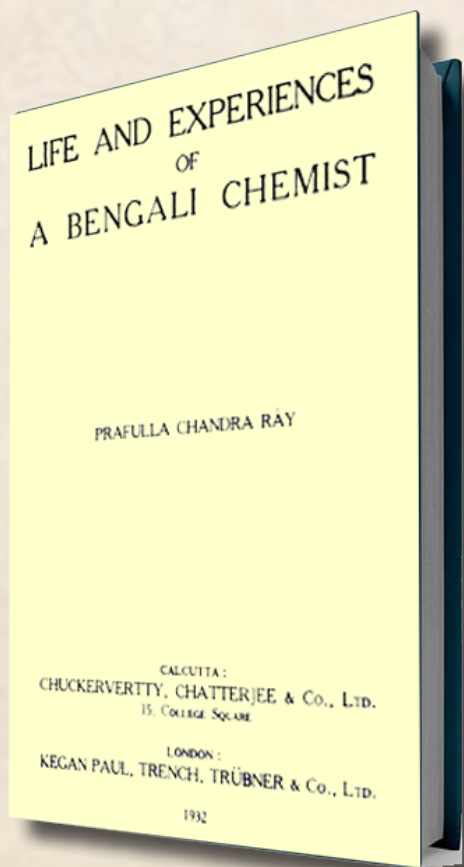


Excerpts from Life And Experiences of A Bengali Chemist

By Prafulla Chandra Ray

DAWN OF A NEW ERA – ORIGINAL SCIENTIFIC RESEARCHES IN BENGAL – INDIANS DEBARRED FROM HIGHER EDUCATIONAL SERVICES.

Jagadis Chandra Bose, after graduating as an ordinary B.A. of the Calcutta University, had been sent by his father to Cambridge to complete his education at the great British seat of learning in 1880. He had the advantage of sitting there at the feet of Lord Rayleigh and of imbibing the traditions of the seminaries on the banks of the Cam. On his return to Calcutta in 1885 he was appointed a junior professor of Physics, his senior colleague being Sir John Eliot. It is a remarkable fact that for twelve years in succession the world knew nothing about him; his students of course highly appreciated the experiments with which his lectures were illustrated. He was, however, by no means idle during this time. His fertile and inventive genius was called into play and he developed wonderful originality in connection with the Herzian Waves. In 1895 he read a paper before the Asiatic Society of Bengal entitled The Polarisation of Electric Ray by a Crystal. It appears that he had not then realised the importance of the new line of research he had hit upon. Copies of the reprints of the paper were sent to Lord Rayleigh and Lord Kelvin. Both these great masters of physical science at once appreciated the significance of Bose's work, the former had them reprinted in the Electrician, and the latter wrote expressing his wonder and admiration. At this time I also chanced to hit upon mercurous nitrite, the first paper on which was communicated to the Asiatic Society of Bengal, 1895.



Bose, as I said above, had discovered a practically unexplored field and as is the case with a pioneer, he reaped a rich and abundant harvest. One paper followed another in rapid succession and most of these appeared in the Proceedings of the Royal Society of London. His reputation was now well-established. The Government of Bengal sent him on deputation to Europe and when at the meeting of the British Association of 1897 he exhibited his miniature apparatus constructed in his own laboratory at the Presidency College by means of which he determined the physical properties of electric waves, e.g. the index of refraction etc., he almost took the scientific world by surprise. It would be out of place here to follow in detail the subsequent directions of Bose's work on plant physiology, nor do I feel competent to do justice to his epoch-making researches on response in the non-living. I am concerned here with only one aspect – the world-wide recognition of the Indian scientist's contributions, and the moral affect it produced on the impressionable minds of the youth of Bengal.

In a free country the talents of a young man find ample scope in almost every walk of life, but in a dependency and among a subject people the paths of an ambitious career are all but closed to him. There is no open door for

him in the army and the navy. The only field in which the Bengali brain hitherto found full play was the legal profession. Forensic talents of a brilliant order had been developed in connection with this branch. The great-grandsons of those who had founded the modern school of logic at Nadia, and carried to perfection the dialectic skill, took to law as kindly as fish does to water. Logic chopping naturally gave place to legal quibbling. The quick-witted sons of the Gangetic delta found in the law courts which sprang up like mushrooms, a congenial occupation. All the best talents were diverted to it. Although the bar soon became overcrowded and starvation stared the junior men in the face, yet the lucky few at the top of the profession could always command high fees and hence the attraction for it. Some twenty years ago in my Bengali Brain and its Misuse I sounded the note of alarm and pointed out how the youth of Bengal was seeking economic ruin for himself and his fair province by the insane pursuit of one and the same profession to the neglect of several others. An eminent lawyer and political leader of note once bitterly exclaimed from his place in the Bengal Council that the law had proved to be the grave of many a promising career.

