

The Activities of JBA

**December 2, 1998
Hotel Suites Jones
Santa Fe de Bogota, Colombia**

**December 7, 1998
National University of Cordoba
Cordoba, Argentina**

Susumu SAKAI
International Affairs Division
Japan Bioindustry Association(JBA)

Contents

1. An Outline of the Activities of the Japan Bioindustry Association(JBA)
2. Operation of International Exchange and Cooperation in JBA
 - (1) International Bioindustry Forum(IBF)
 - (2) Research Institute of Bio-Resources
 - (a) Cooperative Research Project on the Conservation and Sustainable Use of Tropical Bioresources
 - (b) International Forum on Conservation and Sustainable Use of Tropical Bioresources
 - (c) International Symposium on Access and Benefit Sharing of Bioresources
3. Internal activities
 - (1) Development of Technology for Utilizing Bio-consortia and Other Biological Resources.
 - (2) Ten Year Biotechnology Action Plan
 - (3) Japan Bioindustry Information Consortium
4. Industrial and Agricultural Aspects
 - (1) Biotechnology Industry Market in Japan
 - (2) The Current Status of Transgenic Crop Plants in Japan
 - (3) Confirmation of Transgenic Foods based on Safety Guideline by MHW



December 1, 1998

AN OUTLINE OF THE ACTIVITIES
OF
THE JAPAN BIOINDUSTRY ASSOCIATION (JBA)

The Japan Bioindustry Association(JBA) with a staff of 38 serves a membership of 254, corporations, 65 public organizations and 1,320 individuals primarily from academic institutions .

The permanent activities of JBA are supported by corporate and individual membership fees. It conducts international exchange programs and performs public relations activities in Japan which are supported by government funding. The Ministry of International Trade and Industry(MITI) in cooperation with industrial and academic circles concerned with biotechnology authorize the association to carry out research, studies and development work across the entire range of biotechnology for the purpose of establishing a foundation for the biotech industry.

PERMANENT ACTIVITIES

Study group subcommittees composed of corporate members meet regularly to deal with long-range issues. For example, the technology study group is concerned with the issue of intellectual property rights. It also holds a wide range of research meetings on future biotechnology and presents proposals to domestic and international forums.

It holds the strategic committee for investigation on International Standardization in the fields of biotechnology.

The international study group concentrates on the IBF activities of major biotechnology organizations in Japan, North America and Europe to strengthen organizational activities. This study group submits proposals to international organizations on such issues as industrial biotechnology safety and benefits sharing of bio-resources.

The study group on industry and society contributed substantially to establishing the product-based evaluation concept for product safety through domestic and international meetings of specialists. For example this group worked closely with the OECD, and UNEP on the safety of gene recombination.

GOVERNMENT-FUNDED ACTIVITIES

JBA organizes international symposia funded by the government. Unlike academic symposia, JBA symposia focus on the practical aspects of such issues as safety, intellectual property right, health, food supplies, and the global environment. One example of this type of activity is BioJapan '96 which was held in July 1996 and provided a public forum on biotechnology and health, food and the global environment. In Japan, JBA presents seminars and exhibitions to junior and senior high school students. Our ten-year information and education program provides biotechnology education to both experts and non-experts and promotes the exchange of information among organizations.

COMMISSIONED STUDIES AND DEVELOPMENT

JBA undertakes various study and development projects commissioned mostly by MITI. These projects account for as much as half of JBA's annual budget. The projects are conducted by a committee comprised of industry, government and academic experts and the results are reported to MITI.

The most typical examples of activities are as follows;

- ① Three Bilateral Research Cooperation Projects on Conservation and Sustainable Use of Tropical Bio-resources were carried out between Japan and each of Thailand, Indonesia and Malaysia respectively, during 1993-1998.
- ② Technological Development of Bio-resources in Bio-consortia.

These projects have been carried out by the newly established Research Institute of Bio-resources.

OTHER ACTIVITIES

JBA also develops data, introduces publications of foreign governments in the Japanese language and issues such periodicals as *Bioscience and Industry*, a monthly journal, and *Bioindustry Almanac* are Japanese-language publications and *JBA letters* and the *JBA Directory* are English publications.

In conclusion, JBA will continue to promote international activities with the IBF and sponsor overseas academic information exchanges in addition to the collaborative research work on the technical development of bio-resources.

In Japan, we will provide a broad range of public information as a part of our ten-year biotechnology action program and promote the future biotechnology such as bio-informatics.

Chronology

International Bioindustry Forum (IBF)

October 28, 1998.

1. Members

Japan Bioindustry Association,
Biotechnology Industry Organization (U.S.A.)
EuropaBio(E.U.)
BIOTECanada

JBA
BIO
EuropaBio(E.U.)
BIOTECanada

2. Purpose

To promote the sound development and industrial application of biotechnology, associations in various countries are sharing information concerning common subjects related to policy, based on scientific principle in order to achieve international harmonization. Member associations submit proposals to their respective governments and take part in activities with related international associations concerning topics on which they have reached agreement.

3. Background of establishment and evolution

- 1) In July, 1988, a biotechnology forum was established at a meeting of the financial members of the Japan-U.S. Business Council and the U.S.-Japan Business Council to start working towards the establishment of a common system regarding basic scientific principles and procedures which would eventually form the basic principles of biotechnology.
- 2) The above forum concluded successfully and in July, 1990, reports and proposals for both governments were submitted to the Japan-U.S. Financial Members General Meeting. Further, these documents were passed on to related official agencies in both countries.
- 3) After confirming the success of this forum, the SAGB announced its intention to join the Japan-U.S. Biotechnology Forum. Japan and the U.S. welcomed this addition.
- 4) Japan, the U.S. and Europe held a trilateral forum in Brussels which included SAGB in October, 1990.
- 5) At the end of October, 1990, a trilateral forum was held in Tokyo. The next day, a Trilateral Biotechnology Symposium was held by JBA, etc. to discuss regulation policies. Many people attended the symposium including members of industrial, governmental and academic fields. The full text of this symposium in both Japanese and English received high praise in Europe, the U.S. and Canada.
- 6) Canada decided to attend the Trilateral Forum held in San Francisco in March, 1991. At this forum, the Trilateral Biotechnology Forum was

renamed the "International Bioindustry Forum" and the IBF Statement of Purposes was drafted.

- 7) Based on consultations of the International Bioindustry Forum held in San Francisco in March, 1991 and the Trilateral Forum (Brussels Meeting), held in October, 1990, a non-official conference was held by senior members of the OECD and IBF in Paris in April, 1991.

At this conference, the JBA announced that it was ready to support the activities of the Biotechnology Unit, Science and Technology Policy Division, OECD, with both manpower and resources.

- 8) The Japan-U.S. Financial Members and the Biotechnology Forum still existed to follow up on developments. After confirming the success of the Japan/US Biotechnology Forum and its development as the IBF, the Japan-U.S. Financial Members and the Biotechnology Forum was officially dissolved at the general meeting in Pittsburgh in July, 1990.

- 9) IBF meeting was held in London in July, 1991 and subjects such as intellectual property rights, environmental problems, public acceptance and regulation policies were taken up.

- 10) IBF Meeting was held in Tokyo in October, 1991. The IBF Statement of Purposes and opinions regarding intellectual property rights which were discussed at the London meeting, were adopted. IBF members discussed how to deal with UNCED (United Nations Conference on Environment and Development). Following the meeting, the JBA/IBF International Symposium was held with lectures and panel discussions about the development of new plant varieties, their environmental critics and intellectual property rights.

- 11) IBF meeting was held in Washington in March, 1992. A meeting with high-ranking officials was held at the White House regarding the review of the SCOPE document (Streamlining Federal Regulation of New Biotechnology Products) which was announced by President Bush on the 24th of February.

As for a way to make progress possible through international cooperation and tackling GATT/TRIP, a cooperative relationship with OECD was discussed and the publishing of "UNCED '92 - policies for sustainable development; the role of biotechnology" was announced.

- 12) IBF meeting was held in Yokohama in August, 1992 during Bio Japan '92. Beside following up on matters agreed to at the Washington meeting, the political analysis and understanding of each country regarding the active use of biodiversity and biotechnology (which were discussed at UNCED) were once again discussed. The IBF agreed on a basic outlook regarding patent applications of the human genome by the NIH from an industrial application perspective.

For development and international cooperation of biotechnological policies, a more cooperative relationship with the OECD is being discussed.

Seven IBF members from other countries made speeches at the Bio Japan '92 symposium.

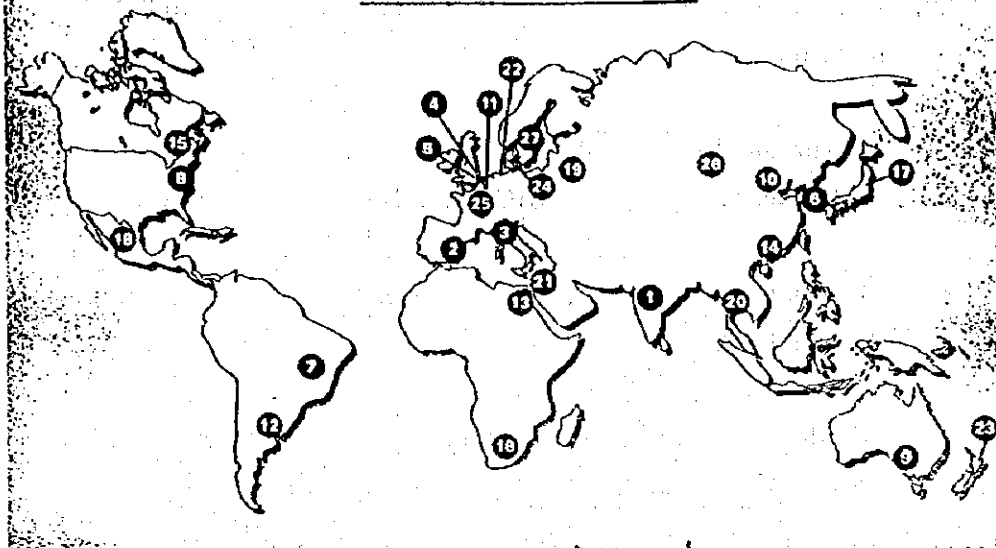
- 13) IBF meeting was held, simultaneously with Bio Europe '93, in Brussels in June 1993. It was reported that government regulation on the field trials of six kinds of major agricultural recombinant crops were largely eased in the United States and Canada, as part of a recent government regulation relaxation. The delegates agreed to issue an IBF Statement of Principle on the Biodiversity Convention adopted at UNCED. The statement is to reflect the opinions held by the industrial circles. Meanwhile, at Bio Europe '93, seven IBF members from Japan, the United States and Canada -- countries where government regulation are being markedly eased -- delivered lectures. The lectures were certain to seriously affect future government policies related to bioindustry in the EC.
- 14) IBF Meeting was held in Washington in April, 1994. In conjunction with this meeting, almost of delegates from E.U and Japan visited Missouri Research Park in St Louis to look for the collaborative research work. IBF issued "IBF statement of principle" on the UNCED Biological Diversity Convention in November 1994 and delivered it to the participants in the 2nd Conference of CBD in Nassou, Bahama.
- 15) IBF Bureau meeting was held in San Francisco in December 1994.
- 16) IBF Events in Paris were held in June, 1995, in order to have opportunities to discuss the matters on CBD with UNIDO and OECD, respectively. IBF issued "IBF statement of principle" on the International Bio-Safety in June, 1995.
- 17) IBF Bureau meeting was held in Washington in September, 1995.
- 18) IBF Planning Meeting was held, simultaneously with BIO'96(International Biotechnology Meeting & Exhibition), in Philadelphia in June, 1996.
- 19) IBF Meeting was held, in conjunction with Bio Japan '96, in Tokyo in July, 1996.
- 20) Consultative Expert Group Meeting on the Convention of Biodiversity was held in New York in August, 1996.

