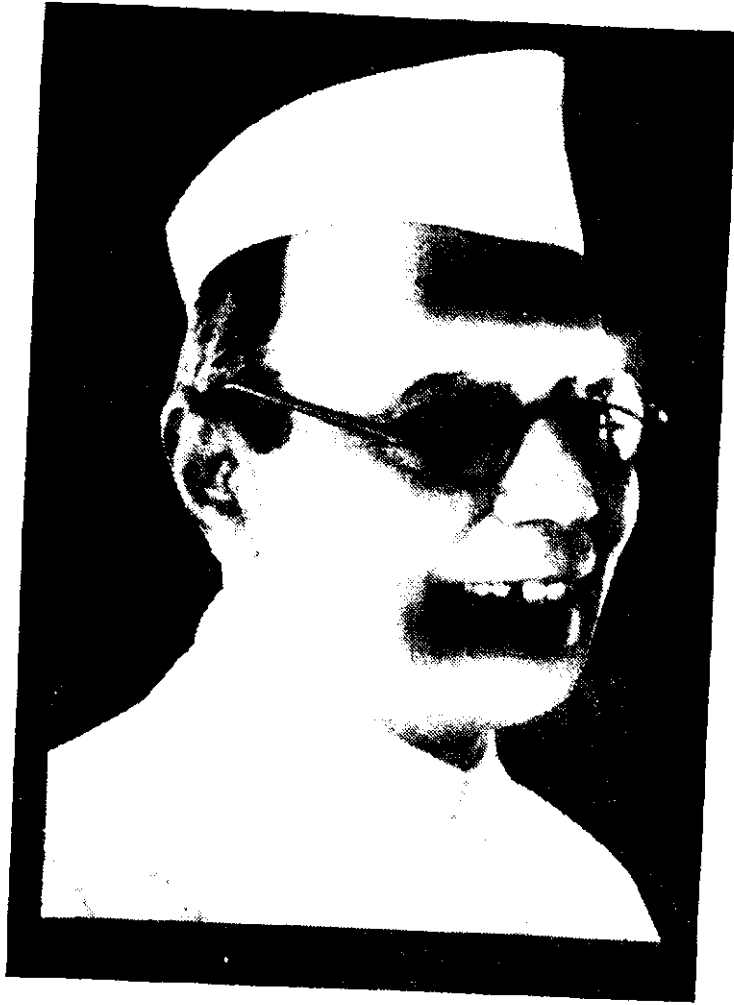


ASPECTS OF EDUCATION



B. G. KHER

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By

B. G. KHER

PREMIER AND MINISTER OF EDUCATION

*[Being a selection of speeches and addresses delivered at various
educational institutions, etc. in India during the year 1947]*

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How Can We Meet The Challenge To Democracy?

ADDRESS TO CENTRAL EDUCATION ADVISORY BOARD

[Text of the speech delivered while welcoming members of the Central Education Advisory Board at its 13th annual meeting in Bombay on January 9].

“It is a genuine pleasure to me to extend to you on behalf of my Government a hearty welcome to Bombay for your 13th meeting.

“It was, indeed, fortunate for this Province that your Board accepted its invitation to hold its Annual Meeting here. Bombay is the First City of India and it is in this City also that we find the early beginnings of modern education in India. I am sure you will find much here that is new in the field of education and that the Government here will get the benefit of your views and suggestions in its new experiments.

“Your last meeting was held at Mysore and I am sure you must be carrying happy recollections of that beautiful city as I do, It is not too much to say, I believe, that to be in and to go about Mysore is itself an educative experience. I am afraid you are going to miss several of the amenities and conveniences which Mysore could offer you. Indeed, I am conscious of some of the inconveniences to which you might be put in this highly congested City, but if a warm and cordial welcome from this Government could make up the loss, I assure you, you have it in the amplest measure.

CHALLENGE CONFRONTING NATIONS

“I hope you will all agree with me if I say that a very bitter and sharp challenge confronts all those nations today, the life and Government of whose people are based on essentially democratic values. If we are to meet this challenge which confronts us to-day, a challenge to our whole civilisation, of which the recent war was the symbol and sad culmination, it is equally true that we will have to meet it with all the energy at our command.

“The proper and only way to meet this challenge is so to fashion our social and national institutions, including our educational system, that they create those cultural values, on the realisation of which we have all

set our heart. Our educational system must be so framed as to aid in the task of creating these values. This can be done only if those concerned with education in this country as in others face this task with knowledge, faith and will. Our educational system must provide for the development and utilisation of all the latent energy in the children and the young people of this country.

EQUALITY OF OPPORTUNITY

“This, of necessity, implies that there must be a genuine equality of educational opportunities for all. If we are genuine in our support of these principles, as I am sure we all are, we must bring into existence an educational system which will enable us to create all those values for which we are striving to-day, but which will not, at the same time, be an impediment in the way of our progress.

“In the Province of Bombay, as you are probably aware, when the Congress Ministry was last in office, we brought into existence a number of Boards dealing separately with primary education, secondary education, physical education, adult education, etc. It was necessary to co-ordinate the activities of these Boards, but the task was left unfinished as we left office in 1939. We have come back to our task and have now formed a Provincial Council of Education on which are represented the respective chairmen of the several Boards with the Minister of Education as Chairman of this Council. The Council will meet every quarter and assist the Minister of Education in all aspects of educational development. I look forward to the useful assistance this Council will give me with great hopes.

“I need hardly dilate here on the importance of physical education. You are all aware of its vital necessity. The very first step which we took when we came to office in 1937 was to appoint a Physical Education Committee and to give effect to its recommendations, chief among which was the starting of an institution for physical training. This was started 8 years ago and I am happy to say that it has continued well and has had a very enthusiastic response from the public.

“The Government of Bombay lately appointed another Physical Education Committee, which has just submitted its report. You all probably have been supplied already with copies of the said report. You will no doubt visit the Institute for Physical Training at Khandivlee during your stay here.

“Basic Education was also one of the subjects which the last Congress Ministry had dealt with. Here, in Bombay, we have a number of Basic

Schools and also about 150 Schools with agriculture as the basic craft. We are planning for the introduction of Basic Education in all the schools and, as a preliminary step, we propose to start soon with craft training in all Primary Schools. During our discussions here, we will no doubt consider the problems which arise in the introduction of the Basic method on a wide scale.

PROBLEM OF ADULT LITERACY

“Adult Education likewise was one of the important subjects and the last Congress Ministry did what it could to start this movement. The Bombay City Adult Education Committee was then brought into existence and has already made about one lakh of illiterate adults literate. Government has now sanctioned a complete 10 years' scheme for adult literacy in the City of Bombay. The problem of adult literacy in the rural areas is of necessity to be worked out on different lines and we will soon address ourselves to that work in earnest.

“India has now joined the great democracies of the world. She occupies to-day a very important position in the world. I am sure you all are proud of our achievement at the United Nations Organisation and of the representatives of India who were responsible for our success. The future for us is very bright but we shall all have to work for it to the last ounce of energy in each of us. The system of education which we evolve here must necessarily be of vital importance to us in our work, and our action in the field of education will have to be brisk as well as vigorous.

A RARE COMBINATION

“It is a matter of great encouragement and pride that we have as our Chairman the Hon'ble Mr. C. Rajagopalachariar. It is rare to find a combination of a powerful intellect and a genius for practical working. We have this rare combination in him. I am sure his sharp intellect, wide experience and ability to work out his ideas will aid us in our deliberations and in the achievement of our goal.

“Now, let me once again thank you all for accepting our invitation and extend to you a warm welcome.

“I am very happy that His Excellency the Governor of Bombay, Sir John Colville, who has long experience of dealing with educational and other problems, has agreed to inaugurate this Conference. I shall now request him to do so.”

Education — A Preparation For Life

IMPORTANCE OF CHARACTER-TRAINING

[Convocation Address of the Madras University delivered on October 6].

“It is now over forty years since I attended a Convocation of the University of Bombay and the degree of Bachelor of Arts was conferred upon me. I do not remember what advice was given to me and by whom. I wonder if it would have made much difference to my life if I had remembered it. I wonder also whether what I am about to say here will make much difference to you, young ladies and gentlemen, who have assembled here in such large numbers to receive your degrees. I do remember, however, that the gown which I was privileged to wear for the first time and the pomp and ceremony of the occasion made a great impression on my mind and made me feel that I had become a grown-up, responsible and perhaps even an important person in society. When last month I received an invitation from His Excellency the Chancellor—cordially backed up by the Hon’ble Minister for Education—to come and speak to you to-day I felt it was my duty to come in your midst and help you all to feel that you are now grown up, responsible and important members of the society in which you find yourselves to-day.

