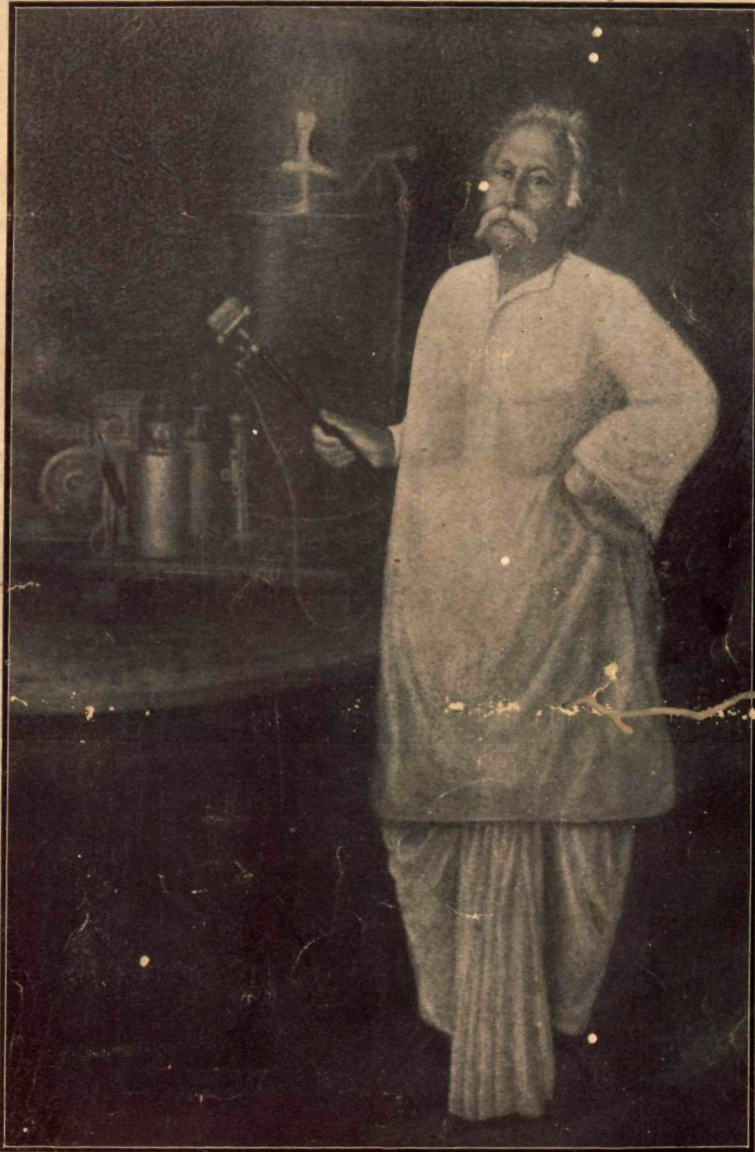


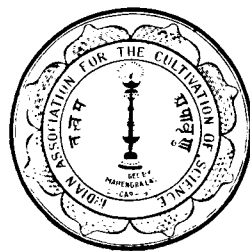
THE
INDIAN ASSOCIATION
FOR
CULTIVATION OF SCIENCE

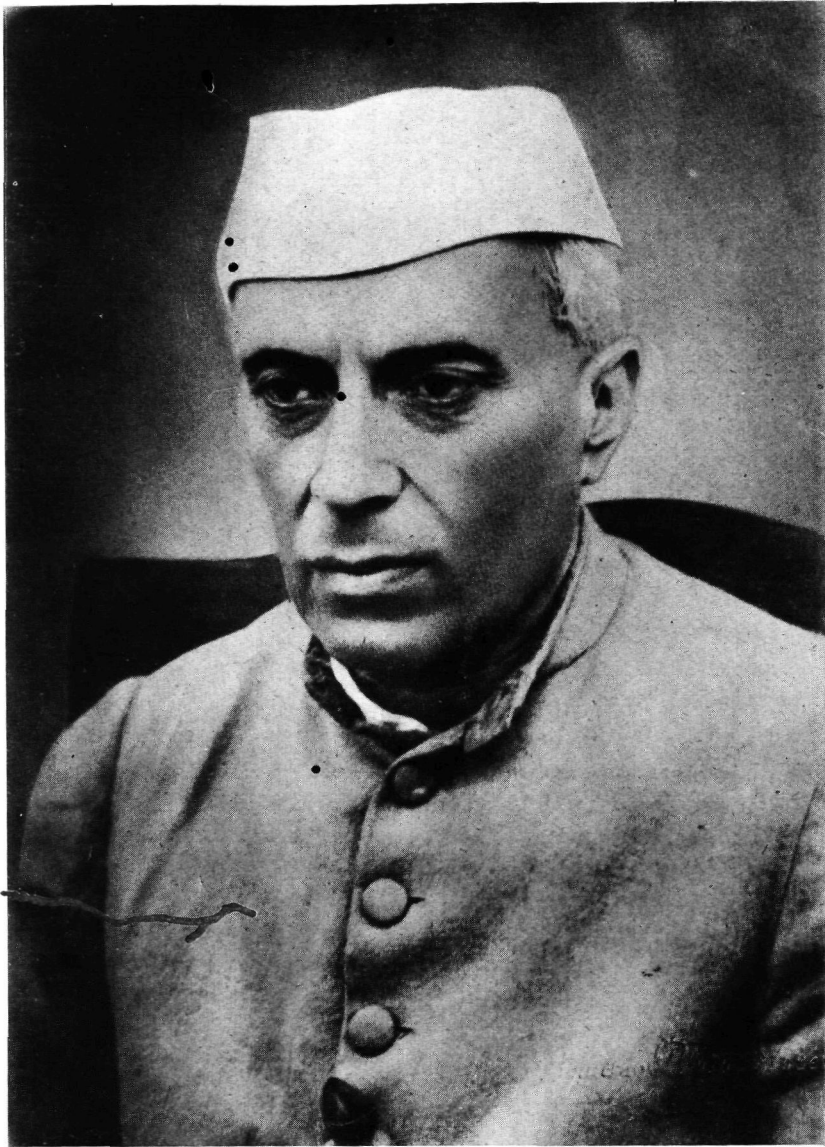


Dr. Mahendra Lal Sircar, Founder of the Association

*Addresses delivered on the occasion of the Laying
of the Foundation Stone of its Building at
Jadavpur on Sunday, the 26th September, 1948*

THE
INDIAN ASSOCIATION
for
CULTIVATION OF SCIENCE





Hon'ble Pandit Jawaharlal Nehru

Prime Minister & Minister-in-charge, Dept. of Scientific Research,
Government of India, who sent his message of
good wishes on the occasion

Message from the Hon'ble Pandit Jawaharlal Nehru, Prime
Minister & Minister-in-charge of the Department of
Scientific Research, Government of India:

**“On the occasion of Foundation Stone of new buildings for the
Indian Association for the Cultivation of Science being laid I send
you and your Association my good wishes. The Association has a
fine record of past work in the field of Scientific Research. May
it excel this in future.”**

THE Foundation Stone of the Laboratory building of the Indian Association for Cultivation of Science was laid at its new site at Jadavpur on Sunday the 26th September, 1948, by the Hon'ble Dr. B. C. Roy, Premier of West Bengal. A respectable gathering of distinguished scientists, representatives of local Industry and the elite of the town attended the function. Dr. Shanti Swarup Bhatnagar, Secretary to the Government of India, Department of Scientific Research, came all the way from Delhi to join the celebration. The pandal was tastefully decorated so as to fit in with the ideal rural surroundings, and the perspective and drawings of the building were exhibited on the dais.

Punctually at 9 a.m. the proceedings commenced with the singing of the National Anthem—'Bande Mataram'.

After the assembly had taken their seats, the Hon'ble Dr. B. C. Roy and Prof. M. N. Saha, President of the Association, who presided over the function, were garlanded on behalf of the Association.

