THE VICE-CHAIRMAN (SHRI M. P. BHARGAVA): The House stands adjourned till 2·30 P.M.

The House then adjourned for lunch at thirteen minutes past one of the clock.

The House reassembled after lunch at half past two of the clock, THE VICE CHAIRMAN (SHRI M. P. BHARGAVA) in the Chair.

RESOLUTION *RE* IMPLEMENTATION OF THE SCIENTIFIC POLICY RESOLUTION OF THE GOVERNMENT OF INDIA OF 1958—*continued*

SHRI N. SRI RAMA REDDY: Mr. Vice-Chairman, I was telling this morning about the necessity for the great strides we have to make in the matter of research and development in this country. The same importance was given by our illustrious Prime Minister even as early as 1947. That is why he is a man of science, he is a man of technology, he is man endowed with the spirit of achieving during his lifetime the great many things this country is in need of Sir, with that end in view he established various national laboratories, and he got established, I should think, all the research organisations. He has given shape to the entire research organisation. We have to remember one thing. The very fact that he has agreed to be the Chairman of the Governing Council of the C. S. I. R., in spite of his preoccupations with several other things connected with the country and with the international situation and certain other things, shows what place our illustrious Prime Minister has given to the development of science, research and technology in this country. Therefore Mr. Vice-Chairman, if man far from being a mere ape in the cage marched, through the millions of years, swimming like fish in water or flying like birds in the air, into a stage of inter-planetary travels and splitting atoms, whoever can stop him from ending up in anything but God? This is my hope in science. Therefore, this Resolution according to me is very appropriate and it has to be considered by this Parliament which is the leader of the country both in regard to opinion and in regard to education and also in regard to the responsibility for the development of this country. This Parliament has to consider these aspects from this viewpoint.

Sir, I had the same view when this Resolution was drafted, and I am glad that I found a very able supporter in Prof. Dedijer who visited this country and who has been studying the working of the national laboratories in this country. It is only the other day he spoke about the necessity of creating a very powerful scientific temper firstly in Parliament. He is a Professor and he is able to see far into the future of this planet, of the human beings in this planet. This Professor thinks that the major political issues to be debated in Parliament and other political forums in times to come will be questions relating to science and science alone. Science and research will be, as a greater amount of peace and political settlement through the various international organisations comes about, the only problems Parliament will have to consider. Later will be questions connected with science and technology and research, all these things. Therefore, the future for science is very vast indeed and as I have said before, if we have to end up ultimately as Gods, we have to pursue this path of science. That is why as this Professor also says, our Parliament will have to consider more science than anybody else. Therefore, it is necessary that a scientific temper should be developed in the country. He also goes on to say that for such discussions to be effective a greater understanding of scientific problems among the public, among the politicians as well as Parliament, is necessary. It is only three or four days back that a very authoritative statement like this has come out from

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Prof. Dedijer of Sweden, who is still here, who is studying the working of the various national laboratories, particularly that of the National Physical Laboratory.

Therefore, Sir, this question of research according to me has to be considered from three aspects, under three heads I should think: firstly, organisation; secondly, resources; thirdly, the work done and the results achieved. Under these three heads it has got to be considered. As I have already pointed out, the Governing Council of the C.S.I.R. is presided over by no less a person than our illustrious Prime Minister of India, Pandit Jawaharlal Nehru. This is a great thing that he is doing and it shows the importance he is giving to this great organisation.

There are various national laboratories. Research is being carried on in this country under very many departments of the Ministries, and particularly 28 or 29 national laboratories are carrying on the work. Then there is the Indian Council of Agricultural Research with regard to agricultural research work. There is the Indian Medical Council with regard to matters connected with diseases, medicines, etc. Then there is under the Railway Ministry a research wing, what is called Research and Development Department which is carrying on their work. Similarly, there is the Atomic Energy Commission, the most important body. So, this is the entire picture of the research work that is being carried on in this country. Of course, I need not describe in detail the organisation of each one of these departments. But is there a sort of co-ordination or is there only overlapping of the work done in various laboratories and various departments under the various Ministries? We do not know and Parliament has not been informed whether there is anything like overlapping. If there is overlapping, it is a national wastage which he cannot afford to suffer. Therefore, overlapping has got to be removed, and it can be done only with the powerful opinion of Parliament. If the Parliament is shut out, maybe voluminous reports are presented to us but the grasp and the necessary knowledge and the expertise will not come, we will be only reading the copious amount of reports that are placed in our hands. It is necessary that at least a powerful cell has got to be created within this Parliament which understands the problems of the country. If overlapping is there, who has got to remove it? The directors and scientists by themselves will not remove overlapping. The only persons authorised to do such a thing as this and to keep a watch and exercise supervision and control and give direction and guidance and all sorts of things and be a friend, philosopher and guide must be this Parliament. It was only recently that our illustrious Prime Minister was saying that there must be a scientific temper created in the country. How can the scientific temper come without study? Will it come from the air? Will it descend from the heaven on the people? No. Therefore, a powerful body has got to be created, and in order to create that body you must compulsorily make them follow the problems of the day, from day to day, from month to month, from year to year.

With regard to the organisation, now it is spread out too much. This work of research and organisation is spread out too much. There is what is called the applied science and research. There is what is called the educational research. There is what is called the pure and fundamental research. Now these 28 or 29 national laboratories that are working are intended only to produce results of practical importance. What have they been producing? I would like to know that. I would like to refer a little to the figures here. Talking of the national laboratories, I want to point out that the study team appointed by the Planning Commission have gone into some of the things and they have bitterly criticised about them.

Is it a matter for the Planning Commission? Is it a matter to be decided by the Planning Commission? Should not the Parliament intervene effectively? This Parliament has got to intervene and say that this is right and this is not right. The various works done by the national laboratories can be divided into or classified into research schemes undertaken, fellowships granted, grants-in-aid given to retired scientists and technical personnel employed, administrative personnel employed, papers submitted, patents taken out, processes made available to industry, processes ready for industrial utilisation, and so on. They have classified them thus; let us follow it from year to year. What happened in these national laboratories? Let us know that also. I do not go far back into the past but in the year 1960-61, there were 363 research schemes; in 1961-62 there were 453; in 1962-63 there were 495 schemes undertaken. As against this, what is the personnel that is increasing during these corresponding years? In 1960-61, the number of both gazetted and non-gazetted scientific staff was 6,037; in 1961-62 the number was 6,369 and in 1962-63 it was 7,707. The personnel has increased by leaps and bounds. But the corresponding work of the research schemes undertaken and the papers produced are falling down. This is not only my opinion, it is not only my analysis; the study team set up by the Planning Commission has come down with such a report, it has not yet been made available.

Now, the number of fellowships in the year 1960-61 was 542; in 1961-62 it was 641. Of course, the fellowships have been increasing. But what I am very particular to point out is that these national laboratories are intended to produce results only in respect of applied science. I request the House to kindly bear with me. What is the number of patents taken out in the year 1960-61? Fifty-two. The next year it was fifty. Thereafter, in 1962-63 it was only fifty-four. Is there any substantial improvement made? No. This is not being done. The number of processes made available to industry in 1960-61 was forty-eight; in 1961-62 it was seventy-two and in 1962-63, a pitifully small number of seven is all that is made use of by the industries. Is this a satisfactory state of affairs? Will the hon. Minister admit that this is a satisfactory state of affairs? If he admits, I have nothing to say. And similarly, the number of processes ready for utilisation in the year 1960-61 was forty-eight; in the year 1961-62 it became fifteen and in 1962-63 it came down to ten. What is the rate at which the personnel is being increased in the national laboratories? What is the rate at which the results of the so-called applied research are made available to the country? This is a sad state of affairs. I am sure that everybody will admit that things are going wrong, that they are not going the right way; they are said to be going all right. But they are going wrong. So, who is going to call a halt to this? Certainly, Parliament must keep a watch over this. I will be too happy to be told that the figures given by me are wrong, I will have no complaint. If the Minister comes down and says that the figures given by me are wrong, I will certainly apologise. But the figures given are from the various laboratories. There has been a lot of complaints. Unfortunately, I have not got much time but this is the state of affairs.

Among the personnel, scientific and technical personnel, that have been employed, there are more of graduates who are not competent enough to deal with the very many problems which the research laboratories are facing; those posts are being filled up with graduates only, not by the experts and the highly qualified people. That is the complaint. That is what the study team has revealed to us. So this is not very good either. Not only that. The study team also says—I have not time to refer to it—that the *per capita* production of papers has been consistently going down year after year, that in spite of

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quality certain recognition must have been obtained by experts or senior scientists from outside the country. (*Time bell rings.*) I know my limitations. That is why I have reduced all my problems, whatever I wanted to say, into certain questions for which I want some time. If the hon. Minister gives satisfactory replies, I have nothing to say.

Sir, I also would like to refer to a thought-provoking article written in the magazine "Thought". It says "A Nabob's Council". This is what they say. The article is produced in "Thought". Nobody has given a reply to it. I am trying to read it. In this democracy even a small opinion expressed must be given credit and the expression must be analysed and remedies must be found. If it is not done it is not a democratic way. Sir, I am giving you the reference also—"Thought" magazine dated 22nd February, 1964—and it has produced this article and also later on there has been what is called a corroboration of the statement made in "Thought". I do not want to read out the entire thing.

THE VICE-CHAIRMAN (SHRI M. P. BHARGAVA): You need not read it, you have given the reference. That is enough.

SHRI N. SRI RAMA REDDY: It says—

> "Under the present regime, some renowned Directors of international fame were made to retire at the age of 60 or 61, while some others are continuing beyond 63 or 64."

Is this good management?—

> "Favouritism also accounts for the double promotion of some of the Directors of Regional Research Laboratories."

Is this right? Another thing . . .

THE VICE-CHAIRMAN (SHRI M. P. BHARGAVA): Mr. Sri Rama Reddy, it is time to wind up. You need not read it. You have referred to it and that is enough for you.

SHRI N. SRI RAMA REDDY: Then there are some of my own questions. Kindly permit me to put them.

THE VICE-CHAIRMAN (SHRI M. P. BHARGAVA): The rules do not permit; you have taken your time.

SHRI N. SRI RAMA REDDY: There are very many things . . .

THE VICE-CHAIRMAN (SHRI M. P. BHARGAVA): Please wind up in one or two minutes.

SHRI N. SRI RAMA REDDY: Sir, in that article something about these things is said. I will only read twenty questions. I do not want to go into other things because I know that I have to . . .

THE VICE-CHAIRMAN (SHRI M. P. BHARGAVA): The best thing will be to send the questions to the Minister. I cannot permit.

SHRI N. SRI RAMA REDDY: Only two or three sailent questions I will read:

1. How many research projects have been undertaken in the various laboratories?

2. Out of these how many have direct practical application to industry?

3. To what extent the recommendations of the Ghosh Committee which reviewed the activities of the CSIR in 1955 been implemented?

4. Why has not a Scientific Civil Service been instituted?

5. Are there migrations of scientists from one laboratory to another for the sake of promotions?

6. What steps have been taken to arrest this migration?

7. What steps have been taken to have uniform standards of recruitment for all the laboratories for the same job requirement? Standards vary widely between laboratories.

8. Is it not in the interests of science that a scientist must be provided with conditions conducive to his stay in one laboratory and pursue a field of investigation?

9. The Chinese are spending a few billion dollars on research, particularly in the applied field for the promotion of industry. In the light of that, how effectively the money allocated to research is being spent on projects having utility?

10. Is the D.G.C.S.I.R aware of the exhaustive report on China by a team of scientists of the American Association for the Advancement of Science? China is, much more ahead in some fields. This is the point that should be borne in mind. Merely cursing China does not help us; instead we must go much ahead of it.

SHRI AKBAR ALI KHAN: How much does China spend?

SHRI N. SRI RAMA REDDY: A few billion dollars. We can also afford to spend like that.

11. Has any congnisance been taken of the scientific work done in China?

12. Are any priorities being given to the work of immediate application?

13. How far are the processes developed in a laboratory being pursued to their commercial fruition?

14. Are pilot plants being operated having a commercial bias to assess the process before passing them on the industry?

15. How many laboratories have followed this procedure and how many projects have been developed?

16. What role does the National Research and Development Organisation play in effecting liasion with the industry?

17. How much of foreign exchange has been saved by processes developed in the laboratories or as a consequence of setting up indigenous production on the advice of the laboratories?

This is the crux of the problem; this is what the country is interested to know—

18. What is the basis of assessment?

19. The previous Minister, Shri Humayun Kabir, had agreed to table the Blackett Report. It has not been done so far. Have the recommendations been implemented? If so, to what extent?

20. Are conditions in all the laboratories conducive to research?

21. Have any efforts been made to study the working of the laboratories from the administrative angle?

Is the administration far beyond the needs of the situation? The administration seems to be causing more of hindrance than help for the research schemes. That is what the report of the study team says. What is being done with regard to that?

THE VICE-CHAIRMAN (SHRI M. P. BHARGAVA): That will do. Mr. Gurupada Swamy.

SHRI N. SRI RAMA REDDY: Then, Sir . . .

THE VICE-CHAIRMAN (SHRI M. P. BHARGAVA): I have called another speaker. I am sorry.

SHRI M. S. GURUPADA SWAMY (Mysore): Mr. Vice-Chairman, Sir, I need hardly tell the House that the history of a nation is made by the

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skills, abilities and technical knowledge of the people, and the history of the nations is shaped and enlarged in accordance with the developments of science and technology. Mr. Vice-Chairman, the history of India for the last three or four centuries is the story where there will be innumerable instances to show that we have lost battles in the war field in industries and other fields because India has lost touch with the tradition of science and technology of the past and we were taken over by superior science and technology, of other countries and consequently we had to have innumerable defects, politically, militarily and socially as well. And today what is happening in the world? There is a large gap, a growing void between the developing and the under developed countries of the world and the developed countries of the world in regard to science and technology. We see as if there are two civilisations existing, one far advanced in achievements and with tremendous prosperity and on the other side, tremendous, terrific gloom and under development. I think apart from various other major factors, one basic factor for this void, this world imbalance in development is due to the fact that there has not been a simultaneous scientific and technological revolution in the various parts of the world. India has suffered in the past for centuries mostly because we did not pay sufficient attention to the vital needs of science and technology.

Sir, unfortunately even now after independence, we have only paid lip sympathy. Our interest in science and technology is only skin-deep in spite of the fact that we have been able to create certain institutions, in spite of the fact that we have passed a very well-worded, classic Resolution in 1958, and in spite of the fact that we have been able to create a host of young scientists. We have still not reached the goal that we expected to reach.