“In these forty years, I need not tell you, the world has changed a great deal. For one thing, we seem to have forgotten almost completely the art of living together, while great progress has been made in the art of destroying life and property. The World Wars have devastated many of the States of Europe—mass destructions, mass expulsions, mass migrations seem to be the order of the day—and even in the slow-changing East, our motherland, India, has undergone a complete transformation. Surrounded as we are in Bombay by refugees and evacuees from the Provinces of Sind and the Punjab and other parts of the country from which thousands of human beings have been uprooted, robbed and exiled, it was really hard for me to make up my mind to get away even for a day or two as the complicated problems of finding shelter, food, solace and work for these unhappy people hardly left me time to think and yet for these very reasons I think it is necessary that you of the younger generation should study, analyse and take stock of the mess in which the world finds itself to-day, so that you could help to make it a little better and happier.

TRIBUTE TO MADRAS

“ I should like, at the outset, to pay tribute to this great Province which has made such a valuable contribution to the intellectual and cultural life of the country. The Madras University has produced some of the finest scholars, jurists, administrators and statesmen who have made their mark in every walk of national life, and you, who belong to this University, can well be proud of their great contributions in their respective fields. I often feel that the Madrasi mind must be gifted with special intellectual ability and a peculiar capacity for critical analysis which enables it to understand complicated problems clearly and to discuss them in a lucid and precise manner. If I am not mistaken, all the four founders of the principal schools of Vedanta lived, studied and flourished in this Southern Province. In this critical period of our national history when violent passions and prejudices have been unleashed, I think it is specially important for the Universities to foster this capacity for dispassionate thought so that we might be able to deal with our complex social and political problems in a cool and scientific manner. This makes me particularly appreciative of the contribution which your University and your Province have already made and are, I believe, destined to make to the future greatness of our country in an increasing measure.

“ I have had the opportunity of watching the progress of this University from strength to strength during the last few decades, and I have been greatly impressed with the gradual extension of the scope of its activities. In order to encourage higher teaching and research, it has established many well-organised departments under its direct control to deal with the various fields of knowledge.

“ Of these, special mention might perhaps be made of the Departments dealing with Indian History and Archaeology, Indian Philosophy, Music, Public Administration, Bio-Chemistry and Chemical Technology, whose cultural and technical importance cannot be overstressed. Your Oriental Research Institute, dealing with the various regional as well as classical languages, is another valuable contribution to the development of Indian culture. You have obviously realised the great truth that a University can become a living institution only when it embraces all the important subjects that come under the Humanities as well as the Sciences and provides an intellectual sanctuary where ‘ promising scholars may carry on co-operatively the work of higher studies and research intimately in touch with the pulsating currents of life but not be swayed aside by the whims and passions which move the unthinking multitude’. Theirs is the role of intellectual leadership in a world where critical thought is at a discount.

NEED FOR NEW IDEOLOGY

“I have no doubt that in the reconstruction of the educational system which is being attempted in all the Provinces, the Madras University will play an important role. May I take this opportunity of sharing with you some of my ideas regarding the principles and problems of this educational reconstruction to which the Bombay Government has been devoting a great deal of attention. I feel that, in order to preserve the fruits of our newly-won freedom and utilise the great opportunities which have been thus offered to us, it is necessary that we should try and create a new ideology in our people through a radically reorganised educational system. We have solemnly resolved in our Constituent Assembly to establish in our country a free, democratic and equalitarian society, and it is obvious that the establishment and maintenance of such a society throws a far greater responsibility on its members than any type of authoritarian society. This postulates the provision of genuine equality of opportunity for the children of all classes and communities in the field of education, so that they may have the fullest chance to develop their innate talents and capacities, which, after all, is the object of life and of education. In the past, there has been far too much waste of national talent, because we have not been able to provide adequate educational facilities for all the children of the nation. If, through the proper reorganisation of our educational system, we can cultivate the qualities of good fellowship and tolerance and also a sense of social responsibility, in short, the moral sense, we shall have laid the most stable foundation for the construction of a better social order. The development of true moral sense and judgment must be ‘the supreme goal of education because they give equilibrium to the individual. They make him a solid building stone of the social edifice’. As has been truly observed, the happiest and most useful men consist of a well-integrated whole of intellectual, moral and organic activities.

INFLUENCE OF FAMILY LIFE

“I am fully alive to the importance and influence of ‘familiar’ training to the individual. ‘In order to reach his full strength, the individual requires the relative isolation and the attention of the restricted social group consisting of the family. When he is only a unit in a school, he remains incomplete’. But I am now dealing only with formal educational institutions other than the family, whose importance to the life of the child cannot be replaced and must not be underrated.

“In so far as primary and secondary education in schools are concerned, it is necessary for us to bridge the gulf which exists to-day between education and life and to bring the two into closer co-ordination with each other. The chief significance, to my mind, of the scheme of Basic Education lies

in the fact that it brings the school into vital relationship with the life of the community and enables the child to acquire knowledge and skill through direct participation in significant activities and occupations carried on in the local community. This principle is one of general applicability and whether we are dealing with problems of primary or secondary education, we must hold steadfast to this sound educational policy. In this way school education will gain reality and value and students who pass out of our institutions will not feel like helpless strangers in an unknown world, but they will be able to share fruitfully and effectively in the life of the community.

RAISING STANDARD OF MASSES

“Further, it is necessary for us to bring all our resources to bear, in a careful and co-ordinated manner, on the complex and manifold problems of Adult Education. We have been far too apt in the past to let our masses lead poor, barren and limited lives and have not made sufficient provision for enriching their life with wide cultural and intellectual interests. I am not oblivious of the fact that one of the most urgent problems of national reconstruction is the improvement of the economic condition of the people. But, to my way of thinking, the raising of the economic and intellectual standards presents a single integrated problem, and unless we work simultaneously on both fronts, we cannot gain our objective. I am confident that, if we can utilise the great man-power that is available in our colleges and Universities for this purpose and if we exploit the powerful modern media of mass communication like the radio, the cinema, the theatre and other similar agencies, we can solve this difficult problem satisfactorily. That is why I was gratified to learn, a short while ago, that the Madras University has decided to make it compulsory for all students of the University to put in a year of social service in rural areas before they are given their degrees. I shall watch with interest the implementation of this idea and I hope that other Provinces will follow your excellent example and train students in practical citizenship and social service.

“I have always been of the opinion that it is not enough for a student to possess intellectual ability and shine in the class-room or the examination hall. It is even more necessary that he should display those social and moral qualities which are the hall-mark of men of true culture and humanity. I am reminded of a sentence that occurs in the *Taittiriya Upanishad* which puts this point tersely in the following words: ‘Let the student who comes for instruction be a *good man*; let him be diligent in his studies, disciplined, strong of body and firm of mind’. Let me assure you that all these qualities can develop best not in the academic seclusion of the class room but through actual participation in socially useful and worthwhile activities.

LEADING "THE GOOD LIFE"

"In so far as the specific objectives of University education are concerned, I feel that special attention should be devoted to the following factors : Firstly, it should aim at the harmonious development of all the powers of the individual—physical, intellectual, social and moral—so that he might be able to lead *the good life* as a useful and co-operative member of the community. This implies that he should be a man of culture, who would not sacrifice for the pursuit of a single narrow interest his breadth of outlook, his intellectual zest and curiosity and his capacity to appreciate and assimilate the best that has been written and achieved in the domain of Art, Literature and Science.

"Secondly, Universities must dedicate themselves to educating young men and women into the duties of democratic citizenship and develop in them the qualities of discipline, responsibility and co-operation without which the social organism cannot be properly cemented. I am deeply pained to observe the general lack of discipline, a disinclination to do hard work and to live a hard life as also the desire for premature leadership which the modern student world exhibits. See what is happening in the United Provinces. Unless we can quicken the social conscience of students and make them more mindful of their duties than of their rights, there is a danger that the conflicts and dissensions, which disfigure our national life to-day, may gain greater momentum and the freedom that we have achieved with so much labour and sacrifice may be jeopardised. It is, however, not enough to make the student a good citizen of his own country. In the present set-up of the world, all the nations of the world have become so closely inter-dependent that our national welfare is inextricably bound up with the welfare of the rest of the world. Therefore, a good Indian must also be a good *citizen of the world* and he should have the capacity to order his loyalties in an intelligent and reasonable manner. While the development of this international outlook is essential amongst all the peoples of the world, it is specially the privilege of those who have received higher education to make it an integral part of their intellectual and emotional equipment so that when they are called upon to assume leadership they would be able to give the right direction to our national policies.

