

# Indian Academy of Sciences, Bangalore

## Registration Certificate

IN THE OFFICE OF THE REGISTRAR OF JOINT STOCK COMPANIES  
IN THE CIVIL AND MILITARY STATION OF BANGALORE.

No. 16.

Dated Bangalore, the 27<sup>th</sup> April 1934.

In the matter of the Societies Registration Act, 1860  
(XXI of 1860) and the "Indian Academy of Sciences", Bangalore.

Sir C.V. Raman, Kt., M.A., Ph.D., D.Sc., LL.D., F.R.S.,  
H.L., one of the members of the Governing Council of the "Indian  
Academy of Sciences", Bangalore, has submitted to this office  
a Memorandum of Association, the terms of which are subjoined,  
purporting to have been signed by seven members, together with  
a certified copy of the Rules and Regulations of the Association  
to be styled "Indian Academy of Sciences" and asks for a certifi-  
cate of registration of the Association under Act XXI of 1860.

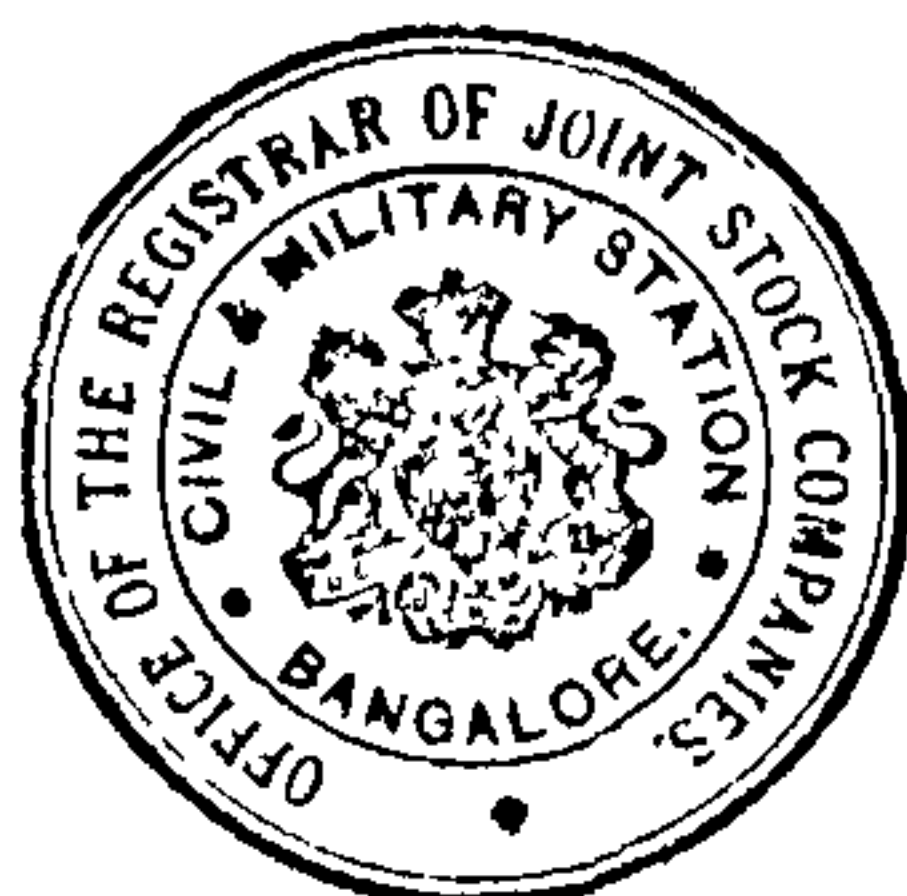
The terms of the Memorandum of Association.

I. The name of the Association shall be "The Indian  
Academy of Sciences" which name shall be changed to "The Royal  
Society of India" on the receipt of Royal Charter.

II. The objects of the Academy are:

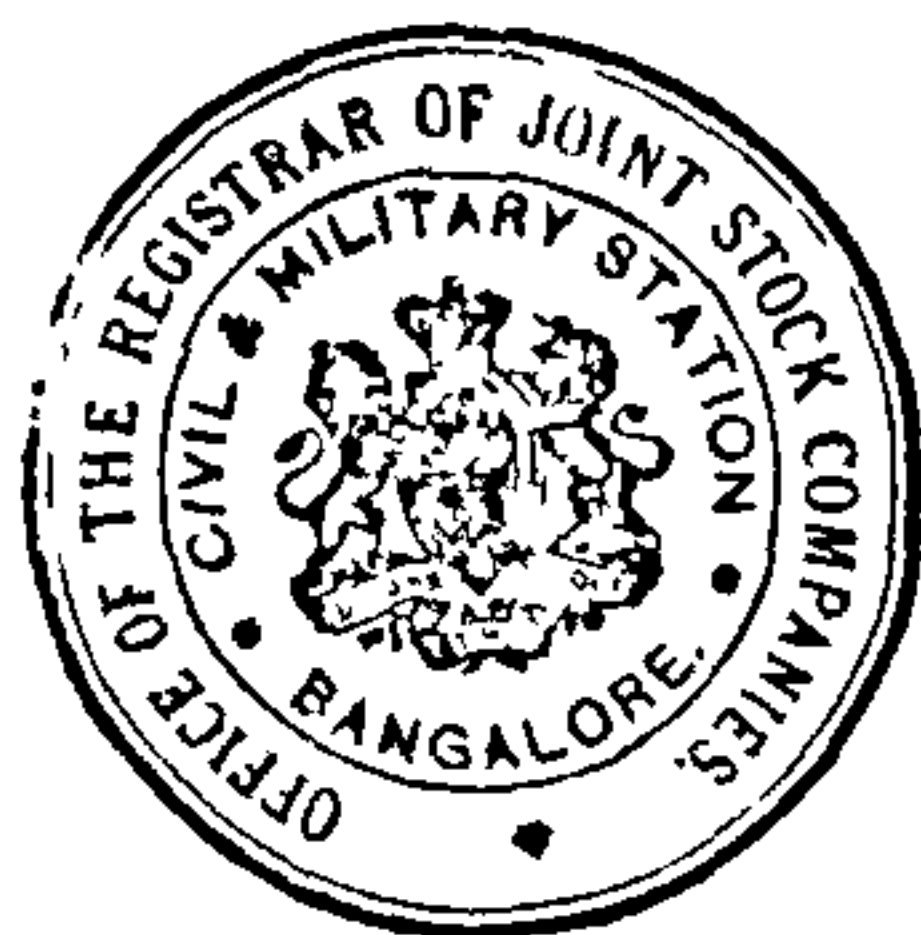
1. To promote the progress and uphold the cause of  
science, both in the pure and applied branches.
2. To co-operate with the existing Provincial Acade-  
mies having similar objects and others when  
founded.

