prof. R.S. Mishra		

FOREIGN SECRETARIES

1931-1932	Prof. Ch. Wali-Mohammad	1970	Vacant
1933-1934	Prof. N.R. Dhar	1971	Prof. U.S. Srivastava
1935-1936	Prof. B. Sahni	1972	Record not available
1937-1938	Prof. M.N. Saha	1973-1974	Prof. Krishnaji
1939-1940	Prof. D.R. Bhattacharya	1975	Prof. N.R. Dhar
1941	Prof. N.R. Dhar	1976	Prof. P.L. Bhatnagar
1942	Prof. M.N. Saha	1977-1979	Prof. N.R. Dhar
1943	Prof. A.C. Banerji	1980	Prof. H.L. Nigam
1944-1945	Record not available	1981-1982	Prof. N.R. Dhar
1946	Prof. Bawa Kartar Singh	1983	Prof. Krishnaji
1947-1948	Record not available	1984-1986	Prof. D.B. Chandra
1949	Prof. A.C. Banerji	1987-1988	Prof. H.C. Khare
1950-1951	Record not available	1989-1990	Dr. C.B.L. Srivastava
1952-1953	Prof. H.R. Mehra	1991-1992	Dr.(Miss) Dipika Kaul
1954	Prof. P.L. Srivastava	1993-1994	Prof. Alok K. Gupta
1955-1956	Prof. Shri Ranjan	1995-1996	Prof. C.B.L. Srivastava
1957-1959	Prof. R.K. Saxena	1997	Dr. Om Prasad (Till July 26, 1997)
1960	Dr. B.N. Prasad	1997-1998	Dr. V.P. Sharma (w.e.f. July 27, 1997)
1961-1963	Prof. S.N. Ghosh	1999-2000	Prof. Jai Pal Mittal
1964	Dr. B.N. Prasad	2001-2002	Prof. Kasturi Datta
1965	Prof. R.N. Tandon	2003-2004	Dr. S.E. Hasnain
1966-1967	Prof. A.C. Banerji	2005	Dr. V. Ravindranath
1968-1969	Prof. N.R. Dhar		

GENERAL SECRETARIES

1931-1934	Prof. P.S. MacMahon Prof. A.C. Banerji	1970-1972	Prof. S.P. Tandon Dr. V. Puri
1935-1938	Dr. S.M. Sane Dr. P.L. Srivastava	1973-1976	Prof. U.S. Srivastava Prof. R.S. Kushwaha
1939-1942	Dr. Shri Ranjan Dr. D.S. Kothari	1977-1980	Prof. Krishnaji Prof. P.T. Narasimhan
1943-1944	Prof. K.S. Krishnan Prof. L.P. Mathur	1981-1983	Prof. H.C. Khare Shri Maheshwar Dayal
1945-1948	Dr. P.L. Srivastava Prof. Birbal Sahni	1984	Prof. H.C. Khare Dr. K.N. Mehrotra
1949-1952	Dr. R.K. Saksena Prof. Ram Behari	1985-1987	Prof. U.S. Srivastava Dr. K.N. Mehrotra
1953	Dr. R.K. Saksena Prof. R.C. Majumdar	1988	Prof. U.S. Srivastava Dr. (Mrs) Manju Sharma
1954	Prof. S. Ghosh Prof. R.C. Majumdar	1989-1992	Prof. H.C. Khare Dr. (Mrs) Manju Sharma
1955-1956	Prof. S. Ghosh Shri S. Basu	1993-1996	Dr. Om Prasad Prof. Sandip K. Basu
1957-1958	Dr. R.N. Tandon Shri S. Basu	1997-1998	Prof. Alok K. Gupta Dr. V.P. Kamboj
1959-1960	Dr. R.N. Tandon Dr. K.N. Mathur	1999	Prof. Alok K. Gupta (Till Jan.31,1999) Prof. H.C. Khare (w.e.f. Feb 1, 1999) Dr. V.P. Kamboj
1961-1962	Dr. R.K. Saksena Prof. K. Banerjee	2000	Prof. H.C. Khare Dr. V.P. Kamboj
1963	Dr. R.K. Saksena Dr. A.G. Jhingran	2001-2003	Prof. H.C. Khare Prof. Pramod Tandon
1964	Prof. M.D.L. Srivastava Dr. M.L. Dhar	2004	Prof. H.C. Khare (Till Feb. 7, 2004) Dr. V.P. Kamboj (From 7th Feb, 2004) Prof. Pramod Tandon
1965-1966	Prof. M.D.L. Srivastava Dr. B.S. Chauhan	2005-	Dr. P.K. Seth Prof. Pramod Tandon
1967-1968	Prof. M.D.L. Srivastava Prof. A.C. Chatterji		
1969	Prof. S.P. Tandon Prof. J.J. Chinoy		

Chairman/Chief Editor of the Proceedings of the National Academy of Sciences, India. (Biological Sciences)

