

GENESIS OF FOUNDING OF THE SOCIETY : BY V.
RAMASWAMI AIYAR IN HIS PRESIDENTIAL
ADDRESS OF 1926

The Presidential Address

Dr. SEAL, LADIES AND GENTLEMEN :

The Indian Mathematical Society and its Committee have honoured me this year, in a three-fold manner, for my humble services, done over 18 years ago, in founding the Society: first, they have made me an Honorary Member of the Society; secondly, they have raised me to the position of the President of the Society; thirdly, they have presented me with a beautiful address, which makes this a red-letter day in my life.

Under the constitution the Committee can elect as Honorary Members persons distinguished in Mathematics, or in eminent positions and interested in the objects of the Society. I do not see that the Committee have made a strict application of the Rule in electing me an Honorary Member. They have simply expressed an exceeding good-will towards me as founder of the Society. By their act, they have put me in one list with such eminent *Acharyas* of the Science as Baker and Hardy, Whittaker and Whitehead, and such a distinguished son of India as Dr. Paranjpye. To such a list I feel my name has been added very unworthily.

Since our last Conference we have lost from this list, by death, the brilliant name of Sir Asutosh Mukherji, M.A., D.L., C.S.I., who was fitly styled as *Saraswathi*. He was eminent in many a field of knowledge besides Mathematics, and his great services in the cause of scientific advancement in India can never be forgotten.

The Presidentship of our Society has been held before me by such distinguished scholars as Prof. Wilkinson and Mr. Balak Ram. They represented the Bombay and the Panjab areas of our membership, respectively. By an unwritten convention, the Presidentship, it appears, should go now to one from the Madras side. When I was offered the place, I expressed my dissent from this convention as Mr. Balak Ram was holding it very worthily; and I also said that, if the convention must be followed, the honour should go to a veteran mathematician like Mr. Naraniengar. But Mr. Seshu Aiyar,

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the energetic Secretary, would not be deflected from his purpose. He said that Mr. Naraniengar was still wanted as Editor of our Journal, that I must take the Presidentship before it can go to younger men, and that the Committee's wish to see me honoured in this way, must be respected. I found myself not strong enough to resist further, and I accepted the nomination.

The Committee have further honoured me with their very kind address read to-day. In every previous Conference I have been mentioned to be the founder of the Society and therefore a special address to me now, on the fortunate circumstance of my being the founder, is really superfluous. But, as an expression of the goodwill of the members towards me, I value it greatly and shall cherish it deeply. It is moreover a happy circumstance, Sir, that it is given to me to receive this address, standing on Mysore soil. For it was in Bangalore and Mysore that, years ago, I had a short spell of service as a Mathematics teacher—a period which I remember with great pleasure. I wish to thank the Committee and members of the Society very sincerely for these several honours which they have bestowed upon me.

When I accepted the Presidentship I did not realize that the task of a Presidential Address at this Conference was to be mine so soon. I am very ill-fitted for the task. My life has been cast in a different sphere of work and away from any Mathematical Library. I own but few books and even these I have left behind in one of my previous stations. Both Messrs. Wilkinson and Balak Ram have, in previous Conferences, given us most scholarly addresses, the level of which it is impossible for me to reach. Casting about for ideas I have thought of making up my address by placing before members some of my own mathematical reminiscences, which, if you are indulgent enough, may show the nature of the interests that the founder possessed; and, along with them, a few observations of a general character regarding the progress we can make for attaining the general objects of the Society. It is an amateur's address, and I hope for your utmost indulgence,

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Before I proceed further, it is my duty to pay a tribute of respect to Messrs. Balak Ram, Seshu Aiyar and Ross for their services in general and as members of the last Committee.