3.



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3. To encourage and publish important researches in the branches of science comprehended by the Academy and to represent internationally the scientific work of India.
4. To undertake, control and direct all scientific enterprises of all-India significance and to participate in them internationally.
5. To collect, sort out and disseminate information concerning the industrial, economic and labour problems relating to India and other progressive countries.
6. To publish books, memoirs, journals, proceedings and Transactions relating to scientific researches in pure and applied branches initiated by the Academy and those conducted under the direction of Provincial Academies, the Universities and Government Scientific institutions.
7. To organise and arrange for the meetings of Congresses, Committees and Conferences for reading and discussing papers submitted to the Academy, advising Government and other bodies on scientific and other matters referred to the Academy and to co-operate with the National Research Council when instituted in all matters of national importance.
8. To secure and administer funds, grants and endowments for furtherance of scientific research.
9. To undertake and execute all other acts which shall



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shall assist in and promote the usefulness, aims and purposes of the Academy.

III. The Academy shall not make any profit nor award any bonus to any of its members but may pay remuneration to the members of its permanent staff. In addition the Academy may award medals, prizes and research grants to individuals and offer financial assistance to scientific organisations or expeditions engaged in specific investigations for the advancement of scientific knowledge.

IV. Pending the election of office bearers and settlement of their functions and responsibilities at the general meeting, the administration of the Academy is vested in the Governing Council consisting of

1. Sir C.V. Raman, Kt., M.A., Ph.D., D.Sc., LL.D.,  
F.R.S., N.L., Director, Indian Institute of  
Science, Bangalore.

2. Professor C.R. Narayan Rao, M.A., L.T.,  
Professor of Zoology, Central College,  
Bangalore.

3. Sastra Vaidya Pravina  
Dr. S. Subba Rao, B.A., M.B.C.M., M.R.C.S.,  
L.R.C.P., D.P.H., Senior Surgeon to the  
Government of Mysore.

and 4. Rao Bahadur Professor B. Venkatesachar, M.A.,  
F.Inst.P., Professor of Physics, Central  
College, Bangalore.

The Governing Body shall make due arrangement for the annual audit of accounts.

O R D E R.

Certified that the "Indian Academy of Sciences"

has



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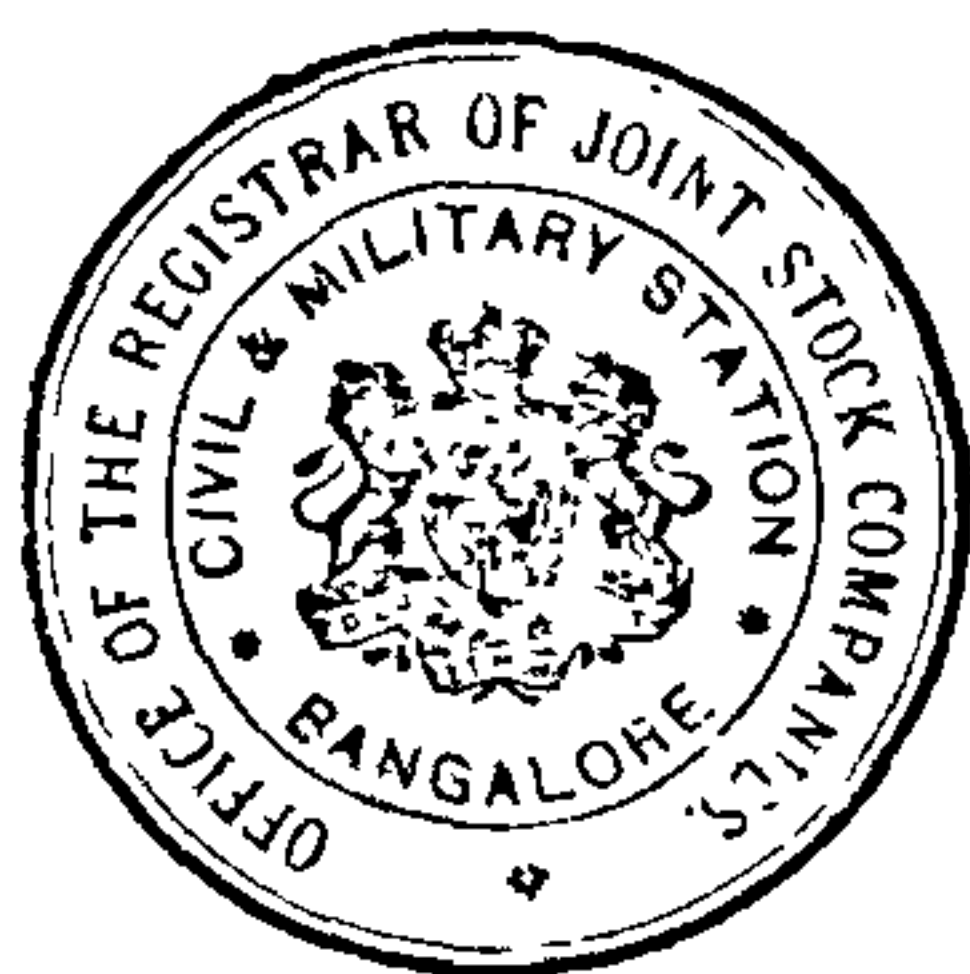
has this day been registered agreeably to section 3 of the Societies Registration Act, 1860 (XXI of 1860), as applied to the Civil and Military Station of Bangalore and the following documents relating to the said Association have been filed in this office:-

(i) Memorandum of Association.

