

GOVERNMENT   OF   INDIA  
DEPARTMENT   OF   SCIENTIFIC  
RESEARCH  
ORGANIZATION   AND   FUNCTIONS.

**GOVERNMENT OF INDIA**

**DEPARTMENT OF SCIENTIFIC  
RESEARCH**

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**ORGANIZATION AND FUNCTIONS**



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## INTRODUCTION

Prior to the World War of 1914, and even for several years after that industrial research in India did not attract any attention. Industrial research was a veritable Cinderella for while two organisations viz., the Indian Council of Agricultural Research and the Indian Research Fund Association had been created with funds provided by Government to promote and carry on research in agriculture and medicine and public health, industrial research was completely ignored.

In 1919 the Indian Industrial Commission suggested the establishment of a Chemical Services Committee. The Committee in turn proposed the creation of an All-India Chemical Service to which were to be assigned the duties of assisting in the co-ordination of industrial work conducted in the provinces. The formation of an All-India Chemical Service was, however, abandoned for several reasons and for sometime the proposal to co-ordinate industrial research in India went into cold storage.

The question was brought up for discussion on several occasions and in 1928, the Provincial Governments were asked for their views on the question of establishing Central agencies and Institutions for industrial research. There was unanimity of opinion among the local Governments regarding the desirability of co-ordinating industrial research in India and a suggestion was put forward by one of the Governments that an Indian Council of Industrial Research on the lines of the Indian Council of Agricultural Research might be formed.

Then came the slump in 1931. With it this proposal was for the time being shelved till July 1933 when the 5th Industries Conference met. Consequent on the discussions at the 5th and 6th Industries Conference, it was decided to bring into being the Central Industrial Intelligence and Research Bureau which would be a Central Clearing House of industrial intelligence, keep abreast of industrial developments in India and abroad and give information and advice to industrialists and persons seeking industrial openings.

The Industrial Research Bureau, as it was subsequently named, was established in 1935 and at the same time the Government of India recognised the necessity for giving *ad hoc* grants to Scientific Institutions as and when occasion demanded. The Government also recognised the need for the establishment of a Central Industrial Research Institute. Industrial research which had long been neglected was at long last coming into its own in a small way.

The outbreak of World War in September, 1939 brought home the necessity for a strong and well planned Central Industrial Research Institute. Since many sources of supply of finished products were either entirely stopped or their supply curtailed, it was realised that if India was to be industrially self-sufficient and an effective source of war supplies, the establishment of a Central Research organization was very necessary. It was then decided to keep in veyance the Industrial Research Bureau and to create the Board of Scientific & Industrial Research which came into existence in 1940. It was now realised that India must pay more attention to industrial research. It was recognised that the Board of Scientific & Industrial Research which had been created as a war-time measure, was only a temporary expedient and that more permanent arrangements were necessary for the purpose and efficient conduct of scientific and industrial research.

**COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH**

In 1941 the following resolution was moved by Dr. A. Ramaswamy Mudaliar in the Legislative Assembly :

“This Assembly recommends to the Governor General in Council that a fund called the Industrial Research Fund be constituted for the purpose of fostering industrial development in this country and that provision be made in the Budget for an annual grant of Rs. 10 lakhs to the Fund for a period of five years”.

This resolution was passed by the Legislative Assembly and accepted by the Government of India.

It was then decided to set up the Council of Scientific & Industrial Research as an autonomous body registered under the Registration of Societies Act-(XXI of 1860), whose functions would be—

- (a) To implement and give effect to the resolution creating the Industrial Research Fund mentioned above.
- (b) The promotion, guidance and co-ordination of Scientific and Industrial Research in India including the institution and the financing of specific researches.
- (c) The establishment or development and assistance to special institutions or departments of existing institutions for scientific studies of problems affecting particular industries and trades.
- (d) The establishment and award of research studentships and fellowships.
- (e) The utilisation of the result of researches conducted under the auspices of the Council towards the development of industries in the country and the payment of a share of royalties of arising out of the development of the results of researches to those who are considered as having contributed towards the pursuing of such researches.
- (f) The establishment, maintenance and management of laboratories, workshops, institutes and organisations to further scientific and industrial research and to utilise and exploit for purposes of experiment any discovery or invention likely to be of use to Indian industries.
- (g) The collection and dissemination of information in regard not only to research but to industrial matters generally.
- (h) Publication of scientific papers and a journal of industrial research and developments; and
- (i) Any other activities to promote generally the objects of the resolution.