- 21) IBF Meeting was held, simultaneously with BIO '97, in Houston in June, 1997.
- 22) EuropaBio '97 was held in Amsterdam in June, 1997, and staffs of JBA participated.
- 23) International roundtable discussion on biotechnology organized by BIO/IBF was held, simultaneously with BIO '98, in New York, in June 1998.
- 24) IBF Meeting was held, in conjunction with EuropaBio '98, in Brussels, in October 1998.
- 25) IBF Meeting will be held, simultaneously with BIO '99, in Seattle, Washington USA, in May, 1999.

WORLDWIDE BIOTECHNOLOGY ORGANIZATIONS

IBF: (17) + (8) + (11) + (15)

As of March, 1998



1 All India Biotech Association
Mr. U.N. Malik
Secretary
Vipps Centre 2, Local Shopping Centre
Bock-EEGH, Masjid Moth G.K-II
New Delhi, 110048, India
011-910116430546
Fax 011-910116469166

2 Asociacion de Bioindustrias
Mr. Joan Guixé
C/Bruc 72-74, 6th Floor
Barcelona, E-08009, Spain
011-3434874000
Fax 011-3434876520

3 ASSOBIOTEC
Mr. Vincenzo Lungagnani
Via Academia, 33
Milano, I-20131, Italy
011-39226810306
Fax 011-39226810284

4 Belgian BioIndustries Association
Mr. Pierre Crooy
Secretariat BBA
Avenue Louise, 490 Bte 9
Brussels, B-1050, Belgium
011-3226460564
Fax 011-3226403759

5 BioIndustry Association
John M. Sims, Ph.D.
Chief Executive
1415 Belgrave Square
London, SW1X 8PS, UK
011-44-1-71-245-9911
Fax 011-44-1-71-235-4759

6 BioIndustry Association of Korea
Han-Sung Yang, Ph.D.
Managing Director
FKI Building
28-1 Yoido-dong,
Youngdeung-ku, Seoul, Korea
011-81-3-3433-3435
Fax 011-81-3-3459-1440

7 Biominas Foundation
Mr. Guilherme Emrich
President
Secretariat of Industrie & Commerce
Ave. Jose Candido da Silveira,
Cidade Nova 31170.000
2000
Belo Horizonte/MG, Brazil
011-55-31-4861733
Fax 011-55-31-4861619

8 Biotechnology Industry Organization
Carl B. Feldbaum
President
1625 K Street, NW, Suite 1100
Washington, DC 20006
(202)857-0244
Fax (202)857-0237

9 Australian Biotechnology Association
c/o BresaGen Limited
John Smeaton, Ph.D.
Managing Director
P.O. Box 259
Rundle Mall
Adelaide, S., 5000, Australia
011-61882342660
Fax 011-61882346268

10 Chinese Association for Medical Biotechnology
Zhang QuanYi, Ph.D.
Secretaire General
422 Datunli
Chaoyang District
Beijing, 100 101, China
(861)432-1117
Fax (861)432-2851

11 EuropaBio
Mr. Andrew J. Dickson
Secretary General
Avenue de l'Armee 6
Brussels, 1040, Belgium
011-32-2-7350313
Fax 011-32-2-7354960

12 Foro Argentino de Biotecnologia (FELAEB)
Maria M.S. de McCarty, Ph.D.
Manager
Callao 215, 50° F
Buenos Aires, 1022
Argentina
011-541-371-9912
Fax 011-541-371-6413

13 Genetic National Research Center
Hassan Monwade, Ph.D.
Professor of Microbiology
Dokki, Cairo, Egypt
011-202-630-1036
Fax 011-202-630-1036

14 Hong Kong Institute of Biotechnology
Albert Y. Chang, Ph.D.
Director
2 Biotechnology Avenue
12 Miles, Tai Po Rd.
Sha Tin, N.T., Hong Kong
011-852-2603-5111
Fax 011-852-2603-5012

BIOTECANADA

15 Industrial Biotech Assoc. of Canada
Roger Perrault, M.D.
President
130 Albert Street, Suite 420
Ottawa, Ontario, K1P 5G4
Canada
(613)230-5585
Fax (613)233-7541

16 Industrial Biotechnology Association of Southern Africa
Roger T. Jones, Ph.D.
President
P.O. Box 782455
Sandton, 2146
Republic of South Africa
011-27-11-605-2201
Fax -011-27-11-605-2723

17 Japan Bioindustry Association
Fujio Ishikawa, Ph.D.
Executive Director
Grande Building 8F
26-9, Hatchobori 2-chome
Chuo-ku, Tokyo, 104
Japan
011-81-3-5541-2731
Fax 011-81-3-5541-2737

18 Mexican Association of Biotechnology Firms
Alfredo Gallegos, Ph.D.
President
c/o Biogenetica Mexicana SA de CV
Gonzalez de Cosio No. 22, Apt. 401
Col. del Valle, 03100
Mexico, D.F.
011-5256871721
Fax 011-5256871721

19 Moscow State Academy of Applied Biotechnology
Iosif A. Rogov, Ph.D.
Academician, Rector
33, Talalikhina Str.
Moscow 109316, Russia
011-95-176-1910
Fax 011-95-276-1423

20 National Center for Genetic and Biotechnology Engineering
Sutat Sriwatanapongse, Ph.D.
Deputy Director
Kama VI Road
Bangkok, 10400, Thailand
011-66-2-245-2499
Fax 011-66-2-246-4850

21 National Steering Committee for Biotechnology
Mr. Naomi Rodrig
Industry Building
29 H'mered Street
P.O. Box 50216
Tel Aviv 61500, Israel
011-9723517-3668
Fax 011-9723510-6724

22 Nederlands Industriele en Agrarische Biotechnologie Associatie
Mr. R.R. van der Meer
Director
Viceweg, 16
Lieschenham, NL-2260 AK
The Netherlands
011-31-70-327-0464
Fax 011-31-70-320-5765

23 New Zealand Biotechnology Association
R. J. Davies, Ph.D.
Manager Bioprocess Development
c/o Industrial Research Ltd.
P.O. Box 31 310, Lower Hutt
Wellington, New Zealand
011-64-4-566-6919
Fax 011-64-4-569-0132

24 Association of Biotechnology Industries in Denmark
c/o Novo Nordisk A/S
Mr. Jørn L. Mähler
Novo Allé, DK-2889
Bagsvaerd, Denmark
011-45-4442-2240
Fax 011-45-4444-4283

25 ORGANIBIO
Mr. Jean Lunel
28, rue Saint Dominique
F-75007 Paris, France
011-33-1-47-53-09-12
Fax 011-33-1-47-53-73-76

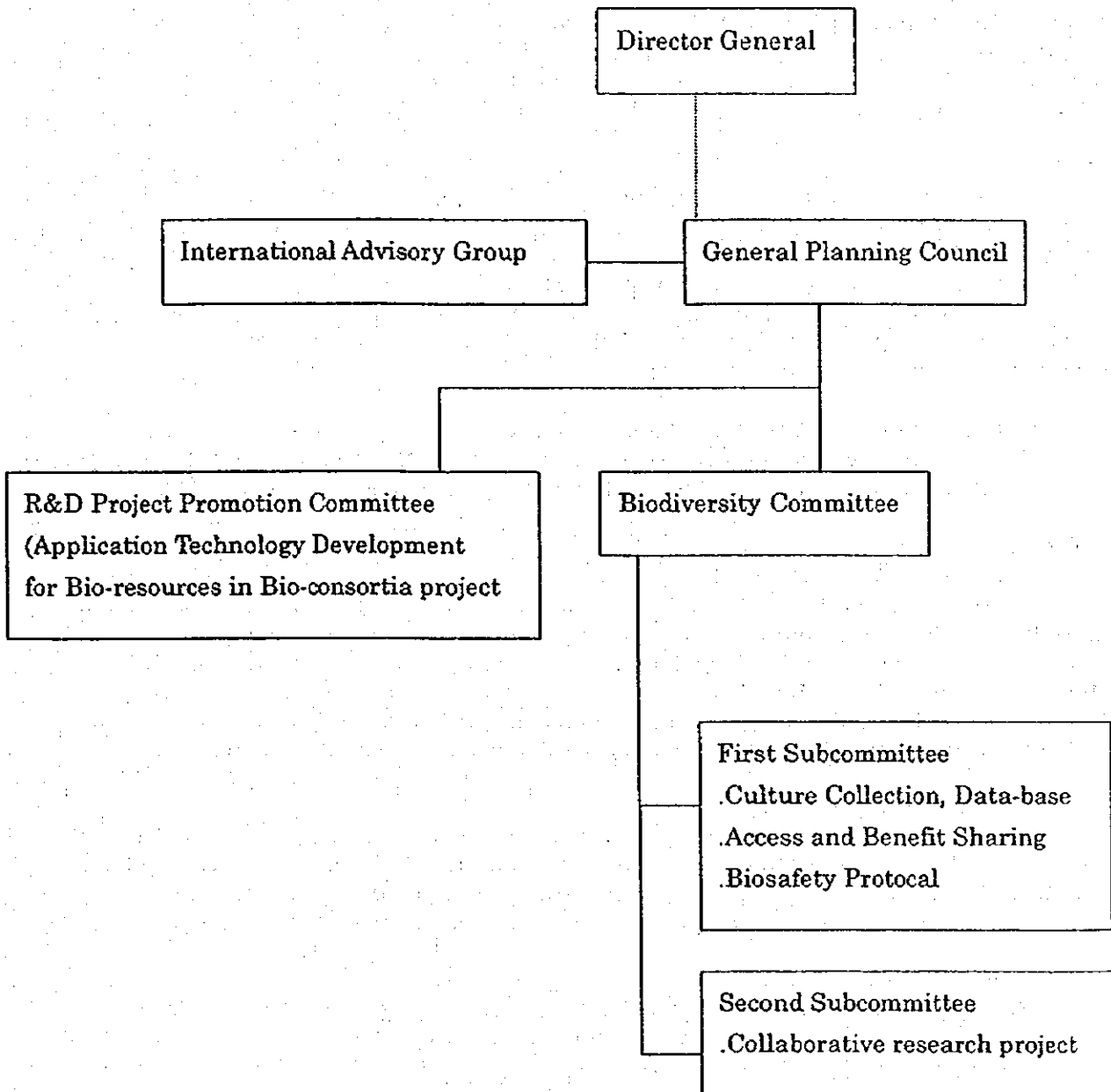
26 Shint Research and Production Co., Ltd.
Nyamaagilin Bataa, Ph.D.
General Director, Mongolia
Biotechnology Association
Central Post P.O. Box 181
Ulanbaatar, Mongolia
011-35861176237
Fax 011-9761358611