Year	Volume	Chairman
1955	25	Prof. P.S. Gill, Aligarh.
1956	26	Prof. P.S. Gill, Aligarh.
1957	27	Prof. P.S. Gill, Aligarh.
1958	28	Prof. P.S. Gill, Aligarh.
1959	29	Dr. M.S. Randhwa, New Delhi.
1960	30	Dr. M.S. Randhwa, New Delhi.
1961	31	Prof. S. Ghosh, Allahabad.
1962	32	Prof. S. Ghosh, Allahabad.
1963	33	Prof. P. Maheshwari, New Delhi.
1964	34	Prof. P. Maheshwari, New Delhi.
1965	35	Dr. B.N. Prasad, Allahabad.
1966	36	Prof. K. Banerjee, Calcutta.
1967	37	Prof. K. Banerjee, Calcutta.
1968	38	Dr. R.K. Saxena, Allahabad.
1969	39	Dr. A.C. Chatterji, Lucknow.
1970	40	Dr. A.C. Chatterji, Lucknow.
1971	41	Dr. M.L. Dhar, Lucknow.
1972	42	Dr. M.L. Dhar, Lucknow.
1973	43	Dr. S.H. Zaheer, Hyderabad.
1974	44	Dr. S.H. Zaheer, Hyderabad.
1975	45	Prof. R.N. Tandon, Allahabad.

1976	46	Prof. R.N.Tandon, Allahabad.
1977	47	Prof.B.D.Nagchaudhuri,N.Delhi.

Note: From the year 1978, Chief Editors were appointed.

Year	Volume	Chief Editor
1978	48	Prof.B.D.Nagchaudhuri,N.Delhi.
1979	49	Prof. U.S.Srivastava,Allahabad.
1980	50	Prof. U.S.Srivastava,Allahabad.
1981	51	Prof. U.S.Srivastava,Allahabad.
1982	52	Prof. U.S.Srivastava,Allahabad.
1983	53	Prof. U.S.Srivastava,Allahabad.
1984	54	Prof. U.S.Srivastava,Allahabad.
1985	55	Prof.Krishna Swarup,Allahabad.
1986	56	Prof. Krishna Swarup ,Allahabad.
1987	57	Prof. Krishna Swarup,Allahabad.
1988	58	Prof. Krishna Swarup,Allahabad.
1989	59	Prof. Krishna Swarup,Allahabad.
1990	60	Prof. Krishna Swarup,Allahabad.
1991	61	Prof. Krishna Swarup,Allahabad.
1992	62	Dr. V.P.Sharma, New Delhi.
1993	63	Dr. V.P.Sharma , New Delhi.
1994	64	Dr. V.P.Sharma , New Delhi.
1995	65	Dr. V.P.Sharma , New Delhi.
1996	66	Dr. V.P.Sharma , New Delhi.
1997	67	Dr. V.P.Sharma , New Delhi.
1998	68	Dr. V.P.Sharma , New Delhi.
1999	69	Prof. U.S.Srivastava,Allahabad.

2000	70	Prof. U.S.Srivastava,Allahabad.
2001	71	Prof. U.S.Srivastava,Allahabad.
2002	72	Prof. B.N.Dhawan, Lucknow.
2003	73	Prof. B.N.Dhawan, Lucknow.
2004	74	Prof. B.N.Dhawan, Lucknow.
2005	75	Prof. B.N.Dhawan, Lucknow.

Chairman/Chief Editor of the Proceedings of the National Academy of Sciences, India. (Physical Sciences)

Year	Volume	Chairman
1955	24	Prof. P.S.Gill, Aligarh.
1956	25	Prof. P.S.Gill, Aligarh.
1957	26	Prof. P.S.Gill, Aligarh.
1958	27	Prof. P.S.Gill, Aligarh.
1959	28	Dr.M.S.Randhwa ,New Delhi.
1960	29	Dr.M.S.Randhwa ,New Delhi.
1961	30&31	Prof. S.Ghosh, Allahabad.
1962	32	Prof. S.Ghosh, Allahabad.
1963	33	Prof. S.Ghosh, Allahabad.
1964	34	Prof. P. Maheshwari ,New Delhi.
1965	35	Dr.B.N.Prasad, Allahabad.
1966	36	Prof. K.Banerjee ,Calcutta.
1967	37	Prof. K.Banerjee ,Calcutta.
1968	38	Dr.R.K.Saksena ,Allahabad.
1969	39	Dr.A.C.Chatterji, Lucknow.
1970	40	Dr.A.C.Chatterji, Lucknow.
1971	41	Dr.M.L.Dhar, Lucknow.
1972	42	Dr.M.L.Dhar, Lucknow.
1973	43	Dr.S.H.Zaheer, Hyderabad.
1974	44	Dr.S.H.Zaheer, Hyderabad.
1975	45	Prof. R.N.Tandon, Allahabad.

1976	46	Prof. R.N.Tandon,Allahabad.
1977	47	Prof. B.D. Nagchaudhuri, New Delhi.

Note: From the year 1978, Chief Editors were appointed.