When our Society was formed in 1907 its membership was confined to the Madras and Bombay areas. But soon afterwards Mr. Balak Ram was introduced as a member by Dr. Paranjpye. Mr. Balak Ram was a fine product of the young University of Punjab, and, ever since he joined, he has been a pillar of strength to our Society. He soon got in for us many members from Punjab. The Calcutta Mathematical Society was under formation at the time and there were reasons to fear that the Punjab area would go over to the Calcutta Society as Punjab formed a part of the extensive area of the old Calcutta University. But Mr. Balak Ram made that area safe for our Society. He has performed for us the mathematical annexation of the Punjab. Not only so, but during his Presidentship our Society reached a world-wide standing coming in contact with all the sister institutions in the world. Our Journal made a marked progress in his time, in keeping with the advance in our Society's standing. To crown all, he has made us a princely benefaction of Rs. 1,000 to our Library. To this benefaction I shall have occasion to refer again. It is one that our Society can never forget. I am so glad that Mr. Balak Ram, though he has laid down the office of President, continues to be a member of the Committee.

I have next to express my great regret that Mr. Seshu Aiyer has gone out from the Committee. He has given his best services to the Committee now for over 15 years. He had a rare touch with the men in all districts of Madras who were engaged in mathematical teaching in High Schools and Colleges. Year after year, also, there were batches of young men who studied Mathematics under him in the Presidency College, Madras. He has brought in many of them as members of our Society. To Mr. Seshu Aiyer is due the credit of organizing our first Conference in Madras, which proved a great success. When he proposed the Presidentship to me, he kept away from me the fact that he was going to be off from the

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Committee. Had I known it, it is nearly certain that I would have preferred to be outside the Committee, too. But, a good tactician, he has fixed me in first, and then got himself out, mentioning our rule of rotation, and various circumstances as excuse. But though outside the Committee, he has promised me, that his endeavours on behalf of our Society will continue unrelaxed. The Government have honoured him with the title of Rao Bahadur which he deserves by his work for our Society alone.

I regret also that Prof. Ross ceases to be in the Committee under the rule of rotation. His breadth of mathematical scholarship, especially in the field of Analysis, is second to none. His genial character and his fine spirit of fellowship with Indians are known to all who have come in contact with him ; and I feel that, by his retirement, the Committee have lost a most valuable member.

I must now turn to the promised mathematical reminiscences of the founder. In 1893 I took the M.A. degree. In the following year, about August, I was a candidate for the Mysore Civil Service Examination and failed. But I then received an enquiry from Mr. Bhabha, Inspector-General of Education in Mysore, asking if I would act as Professor of Mathematics in the Central College, Bangalore, in the place of Mr. T. R. Venkataswami Naidu, who was taking a short leave. I was glad to accept the offer. This made me a colleague of Mr. M. T. Naraniengar and we became intimate friends. Mr. Naraniengar had passed the M. A. in the year previous to mine. We were both deeply interested in Mathematics. Geometry was our *forte* (in a modest way), and curves, our particular fancy. Mr. Naraniengar and myself used to take long walks together in the mornings, in the bracing climate of Bangalore, discussing, I think, nothing but Mathematics. Ball's *Mathematical Recreations* had recently come out and contained a lot to interest us. I wonder how often we stopped in the road to draw and discuss a figure, careless of mankind passing by. After Mr. Venkataswami Naidu rejoined duty, I continued to remain in Bangalore, meeting him frequently. He was a fine conversational-

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ist with shrewd remarks on nearly every topic. We had a special affinity as both of us were old boys of the Coimbatore College. I regret he is no longer among us.

When, years later, I felt the need of a Mathematical Society in India, and sent my proposal to form one, my efforts were warmly supported by both Messrs. Venkataswami Naidu and Naraniengar. Not only were they among our foundation members, but they both came into our first Managing Committee, contributing to its strength. Our Society, when born, showed signs of rapid progress, and, not only did I know that the Journal of our Society would be started soon, but I knew also precisely who was going to be its distinguished Editor. Mr. Naraniengar has carried on the work of our Journal very ably during 18 years and, for this labour of love, we cannot be too thankful.

Proceeding with my reminiscences, in 1895 Mathematics classes were opened for B.A. in the Maharaja's College, Mysore, and I was appointed to a permanent post in the staff of the College, as Lecturer in the subject. Mr. J. Weir was the Principal of the College and Professor of Mathematics. I became his assistant. Mr. Weir got me introduced as a member of the Edinburgh Mathematical Society and I felt very proud to become a member of that body. The proceedings of the Society, which I received, gave me my first glimmer of hope that a Mathematical Society like the Edinburgh could, perhaps, be formed in India. I spent a happy year in Mysore, teaching Mathematics. I remember very well the room in the college that was given to us, Assistant-masters and Lecturers. It was an institution by itself. Men teaching different subjects, we met daily in the interval for lunch. In that company which included the Sanskrit and Kanarese Pandits, I used to feel very happy, and realised that every branch of learning was a means for a great culture: and Mathematics was surely, but only, one such branch.

