

**RESOLUTION RE: WORKING CONDITIONS OF RESEARCH SCHOLARS AND SCIENTIFIC WORKERS**  
—contd.

**Mr. Speaker:** Shri Harish Chandra Mathur will continue his speech.

**Shri Harish Chandra Mathur** (Jalore): Last time, I had complained the Government for establishing these 27 national laboratories, an achievement of which any government can well be proud. But then I was submitting that these national laboratories by themselves are just a super-structure and you cannot stay in a super-structure; you must have the base.

While talking of the base, I submit we have singularly failed in this matter, in not creating a temper for science in the country, which is very necessary. The first thing is that we must create a climate and temper for advancement and development of science in the entire country. For that purpose, we must introduce science clubs from the very start, at the very outset, going to the college and the university. I have to improve upon my statement which I made last time. While it is only 2 per thousand of the students who are in university both in UK as well as here, what is the state of affairs? In U.K., they spend more than 50 per cent in the university stage on scientific advancement and research while here we do not even spend 10 per cent. I would rather like the hon. Minister to tell us what is the percentage of our university expenditure which is devoted to scientific advancement and research? That is the crucial point. That is the main difference between this country and those countries where science has gone ahead.

There is a very serious difficulty which confronts us here. My hon. friend who is in charge of scientific research and development has nothing to do either with primary education

or with college and university education. Unfortunately, these times when we are talking of the problem of co-ordination, there is absolutely no co-ordination even between these two most essential, artificially bifurcated branches of the Education Ministry. It is a most artificial bifurcation that has taken place. I do not know whether we can put personalities above scientific development in this country. If the Minister in charge of scientific development has nothing to do with science education at the base level and at the university level, I do not know what help these national laboratories are going to receive. They might tell us that this is what we have done. This is the first thing, that there should be co-ordination, an intensified effort, a changed mental attitude, a climate and temper created throughout the country in the educational world if we have to make any real and substantial progress.

Having said that, I would examine the state of affairs. We have these national laboratories, an achievement of which anybody who is personally responsible, has got to be congratulated. But even in these national laboratories, what has happened? I think it would be no use my saying very much by way of condemnation. But if you were to read even the speech of Shri S. K. Patil, the Minister of Food and Agriculture, you will find that he himself has condemned on the floor of this House in terms stronger than those used by anybody else, his Agriculture Ministry's performance in taking science and technology from these great laboratories to the field. There is hardly anything done in the matter. I would quote one of our most eminent scientists who says that even if the present knowledge about agricultural research which is available is taken to the fields, there can be an increase of 200 per cent in our food production. Just imagine what a colossal and criminal negligence we can be accused of. Here we have got in our hands all

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the knowledge and technology. If we can take these to the fields, we can increase our food production by about 200 per cent. That is the considered opinion of a scientist who has expressed it from a public platform. But here is a Minister, the Minister of Agriculture, who says the achievements of our national laboratories remain confined to those laboratories. We have not got any Minister for Agriculture and Animal Husbandry. We have a Minister of Food who has been getting food from outside and distributing it. But that is not going to solve our problem. Even if we can raise our agricultural production by 50 per cent, the whole picture will change, and both problems will be solved—distribution of wealth among the rural areas among the poorer sections of the people will be possible and our plan will go ahead with a much comfortable and easy step forward.

I will deal with two more points. What is happening in our laboratories. I will not quote myself; I will quote Dr. Chandrasekhar. He says:

"There was purposefulness in all the work being done. But if one can compare the record of Indian scientists during the last decade with those in other countries, it was disappointing."

It is a confession from one of the biggest scientists.

"While groups and individual scientists were doing excellent work, there was generally a sense of frustration among Indian scientists, particularly among those devoting themselves to pure science due to lack of appreciation at government and university level."

Here again, he puts the entire blame on the Government for their lack of appreciation and for their not being able to do anything.

Then about the terms and conditions of service of scientists. I might

in passing say that my hon. friend's resolution is fully supported not only by Members here but even by Shri V. T. Krishnamachari who, dealing with this subject, said that there was an urgent need for such a commission being appointed to see how science has developed and is integrated right from the base to the highest standard. We have completely ignored that. Who was this person? He was the Vice-Chairman of our Planning Commission.