27 Sjösten Biotechnisk Företaking (SBI)
Mr. Gunnar Haska
Executive Director
Research Park Idem
Ole Romner Väg, 12
S-22370 Lund, Sweden
011-46-46-16-8850
Fax 011-46-46-18-8765

Research Institute of Bio-resources

JBA

Inaugurated on March 26, 1998



Japanese Initiatives for Cooperative Research Projects in Thailand, Indonesia and Malaysia on the Conservation and Sustainable Use of Tropical Bioresources

The Japanese government has extended official development assistance (ODA) for the conservation and sustainable use of biodiversity in developing countries in a variety of areas including wildlife conservation, protected area management, tropical forest monitoring, and the conservation and management of agriculture, forestry and fishery resources. The following is a brief description of cooperative research projects that the Japanese Ministry of International Trade and Industry (MITI) currently offers:

- **Objects**

In accordance with the spirit of the Convention on Biological Diversity and with the desire to contribute to the efforts of developing countries in the tropics to conserve and sustainably use of biodiversity, MITI, NEDO (the New Energy and Industrial Technology Development Organization, Japan) and JBA (the Japan Bioindustry Association) assist these countries in necessary scientific research, technology development and capacity-building through the mutual exchange of resident scientists, researchers and technicians.

- **Project Duration and Countries to be covered**

The projects are scheduled to be undertaken in the five and a half year period from October 1993 to March 1999 in Thailand, Indonesia and Malaysia.

- **Project Details**

- (1) **Overseas programs**

In response to the need for scientific research, technology development and capacity-building in Thailand, Indonesia and Malaysia, competent Japanese scientists, researchers and technicians are sent to research institutions in the three countries, where they will undertake joint research, consultation and/or training activities. Advanced research equipment will also be lent to the research institutions involved whenever necessary to carry out the joint research activities.

- (2) **Invitation programs**

In response to the need for scientific research, technology development and capacity-building in Thailand, Indonesia and Malaysia, their scientists, researchers and technicians will be invited to participate in joint research and training activities in Japanese universities, public research institutes or companies.

- **Estimated Budgets**

A total of one billion yen will be budgeted to cover expenses of dispatched Japanese researchers' activities in the three countries and research equipment to be lent, and basic expenses of invited researchers from the three countries as well as related expenses in Japan.

- **Implementation**

NEDO and JBA are cooperating with the following organizations to implement the projects:

- Thailand : NSTDA (National Science and Technology Development Agency)
- Indonesia : BPPT (Badan Pengkajian dan Penerapan Teknologi or the Agency for Assessment and Application of Technology)
- Malaysia : MOSTE (Ministry of Science, Technology and Environment)

NIBH (the National Institute of Bioscience and Human-Technology), attached to MITI's Agency of Industrial Science and Technology, is cooperating with the following organizations to implement the projects:

- Thailand : Department of Biology, Faculty of Science of Chiang Mai University
- Indonesia : LIPI (Lembaga Ilmu Pengetahuan Indonesia or the National Institute of Sciences)
- Malaysia : POLIM (Palm Oil Research Institute of Malaysia)

• Major R&D Activities

The primary focuses of R&D activities include:

- (a) Developing simple techniques for identifying and preserving microorganisms and other species that can be easily applied at the local level;
- (b) Searching for the useful functions (e.g., production of biologically active substances) of microorganisms and other species;
- (c) Developing technologies for sustainable use of beneficial microorganisms and other species.

See attached table for some of the specific R&D activities under the projects.

• Forums held under this Initiative

As a part of this initiative, international forums have been convened in conjunction with organizations in the participating countries that have invited researchers and policy makers concerned with conservation and sustainable use of tropical bioresources. The first forum held in Chiang Mai from January 30 to February 1, 1994, issued the Chiang Mai Recommendations. The second forum held in Jakarta from January 17 to 19, 1995, issued the Jakarta Recommendations.

• Contacts:

(1) For NEDO and JBA, please contact the following:

Mr. Fujio Ishikawa, Executive Director, Japan Bioindustry Association,
Dowa Building 5-10-5 Shinbashi, Minato-ku, Tokyo 105 Japan
Tel: +81-3-3433-3545 Fax: +81-3-3459-1440

(2) For NIBH, please contact the following:

Dr. Hiroshi Kuriyama, Research Manager, Biochemical Engineering Laboratory,
National Institute of Bioscience and Human-Technology, Agency of Industrial
Science and Technology, MITI
1-1, Higashi, Tsukuba-shi, Ibaraki 305 Japan
Tel: +81-298-54-6080 Fax: +81-298-54-6009

Attachments:

1. Research and Development Themes of Cooperative Research Projects on Conservation and Sustainable Use of Tropical Bioresources
2. Chiang Mai Recommendations
3. Jakarta Recommendations

Development of Technology for Utilizing Bio-consortia and Other Biological Resources

1. Outline of project

Organisms in the natural environment maintain close relations with each other in various ways, such as by exchanging substances, in order to support their existence. Current technology for utilizing organisms, however, has focused on dealing with individual organisms in isolation, thus limiting its own capacity to analyze interactions among organisms. In the area of microorganisms, only a very small portion (0.1 % to a few percent) can be analyzed with the present technologies.

In order to utilize the new and broader functions performed by bio-consortia (see Note below) rather than those by single species alone, this project develops new technologies to analyze bio-consortia and to apply them in industrial uses .

(NOTE) Bio-consortia:

Organisms in the natural environment survive by maintaining various interactions with each other, such as material exchanges. These interactions often provide certain benefits to humans, producing useful substances, decomposing hard-to-biodegrade substances and so on. bio-consortium refers to a population of two or more species performing a certain function.

2. Example of practical use (or its concept) to be realized by this project

Biological functions of bio-consortia will be put to industrial use, as a major progress in the utilization of biological resources based on biotechnology. It will help:

- Increase efficiency in terms of time, space and labor of current production processes.
- Produce physiologically active substances, including various useful enzymes, promoting development of unexploited product areas.
- Realize multistage reaction production process of useful materials, including alternative fuels to oil.

< Producing alternative fuels to light oil , gasoline, etc >

- Establish various environmental clarification technologies, including those for polluted ocean and factory sites.

< Producing oil-water separating polymer and decomposition of crude oil, etc. >

3. Period of research

- 1997 to 2001 fiscal years (5 years)

4. Contents of research

(1) Technology to analyze bio-consortia

1) Molecular-genetic analysis

Develop techniques of characterizing microorganisms in bio-consortia by analyzing genes collected from their samples.

2) Histochemical analysis

Develop techniques of characterizing microorganisms in bio-consortia by analyzing the reactions to characteristic substances on the surface of individual cells of microorganisms in bio-consortia.

3) Functional analysis

Develop techniques of characterizing microorganisms in bio-consortia based on their unique functions by chemical analysis of specific labeled substances related to such functions.

4) New isolation and culture technology

Develop technology for isolating a microorganism from a population and for cultivating it so that newly found species and functions of bio-consortia can be studied and utilized.

(2) Technology to utilize bio-consortia in production

1) Functional material production technology

Develop technologies to efficiently produce functional polymer, utilizing bio-consortia, to clean up spilled oil effectively.

2) Technology to efficiently decompose and purify petroleum compounds

Develop technology to purify and decompose hard-to-biodegrade petroleum compounds using bio-consortia.

3) Technology to utilize unused oil residues

Develop technology to decompose various kinds of useless oil residues using bio-consortia and produce high-value-added oil products such as kerosene.

4) Technology to utilize unused resources such as ligneous materials

Develop technology to produce oil-alternative fuel compounds from ligneous materials, such as cellulose, using bio-consortia.

5) Technology to produce oil-alternative useful resources

Develop technology to efficiently produce a large amount of oil-alternative fuels, such as light oil, utilizing bio-consortia of microorganisms, animals and plants.

Ten-Year Biotechnology Action Program

A ten-year comprehensive action program has been developed to provide high school students and the general public a better understanding of biotechnology.

The program also calls for means to develop professional scientists and information coordinators who will contribute to the future development of Japanese bioindustries.

In order to meet these primary objectives, the following specific objectives and mechanisms have been established:

1. Foundations for actions

1.1 National networking

- National Convention of Local Biotechnology Organizations
- National Convention of Biotechnology Officials from Prefectural and Major City Governments
- Community biotechnology seminars

1.2 Acquisition and Compilation of basic knowledge

2. Public information and education

2.1 Preparation and distribution of information and educational materials.

Appropriate materials will be prepared for specific groups to maximize the effectiveness of the efforts (e.g. for high school students).

2.2 Community seminars and lectures.

Seminars and lectures will be given at the community level.

3. Educational network

To build a network of laymen will be informed about biotechnology, the following seminars will be given for each group:

3.1 Advanced seminars for consumer organization leaders.

3.2 Advanced seminars for high school teachers.

3.3 Basic summer seminars for high school students and the general public.

4. Others

4.1 Bio-science forum

4.2 Bio Japan

- | | |
|------------------|--------------------------------------|
| ① Bio Japan' 88 | Sun-shine Building, Ikebukuro, Tokyo |
| ② Bio Japan' 92 | Pacific Convention Plaza, Yokohama |
| ③ Bio Japan' 96 | Tokyo Big-sight, Ariake, Tokyo |
| ④ Bio Japan 2000 | Keio Plaza Hotel, Shinjuku Tokyo |

Public Acceptance Activities at JBA

Objective

To promote deeper knowledge of biotechnologies among the Japanese public to foster wider support for the technology and to facilitate development of the biotechnology industry.