It was at this critical period in the history of the intellectual development of Bengal that Bose's achievements found full recognition in the world of science. Its moral effect on the youth of Bengal was at first slow, but none the less most pronounced. A career in the Education department was hitherto almost shunned by young aspirants. As stated before the superior branch in the service was virtually a close preserve for Europeans, barely one or two Indians, distinguished graduates of British Universities, after the most frantic efforts had found admission into it. The educational Service had now been reorganised and a separate, but subordinate, branch was created which was meant for Indians; the higher branch, the Indian Educational Service, being practically reserved for Europeans. The poor prospects thus held out to Indians had the effect of scaring away brilliant and meritorious men. I may cite here one instance.

Asutosh Mukerji because of his brilliant academic career and early indications of mathematical talent was sent for by Sir Alfred Croft, Director of Public Instruction, who offered him a post as assistant professor, carrying an initial salary of rupees two hundred and fifty per month. This was the maximum amount which the local Government was entitled to sanction. Had he in a moment of weakness or indecision accepted the offer it would have been the marring of his career. In the ordinary course he would have risen to the highest grade of the Provincial service, practically earmarked for Indians, with a pay of rupees seven hundred to eight hundred, after twenty five years' service. But the remuneration is the least part in consideration. As a government servant he would have been gagged from the very beginning and his talents would have found very little scope. That manly and sturdy independence which characterised his later career would have been nipped in the bud. The comparative freedom from bureaucratic withering influence which our university enjoys would have been reserved as a dream of the future and, not to speak of the College of Science, post-graduate research work, which is the peculiar characteristic of the Calcutta University would not have flourished.

At the Twelfth Sitting of the Indian National Congress held in Calcutta, December 1896, the late A. M. Bose was entrusted with the Resolution namely "that this Congress hereby records its protest against the Scheme of re-organization of the Educational Service, which has just received the sanction of the Secretary of the State, as being calculated to exclude natives of India". In the course of his masterly speech the orator observes:

"And Sir, let me tell the authors of this Scheme that as regards the inauguration of this backward policy in the great Educational Service of the country, they have selected a very inopportune moment indeed. Why Sir, I should have thought that if the gracious words of Her Gracious Majesty's Proclamation, which is the Charter for our rights, are to be belittled, if those solemn words still ring in our ears which granted equal rights and equal privileges to all classes of Her subjects, irrespective of race, colour or creed, are to be violated and to be departed from, then the task would be attempted not in the sixtieth year of Her Majesty's reign which we in India are preparing to celebrate, and the coming of which has filled with joy and rejoicing the mind of all Her subjects in the vast Indian Empire. Let them not select this present year of Her Majesty's beneficent and benignant rule for initiating this retrograde policy. There is, Sir, another reason also which emboldens me to say that

they have been specially unhappy in the selection of their time. Why Sir, we know the London Times has only the other day borne testimony to the fact that the year 1896 is an epoch-making year as regards the intellectual advance of India. We know that the grand researches of an Indian Professor in the field of invisible light, in the sublime and giddy heights of ethereal vibration, have led to discoveries which have filled the mind of Lord Kelvin, the highest authority which England has produced, literally with wonder and admiration. We have heard of the great and wonderful feat that another countryman of ours has achieved in the last great competition for the Indian Civil Service. We know of the discoveries which also in the present year of grace have rewarded the genius and the patient toils of another countryman of ours in the realm of Chemical research. The present year then, when India has shown that she has not forgotten the traditions of her glorious past, when the Indian mind has awakened to the consciousness of the great destiny before it, and not only awakened to that consciousness, but has taken the first practical steps towards obtaining its recognition from the generous scholars of the West, surely is not the time or the season for ushering into existence a policy of this retrograde character. We shall not, so far as in us lies, permit, without protest at any rate, the inauguration of such a policy.

It is, gentlemen, rather late in the day for this unhappy policy, for this creation of a new crime of colour, for this infringement of the gracious words of Her Majesty's Proclamation.

Gentlemen, there is one other observation I have to make, and that is this. If I have dwelt on the nature of this policy, on what I may venture to describe, with all respect, as its audaciously retrograde and un-English character, if I have dwelt upon that, it is only right that I should draw your attention to a small word that occurs in the sentence I have placed before you. That sentence, as you know, is 'In future natives of India who are desirous of entering the Education Department will usually be appointed in India, and to the Provincial Service.' Perhaps the framers of the Resolution thought that there was a great deal of virtue in that saving clause 'usually'. But I will venture to prophesy, I will undertake to say, what the result of that 'usually' will be. Not that the mantle of prophecy has fallen upon me, or that the gift of the seer has been vouchsafed to me. But, gentlemen, the past is a guide to the future and lightens up the dark places of much that is yet to be. Let us consult that guide. As I have said, my facts specially refer to Bengal, and this is what we find in that Province at the present time. I will not attempt to carry the meeting back with me to distant days. But confining our view to the time which has elapsed since the birth of the Congress, what I find is this:— that within the last twelve years there have been six appointments of Indian gentlemen educated in England, and educated successfully so far as all the tests there are concerned. These six gentlemen who have been appointed to the Education Department in these years, have all of them been appointed in India. Not that they did not try to get appointed in England No, gentlemen, after taking their degrees in the great English and Scotch Universities, after having won all their high distinctions – distinctions not less high than those of their English brethren in the Service, in some cases perhaps even higher – they tried their very best, they made what I may almost describe as frantic efforts at the India Office to get an appointment from England. But all their efforts were in vain. After waiting and waiting, and after heartrending suspense, they were told that they must ship themselves off, as soon as they could, to India for the Government to appoint them there. Therefore, although there is that phrase 'usually', you may take it that that will happen in the future, which has in these years happened in the past; and happened too so far as we are aware, in the absence of this retrograde clause now authoritatively laid down in the Resolution For all practical purposes you may take it, gentlemen, that 'usually' in the sentence means 'invariably' and the door is now closed against the entrance of our countrymen into the higher branch of the Service.