1978	48	Prof. H.C.Khare,Allahabad.
1979	49	Prof. H.C.Khare,Allahabad.
1980	50	Prof. H.C.Khare,Allahabad.
1981	51	Prof. P.T.Narasimhan, Kanpur.
1982	52	Prof. P.T.Narasimhan, Kanpur.
1983	53	Prof. P.T.Narasimhan, Kanpur.
1984	54	Prof. P.T.Narasimhan, Kanpur.
1985	55	Prof. H.C.Khare, Allahabad.
1986	56	Prof. H.C.Khare, Allahabad.
1987	57	Prof. H.C.Khare, Allahabad.
1988	58	Prof. H.C.Khare, Allahabad.
1989	59	Prof. S.L.Srivastava, Allahabad.
1990	60	Prof. S.L.Srivastava, Allahabad.
1991	61	Prof. S.L.Srivastava, Allahabad.
1992	62	Prof. S.L.Srivastava, Allahabad.
1993	63	Prof. H.C.Khare, Allahabad.
1994	64	Prof. H.C.Khare, Allahabad.
1995	65	Prof. H.C.Khare, Allahabad.
1996	66	Prof. H.C.Khare, Allahabad.
1997	67	Prof. H.C.Khare, Allahabad.
1998	68	Prof. H.C.Khare, Allahabad.
1999	69	Prof. H.C.Khare, Allahabad.
2000	70	Prof. H.C.Khare, Allahabad.

2001	71	Prof. H.C.Khare, Allahabad.
2002	72	Prof. H.C.Khare, Allahabad.
2003	73	Prof. H.C.Khare, Allahabad.
2004	74	Prof. Suresh Chandra,Varanasi.
2005	75	Prof. Suresh Chandra,Varnasi.

Chief Editors of the National Academy Science Letters .

Year	Volume	Chief Editor
1978	1	Prof. H.L.Nigam, Allahabad.
1979	2	Prof. H.L.Nigam, Allahabad.
1980	3	Prof. H.L.Nigam, Allahabad.
1981	4	Prof. Krishnaji, Allahabad.
1982	5	Prof. Krishnaji, Allahabad.
1983	6	Prof. Krishnaji, Allahabad.
1984	7	Prof. Krishnaji, Allahabad.
1985	8	Prof. S.L.Srivastava,Allahabad.
1986	9	Prof. S.L.Srivastava,Allahabad.
1987	10	Prof. Chandrika Prasad,Allahabad.
1988	11	Prof. Chandrika Prasad,Allahabad.
1989	12	Prof. Chandrika Prasad,Allahabad.
1990	13	Prof. Chandrika Prasad,Allahabad.
1991	14	Prof. Chandrika Prasad,Allahabad.
1992	15	Prof. Chandrika Prasad,Allahabad.
1993	16	Prof. Girjesh Govil, Mumbai.
1994	17	Prof. Girjesh Govil, Mumbai.

1995	18	Prof. J.P.Mittal, Mumbai.
1996	19	Prof. J.P.Mittal, Mumbai.
1997	20	Prof. J.P.Mittal, Mumbai.
1998	21	Prof. J.P.Mittal, Mumbai.
1999	22	Prof. J.P.Mittal, Mumbai.
2000	23	Prof. J.P.Mittal, Mumbai.
2001	24	Prof. J.P.Mittal, Mumbai.

Note: From the year 2002 Board of Editors was created.

Year	Volume	Board of Editors
2002	25	Prof. Girjesh Govil, Mumbai. Prof. Jai Pal Mittal, Mumbai. Prof. Suresh Chandra, Varanasi.
2003	26	Prof. Girjesh Govil, Mumbai. Prof. Jai Pal Mittal, Mumbai. Prof. Suresh Chandra, Varanasi.
2004	27	Prof. Girjesh Govil, Mumbai. Prof. Jai Pal Mittal, Mumbai. Prof. Suresh Chandra, Varanasi.
2005	28	Prof. Girjesh Govil, Mumbai. Prof. Jai Pal Mittal, Mumbai. Prof. Suresh Chandra, Varanasi.

CHAPTERS OF THE NATIONAL ACADEMY OF SCIENCES, INDIA

Jammu Chapter	Prof. Y.R. Malhotra , Formerly Vice-Chancellor, University of Jammu, Jammu.
Varanasi Chapter	Prof. Suresh Chandra , Department of Physics, Banaras Hindu University, Varanasi.
Lucknow Chapter	Dr. P.K. Seth , Scientist-in-Director Grade and C.E.O. Biotech Park, Lucknow; Formerly Director, Industrial Toxicology Research Centre, Lucknow.
Chandigarh Chapter	Dr. Amit Ghosh , Formerly Director, IMTECH; Director, School of Biological Sciences, Indian Institute of Advanced Research (The Puri Foundation), Block 2, 1 st Floor, Udyog Bhavan, Sector 11, Gandhinagar.
Bangalore Chapter	Prof. A.K. Sood , Chairman, Division of Physics and Mathematics Sciences, Indian Institute of Science, Bangalore
Kharagpur Chapter	Prof. D. Acharya , Department of Industrial Engineering & Management, Indian Institute of Technology, Kharagpur.
Mumbai Chapter	Prof. V. Singh , Professor of Eminence and Formerly Director, Tata Institute of Fundamental Research, Homi Bhabha Road, Colaba, Mumbai.
Hyderabad Chapter	Dr. A.V. Rama Rao , Chairman & Managing Director, AVRA Laboratories, AVRA House, Sai Enclave, Habsiguda, Hyderabad.
Patna Chapter	Prof. J.N. Chatterjea , Road No. 6B, Rajendra Nagar, Patna.
Kolkata Chapter	Prof. A.K. Sharma , Center for Advanced Study in Cell & Chromosome Study, Botany Department, Kolkata University, Kolkata.
North-Eastern Region Chapter	Prof. Veena Tandon , Department of Zoology, NEHU, Shillong.
Allahabad Chapter	Prof. S.P. Misra , Department of Gastroenterology, M.L.N. Medical College, Allahabad.
Chennai Chapter	Prof. M. Anandakrishnan , Formerly Vice-Chancellor, Anna University; 8, 5th Main Road, Kasturibai Nagar, Adyar, Chennai.