Justice U. C. Biswas, a Vice-President and Trustee of the Association, then read the messages of good will that had been received from all parts of India from different persons including H. E. the Governor-General, Hon'ble Pandit Jawaharlal Nehru, Hon'ble Sardar Vallabhbhai Patel, Hon'ble Dr. S. P. Mookerjee, Hon'ble Sardar Baldev Singh, Hon'ble Shri Jairamdas Doulatram, Hon'ble Shri N. Gopalaswami Ayyangar, H. H. Maharaja of Coochbehar, Vice-Chancellors of the Universities of Allahabad, Benares, Bombay, East Punjab, Madras and Utkal, Dr. J. C. Ghosh, Director-General of Industries & Supplies, Dr. S. K. Banerji, Director-General of Observatories, Sri E. V. Ganapati Iyer, Director, Indian Institute of Science, Bangalore, Dr. Mata Prasad, Principal, Royal Institute of Science, Bombay, Col. S. S. Sokhey, Haffkine Institute, Dr. J. W. Whitaker, Director of Indian School of Mines, Dhanbad, Sir Ardeshir Dalal, Dr. B. Sanjiva Rao, President of the South Indian Science Association. The Hon'ble Dr. Syamaprasad Mookerjee in his message said :

“Please accept best wishes on occasion of Foundation Stone Ceremony. May the Association maintain its great traditions and further the Cause of Advancement of Free India through Scientific Research.”

The message from H. H. Maharaja of Coochbehar read :

“Many thanks for your kind reference to my grandfather the late Maharaja Sir Nripendra Narayan Bhup Bahadur as one of the original Founders of the Association. The contribution of the Association towards Cultivation of Science has ever been very admirable. Most heartily wish further extension of its useful activities and brighter prospects under the fostering care of the Government of Independent India.”

Prof. M. N. Saha then extended a hearty welcome to the guests, and proceeded to trace the history of foundation and growth of the Association culminating in the adoption of the Development Plans formulated by the Council and approved by the Government of India, which were given in detail in the brochure which had been circulated among the guests. He appealed for generous financial help from the Government and the public to enable the Association to give full effect to these Development Plans. At the end he requested the Hon'ble Dr. B. C. Roy to address the audience and to lay the foundation stone.

The Hon'ble Dr. Roy delivered his Address and then laid the foundation stone which he declared to be well and truly laid. The silver trowel and bowl which were used by the Hon'ble premier for laying the foundation were presented to him by the architects, Messrs. Chaudhuri & Guha.

