

**Agenda for the 52nd meeting of the Board of Scientific and Industrial Research
to be held on 23rd March, 1964.**

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BOARD OF SCIENTIFIC AND INDUSTRIAL RESEARCH,
52nd Meeting of the B. S. / R. 23rd March, 1964.

Subject :—Confirmation of the proceedings of the 51st meeting of the Board of Scientific and Industrial Research held on 24th October, 1963.

Subject :—Setting up a National Institute of Oceanography.

During recent years, interest in oceanic research has increased enormously all over the world with many countries providing substantial support for new institutes and research ships. Among them are (1) Countries which have a long tradition for marine work, (United Kingdom, Scandinavian countries and Japan) ; (2) the Soviet Union and the United States which have recently entered ocean research in a very big way ; and (3) many other countries which are developing oceanography into a fullfledged national activity either by expanding existing organizations or by starting new organizations.

2. Oceanography in many countries began either in association with the Navy or with the fisheries departments but sooner or later these arrangements were found inadequate because the interests of these organizations were far too narrow for the overall development of the aspects of oceanic sciences. Even countries with a long tradition of marine research associated with the Navy, private research institutions, Fisheries Institutes and Universities, have now found it essential to establish distinct institutes of Oceanography. Such large scale developments are taking place in Great Britain, Soviet Union, United States, Canada, Australia, Japan and Indonesia.

3. The most striking example in recent times of the recognition of integrated oceanic studies is the establishment by Japan of a fullfledged Ocean Research Institute at Tokyo, covering 15 research divisions dealing with the various disciplines comprising oceanography. This is particularly noteworthy because Japan already has the largest number of marine institutes and research ships as compared with any other country in the world. Amongst other Asian countries a vigorous programme with an update researchship has been started in Indonesia, while similar developments are likely in the Philippines.

Need for a National Institute of Oceanography in India :

4. India with a coast line of over 3,000 miles and a continental shelf covering several lakhs of square miles (which juridically form Indian territory) cannot afford to ignore ocean studies. Oceanography today provides high dividends in shipping, trade, production of better quality food, arrest of sea erosion and finding of new raw-materials for industry. Oceanographic data are invaluable for defence. The International Indian Ocean Expedition has given us the opportunity to get an organized programme in oceanography for the duration of the Expedition period. Many young men are being trained to handle field oceanographic work and quite a few of our promising scientists have been trained on foreign vessel for special projects coining within the purview of the Indian programme of the Expedition. They are shaping well and it will be a loss if this knowledge and experience is allowed to fritter away when the Expedition ends. Valuable data in the various fields are being obtained and studied, of which India will have the benefit as well as the large volume of charts, biological and geological collections and material gathered during the expedition of Indian as well as other participating ships.

5. It will be in the national interest to consolidate these efforts and the scientific talent which we are building up during these few years, at an institutional level having the status of a National Laboratory. We have also acquired considerable amount of equipment through the Unesco for the prosecution of the Indian Programme in the Expedition subsequently to be integrated with our projects in Oceanography. A Biological Centre for handling, sorting and study of the plankton collections made by standard method throughout the Indian Ocean has been set up in Cochin with Unesco assistance. Meteorological work pertaining to the Expedition is organized at Bombay with U.N. Special Fund Assistance. A small nucleus of research workers on biological, geological and physical problems is being located at Bombay.

6. The Indian National Committee on Oceanic Research strongly recommended to the Government of India at its meeting on 10th May, 1962 the establishment of a National Institute of Oceanography for India. At its meeting held on 1st of August 1963, this recommendation was reiterated and more positive steps urged.

Oceanographic Ship :

7. One of the most essential needs of the country today is the provision of a properly equipped ocean going research vessel. For the expedition period one naval frigate and one small fisheries research vessel are doing oceanographic work, but this will not be a permanent solution. Large naval ships, apart from the unlikelihood of being permanently available for oceanography, are expensive and cumbersome for long range ocean studies, which fisheries vessels are far too specialised for physical oceanography. It is not difficult to combine our requirements into one good research vessel which should be acquired by the country and

allotted for the programme of work of the Institute. Recent discussions which the Director-General had with the Academy of Sciences of the Soviet Union have indicated that the Soviet Union may be in a position to provide a ship for oceanography under an aid programme and may also give substantial equipment and training assistance.

Outline of the Institute

8. The proposed Institute should be at a suitable coastal place with full laboratory, workshop and ship facilities. The Institute will engage itself in research on basic aspects of physical, biological, geological and chemical oceanography and will have an organization for large scale handling and processing of data. Units of research will be established at suitable coastal centres in both East and West coast of India to deal with specialized problems. The institute will develop as the focal point of information relating to Indian Ocean, its resources and the basic factor for applying that knowledge to problems of defence, fisheries, raw-materials from the sea, Oceanic transportation, sedimentation and erosion problems, prospecting of continental shelf and the deeper Waters and safe disposal of natural and radioactive pollutants.