SECTIONAL PRESIDENTS

(Since Silver Jubilee)

Annual Session

Physical Sciences

Biological Sciences

25 th	Prof. A.C. Chatterjee	Dr. A.C. Joshi
26 th	Prof. D.S. Kothari	Dr. M.S. Mani
27 th	Prof. A.K. Bhattachaya	Prof. R. Misra
28 th	Prof. S. Ghosh	Prof. R.N. Tandon
29 th	Prof. B.N. Prasad	Prof. P.N. Mehra
30 th	Shri S. Basu	Prof. M.D.L. Srivastava
31 st	Prof. A.C. Banerji	Dr. A.G. Jhingran
32 nd	-----	-----
33 rd	-----	-----
34 th	Prof. K. Banerjee	Prof. R.N. Tandon
35 th	Prof. R.S. Mishra	Prof. U.N. Chatterji
36 th	Prof. Balbhadra Prasad	Prof. S.M. Das
37 th	Dr. K.N. Mathur	Prof. V. Puri
38 th	Dr. P.L. Bhatnagar	Prof. U.S. Srivastava
39 th	Prof. W.V. Bhagwat	Prof. R.C. Misra
40 th	Prof. S.N. Ghosh	Prof. K.S. Bhargava
41 st	Prof. R.S. Kushwaha	Dr. H.D. Srivastava
42 nd	Prof. R.P. Rastogi	Prof. K.S. Thind
43 rd	Prof. Hari Narain	Prof. G.K. Manna
44 th	Prof. Krishnaji	Prof. S.P. Raychaudhuri
45 th	Prof. Chandrika Prasad	Prof. H.S. Chaudhary
46 th	Prof. P.T. Narashimhan	Prof. R.P. Roy
47 th	Prof. Ajit Ram Varma	Prof. P.N. Srivastava
48 th	Prof. R.P. Bambah	Dr. M.S. Swaminathan
49 th	Dr. Nitya Anand	Prof. A.K. Sharma
50 th	Prof. B. Ramachandra Rao	Prof. J.P. Thapliyal
51 st	Prof. G.N. Ramachandran	Prof. P.M. Bhargava
52 nd	Prof. H.L. Nigam	Dr. S.Z. Qasim
53 rd	Dr. Raja Ramanna	Dr. T.N. Khoshoo
54 th	Prof. J.N. Kapur	Prof. P.N. Tandon
55 th	Prof. M.M. Taqui Khan	Dr.(Mrs) Archana Sharma
56 th	Prof. R.G. Rastogi	Prof. K.N. Mehrotra
57 th	Prof. Prem Narain	Dr. S.K. Jain
58 th	Prof. K.S. Valdiya	Prof. G. Padmanabhan
59 th	Prof. S.K. Joshi	Dr. S.N. Dwivedi
60 th	Prof. V.G. Bhide	Dr. V.P. Sharma
61 st	Prof. R.A. Mashelkar	Prof. S.K. Sinha
62 nd	Prof. C.L. Khetrapal	Prof. Sipra Guha-Mukherji
63 rd	Prof. K. Kasturirangan	Prof. Anupam Varma
64 th	Prof. S.K. Malik	Prof. Asis Datta
65 th	Prof. Goverdhan Mehta	Prof. Madhav D. Gadgil
66 th	Prof. R.K. Verma	Prof. R. Ramamurthi
67 th	Prof. J.P. Mittal	Prof. H.Y. Mohan Ram
68 th	Prof. D.V. Singh	Prof. M. Vijayan
69 th	Prof. H.S. Mani	Prof. N.K. Ganguly
70 th	Prof. L.M. Patnaik	Prof. Sandip K. Basu
71 st	Prof. Girjesh Govil	Prof. Gyan Chandra Mishra
72 nd	Prof. A.K. Sood	Dr.(Ms.)Vijayalakshmi Ravindranath
73 rd	Prof. Sushanta Dattagupta	Dr. Dinakar M. Salunke
74 th	Prof. Ashok Misra	Prof. Amit Ghosh

ANNUAL SESSIONS

(Since Silver Jubilee)

Session	City	Institution	Date		Year
25th	Lucknow	University of Lucknow	December	26-28	1955
(Silver Jubilee Session)					
26th	Aligarh	Aligarh Muslim University	February	3-5	1957
27th	Jabalpur	Mahakoshal Mahavidyalaya	December	26-28	1958
28th	Agra	Agra University	February	6-8	1959
29th	Gorakhpur	Gorakhpur University	February	7-9	1960
30th	Allahabad	Allahabad University	February	3-5	1961
31st	Dehradun	D.A.V. P.G. College	March	10-12	1962
32nd	Allahabad	Allahabad University	February	16	1963
33rd	Allahabad	Allahabad University	February	15-17	1964
34th	Muzaffarpur	L.S. College	February	13-15	1965
35th	Agra	Agra University	February	26-28	1966
36th	Varanasi	Banaras Hindu University	February	24-26	1967
37th	Ahmedabad	Gujrat University	February	1-3	1968
38th	Ranchi	Ranchi University	March	17-19	1969
39th	Roorkee	Roorkee University	March	6-8	1970
40th	Ujjain	Vikram University	February	26-28	1971
41st	Varanasi	Banaras Hindu University	February	24-26	1972
42nd	Allahabad	Allahabad University	March	4-6	1973
43rd	Jodhpur	Jodhpur University	October	20-22	1973
44th	Bhagalpur	Bhagalpur University	April	20-22	1975
45th	Rajkot	Saurashtra University	April	24-26	1976
46th	Delhi	Delhi University	February	5-7	1977
47th	Bhopal	Bhopal University	March	4-6	1978
48th	Gauhati	Gauhati University	October	22-24	1978
49th	Nagpur	Nagpur University	October	27-29	1979