TACKLING INDUSTRIAL PROBLEMS

"Thirdly, a modern University has also to play an important role in developing vocational, professional and technical efficiency, thereby raising the standard of living and of national wealth in the country. While I would not be prepared to sacrifice the wider cultural objectives of University education for any consideration whatever, I realise keenly that, in a country like India, which has vast but undeveloped natural resources and where the

standard of living is so deplorably low, it is essential that there should be a planned and well co-ordinated application of modern scientific ideas to our economic and industrial problems. The older methods, which relied only on traditional skill are entirely inadequate to meet the present situation and we cannot ensure a reasonable standard of material life for our rapidly growing population unless the great power that science has placed at our disposal is pressed into the service of our productive activity. I do not advocate rapid mechanization and industrialisation, which (as Lewis Mumford has pointed out in his excellent book, "Technics and Civilisation") inevitably lead to militarisation and war, but a well thought-out industrial and economic plan which will increase our prosperity without impairing our ideals. 'With a change in ideals from material conquest, wealth and power to life, culture and expression, the machine, like the menial, with a new and more confident master, will fall back into its proper place, i.e., become our servant, not our tyrant. This change will be accompanied by a qualitative change in interest : in general, a change from mechanical interest to vital and psυχical and social interests.'

" This reference to the application of Science brings me, by a natural association of ideas, to what I regard as the most important and most crucial problem of our time, namely, the psychological and ethical conditions under which science can be utilised to enrich our life with greater significance. It appears to me that the most signal failure of modern education lies in its inability to give the proper orientation to our ideals, attitudes and emotions which ultimately determine our conduct. It has made no conscious and well-co-ordinated effort to direct them into proper channels, with the result that the main springs that motivate the life of adolescents and adults have been neglected and there is no assurance that those who receive this education will be strong enough morally and intellectually to meet the challenge of the Age.

CHARACTER-BUILDING

" The greatest need in modern India to-day is the development of character in such a way that students will learn to *conduct* themselves nobly and decently in all their social relationships and to choose those modes of behaviour which are in harmony with the ideals of human dignity. In stressing this aspect, I am anxious to draw your attention pointedly to the fact that the chief object of general education is neither the increase of knowledge nor of skill nor even the attainment of what may be described as 'passive' virtue. It is rather to enable people to do better, to *behave* better, to use their increasing knowledge and skill in the promotion of the common good. Today, we know far more than our ancestors did and we possess infinitely greater power than they ever did. But, if I may repeat a well-known but imperfectly appreciated truism, our moral standards and

our social conscience have failed to keep pace with our growing scientific knowledge and our technical advance. The result is the great disparity between what man *can* do to fill his life with order and happiness and beauty and what he has *actually* done to make it dull and miserable, frustrated and unsafe.

“Every increase in scientific power and control enables man to dominate the destiny of more and more of his fellowmen, to exploit not only the resources of nature but also the labour and the lives of his fellows for his own selfish purposes. This constitutes a great danger to the welfare of the world, for if education fails to quicken social conscience and strengthen the sense of human solidarity, destruction and exploitation, rather than co-operation and service, will become the order of the day.

INDUSTRIAL REVOLUTION AND AFTER

“The spectacular development of the Atom Bomb, which administered an unparalleled shock to the mind of man, is a culmination of the process that we have been witnessing for centuries, particularly since the application of science to industrial processes which heralded the great Industrial Revolution. But even the Atom Bomb, with its imminent threat to wipe out human civilization, has failed to awaken us to the acuteness of the danger, and we are faced with the sorry spectacle of the world which I described to you at the beginning of my Address. Unless the incalculable power that man has gained is directed by an intelligent social vision, unless there is a humanistic application of scientific knowledge, to use Aldous Huxley’s expression, or, in other words, it is consciously employed to make life more peaceful, more humane, more attractive for the common man, I am afraid we shall become victims of our own uncontrolled power lust and be unable to evade the doom that stares us in the face.

AIMS OF SCIENCE

“This will be a great pity, indeed, for, today—for the *first* time in the chequered career of humanity—we have the technical skill and the resources to build up a culture and a civilization to ensure the *good life*, not for certain groups and classes, but for all the peoples of the world. Science has laid all its gifts at our feet; it has also presented us with its greatest challenge. Shall we have the vision and the human understanding to exploit these great gifts for the good of man? When the question is posed in this manner you can see that essentially and ultimately it is an educational question, the problem whether and how the emotions, the attitudes and the reactions of men and women can be guided into channels which are approved by reason and commended by social justice. It also involves the crucial problem of what is to be the controlling authority over human

behaviour, both individually and collectively. Is it to be some external arbitrary authority imposing its will by force, as has usually been the case in the past, or the unpredictable directive of blind passions like greed and jealousy and selfishness ?

“ If that were to happen, human life will lack all dignity and its moral standard would not be superior to that of the beasts! It is the privilege of education to strive to substitute for these unenlightened forces the constructive power of intelligence guided by socially worthy purposes. In the words of John Dewey : ‘ The substitution of control by intelligence for control by external authority, not the negative principle of no control or the spasmodic principle of control by emotional gusts, is the only basis upon which reformed education can build ’. That offers a solitary hope of our being able to emerge from the present tragic deadlock and replacing the existing jungle law in national and international life by a more civilised standard of conduct.

“ The well-established laws of evolution as they really apply to all mankind are all favourable to the advance of true civilization and of morality. Our existing competitive and antagonistic social system alone neutralises their beneficent operation. That system must therefore be radically changed into one of brotherly co-operation and co-ordination for the equal good of all. To succeed, we must make this principle our guide and the pole-star in all social legislation ’. (Hobson).

ROLE IN NATIONAL LIFE

“ You may have the feeling that, in discussing these wider issues affecting the future of mankind, I am throwing the entire burden of the world, as it were, on the shoulders of the Universities. I would suggest in answer to that possible criticism that unless the Universities become conscious of the great forces that are shaping the world today, they cannot carry on their day-to-day work of teaching and research with any assurance of playing a decisive role in national life. It is, after all, the ultimate objectives and ideals which determine the nature of our activities from day to day and the Universities must recognize that they are ultimately responsible for the type of character that is to provide leadership in the future. They have to train young men and women in the supreme art of living together by inculcating in them habits of tolerance and co-operation and placing the common good above personal or sectional interests, and they can do so through providing significant practical experience of social and co-operative activities and community life. While they may be legitimately engaged in the study of the various branches of knowledge, they must remember that the supreme objective of education is to enable the students to gain a correct sense of values and a proper understanding of human nature—‘ their own as well as that of others ’—and thus to acquire a genuine respect for human individuality.

“ I should like you to remember that the most effective approach to the understanding of others, which is the basis of all civilised life, is to try and understand ourselves, and in this connection I cannot do better than commend to you for study the three modes of self-understanding suggested by McDougall in his well-known book on character and conduct of life.

ART OF CONVERSATION

“ There is, in the first place, the rather neglected art of conversation, through which we can not only find self-expression but also get valuable glimpses into the minds of others. In the past, conversation was cultivated as a gentle and fine art. In the hustle and hurry of modern life, this art has fallen into disuse and has tended to degenerate into the much lower art of argumentation. I would like you to remember that the essence of a cultured conversation is not the scoring of cheap verbal victories against an opponent—a tendency which in public life disfigures speeches and statements made by many political leaders—but the desire to examine in co-operation with friends and superiors the various sides of a question and thereby enrich our understanding of the issues involved. A great deal is gained in this direction by the students of the Universities in their Unions and Discussion Groups and the many informal contacts which spring up in the course of their social life and I am of the opinion that these can become even more valuable formative factors when we learn to regard conversation as an educative medium through which we can understand ourselves as well as our neighbours.

“ Secondly, we can find the soul of a people as well as the minds of great individuals mirrored in their art and literature which you are called upon to study in the colleges and the Universities. I feel that the real value of the study of these great cultural achievements of the human race will be lost if they are looked upon merely as technical subjects to be mastered through intellectual exercise. They must be interpreted essentially as a means through which the collective mind of the race has expressed itself in a variety of beautiful and moving forms. Even more important than either of these from the point of view of human understanding, is the cultivation of the power of *reflective self-criticism*, through which we can learn to appraise the social and moral implications of our own conduct.