I cannot venture to detain the meeting any further. I have already passed my allotted limit of time. I will therefore conclude with only one more remark. There is no cause which can be dearer to the members of the Congress than the cause of education. You, gentlemen, are the fruits of that education, of that great awakening of the national mind to which I have referred. And can it possibly be that you will for a moment neglect to do all that you can, all that lies in your power – with the help of our friends in England and in India, with the help of all those, wherever they may be, who look forward to human progress as a thing to be wished for, as a thing to be fought for – to see that your children are not ostracised from those higher branches of the Service with their higher opportunities of educational work and educational progress, to which, up to now, they have been appointed. There are no considerations such as those which are sometimes supposed, be it

rightly or be it wrongly, to apply to appointments in the Indian Civil Service, which can have any application to those in the Educational Service of the country. What possible shadow of a shade of justification can there then be for this enlarged and expanded edition of the policy of exclusion? Gentlemen, I believe in the intellect of India. I believe the fire that burned so bright centuries ago, has not wholly died out. I believe there are sparks, aye, more than sparks, that still exist, and only require the gentle breeze of sympathetic help, of judicious organization and kindly care, to burst forth once again into that glorious fire which in the past illumined not only this great continent, but shed its lustre over other lands – into that intellectual life which achieved wonders in the field of literature and arts, in the field of mathematics and philosophy, which produced works which are even now the admiration and the wonder of the world. Fight with redoubled vigour in that cause, and then we may depend upon it that in the Providence of God, righteousness and justice shall triumph, and this attempt to fix on the brows of the people of this ancient land a new stigma and a new disability shall fail as it deserves to fail”.

Here I must pause for a moment to narrate an incident which has had a far-reaching consequence on my future career. The long looked-for “Reorganisation Scheme” had at last received the sanction of the Secretary of State for India and I was placed in the proper grade in the cadre. As a comparatively senior officer with superior qualifications I was asked to leave my College – the scene of all my activities – and join Rajshahi College as its Principal. To many a Principalship of a first grade college which involves executive powder as also free commodious residential quarters is regarded as a coveted prize post. The charm of wielding executive authority is so innate in human nature that many a man of literary and scientific tastes and activities has been known to ruin his career and rust away. In those days, however, the moffusil colleges were ill-equipped and offered but poor facilities for research. Moreover, outside the metropolis there was no such thing as an intellectual atmosphere and as I was collecting materials for my Hindu Chemistry the Library of the Asiatic Society of Bengal was indispensable. But the most vital objection was my aversion to executive work. The basketful of correspondence with the clearing of files as also attendance at Committee meetings involves such a heavy taxation on time and energies that very little leisure is left for research work and study. I therefore respectfully represented to the Director of Public Instruction, Dr. Martin, my unwillingness to leave Presidency College, where as a member of the Provincial Service I would gladly serve as a junior Professor. My representation received a sympathetic response as within a few days the following notification appeared in the Calcutta Gazette.

“Dr. Martin thinks that this proposal, if sanctioned, will probably lead to embarrassing consequence. ***** He sent for Dr. P. C. Ray to tell him that he might possibly be called upon

to leave the Presidency College. The intelligence was received with consternation, and Dr. Martin knowing that Dr. Ray is a distinguished Chemist engaged in original research in the Presidency College, after weighing the pros and cons, decided that the idea ought to be abandoned. ***** The Lieutenant-Governor agrees in thinking that no hard-and-fast rule can be laid down in the case of several of the officers referred to.” – Govt. Resolution No. 1244, dated 26-3-1897.

The flower of our youth as I said above was looking to the legal profession for the fulfilment of their aspiration, but the bar was already getting overcrowded and the chances of success in it were precarious. Although from the worldly point of view the Education department did not open up gorgeous vistas, it was now proved that one could make discoveries by steadfast devotion to a branch of science and thereby earn fame. ♦



Prafulla Chandra with his colleagues at the Calcutta University. Seated at the extreme right is Satyendra Nath Bose, and standing to the extreme left is Meghnad Saha