Sir, what is the situation today? There are all sorts of crises in the country. There is the political crisis. There is the deepening economic crisis and there are social stresses and strains, but the latest crisis to me, Sir, seems to be a crisis in science and technology. And we are backward; we are not going forward. We have not been able to bring about rapid economic and social transformation merely because the fundamental revolution of science and technology was never brought about, was never attempted in the past or even now. Many expressions of sympathy, many words of faith and dedication in regard to science and technology have been expressed in the past, even at the present moment, by various politicians, by others. But unfortunately the fact remains that we have not been able to create conviction in the country for science and technology. Unless there is awakened interest there is deepening concern with the intelligentsia and the rest in regard to the many faceted necessities of development of science and technology, I think we as a nation cannot become modern we as a nation even cannot survive. We have got to understand this.

A nation can be modern only provided there is a sort of super-scientific consciousness developing in the country and shared not only by the administration, not only by the top few, but by the many in the fields and the factories. Unfortunately, in this country there has been too much of talk. One of my friends said that the Government had exhibited foresight in bringing forward the Resolution in 1958 and in setting up laboratories. May I ask him very humbly: Where is the foresight? I do not think that there is any foresight because there is no implementation of the Resolution passed. I think as a country we are wonderful in passing classic resolutions, producing charters of various things that we want, but unfortunately at the level of performance we have always

failed, and particularly so in the field of science and technology. I know the various problems concerning the scientists in this country. I do not like to go into all these questions. But before I pose certain questions, may I emphasise once again that unless this country is prepared to create that consciousness, a sort of complex for science, a sort of obsession for science and technology, it will be difficult indeed to bring about the revolutionary development that we are envisaging? No country in the world in the past or in the present has been able to produce this miracle of revolutionary development which is not backed, supported, cherished and nourished by an equal development of science and technology. This has got to be understood. There has got to be a fundamental rethinking on this. A new outlook, a new perspective has got to develop. I am afraid, otherwise, we are going to lose heavily in future.

Sir, now may I point out some of the important problems facing science and technology in this country? Some of the laboratories have been set up. I think nearly 28 laboratories are functioning and some sort of research has been conducted in these laboratories. Research sections have also been set up in certain universities. May I know from the Minister concerned whether any research has been done in the laboratories or in the universities? If they have been done, may I know whether they have been done in the context of translating them or carrying them into action or implementation? I do not think that any effort has been made, any thinking has been done to bring about a project orientation in regard to research and if it has been done, I would be happy to know of it. I am told that various young friends are conducting research in a manner which may not be useful or which may not have a direct impact on the development of our economy. We have been conducting most of our researches on traditionally Western pattern and no attempt has been made to develop a totally creative indigenous technology suited to our requirements, suited to our needs. Most of the researches have been repetitive or they have been conducted, as I said, on Western technological tradition. Western norms, Western standards have been applied without regard to the developing needs and requirement of this country. Therefore, while developing an appetite for science and technology, we have not kept in mind what kind of scientific needs are required for our society, what kind of scientific knowledge is required for our people.

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Again, there has been so much of borrowing of knowledge from the foreign countries. Technical know-how is being brought from foreign countries after paying a heavy price. We are literally every year borrowing knowledge, understanding, from various countries but what is happening in this regard? After borrowing knowledge, after getting foreign technical personnel, after entering into technical collaboration agreements with foreign firms and foreign Governments, what is the picture emerging? Here the foreign technicians come and no attempt is made to associate actively our own research officers, scientific officers with those foreign technicians. What happens? They come and go and if there will be no fund of knowledge, growth of understanding, growth of technical know-how in the country, then we have got to depend more and more again on the foreign countries for further knowledge, for the same knowledge again. Secondly, we have been giving permission to various collaboration agreements, technical agreements because pressures are built up. Parties come and they want to enter into collaboration agreements with the various firms abroad and for the same thing there will be different collaboration agreements and it is common-

sense that when once a collaboration agreement is entered into in a particular industry, for a particular project, a kind of knowledge is built up and that knowledge is utilised for setting up projects in our own country and to avoid further import of technical personnel from the various countries. Every year I think we have been spending a lot of money, I think running in to crores, to bring technical personnel on fantastic salaries and there is a drain of foreign exchange every year. That has not been avoided.

I am sorry I have no time but I would like to point out before closing one or two other important matters, that is, the status of scientists in India has got to receive particular attention. Unfortunately the scientists have been treated as if they are cogs in the administrative wheel. It is the I.A.S. and the bureaucratic bosses who control even the development of science and technology. The scientists come far below in the official hierarchy. I do not think such a system exists in foreign countries. If you want real development of science and technology and if we want to bring about a climate for creative thinking and creative research, then we have to give a new status and we have to create new conditions for free research by these people. Otherwise what happens? Our research laboratories may be there but no research will be done and unless there is encouragement, unless there is a spirit for research, a spirit of enquiry, in these friends, it will be difficult to achieve results.

May I say in the end that with a view to know the problems connected with this vital question, it would be difficult for me or for others here specially to deal with all facets of science and technology or implications, or the problems and all the complications involved? Therefore, it is necessary that a sort of Scientific Policy Committee should be set up Secondly, there has got to be an enquiry into the whole problem of science and technology and in the end I say that this Resolution may be accepted with a little modification, that is the body that has to be set up to enquire into the whole thing should be a body of experts. I am afraid Members of Parliament may not be competent to go into this. If there are scientists among Members of Parliament, certainly they should be there but this body should be a body of experts which should go thoroughly into this question. Thank you.

THE MINISTER OF EDUCATION (SHRI M. C. CHAGLA): Mr. Vice-Chairman, normally I should have waited till the debate was over and then replied to it but as I have to leave Delhi this afternoon, will you permit me to intervene at this stage?

THE VICE CHAIRMAN (SHRI M. P. BHARGAVA): You can intervene at any stage.

SHRI M. C. CHAGLA: I know but normally I should have replied to it at the end. I should have heard all the speakers and all criticisms but my Deputy Minister is there and if necessary he will wind up the debate.

I am grateful to the mover of the Resolution for bringing this matter before the House. I think the importance of science cannot be over-emphasised, and I am happy to learn that so many Members of this House are vitally interested in science. Now, the importance of science, as I look at it, is two-fold. One is, technological advance is impossible without the spread of the knowledge of science and our country cannot get industrialised unless we have a larger fund of technological knowledge. The Industrial Revolution passed us by, we did not benefit from it but we are determined that we will participate to the full, in the technological Revolution that is going on all around us.

The other aspect of science is equally important and that is, that knowledge of science helps us to become scientific-minded, to acquire a scientific outlook, to acquire a scientific attitude. It is only the scientific outlook that can make us a modern nation, which will do away with the many inhibitions from which we suffer and which make our progress difficult, if not impossible.

Now, it was pointed out by my friend Mr. Gupta, that the Scientific Policy Resolution on which this particular Resolution is based has become ineffective, and calls for modification. May I say that that is not so? I agree with him that the Scientific Policy Resolution requires to be given flesh and blood, that is, it requires to be implemented but if you read the Scientific Policy Resolution in its broad aspect, it is the only Resolution that could have been passed and which gives a clear signal to us as to the lines on which we should advance therefore, there is no need to change the Resolution or modify it. The need is to give it a quick, effective, positive implementation.

Let me tell this House what we have been doing in our laboratories. In our laboratories we are working on research and on scientific matters, again from two points of view. One is for the purpose of the expansion of knowledge, which is fundamental science. But more important than that, we are working in our laboratories in order to apply science to industrial and other purposes. We are working in such a way that the research should be useful to our industries; our laboratories are working in such a way that the research should be useful to our defence work, and I shall presently point out what we have done in that behalf.

Now, my friend, Mr. Gupta, said that in the laboratories there was a bureaucratic approach. That is not a sound criticism. There is no bureaucratic approach; far from it, we have done away with hierarchy in our labratories. We treat every scientist on his merits. We have taken away from him administrative work and we see to it that most of the scientists attend to research work rather than to administrative work. We are also trying to create a proper atmosphere in our laboratories We fully realise that scientific research is impossible unless the scientist is given a certain amount of autonomy and independence, and that is exactly what we are doing in our laboratories. My friend Mr. Gupta, also said that research in our laboratories was influenced by capitalists. Now let me point out to him that as far as science is concerned, there is no capitalism and no communism. Science is international and in the expansion of knowledge, in the application of knowledge, there is no place for ideology. I agree that bureaucracy and science cannot co-exist. Today capitalism and communism have started co-existing, but in the laboratory it is not possible either for bureaucracy and scientific research to co-exist, or for ideologies and research to co-exist, and therefore, there is no politics, there is no ideology, there is no bureaucracy and there is not too much administration in our laboratories.

SHRI P. K. KUMARAN (Andhra Pradesh): Will the hon. Minister deny that there is the practice that all the papers prepared by young scientists are being published in the names of the directors or the heads of the institutions, which dampens the interest of the young scientists who are doing research work and that since these things are going on they act as disincentive to and discourage the workers to do real work?

SHRI M. C. CHAGLA: I agree that we have come across cases where the senior scientist takes all the credit for the research done by the junior scientist. But we have put our foot down very strongly, and we are going to see to it that the scientist really responsible for the research work gets full credit for it, and that we have done

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by doing away with, as I said, hierarchy and by giving our scientists as much autonomy as possible.

I agree with Mr. Gupta that the amount spent on science is not enough. We will never really advance in science unless we are prepared to spend much more than we are spending. We also said that there should be a larger number of scientific workers. There also I agree with him, and let me tell you briefly what we are doing today to increase the number of scientists in our country. First of all we want science to be introduced in our schools. A team from Russia financed by UNESCO had been going round our schools, and has just submitted a report on how we should introduce science in our schools. Then we are pushing ahead with the scheme for science text-books—we cannot teach science without text-books. Then we have also a large scheme for training science teachers. Again, you cannot produce science without having science teachers. We are also paying attention to laboratories, and this is a very long-term and a very ambitious programme. But we feel that unless our children start learning science from an early age, this country will never become a scientific country. If Russia today has reached the height of technology practically starting from scratch, it was largely due to the fact that Russia realised the importance of science education and started teaching their children science from the primary schools. We may not reach the stage of elementary schools, but we must have better training in science in our secondary schools. Then we are attaching the greatest importance to post-graduate work in science, and that is a vital sector of science education. Unless you have first-class men turned out from post-graduate departments, the standard of teaching in colleges will go down, because it is the post-graduates who will supply teachers to the colleges. And if the standard of teaching in colleges will go down, the standard of teaching in schools will go down also, because it is the colleges that supply the teachers to the secondary schools. And from the secondary schools the standard will go down in the primary school. Therefore, although the post-graduate stage is the apex, even otherwise it is the most important sector of our education, both general education and scientific education.

Now, let me point out what we have done for our industry and our defence. I will just give you some figures which are extremly important. Up to 1962, we have saved 19 to 20 crores of rupees in foreign exchange by reason of the fact that researches have been made in our laboratories and processes have been completed. Now, the main purpose which a laboratory has in mind is the utilisation of the materials we have in this country so as to avoid the necessity to import things from outside. We want to be industrially self-sustained and we can only do so provided we make all those things in our own country, and therefore this shows a very large advance on this front. Then the total number of projects sponsored by the Council since its inception exceeds 1,200. More that 7,000 research papers have been published in Indian and foreign periodicals so far, and as many as 700 patents for inventions have been taken out. Nearly 300 patents and processes have been released for exploitation. Our laboratories are projects-oriented. We give advice to industries; we act as consultants; industries come to us and place their problems before us; we try and solve their problems; new processes are given to them so that they can commercially exploit them. And the result has been tremendous assistance to industry and to defence. I propose very soon to have a brochure, which will be in the hands of Members of Parliament, showing all the work each laboratory has done, what important researches it has been

responsible for. But I will just give you briefly what we have done so far. Now, look at this list which is very imposing.

These are the processes which have been completed and which are being used in our country. Optical glass, coal washing and water softening agents, refractories, mica insulating bricks, boron-free enamels, domestic fuel, high-grade activitated carbons, capacitors, indelible ink and duplicating printing inks, carbon products, lisasorb, nicotine sulphate, carbodymythyl cellulose, protein-rich food, infant food, leather auxiliaries, lightweight aggregates, engineering aids, improved vacuum tester, vitamin 'C', wet ground mica powder, cinema projector carbons, nickle-free stainless steel, brick and block making machine, foaming agents, light basic magnesium carbonate, electrolytic cuprous oxide, etc. etc.

SHRI N. M. ANWAR: What is the project that the hon. Minister just now referred to in connection with vitamin C?

SHRI M. C. CHAGLA: We are making vitamin C now in our own country. We used to import it from abroad, but now we are making it in our own country, thanks to the work done in our laboratories. I am afraid there is not sufficient knowledge of the work done in our laboratories.

SHRI R. P. N. SINHA (Bihar): Is it the same as the vitamin C we get from abroad? Is it as good as that?

SHRI M. C. CHAGLA: I am not a scientist, but I should think vitamin C is the same all the world over. Of course, it has to be produced under proper conditions and we must be sure that it is made in the best way possible. I have been given to understand that the vitamin C that we produce is as good as vitamin C produced anywhere else.

Now, the time is running on and let me point out what we have done for our scientists. It was said that we are not looking after our scientists, that we are not training them, that we are not helping them. Here again the catalogue of what we have done is really remarkable.

We have introduced in 1958 a scheme of fellowships and it is very important. Young scientists working for their post-graduate degrees in various fields of science and technology are given these fellowships, of Rs. 250 for the junior and Rs. 400 per month for the senior fellows. The number of these fellowships rose from 89 in 1958 to 1,745 in 1963-64. This is one of the best ways of training young scientists. When the scientist has aptitude and the desire to learn he gets great support from the fellowship.

Then we give also grants-in-aid to encourage research in the universities and other research and technological institutions. We had 321 research schemes financed in 1958 and in 1963-64 we have 518 such schemes.

Then we have another scheme for merit promotions of scientists who have shown outstanding ability. They are given advance increments up to a maximum of five. This is given to research workers who have shown exceptional originality and ability. In Government service a man rises by getting his usual increments and then retires in due course. That is not the procedure we follow so far as these laboratories are concerned. If we find a bright scientist—he might be taken by industry—we recognise his ability and give him two or three advance increments so that there is impetus and encouragement to his work and he has no desire to leave the laboratory.

As regards retiring age, we have raised the retiring age to 60 with a possible further extension up to 65, subject to physical fitness. Then we have a scheme of grant-in-aid to superannuated research scientists. We have also another scheme of "Emeritus Scientists". If a Director retires

[Shri M. C. Chagla.]

at the age of 65 and is still capable of doing research, we appoint him as "Emeritus Scientist" and attach him to some laboratory where he can continue his research work.

We have also instituted the 'Shanti Swarup Bhatnagar Memorial Award' which is the highest stamp of approval we can give in this country. The award comprises five prizes of Rs. 10,000 each and it is given for notable original research.

Then I think one of the finest achievements is the setting up of the Scientists' Pool. The House may remember that I gave the promise when I took up office that I will do my best to see that every Indian scientist abroad comes back to this country for working in this country and the Scientists' Pool has been helping us in doing this. Today no scientist abroad whether in the U.S.A. or U.K. can say, "Why should I go back to my country? I will not get a job and I will starve". He is put in the Scientists' Pool and given an initial salary. We try to place him in a proper place either in a university or in some laboratory. We recognise his merit and give him every incentive to serve his mother country.