(ii) Rules and Regulations of the Association.

Fees received rupees fifty (Rs.50/-) only.

Delivered under my hand and seal at Bangalore this 27<sup>th</sup> day of April One thousand nine hundred and thirty four.



REGISTRAR OF JOINT STOCK COMPANIES.

NA

PKH/26.4.

## Speech by Sir Mirza M. Ismail, Dewan of Mysore at the Inaugural Meeting of the Indian Academy of Sciences at Bangalore

31st July 1934

Sir Venkata Raman, Ladies and Gentlemen,

I am grateful to Sir Venkata Raman and the other organisers of this assembly for the honour they have accorded me in choosing me to preside on this very notable occasion. I am conscious of the significance of the occasion as marking an important stage in the intellectual progress of our country.

The past quarter of a century has witnessed a remarkable change in the attitude of Indian thought towards the material sciences. The Intellectual of former times exhibited a lack of interest in, and even a certain amount of distrust of, investigations into the working of a universe of the objective existence of which he was not too sure. It is, therefore, not surprising that practically all the scientific work from India which came to international notice was that emanating from the scientific departments of the Government. The system of scientific education or instruction followed by the Indian Univer-

sities, in which the study of experimental science hardly figured, was responsible for inducing in the younger generation an attitude of undue submission to the authority of books and for discouraging independence of thought and of action in pursuing original investigation. In fact, so marked was this effect as to create a general impression abroad of deficiency of originality and resourcefulness in research as a quality inherent in the Indian character.

Reforms in the methods of teaching the experimental sciences introduced some twenty years ago have not been long in bearing fruit in the form of the very respectable volume of scientific research of a high order which now stands to the credit of Indian workers in academical institutions as well as in official departments. Indian science may be said to have come again into its own, after a long dormant period. Of recent years, indeed, its success has been nothing short of spectacular. In every branch of research, Indian investigators



have gained international recognition. Some have become leaders of the very front line in their own particular subjects. As evidence, I need only cite such names as those of Sir C. V. Raman, Professor M. N. Saha, Sir J. C. Bose and Sir P. C. Ray. India's new position in international science demands the foundation of a permanent central institution, charged with the functions of representing Indian scientific opinion as a whole, of safeguarding the position of research, of offering reliable guidance in scientific matters to the administrations, of providing means of publication for work of merit and value—in short, of being to India what the Royal Society of London is to England, and what the other Royal Societies of the British Empire are to their respective Dominions.

Regarding the necessity for such an institution there can be no difference of opinion. Judging from certain newspaper paragraphs that have recently appeared, there does seem to have been some discussion in Indian scientific circles regarding the form of the new institution and particularly regarding its location. Without presuming to discuss a matter which is to be considered at your business meeting to be held later in the day and without prejudice to any decision you may reach, I may say that I should welcome the choice of Bangalore as the home of the Indian Academy of Sciences; and the Government of Mysore would be prepared to consider the grant of special facilities to the Academy should you finally decide to found it here.

Bangalore needs no introduction to the Scientific fraternity in India. This city presents a combination of climatic advantages and social convenience and amenity such as probably no other place in India can offer. It is already sufficiently accessible from all parts of the country and will become more so in future years as the aviation services develop. Here, also, the young plant of the Academy will find, during its growing years, a sturdy support in the Indian Institute of Science, the only All-India Institution for the pursuit of original research in a variety of branches of pure science—an Institution, moreover, which is independent of external control to the extent of practical autonomy, and which is now under the direction of an Indian researcher whose brilliant discoveries have done so much to bring this country to the forefront among the nations in the field of scientific advance. May I also mention here the fact that the Science department of the University of Mysore is located at Bangalore, a department which can, I believe, stand comparison with any of a similar description elsewhere in India, as regards both equipment and personnel. For all these reasons, it appears to me that no more favourable ground than Bangalore could be found for the germination of the idea of an Indian Academy of Sciences and for the subsequent growth of the organism into a flourishing national institution with the necessary international affiliations. I trust, therefore, that those well known scientists of the North—some of whom visit Bangalore regularly in connection with the meetings of the Institute of Science—who are, at present, not so kindly disposed towards the proposal, will modify their attitude and will lend their powerful support in establishing a successful and influential academy. The mind of science is one of high ideals—and the Academy holds out a great ideal before us all.

I understand that sixty distinguished scientists from all parts of India have already enrolled themselves and I hope that other

eminent men of Science will soon join and make the Academy an institution truly representative of the growing scientific achievement of our country.

It ought to be one of the functions of the newly established Academy to secure the intimate co-operation of the medical, agricultural, industrial and forest research departments and to stress the importance of such co-operation among those departments for the promotion of the national health and the economic well-being of the country. I hope that in the years to come, the Academy will expand and grow into a great national research organization. The function of the Academy ought not to be restricted to the encouragement and co-ordination of research work conducted in detached centres, nor merely to the publication of scientific papers and memoirs—however important and necessary these may be for the intellectual greatness of the country. The Academy should seek opportunities for establishing a link between Science and Government on the one hand, and on the other between Science and Society. It should accept the responsibility of promoting discussion in the Council Chambers of All-India on scientific subjects in their application to economic policy and national well-being. The usefulness and importance of the Academy will be tested not merely by the scientific prestige which it attains and the number of publications which it produces each year, but also by the confidence it inspires in the public and the influence it exerts on national affairs.

Within the short space of two months, the Academy has turned out excellent work. The first number of the Journal has been published with businesslike promptitude and I understand that the second number is to be brought out within the next fortnight. These publications form an earnest for the future of the Academy's purpose in this branch of its activities, and it is to be hoped that the facilities offered by the publication section of the Academy will be appreciated in an increasing measure by scientists all over India.

We live in an age of extraordinary scientific development. Pure science has become a cult in Russia, where it takes the place of both Law and Religion. The Soviet administration has clothed science with all the authority of which it has deprived religion. I do not say that we in India should, or, perhaps, ever could, follow the example of Russia and enthrone Science as our God, but there is one lesson which, I think, we should learn from her. That lesson is the application of Science to industry in its many forms, and above all to agriculture which is our basic industry in India.