Regarding the terms and conditions of service, representations have been submitted to my hon. friend, the Minister of Scientific Research and Cultural Affairs. It is said that the revised scales of pay fixed for those in scientific and industrial research work have aroused a variety of conflicting emotions in the country and most angry and bitter representations have been made.

The basic thing is that if you want the real type of persons to be attracted to science and technology, it should be absolutely obvious that from the university you must be able to attract people, the best of the people available in the country, for scientific development and research. Who are those people who could be attracted. If you have a grade for your I.A.S. people which is Rs. 800—1800, how on earth can you conceive of your being able to attract persons of real talent, the cream of persons, who will go and devote themselves completely to science research and technology. There are various things which have got to be taken note of by my hon. friend. For instance, the retirement age. I do not know if in any country there is a research worker who will retire from scientific research. A person engaged in scientific research is not asked to retire at 50, 55 or 65. He just goes on with his research work. But here we have feudal ideas by which we want to tie down our scientists, and still we want them to carry on scientific research. That is why I started by saying that there is need for a complete reorientation.

of the mental outlook of the Minister of Scientific Research himself, and then and then alone we can go ahead.

**The Deputy Minister in the Ministry of Scientific Research and Cultural Affairs (Dr. M. M. Das):** The time at my disposal is very short, and I will take up only one or two points that the hon. Mover made in his speech, and try to give my views upon them.

**Shri Harish Chandra Mathur:** Why ignore me?

**Dr. M. M. Das:** Certainly my hon. friend is not a Member to be ignored so far as this House is concerned.

**Shri Raghunath Singh (Varanasi):** Yes.

**Dr. M. M. Das:** The hon. Mover has said that science and technology have failed to attract the highly talented young men of our country. It is difficult to share this view or to support it.

The hon. House knows that every year a number of engineering colleges is being established in this country. Yet, our best students, highly qualified students, have been finding it impossible to get admission into them. Why? It cannot be denied that today there is a great demand in the country for scientific and technical education. Excepting very few of our talented young men, the best students of the universities, the rank and file, the vast majority of them, want today to be engineers and scientists. I think nobody can challenge this statement.

The hon. Mover dwelt at length on the subject of officialisation of science. There was a time when scientific research was a matter solely personal. A few scientists used to carry out their experiments, scientific research, alone or at the most with the help of a very small number of students or associates, but now scientific research has become a team work, an organised work. Thousands of people, from

the scientists to the sweepers, have to work in a laboratory as a closely knit unit. So, where thousands of persons are employed, where crores of public money are spent, the question of administration cannot be overlooked, however much we may dislike it. It appears that my hon. friend is a little perturbed to see that the scientists of our country are hankering after high Government jobs. I do not find anything unnatural in it or anything peculiar to this country alone. After all, scientists are human beings, and they have got their own likes and dislikes, their attachment for certain things, and their revulsion of others.

Sir Issac Newton, as this hon. House knows, was the greatest scientist of his age, and one of the greatest scientists that the world has ever produced. He had a peculiar fascination for high Government jobs. At the zenith of his prestige and glory when he was writing the Principia Mathematica, he implored his influential friends again and again to secure for him a political post, or a high post in the British King's Court.

**Shri Inder J. Malhotra (Jammu and Kashmir):** If the hon. Minister can give an example of an Indian scientist, I think that would be more useful for us to listen.

**Shri Warrior (Trichur):** Scientists are the same everywhere.

**Dr. M. M. Das:** If the hon. Member wants to differentiate between Indian and foreign scientists, I plead my inability and helplessness.

At long last, Sir Isaac Newton's great ambition was fulfilled. He was appointed Assistant Mint Master of His Majesty the King of England. A first-rate genius was thus converted into a second-rate official. The people of England did not appreciate this and his name became an object of ridicule throughout the country. This is only one aspect of the picture. There is the opposite side also.

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Cuvier, a great scientist of France, the greatest geologist and zoologist of his time, when at the height of his glory, was offered a post in the French Cabinet. But he politely refused it explaining to his friends and well-wishers that he did not want anything to interfere with his scientific experiments and research.

Lord Rutherford, another great scientist that England has ever produced....