DEVELOPMENT OF CIVIC SENSE

“ I need not dilate at length on the importance of this quality. For, do you not feel that we are often apt to concentrate far too much on the mote in our neighbour's eye and forget the beam in our own, with the result that peaceful, co-operative living and communal harmony are becoming increasingly difficult. I feel very strongly that if education addresses

itself seriously to developing this capacity of self-criticism and we give more time and attention to a dispassionate examination of our own thoughts and actions, life will become more meaningful than it is today and there will be much less of the conflict and recrimination that disfigure it at present. We will also realise the great ethical truth that nothing can either exalt or degrade us except our own good or bad conduct and that 'every action, every thought and every feeling that we experience leaves a permanent mark on our personality and helps in shaping its characteristic pattern.'

"This would make us far more concerned with what we do ourselves and less with the criticism of others and it would provide a good foundation for the development of the right type of civic sense. If our education can quicken and deepen our appreciation of this great truth, we shall be able to acquire genuine self-control and the standards of public as well as private conduct will improve quickly.

IDEALS OF SERVICE

"I do not wish to encroach any longer on your patience because I well remember how, in my student days, long addresses were received by me and by the student community generally. I shall, therefore, conclude by thanking you, Mr. Chancellor, once again for affording me this opportunity of coming into contact with this great University and its *alumni*. I would also venture to express the hope that the graduates who have taken their degrees today will find in later life that what they have learnt and acquired at this University, both in knowledge and social training, has stood them in good stead and while this education may not—and perhaps should not—ensure for all of them a life of ease and comfort, it will enable them to live decently and usefully—jealous of their own honour, mindful of the rights of others and willing, above all, to give the best of themselves to the service of all good and worthy causes. For, it is only dedication to great causes that can exalt us, and give meaning to our life. 'Culture without comfort ; beauty without luxury ; machines without enslaving factories ; science without the worship of matter would restore to man his intelligence, his moral sense, his virility and lead him to the summit of his development', says Alexis Carrel, and I believe he has told us the truth.—JAI HIND."

Importance Of Technological Research In India

SILVER JUBILEE CELEBRATIONS OF BENARES COLLEGE

[Speech made while inaugurating the Silver Jubilee Celebrations of the College of Technology, Benares, on December 12.]

“I feel greatly honoured by your kind invitation to inaugurate the Silver Jubilee Celebrations of your College of Technology. I offer you my warmest felicitations on this occasion.

“No tribute I can pay to your College and your University can be complete, however, without a grateful remembrance on this occasion of the founder of this University, the late Pandit Madan Mohan Malaviya. Since very ancient times, Benares has been associated with learning, with seekers after Truth. A man who had his education in Benares was greatly respected all over the country. The first Shankaracharya was a brilliant product of Benares. Tulsidas, the great saint-poet wrote his *Ramayana* in Benares. Until as late as the beginning of the 19th century, students from all parts of India travelled long distances, underwent great hardships and at great risk came to Benares to receive education in the various sciences. They suffered untold miseries, many obtained their food by begging, but they became masters of the subject to the study of which they had dedicated themselves. To my mind, Benares has always been a great University. Learning was the principal occupation of her residents. It was in the fitness of things, therefore, that the late Dr. Annie Besant should have chosen Benares for her educational activities and with rare insight and imagination, the late Pandit Madan Mohan Malaviya also fixed upon Benares as the best site for a modern University. You all know what a hard task it was in those days to build up even a small college. In 1947 we may not quite realise this. New colleges are now started almost every six months or annually. Thirty years ago, this was not so. Organisation of any kind was suspected by the Government of those days. And if the organisers happened to be patriots, the organisation was watched and discouraged. It was in such times that the late Pandit Malaviya by dint of hard labour for long years laid the foundations of this University, of which the whole of India is proud and enjoys the scholastic benefits. It is our duty, therefore, on this happy occasion to lay at his feet our humble tribute of affection and gratitude to his sacred memory.

TWO VIEWS OF SCIENCE

“ You will perhaps agree with me when I say that the advance of the physical sciences is the distinguishing feature of the modern world. Whether we like it or not, we cannot stop this march of science. The food we eat, the clothes we wear, the houses we live in, our travel, our communication with each other, our health, the smallest things in our everyday lives, into all of these science has entered so fully and effectually that we cannot do without her, shake her off and be rid of her. I have noticed as you all must have done, that even in the villages in India, where about 30 years ago, the villagers used to grind their own corn and make it into flour and also weave their cloth, the poorest of them has this done for him now by means of machinery. The poorest of them will pay the grinding mill two pice or an anna but will not do the job himself. So with other necessities like transport. Two objections are usually raised against the development and spread of science and of machinery. One of these is that the development of science and machines has taken away the joy of manual labour from the lives of men and made labour dull and mechanical. The second objection is that science has emphasised the achievement of material progress at the expense of the spiritual. Both are partly true but only partly.

“ The practice of the physical sciences meant an intensification of the senses : the eye had never seen so sharply, the ear heard so keenly, the hand worked so accurately. But with the gain in accuracy went a deformation of experience as a whole. The instruments of science were helpless in the realm of qualities. The qualitative was reduced to the subjective, the subjective was dismissed as unreal, and the unseen and the unmeasurable as non-existent. As the outer world of perception grew in importance, the inner world of feeling became more and more impotent.

“ As a result of the progress of the material sciences, it came to be believed that ‘ happiness was the true end of man and that it consisted in the greatest good of the greatest number. The essence of happiness was to avoid pain and seek pleasure : the quantity of happiness and, ultimately, the perfection of human institutions could be reckoned roughly by the amount of goods a society was capable of producing : expanding wants, expanding markets, expanding enterprises, an expanding body of consumers. The machine made this possible and guaranteed its success. Happiness and expanding production were one (‘ Good life is goods life ’). Now, I do not believe that this philosophy of the utilitarians of the early Nineteenth Century ever made or could make an appeal to us Orientals. We know that ‘ the machine itself makes no demands and holds no promises ; it is the human spirit that makes demands and keeps promises ’. The fault does not lie with science but in the use we make of it. If we keep in view the true purpose of life, all our activities will be animated by

and centre round the one supreme purpose of the search for the real and the eternal and the perfection of the known and the given.

SEARCH AFTER TRUTH

“Some will say this smacks of Religion and not Science. I do not believe that Science and Religion are opposed to each other. Rather, they are two ways of visualising a single Truth—the Ultimate Reality. Science working through knowledge of Nature and her various manifestations and Religion working through knowledge of the self and its components have really the same object of achievement. Science and its discoveries have tempted us and have temporarily led us astray from the real path, just as in the course of spiritual development, the “Sadhaka” or pupil very often succumbs to the temptations of the “Siddhis” or the occult powers which he develops by spiritual practices. In either case, the problem is one of right education. A strong and firm will, a refusal to be the slave of desire, and an unshakable faith in the ultimate object—these will ward off any temptations to the pilgrim on the path whether of the material sciences or of the spiritual sciences. These temptations, to which the strongest of us may very often succumb, do not make the sciences bad and an evil in themselves. It follows from what I have just said that the message of science will now spread far and wide, and being convinced that science in itself is not an evil—the evil is in us, that ‘we are underlings’—we must so organise our society and educate its members that they learn to master the temptation on the onward march towards our ideal—the search of Truth—to cultivate a balanced judgment to put the real and the eternal above the evanescent and the fleeting, to sustain faith in our ideal, in short, to make science serve us in the attainment of our cherished goal, viz., the freedom and salvation of humanity. That must be our constant endeavour and to that end we must bend our energies. A beginning has already been made by the United Nations Organisation. Your Vice-Chancellor, Sir S. Radhakrishnan, is a member of the UNESCO—in my view a very important branch of the UNO. I am sure his great wisdom and foresight will enable your University to give the rest of the country a lead in the spread of this universal education and culture to which I have just referred and which alone can be our salvation.

“The Benares Hindu University has done great work in teaching the sciences in India, at a time when India lacked facilities. Your patient work has borne fruit and now you have your College of Technology celebrating its Silver Jubilee. You can be said to have just come of age and great work lies before you. You will, I am sure, build up a fine body of workers devoted to their work, working not merely with motives of material gain and prosperity and a comfortable and soft life, but in the spirit of true seekers after Truth and servants of humanity.