The Council of Scientific and Industrial Research is an autonomous body and is administered by a Governing Body. The Prime Minister is the President and the Hon'ble Minister for Industry and Supply is its Vice-President. On the Governing Body are representatives of the Ministry of Finance and non-officials representing Science, Industry and Business.

The Governing Body of the Council of Scientific & Industrial Research is advised in technical matters by the Board of Scientific & Industrial Research. The Board of Scientific & Industrial Research consists of 22 members, of whom 10 are scientists who are mostly non-officials and hold esteemed positions in their respective fields of work. Some of these scientist members are connected with research institutes. Four represent some Government Departments interested in industrial research. The Board functions as an Advisory Body and advises the Governing Body on—

- (a) proposals for instituting specific researches ;
- (b) proposals for scientific institutions including universities and other departments of such institutions in the scientific study of problems affecting particular trades and industries ;
- (c) proposals for specific studies and surveys of indigenous resources as an essential preliminary to systematic investigations in particularly important fields of researches.

In technical matters the Board is assisted by a number of Research Committees.

There are 22 research committees as follows :—

1. Glass and Refractories Committee.
2. Electro-chemical Industries Committee (amalgamating the Graphite and Carbon Electrode Committee).
3. Industrial Fermentation & Biological Products Committee.
4. Fuel Research Committee.
5. Vegetable Oils Committee.
6. Cellulose Research Committee.
7. Heavy Chemicals and Chemical Industries Committee.
8. Pharmaceuticals and Drugs Committee.
9. Plastics Committee.
10. Atmospheric Research Committee.
11. Essential Oils Committee.
12. Metals Committee.
13. Internal Combustion Engine Research Committee.
14. Applied Physics Committee (including the Scientific Instruments Committee).
15. Radio Research Committee.
16. Statistics, Standards and Quality Control Committee.
17. Leather Research Committee.
18. Building Research Committee.
19. Committee on the Measurement of Geological Time.
20. Beryllium Research Committee.
21. Vanaspati Research Advisory Committee.

The foundation in 1940 of the Board of Scientific and Industrial Research represented a very notable step in the organisation of science in India. Its full influence has not yet been felt although it has produced important results.

#### THE NATIONAL LABORATORIES

The National Laboratories are its creation. Even at the very inception of the Board of Scientific & Industrial Research it was realised that the machinery available for scientific and industrial research in India was very inadequate and that for undertaking research problems bearing on Indian resources and industries for developmental purposes a much larger organisation comprising some essential laboratories at a substantial cost would have to be set up. Certain tentative proposals and schemes drawn up by the Director of Scientific & Industrial Research for five national laboratories *viz.*, a National Chemical Laboratory, a National Physical Laboratory, a National Metallurgical Laboratory, a Central Fuel Research Station and a Glass & Ceramic Research Institute were approved in principle by the Government of India. The Government of India announced in 1944 a capital grant of Rs. 1 crore for the establishment of these laboratories. The public too evinced keen interest in the Council's schemes and some industrialists offered handsome donations towards their cost. Sir Dorabji Tata Trust has donated Rs. 8.3 lakhs for the establishment of the National Chemical Laboratory and Sir Ratan Tata Charities a sum of Rs. 11.7 lakhs for the National Metallurgical Laboratory. Other donations were also received. Messrs. Indian Steel & Wire Products Ltd. donated a sum of Rs. 1 lakh. The late Mr. D. P. Khaitan and the Indian Metallurgical Association donated Rs. 25,000 and Rs. 10,000 respectively. The Central Government have allotted 68 acres of land in Delhi for the construction of National Physical Laboratory. The Raja of Jharia made a gift of 100 acres of land at Dhanbad for the site of the Fuel Research Station. Dr. R.M. Alagappa Chettiar donated a sum of Rs. 15 lakhs for the establishment of Electro-Chemical Research Institute at Karaikudi. He also presented a plot of land covering 300 acres for the location of the Institute. The Government of Mysore gifted the Chalavamba Palace for the location of the Central Food Technological Research Institute. The Industrial Research Planning Committee appointed by the Council of Scientific & Industrial Research recommended the establishment of the following specialised institutes in addition to the proposed five National Laboratories mentioned in the preceding paragraph.