One very interesting reminiscence of that year is my becoming private tutor in Mathematics to Miss Bhabha, daughter of the

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Inspector-General of Education, who was studying for the Matric. Miss Bhabha, I learn, afterwards became Lady Dorab Tata. I have not met her as Lady Tata and the image in my mind is that of Miss Bhabha only. Miss Bhabha did everything gracefully. Her note-books were a model of neatness. Once, when I was taking her over the theorem of Pythagoras and discussing some *extra* proof of it, she brought to my notice an interesting little figure, which had a neat property. She proved it one way and I showed another way of doing it. Between these lay the proof of a particular case of Euclid, I. 47. Varying the figure a little, both our modes of proof applied for proving a like property of the new figure; and that meant, we found out a new proof of Euclid I. 47. I communicated this proof to Mr. Venkatasami Naidu at Bangalore, who sent me an observation thereon. This led me to see that the principle of the proof that Miss Bhabha and myself had found had a wider application, and that it yielded a proof, *within the First Book of Euclid*, of the theorem that a regular figure of n sides described on the hypotenuse of a right-angled triangle was equal to the sum of the regular figures of n sides described on the other two sides.

My service in Mysore did not continue long. I appeared for the Madras Civil Service Examination of 1895 and came out successful—thanks to my friend Mr. Belwadi Dasappa, the Lecturer in English, who coached me in that subject in which I was very deficient. I left Mysore with great regret, for, not only my work as Mathematics Lecturer, but the life with the students, the scenery and traditions of Mysore, and the work of its statesmen, all filled me with interest; and Mysore was to me emblematic of all the glory of our motherland. I joined the Madras Civil Service as a Deputy Collector at the end of 1895.

Taking a step forward now of about 12 years we come to 1907, the year in which our Society was founded. But, to give an account of the circumstances which led to the formation of our Society, we must go back to the previous year 1906.

The year 1906, I think, is an important date in the intellectual history of the world. It was the year in which Einstein made his

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great discovery of the principle of Relativity. It was also the year, probably, in which our own great mathematician, Ramanujan, unknown as yet, was making some of his discoveries. However that be, there was a feeling in India that it was the time of a large awakening. There was considerable political agitation then, owing to the partition of Bengal. But men also saw that, before India could become great, we needed advancement in many different directions. Our great countryman, Sir J. N. Tata, had these problems in mind and had laid the foundation of a considerable industrial and intellectual advancement. But his great scheme of a Central Research Institute for India made no provision for mathematical advancement. One day I put myself the question "Can I not be of some help in advancing the interests of Mathematics in India." The spirit of the times made me think seriously about the question. I wanted to form a Mathematical Society which might be something like the Edinburgh Society. I obtained the Calendars of the Madras and Bombay Universities and made a list of all the men who had taken the M.A. degree, or a first class in B.A., or were doing work as Professors and Assistant Professors in the various colleges. The list was very encouraging. There were men of distinction like Dastur, Sanjana, Apte and Paranjpye in the Bombay Presidency. There were men like Hanumantha Rao, my own teacher Swaminatha Aiyar, Ramachandra Rao, Naraniengar, Ramesam, Venkateswami Naidu, and so on, in my Presidency. On perusal of the long list, it occurred to me that, if by some magic, I could only put all these names into a Society, then, with Euclid, I might say, Q. E. F. (what is required is now done). But I did not see my way for this magic. I was a Deputy Collector and not a Professor of a College whom his fellow mathematicians would know. I sometimes thought that, if I were the great Asutosh Mukherji of Bengal, I could make a trumpet call, bringing all the mathematicians together at once. But I was unknown; and any call by me, I felt, would fall flat on the public ear. So I was in a state of hesitation as to the action I should take.