50th	Allahabad	Allahabad University	October	23-27	1980
(Golden Jubilee Session)					
51st	Cochin	Cochin University	October	5-7	1981
52nd	Bhavnagar	Central Salt & Marine Chemicals Research Institute	November	2	1982
53rd	Goa	National Institute of Oceanography	October	27-29	1983
54th	Madurai	Madurai Kamraj University	October	11-13	1984
55th	Gwalior	Jiwaji University	November	3-5	1985
56th	Jaipur	Rajasthan University	October	25-27	1986
57th	Tiruchirapalli	Bharthidasan University	October	8-10	1987
58th	Jammu	Jammu University	November	7-9	1988
59th	Hyderabad	Osmania University	January	6-8	1990
60th	Allahabad	The National Academy of Sciences, India	May	3-5	1991
(Diamond Jubilee Session)					
61st	Meerut	Meerut University	December	19-21	1991
62nd	Udaipur	M.L. Sukhadia University	February	9-11	1993
(Prof. M.N. Saha Birthday Centenary Session)					
63rd	Bangalore	Indian Institute of Science	November	24-26	1993
(Dedicated to the memory of Prof. N.R. Dhar)					
64th	Chandigarh	Panjab University	September	29-Oct.1	1994
65th	Tirupati	S.V. University	November	3-5	1995
66th	Aurangabad	Babasaheb Ambedkar Marathwada University	October	31-Nov.2	1996
67th	Bhubaneswar	Utkal University	October	24-26	1997
68th	Lucknow	Central Drug Research Institute	October	23-25	1998
69th	Bhopal	Barkatullah University	November	11-13	1999
70th	Allahabad	Allahabad University	November	3-6	2000
71st	Pune	Pune University	October	5-7	2001
72nd	Shillong	North-Easter Hill University	October	25-27	2002
73rd	Ahmedabad	Physical Research Laboratory	October	10-12	2003
74th	Jaipur	Jaipur University	December	2-4	2004

Publications of The National Academy of Sciences, India

(I) Regular Publications

- (i) Proceedings of The National Academy of Sciences, India (Section A – Physical Sciences) – Being published in four parts every year since 1930.
- (ii) Proceedings of The National Academy of Sciences, India (Section B – Biological Sciences) – Being published in four parts every year since 1930.
- (iii) National Academy Science Letters – Being published in six parts per year from 1993 (from 1978 to 1992 12 parts per year)
- (iv) Annual Report
- (v) Year Book

(II) Special Publications

1. Proceedings of the Symposium on the "Chemistry of Hydrous Oxide" – 1952
2. "Prof. Nil Ratan Dhar 80th Birthday Commemoration Volume" - 1973
3. Proceedings of the Symposium on "Recent Trends in Plant Protection" – 1976 (pp. 392) (Editor Prof. U.S. Srivastava)
4. "Prof. P.L. Bhatnagar Commemoration Volume" – 1979 (pp. 504) (Editors Prof. Krishnaji, Prof. H.C. Khare and Prof. M.K. Singal).
5. "Golden Jubilee Commemoration Volume" – 1980 (pp. 748) (Editor Prof. U.S. Srivastava)
6. Proceedings of the Symposium on "Renewable Sources of Energy" – 1980 (pp. 284) (Editor Prof. Krishnaji)
7. Proceedings of the Symposium on "Chemistry Agriculture and Man" on 90th Birthday of Prof. N.R. Dhar"
8. Proceedings of the National Symposium on "Science and Technology Policy of India" – 1984 (pp. 169) (Editor Prof. Krishnaji)
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11. Proceedings of the Symposium on "Inputs of Science and Technology for the Development of Wasteland" – 1989 (pp. 166) (Editors Prof. U.S. Srivastava, Dr. (Mrs.) Manju Sharma and Dr. T.N. Khoshoo)