1. Institute of Food Technology.
2. Building Research Institute.
3. Road Research Institute.
4. Leather Research Institute.
5. Electro-chemical Institute.
6. Drug Research Institute.

The construction of the following National Laboratories is under way :—

- National Physical Laboratory, Delhi.
- National Chemical Laboratory, Poona.
- National Metallurgical Laboratory, Jamshedpur.
- Fuel Research Institute, Dhanbad.
- Central Glass & Ceramic Research Institute, Calcutta.

Dr. K. S. Krishnan has been appointed Director of the National Physical Laboratory. Prof. J. W. McBain has been selected for appointment as Director of the National Chemical Laboratory. Dr. George Sachs has been appointed Director of the National Metallurgical Laboratory, Jamshedpur. Dr. J.W. Whitaker has been appointed Director of the Fuel Research Institute, Dhanbad.

The buildings for the National Physical and National Chemical Laboratories are expected to be ready for occupation shortly. The Fuel Research Institute and the Central Glass & Ceramic Research Institute are already functioning, the former in some military barracks at Dhanbad and the latter in the Technological Block built in the Jadavpur Engineering College compound.

Plans for setting up of the following new laboratories are well under way :—

- Leather Research Institute, Madras.
- Electro-Chemical Industries Research Institute, Karaikudi.
- Central Food Technological Research Institute, Mysore.
- Central Drug Research Institute to be located in the U. P.
- Road Research Institute, Delhi.
- Building Research Station, Roorkee.

#### DEPARTMENT OF SCIENTIFIC RESEARCH

The Central Government is anxious that India should take her rightful place in the vanguard of the comity of Nations in all fields and in the field of science in particular. It is fully realised that without science industrial development cannot proceed apace. Without rapid advances in industry the standard of living cannot be raised. In pursuance of its plan to develop science in India, the Government of India created on the 1st June 1948 the Department of Scientific Research in order to give scientific research the identity and importance that is due to it in the modern world. This Department has been placed directly under the Hon'ble Prime Minister. The Department of Scientific Research has been assigned some of the important scientific activities which were scattered in the past in several Ministries. The main functions of the Department are to co-ordinate research, give scientific advice to Government Departments, finance *ad hoc* scientific research in Universities and Research Institutes, deal with *ad hoc* research fellowships in applied scientific subjects, and carry out all work in connection with the International Council of Scientific Unions, International Scientific Unions and International Scientific Commissions. Generally all the subjects which are mainly or completely meant for scientific research are dealt with by the Department of Scientific Research.

The Department has taken over the work of the Board of Research on Atomic Energy and the Council of Scientific & Industrial Research. The latter body although attached to the Department retains its non-official character and continues to function as before as an autonomous body. All work in connection with the development of atomic energy has also been placed under this new Department. An Atomic Energy Commission consisting of Dr. H. J. Bhabha, Dr. K. S. Krishnan and Dr. S. S. Bhatnagar has been set up to take stock of Indian resources.

of atomic energy and to plan for future development. To co-ordinate scientific work in the various Ministries of the Government of India, a high powered Committee of scientists has been set up. The work of this Committee is to organise team work, avoid unnecessary duplication and plan new scientific projects.

The chart at Appendix I shows the main functions of the Department. The names of the Officers of the Department are given in the list at Appendix II.