Prof. P. Ray, Hony. Director of the Association, proposed a vote of thanks to the premier and to the guests, in course of which he observed that he felt very happy that the new home of the Association which had been founded by an eminent physician of his time had been laid by an equally eminent physician of the present time. He too appealed to industrialists to come forward with generous donations, for these were bound to bring handsome returns to industrialists.

The Hon'ble Dr. B. C. Roy said at this stage that he could announce on the authority of Dr. S. S. Bhatnagar that income tax relief up to a certain extent is granted to donors to such research institutions.

The proceedings closed with the singing of the National Song—
'jana-gana-mana-adhinayaka jaya hey'.

Welcome Address by Professor M. N. Saha, President of the Association

Mr. Premier, Ladies and Gentlemen,

On behalf of the Council of the I. A. C. S. I have much pleasure in welcoming you to the Foundation Ceremony to-day. I wish to give you a short history of the enterprise. The Indian Association for Cultivation of Science was established 72 years ago by Dr. Mahendra Lal Sircar, on the model of the Royal Institution of Science, London, where worked Davy, Faraday, Tyndall and Bragg. In his self-imposed task, Dr. Sircar was assisted by the then Government of Bengal, the princes and the elite of the city of Calcutta, but he regretted a few years before his death, that he could not get sufficient money to found even a single professorship.

The Association rendered pioneering work in its early days in the teaching of elementary sciences at a time when science teaching was unknown amongst the Universities of India. After 1906, when teaching in science was seriously introduced in the curriculum of Indian Universities, the Association appeared to have completed its mission, but this was more than made up by the activities of Sir (then Mr.) C. V. Raman who was put in charge of the Association at this stage. Here in a quiet atmosphere, untrammelled by the complexities of large institutions, Raman pursued his researches on molecular diffraction with a team of workers which culminated in one of the greatest discoveries in Physical science. This discovery has placed the reputation of the Association on a level with its prototype, the Royal Institution of Great Britain. Under him and his worthy successor and pupil Dr. K. S. Krishnan, the Association became the nursery of aspirants from all parts of India for scientific honour.

Between the two great Wars, the people and statesmen of the world, appear to have discovered the usefulness of science for human well-being and taking advantage of this feeling, the Council of the Association has worked out a new programme for expansion of its activity which is set forth in the pamphlet circulated amongst you. As you will see, attempts have been made to retain the traditions of fundamental research in the Association, but a new programme of activity has been added to it—Industrial Research after the pattern of the Mellon Research Institute, growing out of these fundamental researches.

Fortunately for the authorities of the Association, these schemes were accepted by the Government of India in 1946, and I offer

my thanks to the generous help given by Dr. D. M. Sen, then Joint Educational Adviser, Government of India, Sir S. S. Bhatnagar, Director of Scientific & Industrial Research, and others. The Government of India has increased its grant from Rs. 20,000 to Rs. 2,66,700, and has sanctioned for the Association a capital grant of Rs. 4,32,000 for building purposes.

It is impossible for the Association to carry out its new obligations in the crowded area of 210, Bowbazar Street. With the aid of an interest-free loan of Rs. 5 lakhs advanced by the Government of India, it has been possible for us to secure the plot where this meeting is being held.

Unfortunately, the costs of materials and labour having gone up, our original estimates have jumped from Rs. 18.64 lakhs to nearly Rs. 33 lakhs, and so far promise of only Rs. 9.32 lakhs has been obtained from the Government of India, of which Rs. 5 lakhs has been already paid. It is necessary to raise nearly Rs. 24 lakhs for the completion of the scheme. I am glad to inform you that the Government of West Bengal has very kindly promised $\frac{7}{30}$ of our total costs, and on behalf of the Council and the Members of the Association, I wish to express heartfelt thanks to the Premier, and the Finance Member for this gift. We hope to raise 7 to 8 lakhs of rupees from the sale of the Bowbazar properties, in case the Council is forced to do so. In that case, the Council would have to raise another 9 lakhs of rupees to complete the scheme, and in addition, it would require a substantial amount for laboratory fittings and equipments.

Let us hope that the race of Palits and Ghoshas are not extinct, and the citizens of Calcutta would come forward and help the Association with this amount.