Organization

The Subgroup for Biotechnology Information Networking and the Working Group for Archiving Industrial Biotechnologies have been established within the Industry-Public Relations Division. The Subgroup for Biotechnology Information Networking is responsible for public information and education. The Working Group for Archiving Industrial Biotechnologies is responsible for compiling the historical developments of industrial technologies, and maintaining and disseminating knowledge for such technologies. In order to support the activities of the Working Group for Archiving Industrial Biotechnologies, an expert committee called the Advisory Committee for Information Networking, has also been set up.

Target Population

At present, JBA activities to improve the public acceptance of biotechnologies are targeted mainly at high school teachers and students and the general public.

Scope Of Activity

The scope of JBA's activities for promoting public acceptance is outlined in a Ten-Years Action Program called the Long-Term Comprehensive Action Program for Biotechnology Information and Education which was adopted by JBA's board of directors in May 1991. Main activities include:

1. Preparation and distribution of materials to improve public acceptance of biotechnology: JBA prepares and distributes video and printed educational materials which illustrate how biotechnologies are widely used to process foods and other products that we consume daily.
2. Conducting surveys to determine the general public's perception and attitudes toward biotechnology;
3. Sponsoring community biotechnology seminars, exhibitions and other events
4. Informing high school teachers of corporate facilities that are available for observation and coordinating their plant or company tours as part of support

activities for biotechnology education;

5. Government information coordination: JBA organizes briefing sessions for local governments' biotechnology officials on the policies of central government agencies such as the Science and Technology Agency, the Environment Agency, the Ministry of Education, Culture and Science, the Ministry of Health and Welfare, the Ministry of Agriculture, Forestry and Fisheries, and the Ministry of International Trade and Industry:
6. Serving as a secretariat for the National Convention of Local Biotechnology Organization.

Seminar on New Technology in Industrial Education for High School Teachers

1. Seminar on New Technology in Industrial Education

The Ministry of Education has been conducting a "Seminar on New Technology in Industrial Education" for high school teachers responsible for vocational education since fiscal 1992. The purpose of this seminar is to provide high school teachers with the knowledge and technology necessary for new subjects/curricula reflecting social changes, to improve their resources, and to contribute to fulfilling industrial education at the high school level. The Japan Bioindustry Association (JBA) is assigned to organize a seminar concerning "Lectures on and practice of biotechnology as a new technology". This seminar is held during the summer holidays for approximately 25 teachers selected by the Ministry of Education from among the candidates recommended by prefectural Boards of Education in cooperation with biotechnology-related vocational colleges recommended by the Japan Biotechnology Education Society.

In 1998, a "Seminar on New Technology in Industrial Education", a project implemented by the Ministry of Education, was held for five days from July 27 to 31 at the Education Foundation Tokyo Technical College.

2. Details of activities in fiscal 1998

Biotechnology focusing on plants was the theme chosen for the seminars held in 1995 and 1996 at the request of the Ministry of Education. Basic experiments using gene manipulation techniques such as DNA cleavage by restriction enzymes, and confirmation of recombination by electrophoresis, were conducted in 1997 and 1998.

The twenty-five high school teachers who participated in the seminar came from all over Japan, from Hokkaido to Okinawa, with teaching experience ranging from 1 to 30 years.

Education of Biotechnology Personnel

1. Background

In order to promote the sound development of biotechnology-related industries, it is important for the general public to form an accurate understanding of biotechnology as well as to secure young and creative researchers and technicians in science and technology fields. The JBA started educational activities in 1983 and has greatly contributed to securing researchers and technicians for biotechnology-related industries and to improving their resources.

In 1991, effective personnel education from a long-term perspective was examined and a "Ten-year biotechnology action program for public information/education" was established. In accordance with this guideline, a personnel education project was started in 1992 which targeted mainly the general public and the young generation, middle/high school students, and their teachers who are the most closely involved in biotechnology-related education of the students.

2. Summary of fiscal 1998

As in 1997, the JBA conducted experiments and lectures on biotechnology targeting the general public, high school students and teachers. Seven regional biotechnology seminars were held focusing on recombinant DNA, in cooperation with regional biotechnology organizations.

- 1) Date of seminar: August 4 - 24, 1998
Venue: Faculty of Agriculture, Hokkaido University
Organization in charge: Hokkaido Bioindustry Association (HOBIA)
Content: Biotechnology in relation to plants, animals and yeast

- 2) Date of seminar: August 7 - 8, 1998
Venue: Faculty of Engineering, Hiroshima University
Organization in charge: Bioindustry Technology Forum of the Chugoku Technology Promotion Center
Content: Biotechnology and health, food and the environment

- 3) Date of seminar: August 11 - 13, 1998
Venue: Hokkaido Tokachi Regional Center for Food Processing Technology
Organization in charge: Hokkaido Bioindustry Association (HOBIA)
Content: Biotechnology in relation to plants, animals and yeast

- 4) Date of seminar: August 19 - 21, 1998
Venue: Gifu University Gene Engineering Laboratories
Organization in charge: Chubu Bioindustry Promotion Council
Content: Basic knowledge about genes

- 5) Date of seminar: August 19 - 21, 1998
Venue: Nara Institute of Science and Technology
Organization in charge: Kinki Bioindustry Conference
Content: Information and genes

- 6) Date of seminar: August 25 - 26, 1998
Venue: Faculty of Agriculture, Kochi University
Organization in charge: Shikoku Technology and Engineering Promotion Center
Content: Gene manipulation

- 7) Date of seminar: August 24 - 28, 1998
Venue: Yokohama City University
Organization in charge: Yokohama Biotechnology Conference
Content: Lectures on and practice of new biotechnology: cell fusion, gene recombination, etc.

Japan Bioindustry Information Consortium (JBIC)

1. Background of the Founding of JBIC

- (1) Bioindustry holds great promise as a strategic industry supporting the economic growth of the 21st century.
- (2) In Bioindustry, speed in research and development is a vital lifeline
- (3) The volume, variety, and amount of analytic software for biological information is rapidly increasing on a global scale, and without the fastest links to cutting edge information technology, bioresearch and development is impossible
- (4) At present, speedy provision of bases of research and development information compatible with all fields of bioresearch is called for.

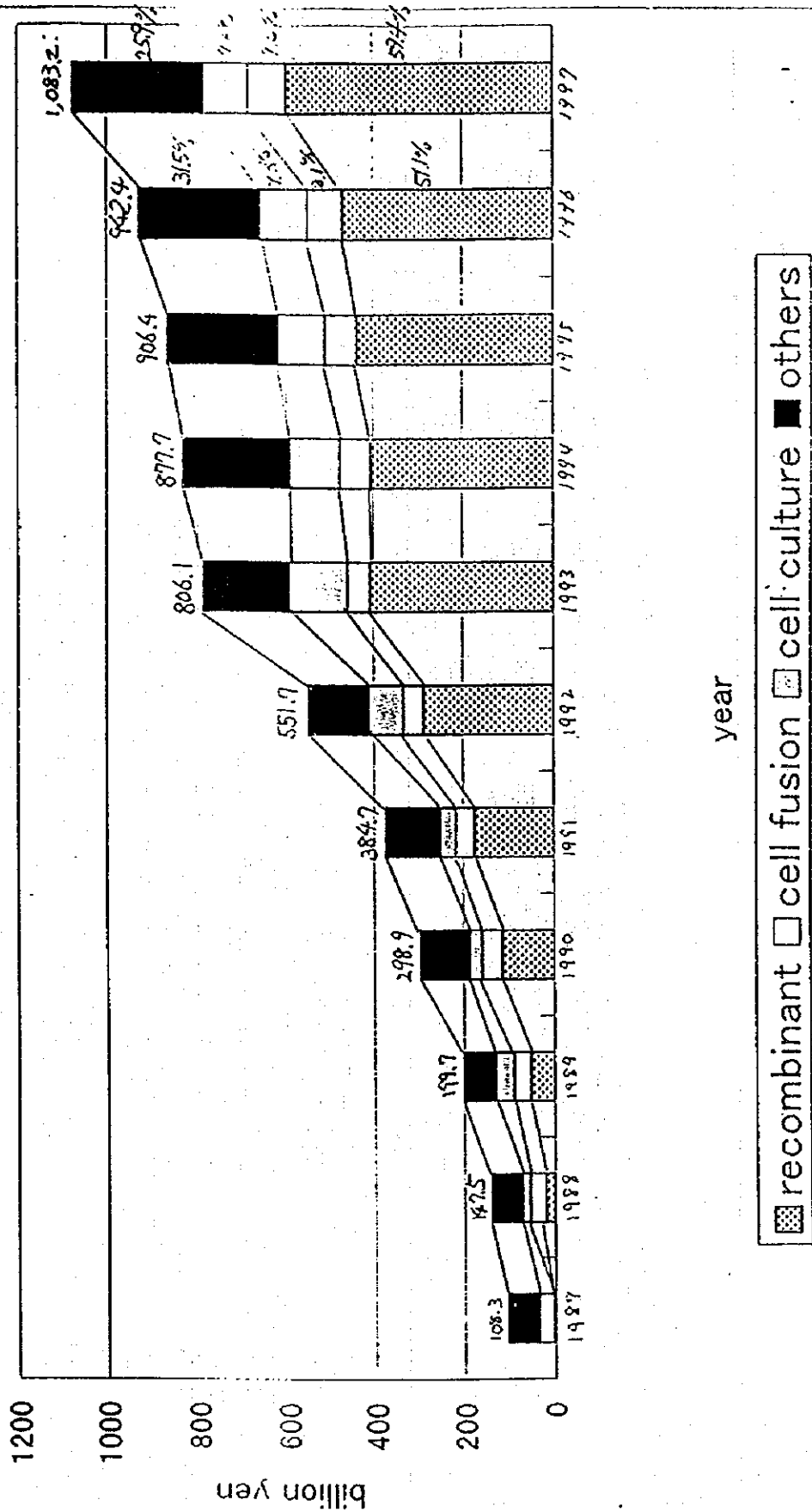
2. Aims of JBIC

In order to plan for faster and more efficient research and development over the wide range of fields predicted for future development in bioindustry, such as health, food, environment, chemistry, and energy, the industrial, governmental, and academic sectors have joined full strength to advance the digitalization of bioindustry, with the provision of bases of research and development information compatible with all fields of bioresearch serving as its core, which will improve the international competitiveness of Japan's bioindustry.

3. JBIC Operations

- (1) JBIC conducts the formation of overall and systematic strategies in relation to the digitalization of bioindustry, the planning and proposals for new biological information related joint projects, etc., as well as surveys, research and development, and technological development.
- (2) JBIC advances the spread and actual use of bioindustry information systems, and also holds various types of symposiums, etc.
- (3) JBIC provides links and exchange between a wide range of related industrial, governmental, and academic organizations with relation to the digitalization of information in bioindustry.
- (4) In addition, JBIC conducts such necessary operations as the development of human resources in biologic information science in order to achieve the goals of JBIC.