It is in this practical application of Science, that we laymen expect to derive benefit from scientific bodies in India and not in the somewhat frantic speculations in which Science is engaging and all but confounding itself at present. It appears to be a tendency of certain branches of pure science, in these days, to set the world in equations as history was set in madrigals in olden times. We want concrete knowledge; we want knowledge which can be translated into tangible facts for the benefit of humanity.

It is with real pleasure and with my best wishes for the success of your deliberations that I declare this meeting open. May the establishment of this Academy kindle a spirit of enthusiasm and energy which cannot fail to achieve great things for this great land of ours!



# First Annual Meeting of the Indian Academy of Sciences

(Held at Bombay on 18th December 1935)

## PRESIDENTIAL ADDRESS

By Sir C. V. Raman, Kt., F.R.S., N.L

The Indian Academy of Sciences was registered at Bangalore on the 24th of April 1934, and was formally inaugurated at a public meeting held at the Indian Institute of Science on the 31st July 1934, by Amin-ul-Mulk Sir Mirza M. Ismail, Dewan of Mysore. In the ordinary course of events, the Annual Meeting should have been held in July last. But for various reasons it was felt desirable to postpone it till the cold weather so that it would be possible for the Meeting to be conveniently held at some centre outside Bangalore where our Fellows could assemble. There is a peculiar appropriateness in that the Academy which was inaugurated at Bangalore should hold its first annual meeting at Bombay. It is known to all of you that if Bangalore to-day occupies a significant position in the world of science, it is to no small extent due to the far-sighted generosity of a great and enterprising citizen of Bombay, the late Mr. Jamsetjee Nusserwanjee Tata. At a time when the Universities of India were few in number and were purely examining bodies, Mr. Tata conceived the idea of creating an Imperial Teaching and Research University for the whole of India which would have aims and ideals approximating to those of such ancient foundations of learning as Oxford and Cambridge. In Mr. Harris's life of Tata, we have an authoritative account of the early history of Mr. Tata's scheme. We read that the two reasons which finally lead to Bangalore being the recipient of his princely benefaction to the cause of learning were firstly, the agreeable climate of Bangalore which he regarded as particularly suitable for a centre of advanced teaching and research, and secondly, the generous offer of the Maharaja of Mysore of half a square mile of land, five lakhs of rupees as a capital grant and an annual subsidy of one lakh of rupees towards the establishment of the Institute at Bangalore. Forty years ago, in this way was forged an intellectual link between Bangalore and Bombay which is now indissoluble and which has had and will, I believe, continue to have a far-reaching influence on the progress of science in India.

The idea of establishing an All-India Academy of Sciences was first clearly put forth in an editorial article in the Journal 'Current Science' published from Bangalore in May 1933. After a period of discussion and consultation with scientific men all over India, the decision to inaugurate the Academy with its provisional headquarters at Bangalore was finally taken in April 1934. I shall, in the course of this address, refer more in detail to the progress which has since been achieved by the Academy and which has amply justified that decision. But even at this early stage, it is appropriate to mention the large part which our friends in Bombay have played in achieving that progress.

At the present time, no fewer than thirty-eight of our Fellows are resident in the Bombay Presidency. The election of such a large number to the distinction of the fellowship has been a natural consequence of the remarkable development in recent years of scientific research activities in the Bombay Presidency. I shall have more to say about this later in my address, and it will be sufficient to remark now that the published Proceedings of the Academy bear ample witness to the scientific energy of Dr. T. S. Wheeler and his colleagues at the Royal Institute of Science and to the deep interest taken in the progress of the Academy by the officers of the Meteorological Department at Poona, and the schools of scientific research which have developed at Poona and other parts of the Bombay Presidency. For all these reasons, it is very appropriate that we meet to-day at Bombay. I hope that this gathering will be the first of a series to be held year after year at various centres of scientific research in India. It is desirable that the annual meetings of the Academy should serve to bring together its Fellows from various parts of India at least once a year and thus to strengthen the feeling of scientific comradeship that unites them. Science like other products of human activity, stands to gain immensely from the personal contacts of leading workers. It is earnestly to be hoped that our present meeting will furnish opportunities for such contacts and thus serve to promote the cause of the advancement of science in our great country.

Before I pass to review the work and progress of the Academy since its foundation, I must express the gratitude of the Council to Your Excellency in having consented to grace the occasion to-day and encourage us by your presence here. I must also express the gratitude of the Council to the Fellows of the Academy in Bombay headed by Dr. Wheeler our Vice-President, and to the Reception Committee presided over by you Mr. Vice-Chancellor, who have been at immense pains to organize this our first Annual Meeting on a scale worthy of the occasion.

When the Academy was inaugurated, it commenced its activities with 65 Fellows. The Council obtained permission from the General Body of Fellows to elect fresh Fellows up to a maximum of 200 and also Honorary Fellows up to a maximum of 30 from amongst the most distinguished scientists of the world. This permission has been acted upon and we have to-day 173 Fellows in India and 30 Honorary Fellows. Our Honorary Fellows include some of the most active and influential scientific men in Europe and America, whose sympathy and co-operation will, I am sure, be of the greatest benefit to the Academy.



The British list of Honorary Fellows includes Lord Rutherford, Sir William Bragg, Sir F. Gowland Hopkins, Sir John Russell, Prof. O. W. Richardson, Prof. Robert Robinson, Prof. A. V. Hill, Prof. P. A. M. Dirac, Prof. A. C. Seward and Prof. G. H. Hardy. The American list includes Prof. R. A. Millikan, Prof. A. H. Compton, Prof. N. L. Bowen, Prof. Harvey Cushing, Prof. D. D. Van Slyke and Prof. G. N. Lewis. The German list includes Prof. A. Sommerfeld, Prof. W. Heisenberg, Prof. Hans Fischer, Prof. H. Wieland and Prof. F. Paschen. From France we have Prof. A. Cotton and Madame Irene Curie-Joliot. From Sweden we have Prof. K. M. G. Siegbahn and Prof. Th. Svedberg. From Denmark and Holland we have respectively Prof. Niels Bohr and Prof. P. Zeeman. From Italy we have Prof. E. Fermi and Prof. S. Belfanti and from Russia Prof. I. P. Pavlov.