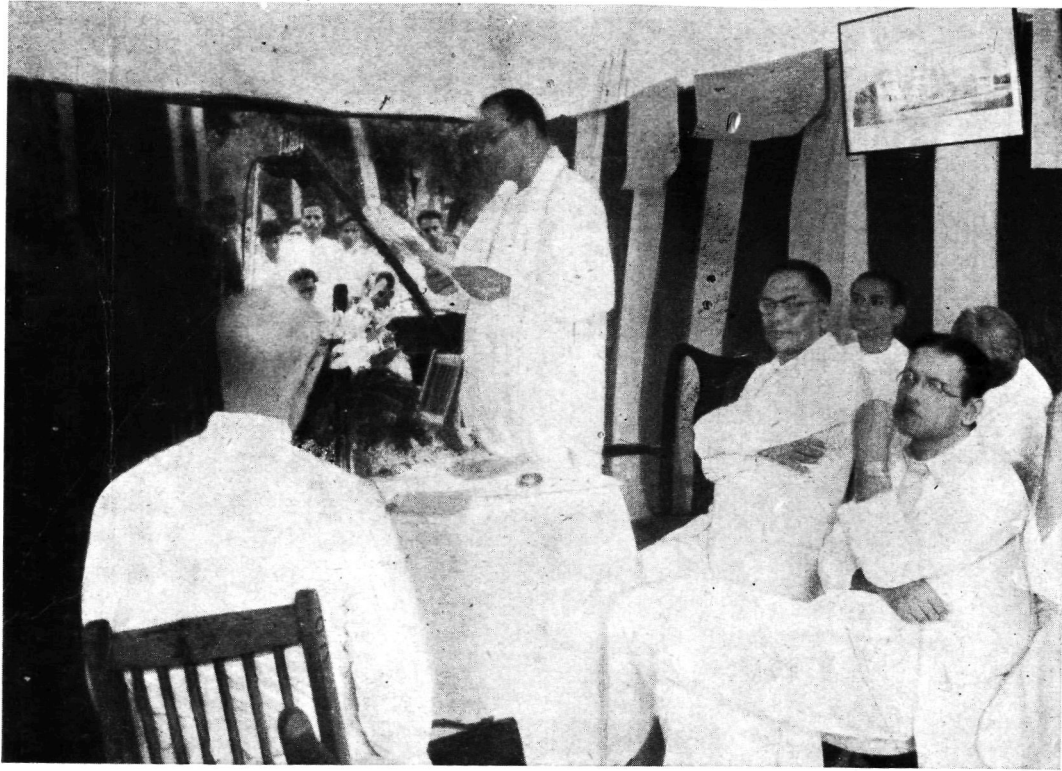
With these words, I have much pleasure in inviting, on behalf of the assembly, the Premier of the Province to lay the foundation stone of the new buildings, where the Association expects to start a new cycle of activity. The Premier is well known to you all; he has not only saved by his skill thousands of human lives, but has been called upon to set aright the maladies of a new-born province, bleeding from its cruel political mutilation. He has brought unbounded energy, knowledge, skill and experience of a rich life to his self-imposed task. We owe to him a deep debt of gratitude for his personal interest in the Association, and for committing his Government to a large share in its expenditure.

Address by the Hon'ble Dr. B. C. Roy, Premier, West Bengal

Mr. President, Ladies and Gentlemen,

To-day I have been asked to lay the foundation stone of the new Laboratories of the Indian Association for the Cultivation of Science.