Biotechnology Industry Market in Japan



(SOURCE : NIKKEI BIOTECHNOLOGY)

The Current Status of Transgenic Crop Plants in Japan

17 - Aug. - 98
Innovative Technology Division, MAFF

(NOTES)

1. the year complied with the Guidelines are shown in I-(1), Contained Greenhouse; I-(2), Semicontained Greenhouse; I-(3), Confined Fields; I-(4), Ordinary Field; II-(1), Safety as foods; II-(2), Safety as animal feeds
2. abbreviations in (Developer): PRI, Plantech Research Institute (Mitsubishi Chemical Corporation); KIK, Kakomi-Breeding Institute (Japan Tobacco INC.); IIGI, Hokkaido Green-Bio Institute (Iokuren); MAFF, Ministry of Agriculture, Forestry and Fisheries; MARC, National Agriculture Research Center; NIAR, National Institute of Agrobiological Resources
3. abbreviations in (Gene): ACC, 1-Aminocyclopropane-1-carboxylic acid synthetase; Ant., Anthocyanin synthesis enzymes; AS-, Antisense; CP, Coat Protein gene; EPSPS, Enolpyruvyl-Shikimate-Phosphate Synthase; PG, Polygalacturonase gene; MS, Male Sterile; PAT, Phosphinotricin Acetyl Transferase; Rf, Fertility Restoration; BSN, Bromoxynil; Gemfad2-1, High oleic acid Gene; dapa, Dihydrodipicolinic acid synthase; DFR, Dihydroflavonol-4-reductase; CHS, Chalcone Synthase
4. Abbreviations in the steps: USA or CAN or AUS, the crops are developed and evaluated in the United State, Canada and Australia respectively; -, not be complied with the Guidelines yet; X, out of object in the Guidelines

Transgenic Crop Plant (event/line)	Developer	Gene	Remark	I				II	
				(1)	(2)	(3)	(4)	(1)	(2)
1. TMV resistant Tomato	MAFF	CP	for Experiment	1988	1989	1991	1992	-	-
2. CMV resistant Petunia	Suntory	CP	-	1990	1991	1993	1994	X	X
3. RSV resistant Rice (16-2)	MAFF	CP	-	1990	1992	1993	1994	-	-
4. RSV resistant Rice (Kinuhikari)	PRI	CP	-	1990	1992	1993	1994	-	-
5. CMV resistant Melon (Prince)	MAFF	CP	-	1990	1992	1993	1996	-	-
6. CMV resistant Tobacco	Japan Tobacco	Satellite RNA	-	1989	1992	1994	-	X	X
7. Low-allergen Rice (Kinuhikari)	Mitsui Toatsu	AS-albumin	for allergy diseases	1991	1993	1994	1995	-	-
8. Low-protein Rice (Akihikari)	KIK	AS-glucerin	for Sake -brewing	1991	1993	1994	-	-	-
9. PLRV resistant Potato (Mayqueen)	IIGI	CP	-	1992	1993	1994	-	-	-
10. Glyphosate tolerant Soybean (40-3-2)	Monsanto	EPSPS	from USA	USA	1994	1995	1996	1996	1996
11. CMV resistant Tomato (405)	MAFF	CP	-	1992	1994	1995	1996	-	-
12. CMV resistant Tomato (707)	MAFF	CP	-	1992	1994	1995	1996	-	-
13. Glyphosate tolerant Canola (GT73)	Monsanto	EPSPS	from Canada	CAN	1994	1995	1996	1996	1996
14. High pectin Tomato (1C19)	Kagomo	AS-PC	with Zeneca	USA	1994	1995	1996	-	-

(Parts of document)

Confirmation of transgenic foods based on Safety Guideline by MHW

16th Dec, 1997

No.	Transgenic foods	property	applicant	developer	countries on sale (except Japan)
1	soy bean	herbicide resistance	Monsanto Japan	Monsanto Company (US)	US, UK
2	canola	herbicide resistance	Monsanto Japan	Monsanto Company (US)	US, Canada
3	potato	insect resistance	Monsanto Japan	Monsanto Company (US)	US
4	corn	insect resistance	Monsanto Japan	Northrup King Company (US)	US
5	canola	herbicide resistance	Hoechst Schering AgrEvo K.K	AgEvo Canada Incorporated (Canada)	US, Canada
6	canola	herbicide resistance	Hoechst Schering AgrEvo K.K	Plant Genetic Systems (Belgium)	US, Canada, Belgium, UK
7	corn	insect resistance	Japan Ciba-Geigy	Ciba-Geigy Corporation (US)	US
8	corn	insect resistance	Monsanto Japan	Monsanto Company (US)	US
9	potato	insect resistance	Monsanto Japan	Monsanto Company (US)	US
10	cotton	insect resistance	Monsanto Japan	Monsanto Company (US)	US, Canada, Australia
11	corn	herbicide resistance	Hoechst Schering AgrEvo K.K	Hoechst Schering AgrEvo GmbH (Germany)	US, Canada
12	canola	herbicide resistance	Hoechst Schering AgrEvo K.K	Plant Genetic Systems (Belgium)	US, Canada, Belgium, UK
13	canola	herbicide resistance	Hoechst Schering AgrEvo K.K	Plant Genetic Systems (Belgium)	US, Canada, UK
14	canola	herbicide resistance	Hoechst Schering AgrEvo K.K	Plant Genetic Systems (Belgium)	US, Canada, Belgium, UK
15	canola	herbicide resistance	Hoechst Schering AgrEvo K.K	Hoechst Schering AgrEvo GmbH (Germany)	Canada
16	cotton	herbicide resistance	Monsanto Japan	Monsanto Company (US)	US
17	cotton	herbicide resistance	Monsanto Japan	Calgene Incorporated (US)	US, Canada, UK
18	canola	herbicide resistance	Hoechst Schering AgrEvo K.K	Plant Genetic Systems (Belgium)	Canada
19	canola	herbicide resistance	Hoechst Schering AgrEvo K.K	Hoechst Schering AgrEvo GmbH (Germany)	Canada
20	tomato	ripening delayed	Kirin Brewery	Calgene Incorporated (US)	US, Canada, Mexico, UK

5. 公開技術セミナー参加者リスト

1) コロンビア

ASISTENTES AL SEMINARIO MEDIDAS DE PROMOCION DE LA BIOINDUSTRIA EN COLOMBIA
DICIEMBRE 03/98

NOMBRE	CARGO	ENTIDAD	DIRECCION	TELEFONO
Laureano Guerrero	Recursos Genéticos	I.C.A.	Calle 37 No. 8-43, 5 piso	285.55.20
Rodrigo Arunduega	Recursos Genéticos	I.C.A.	Calle 37 No. 8-43, 5 piso	285.55.20
Vera Mondragón	Recursos Agrícolas	I.C.A.	Calle 37 No. 8-43, 5 piso	285.55.20
Carlos Morales	Coordinador Agrícola	I.C.A.-TIBAITATA	Km. 13 via Mosquera	344.30.00
Ricardo Vanegas	Recursos Genéticos	I.C.A.	Calle 37 No. 8-43, 5 piso	285.55.20
Carlos Arturo Silva	Recursos Genéticos	I.C.A.	KM. 13 No. 8-43, 5piso	344.30.00
Miguel Benavides			KM. 14 Via Mosquera	344.30.00
Jose Barrera	Coordinador Programa. Biotecnología Animal	CORPOICA		
Marta Isabel Gomez	Labor. Auxiliar Técnico	CORPOICA	KM. 14 Via Mosquera	344.30.00
Laura Villamizar	Auxiliar Control Biológico	CORPOICA	KM. 14 Via Mosquera	344.30.00
Jorge Amanza	Prog. Biotecnología Anim	CORPOICA - CEISA	AV. El Dorado No. 42-42	368.62.16.
Lilian Dupical	Prog. Fecundación Agrícola	CORPOICA - CEISA	AV. El Dorado No. 42-42	368.62.16.
Jorge Evelio Angel	Coord. Biotecn. Agrícola	CORPOICA	KM. 14 Via Mosquera	344.30.00
Carlos Andrés Laguna	Asistente de Gerencia	LABORATORIOS TECFAR LTDA.	Cra. 27 NO. 70-89	311.47.35.
Jorge Jimenez	Gerente General	BIOCHEN	CRA. 41 No. 167-30	674.40.77
German Guerrero	Gerente de Mercadeo	BIOCHEN	CRA. 41 No. 167-30	674.40.77
Jorge Boshell Samper	Director General	I.N.S.	AV. El Dorado Cra. 50	222.10.59.
Helga Niño Torres	Coord. Medios Cultivo	I.N.S.	AV. El Dorado Cra. 50	222.10.82
Martha Gracia	Profesional Medios de Cultivo	I.N.S.	AV. El Dorado Cra. 50	222.10.82
Luz Marina Parra	Laboratorio DPT	I.N.S.	AV. El Dorado Cra. 50	222.10.82
Ana Ligia Duerías B.	Coordinador DPT.	I.N.S.	AV. El Dorado Cra. 50	222.10.82
Roberto Martínez	subdirect. Industrial	I.N.S.	AV. El Dorado Cra. 50	222.10.82
Luzardo Estrada	Dpto. Ing. Química	Universidad Nacional de Colombia	Ciudadela Universitaria	316.50.00.
Margarita Perea	Dpto. Ing. Química	Universidad Nacional de Colombia	Ciudadela Universitaria	316.50.00.

