

R e p o r t
of the
RIKEN Advisory Council
to the
President and Board of Executive Directors
of the
Institute of Physical and Chemical Research
(RIKEN)

August 1, 1993

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A. Introduction

The RIKEN Advisory Council (RAC) was established in 1992 by the President and Board of Executive Directors of the Institute of Physical and Chemical Research (RIKEN) to evaluate the scientific programs and the management of the Institute, and to advise the President on ways in which the performance of RIKEN toward the achievement of its goals might be enhanced. The RIKEN management was cognizant of the use of 'visiting committees' by various institutions, such as the Max-Planck-Gesellschaft of Germany and numerous universities of Europe and the United States, to provide objective evaluations of research programs and give advice to the institutional administrations. With such precedents in mind the RAC was conceived as a continuing body with a rotating membership of Japanese and foreign experts to meet biennially at RIKEN for several days, examine the state of the Institute, and submit a report to the President of RIKEN with advice in the following areas:

1. Proposals to maintain high research standards and to stimulate research activities;
2. indications of research field in which more resources should be invested;
3. suggestions of new directions for research;
4. suggestions of ways to promote RIKEN's internationalization and international cooperation;
5. proposals for RIKEN's further development as a center for interdisciplinary research.

The present report is the result of the first meeting of the RAC, held during the period June 21 to 24, 1993. Fourteen of the fifteen members appointed to the RAC were in attendance throughout the four-day meeting (the fifteenth member was unable to attend owing to illness). The meeting was chaired by Professor Heinz A. Staab, former president of the Max-Planck-Gesellschaft, and currently Vice President of the International Union of Pure and Applied Chemistry; the Co-Chairmen were Professor Tokindo S. Okada, Professor Emeritus of Kyoto University, and Professor George W. Clark, Professor of Physics, Massachusetts Institute of Technology.

B. Programme and Course of the RAC Meeting

Introduction and Information by the President and the Administration of RIKEN

Professor Minoru Oda, President of RIKEN, opened the sessions on Monday, June 21, in the morning with a presentation of a brief history and general description of RIKEN as a multidisciplinary research institution funded primarily by the Science and Technology Agency of the Japanese government. President Oda described the breadth and interrelation of the current research of the Institute. He explained how the RIKEN facilities, many of them unique in Japan and some unique in the world, are used in the pursuit of specialized as well as interdisciplinary research. President Oda concluded with an explanation of the innovative nature of the RAC in the context of the general structure and policy of academic and research institutions in Japan. He expressed his desire for a frank report on the findings and recommendations of the RAC, and the intention of himself and the Board of Executive Directors to give the most serious consideration to any advice that may be given.

Professor T. Sata, Vice President of RIKEN, explained the administrative structure of RIKEN and its organization of research activities in 46 Institute Laboratories, five Institute Research Groups for interdisciplinary and multidisciplinary projects, the Frontier Research Program, and the large facilities (the Ring Cyclotron Accelerator Research Facility and the

SPring-8 Synchrotron Radiation Facility). Of special interest to the RAC were the procedures for evaluating the work of the institute laboratories, and for making decisions on future directions of research upon the retirement (at age 60) of the Chief Scientist in charge of a particular Institute Laboratory.

The RAC had been provided with two 'White Papers' of which Volume I gives detailed information about the administrative structure and management policies of the Institute. Volume II summarizes the personnel, research programs, budget, and productivity of each of the institute laboratories and groups in a standardized format.

Subcommittees on Physics, Chemistry, Biology, Medicine and Engineering

Following the conclusion of the briefings on Monday morning, the RAC divided into five subcommittees to undertake separate reviews of the institute laboratories in the areas of physics, chemistry, biology, medicine and engineering. Monday afternoon and all day Tuesday were devoted to inspections of the laboratories, scientific reports by the Chief Scientists and their associates, and discussions with them about problems and future plans of the laboratories. On Tuesday the medical subcommittee visited the Life Sciences Center of RIKEN at Tsukuba. Wednesday morning was devoted to the preparation of draft reports of the subcommittees.