**Shri Harish Chandra Mathur:** Do not talk of geniuses, talk of the ordinary men, the general run of people.

**Shri Inder J. Malhotra:** Who really do the work.

**Dr. M. M. Das:** Scientists come from the ordinary run of men.

Lord Rutherford was appointed, during the First World War, a member of an anti-submarine research committee. The German submarines were creating havoc in the British mercantile marine, and a high power committee was set up by the British Government to find out the means which would remove the submarine menace. Lord Rutherford was the foremost and perhaps the most important member of the committee.

Ten minutes are over?

**Shri Harish Chandra Mathur:** He has only talked of exceptions.

**Mr. Deputy-Speaker:** The senior Minister has also to reply. Let him be brief.

**Shri Inder J. Malhotra:** He has been touring the United Kingdom and France. Let him come to India for two minutes at least.

**Dr. M. M. Das:** My hon. friend toured the United States of America at the very beginning of his life. He says he was a research scholar, and as a research scholar he went to that country. In his subconscious mind perhaps there has been always a comparison between the conditions of research prevailing in that country and

those in India. But he will do well to remember that the United States of America is a God-favoured country. Six per cent of the population of the world of that country enjoy 42 per cent of the world's natural resources. It is futile, it is extravagant to compare the conditions prevailing in America with those prevailing in this country.

I have lost the trend of my argument. I was going to say that Lord Rutherford was absent in one of the meetings of the high power committee, and at the next meeting when he was asked why he had been absent, he said: "Gentlemen, I was engaged in a research which suggested that the atom could be disintegrated.

If that comes to be true, then I tell you, it is an event of far greater importance than your war. Twenty-four years later, these prophetic words came to be true, when one of his students, Dr. Otto Hann, Prof. of Chemistry in the Berlin University succeeded in disintegrating the atom and thus unwillingly became the father of the atom bomb. Had Dr. Otto Hans liked, Hitler would have provided him everything, wealth, prestige, whatever he wanted, but his first and sole aim was to save the atom bomb from the hand of Hitler. He said to one of his colleagues that if Hitler got the atom bomb, he would kill himself.

There are various other examples, examples in this country also, where we find that, a university professor, when offered a Vice-Chancellorship, a high post in the Government of India, refuses to leave his professorship in the university. There are many examples of this. On the other hand, there are examples also where a man, while being endowed with everything, with a decent living, honour, prestige and everything, does not want to give up his job, a Government job. So, it depends upon the temperament of the man, upon his personal likes and dislikes.

Have I got any more time?

**Shri Nambiar (Tiruchirapalli):** It depends on the Government also, how they treat the persons.

**Mr. Deputy-Speaker:** The hon. Minister has also to speak. So, I would like him to conclude his speech as soon as possible.

**Dr. M. M. Das:** In conclusion, I want to tell the House that so far as facts are concerned, I have no quarrel with the hon. Mover of the resolution, but so far as conclusions are concerned, I am diametrically opposed to him. During the last 12 years or more during which this country has been independent, the Government of this country has done many things, and has met with commendable success in the field of scientific education and research in this country.

**Shri Hari Vishnu Kamath:** Question.

**Dr. M. M. Das:** It may be extravagant to say that we are on a par with other countries, we do not claim that, but we must admit that we have achieved considerable success in this direction, which nobody can deny.

Thank you.

**The Minister of Scientific Research and Cultural Affairs (Shri Humayun Kabir):** Mr. Chairman, I am very grateful to my hon. friend Shri Malhotra for raising this subject in the House and giving us an opportunity to place certain facts before the House. His approach was generally friendly and I am thankful to him also for the personal note he brought into his speech and the very kind references to me, I wish I could have said the same thing about my hon. friend Shri Mathur. I will not have much difficulty in saying that in this case probably Shri Malhotra was more right and correct than Shri Mathur.

**Shri Harish Chandra Mathur:** That suits you, not the scientists.

**Shri Humayun Kabir:** I claim to be a scientist in a way because I claim that anybody who pursues knowledge and truth for its own sake

is a scientist and that truth and truth alone shall prevail. I hope my hon. friend Shri Mathur after he hears he will also agree that truth and truth alone should prevail and he should revise his opinion categorically. He has already revised one opinion or statement which he made on the last occasion when he said that in U.K. and in India roughly two out of 1000 population go to universities but fifty per cent of students in U.K. are post-graduate. He has corrected it today. I am sure he will agree that this was a correction which was necessary and before I have concluded I hope to show him that many more corrections will be necessary in the conclusions he has drawn.... (Interruptions) I will leave it to him to decide whether they are facts or not. He has today himself stated the correct position that in the English universities about fifty per cent of the money that is spent is on post graduate research. It is entirely a different position from saying that fifty per cent of the students are post-graduate students.