**ASISTENTES AL SEMINARIO MEDIDAS DE PROMOCION DE LA BIOINDUSTRIA EN COLOMBIA
DICIEMBRE 03/98**

NOMBRE	CARGO	ENTIDAD	DIRECCION	TELEFONO
Liliana Franco	Dpto. Química	Universidad Nacional de Colombia	Calle 45 Cra. 30 Ciudadela Universitaria	316.50.00.
Myriam Navarrete	Dpto. Química	Universidad Nacional de Colombia	Calle 45 Cra. 30 Ciudadela Universitaria	316.50.00.
José María Escobar K.	Dpto. Química	Universidad de Los Andes	Cra. 1 No. 18A-70	284.99.11.7 286.92.11
María del Pilar Delgado	Dpto. Ciencias Biológicas	Universidad de los Andes	Cra. 1 No. 18A-70	284.99.11.7 286.92.11
Alvaro Rozo	Dpto. Ciencias Biológicas	Universidad de los Andes	Cra. 1 No. 18A-70	284.99.11.7 286.92.11
Clara Quijano	Dpto. Ciencias Biológicas	Universidad de los Andes	Cra. 1 No. 18A-70	284.99.11.7 286.92.11
Tania Morales	Dpto. Ciencias-Biolog.	Universidad de los Andes	Cra. 1 No. 18A-70	284.99.11.7 286.92.11
Diana Guarín		ASINFAR	Calle 38 No. 8-62	285.62.61.
Patricia del Portillo	Directora Científica	CORPOGEN	Calle 26 No. 37-28	368.54.11
María Mercedes Zambrano	Direct. Área Microbiología	CORPOGEN	Calle 26 No. 37-28	368.54.11
Carlos Bernal Quintero	Director	Instituto Zerli	Cra. 22 No. 140 -51 Int. 7	258.89.19.
Henry Cardenas	Gerente de Producción	ALFATECNICA	Calle 93 No. 19-75-	530.08.08
Julio Delgado	Profesor Microbiología	Univ. Javeriana		320.83.20 ext.4065
Guillermo Quiñonez Salazar	Director Dpto. Ciencias del Medio Ambiente	Universidad Francisco de Paula Santander	Av. Gran Colombia N. 12E-96 Colsat	(0976) 751253. Cel. 33615262
Orlando Saavedra		Biológicas S.A.	Cra. 17 No. 10-94	092.5577.828
Patricia Olaya	Directora Científica	Centro de Análisis Molecular	Av. 13 -146-14	259.50.26 615.41.16.
Wosilmar Hernández	Gerente de Producción	Universidad del Valle	Calle 13 No. 90-389	092.31.90.04
Lucía de Alehoñua	Dir. Dept. Biotecnología	Universidad Antioquia	Calle 67 No. 53-708	094.210.55.00.
Marcela Llines Acosta	Dpt. Ciencias	Universidad Antioquia	Calle 67 No. 53-708	094.210.55.00.

**ASISTENTES AL SEMINARIO MEDIDAS DE PROMOCION DE LA BIOINDUSTRIA EN COLOMBIA
DICIEMBRE 03/98**

NOMBRE	CARGO	ENTIDAD	DIRECCION	TELEFONO
Jesus Alfredo Berdugo	Dpt. Ciencias	Universidad Antioquia	Calle 67 No. 53-108	094.210.55.00.
Diego Duque	Gerente Administrativo	Laboratorio Vonw Haller	Calle 9 sur No. 26-13	337.30.19.
Jaime Ayala Ramirez	Director Ejecutivo	SEGUNDA EXPEDICION BOTANICA	Cra. 50 No. 27-70.	221.93.80 221.93.31.

2) アルゼンティン

List of Participants

Name	Organization	Faculty of Chemical Sciences	Pharmacy Dept.
1 ALBESA, Inés	Córdoba National University	Faculty of Chemical Sciences	Pharmacy Dept.
2 ALVAREZ, María Emma	Córdoba National University	Faculty of Chemical Sciences	Biological Chemistry Dept.
3 ALPARTIN, Carina Diana	La Plata National University	Faculty of Sciences	Industrial Fermentation Research and Development Centre (CINDEFI)
4 ARGARANA, Carlos	Córdoba National University	Faculty of Chemical Sciences	Biological Chemistry Research Centre (CIQUIBIC)
5 BACMAN, Sandra Raquel	Córdoba National University	Studies Centre for Congenital Metabolic Pathologies	
6 BARRA, Hector Silvio	Córdoba National University	Faculty of Chemical Sciences	
7 BARRA, José Luis	Córdoba National University	Faculty of Chemical Sciences	Biological Chemistry Dept.
8 BELTRAMO, Dante	Centre of Excellence on Products and Processes of Córdoba (CEPROCOR)		
9 BIANCO, Imael Darío	Centre of Excellence on Products and Processes of Córdoba (CEPROCOR)		
10 BOGDANOV, Patricia	Córdoba National University	Faculty of Chemical Sciences	Pharmacy Dept.
11 BORIOLI, Graciela	Córdoba National University	Faculty of Chemical Sciences	Biological Chemistry Research Centre (CIQUIBIC)
12 BRIZUELA, Omar	Córdoba National University	Faculty of Chemical Sciences	Applied Chemistry Centre (CEQUIMAP)
13 CAMUSSO, Celso	Córdoba National University	Faculty of Agricultural Sciences	
14 CASTAGNA, Leonardo	Centre of Excellence on Products and Processes of Córdoba (CEPROCOR)		
15 CHEVALIER, Hipólito	GENECOR INT. ARG. S.A.		
16 COLAUTTI, Nélida	NATOCOR Laboratory		
17 COLAUTTI, Pedro	NATOCOR Laboratory		
18 CONDE, Cecilia Beatriz	Córdoba National University	Faculty of Chemical Sciences	Biological Chemistry Research Centre (CIQUIBIC)
19 DAVIDINO, Rubén	Río Cuarto National University	Faculty of Agricultural and Veterinary Sciences	
20 DEFILPO, Silvia Susana	Córdoba National University	Faculty of Agricultural Sciences	
21 FILIBERTI, Adrián	Córdoba National University	Faculty of Sciences	
22 GENTA, Hugo Dante	Tucumán National University	Faculty of Biochemistry, Chemistry and Pharmacy	
23 GENTA, María Luisa	Tucumán National University	Faculty of Sciences and Technology	
24 GRAUDDO, María Rosa	Gornahue National University	Applied Microbiology and Biotechnology Laboratory	
25 KORTSCHONER, Nicolás	Córdoba National University	Faculty of Chemical Sciences	Clinical Biochemistry Dept.
26 MARGUIES, Darío	Litoral National University	Faculty of Chemical Engineering	Technical Development for Chemical Industries Institute (INTEC)
27 MODESTI, Nidia María	Centre of Excellence on Products and Processes of Córdoba (CEPROCOR)		
28 MURATURE, Domingo	Córdoba National University	Hemoderivados Laboratory	
29 MORES, Gustavo	Córdoba National University	Faculty of Chemical Sciences	Biological Chemistry Dept.
30 OLIVOS, Carlos Angel	Córdoba National University	Faculty of Agricultural Sciences	
31 PEZZA, Roberto José	Córdoba National University	Faculty of Chemical Sciences	
32 PRONE, Juan Manuel	Córdoba National University	Faculty of Chemical Sciences	
33 PRONE, Miguel Angel	Córdoba National University	Faculty of Chemical Sciences	
34 QUIROGA, Gabriela	Córdoba National University	Faculty of Chemical Sciences	
35 SILVA, Carlos Alejandro	GENECOR INT. ARG. S.A.	Faculty of Agricultural Sciences	
36 SMANIA, Andrea María	Córdoba National University	Faculty of Chemical Sciences	Biological Chemistry Research Centre (CIQUIBIC)
37 VALDEZ, Javier Esteban	Córdoba National University	Faculty of Chemical Sciences	Biological Chemistry Research Centre (CIQUIBIC)

6. 収集／配布資料一覧

1). 収集資料一覧

a. コロンビア

ICETEX (海外留学技術研修基金)

- Portafolio de Programas y Servicios

University of Los Andes

- Enterprise-University Program, School of Engineering.

Instituto Colombiano Agropecuario (ICA)

- Informa (Boletín Técnico Informativo)

Corporacion para el Desarrollo Industrial de la Biotecnologia (CORPODIB)

- Definición de Servicios, Grupos y Líneas Tecnológicas Ofrecidas por CORPODIB

Universidad de Antioquia

b. アルゼンティン

Univesidad National de Cordoba

- Resena Científico-Academica 1997, Facultad de Ciencias Químicas.

Universidad National de Rio Cuarto

- Bromatologia y Reglamento Bromatologico Municipal by Dr.Ruben A.Davicino

- Food Research Center (F.R.C)

- Universidad National de Rio Cuarto (U.N.R.C)

IFFIVE-INTA

- Proyecto de Investigaciones en Fitovirologia-Cooperacion Tecnica del Gobierno de Japon.

2) 配布資料一覧

MITI

- Development of Policy for Biochemical Industry in Japan.

- The Convention on Biological Diversity and Bio-industry.

Japan Bioindustry Association (JBA)

- An Outline of the Activities of the Japan Bioindustry Association (JBA)

- Operation of International Exchange and Cooperation in JBA

- Internal Activities

- Industrial and Agricultural Aspects.

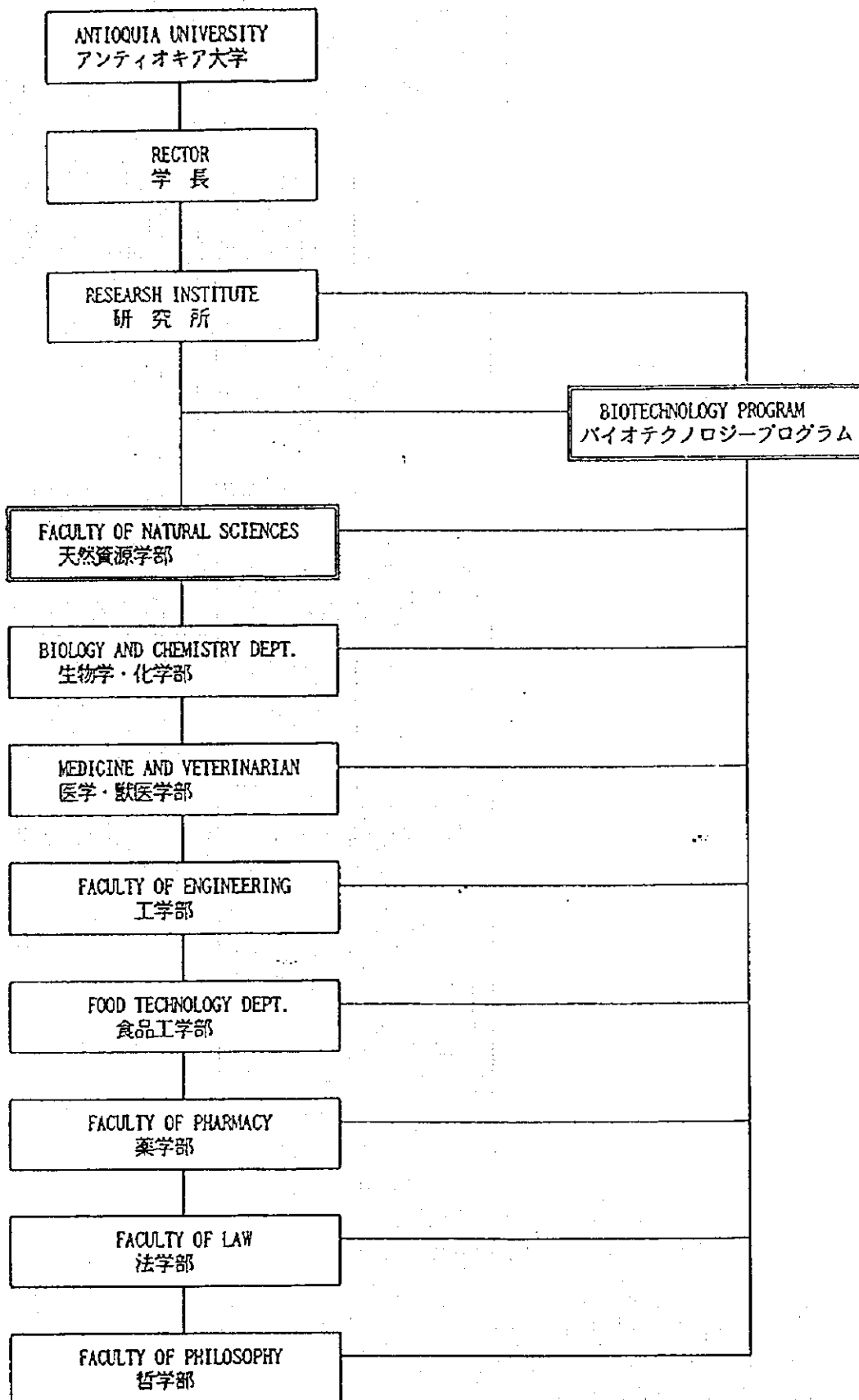
- Brochure of JBA

- Flier of BioJapan 2000.