It is noteworthy that the list of 30 includes one woman scientist, Madame Irene Curie-Joliot. It must have given our Fellows great pleasure to read the recent announcement of the award of the Nobel Prize in Chemistry to this lady and her husband jointly.

Our list of Fellows in India is representative of every important branch of science. Physics and Meteorology are represented by 34 Fellows, Mathematics and Astronomy by 18, Chemistry by 40, Zoology and Anthropology by 17, Agriculture, Forestry and Botany by 35, Medicine by 15 and Geology by 8. We have only 6 Engineering Fellows but they include some very distinguished names including some very familiar in Bombay, viz., Sir M. Visvesvaraya and Dewan Bahadur N. N. Iyengar. Our list of Fellows is also representative of all parts of India. Bombay heads the list with 38 Fellows, closely followed by the Madras Presidency by 35 and Mysore State by 33. Other provinces are also well represented. We have 21 Fellows in the United Provinces; 13 from the Punjab, 11 from Bengal, 8 from the Central Provinces; Bihar and Orissa, Hyderabad, Travancore and Burma are also represented in our list.

The scientific activities of the Academy may be considered under the three heads:

Meetings for discussion of research papers.

Symposia on special subjects.

Publication of the Proceedings.

I shall consider the last first because in a country like India separated by great distances, by far the most important service that can be rendered to science by the Academy is the regular issue of a scientific journal of high standing in which scientific papers of its Fellows can find prompt publication. I think it will be generally agreed that the Academy has achieved very gratifying success in this direction. Ever since the formal inauguration of the Academy, the Proceedings have appeared month after month with unbroken regularity on the due date. A very great amount of material has reached the Academy from many quarters. The examination of this material and the selection of suitable papers has naturally been a formidable task. That it has so far been accomplished without any signs of breakdown is largely due to the co-operation which the Academy has been so fortunate to secure. A special word of praise is due to the Superintendent of the Bangalore Press who has maintained a high standard of printing both as regards accuracy and technical finish and has enabled the Journal to appear with unflinching punctuality. To the numerous Fellows

who have acted as referees for papers often at great cost of time and trouble, the Council are deeply indebted. A heavy burden has also fallen on the Secretaries and on the Manager of the office which they have discharged with conspicuous devotion and success. I believe our Fellows have by this time learnt to look forward to the appearance of the Proceedings on the first of every month and to peruse its contents with eagerness and satisfaction. The volume of published material has grown so rapidly that commencing from July 1935 it was found necessary to separate the Proceedings into two parts, A, Physical and Mathematical Series, and B, Biological Series respectively. The two numbers of the Journal appearing in each month have each contained roughly 100 pages of printed matter together with a very substantial number of illustrated plates. In view of the volume of published matter, the Council have decided in future to issue two volumes instead of one per annum for each of the two sections of the Proceedings.

I will next refer to the Symposia organized by the Academy. There was one in August 1934 on Molecular Spectra which was attended by 50 Fellows from all over India. The shorter papers submitted for this symposium have all been published in the Proceedings. A very valuable and detailed report by Prof. R. Samuel of the Aligarh University has already been printed and circulated to leading specialists on the subject. A detailed report by Mr. N. S. Nagendra Nath on the subject of Dynamics of Molecular Vibrations is also to be printed and issued shortly together with Dr. Samuel's Report as a special publication. In October 1935, a symposium on Disease Resistance in Plants was held at Coimbatore. This was largely attended and was a successful gathering, mainly as the result of the efforts of our Coimbatore friends who worked hard to organize the function. At the present meeting in Bombay, a symposium on Colloid Science has also been arranged.

An important part of the regular work of the Academy is the holding of scientific meetings at which papers presented to it are read and discussed. While such meetings are usually held at Bangalore, the Council have also encouraged the idea of meetings being held at other centres for the reading of papers on the occasion of special gatherings such as Symposia and the annual meetings.

A matter of great concern to the Academy is the question of providing money for these activities, especially for the cost of publication of the Proceedings which is very heavy. That it has been possible at all to carry on the work of the Academy without a complete financial breakdown is largely due to the generosity of the external authorities who have come forward to help us. Chief amongst these, I should mention the Government of His Highness the Maharaja of Mysore who have sanctioned a grant of Rs. 3,000 per annum for a period of five years. His Highness the Ruler of Bhopal has been pleased to sanction an annual recurring grant of Rs. 500, and the Government of His Highness the Maharaja of Cochin have also sanctioned an annual recurring grant of Rs. 250. The Imperial Council of Agricultural Research have sanctioned a grant of Rs. 500 per annum for 3 years. The latest benefaction to the Academy is from the Government of His Highness the Maharaja of Travancore of Rs. 1,000 for this year. The Council of the Indian Institute of Science sanctioned a grant of Rs. 2,000 for the current year. The University of Nagpur have given us Rs. 100 and one of our Fellows, Mr. T. W. Barnard,



has made a special contribution of Rs. 50.

It must be obvious that the publication of a scientific journal rather, of two scientific journals appearing month after month, is a very expensive proposition. Unless we have an assured income of at least Rs. 25,000 per annum, it will not be possible to carry on this work in a satisfactory manner. Only about one-third of this sum can be found from the regular subscriptions of our Fellows. In these days, the building up of a subscription list for a new scientific periodical is a slow and difficult business. It is here, however, that great assistance can be rendered to us by the educated public in India. If every college, every scientific institution and every department of the local Governments subscribed, as it should, for one copy of the Proceedings of the Academy, our financial problem would be greatly eased. I earnestly appeal to all the other Governments and Universities in India to come to our aid. Even a modest annual contribution from each of them would aggregate to a total sum which would enable the Academy to go forward in its great task without fear of financial breakdown.