RESEARCH BY SPECIALISTS

“ In Western countries and the U. S. A., researches on difficult problems in science are conducted not by individual workers but by the co-operation of a team of experts specialised in the different branches of science in laboratories or institutes managed by recognised national organisations. In England they have the Department of Scientific and Industrial Research, in Germany the Reichenstadt, and in the U. S. A., Canada and Japan the National Research Council or the National Academy of Sciences. The programme of research on problems which are of great importance to industry and human welfare is planned by research committees or councils working under the auspices of these organisations.

“ In India also, although the foundations of scientific research were laid in the beginning of this century by pioneers or savants like Sir P. C. Ray, Sir J. C. Bose and Sir C. V. Raman, the systematic planning of scientific and industrial research was accomplished only recently under the stress of the last war. At that time, the Government felt that India should be made industrially self-sufficient and her indigenous resources employed to the fullest extent for the production of commodities essentially required for war and for peace. For this purpose, a central research organisation was created by the Government of India in 1940, and Sir S. S. Bhatnagar, who was at one time the University Professor of Chemistry in this University, was appointed as its Director. This organisation was later transferred to a non-official registered body called the Council of Scientific and Industrial Research which functions with the assistance of two advisory bodies, namely, the Board of Scientific and Industrial Research and the Industrial Research Utilisation Committee.

WORK OF NATIONAL LABORATORIES

“ In 1941 the Government of India considered the establishment of National Laboratories where research on various fundamental and large-scale technical problems which are not usually tackled in universities could be systematically conducted on an extensive scale. Five National Laboratories sponsored by the Council of Scientific and Industrial Research have already come into existence. The foundation stone of one of them, the National Chemical Laboratory, was laid by me in April last at Poona. I hope that these laboratories will soon be set on their programme of work and that it will not be long before India begins to reap the fruits of their labours.

“ India possesses great wealth in agriculture, forests, and mines which is as yet hidden. These resources have to be discovered by an extensive survey of the country, and have to be exploited by the latest scientific

methods. For this purpose, systematic investigations have to be conducted on the proper utilisation of our vegetable oil, molasses and mowhra flowers, metals, essential oils, glass and refractory materials, gypsum, the waste products and the by-products of industries. Investigations have also to be directed to the working out of methods of utilisation of the Indian raw materials for the production of new plastics, new alloys, new types of varnishes, rayon and cellulose, synthetic wool and other materials, in which our country is not self-sufficient. It has been reported that most of the raw materials needed for the foundation of the dyestuff industry are available in the country. The establishment of this important industry in India will lead to the setting up of the chemical industry which will manufacture also a large variety of organic substances used in ammunition factories.

“The need for large-scale industries in the country has been appreciated by the National Government. As a step towards industrialisation on proper lines, it is necessary that a comprehensive scheme of national planning should be formulated. This scheme should provide for the development of heavy key industries, medium-scale industries and cottage industries, keeping in view our national requirements, the resources of the country, as also the peculiar circumstances prevailing in the country. The scheme should provide for the establishment of new industries and also for the development of the existing ones. In order to give effect to this and other resolutions, a National Planning Committee was appointed under the chairmanship of Pandit Jawaharlal Nehru. The Committee worked through a large number of sub-committees which surveyed potentialities for the manufacture of various articles and collected a huge amount of useful data, which unfortunately could not be translated into practice owing to altered political conditions. The circumstances have now changed ; India is an independent country and is free to use her raw materials for her industrial development. Furthermore, Pandit Nehru himself is now at the helm of the administration and holds the portfolio of Scientific and Industrial Research. The report of the Industrial Research Planning Committee appointed by the Council of Scientific and Industrial Research is ready and the committee under the chairmanship of Sir S. S. Bhatnagar is going into the problem of scientific man-power. A number of scholars have been sent to the United Kingdom and the United States of America for training in special branches of science. The construction of the plant for the production of artificial manure in India is already in progress.

TECHNOLOGICAL RESEARCH IN BOMBAY

“You are probably aware that in the Province of Bombay, we have the Department of Chemical Technology of the University of Bombay. It

was started in 1934. It offers the following courses of study : (1) Textile Chemistry ; (2) Chemical Engineering ; (3) Technology of Intermediates and Dyes ; (4) Pharmaceuticals and Fine Chemicals ; (5) Chemistry of Foods and Drugs ; (6) Plastics, Paints and Varnishes ; and (7) Oils, Fats and Soaps. Students are admitted for research degrees in the Faculty of Technology. Other persons qualified for conducting research are also given facilities, if accommodation is available. The Department has also been able to place its services at the disposal of the chemical industries for carrying out industrial research, investigating technical problems and working out manufacturing processes. Some problems are also investigated with the aid of subsidies from the Government, the Imperial Council of Agricultural Research, the Council of Scientific and Industrial Research, and the Indian Central Cotton Committee. The Department has received several endowments and subsidies from the public.

“ The Government of Bombay has also sent a number of scholars for special training to foreign countries. The Government of Bombay also appointed the Provincial Industries Committee and a number of sub-committees which have submitted their final reports, which are now under consideration.

“ I notice that your College specialises in pottery, glass technology and pharmaceuticals. The training in all these three subjects is useful and important. There is no reason why India should not be self-sufficient in all her requirements and especially in the matter of drugs. I see that some of them are being made in our country but the preparation of many others is held up because the fine chemical industries are not yet fully developed. I hope that the students trained in your College will take up the work of developing and perfecting the schemes for the production of all important drugs and will themselves direct their manufacture on an industrial scale.

CONTRIBUTION TO CIVILIZATION

“ Amongst the civilised countries of the world probably India is lacking most in the applications of science as well as in research. Every young student has unlimited opportunities to apply his scientific training and knowledge for the good of his fellow countrymen. It is imperative that these applications should be pressed on with vigour in order to raise our standard of life and enrich our civilisation in as short a time as possible.

“I must congratulate Principal Godbole and his staff on 25 years of valuable work which has been accomplished. He was appointed by the late Pandit Malaviya as the first Professor of Industrial Chemistry in 1919 after his return from his first visit to Japan and he started a regular course of Industrial Chemistry at the B. Sc. stage in 1921. In 1923, he went to study in Germany and returned in 1925. He has steadily worked for a quarter of a century to build up this College in which over 300 students are studying Industrial Chemistry, Glass Technology, Pharmaceutical Chemistry, Ceramics and other important subjects, but it is a matter for regret that over a thousand students are refused admission for want of accommodation which means want of funds. A noble institution like this must not be allowed to languish for lack of funds and I take this opportunity to make an appeal to the well-wishers of our country to help this great cause.

“I have great pleasure in inaugurating the Silver Jubilee Celebrations and I offer my sincere good wishes for the future progress of the activities of this College. I thank you once again. JAI HIND.”

Urgent Need for Technical Education

NEW ENGINEERING COLLEGE AT SANGLI

[Address at the opening ceremony of the New Engineering College in Kupwad (Sangli) on November 29].

“I am very glad to be amongst you this afternoon to declare open formally the buildings of the New Engineering College. Mr. Padamjee and Mr. Sathe have already referred to the interest I took when the Maharashtra Technical Education Society was contemplating starting a new Engineering College. It gives me greater pleasure, therefore, to see the untiring efforts of Mr. Sathe, Mr. Gokhale and their other co-workers bearing fruit so quickly and so successfully.

“I share the grief of your Society in the loss it has suffered in the late Mr. Gole. The Society is treading the traditional path of eminent people in Maharashtra in selfless work in the educational field. The energy shown by even persons who should, according to common standards, live in peace in their retirement is such that even youth might envy.

“The Society had also the benefit till recently and the mature advice of the late Mr. N. C. Kelkar.

A GENEROUS DONATION

“You, sir, have referred to the generous donation of the Raja Saheb of Sangli, but for which donation the College might not have started at Sangli and so soon. I do trust the other Princes in this part emulate the example of the Raja Saheb of Sangli. It is only right that these States which will be deriving benefits from such educational institutions should assist in their establishment and maintenance.

“Your Secretary Mr. Sathe has, in his report, referred to the general financial position of the Society. I am afraid the picture is not too satisfactory. Indeed so far the donations proper towards the expenditure of the institution amount to less than 2½ lakhs.

“I realise that technical education of all branches must necessarily be expensive; indeed it would be fateful to try and make it cheap. I find from one of your published pamphlets that the estimated expenditure for

the Civil Engineering course is of the order of about 21 lakhs and another 8 to 9 lakhs are estimated for the mechanical and electrical courses, bringing the total to 30 lakhs.