#### ADVISORY COMMITTEE FOR CO-ORDINATING SCIENTIFIC WORK

There are 6 main categories of scientific work affecting the welfare of India in addition to the pure or academic research lying at the back of each of them. These relate respectively to :—

1. Medicine and Public Health —carried out under the I.R.F.A. under the Ministry of Health.
2. Agriculture and Animal Husbandry —carried out under the Ministry of Agriculture.
3. Industry,— carried out under the Department of Scientific Research.
4. Surveys and Natural Resources.
5. Engineering in all its aspects.
6. The Defence Services.

It was felt that if Scientific Research in India was to make a concerted and co-ordinated contribution, as it ought, to national development in all its phases, co-ordination of the scientific work carried out under the aegis of the various ministries of the Government of India was very necessary. One of the activities assigned to the Department of Scientific Research is therefore to co-ordinate scientific work in other Ministries. This co-ordination does not in any way interfere with the work being done in any Ministry. To enable the co-ordination of scientific work an Advisory Committee for co-ordinating Scientific Work has been set up. The following are the members of the Committee :—

1. The Hon'ble Pandit Jawaharlal Nehru. (*Chairman*).
2. Dr. J. C. Ghosh, F. N. I., Director General Industry & Supply, New Delhi. (*Member*)
3. Dr. J. N. Mukherjee, Director, Indian Agricultural Research Institute, New Delhi. (*Member*).
4. Dr. C. G. Pandit, Secretary, Indian Research Fund Association, New Delhi. (*Member*).
5. Prof. P. C. Mahalanobis, Director, Statistical Laboratory, Presidency College, Calcutta. (*Member*).
6. Major General S. S. Sokhey, Director, Haffkine Research Institute, Parel, Bombay. (*Member*).
7. Dr. D. S. Kothari, Scientific Adviser to the Ministry of Defence, New Delhi. (*Member*).
8. Dr. S. R. Sen Gupta, Deputy Secretary, Ministry of Education, New Delhi. (*Member*).
9. Dr. S. S. Bhatnagar, Secretary & Principal Executive Officer, Department of Scientific Research. (*Member Secretary*).

The *raison d'être* of the creation of the Committee was that the need for the co-ordination of scientific research in various Ministries had in the past been felt. With the advent of independence it was realised that the need for co-ordination of scientific work would grow as the days went by, for security and defence reasons as well as a natural consequence of the National Government's plan for expansion in various fields of development requiring scientific knowledge. In the interest of economy and the most efficient use of our research, manpower and resources, co-ordination under a high powered Committee was felt necessary. The fields in which this co-ordination is possible will naturally expand but the following projects are the immediate objects of the Committee.



## ORGANISATION OF TEAM WORK

In the solution of the scientific problems particularly in its applied phases, the aid of more than one type of science is frequently required, and it is very often the case that these sciences are administered in different Ministries. With increasing specialization in Science and the necessity to reduce expenditure in Government and to obtain results more quickly in the U. K. and other countries inter-departmental team work is encouraged. Joint undertaking not only saves time and money but also helps to bring about better results. During the war the success of science was largely due to the splendid team work of British and American scientists in many departments. The Co-ordinating Committee appointed to help in the co-ordination of the scientific work in all Ministries helps in organising this team work on the most important scientific problems before the nation.

## PREVENTION OF UNNECESSARY DUPLICATION

While some duplication is obvious and may even be necessary in scientific research, it has been realised that such research is expensive. Budget provision for it will be larger and larger as the country's development programme proceeds. Ways and means must therefore be devised to prevent unnecessary duplication and to utilize to the best advantage the equipment and manpower available in the country. The Advisory Committee for co-ordinating scientific work examines the problems that come before it from time to time with a view to keeping down expenditure as far as possible by encouraging proper liaison work and preventing unnecessary duplication.

## PLANNING OF NEW SCIENTIFIC RESEARCH PROJECTS HAVING A BEARING ON MORE THAN ONE MINISTRY

This can obviously be best carried out by a team of inter-departmental scientists and the Co-ordination Committee has been created to fulfil this purpose.