We have also established the Regional Research Laboratories in Jammu and Kashmir, Assam and Hyderabad, and we propose to have a Regional Research Laboratory very soon in Orissa. These are of great benefit to the people of the State, for they not only give encouragement to the scientists, but also help industries because they help to do research in industries so that the neighbouring industries can be helped to take advantage of the processes worked out in these laboratories.

In the Fourth Five Year Plan we want to set up a few new research projects on, (i) Automation, (ii) Marine Engineering, (iii) Agricultural Chemicals, (iv) Oral contraceptives, (v) Substitute materials for electrical appliances, (vi) Packaging and (vii) Fish Technology. In the Fourth Plan we also envisage the setting up of some more laboratories like an Institute for Oceanography, Institute for High Altitude Research, Centre for study of social relations of science, and so on. So, you will see that this Council and the Scientific Department for which I am responsible have done all they can for the encouragement of science and the advancement of research.

The point that I have to meet in this Resolution is whether there is need for a committee. What is urged is that we want a machinery for implementing the Scientific Policy Resolution. This is the last point I shall deal with and I want to satisfy this House that at present there is sufficient machinery for the implementation of the Scientific Resolution without setting up a different parliamentary committee. In the first place, after that Resolution was passed in 1958, we had a Science Conference in 1958. Then there was a conference in 1963. Then we have the Scientific Advisory Committee of Cabinet which has been considering various aspects of the Scientific Policy Resolution. Then we have the Defence Coordination Unit which was set up under the C.S.I.R. And finally there is also the working group which has been set up for drawing up the Fourth Plan for the C.S.I.R. This group has met three times and it consists of distinguished scientists from the universities, non-official scientific organisations and so on, national laboratories and the University Grants Commission. There is also the Committee on Organisation of Scientific Research appointed by the Prime Minister which is still working. It has so far met three or four times. And finally we have appointed a very high power committee, the Reviewing Committee presided over by Dr. A. Ramaswami Mudaliar on which we have some outstanding

scientists and we are expecting the report of this committee very shortly. That committee will tell us whether there is anything wrong with scientific research and in what direction we should improve. Under the circumstances I would beg of this House not to have one more committee. It will only be duplicating the work which is already being done by all these organisations.

Just one last word. I was told that some hon. Member used the word "nepotism" as far as appointments to these laboratories are concerned. I want to strongly repudiate that charge. No organisation takes more trouble in the selection of Directors, Assistant Directors and Scientific Officers in the laboratories than we do. A selection committee is appointed of the best scientists we have in this country and it is only that selection committee that makes the appointments. So, there is no scope for any nepotism. The appointment is not in the hands of an individual however eminent he may be. It is the view of the best talent we have in this country that is taken and they choose the best persons for our laboratories either as Directors, Assistant Directors or Scientific Officers.

Sir, I have taken more time than I expected and I am grateful to the House for the patience it has shown in listening to me. I hope the hon. Member will not press this Resolution because he has served the purpose of bringing it here and eliciting this debate.

SHRI BHUPESH GUPTA: May I invite the hon. Minister's attention to a publication called "Some observations on the Scientific Policy Resolution and its implementation" by Dr. M. S. Iyengar, General Secretary of the organization of the Scientific Workers in India? I would like to know from the hon. Minister whether the proposals or suggestions made in this document have been given due consideration and whether, in this connection, the representatives of this Organisation have been invited for consultation.

SHRI M. C. CHAGLA: What document is it? I am sorry I did not catch its name.

SHRI BHUPESH GUPTA: This is a memorandum by Dr. M. S. Iyengar, General Secretary of the Organisation of the Scientific Workers in India, entitled "Some observations on the Scientific Policy Resolution and its implementation". This contains a number of constructive suggestions one of them being the Policy Commission.

SHRI M. C. CHAGLA: I myself have not seen it. I do not know whether the C.S.I.R. has seen it or not. If the authorities of the C.S.I.R. have not seen it, I will certainly see that their attention is drawn to it and if there is any useful suggestion, we will certainly carry it out.

SHRI BHUPESH GUPTA: I would request the hon. Minister to invite them for some consultation so that they can be considered here.

SHRI M. C. CHAGLA: I am prepared to listen to anyone.

SHRI N. M. ANWAR: While the achievements of our scientific research are very considerable indeed, may I have an assurance from the hon. Minister that he would check the very serious turn that is visible in our country about the bureaucratic hierarchy preventing the Junior Scientific Officers from taking the fullest credit for the real work . . .

THE VICE-CHAIRMAN (SHRI M. P. BHARGAVA): He has denied that.

SHRI N. M. ANWAR: I am coming to that. The Junior Scientific Officers are made to remain *incognito* whereas the Senior Scientific Officers, through plagiarism, take full credit for work which they have never done.

THE VICE-CHAIRMAN (SHRI M. P. BHARGAVA): He has already said that he has put this down.

SHRI BHUPESH GUPTA: I gave you the instance of the Civil Engineering Division of the Department of Atomic Energy where thirty-six scientific workers have left as a result of the behaviour of the Chief Engineer. Name also I gave.

SHRI M. C. CHAGLA: I did not deal with that case because that Department does not come within my portfolio. That is in the Prime Minister's portfolio.

SHRI BHUPESH GUPTA: I know but it comes within the purview of the scientific policy. The Minister should not be disinterested. I have brought this to his notice, it is rather a serious allegation.

SHRI M. C. CHAGLA: I will pass it on to the Prime Minister.

SHRI BHUPESH GUPTA: We cannot get him to talk for one thing. Will the Minister kindly tell him?

SHRI M. C. CHAGLA: I will certainly tell him.

SHRI P. N. SAPRU (Uttar Pradesh): May I invite the attention of the hon. Minister for Education to an article which appeared a few years back in the London "Spectator" on the death of Dr. Joseph? The writer, who is evidently a person well acquainted with Indian educational conditions, says that there is no doubt that Mr. Nehru wants scientific development in India. He further goes on to say that there is no doubt that there is good scientific material available in this country though the number of outstanding men in the world of science is rather small. He further says that we have good laboratories and libraries and that there is some enthusiasm for science among some men but unfortunately the scientific outlook in this country is poor. What is the reason for that? He goes on to answer that question. He says that Mr. Nehru has never applied his mind to this aspect of the question. The fact of the matter, he says, is that the heads of department and Deans of Faculties are jealous of young men, they do not want to encourage talent. They do not want young men to outshine them. There is no encouragement. I read that article and I felt that there was a great deal of truth in what that writer had said because as a member of many Executive Councils in my State and Appointment Boards and so on, I had developed the same type of feeling. I know that our teachers or Deans and heads of departments were jealous of talent. They did not want them to outshine them. Ernest Barker says, in his autobiography, that he looks upon his pupils as projections of himself. Our heads of departments or Deans do not look upon their pupils as projections of themselves and I think the fault lies somewhere with our heads of departments and our Deans of Faculties. This aspect of the matter needs enquiry.

THE VICE-CHAIRMAN (SHRI M. P. BHARGAVA): Do you want to say anything? Dr. Joseph's case was discussed here.

SHRI M. C. CHAGLA: Just one word, Sir. We are trying our best to encourage talent, fine young men with talent. We have a scheme whereby we pick up scientific talent at the school stage and give scholarships so that these people can go right up to . . .

SHRI BHUPESH GUPTA: The number is very small.

SHRI M. C. CHAGLA: But that is a project plan. I want to assure this House of one thing. I have met many scientists. I have interviewed many. I know that they have thrown up big jobs in the United States and in the United Kingdom, I know they have thrown up big jobs in industry here and they have come to the laboratories because they want research work. I want to assure my hon. friend, Mr. Sapru, that I will see to it that the youthful talent gets all

the support and encouragement that we can give.

SHRI K. V. RAGHUNATHA REDDY (Andhra Pradesh): I wish to draw the attention of the hon. Minister to one fact. In institutions where there are post-graduate courses where even research work is done, the heads of the institutions do not necessarily have post-graduate qualifications. Maybe this fact may be explained away on grounds of administrative convenience but if retired officers are appointed as heads of institutions without the necessary post-graduate qualifications, I am afraid, Sir, the staff and the departmental heads will not have respect for such heads. These things are happening and I would like the hon. Minister to keep in mind this fact and see that this tendency is checked. He may have a watchful eye on the various institutions and on their appointments to posts of Principals or heads of institutions.

SHRI M. S. GURUPADA SWAMY: May I know from the hon. Minister as to who really formulates scientific policy? Is it done by the Minister or the officials or by a body of scientists?

SHRI M. C. CHAGLA: As Minister I am responsible to Parliament, I am responsible to the country.

SHRI BHUPESH GUPTA: That is technical.

SHRI M. C. CHAGLA: It is not. It is very important. If any mistake is committed, I am responsible. You will want my head.

SHRI BHUPESH GUPTA: Technically that is correct but . . .

SHRI M. S. GURUPADA SWAMY: Sir, I want to know who really formulates the scientific policy. Is it done by the Minister or the officials or by a body of experts?

SHRI M. C. CHAGLA: We have the C.S.I.R. We have also got the Laboratories which have got Directors. They have got their Research Committees. The projects are considered by the scientists. They decide whether a project is worth proceeding with or not and then the project is started. The policy is also made at various levels. It is made in the laboratory, in the C.S.I.R., in the Ministry. We try and give as much autonomy to the scientists as possible because they know what they are doing.

SHRI M. S. GURUPADA SWAMY: I think it is the most chaotic way of policy-making if there is no single body to formulate policy.

SHRI M. C. CHAGLA: Policy in the broad sense is the Resolution. I thought the reference was to policy with regard to research, with regard to projects. Such policy with regard to what a laboratory should do must be formulated at different levels.

SHRI BHUPESH GUPTA: The point is, then you need co-ordination for setting the perspective properly. Therefore, a suggestion was made that a Scientific Policy Commission should be appointed to coordinate these things and lay down the basic policy to go by.

SHRI M. C. CHAGLA: The Council is there. The Council of Scientific and Industrial Research is the body which has been set up for the purpose of co-ordinating policy. The twenty-eight laboratories are under it. We have a Governing Body which considers it. We have an Executive Council for each laboratory. The report comes up and at that stage policy is made.

SHRI K. V. RAGHUNATHA REDDY: Mr. Vice-Chairman, Sir, having listened to the speech of the hon. Minister one feels assured that the future of scientific research in this country is quite safe in his hands. He has dealt with quite a number of questions, one of the questions being education of children and also the scientific attitude that has to be developed from childhood. In this regard if I

[Shri K. V. Raghunatha Reddy.]

look at the elementary education and the secondary education and the deplorable conditions in which secondary education and elementary education are being managed, I am afraid the edifice for scientific development and a superstructure of post-graduate research and scientific contribution cannot be built on such shaky foundations. As you know, mathematics is absolutely essential for all sciences but the attention that is being paid to the subject from childhood, that is from the elementary education stage, is not of a very happy nature. If you take again secondary education and if you look at the condition of the high schools and how science is being taught, the picture of even a clinical thermometer has to be drawn on the blackboard. The students are not in a position to see how exactly a clinical thermometer would look and how it would help. This is the position to which the condition of the laboratories is being reduced in the various high schools in this country. If, in that atmosphere, a student is taught and a personality is built up, what kind of scientific attitude the student would develop, is a matter for serious consideration. Science, Sir, and scientific research and scientific spirit can only be developed in an atmosphere of disinterested scientific attitude. That atmosphere is necessary because as in philosophy, like Buddha with *nishkamakarama* a person has to do his research because in the field of research rewards are not easily got. A person may sit for the I.A.S. examination, and once he passes his I.A.S. or other competitive examination the rewards are assured. If he does his normal work he will get his regular promotions and will slowly get to the top of the ladder but in the case of science it is a question of constant application of human mind to the problems of nature and one must be constantly engaged in solving the various problems one is confronted with, be they problems of physics and biology, etc. For all these, knowledge of mathematics is absolutely necessary and sufficient devotion is not being paid to the teaching of mathematics. In spite of the fact that India has contributed to the world of mathematics the figure of zero and outstanding mathematicians like Lilawati and Ramanujam still sufficient attention is not paid to mathematics.

I might illustrate my point. For instance, in the field of statistics—I am not a mathematician but still with a little knowledge about men of mathematics—there are few universities in this country and I can say that there are very few mathematicians in the country who have specialised in the science of stochastic. You can count them on your fingers. As I said, mathematics is closely associated with pure science and pure science is absolutely necessary if modern technology is to advance. Modern technology—I would call it an applied science. And if applied science is to advance, the productive forces in this country must be developed in relation to technology which in its turn depends upon pure science and if technology or technological research or the work done in the field of industrial research is not found a place, if it is not properly utilised in the field of industrial development, what happens to science is, what one might call in medical phrase, 'disuse atrophy'. The research work in the field of industry suffers from disuse atrophy and it slowly dies on its own. In other words, it dies because of inertia. So, all these aspects are intimately related and this is one aspect which the hon. Minister, Members of Parliament and you, Sir, particularly should take note of. I still remember—I am not flattering you—the speech you made on the floor of this House on scientific problems that confront the country during the last session and I was very much impressed by it. And in that spirit if I may say, what is needed is a disinterested interest in the field of science for scientific research. That can be developed only if men's creative energies are liberated from the tantrums of insecurity of morrow. That insecurity of morrow can be solved only by

developing a socialist society. Unless this aspect is clearly understood whatever might be the magic of words, that may be said about advancing scientific research, there can be no development. In an under-developed country science cannot advance unless men's creative energies are liberated from the tantrums of insecurity of morrow. If man feels that his work will be rewarded not only in terms of economic security but also in terms of social security, in due recognition of his merit, then alone he would be able to devote his attention and energy for the development of science.

I would like to refer to one more problem. In the field of scientific research what is happening in India is this. There is a certain amount of duplication of work at the university stages and this can be avoided only by developing a proper national index system. A proper national index system has to be developed by which all the scientific journals published in the world can be procured and under each heading an index can be prepared so that a scientific investigator who starts on his voyage of discovery or investigation would be able to find out immediately what work throughout the world had been done on the particular branch of knowledge on which he has started his work. Then only he will be able to do further thinking on the subject and make a contribution to the world of knowledge. Otherwise it will mean repetation and waste of energy. After doing his work for a long time he will find that some other scientist had already done this work and all that he has done is mere repetation. I am not afraid of repetation as such; sometimes it may help clarity. But in the field of science this mere repetation should be avoided, if it is possible.

Coming to institutions—I already raised this question at the time when the hon. Minister was answering certain questions—when we deal with scientific institutions, say, the engineering college, medical college or any other institute of physics or chemistry or of sciences, what is happening is this.