The Institute will broadly consist of the following divisions :

- (1) Data and Documentation.
- (2) Physical and Dynamical Oceanography.
- (3) Coastal and nearshore Oceanography-Shore protection and stabilization.
- (4) Chemical Oceanography-Raw-material from the sea.
- (5) Biological Oceanography-Marine Resources and Productivity.
- (6) Marine Geology and Geo-physical prospecting of continental shelf.
- (7) Oceanographic Instrumentation.

(I) *Data and Documentaton Division :*

This division will be engaged, in receiving, processing and exchange of all oceanographic data and will function as the National Oceanographic Data Centre for the handling of data within the country and for exchange with other countries as the Indian counterpart of the world data centres A & B established at Washington and Moscow. The division will primarily deal with only Indian Ocean Data of direct concern to India and such world data which have global significance.

The division will deal with processed and un-processed Oceanographic data from different sources, have them processed and kept on punch card system for international exchange and will engage in the preparation of station lists, atlases and charts pertaining to Indian ceanology. The data and documentation division is proposed to be started during

(2) Physical and Dynamical Oceanographic Division :

This division will undertake systematic investigations of the different oceanic water bodies to the water around India, the pattern of the wind driven and sub-surface oceanic circulation, mixing and follow the sequence of events leading to the formation of the monsoons.

The work will include a general survey to cover the Arabian Sea, Bay of Bengal and the northern part of the Indian Ocean with intensive Oceanographic programmes taken up in different regions in a phased programme.

(3) Coastal and Nearshore Oceanography Division :

This division will handle problems having a direct bearing on problems of the shore and sea-land interface. It is increasingly realised that coastal erosion, sedimentation and salting are essentially oceanographic problems and require intensive study of water and solid transport. The division will also engage itself on the problems of salination of coastal tracks and estuaries changes in the pattern of water resources and the consequent diminution of fresh water entering the sea. Bio-ecological methods of land stabilization of coastal strips will also be studied.

(4) Chemical Oceanography Division :

This division will deal with the chemical and analytical problems of sea water and other marine resources and determination of trace elements. The routine programme will provide the data for physical and dynamical oceanography whereas the research programme will be directed to specialised fields for further development by the Central Salt and Marine Chemicals Research Institute, Bhavnagar.

(5) Biological Oceanography and living marine resources Division :

This division will be developed from the International Biological Centre which has been set up and will engage in research pertaining to planktonic and benthic groups of organisms, productivity and rate of turnover and assessment of living resources from the sea both exploitable and contributory. The division will provide the general scientific framework for diagnosis of marine resources and will collaborate in the international biological programme for basic researches on increasing productivity of natural waters.

(6) Marine Geology and related problems :

This division will deal with the geological characteristics of the continental shelf through exploration of the shelf itself, study of bottom profiles, analysis of sediments, cores and the prospecting of raw materials from sea bottom.

The project envisages the slow development of these Divisions to be built from the programmes which are being taken up during the International Indian Ocean Expedition. The

teams handling the different subjects will be formed of groups which are already in the field in connection with the Expedition and personnel who are being trained at present or are proposed to be trained during the coming two or three years in Indian and Foreign Ships and at specialized training centres.

(7) Oceanographic Instrumentation.

This division will deal with designing and fabrication of Oceanographic instruments for special research needs, improvements in existing Oceanographic gear and will also carry out researches in problems of instrumentation. A workshop will be part of this division where repairs and testing of existing conventional types of instruments will also be carried out. Designing of ocean models for detailed study by the physical Oceanography Division will also form part of the work of this division.

9. The Governing Body may like to approve the project in principle for execution during the Fourth Plan and authorise the Director-General to take appropriate steps for preparation of a detailed plan and to sanction the establishment of Units of Research in fields selected on a priority basis.

Subject :—Draft Plan for the Regional Research Laboratory, Jorhat, Assam.

At the meeting held on 16th & 17th October, 1959, the Governing Body of the CSIR considered the draft plan of Regional Research Laboratory, Assam and decided that :

- (a) the laboratory should start in an effective way and concentrate on specific problems of importance to region. The Executive Council of the Laboratory should laid down the programme with this end in view ;
- (b) the detailed staff proposals need not be approved in their present form but that for purposes of inclusion in the Third Five Year Plan and ad-hoc amount may be included ; and
- (c) the Laboratory should cover Assam, Manipur, Tripura, Dooars, NEFA and NHTA.