The Co-ordinating Committee does not issue any directive to any other Department or Ministry as scientists know how to adjust these matters among themselves, but if a directive becomes necessary in the opinion of the Prime Minister it would be issued by him through the Hon'ble Minister in the Ministry or Ministries concerned.

### *Indian National Committee on Type-Cultures of Micro-organisms*

On the recommendation of the Advisory Committee for Co-ordinating scientific work an Indian National Committee on Type-Cultures of micro-organisms representing the following subjects has been set up:—

| <i>Aspects to be represented :</i>          | <i>Institute from which members are chosen :</i>                               |
|---|--|
| Agriculture . . . . .                       | Indian Agricultural Research Institute, New Delhi.                             |
| Sylviculture . . . . .                      | Forest Research Institute, Dehra Dun.  |
| Dairying . . . . .                          | Dairy Research Institute, Bangalore.   |
| Medical . . . . .                           | Central Research Institute, Kasauli.   |
| Veterinary . . . . .                        | Indian Veterinary Research Institute, Mukteswar.                               |
| Industrial . . . . .                        | Indian Sugar Syndicate, Kanpur.  |
| Fundamental Microbiology and Bio-chemistry. | Department of Fermentation Technology, Indian Institute of Science, Bangalore. |

Mr. M. Sreenivasaya, In-charge of the Type-culture Section of the Council of Scientific and Industrial Research at the Indian Institute of Science, Bangalore, has been appointed a member of the permanent Committee for the collection of the micro-organisms of the B.C.S.O.C. The Scientific Liaison Officer in London represents Mr. Sreenivasaya in this work and attends the meetings of that Committee in London on his behalf.

## INDIAN SCIENTIFIC LIAISON OFFICE IN LONDON

The Royal Society Empire Scientific Conference and the British Commonwealth Official Conference which followed it gave very close attention to the question of Scientific Liaison Offices. In general the work done by the Scientific Liaison Offices during the war in London and Washington was highly appreciated especially by those of the delegates who were personally acquainted with the work and the war time difficulties under which it was carried on. There was a unanimity of opinion that Scientific Liaison Offices were a necessary part of the peace time as well as war time organisations of collaborative research work.

After examining the question in detail, the Government of India decided for a start to set up an Indian Liaison Office in London. The Office is staffed by one Scientific Liaison Officer who is assisted in his office work by a stenographer. The work of the office is :—

- (i) To facilitate the movement of scientists within the Commonwealth and to provide adequate facilities for them and their work and to arrange contacts for them,
- (ii) to keep abreast of the latest improvements in techniques and scientific and technical developments and make this information available in India,
- (iii) to facilitate exchange of scientific information and experimental material such as plants, animals, micro-organisms, etc.,
- (iv) to help, wherever required, in the placing of Research Workers in British and American Laboratories for research or training.

The Scientific Liaison Office in London has during the short time it has been in existence been able to obtain valuable scientific information regarding the latest improvements in techniques and scientific and technical developments. The Scientific Liaison Office has also been able to help in obtaining from the U. K. the exact type of technical equipment required for the National Laboratories and has thus saved valuable time in equipping the Laboratories. The dissemination of the latest scientific information has been greatly facilitated by the creation of the Indian Scientific Liaison Office in London.

The Indian Scientific Liaison Officer in London also works as the assessor to the Pest Infestation Research Board of the Department of Scientific and Industrial Research of the United Kingdom. His duties in this connection are to contribute to the pooling of knowledge for the common pool in the solution of various problems on the subject with which one or other parts of the Commonwealth may be faced.

## NATIONAL PROFESSORSHIPS

National Professorships have been created in the leading countries of the world. Since the inception of the Department of Scientific Research on the 1st June 1948 a National Professorship of Physics has been created. It will be held by the eminent Indian Scientist Dr. C. V. Raman at the Indian Academy of Science, Bangalore.