In order to provide jobs to certain persons who have retired from Government service, may be from the Department of Technology or from the Department of Medicine or any department dealing with certain aspects of science, what is happening is that people without necessary post-graduate qualifications are being appointed either as heads of departments or as heads of institutions. In such an event people who work under them with better qualifications, with post-graduate research, naturally cannot have necessary respect for those heads of institutions. What happens to the head of the institutions is that he develops a kind of inferiority complex, which is inexorable in its nature. Then, he always tries to suspect his fellow-members and develops a kind of authoritarian attitude. Unless a person who has to work in an institution can develop proper respect for the head of the institution and unless the head of the institution is a person who can on his own merits command respect, this kind of dichotomy between administrative and research work goes on. That would only lead to demoralisation in any scientific institution.

With these words I thank you very much for giving me the opportunity to speak.

SHRIMATI PHULRENU GUHA (West Bengal): Sir, I support the Resolution first and then I also acknowledge that the Government of India has done a lot for the development of scientific and technological research in our country. Still I would like to place a few points before you.

Resolutions may be passed, committees may be formed, more money may be allotted, but unless our attitude towards scientists and technologists is changed, I do not think we can expect very good results. In this connection, I must say that a lot of money is spent and more money may be

[Shrimati Phulrenu Guha.]

allotted. Yet I have great doubts whether we can expect results up to our expectations. The reason is that scientists and technologists are not honoured in our country as their position demands. In this connection I must say that some of our top-most scientists and technologists are respected very much. There is no doubt about that. But only respecting a few outstanding scientists and technologists will not help our country. Our general attitude should change and that can be brought about only if the procedure is changed.

I would like to say here a few points. I am not talking about the national laboratories which are governed by the Government. As we all know, we cannot expect scientific research only in our national laboratories. Unless the other different institutions, particularly universities, come forward and a free hand is given to our universities for doing research work, we cannot progress. In this connection, if I point out one or two facts I do not think it would be out of place. When a grant is sanctioned to a unit, naturally the break-up of equipment and other things needed is asked. The unit has to furnish those particulars. It is not uncommon that a clerk puts up a note asking: Why the machinery is needed, why not one that is less expensive, why this material is to be used, etc? That letter is sent to the unit under the signature of an Under Secretary or somebody else. I would like to point out here that I am not blaming the official. It is the procedure which is not encouraging the development of the spirit of the scientists and technologists. It is high time that the procedure should be changed. When the grant is sanctioned or when the unit is asked to do something it is not only that the official has the authority, he has the right to ask why this machinery should not be used and so on and so forth, but this procedure should be changed.

Another point I would like to tell you is that if we go into the position we will find that with a few exceptions most of the good scientists and technologists are not sticking to universities and colleges. Unless we have good, knowledgeable scientists and technologists attached to universities and colleges, we cannot expect our future scientists and technologists to be good. It is high time that we should take care of it. Even if we have the scientific apparatus in schools and colleges, we do not have enough science teachers, particularly in the secondary schools and mofussil colleges. Why? Apart from any other thing, it is because of the salary and also the status. We cannot forget that. The same person working in a college or university gets a much better salary when he is attached, by the same Government, to a post under an administrative body. His knowledge is not increased by leaving the university and joining the administrative cadre. I am not blaming those scientists and technologists because they leave their scientific career. But we must remember that if we want our colleges and universities to be developed in scientific line, we must take care of them. Some of our friends have spoken about the results of research by the different units and different laboratories. The result of research cannot always be expected overnight, even for years. That atmosphere or that teaching we do not have. It is high time that people should be told that there are two types of research. One is fundamental and the other is applied. Particularly in respect of fundamental research we cannot expect any result in a year. We may not get any result even for twenty years. If we read the lives of the great scientists of the world we find that in some cases they had worked for years but they could not produce result. But at the end they produced something miraculous. That kind of patience we must have in our country also. That does not mean that those who have not got the talent should be encouraged. Those who have got the talent should be encouraged. It should not be judged by the number

of papers produced by a person. He should be judged by the quality of his work or her work.

In other countries we find the industrialists coming forward to spend quite a lot of money on research. Here, at least so far as the common people are concerned, we do not know how much money is spent by the industrialists on different fields of research. It is also high time that the Government should take care and discuss with the different industrialists and induce them to spend money on research, not only in the interests of the country but it is in their own interest, for their own industrial development. But they are not spending money on research. They think that Government should find out the result and they should utilise it. Surely they could utilise the result obtained by Government, but they should also come forward and spend money for the development of industry.

4 P.M.

In this connection I would like to say that the results of scientific research which are used for the development of our country, which are used by the different industries, must be known to the people. Really we commoners are almost kept in the dark. This is my humble suggestion that whatever results have been given over to the industrialists or to some of the departments to be utilised for the country's development should be made known to all of us.

With these few suggestions I support the Resolution.

SHRI LOKANATH MISRA: Mr. Vice-Chairman, after a deep slumber the Government of India woke up in the field of science and technology to find that the entire world has gone much ahead. But even then instead of being aware of what is happening, it seems they are bent upon feeling sleepy yet.

Sir, this Scientific Research Department has been treated as an unwanted child from its very inception. When it was first started, it was tied to a Ministry of the Prime Minister. In 1948 it followed some other Minister. In 1953 it went to a third Minister. In 1954 or 1955 a separate Ministry was created. But again they have now gone back to the position in 1951. They have merged it in the Education Ministry as if the all-pervading Education Ministry can also look after scientific research and cultural affairs.

THE VICE-CHAIRMAN (SHRI M. P. BHARGAVA): This is permutation and combination of scientific methods.

SHRI LOKANATH MISRA: This unification or bifurcation is probably due to the bureaucratic attitude of the Secretariat. With their immature thinking they presume that they could get much more out of this bifurcation and unification and that they do not have to pay any heed to the actual facts. These frequent changes have done greater harm than they have done any good to this Ministry, because the officers go on changing from Ministry to Ministry and by coming in contact with new persons in the new Ministries it becomes difficult to deal with them. If they have to deal with people who know about it, things are much easier. Things become only difficult when new persons come in who have to be persuaded for new things to be done or for any fresh project to be taken up.

Now, Sir, there is an organisation called the National Research Development Corporation. It had been started with a capital of Rs. 20 lakhs. Each year it has suffered some loss and ultimately the capital has been eaten up to the extent of Rs. 17 lakhs. Rupees three lakhs remain and I do not know how many years will be needed to eat up the rest. Probably a year or two after the entire capital would have been eaten up. But they have not done any of the functions that were allotted to them. The main functions allotted to them were to have designing and plant fabrication. This has subsequently been taken up

[Shri Lokanath Misra.]

by another Department the C. S. I. R. There is duplication. Since this National Research Development Corporation has not been able to do anything yet and since the C.S.I.R. has taken it up and it has gone ahead with the task that was allotted to it. I would urge that this National Research Development Corporation should be wound up. There is absolutely no necessity for continuing this body. The same work and the same responsibility could be given to the C.S.I.R. because the C.S.I.R., I am told, has gone ahead with its pilot projects, with the designing and plant fabrications, etc.

Sir, if we go into the statistics, we know the plight of the scientists in the country. From the housetops it is being said that the scientists will carry us forward in the field of science and technology. But if you see the engineering colleges and other institutions that have to deal with technology and science, they are staffed at the top only by non-technical administrators. People who do not understand technology or science hold charge of the departments. So, it becomes very difficult for the subordinate officials who are scientists to get things done through them by persuation. A lot of time is being taken up by the lower staff in persuading the head to accept a certain thing. That is a very wrong policy. If scientists are not given their proper position, then there will be no advancement absolutely in the field of science. Howsoever our Prime Minister might be giving talks from platforms and radio, they will be of no avail at all because the scientists are the persons who could carry the country forward. No amount of our Prime Minister's talk can carry the country forward unless the scientists are given their proper place. So, the crux of the problem lies there and not in how many times we speak through the radio or on the platform about advancement of science.

Then, whatever is being achieved in the field of research does not pass on to the industries. That is because of lack of co-ordination between research and industry. In other countries the Governments spends the money not through its own agencies but partly through its agencies and partly through non-official organisations. Here, even though Government otherwise believes in a mixed economy, it seems that in this particular sector it does not believe in mixed economy. It does it all in the public sector, and because it is being done in the public sector the people in general, the industrialists in general, are not supplied with the information necessary for their industries. There is also no liaison between the industry and the Government research departments. If there was liaison or if there could be transfers of scientists from the research laboratories to the industries concerned or from the department of engineering back to the research department, knowledge could be disseminated. But here the laboratory holds the entire knowledge, if there is any.

The country does not know a lot of research is being done, there is a lot of things being done in the laboratories—to what use they are put. They are not really used in the fields for which they are meant. We are spending crores of rupees on this but we are not putting them to use

Then I will come to the point about publicity. We lack so much in publicity regarding the information from our laboratories; except what is being generally said by the politicians, by the top leaders in the ruling party, nothing technical goes to the masses.

THE VICE-CHAIRMAN (SHRI M. P. BHARGAVA): That point has been dealt with by the Minister. He said that he knew that there was lack of publicity and . . .

SHRI LOKANATH MISRA: I am sorry. Has he conceded it? But there is only one point which is very important. There are about two hundred million Hindi-knowing people in

this country. There is a publication by the name of "Vignan Pragati" which has a circulation of only 300. We must be spending a lot of money on this publication. If that particular publication is not acceptable to the readers, then they must change the pattern. There must be something wrong with the publication. They must make it more interesting. If they are spending some money, let them spend something more, make it attractive and make it acceptable to the readers. Unless we do it, it will be useless. It will not mean anything, it will remain only in name that we publish one magazine and that is all. As if for our satisfaction we are getting it published. But all the same the purpose is not served.

Now, Sir, the States are required to spend 20 per cent on education, which also includes scientific and technological education. And the Centre is supposed to be spending 10 per cent of its budget. But I am given to understand that the States are doing their part of the job while the Centre is not doing it. The Centre is now spending to the tune of three per cent of the budget. Now, these norms were set probably ten or twelve years back when the need for science and technology was not very much realised as it is being realised now. These norms should change. They must spend. Even the Centre should now be prepared to spend 20 per cent because our future very much depends upon how far we progress in the field of science and technology. That is what is being admitted by everybody. So, what is the difficulty in increasing our expenditure on education, if that is so very necessary? Unless we spend more, unless we are prepared to spend more, unless we reorientate the entire pattern, there is also the possibility of a great danger even to our survival. Our neighbouring country with whom we have a lot of disputes short of an open war—I mean the Chinese—are spending huge amounts on science and technology. We have to compare our expenditure with theirs. The Chinese, I am told, are spending about three per cent of their national income, while we are spending only 0.3 per cent. We have a handful of geologists in this country, who number about three thousand. We do not know what to do with them. If that is so, then how are we going to compete with other countries like the United States, or the Soviet Union or the United Kingdom? They spend colossal amounts on these and whatever is being spent is fully utilised. In this country we spend less and whatever little amount is spent, we are not in a position to utilise it fully. Therefore, I would agree with the hon. mover and I support the Resolution.

DR. S. CHANDRASEKHAR (Madras): Sir, I welcome the Resolution of the hon. Member, Shri Dhirendra Chandra Mallik, I feel it is rather a little ungracious to rise to speak after the interim reply of the hon. Minister of Education. However, since some other points that I had proposed to make had been anticipated by him or by the hon. Members who spoke earlier on this Resolution, I would like to draw briefly the attention of the hon. House to these.

May I at the outset congratulate the Government for having done the very best during the last seventeen years of our political freedom? Sir, in 1947 when we attained our political freedom there were only sixteen universities in this country. Today the number has increased to 55, nearly four times the number with which we started our life as a free, independent India. Then as for the national laboratories, we started from scratch with nothing. It is to the vision, the pioneering zeal and, shall I say, the great capacity of our beloved Prime Minister that we started this national network of laboratories, and today we have 29 of them. And Sir, this is something of which the Government deserves to be congratulated.

But then quantity is not everything and we want to look into the quality of the work turned out by these laboratories and research institutes

[Dr. S. Chandrasekhar.]

as well. We must also look into the quality of the graduates of these new universities. Here we find that the story is rather disappointing, if we are to accept and adopt an international criterion as the standard or measuring rod. For instance, we find that during the last fifteen years, we have hardly produced three Fellows of the Royal Society and hardly one Fellow of the British Academy, not to speak of people who won the Noble Prize for Science. India won recognition in 1930 when Sir Chandrasekhara Venkataraman won the Nobel Prize for Physics, and earlier Tagore won the Nobel Prize for Literature as early as 1913. And today we do not have fifteen living Fellows of the Royal Society whereas people of the United States which is not normally entitled to have Fellows of the Royal Society because it is not part of the Commonwealth, by virtue of the extraordinary work that they have done in the laboratories and institutes and universities are welcome to become Fellows of the Royal Society and we find that the number is something like sixty for a population of 180 millions. A few months ago, 'Nature' the well known British journal, published a statistical comparison of the awards given on the basis of original research work in the various fields of science, from Physics to Zoology, and I am sorry to say that India is mentioned in the list at the very last. Our performance is far from satisfactory, for a country of five thousand years of cultural heritage and ancient civilisation and a country with a prolonged period of education, pre-British as well as post-British and post-independence India, and this is something on which we cannot congratulate ourselves.

What is the reason for this? You might ask, and I want to explore and answer in three or four points on this question. The first point is this. And I want to say it very frankly, not because I am a nationalist but because it happens to be the truth. As I told the other day I have gone round the world more than once. I have visited many countries as a scholar and a scientist, and I want to be very sure that the House understands this that as far as India's ability is concerned, its latent capacity to pick up learning and advance the frontiers of knowledge is concerned, our students, our young men and women, are second to none in any part of the world. And yet, despite the tremendous ability to learn and to advance knowledge, we have not done very well, and the reason seems to be something like this. To begin with, we cannot build a super-structure of Nobel Prize-winners and Fellows of the Royal Society or Fellows of recognised international scientific organisation, down to the Ph.Ds., D.Scs., college professors, university professors, the B.As, the S.S. L.Cs. and high school students unless we have a strong educational foundation. The latest statistics produced by the Census Commissioner and the Registrar General for 1961 reveal a very sad story. If I may interpret the statistics very liberally for the purposes of this House in regard to our literacy rate—and the Home Ministry's definition of 'literacy' is ones ability to read and write a post card—we are hardly 25 per cent literate. Let us take the age above ten because literacy must be calculated not for all age groups because at birth everybody is illiterate. And then when we go higher, how many of them remain literate, who have not relapsed into illiteracy? Then how many who take the S.S.L.C. or Matriculate or High School complete the course? There again there is a very small percentage of the total number of young boys and girls who have gone to high school. Then there is a still smaller percentage who go up to B.A. and B.Sc. Beyond that those who have shown aptitude for research in physics, chemistry, geology, botany or anthropology and go to Indian universities or to universities in the United States or the United Kingdom, even Germany or Sweden or Russia and come back as Ph.Ds or D.Sc's. These are no more than a handful. Among the fifty five universities—I asked the Vice-Chancellor of one Uni-

versity—at least some 20 Chairs remain vacant, not because the universities do not have the resources, not that they have not advertised for these Chairs to be filled, but because there are not competent young men and women with the requisite degrees and academic credentials, with publications and papers to their credit, who can occupy these Chairs. What is the matter with our country? The first thing, Sir, is that the whole educational structure of the country seems to be lopsided. And we cannot have, as it were, a few brilliant, scientists who can put things in stratosphere at the top but instead must have a whole mass of people educated and alert and not backward, groping completely in darkness and unlettered. Therefore, if you are going to build up scientists of any superior calibre, of any internationally accepted calibre, then you must build up from the bottom as it were. You cannot expect many Nobel Prize winners in a country where 80 per cent. are illiterate, no matter how you define your literacy or illiteracy. We are all stressing that we shall have more laboratories, more institutes, more research organisations, more money because China gives 3 per cent. of its income whereas we give only one per cent, or whatever the case might be, ignoring the fact that we cannot have distinguished scientists unless we have a large mass of educated people. Therefore, those who believe in the emergence of a great number of scientists, in our country, technologists, superior craftsmen in intellectual matters, they must go to the very bottom and the root of the matter and see what we can do to reorganise and rehabilitate and reconstruct the basic educational fundamentals of our country and our educational structure.