Plenary Session of RAC

A plenary session was held on Wednesday afternoon to discuss the draft reports of the subcommittees and to draw from the impressions the subcommittees gained general conclusions and recommendations that would constitute the report of RAC.

Closing Session with the President and the Board of Executive Directors

On Thursday, June 24, in the morning the RAC met with President Oda and the Board of Executive Directors to discuss its findings and recommendations and to plan the form of its report. It was concluded that the subcommittees' reports would be most useful to the RIKEN management in their unedited draft form which would not be appropriate for general circulation. These reports were handed over to the President at this session.

At the same time it was agreed that the formal report of the Council's work, its findings, and its recommendations on general issues of administration, policy and structure of RIKEN would be prepared for review and approval by all members of the Council, and would be transmitted by the Chairman of the RAC to the President of RIKEN as soon as possible. The present report is the product of these arrangements. Its findings and recommendations must be seen in the context of the subcommittees' reports from which they were derived and which contain the evaluation of the specific research activities of RIKEN.

C. Findings and Recommendations by RAC

The following findings were unanimously agreed upon by the RIKEN Advisory Council (RAC):

- RIKEN is producing excellent research results. These results are broadly disseminated at international meetings and in refereed journals.
- RIKEN has in place effective procedures for evaluating the quality of its research programs. The RIKEN management is commended for extending these procedures through the initiation of biennial broad-based examinations of its research programs and management policies by an international 'visiting committee', the present RIKEN Advisory Council.
- RIKEN facilities provide excellent and unique opportunities for interdisciplinary research

by its own and by visiting scientists.

- RIKEN encourages and facilitates the participation of Japanese and foreign visitors in its research programs. The number of foreign scientists working at RIKEN has been strongly increased in recent years and is at present exceptionally high.
- RIKEN benefits from the work of graduate students in its laboratories and, at the same time, it promotes the contacts to universities to be welcomed in the common interest.
- RIKEN's Frontier Research Program is fostering innovative research of exceptionally high quality and importance.

The RIKEN Advisory Council (RAC) supports strongly the general policy which RIKEN applied in recent years. For further successful developments RAC presents the following recommendations:

1. The RAC recommends that the process for appointments to all permanent research positions be strengthened by adoption of the following procedures:
 - a. All openings should be advertised in appropriate media, and applications should be solicited accompanied by curricula vitae, bibliography, and references.
 - b. Following the identification of a short list of the most promising candidates, the qualifications of each one through extensive use of external references should be explored and verified. Particular importance should be attached to evidence of international reputation for the positions of Chief Scientist and Senior Scientist. Each candidate is to present a colloquium at RIKEN on his or her recent research, and all the evidence together with the opinions of the senior staff should be considered in the final appointment decision.

2. High promise of future creativity and productivity is rarely established by a scientist before the age of mid-thirties. Therefore the RAC recommends that the current upper age limit of 32 years for permanent appointments below the level of Chief Scientist should be raised simultaneously with the initiation of the appointment procedures suggested above. The RAC notes that the post-doctoral scientists at RIKEN comprise a pool of talent from which excellent appointments to the permanent staff might well be made if the current age restriction were raised.
3. In order to broaden efforts to foster interaction among groups within RIKEN and between RIKEN and external scientific groups, the RAC recommends:
 - a. The interaction between the various RIKEN research centers, possibly through the provision of convenient transportation where appropriate, and through the encouragement of an exchange of seminars between the separated scientific staffs should be enhanced.
 - b. The adequacy of shared instrumentation to facilitate the interaction and mutual support of groups with related research interests should be insured.
 - c. Regular (weekly) seminars by internal and external speakers, also in areas that are now deficient in this regard, ought to be encouraged and financed.
4. The participation of graduate students in RIKEN research should be extended with the special effort that students of the highest quality are brought in.
5. New organizational structures for the large facilities (i.e., the Ring Cyclotron, the SPring-8 Facility) should be developed to alleviate the current overload of RIKEN scientists who must support external users while maintaining vigorous internal use of

the facilities.

Of these recommendations those concerning the procedure of appointments of scientists to permanent positions were considered of special relevance. It is felt by the RAC members that by executing especially these recommendations the high reputation RIKEN enjoys in the scientific community would be further improved and ensured for the future.