In that year I saw a copy of the quarterly journal of Mathematics, sent me by a friend. The matter which it contained was

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mostly beyond me but there was a little bit which delighted me. And I began to wonder how many such delightful bits, we in India may be missing by not seeing the leading journals. This made me more eager than ever to try to form a Mathematical Society. At length came the Christmas Day of December 1906. I was put up in a village *Chavidi*, in Gooty Division, Anantapur District. Thinking calmly, I felt that God will prosper any earnest endeavour made in a self-less cause. I was able to see my plan clearly and I wrote a little letter asking friends to join and form a small Mathematical Society. The letter was simply conceived and had no ambitious programme. It has been published in Vol. XI of the Journal of our Society. I sent copies of the letter to one friend after another and I received an abundant response during three months. Then on the 4th of April 1907, I was able to announce in the Madras dailies that the Society was formed, with a strength of 20 members, under the name "The Indian Mathematical Club," and I became one of its Joint Secretaries along with Mr. Naraniengar and I continued so till 1910. The strength of the Society had grown then to about 120. This period of service in the cause of Mathematics is one which gives me great pleasure to look back upon, and your generous recognition of it to-day fills me with thankfulness that it was given to me to render the service.

After the formation of our Society in 1907, I wrote to the leading mathematicians of Bengal (with copies of my original letter and letter of announcement) asking for their support. I got a prompt response from Professor Mahendra Nath De, but not from others. Prof. De informed me that my letters to others had been received, but the mathematicians of Bengal were considering the formation of a separate Society in Calcutta. I was feeling disappointed that Bengal did not join us. Before long, however, I received a kind letter from Sir Gurudas Bannerji, the eminent Judge, as well as mathematician, acknowledging my letter, commending our action, and stating that they in Bengal preferred to have a Society formed in Calcutta itself, to gain our common objects the better, and that plans for this were ready. He said that

India was such a vast country that there was ample room for both the Societies to function and he wished all prosperity to our endeavours. With such blessings from Sir Gurudas we were very glad to see our sister Society come into existence in Calcutta in 1908, for promoting our common objects. The thought has sometimes occurred to me, Sir, that if I have been the positive founder of our Society, I am also a sort of *negative* founder of the sister Society at Calcutta.

The year 1910 holds a special place in my mathematical reminiscences being that in which I met Ramanujan, that brightest flower of Indian Mathematics which has been plucked away so soon from the bosom of Mother India. Ramanujan, as yet unknown to the world, came to me at Tirukoilur, with a letter of introduction from Mr. K. S. Patrachariar, member of our Society. The letter said that Ramanujan had great abilities in Mathematics which, Mr. Patrachariar suggested, I would be in a better position to appreciate. Ramanujan stayed with me 3 days. I then had a view of those remarkable note-books in which he had recorded the numerous results of his discovery. There was little or no explanation given but the results were of a very striking character. I put him some test questions in order to find out if his methods were really based on sound principles. I remember one such question. Taking the harmonic series $1/2 + 1/4 + 1/6 + 1/8 + \dots$ formed with the even natural numbers and the harmonic series $1 + 1/3 + 1/5 + \dots$ formed with the odd natural numbers, my question was to show that the sum of $4n$ terms of the former series exceeded the sum of n terms of the latter series by an amount which constantly diminished as n increased and vanished as n became infinite. I asked Ramanujan to let me know if this was true. He soon said it was. I asked him for his method. He gave it and I observed it did not require the use of the Euler Constant. When I told him that my method required the use of the Euler Constant, he observed that both the series were plain enough in their meaning and did not involve the idea of a logarithm or the Euler's Constant and therefore, intrinsically,

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the result should be capable of proof without the Euler Constant, a remark which impressed me as showing a broad out-look which we discussed further. I put Ramanujan other questions involving delicate points of convergence which I had come to know in correspondence with Prof. Hardy. Ramanujan was able to grasp them quickly. I then felt convinced that Ramanujan's abilities were of a high order and that the results in his note-books must be genuine work. In the end I asked Ramanujan to let me know whether there was anything I could do for him. He said he was badly in need of employment and suggested that I might put him as a teacher in one of the Elementary Schools belonging to the Taluk Board of which I was President. I told Ramanujan that it would be sacrilege on his talents to put him to teach in an Elementary Board School but that I had been thinking out if I could not be of help to him in a real manner.