Sir, I come to the second point of this story. In our country we have never been able to develop any scientific temper, or what Bertrand Russell calls scientific outlook. Our whole life is conditioned directed and dominated and guided by superstitions. There is lack of anything that can even be remotely called scientific understanding of the universe and its phenomena. In our country today we have jet airliners co-existing with bullock carts, where a Professor of Physics might "celebrate" a solar or a lunar eclipse by putting—*darba* grass in the provisions in the home! Some who teach physics in our universities and colleges and schools, teach our youngesters how a solar or a lunar eclipse is caused but do not themselves believe it. This, if I may use the word, dichotomy, or split personality in our scientific making seems to be at the bottom of the trouble in our country, and if we have not gone to the extent of doing anything of fundamental research in science, moving the frontiers by .01 millimetres, and not produced able scientists as America and Russia have done, the reason seems to be that we as a nation seem to have missed the bus not only of evolving and bringing about the agricultural revolution, the industrial revolution or the health revolution and, last but not the least, a scientific and technological revolution. Therefore, if you want to look at the real root of the matter, it is no use blaming the Government of India for the scientific backwardness of our community and the country at large. That is why even today in 1964, we find vaccinators of the municipal corporations of our cities chasing mothers with infants to give them primary vaccination and the mothers with their new born infants running away from the vaccinators on the presumption that the vaccinator was going to harm their babies. If this is the attitude, then we can hardly expect any scientific outlook in the country. These are unhappy matters. But these ought to be referred to because there is a need for giving up our traditional superstitions.

Secondly, Sir, there is another question. I have met several of the directors of the national laboratories. I have visited two of them. Their tables were crowded with files and files. I presume, Sir, that these files may deal with leave letters of the peons

[DR S. Chandraeskhar.]

because the peon is getting married, or, the emoluments demanded by the staff. If you make a man a director of an institute or a national laboratory by virtue of his attainments in a particular field of endevour, botany, physics or chemistry, and you make him also the administrative head of the organisation, he is finished. The moment I find a young, promising scientist with Indian background or foreign background, who has done some valuable papers, who has collaborated in some original research and you make him an administrative Director on a pay of Rs. 2,000, with a few chaprassis and a hundred files, you sign his death warrant as it were; he is finished. Therefore, Sir, as in most universities abroad, in most of the research institutes abroad, there are two functions very clearly demarcated. There is a research Director who does not bother about how the plant works, but whose business is to go straight to his apparatus and begin from where he left it in the evening or last night or in the early hours of that morning or as the case might be. On the other hand there is an administrative Director who could indeed be trained in I.A.S. or I.C.S. whose business should be to see that the administrative wheels of the institute run smoothly without any difficulty. I do not think that the research Director should be consulted on anything about the running of this institute. The research Director is a man who deals primarily with scientific and intellectual matters, while the other man deals with the more mundane and necessary matters of making this organisation work. Coupling them both and expecting the man to produce not only a beautiful volume on advanced physics and at the same time run the institute, should be discouraged

Well, Sir, I come to a third point, I want to dilate upon it for a moment. In this country we have followed some British traditions. In scientific matters the question of seniority must be completely overlooked. The question of giving somebody a raise automatically because he is greying or becoming older does not hold any water and is, from a scientific point of view invalid. Sir, again I quote some statistics that I compiled some time ago, long before I became a Member of this House, to show that most of the creative work all the world over has been done by scientists between the ages of 35 and 50. Practically everybody, who has won any great international award, a Noble Prize or a Pulitzer Prize, or become Fellow of the Royal Society or of the British Academy, or become member of an international scientific organisation, has almost finished his major work by the age of 40 or 50. And we seem to bring young scientists and put them here as a junior on a very nominal salary to work under somebody who is 60 and over, who is senior only in age, It is not fair. I do not subscribe to the theory that grey hair means absence of grey matter. But sometimes it may mean that. when such a competent young scientist is put under a senior man who has not done much work but is put above him due to seniority, piction is bound to arise and not much creative work is likely to come out of the laboratory.

Every time I go to the United States —this is a special point I want to make—I go round the universities from Columbia to California, from New York to San Francisco. I visit 40 to 45 universities every year and I meet young extremely competent, and even brilliant young Indians who have come with a B.A. or M.A. from the Indian universities, who have taken a PhD. or D.Sc. from American universities. These young Indians have appointments with a very good start, minimum salary of 750 dollars, 800 dollars, 1,000 or 1500 dollars and these people are not even 45. They say that they are very happy because their environment is happy, the laboratory is the latest, they have the latest and modern equipments, the fellow scientists and fellow workers are very cordial to them. These young scientists want to come to India

and work in our country for the benefit of our motherland for its progress, for its industrialisation, for its defence for perhaps, patriotic reasons, not because science has any geographical limitation or scientific knowledge has any frontiers. And yet these people are not able to come to our country, Why? A few months ago I was in one of the American universities. One young man wrote to one of the national laboratories. He did not even receive an acknowledgement of his letter. One man took a loan, took six months' leave, visiting many universities but found no encouragement and said to me "I did not have any relatives among the Powers that be". This is a serious charge but I am going to let it out so that people might at least think about it. Then he ran round the country. He came back and said: 'Now they are offering me Rs. 400 but I am getting 900 dollars and so I am going back.' You might say in a philosophic sense that this young man's loss is not ours, of course, because his writings will still be available but then the Government is appealing to all Indian scientists abroad to come back, but come back to what? Even British scientists are deserting their universities such ancient universities as Oxford and Cambridge and going to America because conditions are much better there. Therefore, if our Government means business—and I think it does—I want them to look seriously into this matter, even appointing a committee of enquiry to go round the world particularly the 5 or 6 countries where most of our scientists are working and see what prevents them from coming home.

And lastly before I sit down, with your permission Sir, may I make one more point? Despite the technological achievements and marvellous inventions of the Soviet Union I find that a free mind, the development of a free society, the creation of an open society is a pre-requisite and primary condition for the development of the human mind. If you think that in a closed society you can confine the scientists, dictate to them, lock them up in a room and ask them produce a formula for conquering the moon or the sun, you are mistaken. So long as this country with its democratic traditions has a free society, it can create conditions for the betterment and advancement of knowledge through our free scientists.

People are questioning—one more minute and I am done—that we have no money. This is something extraordinary that we have no resources. I notice that money is available for all sorts of things. For instance I will give one small example. In most countries abroad the insurance companies finance studies in medical sciences. Very practical—Why? If they finance studies in medical science and if you conquer. disease, postpone death and prolong human life, so much more premia are paid and so you get more money. Now our L.I.C. must finance medical research. Then we have the industries in the private sector. They can certainly give some funds for industrial research, research which will help the wheels of industry run better, yield larger dividends and greater profits in the years to come.

Lastly, the Government must realise that every naya paisa they invest in the making of a scientist or technologist or a scholar is a tremendous long-range investment in which the dividends may not be visible today or tomorrow but will be a long-range benefit not only to us but to the world at large. I hope when the call comes our country will not be found wanting. I have great pleasure in supporting the Resolution of Shri D. C. Mallik.

شری پیارے لال کریل "طالب"

(اتر پردیش) : جناب وائس چیرمین صاحب - میں آپ کا زیادہ وقت نہیں لونگا - یہ تو ہم اچھی طرح سے جانتے ہیں کہ ٹیکنالوجیکل اور سائنٹیفک ترقی ایک دیش کے لئے

[شری پیارےلال کریل (طالب)]

کتنی ضروری ہوتی ہے - باہر کے دیشوں نے جتنی سائنٹیفیک ترقی کی ہے اتنی ہمارے دیش نے نہیں کی ہے - اور اس کا سوواں حصہ بھی ہم نے ترقی نہیں کی - دیش کی انڈسٹری کا دارومدار دیش کے ہر شعبہ کی ترقی کا دارومدار سائنٹیفیک اور ٹیکنالوجی کی ترقی پر ہے اور ہمیں اس طرف زیادہ دھیان دینے کی ضرورت ہے -

موجودہ دور میں موجودہ زمانہ میں جب ہر بات سائنٹیفیک طریقہ سے ہوئی ہے - ہر کام سائنٹیفیک طریقہ سے ہوتا ہے جب کہ دوسرے دیشوں کا مقابلہ کرنے کے لئے ہم کو سائنٹیفیک قسم کے اوزاروں کی ضرورت ہوتی ہے - جب کہ زندگی کے ہر شعبہ میں سائنس اور ٹیکنالوجی کا دخل ہے تو ہمیں اس طرف زیادہ دھیان دینے کی ضرورت ہے - انیشیل اسٹیجیز میں جب بچہ اسکول میں یا کالج میں داخل ہوتا ہے تو ہمیں اسی وقت سے اسکو یہ دیکھنا چاہیئے تاکہ ہمارے اسکولوں میں بڑے بڑے سائنٹسٹ تیار ہو سکیں جس سے ہمارے دیش کو فائدہ پہنچے - لیکن ہم دیکھتے ہیں کہ ہمارے ملک میں بہت ہی ناکامی سائنٹسٹ ہیں - آپ باہر کے دیشوں میں چلے جائیے آپ کو وہاں پر ہزاروں مشہور سائنٹسٹ ملیں گے - آپ کو وہاں پر ہزاروں ایسے آدمی ملیں گے جنہوں نے نئی نئی ایجادیں کی ہیں - ہمارے دیش میں کتنے ایسے آدمی ہیں جو نئی ایجاد کرنے کے قابل ہیں اور کر رہے ہیں ہمارے دیش میں دو تین سائنٹسٹوں کو چھوڑ کر باقی کوئی ایسا آدمی نہیں ہے جس نے کوئی ایسا کارنامہ کیا ہو ایسی کوئی بڑی بات کی ہو جس پر ہمیں فخر ہو یا دنیا کو فخر ہو - ہم خود دیکھتے ہیں کہ جب کوئی لڑکا آٹھویں، نویں درجہ سے پاس کرکے دسویں میں آتا ہے یا میٹرک سیکنڈری کلاس میں آتا ہے تو وہاں پر یہ فیصلہ کیا جاتا ہے کہ کون کونسے لڑکوں کو ہم ٹیکنالوجی یا میڈیکل کالج میں بھیجیں یا انجینیرنگ لائن میں بھیجیں - وہاں پر سائنس کا امتحان لیا جاتا ہے کہ یہ لڑکا سائنس میں کیسا ہے - ہم نے بہت لڑکے اور لڑکیوں کو روتے ہوئے دیکھا اس لئے کہ دو فی صدی نمبر کم آئے ہیں - اس لئے انہیں سائنس میں نہیں لیا جا سکتا - دو تین فی صدی نمبر کم آنے کی وجہ سے انہیں انجینیرنگ میں نہیں لیا جا سکتا ہے - بہت سے لڑکے اور لڑکیوں کے ایسے بہت اونچے ہوتے ہیں اور وہ سائنس کی ریسرچ میں بہت ہی مفید ثابت ہو سکتے ہیں - جو لڑکے سائنٹیفیک اسٹڈی کرنے کے لئے بے تاب ہیں انہیں دو تین فی صدی نمبروں کے لئے فیل کر دیا جاتا ہے یا ان کی سفارش نہیں پہنچتی ہے - اور اس طرح سے انہیں سائنس میں نہیں لیا جاتا ہے - میرے دو بھائی ہیں - ایک بھائی نے ایم - ایس - سی کیا ہے اور اس کی انتہائی خواہش تھی کہ وہ میڈیکل کالج میں جائے اس کا میڈیکل لائن کے لئے زبردست دماغ ہے وہ پنجاب یونیورسٹی

پر ہیں - ایک بھائی آئی - اے - ایس - میں ہے اور دوسرا ایک اور اچھی جگہ پر ڈائریکٹر ہے - مگر جس چیز کو وہ چاہتے تھے ہمارے پتا چاہتے تھے کہ وہ میڈیکل لائن میں جائیں اور سب کی یہی خواہش تھی مگر وہ خواہش دب کر کے رہ گئی - محض اس لئے کہ دو تین نمبر سے وہ فیل ہو گئے یا زیادہ اچھے نمبر نہیں لا سکے - میں یہ کہتا ہوں کہ اگر اس دیش کے اندر آپ سائنٹیفیک ترقی چاہتے ہیں تو اسکولوں اور کالجوں میں ایسا ماحول پیدا کیجئے اس کے لئے سہولتیں پیدا کیجئے اور جتنے لڑکے سائنس کے لئے جانا چاہتے ہیں ان کو جانے کا موقعہ دیجئے -

آپ ایڈیسن کو لے لیجئے - وہ کون سے کالج میں پڑھا تھا - کونسی ایم - ایس - سی - اور بی - ایس - کی ڈگری اس نے لی تھی کونسا وہ ڈاکٹر تھا سائنس میں اسی طرح سے اسٹیونسن کو لے لیجئے - وہ ایک لوہار کے کارخانہ میں کام کرتا تھا اور اتنی بڑی ایجاد اس نے کی ریل گاڑی دیکھ کے اندر چلے جائیے - کئی ایسے ان پڑھ اور معمولی پڑھے لکھے آدمی ملیں گے جن کا سائنٹیفیک برین ہے اور جو طرح طرح کی ایجادیں کر سکتے ہیں مگر ہماری گورنمنٹ کی طرف سے ان کی کوئی حوصلہ افزائی نہیں