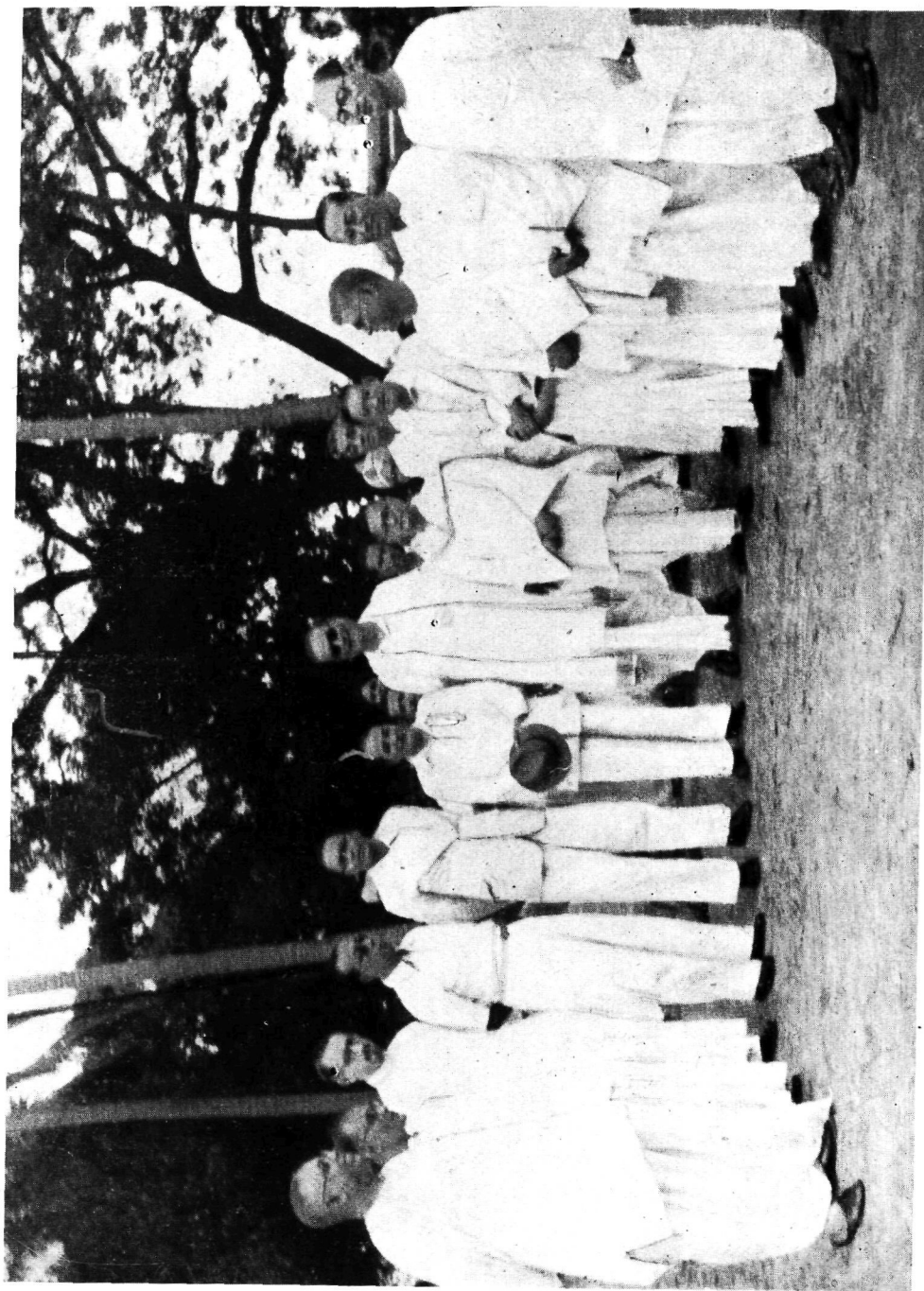
This institution was founded in the year 1876 by one of the doyens of the medical profession, Dr. Mahendra Lal Sircar, who enjoyed a unique reputation as a medical practitioner in those days. It has been the tradition in Bengal that most of such institutions owe their origin to the initiative of men who, in spite of their environmental handicap, think and work in terms of Nationalism. Who could have thought that as far back as 1869-70, provision should be made by a non-official agency for a 'thorough and practical training in science'? Barring the Calcutta Medical College which was founded in the year 1835, there was hardly any institution in those days, in which any form of scientific training was given to Indians. It is the glory of Bengal that one of her sons in the middle of the last century should have conceived the desirability of founding a national institution-- 'an institution entirely under native control and management'. Very few people in those days could have the vision to establish an institution and develop it entirely under native management and control. Why was it that Dr. Sircar thought it essential that for the development of science, the institution should be under national management? The objective of Dr. Sircar was that 'there shall be an institution for the instruction of the masses where lectures on scientific subjects will be systematically delivered and not only illustrative experiments performed by the lecturers but the audience should be invited and taught to perform them themselves'. This was the germ, the seed which was planted in 1869. It was planned that scientific subjects should be 'for the instruction of the masses' and that the 'audience should be invited to perform the experiment themselves'. It is obvious that even 80 years ago one of our men realised that Bengal should have a vast organisation for the benefit and in the interest of the masses. Today we hear our leaders talking about national institutions to be developed for the benefit of the 'common man'. It is wonderful that a medical man, eighty years ago, conceived the idea of starting an institution for the benefit of the masses. It is a strange coincidence that when Benjamin Thompson founded the Royal Institution of Great Britain in 1799, he was also actuated by almost identical



Hon'ble Dr. B. C. Roy delivering his Address



Hon'ble Dr. B. C. Roy laying the foundation stone



Hon'ble Dr. B. C. Roy with Members of the Council & the Staff of the Association

L. to R.—Sri J. M. Majumder, Dr. K. Banerjee (*M.L.S. Professor of Physics*), Rev. Fr. A. Verstraeten, Prof. S. K. Mitra, Prof. M. N. Saha (*President*), Sir S. S. Bhatnagar, Hon'ble Dr. B. C. Roy, Justice C. C. Biswas (*Vice-President*), Prof. P. Ray (*Hony. Director*), Sri R. Roy (*Registrar*), Dr. S. R. Palit (*Prof. of Physical Chemistry*), Dr. B. C. Guha.

idealism. He said that the institution was for 'bettering the conditions and increasing the comforts of the poor' and that the institution would be 'diffusing the knowledge and facilitating the general introduction of useful mechanical inventions and improvements and for teaching by courses of philosophical lectures and experiments the application of science for the common purposes of life'. Two great men in two different countries under different conditions had planted the same seed and in both cases the institutions blossomed forth into institutions not merely for TEACHING but also for RESEARCH. Men like Davy, Faraday and Tyndall worked in the Royal Institution in Great Britain, and in our country we had men like Dr. Mahendra Lal Sircar, Dr. Sir J. C. Bose, Sir C. V. Raman, Dr. K. S. Krishnan and others who have obtained international reputation in scientific teaching and research, working in this institution. As a matter of fact, this institution during its early days confined its activities to the dissemination of scientific knowledge through popular lectures to the people and making them familiar with the methods of experimentation. A large number of lecturers, amongst whom may be mentioned Father Lafont, Dr. Taraprasanna Roy, Sir Jagadish Bose, Sir Ashutosh Mookerjee, Sir Nilratan Sircar, Dr. Chunilal Bose, Dr. Rajani Kanta Sen, Sj. Ram Chandra Dutt, Sj. Mahendra Nath Roy, Sj. Shamadas Mookerjee, Sj. Pramatha Nath Bose, Dr. B. L. Chowdhury, Sj. Girish Chandra Bose and others, delivered these popular lectures. But the Institution soon began to make its name in Research. Prof. Raman was one of the pioneers of Research activities as far back as 1907. From time to time Research has been carried on Interference and diffraction of light, Birefringence due to Electric and Magnetic fields, Viscous Flow and Stress, and on Magnetic susceptibilities of gases, liquids and solids. Such research work led to what is now known as the wonderful discovery of 'Raman Effect' in Physics so that today the Institute is well known as a centre for research and study. A large number of scientific publications both in the form of bulletins and periodical journals record the progress of events in this institution.