I think it would be not inopportune to consider at this stage the nature of the services which the Academy can render to science in India. We live in an era of scientific progress and it is a very gratifying feature that India is beginning to pull its weight in this respect. Modern scientific progress shows side by side two apparently contradictory features. On the one hand, we have an enormous accumulation of raw scientific material, the significance of which, in many cases, is hardly apparent except to specialists in very limited fields of investigation. On the other hand, we have a great process of scientific synthesis going on tending towards the simplification and unification of the fundamental principles of natural knowledge in all its ramifications. It should never be overlooked that science is in reality a great impartible estate and that the boundaries drawn across it to divide it into restricted fields are in essence artificial. I think the history of science has shown over and over again that it is only by boldly cutting across these artificial boundaries that progress of real significance can be achieved. It is precisely this feature that lends importance to the activities of such an Academy as ours where men of science of widely different scientific interests come together in a common endeavour and seek to understand each other's points of view. While specialisation is necessary, an excessively narrow outlook defeats the primary purpose of science which is to advance our essential comprehension of nature as a whole. It is, therefore, one of the most important functions of our Academy to promote co-operation between men who profess knowledge of different branches of science. This is effected in various ways. In the Proceedings of the Academy the Fellows and indeed all scientific men have an opportunity of obtaining

at least a general idea of what is being done in India in fields of knowledge other than their own speciality. In the scientific meetings of the Academy and especially in the Symposia, they have a valuable opportunity of discussing problems of common interest from different points of view.

I will also say a word about the Academy in relation to the nation at large. It is inevitable that the Academy, consisting as it does of the most active workers in the country who are representatives of the different parts of India and of different branches of science, will soon come to be regarded as the most authoritative body to speak in the name of India on all matters touching the progress of science. The potentialities of such an Academy in the way of national service are almost unlimited. What it can actually achieve depends on the measure of support and recognition that it receives from the Governments of India and from the general public. I do not think that any calls for service from responsible quarters will find us unwilling or unprepared.

According to the Memorandum of Association, the headquarters of the Academy has been fixed at Bangalore for a period of three years in the first instance. I have no doubt it is the general feeling of all our Fellows that this location has fully justified itself. In this connection, I should mention the generous personal gift by His Highness the Maharaja of Mysore of ten acres of land in the vicinity of the Indian Institute of Science as a permanent location for the Academy. The location selected is a historic spot close to one of the four towers set up by Kempe Gowda, a former Hindu ruler, as a limit for the extension of his city. A relief map shows this site to be the highest spot in Bangalore. Indeed, standing on it at ground-level we see a magnificent panorama stretching out towards the horizon in all directions with Nandidroog in the blue distance towards the north, Sankey's Reservoir and the City of Bangalore to the south, the Palace Gardens to the east and the Indian Institute of Science to the west with the Sivaganga hills looming in the distance. Such a spot is indeed a worthy site for the location of an Academy of Sciences intended to play a great part in the intellectual life of the nation. Such a site also demands a noble edifice which would catch the eye and strike the imagination of both the present and future generations. Has not Bombay some far-sighted and philanthropic donor who would come forward to build an Academy of Sciences for all India and thus immortalize himself and find a place in the memory of India side by side with Jamsetji Tata. The permanent location at Bangalore of an Academy of Sciences would indeed be a fitting completion of Tata's great work. The Academy would serve as a link between the Institute and the outer world of science, each strengthening the other and helping it to reach the full fruition of its aims.



## Formation of the Academy

### The beginning

On 27 April 1934, the Academy was registered under the Societies Registration Act, 1860. In the Memorandum of Association filed under the Act, the administration was vested in a Governing Council consisting of the following members, pending the election of office bearers and the settlement of their functions and responsibilities, at the general meeting to be arranged:

Sir C. V. Raman, Indian Institute of Science, Bangalore; Prof. C. R. Narayana Rao, Central College, Bangalore; Dr S. Subba Rao, Senior Surgeon to the Government of Mysore and Prof. B. Venkatesachar, Central College, Bangalore.

Between then and the 31st of July 1934, when the Academy was formally inaugurated, two groups of Fellows met at short intervals to look after the affairs of the Academy and arrange for its inauguration and the general meeting. They were the above Governing Council and another group of seven, styled as the 'organising members', consisting of the four Council members and the following three in addition:

Prof. L. Rama Rau, Central College, Bangalore, Dr V. Subrahmanyam, Indian Institute of Science, Bangalore and Dr B. K. Narayana Rao, Senior Surgeon, Government of Mysore, Bangalore.

Almost all these meetings were held in turn at the residences of the Fellows. By the middle of July 1934, the following programme for the inauguration called the 'Academy Week', had been finalised.

Tuesday 31 July 1934	9 am	Inaugural Meeting Welcome speech by Sir C. V. Raman Opening address by Sir Mirza M Ismail Address by Sir T. Vijayaraghavacharya Vote of thanks by Prof. C. R. Narayana Rao
	2 pm	Business Meeting President: Dr E. P. Metcalfe (a) Consideration of rules and regulations (b) Election of office bearers
	5.30 pm	Public Lecture
Wednesday 1 August 1934	8.30 to 10.30 am	Scientific Meeting
	2 to 5 pm	Business Meeting (continued)
	5.30 pm	Public Lecture

\*A report on this symposium is published in *Current Science*, 1934, 3, 78-79

Thursday, 8.30 to Symposium on  
Friday & 10.30 am 'Molecular Spectra'\*  
Saturday  
2-4 August 1934

A reception committee consisting of the following members looked after reception, accommodation, etc:

Mr S. G. Sastry, Director of Industries and Commerce, Bangalore; Dr K. R. Krishnaswami, Indian Institute of Science, Bangalore; Dr M. A. Sampathkumaran, Central College, Bangalore; Mr M. Sreenivasaya, Indian Institute of Science, Bangalore.

### The Inaugural Meeting

The inaugural function, the general meeting and the scientific meetings and symposium were held at the Indian Institute of Science.

The Academy was inaugurated on the morning of 31 July 1934 by the Dewan of Mysore Sir Mirza M. Ismail in the presence of distinguished scientists and guests. The Resident of Mysore was also present on the occasion.

Extracts from Sir Mirza's inaugural address are reproduced below:

'I am conscious of the significance of the occasion as marking an important stage in the intellectual progress of our country'.