کے بی - ایس - سی کے امتحان میں ساتویں آٹھویں نمبر پر تھا - اور ایم - ایس - سی - بھی کیا انہوں نے - میڈیکل کالج میں رہ جانا چاہتے تھے - اگر ان سے کہا گیا کہ آپ یو - پی - کے رہنے والے ہیں اس لئے پنجاب میں آپ کو نہیں لیا جائے گا - پنجاب میں اس وقت کمپٹیشن نہیں ہوتا تھا - جو تاپ کے لڑکے آتے تھے پچاس، ساٹھ جو بھی ہوں وہ لے لئے جاتے تھے - میں لاہور میڈیکل کالج کی بات کر رہا ہوں - وہ اس میں لیا جا سکتا تھا مگر نہیں لیا گیا - پھر وہ یو - پی - میں آیا اور یو - پی - میں امتحان لیا جاتا تھا لیکن اس سے کہا گیا صاحب آپ پنجاب سے پڑھے ہیں اس لئے یہاں آپ کو نہیں لیا جائے گا - یہ میں ۳۹-۴۰ ع کی بات کر رہا ہوں - بہت لڑنے جھگڑنے کے بعد ان کو اجازت ملی لیکن صرف دو تین دن امتحان میں رہ گئے تھے - تب ان کو اطلاع دی گئی کہ آپ امتحان میں بیٹھ جائیے - لیکن چالیس فی صدی کی بجائے سینتیس فی صدی وہ نمبر لا سکے اور اس لئے اس کو نہیں لیا گیا - اسی طرح سے دوسرا بھائی تھا انہوں نے بی - ایس - سی کیا اور یو - پی - سے کیا لیکن ان کی بھی یہی حالت ہوئی کہ وہ دو تین نمبر سے نہیں آ سکے - یہ بات دوسری ہے کہ آج اچھی جگہوں

شری پیارے لال کریل دد طالب دد :

جی ہاں - ایسے تو ہزاروں کیس ہیں اور میں دنیا تو کیا ہندوستان میں بتا سکتا ہوں ہمارے ٹیگور صاحب جو انگلش لٹریچر کے بڑے بھاری شاعر گذرے ہیں وہ اسکول کے امتحانوں میں بھی پاس نہیں ہوئے اور بہت کم نمبر لاتے تھے ، یہ سب اچھی طرح سے جانتے ہیں - Examinations are not the real test of one's ability. ایگزامینیشن پر آپ ڈیپینڈ مت کیجئے - آپ آدمی کے ٹیلینٹ کو دیکھئے ، اس کے ایکسپیریئنس کو دیکھئے - اس کے اپٹیچوڈ کو دیکھئے اور اس کے امبیشن کو دیکھئے - یہی چیزیں ہیں جو آدمی کو نئی نئی ایجادات کرنے کے لئے مجبور کرتی ہیں - آدمی کی ان کوالٹیز کو دیکھئے ، ان صفات کو دیکھئے ، مگر ہوتا کیا ہے کہ جو قابل نہیں ہیں وہ لے لئے جاتے ہیں کیوں کہ سفارش پہنچ جاتی ہے - بعض ایسے ہیں جو فرسٹ ڈویژن لے آئے ہیں لیکن پھر بھی نہیں لئے جاتے ہیں - بہت سے ایسے خانگی معاملات ہوتے ہیں جن کی وجہ سے لڑکے فرسٹ ڈویژن نہیں لا پاتے ہیں - میں نے خود میٹرک فرسٹ ڈویژن میں پاس کیا مگر بعد میں میں پالٹیکس میں پڑ گیا ، شاعری کا مجھے چسکا ہوا اور جے میگزین کا میں ایڈیٹر رہا - میں نے کئی کلاسیز اٹینڈ نہیں کیں -

[شری پیارے لال کریل دطالب]

ہوتی ، ان کا کوئی انکریجمینٹ نہیں ہوتا ، ان کی بات کوئی سنتے کو بھی تیار نہیں ہے - وہ درخواستوں پر درخواستیں دیتے ہیں مگر کوئی سنتا نہیں ہے - کیا آپ یہ سمجھتے ہیں کہ وہ ہی سائنٹسٹ ہیں جو کالجوں اور یونیورسٹیوں سے پڑھکر ایم - ایس - سی - اور بی - ایس - سی - کی ڈگری لے آئے ہیں - آپ دوسرے ٹیلنٹس کو بھی دیکھئے - سائنٹیفک ٹیلنٹس کو دیکھئے جو ہمارے ملک کے طول و عرض میں آپ کو ملیں گے - اس طرف زیادہ دھیان دینے کی ضرورت ہے اور ہمارے ان کم پڑھے لکھے لوگوں کی بھی تھوڑی سی حوصلہ افزائی کیجئے -

اس کے علاوہ وظیفہ کا سوال ہے - جب کسی کو سائنٹیفیک ریسرچ کے لئے وظیفہ دیتے ہیں تو کہتے ہیں کہ وہ فرسٹ ڈویژن ہونا چاہیئے - اگر کوئی آدمی سیکنڈ ڈویژن ہے تو اس کو وظیفہ دیا ہی نہیں جا سکتا ہے چاہے اس کا اپٹیچوڈ کتنا ہی کیوں ہو -

شری دین - ایم - انور : شری راما نوجم جو مدراس میں پیدا ہوئے تھے اور دنیا میں جن کی بہت بڑی چرچا ہے میتھیمیٹکس میں وہ کوئی کالج کے ڈگری یافتہ نہیں ہے -

شری این - ایم - انور : آپ بڑی اچھی تقریر کرتے ھیں -

شری پیارے لال کریل دہ طالب دہ :

اس وجہ سے آگے چل کر ایم - اے میں میں فرسٹ ڈویژن حاصل نہیں کر سکا - لیکن اس کا یہ مطلب نہیں ھے کہ میرے اندر قابلیت نہیں ھے یا میں اس قابل نہیں ھوں کہ میں اور نہیں نہ جا سکوں - تو ان سب باتوں کو آپ نظر انداز مت کیجئے - اور دیکھئے کہ نیچے کے لوگوں میں ، چھوٹے آدمیوں میں یا کم پڑھے آدمیوں میں کسی میں ٹیلینٹ ھے - پڑھے لکھے آدمیوں میں بھی جو فرسٹ ڈویژن لے آتے ھیں ان کو تو آپ موقعہ دے دیتے ھیں لیکن سیکنڈ ڈویژن والوں سے تو کوئی بات نہیں کرتا ھے - اگر دیکھا جائے تو بہت سے ایسے سیکنڈ ڈویژنرس ھیں جو بہترین طریقے سے پڑھا سکتے ھیں لیچ اور یونیورسٹیز میں ، مگر ان کو نہیں لیا جاتا ھے - وہ پروفیسر نہیں بن سکتے ھیں ، لیکچرر نہیں بن سکتے ھیں - آپ نے وھی پرانا فرسودہ طریقہ قائم رکھا ھے کہ اس معیار پر ھم اپنے پروفیسروں اور ٹیچروں کو جج کریں گے مگر یہ کوئی صحیح طریقہ نہیں ھے -

آپ کے جو آدمی ریسرچ کے لئے باھر کے دیشوں میں جاتے ھیں امریکہ میں جاتے ھیں انگلینڈ میں جاتے ھیں ، جرمنی میں جاتے ھیں یا اور دوسرے ملکوں میں جاتے ھیں ، ان کے بارے میں ذرا دیکھئے اور معلوم کیجئے کہ سو جاتے ھیں تو ان میں سے کتنے واپس آتے ھیں - آپ ایمبیسی والوں سے جاکر پوچھئے ، وہ کام کیلا کہتے ھیں کہ سقرہ سے لے کر بیس فی صدی آدمی انہیں دیشوں میں وہ جاتے ھیں - کیا یہ سہی نہیں ھے - کیوں وھاں وہ جاتے ھیں - وھاں انکی قدر ھے - ان کے لئے ماحول ھے ، پروفیسروں میں ان کی عزت ھے - میں نام بتا سکتا ھوں کہ تھرڈ ڈویژنرس یہاں سے گئے ھیں جو آج وھاں پروفیسر ھیں ، جنھوں نے وھاں جاکر پی - ایچ - ڈی - کی ڈگری لی ھے - ڈاکٹر بنے ھیں اور وھیں پر وہ پڑھا رھے ھیں - میں ذاتی نالج سے ایک شیڈولڈ کاسٹ کے آدمی کو بتا سکتا ھوں جو تھرڈ ڈویژن تھا اور اپنے خرچہ سے وھاں گیا تھا - اس نے وھاں ڈاکٹریٹ کی ڈگری حاصل کی اور وھیں پر وہ پروفیسر ھے - آج وہ وھیں پر رھنا پسند کرتا ھے - اس کا باپ اس کو بلا رھا ھے مگر وہ آنے کے لئے تیار نہیں ھے - وھاں ان کا ماحول ھے ، ان کو انکریمینٹ ملتا ھے اور ان کی واقعی قدر ھے - تو اس طرح پندرہ فی صدی سے لے کر بیس فی صدی تک باھر جانے والے آدمی

ہوں - میں چاہوں گا کہ اس کو روکا جائے -

اس سلسلہ میں میں یہ بھی عرض کر دوں کہ ابھی چند سال ہوئے جب دلی میں ہی ایک نہیں بلکہ دو سائنٹسٹوں نے خودکشی کر لی تھی - اس کی کیا وجہ ہے - گورنمنٹ ان کو اتنا دم دیتی ہے اتنی کم تنخواہ دیتی ہے کہ ان کو تو اپنے دماغی تفکرات سے ہی فرصت نہیں ملتی ہے اور ان کے سامنے اتنی دقتیں پیش آتی ہیں کہ ان کو ان فکروں سے ہی نجات نہیں ملتی ہے - آج ان کے لئے ہمارے دیش میں آزاد ماحول نہیں ہے - ہمارے سائنٹسٹ کے لئے ، بڑے بڑے سائنٹسٹ کے لئے جیسی آزاد فضا ہونی چاہئے ، جیسا ماحول ہونا چاہئے ، وہ آج نہیں ہے - بے جا دخل دیا جاتا ہے ان کے کام میں اور ان کے راستہ میں بے جا رکاوٹیں ڈالی جاتی ہیں - انکو اپنے اشارے پر نچانے کی کوشش کی جاتی ہے - ایک انٹلکچول آدمی ، ایک سائنس کا آدمی ، کہاں تک ناچ سکتا ہے کسی کے اشارے پر - اسے تو اپنا کام کرنا ہے - اپنے کام سے دلچسپی ہے اور اس کا امبیشن ہے کہ میں کچھ کرکے دیش کے اندر دکھاؤں - اس کے لئے آزاد ماحول پیدا کیجئے - اس کو ہر قسم کی سہولیت دیجئے - اس کے لئے روپئے پیسے کی کمی

[شری پیارےلال کریل (طالب)]

وہیں رہ جاتے ہیں - ایمبسی والوں کا یہی کہنا ہے اور میرے ایک آدمی جو باہر گئے ہیں انہوں نے بھی بتایا کہ اتنے فی صدی آدمی وہیں پر رہ جاتے ہیں اور ہندوستان واپس نہیں آتے ہیں -

ایک اور مسئلہ لے لیجئے - میرے دل میں مسلمانوں کے لئے بڑی عزت ہے اور میں ان کے ساتھ کبھی کسی قسم کا امتیازی سلوک نہیں کرنا چاہوں مگر میں نہایت افسوس سے کہوں گا کہ علی گڑھ یونیورسٹی میں کتنے مسلمان انجینیری میں پاس کرتے ہیں ؟ ٹیکنالوجی میں اسٹڈی کرتے ہیں - سائنس میں اسٹڈی کرتے ہیں اور بعد میں ڈگری لے کر اپنے دیش کو چھوڑ کر پاکستان چلے جاتے ہیں - وہ یہاں سے کیوں چلے جاتے ہیں - آپ ان کے لئے یہیں ایسا ماحول پیدا کیجئے کہ وہ یہیں رہ جائیں - آپ ہزاروں لاکھوں روپیئے ان طالب علموں پر خرچ کرتے ہیں مگر بعد میں پاکستان میں جاکر نوکری کرتے ہیں - میں اپنے مسلمان بھائیوں سے اور ان کے لیڈروں سے یہ کہوں گا کہ وہ اس کو روکنے کی کوشش کریں اور سرکار سے بھی کہوں گا کہ اس کو روکا جائے - اسی طرح سے ہماری اور بھی بڑی بڑی یونیورسٹیز میں سے جو پڑھکر نکلتے ہیں وہ باہر جاکر نوکریاں کرتے

نہیں ہونی چاہئے نہیں تو دیش کے اندر سائنٹسٹ نکلیں گے ، تبھی تو اس دیش کے اندر بڑے بڑے ٹیکنالوجسٹ نکلینگے - تو ایسی فضا پیدا کیجئے ایسا ماحول پیدا کیجئے تاکہ ہمارے اندر اچھے سے اچھے سائنٹسٹ پیدا ہو سکیں -

میں اور زیادہ نہ کہتے ہوئے - ہمارے بہت سے ساتھیوں نے جو نئی نئی باتیں اس سدن میں رکھیں ہیں ان کی تائید کرتا ہوں اور یہ اپیل کرتا ہوں کہ اس دیش کے اندر جو سائنٹیفیک ٹیلنٹیڈ ہے ان کو انکریج کیجئے - اس کو سہولیت بہم پہنچائیے اور یہ جو ریڈ ٹیپزم ہے اور یہ جو بے جا دخل ہے ان کے راستہ میں ، اس کو دور کیجئے اور ان کو اچھی سے اچھی تنخواہ دیجئے تاکہ وہ ہمارے دیش کے لئے مفید ثابت ہو سکیں - تھینک یو -

†[श्री प्यारेलाल कुरील 'तालिब' : (उत्तर प्रदेश) जनाब वाइस-चैयरमैन साहब, में आपका ज्यादा वक्त नहीं लूंगा। यह तो हम अच्छी तरह से जानते हैं कि टेक्नोलोजिकल और साइंटीफिक तरक्की एक देश के लिये कितनी जरूरी होती है। बाहर के देशों ने जितनी साइंटीफिक तरक्की की है उतनी हमारे देश ने नहीं की है और उसका सौवां हिस्सा भी हमने तरक्की नहीं की। देश की इंडस्ट्री का दारोमदार, देश के हर शोबे को तरक्की का दारोमदार साइंटीफिक और टेक्नोलोजी की तरक्की पर है और हमें इस तरफ ज्यादा ध्यान देने की जरूरत है।

मौजूदा दौर में, मौजूदा जमाने में हर बात साइंटीफिक तरीके से होती है, हर काम साइंटीफिक तरीके से होता है जब कि दूसरे देशों का मुकाबला करने के लिये हमको साइंटीफिक किस्म के ओहदारों की जरूरत होती है जब कि जिन्दगी के हर शोबे में साइंस और टेक्नोलोजी का दखल है तो हमें इस तरफ ज्यादा ध्यान देने की जरूरत है। इनीशियल स्टेजेज में जब बच्चा स्कूल में या कालेज में दाखिल होता है तो हमें उसी वक्त से उसको देखना चाहिये ताकि हमारे स्कूलों में बड़े बड़े साइंटिस्ट तैयार हो सकें जिससे हमारे देश को फायदा पहुंचे। लेकिन हम देखते हैं कि हमारे मुल्क में बहुत ही नाकाफी साइंटिस्ट हैं। आप बाहर के देशों में चले जाइये। आपको वहां पर हजारों मशहूर साइंटिस्ट मिलेंगे। आपको वहां पर हजारों ऐसे आदमी मिलेंगे जिन्होंने नई-नई ईजादें की हैं। हमारे देश में कितने ऐसे आदमी हैं जो नई ईजाद करने के काबिल हैं और कर रहे हैं। हमारे देश में दो-तीन साइंटिस्टों को छोड़ कर बाकी कोई ऐसा आदमी नहीं है जिसने कोई ऐसा कारनामा किया हो, ऐसी कोई बड़ी बात की हो जिस पर हमें फख्र हो या दुनिया को फख्र हो। हम खुद देखते हैं कि जब कोई लड़का आठवें, नवें दर्जे में पास करके दसवीं में आता है या हायर सेकेन्डरी क्लास में आता है तो वहां पर यह फैसला किया जाता है कि कौन कौन से लड़कों को हम टेक्नोलोजी या मेडिकल कालिज में भेजें या इंजीनियरिंग लाइन में भेजें। वहां पर साइंस का इम्तहान लिया जाता है कि यह लड़का साइंस में कैसा है। हमने बहुत लड़के और लड़कियों को रोते हुए देखा इसलिये कि दो फीसदी नम्बर कम आये हैं इसलिये उन्हें साइंस में नहीं लिया

†[ ] Hindi transliteration.