The major points that arose were raised about the conditions of work of the scientists were whether they are properly looked after, whether facilities have been created and secondly whether the results of research in science have been brought into our practical life and what is their bearing on them? On both these questions, I wish to place a few facts before this House. My hon. friend Shri Mathur on the last occasion and today also made a reference to the fact that I had stated that their conditions of services, the conditions of scientists in India today, are at least as well off as anybody else in the public service. They are certainly better than IAS and IFS. I do not know where Shri Mathur got his figures and say that IAS man starts on 800. It is certainly news to me and the Home Minister as well.

**Shri Harish Chandra Mathur:** On the fifth year, they are put on that scale.

**Shri Humayun Kabir:** They start on Rs. 400 and go up to Rs. 1800. In the case of scientists I will give only a few grades. A senior scientific officer starts on Rs. 700 and goes up to Rs. 1250... (*Interruptions*). A junior scientific officer starts on Rs. 350 and goes up to 900. This compares well with the recruitment for the IAS and IFS. The assistant directors are on Rs. 1300-1600. The difference is this. A man can become an assistant director at the age of 28 or 29 or 30. Out of 80 assistant directors in the national laboratories we have about 21 or 22 are between 30-40 years, many of them in their early thirties. The rate of promotion of scientists is remarkable. Shri Malhotra referred to one case of a scientist who had entered service in his 18th year and is continuing as such. As against that he quoted the example of a man who had entered service as a clerk and is under secretary today. That is a solitary case. I do not know; perhaps the other man is unfortunate or perhaps did not do scientific work. There are 293 JSO who have received promotion and accelerated promotion in recent times. Most of the SSOs grades I and II have come from the ranks of JSO a substantial portion if not the majority. A substantial proportion of the assistant directors on Rs. 1300-1600 are below 40 and almost all of them with a few exceptions are below 50. These are grades which compare favourably with universities and IAS... (*Interruptions*).

**Shri Harish Chandra Mathur:** An average IAS on the 6th year goes to the grade of Rs. 800.

**Shri Humayun Kabir:** To reach the Under Secretary's grade which is roughly about Rs. 700-1250, he should put in 10-12 years of service... (*Interruptions*).

**Shri Harish Chandra Mathur:** If you read the Home Minister's report, you will find that they have appointed people who have put in 4-6 years of service.

**Shri Humayun Kabir:** I think it is not less than 10 years.

**Shri Harish Chandra Mathur:** That was 29 years ago... (*Interruptions*).

**Shri Humayun Kabir.** It might have been immediately after 1947 when there were accelerated promotions. In every department there have been cases. Today the general position is as I said in the engineering and technological institution. A young man of 24 starts on Rs. 400 and he can go up to Rs. 1250 if he is good enough. I do not say that these grades should not be improved upon further. But the conditions of service today are not less attractive for these people than in any other type of service. The evidence of that is that better types of students are today going for engineering and technological and scientific courses and there is a constant complaint by the UPSC and the Home Ministry that the best students are not going to the IAS and IFS.

**Shri Harish Chandra Mathur:** If you read the last report of the UPSC, you will know the correct position; it contradicts you.

**Shri Humayun Kabir:** I am speaking on the basis of facts. There are other differences in conditions of service also. In the CSIR the age of retirement is 60 for all scientists whereas in the other services it is 55. This is also an advantage. There is freedom to publish results of research, facilities for patenting inventions, participation in symposia and conferences, in delegations abroad, etc. On an average about 50 scientists are sent abroad on deputation every year. In addition 20 senior scientists and engineers are deputed for shorter periods. Above all there is the satisfaction of creative work. When a man is pursuing research in his own interest he has the satisfaction and pleasure in creative work which he does not have when he is carrying on merely administrative duties.