'The past quarter of a century has witnessed a remarkable change in the attitude of Indian thought towards the material sciences. The Intellectual of former times exhibited a lack of interest in, and even a certain amount of distrust of, investigations into the working of a universe of the objective existence of which he was not too sure. It is, therefore, not surprising that practically all the scientific work from India which came to international notice was that emanating from the scientific departments of the Government. The system of scientific education or instruction followed by the Indian Universities, in which the study of experimental science hardly figured, was responsible for inducing in the younger generation an attitude of undue submission to the authority of books and for discouraging independence of thought and of action in pursuing original investigation. In fact, so marked was this effect as to create a general impression abroad of deficiency of originality and resourcefulness in research as a quality inherent in the Indian character'.

'Reforms in the methods of teaching the experimental sciences introduced some twenty years ago have not been long in bearing fruit in the form of the very respectable volume of scientific research of a high order which now stands to the credit of Indian workers in academical institutions as well as in official departments. Indian science may be said to have come again into its own, after a long dormant period. Of recent years, indeed, its success has been nothing short of spectacular. In every branch of research, Indian investigators have gained international recognition. Some have become leaders of the very frontline in their own particular



subjects. As evidence, I need only cite such names as those of Sir C. V. Raman, Prof. M. N. Saha, Sir J. C. Bose and Sir P. C. Ray. India's new position in international science demands the foundation of a permanent central institution, charged with the functions of representing Indian scientific opinion as a whole, of safeguarding the position of research, of offering reliable guidance in scientific matters to the administration, of providing means of publication for work of merit and value—in short, of being to India what the Royal Society of London is to England, and what the other Royal Societies of the British Empire are to their respective dominions'.

'I should welcome the choice of Bangalore as the home of the Indian Academy of Sciences, and the Government of Mysore would be prepared to consider the grant of special facilities to the Academy should you finally decide to found it here'.

'Bangalore needs no introduction to the scientific fraternity in India. This city presents a combination of climatic advantages and social convenience and amenity such as probably no other place in India can offer. It is already sufficiently accessible from all parts of the country and will become more so in future years as the aviation services develop. Here also, the young plant of the Academy will find, during its growing years, a sturdy support in the Indian Institute of Science, the only All-India Institution, for the pursuit of original research in a variety of branches of pure science—an institution, moreover, which is independent of external control to the extent of practical autonomy, and which is now under the direction of an Indian researcher whose brilliant discoveries have done so much to bring this country to the forefront among the nations in the field of scientific advance. May I also mention here the fact that the Science Department of the University of Mysore is located at Bangalore, a department which can, I believe, stand comparison with any of a similar description elsewhere in India, as regards both equipment and personnel. For all these reasons, it appears to me that no more favourable ground than Bangalore could be found for the germination of the idea of an Indian Academy of Sciences and for the subsequent growth of the organism into a flourishing national institution with the necessary international affiliations'.

'It ought to be one of the functions of the newly established Academy to secure the intimate co-operation of the medical, agricultural, industrial and forest research departments and to stress the importance of such co-operation among those departments for the promotion of the national health and the economic well-being of the country. I hope that in the years to come, the Academy will expand and grow into a great national research organisation. The function of the Academy ought not to be restricted to the encouragement and co-ordination of research work conducted in detached centres, nor merely to the publication of scientific papers and memoirs—however important and necessary these may be for the intellectual greatness of the country. The Academy should seek opportunities for establishing a link between Science and Government on the one hand, and on the other between Science and Society. It should accept the responsibility of promoting discussion in the Council Chambers of All-India on scientific subjects in their application to economic

policy and national well-being. The usefulness and importance of the Academy will be tested not merely by the scientific prestige which it attains and the number of publications which it produces each year, but also by the confidence it inspires in the public and the influence it exerts on national affairs'.

'It is in this practical application of science that we laymen expect to derive benefit from scientific bodies in India and not in the somewhat frantic speculations in which science in engaging and all but confounding itself at present. It appears to be a tendency of certain branches of pure science, in these days, to set the world in equations as history was set in madrigals in olden times. We want concrete knowledge; we want knowledge which can be translated into tangible facts for the benefit of humanity'.

'... May the establishment of this Academy kindle a spirit of enthusiasm and energy which cannot fail to achieve great things for this great land of ours!'

### General Meeting

The general meeting which followed on the afternoon of 31 July 1934 was presided over by Dr E. P. Metcalfe, Vice Chancellor of the Mysore University. It was attended by 29 Fellows of the Academy.

In his opening remarks, Dr Metcalfe too touched upon the broad principles regarding the founding of the Academy and said:

'I may say at once that I have no misgivings whatever on matters of broad principle in regard to the foundation of an Indian Academy, on which I believe no difference of opinion exists in any quarter. A body of the kind that this Academy aspires to become is now a national need in India. The quite remarkable progress of scientific research in this country during the last twenty years and the quantity and volume of the work now being turned out call for the institution of an all India co-ordinating authority in continuous activity corresponding to the Royal Society in England as distinct from the annual Science Congress which is the counterpart of the British Association, a more 'popular' body of periodical activity. It is felt, too, that a permanent authority should exist to represent Indian scientific interests in various ways, not only in India but internationally. On such points there is no lack of unanimity'.

He followed this by referring to the location of the Academy, stating:

'One of the chief points at issue appears to be the location of the Academy. In India local patriotism is a well-marked phenomenon; so that this particular bone of contention was bound to be unearthed. I feel, speaking for myself and trying to view the matter quite dispassionately, that, for the reasons given by Sir C. V. Raman, Bangalore does appear to present certain solid advantages. This place provides a combination of facilities in the way of accommodation, laboratories and libraries with various social amenities and a twelve-month working year which few, if any, other Indian cities possess; and we have at hand a personal element ready, capable and willing to work for the welfare of the new institution, and,



above all, of the necessary reputation to lend to it an initial prestige'.

'The proposal to locate the Academy at Bangalore is therefore, on the merits of the case, not an unreasonable one'.