Those in authority soon found that the place was getting too small for expansion which they proposed. Until recently the development of science centred round individual workers each cloistered in his own laboratory and pursuing his favourite line of work, but science has grown to such an extent and the different methods of tackling a problem have become so inter-related that though solitary workers can still be expected to make notable contributions to the

cause of science, there are certain types of scientific investigations which can only be done with well directed team work. I can do no better than quote from the printed booklet to indicate the future activities of the Institute.

“The Committee of Management of the Indian Association for the Cultivation of Science during the war years of 1943-46 realised the supreme need of reorganising the activities of the Association so that it might play an increasingly important part in the domain of fundamental researches in Molecular Physics, a branch of science in which it has made a name and has a tradition to cherish. The Committee very rightly felt that it must not be satisfied with any plan of mere rebuilding and extension of the laboratory or of improvement of its equipment, but that the planning must recognise the new trends and tendencies of scientific research. The plan ultimately formulated by the Committee early in 1946 envisaged the creation of an active Research School where the problem of Molecular Structure would be investigated by the concerted team work of a band of physicists and chemists. The entire resources of the Association for fundamental researches in X-rays, Optics, Raman Effect and Magnetism would be fully utilised and the works in these fields would be supplemented, co-ordinated and blended with the works of a Theoretical Physicist, a Physical Chemist and a specialist in Optics, and with the researches of an Organic and an Inorganic Chemist in the field of Structural Chemistry. In fact, the plan is for a more intensive and unified study of problems which the Association has set as its goal almost from its inception, and this is sought to be done by starting the five new Departments referred to above.

“Our statesmen and scientists have begun to realise that if India is to take her rightful place in the Assembly of Nations it is highly necessary for her to undertake an intensive programme of simultaneous and co-ordinated development of both fundamental and applied research. It is now recognised that such researches alone can ensure the security of a country in war and its prosperity in peace. It is hoped that India will inaugurate a new era where fundamental and industrial researches will be harnessed for the service of her people.” For the present the Committee has chosen to concentrate on investigations in the physics and chemistry of High Polymers. “This subject has attained enormous scientific and industrial importance during the last 25 years. Next to Atomic Energy this is today receiving the greatest attention of chemists

and physicists of Europe and America, but unfortunately it has not yet attracted sufficient attention in our country. High polymers include such diverse substances like Rayon and Nylon; synthetic rubber and gutta percha; nitro-cellulose lacquers, varnishes and adhesives; and Plastics. Synthetic products like Nylon bid fair to eclipse all old established fibre industries, synthetic rubber has already become a major war and peace-time material; and plastics have found such wide applications that it is truly said that from the age of steel we are fast passing into an age of plastics. Industrial India of the future will have to develop these industries on her own'.

This institution has been reorganised and has framed a new Constitution. Under the new regulations, the scope of membership has been widened, enabling provincial Governments, city corporations, and industrial firms to be associated actively with the development and administration of the Association. The actual administration is vested in a Council of 22—28 members, of whom 12 are elected by the general body of members, 4 are nominated by the Government of India, including two nominees of the National Institute of Sciences of India, and up to 5 members are elected by Donors and Subscribers. 10 members of the Council must retire every year. The office-bearers of the Association are the President and two Vice-Presidents.