7. 帰国研修員所属機関の組織図

ORGANIZATIONAL CHART (3. COLOMBIA)

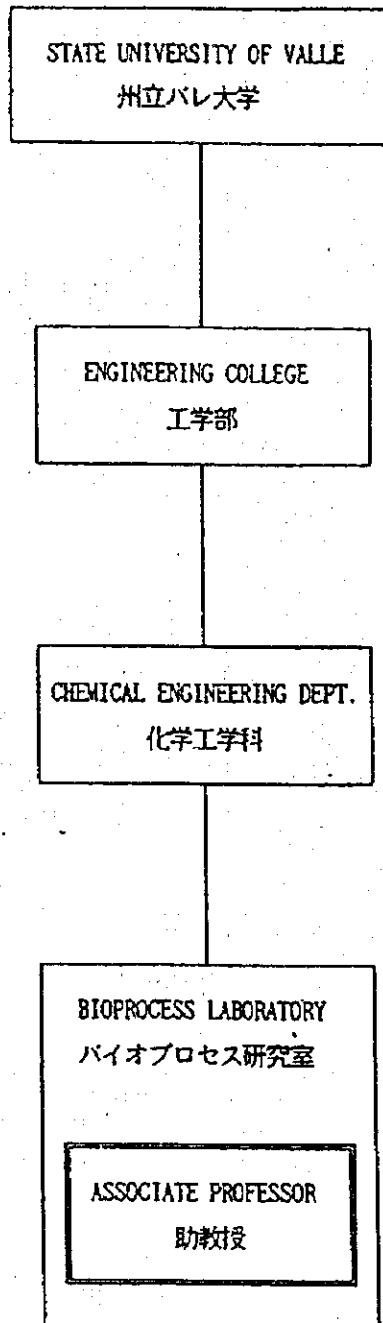
* 二重ワクが本人の現職.

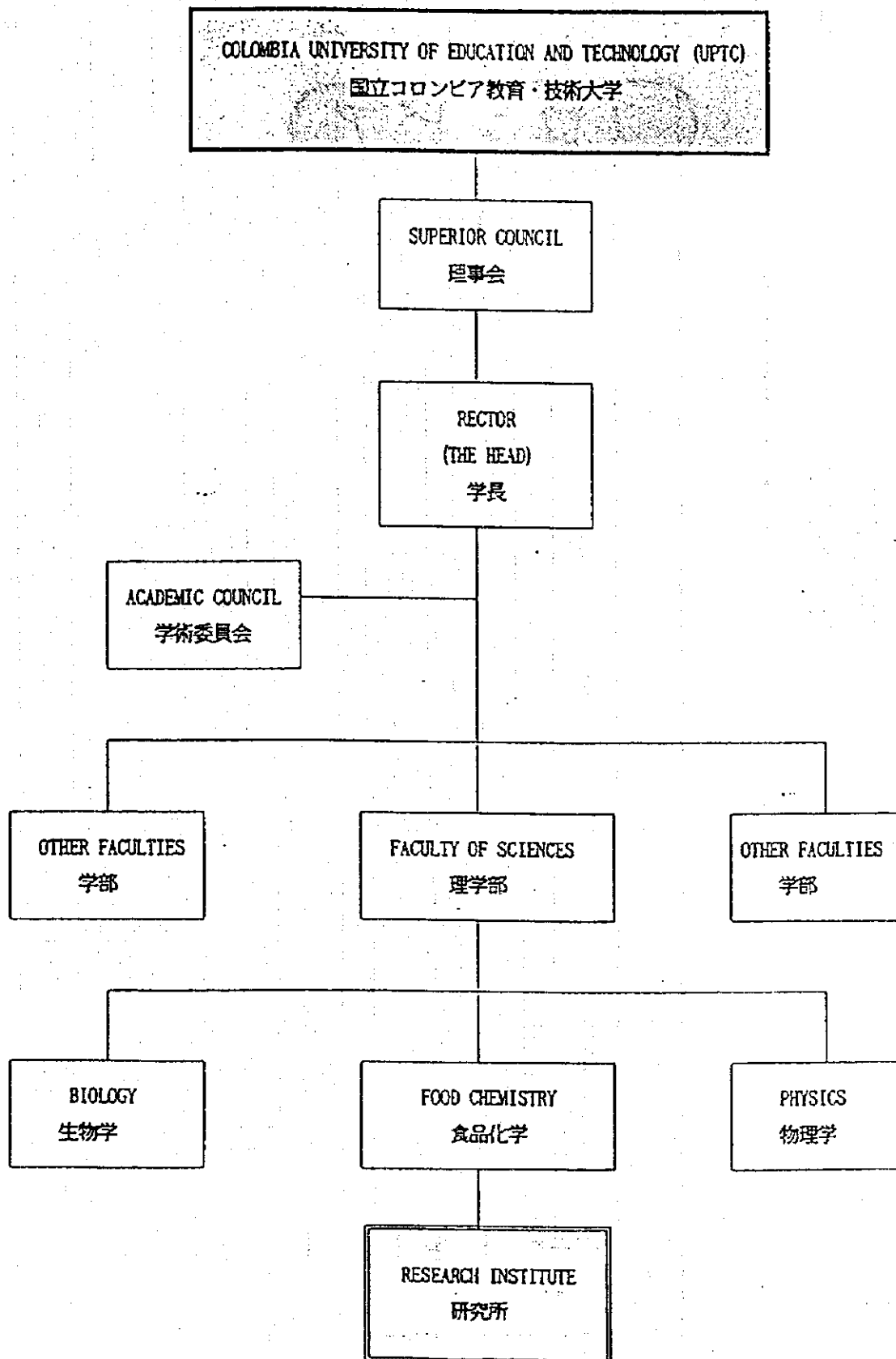


ORGANIZATIONAL CHART (2. COLOMBIA)

*二重ワクが本人の現職。

Dr. Jose
(1996年当時)