'In concluding, I would appeal earnestly to all scientific workers in the country who have the cause of science at heart and take pride in the great achievements of India of late in the fields of research, to come together over this matter in a friendly spirit and to reach an agreed decision – a decision which, once taken, I would exhort all to accept and uphold'.

During the deliberations that followed, the draft constitution for the Academy was considered and after some verbal alterations was finally accepted....

Proposing the vote of thanks, on behalf of the Academy, Sir C. V. Raman thanked Dr Metcalfe for having conducted the business meeting in an admirable fashion. He thanked the Reception Committee for the splendid arrangements for the Academy Week. He also thanked the members assembled for the honour done to him by electing him the President of the Academy and expressed the hope that the Academy would continue to receive unstinted support, sympathy and a spirit of co-operation in the years to come.

The meeting terminated with a vote of thanks to the Chair.

### Scientific Meeting

The following papers were read and discussed at the scientific meeting on 1 August 1934.

- a) Magnetism of tin by Dr S. Ramachandra Rao
- b) On the theory of liquids by Dr T. S. Wheeler
- c) Heilbronn's Class-number theorem (II) by Dr S. Chowla
- d) An extension of Heilbronn's Class-number theorem (III) by Dr S. Chowla.

### Symposium

The symposium on Molecular Spectra which was held on the next three days was attended by about 50 Fellows from all over India.

Reporting on the founding of the Academy on the premises of the Indian Institute of Science, the Council of the Institute in its Annual Report for the year 1934–35, referred to it as 'a significant event which occurred during the year tending to the advancement of science in India...'

## Presidents of the Indian Academy of Sciences and Years of office



C. V. Raman  
(1934–70)



T. S. Sadasivan  
(1971–73)



M. G. K. Menon  
(1974–76)



S. Dhawan  
(1977–79)



S. Varadarajan  
(1980–82)



S. Ramaseshan  
(1983–85)



O. Siddiqi  
(1986–88)



C. N. R. Rao  
(1989–91)



R. Narasimha  
(Present President)



## Foundation Fellows

K. Ananda Rao	B. N. Iyengar	C. Newcomb	N. K. Sethi
L. K. Ananthakrishna Ayyar	E. K. Janaki Ammal	M. Owen	R. C. Shah
J. J. Asna	S. S. Joshi	K. S. Padmanabha Iyer	M. S. Shah
R. K. Asundi	A. C. Joshi	G. Palacios	N. M. Shah
N. N. Ayyangar	R. J. Kalamkar	S. R. Pandit	T. P. B. Shastry
J. S. Badami	D. D. Kanga	K. C. Pandya	Shri Ranjan
K. Bagchee	A. N. Kappanna	H. Parameswaran	L. Sibaiya
D. V. Bal	S. N. Kapur	G. R. Paranjpe	M. R. Siddiqi
S. K. Banerji	K. L. Khanna	P. Parija	S. Siddiqui
T. W. Barnard	V. R. Khanolkar	J. S. Patel	B. K. Singh
S. Bhagavantam	C. A. King	D. H. Peacock	B. N. Singh
Y. Bharadwaja	D. D. Kosambi	B. Rama Rao	M. R. R. Sivan
S. L. Bhatia	P. Krishnamurti	Rama Rau	S. S. Sokhey
B. L. Bhatia	K. Krishnamurti	S. Rama Swamy	M. Sreenivasaya
S. S. Bhatnagar	K. S. Krishnan	S. Ramachandra Rao	Sri Krishna
G. W. Burley	M. S. Krishnan	Y. Ramachandra Rao	H. Srinivasa Rao
K. C. Chakko	K. V. Krishnan	T. V. Ramakrishna Ayyar	V. Srinivasan
S. N. Chakravarthy	K. R. Krishnaswami	C. V. Raman	S. Subba Rao
S. Chandrasekhar	K. S. Kuppuswami Iyengar	V. Ramanatha Ayyar	A. Subba Rau
H. Chaudhuri	K. B. Madhava	K. R. Ramanathan	T. S. Subbaraya
C. S. Cheema	C. Mahadevan	S. C. M. Ramanujam	V. Subrahmanyam
S. Chowla	G. S. Mahajani	L. A. Ramdas	N. R. Tawde
A. C. G. Correia	P. C. Mahalanobis	K. Ramiah	E. M. Taylor
S. N. Dasgupta	P. Maheshwari	P. V. Ramiah	A. V. Telang
J. F. Dastur	S. L. Malurkar	S. Ranganathan	G. S. Thapar
B. N. Desai	Mata Prasad	G. N. Rangaswami Ayyangar	T. S. Tirumurti
S. V. Desai	G. Mathai	R. Row	V. I. Vaidhianathan
I. F. de Mellow	K. K. Mathur	S. K. Roy	R. Vaidyanathaswamy
S. C. Devadatta	K. C. Mehta	S. C. Roy	K. Vakil
S. C. Dhar	E. P. Metcalfe	T. Royds	S. S. Vazifdar
K. S. G. Doss	N. B. Mirza	T. S. Sabnis	M. P. Venkatarama Iyer
N. L. Dutt	M. A. Moghe	D. L. Sahasrabuddhe	T. S. Venkataraman
T. Ekambaram	K. L. Moudgil	R. R. Sahni	K. Venkataraman
R. B. Forster	A. Nagaraja Rao	M. R. Sahni	B. Venkatesachar
A. S. Ganesan	N. S. Nagendra Nath	Birbal Sahni	S. Venkateswaran
R. Gopala Aiyar	A. Narasinga Rao	M. A. Sampathkumaran	T. Vijayaraghavan
M. A. Govinda Rau	A. L. Narayan	Basur Sanjiva Rao	M. Visvesvaraya
K. R. Gunjekar	N. Narayana	B. N. Sastri	B. Viswa Nath
C. V. Hanumantha Rao	C. R. Narayana Rao	S. G. Sastry	D. N. Wadia
K. H. Hasan	B. K. Narayana Rao	S. R. Savur	T. S. Wheeler
H. C. Howard	V. V. Narlikar	K. Sawhney	Ludwig Wolf
M. O. P. Iyengar	C. V. Natarajan	T. R. Seshadri	
K. R. K. Iyengar	Nazir Ahmad	J. B. Seth	