The idea that had struck me was that I should try to get Ramanujan a University Research Scholarship. I devoted anxious thought as to how this was to be done. Ramanujan was a failed F. A. and how was he to get a scholarship for research, from the University? In the end, I wrote a letter to Mr. Seshu Aiyar, then at Madras, a letter written both for him and Mr. Narayana Aiyar, the Treasurer of our Society. I said in that letter that Ramanujan had extraordinary abilities in Mathematics though he was a failed F.A., and that a University Research Scholarship should be secured for him; that for this purpose, his abilities should be brought to the personal notice of every member of the Mathematical Board of Studies (I had then the honor to be on the Board), and, with our united support, we should make an impression on the Syndicate. I wrote also that, till a scholarship was secured, some job must be found for Ramanujan to live by in Madras; and that till he got a job, friends should maintain him somehow. I asked in particular that Ramanujan's merits should be promptly brought to the notice of Dewan Bahadur R. Ramachandra Rao. Such was the substance of my letter. Mr. Ramachandra Rao, our past President, within whose bosom there beats the heart of a

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true son of India, generously helped Ramanujan to remain in Madras at a time of pinch. My friend Mr. Narayana Aiyar removed the pinch by finding him a clerkship in the Port Trust Office of which he was Manager. The getting of a research scholarship for Ramanujan was, however, very difficult. But Sir Francis Spring, President of the Port Trust, and Dr. G. T. Walker, F.R.S., came to discover that there was a mathematical genius rotting in the Port Trust Office and, thanks to *their* intervention, the Research Scholarship, that I had anxiously hoped for was eventually secured for Ramanujan. After becoming a Research Scholar, Ramanujan became the architect of his own further advance by those first letters that he wrote to Prof. Hardy, giving some hundreds of his results. These led Prof. Hardy to realize that Ramanujan was a mathematician of a high order; and he warmly took the steps required to get Ramanujan to go over to England for study and made his genius world known. It is the duty of our Society to keep Ramanujan's memory ever fresh, and, coupled with it, the name of Prof. Hardy.

Our Society, having attained 18 years of age, is probably now in a self-conscious stage of its progress and it behoves us to see what we can do to further advance the objects of the Society. I would first advocate that each of our younger members should try to get into intimate touch with a few others and keep an active correspondence on matters mathematical which interest them. Our members are scattered over a large area and it is necessary that we should cultivate close touch, each with as many others as possible, through the post. I may give a bit of my own experience. Two years ago, Mr. M. Bhimasena Rao wrote to me his first letter, asking me to look into a paper which he was then contributing to our Conference of 1924. Since then our correspondence grew up and I have collected Mr. Bhimasena Rao's letters, received so far into 4 little volumes which are here before you. These volumes contain some of the most highly interesting work in Mathematics that I know of and show Mr. Bhimasena Rao to be a gifted geometer. Mr. Bhimasena Rao has with him two volumes into which he has

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collected the letters I wrote to him. The principal subject of our study has been a generalization of the pedal circle theory. By means of it we have been able to extend the theory of pedal and contact circles *in plano* to a spherical triangle. I think I may try to give a general idea of the subject.

Nearly a hundred years ago Feuerbach discovered the theorem that the nine points circle of a triangle touched the inscribed and escribed circles. The beauty of this theorem has attracted many to try and find out proofs, and several proofs have been given. A notable advance was made by Dr. Hart some 40 years later when he found that the inscribed and escribed circles of a spherical triangle were all touched by another circle. This is known as Dr. Hart's circle. Some 25 years later, about the nineties of the last century, M'Cay discovered an extension of Feuerbach's theorem. It is to the effect that if the join of a pair of isogonal conjugates pass through the circum-centre their pedal circle touches the nine points circle. In 1896 I discovered an extension of M'Cay's Theorem, forming so to say, an extension of the second order of Feuerbach's Theorem and published it in the proceedings of the Edinburgh Mathematical Society. In 1901 I made a further order. I was intending to write a paper about it, but it never came about. In 1906 I published a case of it, forming an extension of Feuerbach's Theorem of the third order, as a question in the *Educational Times*. In 1907 I published, also as a question in the *Educational Times*, another case deduced from my theorem of 1901, which forms an extension of the second order of Feuerbach's Theorem. About 1910, Mr. Bhimasena Rao made his discovery of a new circle connected with a pair of isogonal conjugates which he called the contact circle. He showed that the contact circle of a pair of isogonal conjugates touched the nine-points circle if their join passed through the Symmedian point. This is an interesting extension of Feuerbach's Theorem, analogous to M'Cay's. Mr. Bhimasena Rao also discovered the theorem that the pedal circle of a point P touched the nine-points circle if the sum of the angles PAB, PBC, PCA was equal to one right angle. Mr.