All that I can say is that the working conditions have considerably improved. I agree that it should improve even further. The major difficulty is where there is an atmosphere of non co-operation within a laboratory. That is a question of scientists versus scientists. There is not that amount of co-operation between one scientist and another and that collaboration which we demand. But there also we have taken certain steps in recent times in the last two or three years, especially in regard to younger scientists and I think they will go a long way in removing a sense of dissatisfaction.

Very recently it has been decided that in any delegation that we may send abroad, at least half shall be below 40. Formerly there was generally a tendency for senior scientists to go again and again. In spite of some opposition from some senior scientists we have taken a decision that no senior scientist and no director of national laboratories should be on more than ten committees.

**Shri Hari Vishnu Kamath:** You are speaking of all delegations.

**Shri Humayun Kabir:** I am concerned with scientific delegations. Formerly there were people on even 100 committees and when we suggested that the number should be limited, all kinds of objections were raised. We said that this would give the younger scientists a chance: by cutting down the number of a maximum of 10 for senior scientists, a very much larger number of younger scientists will get a chance.

Formerly in order to publish even a scientific paper, a reference ought to be made to senior scientists and sometimes even to the Government. Today we have laid down that in standard authorised journals, recognised journals people can publish the results of their research without anybody's permission. All these have given encouragement to younger scientists

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and I am sure if my hon. friend Shri Mathur goes to the laboratories and talks to the scientists he will find that there is no lack of sympathy on our part for the scientists. On the contrary, I think that certain things that have been done created a response among the scientists themselves.

Then there was some reference to officialisation of science. Shri Inder J. Malhotra also referred to it. I am afraid that a certain amount of officialisation is inevitable today not only in our country but in all countries of the world. My colleague Dr. M. M. Das as referred to it very briefly. In the past, scientific research was the lonely effort of a certain single individual genius. Today, scientific research is an organised affair and groups of people take part in it, and without this kind of concerted effort by many people scientific advance is not possible.

16 hrs.

Apart from that, science is now entering very intimately into industry, commerce, agriculture, communication, transport and finally into defence. In every field of life, without organised scientific research we cannot make any advance; let alone make advance, we cannot maintain the position which we have attained today and we cannot maintain our survival and our safety. In such a situation it is inevitable that there must be a certain amount of organisation and officialisation. Even in a country like the United States of America, where they are always afraid of what they call bureaucratic interference, as my hon. friends are aware—I am sure both Shri Inder J. Malhotra who has got experience of scientific research as he has worked in the USA and Shri Harish Chandra Mathur who is always very much interested in this problem know—a very larger and substantial part if not a major part of scientific research is financed by the Government under certain conditions. Therefore in things like exploration of

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mineral resources, collection of meteorological data, forestry, food and drugs control, roads, communication, defence, etc.—in all these matters—a certain amount of organisation and officialisation is inevitable. But we have taken one step. We are trying to see that in every case, the man at the top is a scientist. Today, the national laboratories are being run by the scientists, and the administrators are under the control of the scientists.

Here, we meet with a very peculiar situation. On the one hand, it is said that scientists should not be given any bureaucratic or administrative work at all. On the otherhand, if they are not given that power of administration, then they cannot function freely. It is inevitable today, in the circumstances of the modern world, that major scientists will have to take some share in administration as well. That is the experience of every country in the world.

Then there was some reference that not enough research is being done. Just now Shri Harish Chandra Mathur referred to the statement of Prof. Chandrasekhar. I must say that it was very fair that he quoted the concluding part of the professor's statement wherein he has paid a compliment to our national laboratories. He said that wherever he went he found a spirit of enthusiasm and a certain dedication and went on to say that the results were probably not commensurate with the effort which the country has made. But what does that mean?

**Shri Harish Chandra Mathur:** I quoted exactly what he said.

**Shri Humayun Kabir:** He quoted him in full. My hon. friend quoted him in full and I only said that it was fair that he quoted that part which was complimentary to the work of the laboratories. He had made certain criticisms. What were the criticisms? The criticism was that the great effort which has been put into it has not yielded results which could have been expected. Now, we

have to remember that in scientific research it is always a process which gathers acceleration gradually. In our country, this kind of organised research is a comparatively recent development.