The Research Departments proposed are :—

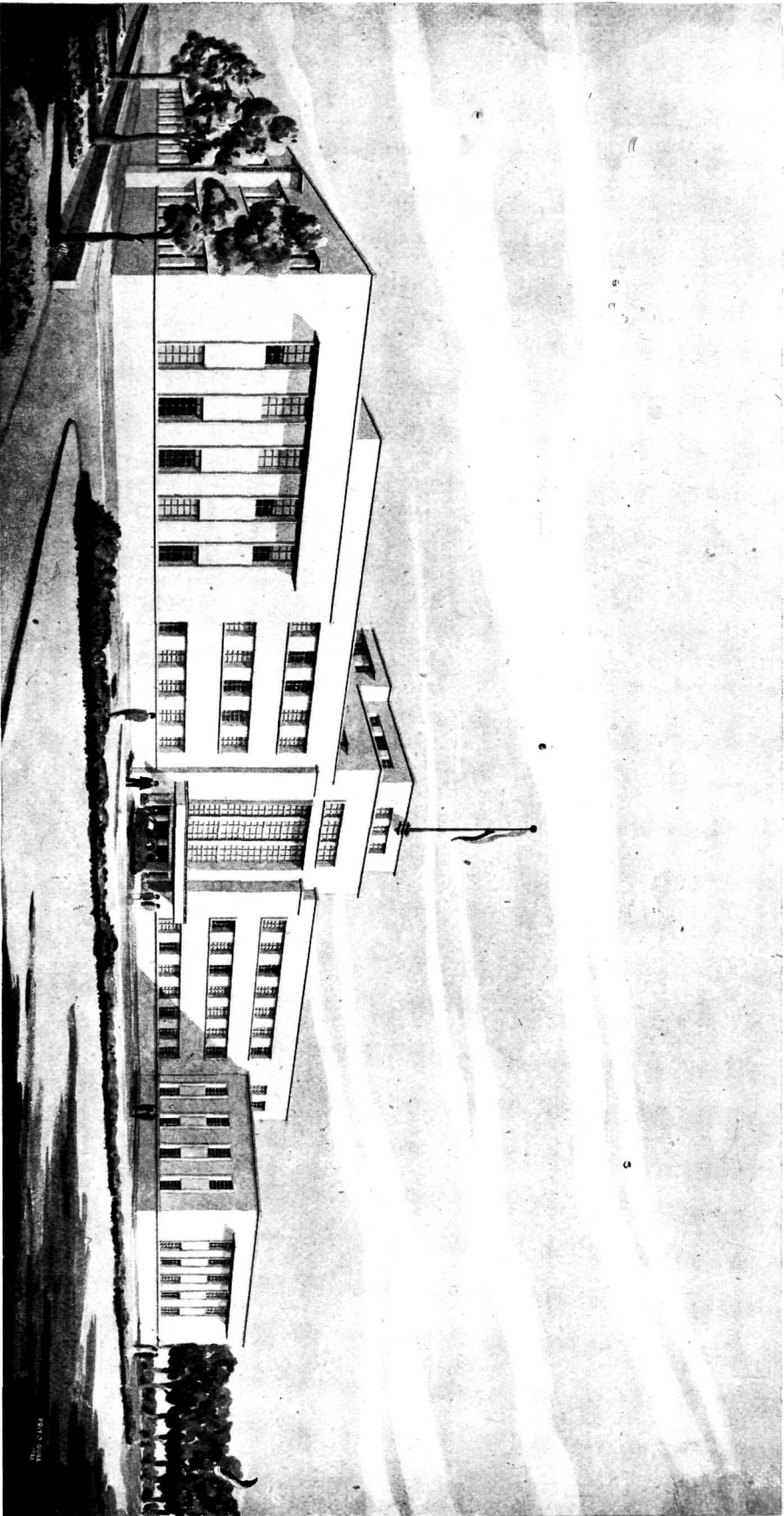
(1) X-rays and Magnetism (2) Optics (3) Theoretical Physics (4) Physical Chemistry (5) Organic Chemistry (6) Inorganic Chemistry—each under a Professor or Reader. To assist the Professor or Reader in each department there would initially be one Research Officer, one Laboratory Technician, one Senior Research Scholar and two Junior Research Scholars.

The Council of the Association has been able to acquire through the good offices of my Government the plot of land covering nearly 29 bighas at Jadavpur. On the one side is the College of Engineering & Technology, Bengal, and on the other is being established the Central Glass and Ceramic Research Institute (under C. S. I. R.). The Association will thus have neighbours most intimately interested in researches of an applied type. The total of the capital cost is estimated to be Rs. 30,25,000/-. The Government of India has sanctioned an interest-free loan of Rs. 5,00,000 and has provided further capital grants of Rs. 3,10,000 in 1947-48 and Rs. 1,22,000

in 1948-49. The Association has thus available a total sum of Rs. 9,32,000 only and it would require a further sum of about twenty-one lakhs of rupees for the construction of all the laboratories and for their full equipments. The Council has therefore issued a public appeal for funds. It is estimated that to give full effect to the initial scheme a sum of Rs. 3 lakhs would be required in the first year, thereafter rising progressively to about Rs. 4.3 lakhs. The Government of India has sanctioned a sum of Rs. 2,66,700 for 1948-49 and subsequent years; and the Council has a normal income of about Rs. 17,000 only per annum from endowments, etc., which can be utilised for the establishment.

‘It is encouraging to note that the Government of India has recognised the utility of such expenditures in starting and maintaining several National Research Institutes and subsidizing Research Associations. It is high time that our industrialists should also utilise these Research Associations to their advantage. The Indian industrialists will now have to face a ruthlessly competitive world and it would be a mistaken policy to depend for their success upon tariff protection, abundance of raw materials, cheapness of labour and other similar factors. They must move forward and find out ways and means for increasing application of the results of pure research in a constant endeavour to improve their products.’ ‘The Council of the I. A. C. S. has planned that the Association would also undertake both short-time and long-range research problems on the Industrial Fellowship basis. Such Fellowships can be created by individual industrial concerns or by associations of manufacturers. The Mellon Institute of Industrial Research in the U. S. A. provides a parallel of a private organisation of research workers where this system of Industrial Fellowship has worked very satisfactorily.’ Will the Industrialists in their own interest come forward ?

I am laying the Foundation Stone of this Building in the hope that we shall soon realise our dream, namely, integration of Science and Industry, and placing Science to the service of mankind and its welfare.