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Bhimasena Rao afterwards found that this theorem was anticipated by Mr. C. E. Youngman. In 1917 I gave an extension of this theorem, namely, the pedal circle of any point P cut the nine point circle of ABC at an angle equal to the complement of the sum of the angles PAB, PBC, PCA. In this way several extensions of Feuerbach's Theorem, *in plano*, have been discovered. But it does not appear that any similar extensions of Dr. Hart's theorem on the sphere have been found out, though it is now some 60 years since Dr. Hart made his discovery. In our generalized pedal circle theory, we have found that it is possible to define 'the pedal circle,' as well as 'the contact circle', with respect to any pair of isogonal conjugates in a spherical triangle, in such a way that we have several analogous extensions of the property of Dr. Hart's circle. Mr. Bhimasena Rao has worked up the extension to the sphere, of my third order extension *in plano* in a very able manner; and we are now standing confronted by the question of extending to the sphere my fourth order extension *in plano*.

Mr. Bhimasena Rao who is a son of the Mysore soil is holding a small place in the Educational service of his State. When I think of his great abilities I am put in mind of Ramanujan as a clerk in the Port Trust Office. May I make an appeal to His Highness the Maharaja of Mysore, who has sent us a gracious message to-day, that Mr. Bhimasena Rao may be placed in a better position to make his best contributions to Mathematics? Is it necessary, Sir, that I should appeal to His Highness, is it not sufficient if I appeal to you, the learned Vice-Chancellor of the Mysore University, to give this matter your kind consideration?

The next point that I wish to place before our members, is now that our Society has grown strong during 18 years, we should try to see that not only certain branches of Mathematics, but the whole field, should be cultivated by our members, based on the principle of study in close association, that I have spoken of. The whole field is recognizable as falling into so many divisions, and sub-divisions, which are not water-tight compartments but have vital connection with one another. I should like to place before members the idea that there should be a few of us studying each of these divisions or fields. Taking any one of these fields the pro-

gress that can be made in its study will be generally as follows. First one must be eager to enter the field. At this stage he is a mere *entrant*, an *embryo*. Then, by study, he develops into a *learner*. After this stage, with some enlightenment, he becomes an *interpreter* of the subject. In this stage he sees that many of the things learnt are not essential, and are mere cobwebs in the mind. He sweeps them out and takes hold of the essential. Finally, one rises to the stage of a *master*. Here he brings a fresh light of his own into the subject, becomes a discoverer, and extends the scope of the field. We can rarely rise to be masters, but we can all be learners, and possibly rise to be interpreters, by close study. All these stages of progress are symbolized by the letters of the word MILE. M is the stage of the master ; I the stage of the interpreter ; L the stage of the learner ; and E the stage of the entrant, or embryo in the subject. Applying this philosophy, in order to cultivate any particular branch of Mathematics in our Society, I would like to catch some of you, younger members of the Society, as entrants, or embryos, and put you into a compartment, stock around you all the books on the subject, find a senior member, if possible, to serve you as interpreter, and find you also a master, if possible. I want to see created in our Society many such groups of interested members, of all grades of advance, compact little groups, call them Gurukulas if you like, to study the different fields of Mathematics, so that none is neglected in our Society. Success can only be slowly realized, but we can make an effort from now to secure our progress in all branches, so to say, by MILE and MILE, that is, by means of such compact groups consisting of masters, interpreters, learners and entrants. It may be said we have not got masters, or interpreters, for many subjects. But the Committee have power to appoint Honorary Members and we can cast about the wide world for finding such men to assist us.