In order to implement this decision and make a realistic beginning a Special Planning and Expert Committee was constituted under the Chairmanship of the DGSIR. The recommendations of this Committee were considered by the Executive Council of the Laboratory and the final recommendations thus arrived at were placed before the BSIR and GB at their meetings held in March, 1960. It was decided that (i) an immediate beginning may be made with only two Divisions namely, Applied Chemistry and Engineering : between these

two Divisions, it would be possible for the Laboratory to cover many problems related to the area; (ii) part of the building programme required for the purposes of these two divisions and the ancillary services be taken up for the present. The DGSIR was authorised to take steps to formulate the plans and estimates for the buildings and requirements of scientific and other staff and take the approval of the President, CSIR, as and when necessary. In pursuance of the above, the construction of the following Main Block with essential ancillary buildings was approved :—

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|-------------------------------------|-----------|
| (1) Applied Chemistry | one block |
| (2) Engineering | one block |
| (3) Fuel Technology | one block |
| (4) Ground Floor of the Main Block. | |

Construction of staff quarters was also approved. 66 Staff quarters have already been constructed. The Construction of the Laboratory Blocks etc is also going apace and most of them are expected to be completed during the next financial year.

As desired by the Governing Body, the Executive Council of the Laboratory at its meeting held on 25th July, 1963 formulated and approved a programme of research as given in the Annexure.

COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH

Proceedings of the 52nd meeting of the Board of Scientific and Industrial Research, held on Monday, the 23rd March, 1964 at 9.30 A.M. in the Conference Room of the Ministry of External Affairs, South Block, New Delhi-11.

The 52nd meeting of the Board of Scientific and Industrial Research was held on Monday, the 23rd March, 1964 at 9.30 A.M. in the Conference Room of the Ministry of External Affairs, South Block, New Delhi. Shri Jawaharlal Nehru, Prime Minister, President, Council of Scientific and Industrial Research presided.

The following were present :

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| 1. Shri M.C. Chagla | <i>Vice-Presided</i> |
| 2. Prof. Humayun Kabir | <i>Member</i> |
| 3. Shri N. Kanungo | ” |
| 4. Dr. H.J. Bhabha | ” |
| 5. Shri N.G. Chakravarti | ” |
| 6. Shri Y.A. Fazalbhoy | ” |
| 7. Dr. Gurbaksh Singh | ” |
| 8. Dr. A.R. Kidwai | ” |
| 9. Dr. D. S. Kothari | ” |
| 10. Prof. R.C. Mehrotra | ” |
| 11. Shri K.N. Mookerjee | ” |
| 12. Shri P.A. Narielwala | ” |
| 13. Dr. B.R. Nijhawan | ” |
| 14. Dr. B.P. Pal | ” |
| 15. Prof. Santi R. Palit | ” |
| 16. Shri Abdul Quader | ” |
| 17. Dr. M.S. Randhawa | ” |
| 18. Dr. Satish Dhawan | ” |
| 19. Dr. T.S. Subramaniam | ” |
| 20. Dr. D.N. Wadia | ” |
| 21. Dr. S. Husain Zaheer, DGSIR | ” |
| 22. Shri A.K. Mustafy | <i>Secretary, CSIR,</i> |

The following had expressed their inability to attend the meeting :

1. Shri D.C. Baijal

2. Dr. D. Banerjee
3. Prof. S.N. Bose
4. Dr. S. Bbagvantam
5. Shri G.K. Devarajulu
6. Dr. K. S.G. Doss
7. Dr. Y. Nayudamma
8. Dr. C.G. Pandit
9. Dr. G.N. Ramachandran
10. Dr. J.C.Ray
11. Dr. A.K. Saha
12. Dr. Triguna Sen
13. Shri Manubhai Shah
14. Shri K.G. Sharma

The following did not attend the meeting :

1. Prof. M.S. Thacker
2. Prof. P.C. Mahalanobis
3. Shri R. Sankar
4. Shri S. Mehdi Ali
5. Shri B. Patnaik
6. Shri P. R. Ramakrishnan
7. Shri N. B. Prasad.

At the request of the President, the Vice-President took the Chair after some time.

Item No. 1 :

Confirmation of the proceedings of the 51st meeting of the Board of Scientific & Industrial Research held on 24th October, 1963.

The Board confirmed the proceedings of the 51st meeting held on 24th October, 1963.

The Board endorsed the recommendations of the Joint Committee made at its meeting held on Sunday, the 22nd March, 1964, and made the following further recommendations :—

Item No. 2 :

Setting up a National Institute of Oceanography.

Dr. D.N. Wadia gave a resume of the work done in this field in India during the last three years and highlighted the need for an Institute of Oceanography. The Board strongly supported the proposal to set up the Institute as recommended by the Joint Committee. It agreed with the view of Dr. H.J. Bhabha that in planning the Institute, account should be taken of the facilities at the Naval Physical Laboratory at Cochin and elsewhere in the country. He also suggested that the Institute should grow gradually keeping in view the availability of trained personnel.