I would also like the House to remember that out of the 27 laboratories, only about seven or eight have had a life of ten years or more. You require about ten years before you get any substantial result out of any national laboratory. At the same time, the work which has been done is not inconsiderable. Both in the field of fundamental and applied research, a great deal of work has been done. I would not say that all this work is outstanding or world-shattering. You do not have world-shattering discoveries every day anywhere in the world.

**Shri Hari Vishnu Kamath:** The world be shattered otherwise!

**Shri Humayun Kabir:** Quite right. About 6,000 research papers have been published from the national laboratories and sponsored research in the course of the last ten to 12 years. I would submit that it is not an inconsiderable number. 800 patents have already been taken.

There was reference to the application for licences. The number of licences which have been issued and the number of licences negotiated and actually carried out in recent years is also very interesting. In 1957-58, 17 licences were issued to industry and were actually negotiated and accepted by industry. In 1958-59, the number was 24; in 1959-60, 30; 1960-61, 50; 1961-62, 80. This shows that there is a sharp increase and gradually the work of the laboratories is being recognised by industry. It is being recognised by different trades, and in this way we are adding to the national wealth.

I cannot give exact figures, but the value of production from the processes in the last three years will again indicate to the House the great progress which has been made. In 1959-60, the value of production from the

processes which were released by the National Research Development Corporation on the basis of research in national laboratories was about Rs. 20 lakhs. In 1960-61, it was Rs. 29 lakhs. In 1961-62 it was Rs. 1 crore, out of which it has been estimated that about Rs. 80 lakhs would be the saving in foreign exchange. That, I would submit, is not an inconsiderable effort.

During the second Plan, commercial production began of a large number of items. I will mention only a few more important ones. Carbions, Chemical porcelain, mica insulating bricks, silver mica capacitors, cuprous oxide etc. During the third Plan, three important production processes are already under operation. They are for pine oil, infant foods and carboxy methyl cellulose. These have already gone into production. I have already mentioned to the House last year the production of optic glass, which has not only given us a strategic material of the greatest possible value, but also added prestige to our scientists. It is a thing where no country helps any other country. Today the Central Glass and Ceramic Research Institute is supplying all the requirements of the country in regard to optic glass and we may be in a position to export a little bit of optic glass outside.

The mica insulating bricks, which were patented in the laboratories, are being used in Bhilai steel plant and in the Gauhati oil refinery. If these have not been used, a large amount of expenditure would have been incurred. Carbion is being used for water softening at Bhilai.

During the third Plan, processes which are expected to go into production are vitamin C, protein isolate, foam glass, manganese metal, nickel free stainless steel, etc. I am sure hon. Members will be glad to hear that work on vegetable proteins which had been carried out in India at the

Mysore laboratory has attracted world-wide attention and laboratories in UK, USA., etc., are seeking our cooperation. Some of the processes made here are attracting attention outside. From glass is another important material to go into production. The other processes, as I have already said, are manganese metal, nickel free stainless steel, etc. Hon Members may remember that the alloy steel plant, which has been put up in the public sector at Durgapur will be based on a process perfected at the National Metallurgical Laboratory, Jamshedpur. These are a few examples.

It has been estimated that the production from these processes in the national laboratories by the end of the third Plan will be of the order of about Rs. 20 crores and the foreign exchange saving will be of the order of Rs. 10 crores to Rs. 15 crores. These are the results of 101 processes which have been leased out. In addition, 109 processes have been leased out without any fees at all. In this way, they are also adding to the national wealth.

My hon. friend, Shri Malhotra, referred to the Indian Council of Agricultural Research. I do not have the same intimate knowledge of this institute as I have about CSIR. But I think he will agree that he was not fully fair to the Council when he said that no work has been done there at all. Two of the achievements in the field of agriculture are well-known and they have earned world-wide recognition, namely, Coimbatore sugarcane and....

**Shri Inder J. Malhotra:** I referred to the Pusa Institute. They are two different organisations.

**Shri Humayun Kabir:** I am also talking of the Pusa Institute. Pusa wheat has already become world famous. These are two things which were done in the past. In recent times also, very important work has been done and is being done.