12. Proceedings of the Symposium on "Utilization of Living Resources of Indian Seas" – 1989 (pp. 367) (Editor Prof. U.S. Srivastava)
13. Proceedings of the Symposium on "Science & Technology for National Development : Vision, Opportunities, Challenges and Implementation" – 1989 (pp. 294) (Editors Prof. U.S. Srivastava, Dr. (Mrs.) Manju Sharma and Dr. A.K. Chakravarti)
14. Proceedings of the National Symposium on "New Materials (Role, Development, Production and Use in Key Sectors of National Relevance)" – 1990 (pp. 233) (Editors Dr. (Mrs.) Manju Sharma and Dr. A.K. Chakravarti)
15. "Space in Pursuit of New Horizons – A Festschrift for Prof. U.S. Rao" – 1992 (pp. 363) (Editors Prof. R.K. Varma, Prof. U.S. Srivastava, Dr. K. Kasturirangan and Prof. B.H. Subbaraya)
16. Special Issue on "Petrology" – Proceedings of The National Academy of Sciences, India (Section A – Physical Sciences), Vol. 63, Part I – 1993 (pp. 310) (Guest Editor Prof. S.K. Sen)
17. Special Issue on "Environment and Development" - Proceedings of The National Academy of Sciences, India (Section B – Biological Sciences), Vol. 63, Part I – 1993 (pp. 139) (Editors Dr. V.P. Sharma and Dr. Om Prasad)
18. Special Issue on "Nuclear Magnetic Resonance" - Proceedings of The National Academy of Sciences, India (Section A – Physical Sciences) – 1996 (pp. 259) (Guest Editor Prof. C.L. Khetrpal)
19. Special Issue on "Chaos, Disorder and Fractals" - Proceedings of The National Academy of Sciences, India (Section A – Physical Sciences) – 1996 (pp. 121) (Guest Editors Prof. S. Chandra and Prof. Krishnaji)
20. Special Issue on "Current Trends in Plant Biochemistry and Molecular Biology" - Proceedings of The National Academy of Sciences, India (Section B – Biological Sciences) - 1996 (pp. 117) (Guest Editors Prof. Prasanna K. Mohanty and Prof. Asis Datta)
21. Special Issue on "Parasitology" - Proceedings of The National Academy of Sciences, India (Section B – Biological Sciences) - 1996 (pp. 300) (Guest Editors Dr. V.P. Sharma and Dr. V.P. Kamboj)
22. Special Issue on "Soil and Environment" – Proceedings of The National Academy of Sciences, India (Section B – Biological Sciences) - 1997 (pp. 163) (Guest Editor Prof. U.S. Srivastava)
23. Special Issue on "Mantle Dynamics" – National Academy Science Letters, Vol. 21, Nos. 5 & 6, 1998 (pp. 138) (Editor Prof. Alok K. Gupta)
24. Stepping Stones (1930-2000) (Prof. U.S. Srivastava).
25. Special Issue on "Issues in "Mathematical Modelling Related to Himalayan Glaciology" - Proceedings of The National Academy of Sciences, India (Section A – Physical Sciences) - 2001 (pp. 242) (Chief Editor Prof. H.C. Khare)

26. Special Issue on "Infectious Diseases of Domestic Animals and Zoonoses in India; Proceedings of the National Academy of Sciences, India, Section B, Biological Sciences; Vol. 75, 2005, (Editors Prof. Veena Tandon and Prof. B.N. Dhawan).
27. Journey of NASI (1930-2005)-History of the Academy (Prof. B.N. Dhawan & Dr. Niraj Kumar).

Academy's Special Publications through other Agencies

1. Proceedings of the National Symposium on "Desert Ecology" – 1988 (pp. 313). (Editor Prof. Ishwar Prakash) Scientific Publishers, Ratanada Road, Jodhpur – 340 001
2. "Glimpses of Sciences in India – Diamond Jubilee Commemoration Volume" – 1991 (pp. 673) (Editor Prof. U.S. Srivastava), Malhotra Publishing House, A-38/3, Mayapuri Industrial Area, Phase I, New Delhi – 110 064
3. Proceedings of the Symposium on "Indian Geosphere & Biosphere Programme" – 1991 (pp.289) (Editors Dr. T.N. Khoshoo and Dr. (Mrs.) Manju Sharma, Vikas Publishing House Pvt. Ltd., 576, Masjid Road, Jangpura, New Delhi – 110 014
4. Proceedings of the Symposium on "Sustainable Management of Natural Resources" – 1992 (pp. 428) (Editors Dr. T.N. Khoshoo and Dr. (Mrs.) Manju Sharma)
5. "Collected Scientific Papers of Meghnad Saha" (Reprinted Version) – 1993 (pp. 422) (Compiled and Edited by Prof. Santimay Chatterjee) (NASI & CSIR); Publication and Information Directorate, Dr. K.S. Krishnan Marg, New Delhi – 110 012
6. "The Dynamic Geosphere – Felicitation Volume in Honour of William S. Fyfe" – 1997 (pp. 237) (Editors Prof. Alok K. Gupta and Prof. Robert Kerrich), Allied Publishers Ltd., 13/14, Asaf Ali Road, New Delhi – 110 012
7. "Geochemical Studies of Synthetics and Natural Rock Systems – Felicitation Volume in Honour of Kenzo Yagi" - 1997 (Editors Prof. Alok K. Gupta, Prof. Kosuke Onuma and Prof. Mokoto Arima), Allied Publishers Ltd., 13/14, Asaf Ali Road, New Delhi – 110 012
8. "Human Genome Research – Emerging Ethical, Legal, Social and Economic Issues" – 1999, (pp. 252), (Editors Prof. M.G.K. Menon, Prof. P.N. Tandon, Prof. S.S. Agarwal & Dr. V.P. Sharma), Allied Publishers Ltd., 13/14, Asaf Ali Road, New Delhi – 110 012
9. Proceedings of the Symposium on "Natural Hazards - Indian Context" – 2004 (pp. 277) (Editor Prof. K.S. Valdiya)
10. Proceedings of the Symposium on "Biodiversity : A Scientific Approach – Agenda for the 21st Century" Viz. 'Biodiversity – Status and Prospects' - 2004, (Editors Prof. Pramod Tandon, Prof. (Mrs.) Manju Sharma and Dr. Renu Swarup)