RESEARCH LABORATORY AT JADAVPUR, CALCUTTA • THE INDIAN ASSOCIATION FOR CULTIVATION OF SCIENCE

CHANDRASEKHAR GUPTA, B. F. A. ARCHITECTS • CALCUTTA

Speech by Professor P. Ray, Hon'y. Director of the Association

Ladies and Gentlemen,

I have now a very pleasant duty to perform. That is to offer, on behalf of the Council of the Indian Association for the Cultivation of Science, our sincerest thanks to the Hon'ble the Premier of West Bengal who, inspite of the very heavy pressure of official duties, has spared time to come here today and to lay the foundation stone of the new building of our Association.

You have just heard that our Association was founded as early as 1876 at 210, Bowbazar Street, by Dr. Mahendra Lal Sircar, a great and illustrious son of Bengal and an eminent physician of his time. It is, therefore, a happy coincidence that the foundation stone of the new home of our Association at Jadavpur has just been laid by an equally eminent physician of the present time and an equally great son of Bengal who holds the highest administrative position of the province today. Just as Dr. Mahendra Lal Sircar devoted himself to the task of curing his fellow countrymen, not only from their physical ailments but also from their intellectual deficiency, so far as the pursuit of positive sciences was concerned, a parallel task is being performed in a more propitious atmosphere today by our revered premier, Dr. Bidhan Chandra Roy.

Ladies and gentlemen, you have also heard that the old home of our Association at Bowbazar has acquired a great international fame through the achievements of two of its most eminent workers, Sir C. V. Raman and Sir K. S. Krishnan, and has thus led to the realization of the noble dreams which Dr. Mahendra Lal Sircar dreamt nearly three-quarters of a century ago. May our new home at Jadavpur, sponsored by a great exponent of Science like our Hon'ble Premier, continue to live up to the tradition and glory of its parent at Bowbazar and continue to be worthy of its noble heritage. We may not claim to have in our Association today workers of the eminence of Sir C. V. Raman of Nobel Laureate fame, or of Sir K. S. Krishnan, but we may have the satisfaction that we are going to provide facilities and create opportunities, which will make possible the rise of future Ramans and future Krishnans in this new abode of our Association. Need I say that but for the opportunities offered to Raman, then a young officer in the Finance Department of the Government of India, for scientific researches in the laboratory of our Association at Bowbazar, there would possibly have been no Sir C. V. Raman of Raman Effect fame as a prominent international scientific figure in India today, who might have otherwise ended his career as a distinguished Accountant

General or at best a Finance Secretary or even a Finance Minister of the Central Government at Delhi. India and the scientific world at large would thus have been deprived of a great discoverer of truth which alone constitutes the noblest and the most lasting achievement of man in this world, and which alone gives a meaning to human life.

Life of an institute differs from that of an individual in the fact that it has the potentialities to become stronger, the older it grows. Its future vitality will depend to a large extent upon the nourishment it has received, both materially and culturally, from its past and present. Endowed with the inspiration of its great Founder and the achievements of its eminent workers, supported by the substantial grants from the Central and the Local Governments, encouraged by the good wishes and keen interest displayed by our sympathetic Premier for its progress, we may reasonably hope that our Association has a great future before it. We may, therefore, be permitted to appeal to the representatives of wealth and industries of our country to come forward to help us in building up a great and modern institute of research, fitted up with all up-to-date equipments, that will be worthy of its glorious past and will be in keeping with its future promises. Investment in scientific researches seldom fails to bring in, sooner or later, directly or indirectly, a very handsome return in the form of increased production and useful discoveries, which alone can solve the disquieting problem of poverty, scarcity and diseases that afflict our unhappy land today.

You have just heard from our President that in order to complete the entire Scheme, which we have in view, we shall require another 9 lacs, besides the Government grants and our assets at Bowbazar. For this, we have to depend entirely on contributions from the generous public, and we believe we shall not prove ourselves unworthy of their co-operation, sympathy and support in this great endeavour of raising the material and moral standard of our country through the pursuit of science.

Finally, let us not forget on this happy occasion to pay our most reverent homage to the memory of our illustrious Founder, Dr. Mahendra Lal Sircar, and to express our deep respect to the memory of all those noble souls who helped him in his great endeavour.

Ladies and gentlemen, I would now request you all to join with me in offering a hearty vote of thanks to our Premier, to Sir Shantiswarup Bhatnagar and to the guests who have graced this occasion by their presence.

A P P E A L

On this solemn occasion when the Association is launching into its programme of construction of its new Laboratories where it may carry on its investigations with greater effectiveness and wider scope, the Council appeals to the Government and to the public for generous contributions to its funds.

The *immediate* necessity is a sum of approx. Rs. 14 lacs, in addition to capital grants already sanctioned by the Central and the Provincial Governments, for the construction and equipment of the laboratories. The illustrious founder organized the Institution as a noble and useful gift to the nation. True to his ideals, the new buildings, with all that they are meant to represent, will be devoted to the service of the country through the pursuit of Science: they will provide facilities for investigations by a team of workers which will maintain the traditions of the Association for fundamental research, and will be equipped and staffed for undertaking both short-term and long-range technological problems on the Industrial Fellowship basis. The Council hopes that the Government, and the representatives of Industry and Wealth of the country will come forward with grants and donations to help the Association in fulfilling its programme as drawn up by the Council.