[Shri Humayun Kabir]

Rice hybrids between India and Papanica varieties of rice showing an increased yield of 18 to 34 per cent. more than the Indica parents have been found out. These are in experimental stages now, and as soon as these are accepted on a wide scale they will begin to show good results. I agree with my hon. friend Shri Mathur when he said that if the knowledge which is available today is applied on a large scale in agriculture our food production could be doubled. I agree, but it always takes a little time.

**Shri Harish Chandra Mathur:** I said 200 per cent.

**Shri Humayun Kabir:** 200 per cent. means twice, and I said "doubled". It means exactly the same thing.

**Shri Harish Chandra Mathur:** We want only 50 per cent.

**Shri Humayun Kabir:** But in a country like ours where the agriculturists are still very largely illiterate and where there is a certain amount of conservatism and inertia it takes a little time. But even now the agriculturists are taking to these new things.

Similarly, in the field of wheat, rust resistant wheat strains NP 710 and NP 718 have been developed and they are expected to save about 5 to 10 per cent. of annual loss due to rust diseases. A new strain NP 836 is estimated to give 5 to 10 per cent. more yield.

More interesting is the development in the field of maize. By crossing Indian, North and South American and Caribbean maize we have been able to develop four types of maize. They are: Ganga Hybrid Makka-1, Ganga Hybrid Makka-101, Ranjit Hybrid Makka and Deccan Hybrid Makka for different regions of the country. All these are expected to lead to an increase of 20 to 40 per cent. increase in production.

In the field of cotton also, in recent times very valuable work has been done.

**Shri Bhagwat Jha Azad** (Bhagalpur): People only want to know how such eminent scientists who invented so many things have failed to find a colour for the vegetable ghee?

**Shri Humayun Kabir:** I will come to that in a minute. A reference was made to vanaspathi and it was asked why no colour has been found for vanaspathi. There the difficulty is, you have to find a colour which is non-toxic, and this is a problem which is not peculiar to our country alone; it is a problem which scientists in other countries have not been able to solve. We want a colouration which will be completely non-toxic. If you do it without proper safeguard, without proper investigation and without being sufficiently careful all kinds of tragedies may happen. You have been reading in the papers that recently certain medicines were released in Germany, U.K., and certain countries in Europe which have resulted in deformed babies and all kinds of monstrosities. We do not want that to happen, we do not want any toxic element to be used which may have far-reaching effects. When one is dealing with human life and health one has to be careful.

But that is not my main concern. My concern is this. I agree with my hon. friends that there should be encouragement given to scientists especially inside the laboratories and outside. A scientific climate must be created. My hon. friend Shri Mathur talked about the science classes. I do not know whether he is aware that through the vigyan mandirs science classes are being conducted in rural areas and in schools. But there is always room for improvement in such matters. But what I would submit is, a definite beginning has been made and the impact of science is beginning to be felt today in the country-side. It is not yet fully perceptible, but you will have to give some time for this also.

Another thing I would like to mention is about the science talent search.

Under a new scheme children are encouraged to take to study of science. Scholarships have been increased. Very gradually all these factors are contributing towards that end. But in a country like ours with a tremendous hoary tradition—tradition from one point of view is extremely valuable but from another point of view it is a great handicap because you are weighed down by the burden of tradition—to do anything new it requires enormous courage and vision. In a vast country like ours we have to move the people and take the people with us. An effort has been made in that direction.

The request for the setting up of a Commission, therefore, I would submit, is not justified, because continually these things are being done. As soon as the Scientific Policy Resolution was passed in 1958 a conference of leading scientists of this country, the educationists and vice chancellors was convened. We met together and examined the Scientific Policy Resolution clause by clause, paragraph by paragraph, and we made certain recommendations which are being carried out. I might inform this House that again a conference of scientists....

**Shri Harish Chandra Mathur:** What persuaded Shri V. T. K. to make that recommendation?

**Shri Humayun Kabir:** I think you have better to ask Shri V. T. K. I can not reply why Shri V. T. K. made such a recommendation.

I was saying what is happening here. We have decided to call a conference of leading scientists, educationists and Vice-Chancellors to survey the work which has been done for the last few years and to suggest further progress.

I may mention another thing. We have very recently appointed a committee of senior scientists of the CSIR, five or six of the leading scientists in the CSIR, to meet from time to time, three or four times a year to

survey the scientific work of the CSIR and to indicate new lines of research.