“I have had occasion more than once to emphasise that at the present stage when Government has to spend huge amounts on the elementary needs of primary education for every child in this Province, it will just not be possible for Government to undertake similar liabilities in other fields of education. Far be it from me to underestimate the importance of technical education and higher education generally. The Scientific Manpower Committee set up by the Government of India has just submitted an interim report and has sounded a note of urgency in the field of technical education, thus adding to what so many previous authorities have already emphasised. The interim report of the Committee states as follows :—

INCREASE OF PERSONNEL

“From a comparative study of the figures leaving aside the requirement of Government for their contemplated large-scale public works, we have to plan for at least a four-fold increase in the output of all categories of personnel if we are to meet our needs for the next four or five years’.

“But more than Government aid is required to push through such programmes of educational expansion. I was sorry to learn that the appeal which was issued under the signatures of the eminent persons mentioned by you has not evoked a generous response. I do hope people with means will come forth readily to contribute towards this urgent and essential social service.

“The facilities so far available, whether in this Province or in the country as a whole, for technical education are restricted. That explains the large number of applications which even in your very first year you have received from students. Next year there may be two or three more Engineering Colleges which may be established in this Province, one among them being the Government College at Ahmedabad. All those who will be in charge of these Colleges will have to ensure that with the expansion of the facilities for technical education the quality is not allowed to lower.

“I was gratified to learn that your neighbour the Willingdon College has been ready to extend a helping hand whenever necessary. This is a good augury for harmonious and co-ordinated working of the two institutions.

SHIFT OF EMPHASIS

“While we are expanding our technical education and rightly shifting the emphasis at the present stage of our development, it is interesting to

see that in such advanced countries as America and others, there is a perceptible movement to ensure that those who go in for technical education are also imparted some general education as well. Those of you who have studied the draft syllabus of our own National War Academy will no doubt have been impressed by the large part which ordinary general education occupies in that scheme. The proximity of the Willingdon College will no doubt assist in any scheme which you will have in mind for supplementing the technical education proper of your students.

“There is, I think, also a large scope for collective effort on the part of both your institutions in organising something of the nature of “extension” lectures. Our Universities and colleges will have to perform this essential function in educating the general populace. I would make a suggestion that if and when you undertake such extension lecture series, you may get the material for the lectures carefully prepared and then published in suitable language in small pamphlets.”

Quest For Truth and Beauty Ultimate Aim of Education

NEW SCIENCE INSTITUTE INAUGURATED AT RAJKOT

[On the occasion of declaring open the Kotak Institute of Science at Rajkot on June 23].

“It gives me great pleasure to be among you on this auspicious occasion of the opening ceremony of the Kotak Institute of Science. Few things give me so much pleasure as assisting at the birth of a new educational institution, as, in my opinion, education on right lines is the one remedy for all the evils rampant in the world today. I am, therefore, grateful to you for having given me this opportunity of visiting this beautiful city in Kathiawar in order to open this Institution. It will not be out of place, I hope, if I make a few remarks on the development of our educational system.

A POVERTY-STRICKEN MIDDLE CLASS

“In the past, our foreign rulers tackled education at the top. They believed in the theory of percolation and thought that if they started a few high schools and colleges, somehow the knowledge imparted to a fortunate few in these institutions would percolate to the masses. But unfortunately, knowledge unlike water does not percolate easily. This policy succeeded in creating a poverty-stricken middle class fit only for desk jobs, for teaching and the legal profession. Scientific and technical education was neglected. Lord Macaulay wrote his famous Minute on Educational Policy in 1834; the Royal Institute of Science started working only after the first World War in 1920. This is the reason why the proportion of students in Indian universities as compared to the school-going population is so high in India. According to the Sargent Report, in 1940-41 one out of every three school-going children went to the University, whereas in England and Germany the proportion was one to seven. Let us not flatter ourselves that this was a good thing. For, if we compare the total number of university students to the total population just before the war, we shall find that whereas in England it was 1 to 837, in Germany 1 to 690, and in the U.S.A. 1 to 225, in India it was 1 to 2,206.

NEED FOR GALVANISED EFFORT

“We must remedy this lop-sided development. As you are well aware, the Bombay Government has launched a vast scheme of Primary Educa-

tion whereby it hopes to give a minimum education to every child in the land. An Adult Literacy Programme has also been launched which is intended to achieve universal literacy in about 10 years. But although primary education and literacy are at present our main concern, we are alive to the fact that no stage of education can be neglected without bringing about results like those I have just mentioned. The war against ignorance or *avidya* must be waged on all fronts. So, we have a scheme for technical, commercial and agricultural schools which are intended to provide openings for those who cannot, or do not, wish to go on to the university. We also propose to start in the near future three new universities, fully equipped with Engineering, Medical and Technological Faculties. You can, therefore, well appreciate my pleasure today when I am present at the birth of this new scientific Institute, the Harjivandas Hargovandas Bhavanbhai Kotak Science Institute.

“Our young men and women have now begun to realise the value of scientific education. They flock to the science classes in large numbers; the best of them go in for science. In Bombay, there is not enough room for them, and many a boy and girl has to return disappointed from one college after another. The difficulty here in Rajkot must have been even greater. 1,324 candidates sat for the Matriculation Examination this year at the Rajkot centre. Of these, I am sure at least 150 want to go on to the B.Sc. degree. Fortunately for them, this year they will be able to do so in their own home town. In previous years after passing the Inter Science Examination, students had to go to Bhavnagar, or perhaps Ahmedabad, or may be even Bombay. Today, thanks to the munificent donation of Rao Saheb H. B. Kotak, the Maharajasahebs of Morvi and Gondal, and all those other generous gentlemen who have contributed so freely to the building of this Science Institute, the students will not have to go out of their home town to far-off places, begging to be given a chance of imbibing scientific knowledge.

PRACTICAL APPLICATION OF KNOWLEDGE

“It is very necessary that we should learn to apply our knowledge to the needs of life, to the production of wealth, i.e., of the things that we need for a full life. And for this, ladies and gentlemen, neither the arts nor pure science are enough. We must have institutions which teach us how to apply scientific knowledge to the fulfilment of these various purposes. We must have agricultural colleges which will teach us how to make the earth yield more, engineering colleges which will teach us how to build roads, bridges and canals, which will divert water to waste lands and turn them into green pastures and fruitful gardens, great hydro-electric schemes which will generate power for a hundred factories, which in

turn will produce cloth and steel, rail-roads, ships, locomotives and a thousand and one other things.

“ Now, you cannot do all this without learning to apply our scientific knowledge to practical ends. I hope, therefore, that this College of Science, which is being officially opened today, will be the first of a number of scientific institutions ; that you will in the near future have engineering and agricultural and medical colleges and technological institutes. I am sure that the rulers of the Kathiawar States and the wealthy merchants who have contributed to bring into existence this College will contribute again and thus set an example to others so that, sooner or later, there may come into existence a university which will not only bring the latest knowledge to the door of every aspiring Kathiawari, but will keep alive the culture and the wonderful skill in craftsmanship which have made this Peninsula famous. If such an endeavour were to materialise, it would be one of the finest fruits of that co-operation among the Kathiawar States whose beginnings in the political sphere are discernible today.

IDEALS OF RIGHT LIVING

“ I have spoken about the need for scientific studies and the application of scientific knowledge to the betterment of our material conditions. This need is great because as a result of long neglect, we have sunk into the depths of poverty. But let me not be misunderstood. I am not one of those who believe that the salvation of the world lies in planning for plenty and not for peace. We in this country must not make the mistake of believing that scientific inventions and the power they bring are the supreme ends of life. There is not the shadow of a doubt that mechanical, physical and chemical sciences are incapable of giving us intelligence, moral discipline, health, security and peace, all of which are essential. The mere multiplication of material needs and their satisfaction through the application of scientific knowledge cannot be the ultimate aim of life, the index of progress and the criterion of civilisation. Science is merely a means to an end, the end being right living, and right living is by no means the same thing as luxurious living, but the very reverse. Wealth and welfare or well-being are not synonymous. The supreme problem of the modern educationist is, to ensure well-being, a harmonious development of the whole personality on the basis of right values or moral ideas. ‘ The science of man will be the task of the future. Much more than science, art and religious rites, moral beauty is the basis of civilisation.’