## SCIENTIFIC SOCIETIES IN INDIA AND SCIENTIFIC RESEARCH IN UNIVERSITIES AND RESEARCH INSTITUTES

It has been said that the constant association of scientific men in scientific societies is very necessary for the development of science in any country. These Societies provide the platform at which new ideas are brought out and critically examined, new data and facts discussed and common policy decided. The Societies help to keep ideas freely current. They thus keep science fresh and as such the humble and trusty servant of truth. They also help to bring scientists who may not otherwise meet to get together and so create contacts which lead to the quick exchange of scientific information.

Scientific Societies are of 2 kinds. The first kind has a general membership and its members are drawn from the whole of science and the second is special and its members are drawn from a single branch of science. Both kinds of scientific societies exist in India.

Both play an important part in the development of science in India by the dissemination of scientific knowledge through the publication of scientific papers. They also are repositories of scientific information through their libraries and collections. Finally such societies keep science from stagnating in the country by their discussions, criticisms and suggestions. The Department of Scientific Research helps in the development of such societies by giving them grants-in-aid from time to time and by obtaining for them such scientific information as they may require on various subjects.

In relation to science the Universities have a dual function of training scientific workers and conducting fundamental research. The Department of Scientific Research helps in the development of research in Universities and Research Institutes of an All India character by—

- (1) Sanctioning grants-in-aid to Universities and Research Institutes for buildings and equipment.
- (2) Diffusion of scientific knowledge—distribution of scientific literature, improvement of libraries, etc.
- (3) Discovery and training of talented persons through fellowships.

A list of learned scientific societies and Research Institutes which have so far come under the purview of the Department is given at Appendix III.

The grants from the Department of Scientific Research are given to Learned Scientific Societies, Research Institutes and Universities to help them to establish themselves on a reasonable financial basis and to encourage the expansion of their activities on an All India basis. The intention underlying the Department's general policy is to increase scientific mindedness by the expansion of such learned scientific societies of an all India character.

#### ATOMIC ENERGY COMMISSION.

Research on Atomic Energy had been carried out in India under the auspices of the Council of Scientific and Industrial Research. The Council had appointed a Committee for research on atomic energy in January 1946 but in view of the vast and important field covered by atomic energy research, it was felt that the problem connected with this intricate subject should not be handled by a small committee of the Board of Scientific and Industrial Research. The Government of India and the Council of Scientific and Industrial Research, therefore, decided in June 1947 to set up a Board of Research in Atomic Energy to work directly under it. At the same time a Joint Committee with representative of the Travancore Durbar for research and development of atomic energy from Travancore minerals was also set up.

It was long ago recognised that atomic energy will play a very important part in the near future both in regard to defence and industrial and other purposes. The countries of the world are spending considerable sums of money for atomic energy research and some of their best scientists are working to this end. Any country that lags behind in this respect will be unable to play an important part in the world affairs of to-morrow and may not even be able to maintain its independence.

In order to facilitate control on matters concerning atomic energy, the Constituent Assembly (Legislative) following the precedent of other countries passed the Atomic Energy Act—(No. XXIX) of 1948.

Clause 13 of this Act reads as follows :—

*“ Delegation of Powers :* The Central Government may by order direct that any power conferred on it by this Act shall be exercised or discharged by such officer or officers in such circumstances and under such conditions as may be specified in the order.”

Along with other nations of the world the Government of India has under this clause set up an Atomic Energy Commission to take stock of India's resources of atomic energy and plan for future development. The Atomic Energy Commission is composed as under :—

1. Dr. H. J. Bhabha, Director, Tata Institute of Fundamental Research, Bombay. (*Chairman*).
2. Dr. K. S. Krishnan, Director, National Physical Laboratory, New Delhi. (*Member*).
3. Dr. S. S. Bhatnagar, Secretary to the Government of India, Department of Scientific Research. (*Member—Secretary*).