All these show that efforts are being continuously made to improve the facilities for science in this country, and I was glad to find that everybody agreed that the facilities have been increased manifold. In fact, the effort which India made during the last ten or twelve years has attracted admiration throughout the world. We were, perhaps, the first country to have a Scientific Policy Resolution.

16-16 hrs.

[MR. SPEAKER in the Chair]

We had a Minister of Scientific Research before U.K. and, in fact, in a sense, the U.K. Minister of Science told me before he had become the Minister of Science that they would also like to have a Minister of Science on the Indian pattern.

We are continually in touch with the advances in science. There is the Scientific Advisory Committee of the Cabinet. There is the Council of Scientific and Industrial Research. There is the Indian Science Congress and the National Institute of Science. All these bodies are working together and it is my hope that, as the scientific education spreads lower—we have not been able to bring it sufficiently at the primary and secondary level—a proper scientific temper in the country will be created, and we are marching towards that consummation. In view of this, I would request my hon. friend, Shri Malhotra, not to press his Resolution because the purpose of his Resolution has been served and the work has been done.

Then he said that the scientists have the research field and go to other areas. Some examples are given by my hon. colleague, Dr. Das, but I think we have the example in the person of the hon. mover of the motion, who was a scientific worker, who because the attraction of politics has proved more powerful....

**Shri Inder J. Malhotra:** I left that to plead their case here.

**Shri Humayun Kabir:** Whatever be the reason, it is other than the attractions of purely scientific research. But I hope that he will keep his interest in science and will continuously go on goading us so that more and more effort is put in science.

**Shri Harish Chandra Mathur:** The hon. Minister who started his speech with gusto about my remarks has contradicted me only at one point. He said that the IAS officers get Rs. 1,800 only after 10 or 12 years when I said that they will reach it in six years. Since the Minister of Home Affairs is here, let him tell us whether it is not in the 6th year that they reach Rs. 1,800. If not, let him contradict it. Let us know who is correct.

**Mr. Speaker:** Shri Inder J. Malhotra.

**Shri Inder J. Malhotra:** My regret is that the treatment which I expected for my Resolution from the hon. Minister for Scientific Research has been absolutely reversed. He himself being a scientist, when he justified the terms and conditions of work today existing in the various scientific institutions, when he justified them by saying those are the existing conditions, with statistics at his disposal, being a scientist himself, I expected him to say at least that there is a good deal of room still left for improvement in the working conditions.

**Shri Humayun Kabir:** There is always scope for improvement.

**Shri Inder J. Malhotra:** The hon. Minister said certain things about the achievement of the Indian Council of Agricultural Research. In the first place, in my speech I had referred to the research work done at the ICAR. Anyhow, I take it that those performances of the ICAR, the performances listed by the Minister of Scientific Research on the floor of this House today, if all those performances are existing in the field today, there would be no food shortage in the country. I will say that the hon. Minister has been misled by the Ministry of Food

and Agriculture when they supplied him with this information, for all these things are in the experimental stage, in the experimental laboratories.

**Shri Humayun Kabir:** I said the same thing.

**Shri Inder J. Malhotra:** When research is still in the experiment stage no claim for achievement can be made.

This Resolution was introduced in this House on the 24th August and today is the 7th September. During this period I have received a large number of letters from the various scientific and technical associations and the research institutes in this country. All of them have emphasised this fact that there is necessity for such a commission consisting of Members of Parliament, administrators or scientists. It may comprise of any category of Indians. My hon. friend, Shri Mathur, also pointed out that no less a person than Shri Krishnamachari, who was in the Planning Commission, also emphasised the fact that now is the time to look more thoroughly and more deeply into the working conditions and the administrative difficulties and bottlenecks which exist in our national laboratories.

The hon. Minister has pleaded that I should withdraw the Resolution. Before me there is only one justification to withdraw the Resolution and that is that I do not want this Resolution to be negatives because if that goes on record, the scientists of this country and the scientific workers would feel demoralised by the fact that even the highest forum or authority of the nation did not think it fit to grant them a commission to look into their working conditions. With regret I say that I would like to withdraw the Resolution.

**Mr. Speaker:** Has the hon. Member the leave of the House to withdraw the Resolution?

**Several Hon. Members:** Yes.

*The Resolution was, by leave, withdrawn.*