RENOVATING MODERN MAN

“ It is a sad portent for the future that the profoundest research into the ultimate constitution of matter should have brought forth as its first fruit the Atom Bomb, Scientific research seems to have led huma-

nity to sign its own death warrant. What is the way out? Not merely further scientific research on the same lines, but also a moral reawakening which will lead the nations of the earth to put aside greed and the lust for power, fear and distrust, and will bring them together in mutual understanding and forbearance into a world federation of which the world's idealists have dreamt hitherto in vain. This is a noble dream. A great scientist has said, 'Men grow when inspired by a high purpose—when contemplating vast horizons. The sacrifice of oneself is not very difficult for one burning with the passion for a great adventure. And there is no more beautiful and dangerous adventure than the renovation of modern man.'

“I hope and pray that the Institution which I have declared open today will help in furthering this object and help us to pursue our search for the true, the good and the beautiful.”

Science Can Ensure Salvation of Mankind

MAN ALONE RESPONSIBLE FOR WARS

[Speech made on the occasion of laying the foundation-stone of the National Chemical Laboratory at Poona on April 6].

“It is not without a certain amount of trepidation that I consented to accept your kind invitation to lay the foundation-stone of the National Chemical Laboratory. Not being gifted with a scientific bent of mind, I naturally hesitated. I was, however, comforted by the hope that your President, the Hon’ble Mr. C. Rajagopalachari, and you all men of science, would, with your usual tolerance and patience, pardon me if I did not come up to your expectations in what I am about to say on this occasion.

“Science to-day has come in for a strong indictment at the hands of politicians and the common man, and this is how it is worded in a book which I came across recently :

Humanity stands today in a position of unique peril. An unanswered question is written across the future : Is man to be the master of the civilization he has created, or is he to be its victim ? Can he control the forces which he has himself let loose ? Will this intricate machinery which he has built up and this vast body of knowledge which he has appropriated be the servant of the race, or will it be a Frankenstein monster that will slay its own maker ? In brief, has man the capacity to keep up with his own machine ?

And the necessity of a right answer is perhaps more immediate than we realise. For science is not standing still. It is advancing by leaps and bounds, gaining in impetus with each year. It is giving us more machines, faster machines, machines increasingly more intricate and complex.

“As I read this passage I began to wonder whether the National Chemical Laboratory, of which I was invited to lay the foundation-stone, was going to be a blessing or a curse to India. But soon my doubts were dispelled and I was cheered by a new hope and a new outlook. I know that man is simultaneously a material object, a living being and a focus of mental activities. He appertains to the surface of the earth exactly as trees, plants and animals do. But he also belongs to another world—a world

which, although enclosed within himself, stretches beyond space and time. And in this lie our hope and our salvation.

A POPULAR FALLACY

“The popular indictment of science seemed to me like many things popular, without any foundation. Can we justly blame science and its discoveries for all the destructive weapons used in war or must we look elsewhere for the cause? Did we not have wars before even the beginnings of science and did not each war then make use of such knowledge as was then available for the creation of destructive weapons? For, all along the ages, war has been considered to be an easy way of settling disputes. It is not true, then, to say that science is responsible for war and for the creation of destructive agencies. If anything, human history seems to indicate that the ideas of war have been carried in their minds by men at all times and in all ages. Science alone is certainly not responsible for it.

“Another popular complaint against science is that by the creation of machines, she has taken away the joy of manual labour from the lives of men and made labour dull and mechanical. But as against this, we must put into the other scale the rich harvest of benefits which science has offered to humanity—the shortening of long distances and the easy means of communication, to mention only two of them. And every scientific discovery provides a number of constructive uses just as well as it provides the destructive ones. For instance, steel is used for destructive weapons; but as against these, it is used for a hundred arts of peace. With the atom bomb, you also have infinite atomic energy at your command for beneficent use, if you so will.

HOPE OF BETTER LIFE

“There is one other sin, that is popularly ascribed to science, namely, the sin of glorifying the material at the expense of spiritual values. But I do not know that even this charge can stand the test of dispassionate analysis. If by this is meant that science has increased the means of multiplying food and clothes and all the other comforts of life and given us ideas and hope of a better living than was known to the world in the past, the charge is true. But science has also given us a scientific outlook, and the scientific method has taken hold of the minds of all thinking people in the world and it may be that, if intelligently and honestly practised, science may be our salvation as much as religion and spiritual practices. Indeed, we must not believe that there is a necessary antagonism between these two.

“To take a few instances. Take the question of war which looms so prominently before every one of us to-day. In the ages gone by, war was the easiest method of resolving a dispute between two nations. But with

the advance of science and the scientific method, the minds of all thoughtful people are now turning towards the creation of agencies more for peace than for war, namely, those of international arbitration and international control of problems common to the whole of humanity. It is true that science has increased and brought into existence deadly weapons of destruction, but it has also evolved men's minds to a stage at which the thought of war is replaced by thoughts of peaceful solutions of disputes.

SALVATION OF HUMANITY

“ Again, take another instance. Science is one of the factors which has shifted the emphasis of our thinking from the salvation of the individual to the salvation of the whole race. The altruistic teaching of every religion worth the name is well known. The good of the people is the ideal of every religion. It is not an exaggeration, in my view, to say that science has actually promoted and made possible the achievement of those ideals. For, as science advances and society becomes more and more complex, the individual has to learn more and more to subordinate his own good to the good of all. And at no time were ideas of social welfare and social responsibility more thought of than in the present scientific age.

“ It would thus seem that many of the evils which are laid at the door of science and scientific advance are a result of popular fallacies and lack of sound thinking. The fault is not in science but in ourselves that we are underlings.

TWO ASPECTS OF SINGLE REALITY

“We, Indians, are sometimes ridiculed as people being too much interested in matters concerning the spirit and too less in the material arts of life. The fault is attributed by our critics in a great measure to our ancient Hindu philosophy. But what is this Hindu philosophy except a very highly evolved and perfected science of life? Anyone who studies the principles of Yoga cannot but be impressed by the deep studies in psychology which our ancestors had made the subject of their life's work. And did we not have in ancient times in our land a highly developed study of the science of astronomy, of mathematics, of medicine, of chemistry or of engineering? I do not know that our Hindu philosophy which is so much ridiculed ever stood in the way of the study and progress of these sciences.

“ To my mind, the correct view is not to regard the spiritual and the material sciences as two opposing principles or creeds, but to regard them as the two aspects of a single Reality, as two ways of visualising a single Truth, a single Principle, which underlies the phenomena of the universe. Material science works through the bewildering phenomena of Nature and

seeks to realise the unity underlying all the diverse facts of Nature. Spiritual science or religion properly so called, working through the self and the states of consciousness, aims at the realisation of the Supreme Self, 'to know that by which all else is known'. Both the saint and the scientist must possess the same qualities in order to reach their ideals—selfless devotion, a meticulous love of truth, infinite patience, thoroughness and a depth of mind which does not resent criticism in any form but only makes for the broadest sympathies. Without these qualities, neither of the two can reach his goal. But it is my firm belief that the goal which both science and religion reach by different routes is one and the same.

NEED TO ELEVATE MORAL STANDARDS

“To-day the world is on the verge of moral bankruptcy. The spirit of selfishness, lawlessness and disintegration has spread far and wide. A sentimental pacifism is not the correct reply to these conditions. Science is on the march and is making great strides and, with the advance of science, the means of destruction are also advancing. Science does not take heed of moral progress. It continues to give us the bare, naked truth and leaves it to us to put it to use, good or evil, according to our moral make-up.

“The only solution, to my mind, appears to be so to reconstruct, fashion and extend our educational machinery that the moral progress of men, including scientists, keeps pace with the progress in science. We must use every valuable means at our command, religious, social and educational, through individuals, groups and nations for the elevation of our moral standards. The problem of science is the problem of better education of the people. We must create higher ethical values. No one will dispute that the mechanical, physical and chemical sciences are incapable of giving us intelligence, moral discipline, health, nervous equilibrium, security and peace. But they will help us in our great task of creating the “science of men” which will be the task of the future. We must study Reality in all its aspects and to-day’s function is an attempt to help us to do so in one of them.

MEANS OF COUNTRY'S INDUSTRIAL PROGRESS

“The National Chemical Laboratory, of which I have just had the honour and the good fortune to lay the foundation-stone, promises to be a symbol of our future greatness as a nation. The wheels of fortune have turned and we seem to be on the eve of the restoration of our former glory. Here, the scientists of our country will devote themselves to the search after the Truths of Nature and thereby help the nation, let us hope, to achieve prosperity, material as well as spiritual. And in this respect, its

position will be unique. Its most important function will be to bridge the gulf between science and its application ; it will be a link between institutes for study and research in pure science on the one hand, and national industries, on the other.