AWARDS INSTITUTED BY THE NATIONAL ACADEMY OF SCIENCES, INDIA

LECTURE AWARDS

Sl. No.	AWARDS	FREQUENCY	FIRST AWARDEE	RECENT PAST AWARDEE
1	Professor A.C. Banerji Memorial Lecture Award	Alternate year	Prof. A.K. Ray Choudhuri (1989)	Prof. M.S. Raghunathan (2003)
2	Professor Meghnad Saha Memorial Lecture Award	Alternate year	Prof. Govind Swarup (1987)	Prof. K. Kasturirangan (2003)
3	Professor N.R. Dhar Memorial Lecture Award	Alternate year	Prof. R.C. Mehrotra (1991)	Prof. Girjesh Govil (2003)
4	Dr. B.P. Pal Memorial Lecture Award	Alternate year	Dr. M.S. Swaminathan (1991)	Dr. Sushil Kumar (2003)
5	Dr. P. Sheel Memorial Lecture Award	Every 3 rd year	Dr. S.P. Gon Chowdhury (1989)	Dr. Anil Joshi (2004)
6	Dr. P. Sheel Memorial (Young Woman Scientist) Lecture Award	Every 3 rd year	Dr.(Mrs) R.S. Nadgauda (1997)	Dr.(Mrs) Madhoolika Agrawal (2003)
7	Professor Saligram Sinha Memorial Lecture Award	Every 5 th year	Prof. K.S. Bilgrami (1992)	Prof. S.K. Sopory (2001)
8	Professor R.C. Gupta Endowment History of Science Lecture Award	Alternate year	Prof. Deepak Kumar (2000)	Dr. A.K. Bag (2004)
9	Professor R.N. Tandon Memorial Lecture Award	Alternate year	Prof. Anupam Varma (2000)	Prof. H.Y. Mohan Ram (2004)
10	Professor B.K. Bachhawat Memorial Young Scientist Lecture Award	Alternate year	Dr. Pratima Srivastava (2002)	Dr. Amita Gupta (2004)
11	Professor U.S. Srivastava Memorial Lecture Award	Alternate year	Dr. V.P. Sharma (2003)	Due in 2005
12	Professor Shri Ranjan Memorial Lecture Award	Alternate year	Dr. L.M.S. Palni (2004)	Due in 2006
13	Award Lecture in the field of Toxicology	Alternate year	Dr. P.S. Chauhan (2004)	Due in 2006
14	Prof. R.N. Tandon's Birthday Lecture Award	One time	Dr. C.R. Bhatia (1993)	---

OTHER AWARDS

1	SICO-Sponsored NASI Award	Every 3 rd year	Dr. George Joseph Dr. Rafiz Hirdya Nath Dr. Sushil Kumar Dr. P.S. Ramakrishnan (1986)	Dr. Sudipta Maiti (2001)
2	NASI-Swarna Jayanti Puraskar	Every year	Dr. P.P. Srivastava & Dr. P. Dashora (1998)	Dr. Shipra Singh & Dr. Pragya Khanna (2004)
3.	Science Teachers Award	Every year	Dr. Girish Chandra Badoni (1996)	Dr. Narain Sharan (2004)
4.	NASI-Millennium Award			
A.	Senior Scientist Category	One time (2000)	Prof. U.S. Srivastava	---
B.	Young Scientist Category	One time (2000)	Dr. S. Ramaswamy & Prof. Satish Jain	---
5.	U.P. Educational Minister's Gold Medal	Discontinued since 1987	Dr. Sikhi Bhusan Datta (1936)	Dr. Prasanna Mohanty (1986)

List of Symposia/Seminars/Workshops held during 1935-2004

- | | |
|-----------------------------|--|
| March 5, 1938, Allahabad | - Symposium on "Problems of Power Supply in India" |
| | - Symposium on "Utilization of Mollases in increasing the fertility of the soil and Reclaiming Waste Lands" |
| | - Symposium on "New Conceptions of Relativity" |
| January 22, 1951, Banaras | - Symposium on "Application of Solar Radiation to some Agricultural Problems" |
| February 9, 1952, Lucknow | - Symposium on the 'Chemistry of Hydrous Oxides' |
| February 7, 1954, Allahabad | - Symposium on "Chemical Kinetics" |
| | - Symposium on "The Structure of Chromosomes with Special reference to Chromovires, Matrix and Lamp Brush Processes" |
| December 27, 1954, Saugar | - Symposium on "Recent Trends in Soil Research" |
| December 26, 1955, Lucknow | - Symposium on "Floods and their Control" |
| December 27, 1955, Lucknow | - Symposium on "Physics of Solid State" |
| December 27, 1955, Lucknow | - Symposium on "Role of Phosphates in the Soil, Plant and Animal Kingdom" |
| December 28, 1955, Lucknow | - Symposium on "Role of Hormones in Growth and Reproduction" |
| December 28, 1955, Lucknow | - Symposium on "Constitution of Stars" |
| February 3, 1957, Aligarh | - Symposium on "Molecular Spectra and Molecular Structure" |
| December 27, 1957, Jabalpur | - Symposium on "Photochemical Reactions including Photosynthesis in Plants" |
| February 7, 1959, Agra | - Symposium on "Chemistry of Co-ordination Compounds" |