May we discuss Prof. Eddington as an illustration of the above theory of progress? The subject of Relativity is itself new and so, we can be sure, that, not many years ago, he was but an entrant, in the field. This eager learner soon made his own the wealth of thought created by Einstein and Minkowski, De Sitter and Weyl. He saw all this wealth in clear light, and became an interpreter ; at which stage he has given the world that fascinating exposition

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of the subject, contained in his "Space, Time and Gravitation." From this stage he has had further illumination, become a master, and reached a deeper synthesis of the subject, an advance upon Weyl's theory. It is a most difficult branch of Mathematics, but, it is necessary that some of our members should try to get into its mysteries. There *are* members gifted with an insight into the subject, Mr. S. V. Ramamurthi, for example; and it gives me great hope that even this abstruse subject can be successfully cultivated in India by a band of our members

While we should organise for the study of all branches of Mathematics in some such manner, the Journal of our Society must develop also. At present, in our Journal, different classes of matter, the Higher and the Elementary, are put in together: and they both experience a discomfort in thus travelling together. I think we should early separate our Journal into an Advanced part and an Elementary part. Neither of these should be sacrificed for the other. The former should be reserved for original work and for notes relating to Advanced Mathematics. The latter should be devoted to Notes, Reviews, Questions and Solutions and should be a journal for entrants, learners and interpreters, in the better known fields of Mathematics forming the subjects of study in Colleges. In this way our Journal will become more effective in its purpose and more appealing to all classes of our members.

Then comes the big question of the expansion of our Library. Our funds are sufficient for every purpose, but the Library. I think we may proceed to improve our Library as follows. We have the princely gift of Rs. 1,000 from Mr. Balak Ram. We should ear-mark the amount for a shelf in Mr. Balak Ram's name. The shelf may be devoted to books in a few subjects, say, Quaternions, Differential Geometry, Relativity, and Statistics which, we guess, have been specially attractive to the donor. Every book in the shelf should have a label showing the particular shelf it belongs to and contain a photogravure of its donor. We should form a shelf in the name of Ramanujan and put into it all the books relating to the fields traversed by him, Theory of Numbers, Theory of Modular Equations, and so on. The Government of Mysore are making a liberal annual grant to the Indian Institute of Science. We should appeal to them to make us also a small

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gift annually. In that case we can start one or more shelves in the name of His Highness the Maharaja, every book in them showing by its label that it is a gift from the Mysore State and bearing the figure of its gracious Ruler.

The position of our Society, as regards the Library, reminds me of a recent experience of mine. I went into a village one morning and saw a middle-aged woman drawing water from a well. She had some 15 pots, placed around her feet, on the platform, and was engaged in filling them. I asked the woman what she wanted so much water for. She said she was keeping a *tsalivendra* close by. *Tsalivendra* in Telugu means a place where water is supplied to people, as a charitable act, to quench thirst. I asked her if there was need for so much water for the *tsalivendra*. She said, "Not 15 pots, Sir, but even 150 will not suffice on the *shandy* days." Then I asked her who was the good man who was doing the charity. She understood my mistake and said meekly that she was doing it all herself. Then suddenly, as if she were wrong and I were right, she said, "Sir, I said wrongly, the good man who is doing this charity is the Lord Venkateswara of yonder temple, and I am doing it in His service." I praised the good woman and said she must be feeling very happy with the work. She admitted it was a happiness to her. When I was about to go, the good woman said she wanted to make a request and asked me to kindly look into the well. I looked in and saw that the water lay very deep below and told the woman that it must be hard to draw water from that depth. The woman said she did not mind the hard work and, to explain her point, she let down her bucket into the well and showed me that it can only half fill. She expressed her distress that the hot weather was coming and even this little water would go away. She asked me that the well should be deepened. Sir, our Society is like that distressed woman, who was willing to work in God's service. And as she appealed to me, I wish to appeal to States and Governments, and all the wealthy in the land, to help us to get a good Library. I appeal to them, to keep the Well of Knowledge full for us, so that we may draw and distribute, and serve to strengthen our national life; and that we may hold the banner of Mathematics aloft, as the Motherland marches to glory with the rest of the world.