The work of the Commission is carried out under the direct guidance of the Prime Minister. The chief functions of the Commission are :—

- (i) To take such steps as may be necessary from time to time to protect the interest of the country in connection with atomic energy by the exercise of the powers conferred on the Government of India by the provisions of the Atomic Energy Act.
- (ii) To survey the territories of the Indian Dominion for the location of useful minerals in connection with atomic energy.
- (iii) To promote research in India on atomic energy and to subsidise such research in existing Institutions and Universities.
- (iv) To take steps to increase teaching and research facilities in nuclear physics and chemistry in Indian Universities.

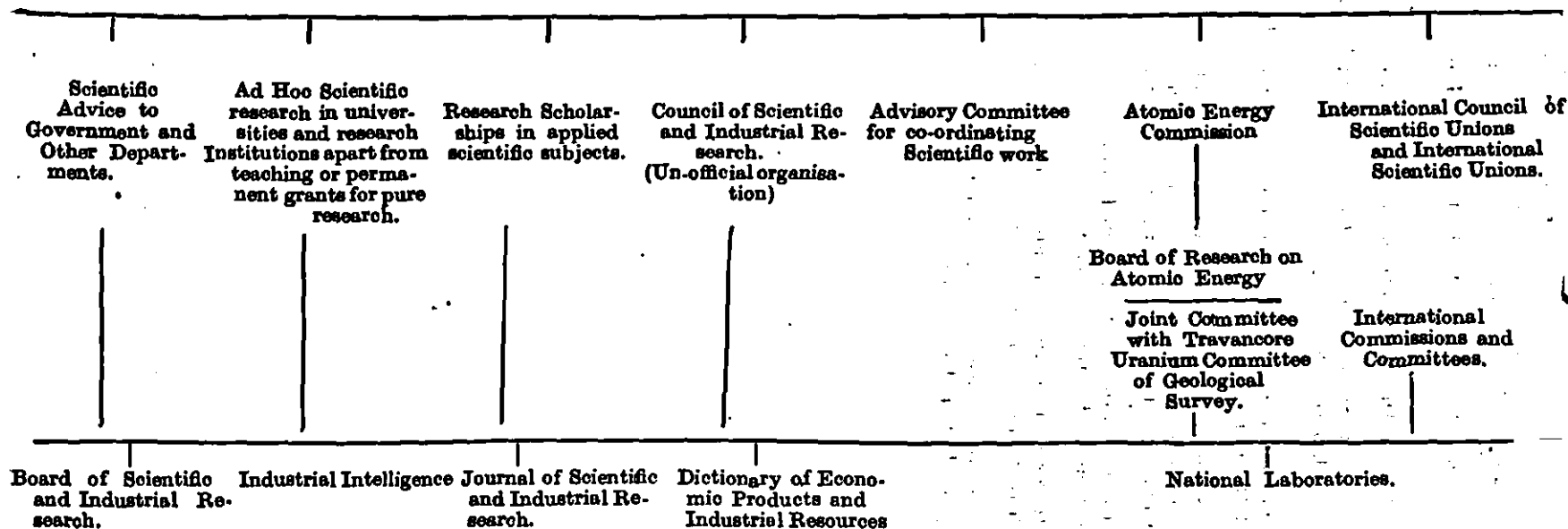
**APPENDIX I**

**PRIME MINISTER**

**DEPARTMENT OF SCIENTIFIC RESEARCH**

**SECRETARY AND *Principal***

*Executive Officer*—Dr. S. S. Bhatnagar, F.R.S.



**Subjects.**

1. Applied Physics.
2. Metals.
3. Fuel.
4. Cellulose.
5. Dyestuffs.
6. Plastics.
7. Vegetable Oils.

**Laboratories.**

1. National Physical Laboratory, Delhi.
2. National Chemical Laboratory, Poona.
3. National Metallurgical Laboratory, Jamshedpur.
4. Fuel Research Institute, Dhanbad.
5. Central Glass and Ceramic Research Institute, Calcutta
6. Road Research Institute, Delhi.
7. Building Research Station, Roorkee.

8. Essential Oils.
9. Leather.
10. Atmospherics.
11. Building.
12. Radio.
13. Glass and Refractories.
14. Electro-Chemical.
15. Heavy Chemicals.
16. Internal Combustion Engines.
17. Drugs and Pharmaceuticals.
18. Statistics and Standards.
19. Measurement of Geological time.
20. Industrial Fermentation and  
Biological Products.
21. Vanaspati Research Committee.