[श्री प्यारेलाल कुरील 'तालिब']

जा सकता । दो तीन फीसदी नम्बर कम आ गये इसलिये उन्हें इंजीनियरिंग में नहीं लिया जा सकता । बहुत से लड़के और लड़कियों के एम्स बहुत ऊंचे होते हैं और वह साइंस की रिसर्च में बहुत ही मुफ़ीद साबित हो सकते हैं । जो लड़के साइंटीफिक स्टडी करने के लिये बेताब हैं उन्हें दो तीन फीसदी नम्बरों के लिये फेल कर दिया जाता है या उनकी सिफारिश नहीं पहुंचती है । और इस तरह से उन्हें साइंस में नहीं लिया जाता है । मेरे दो भाई हैं । एक भाई ने एम०एस०सी० किया है और उसकी इन्तहाई ख्वाहिश थी कि वह मेडिकल कालिज में जाये । उसका मेडिकल लाइन के लिये जबरदस्त दिमाग है वह पंजाब यूनिवर्सिटी के बी०एस०सी० के इम्तहान में सातवें, आठवें नम्बर पर था । और एम०एस०सी० में भी उन्होंने किया । मेडिकल कालिज में वह जाना चाहते थे मगर उनसे कहा गया कि आप यू० पी० के रहने वाले हैं इसलिये पंजाब में आपको नहीं लिया जायेगा । पंजाब में उस वक्त कम्पीटीशन नहीं होता था जो टाप के लड़के होते थे ५०–६० जो भी हों वह ले लिये जाते थे । मैं लाहौर मेडिकल कालेज की बात कर रहा हूं । वह उसमें लिया जा सकता था । मगर नहीं लिया गया । फिर वह यू०पी० में आया और यू० पी० में इम्तहान लिया जाता था । लेकिन उससे कहा गया कि साहब, आप पंजाब से पढ़े हैं इसलिये यहां आपको नहीं लिया जायेगा । यह मैं सन् '३९–'४० की बात कर रहा हूं । बहुत लड़ने झगड़ने के बाद उनको इजाजत मिली लेकिन सिर्फ दो-तीन दिन इम्तहान में रह गये थे । तब उनको इत्तला दी गई कि आप इम्तहान में बैठ जाइये । लेकिन चालीस फीसदी की बजाय सैंतीस फीसदी वह नम्बर ला सका और उसको नहीं लिया गया । इसी तरह से दूसरा भाई था उन्होंने बी०एस०सी० किया और यू० पी० से किया लेकिन उनकी भी यही हालत हुई कि वह दो तीन नम्बर से नहीं आ सके यह बात दूसरी है कि वह आज अच्छी जगहों पर हैं । एक भाई आई०ए०एस० में है और दूसरा एक और अच्छी जगह पर डाइरेक्टर है । मगर जिस चीज को वह चाहते थे—हमारे पिताजी चाहते थे कि वह मेडिकल लाइन में जायें और सबकी यही ख्वाहिश थी पर वह ख्वाहिश दब कर रह गई महज इसलिये कि दो तीन नम्बर से वह फेल हो गये या ज्यादा अच्छे नम्बर नहीं ला सके । मैं यह कहता हूं कि अगर इस देश के अन्दर आप साइंटीफिक तरक्की चाहते हैं तो स्कूलों और कालेजों में ऐसा माहौल पैदा कीजिये, उसके लिये सहूलियतें पैदा कीजिये और जितने लड़के साइंस के लिये जाना चाहते हैं उनको जाने का मौका दीजिये ।

आप एडीसन को ले लीजिये । वह कौन से कालेज में पढ़ा था, कौन सी एम०एस० सी० और बी० एस० सी० की डिग्री उसने ली थी, कौन सा वह डाक्टर था साइंस में ? इस तरह से न्टोवेंसन को ले लीजिये । वह एक लोहार के कारखाने में काम करता था और इतनी बड़ी ईजाद उसने की । आज हमारे देश के अन्दर चले जाइये । कई ऐसे अनपढ़ और मामूली पढ़े लिखे आदमी मिलेंगे जिनके साइंटीफिक ब्रेन हैं और जो तरह तरह की ईजादें कर सकते हैं । मगर हमारी गवर्नमेंट की तरफ से उनकी कोई हौसला अफ़जाई नहीं होती, उनका कोई एनकरेजमेन्ट नहीं होता, उनकी बात कोई सुनने को भी तैयार नहीं है । वह दरख्वास्तों पर दरख्वास्तें देते हैं मगर कोई सुनता नहीं है । क्या आप यह समझते हैं कि वह ही साइंटिस्ट हैं जो कालेज और यूनीवर्सिटियों से पढ़ कर एम०एस०सी० और बी० एस० सी० की डिग्री लेकर आते हैं । आप दूसरे टेलेन्ट्स को भी देखिये ।

साइंटीफिक टेलेन्ट्स को देखिये जो हमारे मुल्क के तूल-ओ-अर्ज में आपको मिलेंगे । इस तरफ ज्यादा ध्यान देने की जरूरत है और हमारे कम पढ़े लिखे लोगों को भी थोड़ी सी हौसला अफ़जाई कीजिये । इसके अलावा वजीफे का भी सवाल है । जब किसी को साइंटिफिक रिसर्च के लिये वजीफा देते हैं तो कहते हैं कि वह फर्स्ट डिवीजन होना चाहिये । अगर कोई आदमी सेकेन्ड डिवीजन है तो उसको वजीफा दिया ही नहीं जा सकता है चाहे उसका एप्टीच्यूड कितना ही क्यों न हो ।

श्री एन० एम० अनवर : श्री रामानुजम् जो मद्रास में पैदा हुए थे और दुनिया में जिन की बहुत बड़ी चर्चा है मैथेमेटिक्स में वह कोई कालिज के डिग्रीयाफ्ता नहीं थे ।

श्री प्यारे लाल कुरील 'तालिब' : जी हां, ऐसे तो हजारों केस हैं । और मैं दुनिया तो क्या, हिन्दुस्तान में बता सकता हूं । हमारे टैगोर साहब जो इंगलिश लिटरेचर के बड़े भारी शायर गुजरे हैं वह स्कूल के इम्तहानों में कभी पास नहीं हुए और बहुत कम नम्बर लाते थे, यह सब अच्छी तरह से जानते हैं Examinations are not the real test of one's ability. एक्जामिनेशन पर आप डिपेन्ड मत कीजिये । आप आदमी के टेलेन्ट को देखिये, उसके एक्सपीरियन्स को देखिये । उसके एप्टीच्यूड को देखिये और उसके एम्बीशन को देखिये । यही चीजें हैं जो आदमी को नई नई ईजाद करने के लिये मजबूर करती है । आदमी की इन क्वालिटीज को देखिये, इन सिफात को देखिये । मगर होता क्या है कि जो काबिल नहीं हैं वह ले लिये जाते हैं क्योंकि सिफारिश पहुंच जाती है । बाज ऐसे हैं जो फर्स्ट डिवीजन ले कर आये हैं लेकिन फिर भी लिये नहीं जाते है । बहुत से ऐसे खानगी मामलात होते हैं जिनकी वजह से लड़के फर्स्ट डिवीजन नहीं ला पाते हैं । मैंने खुद मैट्रिक फर्स्ट डिवीजन में पास किया मगर बाद में मैं पोलिटिक्स में पड़ गया । शायरी का मुझे चस्का हुआ । और कालेज मैगजीन का भी मैं एडीटर रहा । मैंने कभी क्लासेज अटेन्ड नहीं कीं ।

श्री एन० एम० अनवर : आप बड़ी अच्छी तकरीर करते हैं ।

श्री प्यारे लाल कुरील 'तालिब' : इस वजह से आगे चलकर एम० ए० में मैं फर्स्ट डिवीजन हासिल नहीं कर सका । लेकिन इसका मतलब यह नहीं है कि मेरे अन्दर काबलियत नहीं है या मैं इस काबिल नहीं हूं कि मैं और कहीं न जा सकूं । तो इन बातों को आप नजरन्दाज मत कीजिये । और देखिये कि नीचे के लोगों में, छोटे आदमियों में या कम पढ़े आदमियों में किस में टेलेन्ट है । पढ़े लिखे आदमियों में भी जो फर्स्ट डिवीजन ले आते हैं उनको तो आप मौका देते हैं लेकिन सेकेंड डिवीजन वालों से कोई बात नहीं करता है । अगर देखा जाय तो बहुत से ऐसे सेकेंड डिवीजन हैं जो बेहतरीन तरीके से पढ़ा सकते हैं । कालिज और यूनीवर्सीटीज में मगर उनको नहीं लिया जाता है । वह प्रोफेसर नहीं बन सकते हैं । वह लेक्चरार नहीं बन सकते हैं । आपने वही पुराना फरसूदा तरीका कायम रक्खा है कि इस मयार पर हम अपने प्रोफेसरों और टीचरों को जज करेंगे ; मगर यह कोई सही तरीका नहीं है ।

आपके जो आदमी रिसर्च के लिये बाहर के देशों में जाते हैं, अमरीका में जाते हैं, इंगलैंड में जाते हैं, जर्मनी में जाते है या और दूसरे मुल्कों में जाते हैं, उनके बारे में जरा देखिये और मालूम कीजिये कि सौ जाते हैं और उनमें से कितने वापिस आते हैं । आप एम्बेसी वालों से जा कर पूछिये । वह

[श्री प्यारे लाल कुरील "तालिब"]

खुल्लमखुल्ला कहते हैं कि सत्रह से लेकर बीस फीसदी तक आदमी उन्हीं देशों में रह जाते हैं। क्या यह सही नहीं है ? क्यों वहां रह जाते हैं ? वहां उनकी कदर है, उनके लिये माहौल है, प्रोफेसरों में उनकी इज्जत है, मैं नाम बता सकता हूं कि थर्ड डिवीजनर्स यहां से गये हैं जो आज वहां प्रोफेसर हैं, जिन्होंने वहां जाकर पीएच० डी० की डिग्री ली है, डाक्टर बने हैं और वहीं पर वह पढ़ा रहे हैं। मैं जाती नालेज से एक शिड्यूल्ड कास्ट के आदमी को बता सकता हूं जो थर्ड डिवीज़नर था और अपने खर्चे से वहां गया था । उसने वहां डाक्टरेट की डिग्री हासिल की और वहीं पर वह प्रोफेसर है । आज वह वहीं पर रहना पसन्द करता है । उसका बाप उसको बुला रहा है मगर वह आने के लिये तैयार नहीं है । वहां उनका माहौल है । उनको एनकरेजमेन्ट मिलता है और उनकी लियाकत की कदर है । तो इस तरह पन्द्रह फीसदी से लेकर बीस फ़ीसदी तक बाहर जाने वाले आदमी वहीं रह जाते हैं । एम्बेसी वालों का यही कहना है । और मेरे एक आदमी जो बाहर गये हैं उन्होंने भी बताया कि इतने फीसदी आदमी वहीं पर रह जाते हैं और हिन्दुस्तान वापिस नहीं आते हैं ।

एक और मसला लीजिये । मेरे दिल में मुसलमानों के लिये बड़ी इज्जत है और मैं उनके साथ कभी किसी किस्म का इम्त्याज़ी सुलूक नहीं करता हूं । मगर मैं निहायत अफसोस से कहूंगा कि अलीगढ़ युनिवर्सिटी में कितने मुसलमान इंजीनियरी में पास करते हैं, टेक्नोलोजी में स्टडी करते हैं, साइंस में स्टडी करते हैं और बाद में डिग्री लेकर वह अपने देश को छोड़कर पाकिस्तान चल जाते हैं । वह वहां से क्यों चले जाते हैं ? आप उनके लिये यहीं ऐसा माहौल पैदा कीजिये कि वह यहीं रह जायें । आप हजारों, लाखों रुपये उन तालिबइल्मों पर खर्च करते हैं मगर वह बाद में पाकिस्तान में जाकर नौकरी करते हैं । मैं अपने मुसलमान भाइयों से और उनके लीडरों से यह कहूंगा कि वह इसको रोकने की कोशिश करें और सरकार से भी कहूंगा कि इसको रोका जाये । इसी तरह से हमारी और भी बड़ी बड़ी यूनीवर्सिटीज में से जो पढ़कर निकलते हैं वह बाहर जाकर नौकरियां करते हैं । मैं चाहूंगा कि इसको रोका जाये ।

इस सिलसिले में मैं यह भी अर्ज कर दूं कि अभी चन्द साल हुए जब दिल्ली में ही एक नहीं, बल्कि दो साइंटिस्टों ने खुदकशी कर ली थी । इसकी क्या वजह है ? गवर्नमेंट उनको इतना कम देती है इतनी कम तनख्वाह देती है कि उनको तो अपने दिमागी तफरकात से ही फुरसत नहीं मिलती है और उनके सामने इतनी दिक्कतें पेश आती हैं कि उनको इन फिक्रों से ही निजात नहीं मिलती है । आज उनके लिये हमारे देश में आजाद माहौल नहीं हैं । हमारे साइंटिस्ट के लिये, हमारे बड़े बड़े साइंटिस्ट के लिये जैसी आजाद फिज़ा होनी चाहिये, जैसा माहौल होना चाहिये वह आज नहीं है । बेजा दखल दिया जाता है उनके काम में और उनके रास्ते में बेजा रुकावटें डाली जाती हैं । उनको अपने इशारे पर नचाने की कोशिश की जाती है । एक इंटैलेक्चुअल आदमी, एक साइंस का आदमी कहां तक नाच सकता है किसी के इशारे पर । उसे तो अपना काम करना है । अपने काम से दिलचस्पी है और उसका एम्बीशन है कि मैं कुछ करके देश के अन्दर दिखाऊं । इसके लिये आजाद माहौल पैदा कीजिये, उसको हर किस्म की सहूलियतें दीजिये । उसके लिये रुपये पैसे की कमी नहीं होनी चाहिये तभी तो देश के अन्दर साइंटिस्ट निकलेंगे । तभी तो इस देश के अन्दर बड़े-बड़े टेक्नालाजिस्ट निकलेंगे । तो ऐसी फिज़ा पैदा कीजिये, ऐसा माहौल पैदा कीजिये ताकि हमारे अन्दर अच्छे से अच्छे साइंटिस्ट पैदा हो सकें ।

में और ज्यादा न कहते हुए, हमारे बहुत से सदस्यों ने जो नई नई बातें इस सदन में रखी है, उनकी ताईद करता हूं और यह अपील करता हूं कि इस देश के अन्दर जो साइंटीफिक टेलेन्ट है उसको एनकरेज कीजिये। उनको सहूलियतें बहम पहुंचाइये और यह जो डैडेक्विज्म है और यह जो बेजा दखल उनके वास्ते में, उसको दूर कीजिये और उनको अच्छी से अच्छी तनख्वाह दीजिये ताकि वह हमारे देश के लिये मुफीद साबित हो सकें। थैंक यू।

SHRI AKBAR ALI KHAN: Mr. Vice-Chairman, Sir, we are grateful to Mr. Mallik and Dr. Chandrasekhar because, I think, they have given us, I mean the mover of the Resolution has given us the opportunity to consider some of the very important aspects of this very important problem, and we are really grateful to Dr. Chandrasekhar that he has given us really a very suggestive speech, and I do hope the Ministry will take his speech very seriously and act up to it.