- February 7, 1960, Gorakhpur - Symposium on "Nitrogen Problem"
- February 4-5, 1961, Allahabad - Symposium on "Ecological Problems in the Tropics"
- February 4-5, 1961, Allahabad - Symposium on "Spectroscopy"
- March 10, 1962, Dehradun - Symposium on "Collisional Processes"
- February 15-16, 1964, Allahabad - Symposium on "Chemistry of Natural Products"
- February 15-16, 1964, Allahabad - Symposium on "Land Fertility, Improvement and Alkali Land Reclamation by Blue Green Algae"
- February 27, 1966, Agra - Symposium on "Non-Linear Optics"
- February 3, 1968, Ahmedabad - Symposium on "Diversities in Plants and Animal Populations"
- February 25, 1972, Banaras - Symposium on "Soil Productivity"
- October 24, 1974, Nagpur - Symposium on "Green Revolution"
- March 5-6, 1978, Bhopal - Symposium on "The Changing Environment"
- October 25-26, 1978, Shillong - Symposium on "Environment Adaptation & Distribution"
- October 24, 1980, Allahabad - Symposium on "Renewable Sources of Energy"
- October 23-27, 1980, Allahabad - Symposium on Recent Advances in Experimental Zoology"
- October 5-7, 1981, Cochin - Symposium on "On Computers in Education, Research & Industrial Development"
- October 28-29, 1983, Goa - Seminar on "Ocean and Climate"
- October, 1984, Madurai - Symposium on "Interface of Physical and Biological Sciences"
- February, 1986, New Delhi - National Conference on "Short Term and Long Term Hazards of Pesticides and strategies for their safe use"
- March, 1986, Allahabad - Workshop on "Ganga as Resource – Prospects and Problems"
- May, 1986, New Delhi - National Seminar on "Electronics for Teaching and Mass Education"

October, 1986, Jaipur	- Symposium on "Desert Ecology"
	- Symposium on "Recent Trends in Geomagnetism"
April, 1987, Allahabad	- National Symposium on "Inputs of Science and Technology for the Development of Waste Lands"
October, 1987, Tiruchirapalli	- National Symposium on "New Materials"
December, 1987, Bombay	- National Symposium on "Utilization of Living Resources of the Indian Seas"
July, 1988, New Delhi	- Symposium on "Science & Technology for National Development : Vision, Opportunities, Challenges and Implementations"
November, 1988, Jammu	- Symposium on "Frontiers of Modern Biology"
March, 1989, New Delhi	- Regional Seminar on "Public Policy Implication of Biotechnology for Asian Agriculture"
April, 1989, New Delhi	- Workshop on "Natural and Cultural Sites along Ganga"
November, 1989, Allahabad	- Symposium on "Cultural and Natural Sites along Ganga : Our Unique National Heritage"
January, 1990, Hyderabad	- National Symposium on "Indian Geosphere and Biosphere Programme"
September, 1990, Pondicherry	- National Symposium on "Sustainable Management of Natural Resources"
May, 1991, Allahabad	- National Symposium on "Science and Technology in 2000 AD and Beyond"
December, 1991, Meerut	- National Symposium on "Environment and Development – A Scientific Approach"
February, 1993, Udaipur	- National Symposium on "Science and Technology for Development – New Directions in the Changing Scenario"
September, 1993, Allahabad	- Symposium on "Meghnad Saha's Contributions and the Journey Beyond"
November, 1993, Bangalore	- Workshop on "Soil and Environment"

December, 1993, New Delhi	- Symposium on "Science and Law"
September, 1994, Chandigarh	- Symposium on "Industrial Biotechnology – An Indian Scenario"
December, 1994, Calcutta	- Symposium on "Mantle Dynamics"
October, 1995, Tirupati	- Symposium on "Water Resources – Scientific Management"
October, 1996, Aurangabad	- Symposium on "Emerging Health Issues in India"
May, 1997, Goa	- Symposium on "Ethical, Legal and Social Implications of Human Genomic Research"
October, 1997, Bhubaneswar	- Symposium on "Science and Technology for Sustainable Development"
October, 1998, Lucknow	- Symposium on "Science and Technology Education – Concerns and Perspectives"
December, 1998, Allahabad	- "K.S. Krishnan Birth Centenary Symposium on Condensed Matter Physics" (Co-sponsored)
November, 1999, Bhopal	- Symposium on "Information Technology and its Applications"
April, 2000, Allahabad	- Symposium on "School Science for India of Tomorrow"
August 2000, Allahabad	- "Brain Storming Session on Mathematical Modeling for Glacier Studies"
November, 2000, Allahabad	- Symposium on "Harnessing Science and Technology for the New Era"
October, 2001, Pune	- Symposium on 'Coping with Natural Hazards'
October, 2002, Shillong	- Symposium on "Biodiversity : A Scientific Approach – Agenda for the 21 st Century"
October, 2003, Ahmedabad	- Symposium on "Astronomy in the New Millennium"
December, 2004, Jaipur	- Symposium on "Science & Technology for Desert Development"

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The National Academy of Sciences, India

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