In addition, the National Chemical Laboratory will itself undertake fundamental research in pure science, thus leading to greater and better industrialisation. For, is not pure science really the mother of modern industry ? Further, greater industrialisation must inevitably stimulate the advance of science all round.

“ The task of the seeker is always a very hard and arduous one. This is no less true of discoveries in science and their application. Apart from these, the difficulties of finance and the right type of workers must also be taken into account. But it is equally true that only continuous and untiring research can win for us new discoveries and inventions. And while I am on these difficulties, I will take the opportunity to make a special appeal to industrialists. I would say to them, ‘ Do not fall into the error of supposing, as you are very likely to do, that scientific or industrial progress can be made by entrusting everything to a paternal Government, and putting the whole responsibility for all initiative on it. Do not imagine that because Government have established this Laboratory, Government alone must undertake all projects and experiments for the development of science and give you the benefit of these’. Rather, be prepared to shoulder a major part of the responsibility, financial or otherwise, with the Government. Do not do away with your own private industrial laboratories, where alone industrial research is best stimulated. Nor must you stint in your support to this Institution and the others such as the Universities. I mention with great pride the example of the House of Tatas, whose contributions to schemes of national welfare have always been munificent. That is an example which you all must emulate if you believe in the progress of this country. If you keep that ideal before yourselves, Indian industry cannot fail.

CONGRATULATIONS AND GOOD WISHES

“ It is hardly necessary for me to say anything to those whose great good fortune it will be to work here. I offer them my heartiest congratulations. Poona has made great history in the past and this was referred to in his speech by your President. You have also beautiful natural surroundings here and a most pleasing climate to stimulate all your energies and faculties. I am sure you are all imbued with the same zeal, the same burning desire for the discovery of truth, the same patience and untiring energy, of which the true seeker is possessed. Let us not make only material prosperity or fame our object of achievement, but also preserve our freedom of

thought and independence of mind. If you possess these qualities, you are bound to win the quest. Your President, the Hon. Mr. C. Rajagopalachari, presides over the Department of Government, of which your Institution is a part. His example, ought to be a source of constant inspiration to all. It is true, his work lies in a different field, but it should be clear to those who have studied his life and work that he possesses, in a large measure, the great qualities of which I just now made a mention.

“I thank you most sincerely for the honour you have done me in selecting me to lay the foundation-stone of this building which I now declare is well and truly laid. I wish you all and this Institution a long life and great success in the achievement of your ideals.”

Reclaiming Destitute Children Is Vital Social Task

TRIBUTE TO CHILDREN'S AID SOCIETY

[Speech on the occasion of the opening ceremony of the First Exhibition of the Children's Aid Society on Saturday, May 24 at the Aryan Education Society's School, Bombay].

“ It gives me very great pleasure to be in your midst on this happy occasion and I have to thank the Chairman and members of the Managing Committee of the Children's Aid Society for inviting me to preside on the occasion of the First Exhibition of the articles prepared by the inmates of the various institutions run by the Society. Few bodies in this City can claim to do work which is nobler and more worthy of praise than the Children's Aid Society. This fair city of ours is guilty of many sins ; but perhaps its greatest crime is the indifference and callousness it has displayed towards the little waifs and strays who roam the streets in dirt and filth deprived of the most elementary necessities of life—food, shelter and clothing, to say nothing of education and a chance of developing into decent citizens—with nothing to look forward to but a life of beggary or crime. It is horrible to think that most of us take these poor little social outcasts for granted ; we shun them, we abuse them ; at least we salve our conscience by flinging a coin at them, and hurry on to our own work or pleasure, as the case may be. But this thoughtless, intermittent charity is really no help. True, it makes one feel more virtuous, but at the most it only prolongs the destitute's life of misery and shame. What is needed is to reclaim them from their environment of dirt, disease and crime, to give them food and shelter and clothing, and above all to educate them and teach them to earn their living like decent, self-respecting members of society. It is due to the clear vision of those who saw the problem in this light, and to their untiring zeal and selfless devotion that the Children's Aid Society owes its birth and progress.

A BIG STEP FORWARD

“ It was owing to their pressure that the Government of Bombay promised in 1921 to bring in a Children's Act. But nothing was done till 1927 when at last the Children's Aid Society was inaugurated and the Umar-khadi Home was started. The Junior Certified School was started three years

It took another five years to start a Remand Home for Girls at Umarchadi which was made possible by the generous gift of Rs. 20,000 from the late Mr. Ramchandra Bhatt. A big step forward was taken when in response to the intensive propaganda of women's organizations, Government on the initiative of the then Home Minister, Sjt. K. M. Munshi, gave 130 acres of land and 2 lakhs of rupees for the starting of a Home at Chembur. To this, the Corporation generously added a grant of a lakh of rupees for buildings and various public-spirited individuals and bodies have contributed generously to the maintenance of these Homes and the expansion of their activities.

“But I wish to emphasize that only the fringe of the problem has been touched. The total number of boys and girls in all the Homes in 1945 was well below a thousand. How many thousands are still at large in the streets and alleys of Bombay is well enough known to you. It is true that Bombay has been spared the horrors of the famine which left in its wake such large numbers of destitute, orphaned children in Bengal. Nevertheless, our problem is big enough to demand the unstinted assistance of everyone for its solution. We cannot really take pride in calling ours the first city in India so long as this ugly evil continues to blot its fair name.

A LEGITIMATE CHARGE

“The Thirteenth Annual Report of the Society states that ‘although the Managing Committee is immediately responsible for successfully carrying on the work which has been planned ahead, the primary responsibility for the scientific handling of the juvenile problem should rest with the community and the State or rather with the State more than with the community. Social services, particularly in regard to the social problem children, are a legitimate charge on the Exchequer of the State, and the State should come forward to own its responsibility thereon’. I can assure you that Government is fully aware of its own responsibility in the matter, and will spare no pains to render all the assistance it can. But I must remind you that problems of this kind cannot be solved by Government alone. The resources of Government, as you all know, are limited, and the demands on these resources from all quarters are heavy. Therefore, the united effort of every individual member of a community whose social conscience is fully awake and is goading it on to action is necessary. Our city is regarded as the wealthiest in India and it has also acquired the reputation of being the most munificent. I need only remind it of the maxim, ‘Charity begins at home.’

“I should like to express my appreciation of the manner in which the occupations of the inmates of these Homes are planned and organized. Thus, in the Remand Home at Umarchadi, the children are taught paper bag

making, spinning and weaving, basket-making, carpentry, tailoring and mending of clothes, making of rag dolls, toys, buttons, fancy work and embroidery. They are also taught to wash, sweep and cook. It is most interesting to note that these poor little vagrants, who have never known what it is to work, seem to take to these various crafts with interest, and that these latter have a marked influence for the better on their character and behaviour.

EDUCATIVE VALUE OF CRAFTS

“We have here an eloquent testimony to the educative value of crafts in the moral sphere. Organized games teach the value of co-operation. To give them opportunities of self-expression, the children are encouraged to write and produce plays; again, camp fires are arranged at which the boys and girls perform lively sketches and give demonstrations of dancing and music. Primary education upto the fourth year is given in all the provincial languages. In the Chembur Home, greater attention is rightly given to agriculture and farming, as this Home takes in smaller children from outside Bombay, whereas, in the David Sassoon Industrial School, systematic training is given in the skilled work of the workshop. The present Exhibition, the first of its kind, is intended to offer you an idea of the variety of work done by these boys and girls.

“I am sure you will agree with me, after seeing it, that no aspect of the child's nature seems to have been neglected. I trust that those in charge will also make efforts to offer something of a substitute for the home atmosphere which these unfortunate children have missed.

MALADJUSTMENTS REMOVED

“A very interesting feature of the Home at Chembur is the special section for the mentally deficient children. Here, the cases are studied by expert psychiatrists, the educables are separated from the uneducables, and are thus slowly, if only partially, reclaimed. Sometimes, in the course of these psychological investigations, it has been found that a boy or girl has become a vagrant, not because of poverty, but because of some maladjustment in the home, and in some cases, a cure has been effected on the removal of these maladjustments.

“From what I have said about the many-sided activities of the Children's Aid Society in the three Homes under its control, it will be clear, that the Society is addressing itself to the problem of reclaiming the boys and girls in its custody with great vigour and thoroughness. Its management and all its workers, whether paid or honorary, deserve to be congratulated on the good work they are doing. And, as I have already said, they deserve