Now, I wanted to bring just one or two points for the consideration of this House. This Resolution does require and I expect that the Ministry will accept it and appoint a committee. I say this because in such matters it is always better to have a fresh approach of experts and of parliamentarians brought to bear or the question.

THE VICE-CHAIRMAN (SHRI M. P. BHARGAVA): The Minister has said that the Reviewing Committee has been appointed.

SHRI AKBAR ALI KHAN: If that viewing Committee will take all these points into consideration, all these points which have been brought forward in this discussion, I think I will certainly wait for its report. I shall very eagerly await the report of the Reviewing Committee, and I would suggest Sir, with your permission, that today's debate should be sent to the Reviewing Committee so that they may take into consideration all the suggestions that have been made which are worth consideration.

The point that I wanted to refer to is this. There is no doubt that we started from scratch and I feel that in the limited time that we have had, we have done very well. I have got some experience of the laboratory in Hyderabad and I have had also the opportunity to see the Atomic Energy Commission and to see certain things there. I can say that every earnest effort is being made to improve things and in the short period that we have had, the work that has been done cannot be considered negligible. This does not mean that we have not to do a lot more. My suggestion is that we have got at present the universities which have taken up this research work. We have got the laboratories which have also taken up research work. In addition to these, we have, as you know, Sir, the departments for research under the different Ministries. The Defence Ministry, the Railway Ministry, they are also dealing with research work. I would very much like that a committee or if possible this Reviewing Committee itself should take into consideration how best all these efforts of these laboratories and in some of the private industries like those of Tatas and others, can be coordinated and the best use made of the talent as well as the money. I would like the Ministry to see to it, because the Technical and Research Council has nothing to do with these universities and the body that deals with the universities has no direct bearing on these laboratories. In the different Ministries the position is still more difficult. So, I feel that such a co-ordinating body should enquire into the matter and see that the best use is made of the resources available. I hope this will receive the consideration of the Ministry.

The other thing that I wanted to bring to the notice of this House is this. I have come across that when

[Shri Akbar Ali Khan.]

more than one university in a State works on a project, the reply from the Education Ministry or the University Grants Commission is that they cannot give support to more than one university. For instance, certain work is being done on atomic energy in the Andhra University as well as in the Osmania University. There are different branches which are being investigated and research is being done. The general attitude of the University Grants Commission is that they do not think the funds can be given to both the universities, but only to one, to this university or to the other. But I think in the matter of science and in the matter of research, in all such matters, these regional considerations or considerations of this university or that should not come in the way. As was very correctly pointed out, even countries, even national barriers have no place in scientific research. If you consider that there are men who are doing good work, if you think that there is ample scope for such work, I would suggest that it should be supported without any limitation.

One more thing I would like to refer to. It was very correctly pointed out by Dr. Chandrasekhar that so far as our best boys outside India are concerned, they are prepared to come home. There is no lack of patriotism. I very much appreciate the work done by the Scientists' Pool. As was pointed out by the Education Minister, this Scientists' Pool has gone a long way to ease the situation. At the same time I would also point out that this is not enough. Some of the young men who are getting very high salaries, are still prepared to come back for one third or even one-fourth of that remuneration. But if you ask a person earning, say, Rs. 7,000 there to come here on a pay of Rs. 400, I think that will not be fair. It is not fair so, this matter also should be looked into.

SHRI BHUPESH GUPTA: Where are they earning Rs. 7,000?

SHRI AKBAR ALI KHAN: In foreign countries, in America, in England.

THE VICE-CHAIRMAN (SHRI M. P. BHARGAVA): No, not in England. That is only in America.

SHRI BHUPESH GUPTA: I doubt.

SHRI AKBAR ALI KHAN: These research students and research workers who come home here, they find that they do not have the laboratory facilities for carrying on their work. They do not have the same facilities for carrying on their research that they were getting in the United Kingdom or in the United States of America. I would, therefore, very strongly appeal that at least let there be—if not 28 or 29 laboratories—one or two laboratories which can be compared to the best in the world. I would not want the increase in the number of laboratories, but I would plead, let there be at least two or three laboratories where we can say that the best facilities for research are provided. Otherwise, if you call these able young research workers and if they come here in spite of their personal losses, and if you do not provide them with the necessary facilities, with the necessary research amenities, then I think that would be a loss not only to our country but a loss to the whole world. I would, therefore, very much like this matter to receive the consideration of the Ministry. But as you have said, the hon. Minister has mentioned about the Reviewing Committee that has been appointed and that is going to submit its report, I would very anxiously and eagerly await the report of that committee.

श्रीमती शारदा भार्गव (राजस्थान) : उपसभाध्यक्ष महोदय, जो प्रस्ताव श्री धीरेन्द्र चन्द्र मल्लिक ने रखा है बिलकुल ऐसे ही प्रस्ताव का मैंने भी नोटिस दिया था, इनका पहला नम्बर आया और मेरा दूसरा नम्बर था, इन्होंने प्रारम्भ किया और मैं शायद

समाप्त करूंगी क्योंकि मुझे नहीं लगता कि अब इतना टाइम है कि मेरे बाद कोई और माननीय सदस्य बोलें । खैर, मैं आपको धन्यबाद देती हूं कि आपने चार पांच मिनट मुझे दिये ।

मैं यही कहना चाहती हूं कि आज विज्ञान का युग है और विज्ञान पर जोर देना हमारा परम कर्त्तव्य है क्योंकि हर एक क्षेत्र में विज्ञान का महत्व है । जब हम दुनिया से अपने को कम्पेयर करते हैं तो हमें मालूम पड़ता है कि हम विज्ञान की प्रगति में बहुत पीछे हैं और इसी उद्देश्य से मैंने यह प्रस्ताव दिया था कि १९५८ ई० में विज्ञान के बारे में सरकार ने जो प्रस्ताव स्वीकार किया था उसके अनुसार हम कुछ भी नहीं कर पाये हैं । प्रोफेसर हुमायून कबिर ने भी जो १९६३ में साइंटिस्ट्स की कान्फ्रेन्स हुई थी वहां बहुत सी ऐसी बातें कही थीं—अब टाइम नहीं है वर्ना तो पढ़ कर सुनाती—उन्होंने एडमिट किया था कि हम इस ओर बहुत कम कर पाये हैं । तो फिर हमें यह देखना है कि अगर हमें संसार के थोड़ा भी साथ चलना है तो हमें यहां विज्ञान की प्रगति को बढ़ाना है अन्यथा हम आज तो पीछे हैं ही और आगे भी पीछे होते चले जायेंगे ।

अभी कुछ सदस्यों ने विज्ञान मंदिरों के बारे में कहा कि ये बहुत कम हैं और इसमें काम भी जो हो रहा है वह संतोषजनक नहीं है । साथ ही उन्होंने यह भी कहा कि विज्ञान मंदिरों जो पहले केन्द्रीय शासन में थे वे अब राज्यों के शासन में चले गये हैं । मैं उनसे इस बात में सहमत हूं कि ये राज्यों के शासन में नहीं जाने चाहियें थे । मैंने तो कई बार यह कहा है, जैसी कि हमारे एजूकेशन मिनिस्टर साहब की राय है, कि एजुकेशन ही कांकरेंट सब्जेक्ट हो जाना चाहिये ताकि सेंटर का उसमें पूरा दखल हो और जो स्टेट्स में गड़बड़ी हो जाती है उनको हमें यहां पर पार्लियामेंट में सही करने का पूरा अधिकार हो । इसी प्रकार ये विज्ञान मंदिर भी अगर सेंटर के शासन में रहें तो अधिक उपयोगी हो सकते हैं । साथ ही मैं यह भी कहूंगी कि साइंस की जितनी भी सर्विसेज है उनको अखिल भारतीय सेवा बना देना चाहिये, जिस प्रकार कि हमारे एजूकेशन मिनिस्टर साहब शिक्षा की सर्विसेज को अखिल भारतीय सेवा बनाना चाहते हैं उसी प्रकार साइंस को भी बना देना चाहिये ताकि एक स्टेट से दूसरे स्टेट में भी जा कर साइंटिस्ट्स काम कर सकें, रिसर्च कर सकें और लेबोरेटरीज में काम कर सकें । यह सबसे बड़ी आवश्यक चीज है ।

5 P.M.

दूसरी बात जो आती है वह अधिकतर रुपयों के बारे में कही गई है और अनेक मेम्बरों ने कहा है कि और देशों में, चीन में, अमेरिका में, लगभग बजट का तीन प्रतिशत खर्च किया जाता है साइंस पर और हमारे यहां पर केवल .३ प्रतिशत खर्च हो रहा है । ठीक है, यह बहुत ही कम है और हमारी सरकार भी सोच रही है कि हम एक प्रतिशत इसको कर दें, परन्तु मैं इसको महत्व नहीं देना चाहती हूं कि कितना प्रतिशत है, कितना प्रतिशत नहीं है । मैं समझती हूं कि अगर योजनाबद्ध काम किया जाये तो जो धन अभी खर्च किया जा रहा है वह भी अधिक उपयोगी हो सकता है । मेरे कहने का मतलब यह नहीं है कि और अधिक रुपया खर्च नहीं करना चाहिये या और अधिक रुपया लगना ही चाहिये तभी हम प्रगति कर सकेंगे । मगर जो धन रखा गया है उसको भी जिस

[श्रीमती शारदा भार्गव]

प्रकार से खर्च होना चाहिये वह नहीं हो रहा है क्योंकि मेरा ख्याल यह है कि इन्डस्ट्रियल प्लानिंग के अनुसार अगर हम रिसर्च के काम को कान्सन्ट्रेट करें तो हमारा वह रिसर्च ज्यादा उपयोगी हो सकेगा बनिस्बत इसके कि जिस प्रकार का अनप्लान्ड काम हम कर रहे हैं। और दूसरी बात यह है कि प्रैक्टिकल वेल्यू की चीजों पर रिसर्च ज्यादा करना चाहिये। मैं आपको बताऊं कि कई जगहों पर मैं समझती हूं कि धन का और इनर्जी का वेस्ट होता है।

THE VICE-CHAIRMAN (SHRI M. P. BHARGAVA): It is time.

श्रीमती शारदा भार्गव : मैं खत्म ही कर रही हूं। नेशनल फिजिकल लेबोरेटरी का बना हुआ, मुझ ख्याल है कि एक दफा एक्जीबिशन में सोलर कुकर दिखाया गया था मगर मेरी निगाह में वह कभी काम में नहीं लाया गया क्योंकि काम में आया होता तो हमारी नजर में पड़ जाना चाहिये था। तो अगर इस तरह से चीज बेकार पड़ जाती है तो हमारे धन का, जन शक्ति का और समय का व्यर्थ में दुरुपयोग होता है और उसको अगर हम बचायेंगे तो जितना हम पैसा लगा सकेंगे उसका पूरा उपयोग भी कर सकेंगे।

आपने टाइम नहीं है कहा, इसलिये एक ही पोइन्ट कह कर खत्म करती हूं। मैंने पहले ही कह दिया था कि टाइम बहुत कम दिया गया है। जो यह कहा गया कि मिनिस्ट्री आफ साइंटिफिक रिसर्च अलग होनी चाहिये, तो मैं पहले भी कह चुकी हूं कि एजुकेशन और साइंटिफिक रिसर्च का बहुत निकट संबंध है और एजूकेशन और साइंटिफिक रिसर्च की मिनिस्ट्री एक होनी चाहिये। परन्तु मैं इससे सहमत नहीं हूं कि उसको खाली एजूकेशन का नाम दे दिया जाय और साइंटिफिक रिसर्च को कोई महत्व नहीं दिया जाय। मैं चाहती हूं कि एजूकेशन और साइंटिफिक रिसर्च की मिनिस्ट्री के अन्तर्गत यह दोनों काम हो सकते है। उपसभाध्यक्ष महोदय कहने को बहुत कुछ था लेकिन समय नहीं है इसलिये आपके कहने पर मैं समाप्त करती हूं। धन्यवाद।

MESSAGES FROM THE LOK SABHA

I. THE INDUSTRIAL DEVELOPMENT BANK OF INDIA BILL, 1964.

II. THE INDIAN COINAGE (AMENDMENT) BILL, 1964.

SECRETARY: Sir, I have to report to the House the following messages received from the Lok Sabha, signed by the Secretary of the Lok Sabha:

(I)

"In accordance with the provisions of Rule 96 of the Rules of Procedure and Conduct of Business in Lok Sabha, I am directed to enclose herewith a copy of the Industrial Development Bank of India Bill, 1964, as passed by Lok Sabha at its sitting held on the 30th April, 1964".

(II)

"In accordance with the provisions of Rule 96 of the Rules of Procedure and Conduct of Business in Lok Sabha, I am directed to enclose herewith a copy of the Indian Coinage (Amendment) Bill, 1964, as passed by Lok Sabha at its sitting held on the 30th April, 1964."

Sir, I lay the Bills on the Table of the House

THE VICE-CHAIRMAN (SHRI M. P. BHARGAVA): The House stands adjourned till 11 A.M. on Monday, the 4th May, 1964.

The House then adjourned at three minutes past five of the clock till eleven of the clock on Monday the 4th May, 1964.

CMGIPND—RS—215 RS—8-7-64—550