8. Leather Research Institute, Madras.
9. Central Drug Research Institute.
10. Central Food Technological Research Institute, Mysore.
11. Electro-Chemical Research Institute, Karaikudi.

## APPENDIX II.

## DEPARTMENT OF SCIENTIFIC RESEARCH

|   |   |
|---|---|
| Minister-in-Charge . . . . .                        | The Hon'ble Pandit Jawaharlal Nehru.              |
| Secretary and Principal Executive Officer . . . . . | Dr. S. S. Bhatnagar, F.R.S.                       |
| Under Secretary . . . . .                           | Mr. T. Gonsalves, B.A. (Hons.), LL.B., F.R.Econ.S |
| Assistant Secretary . . . . .                       | Mr. G. C. Jerath, M.A.                            |
| Superintendent . . . . .                            | Mr. M. R. Kalyanaraman, B.A.                      |

## COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH

|   |  |
|---|--|
| Secretary, Council of Scientific and Industrial Research.                         | Mr. R. P. Bahadur, M.Sc.                     |
| Industrial Economist and Research Development Officer.                            | Dr. S. D. Mahant, M.Sc., Ph.D., F.R.I.C.     |
| Editor Journal of Scientific and Industrial Research                              | Mr. B. N. Sastri, M.Sc., A.R.I.C., A.I.I.Sc. |
| Chief, Editor, Dictionary of Economic Products and Industrial Resources of India. | Mr. B. N. Sastri, M.Sc., A.R.I.C., A.I.I.Sc. |

## NATIONAL LABORATORIES

|   |                                 |
|---|---------------------------------|
| Director, National Physical Laboratory . . . . .      | Dr. K. S. Krishnan, F.R.S.      |
| Director, National Metallurgical Laboratory . . . . . | Dr. George Sachs.               |
| Director, Fuel Research Institute . . . . .           | Dr. J. W. Whitaker, Ph.D.       |
| Director, National Chemical Laboratory . . . . .      | Dr. J. W. McBain.               |
| Acting Director, Chemical Laboratories . . . . .      | Dr. S. Siddiqui, Ph.D., D.Phil. |

## APPENDIX III

## LIST OF RESEARCH INSTITUTIONS AND LEARNED SOCIETIES WHICH COME UNDER THE PURVIEW OF THE DEPARTMENT OF SCIENTIFIC RESEARCH

| S. No. | Name of Institution.  |
|--------|---|
| 1      | National Institute of Sciences of India, University Buildings, Delhi.                                       |
| 2      | Indian Chemical Society, 92, Upper Circular Road, Calcutta.   |
| 3      | Indian Science Congress Association, Calcutta.  |
| 4      | Indian Association for the Cultivation of Science, Calcutta.  |
| 5      | Indian Botanical Society, Poona.  |
| 6      | Palaeobotanical Society, Lucknow.   |
| 7      | Indian Academy of Sciences, Bangalore.  |
| 8      | Bose Research Institute, 93, Upper Circular Road, Calcutta.   |
| 9      | Bombay Natural History Society, Bombay.   |
| 10     | Tata Institute of Fundamental Research, Bombay.   |
| 11     | Institution of Chemists, Chemical Department, Medical College, Calcutta.                                    |
| 12     | Indian Science News Association, Calcutta.  |
| 13     | Calcutta University for the Institution of Nuclear Physics, Calcutta.                                       |
| 14     | Indian Dairy Science Association, Bangalore.  |
| 15     | The Entomological Society of India, Indian Agricultural Research Institute, New Delhi.                      |
| 16     | National Academy of Sciences of India, Muir College Buildings, Allahabad.                                   |
| 17     | Geological, Mining and Metallurgical Society of India, Geological Department, Presidency College, Calcutta. |
| 18     | Calcutta Mathematical Society, Calcutta.  |