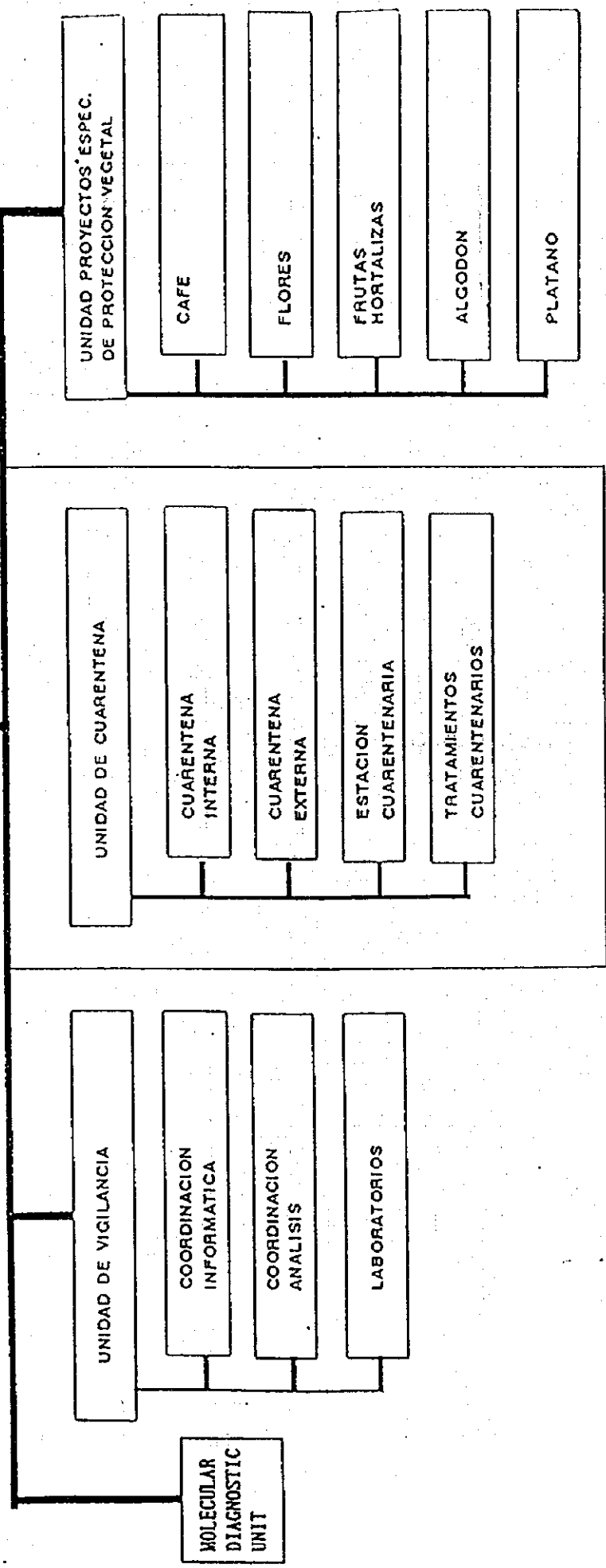




SUBGERENCIA DE PREVENCIÓN Y CONTROL

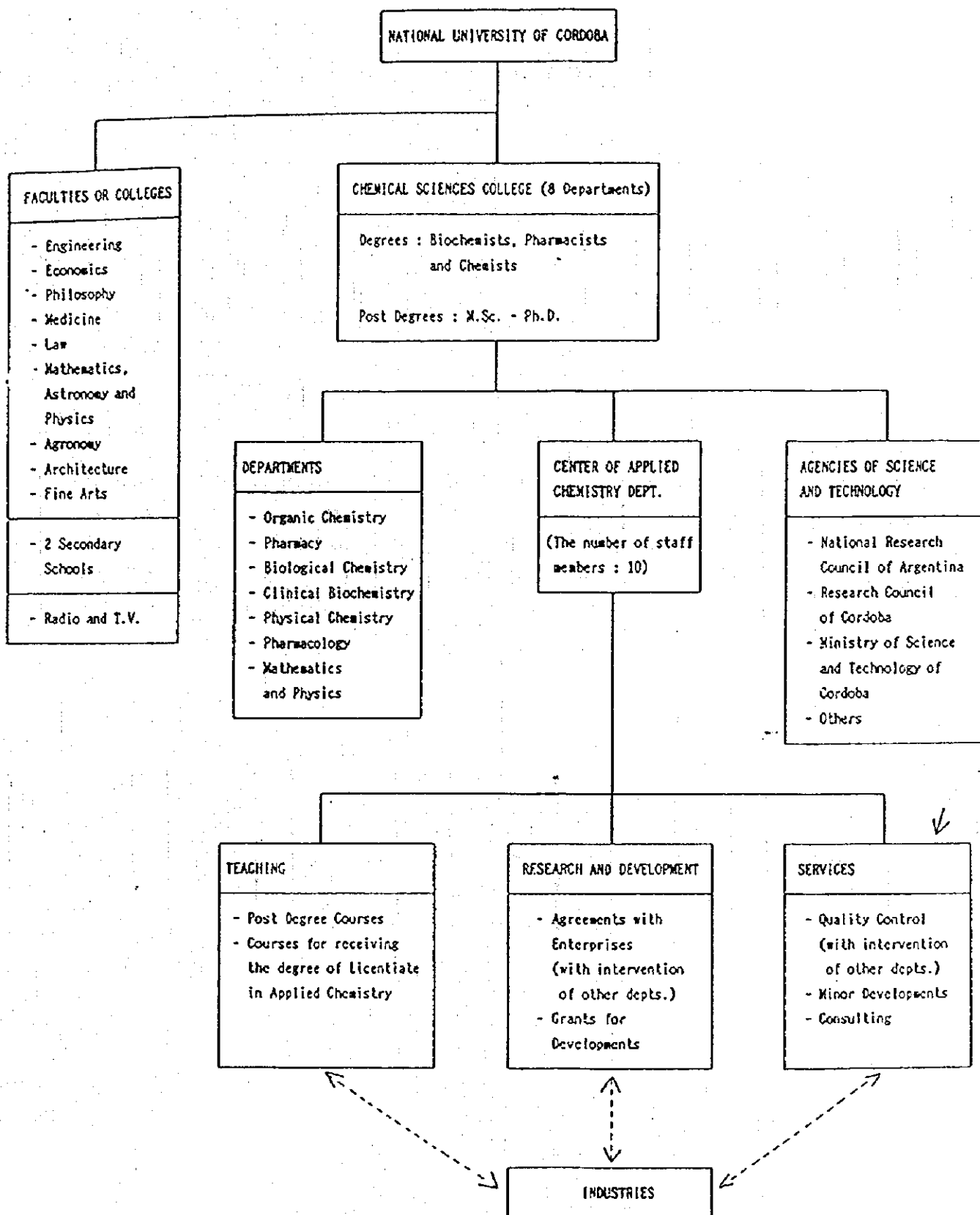
DIVISION SANIDAD VEGETAL

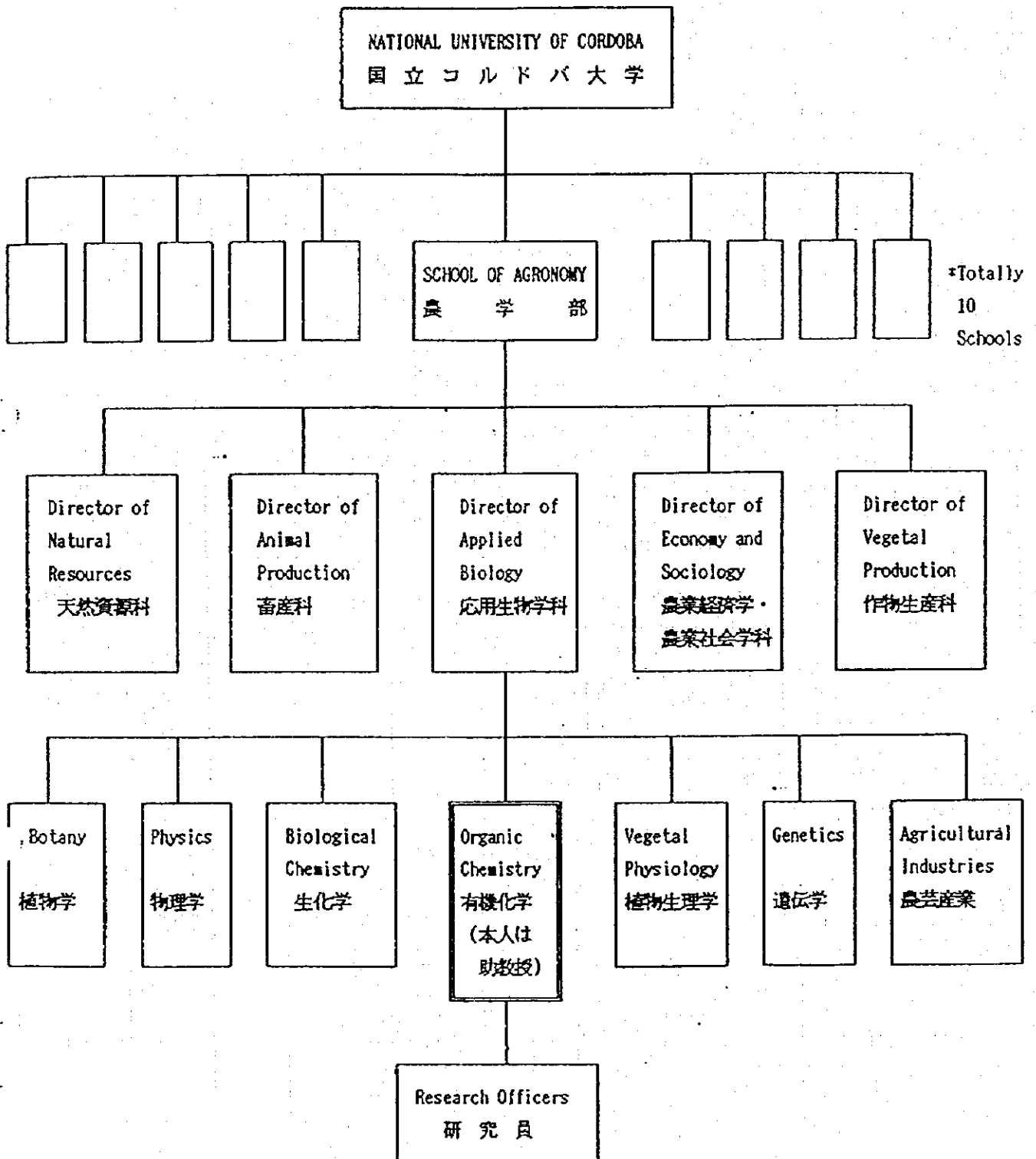
COMITE ASESOR

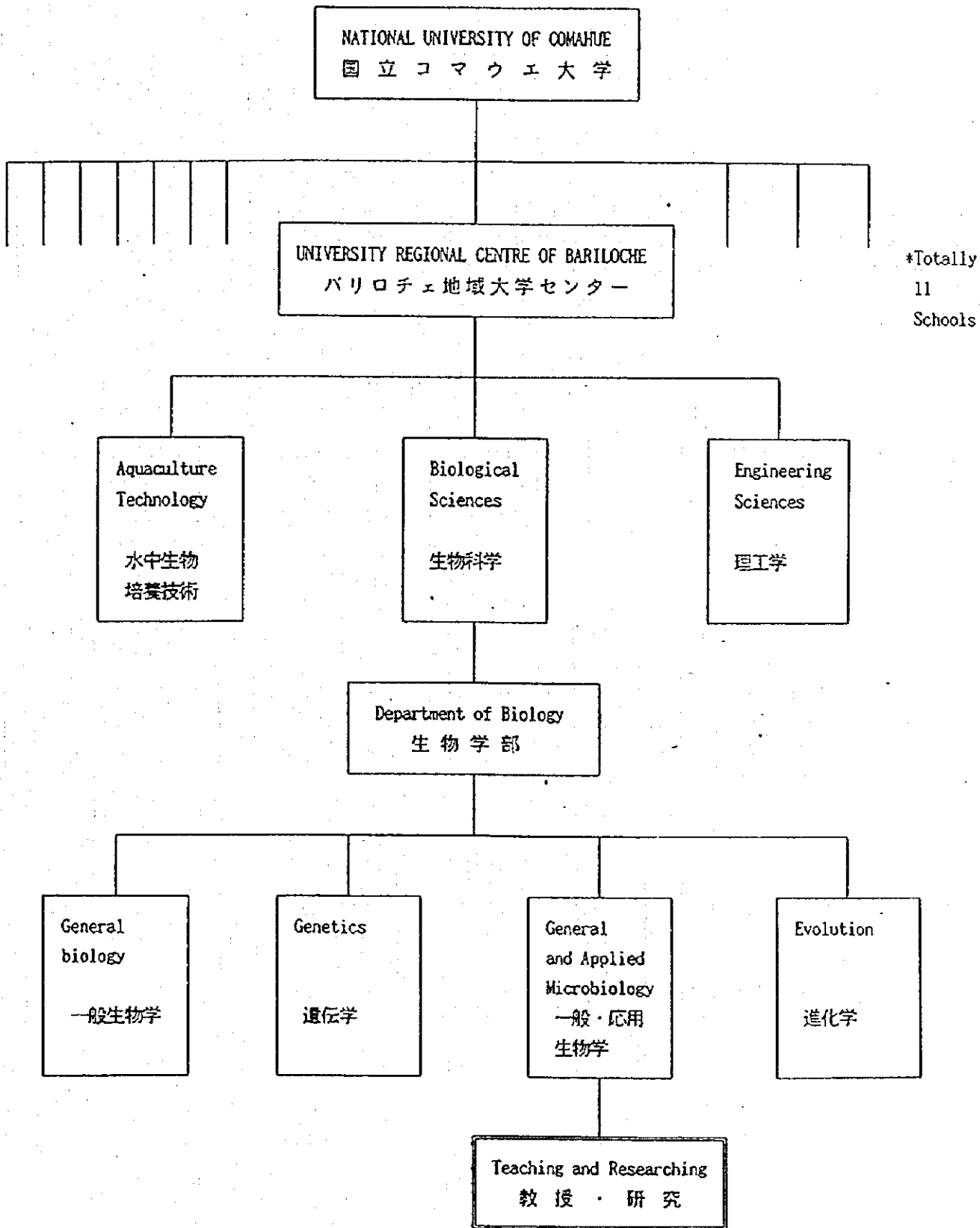


COORDINACIONES DEPARTAMENTALES

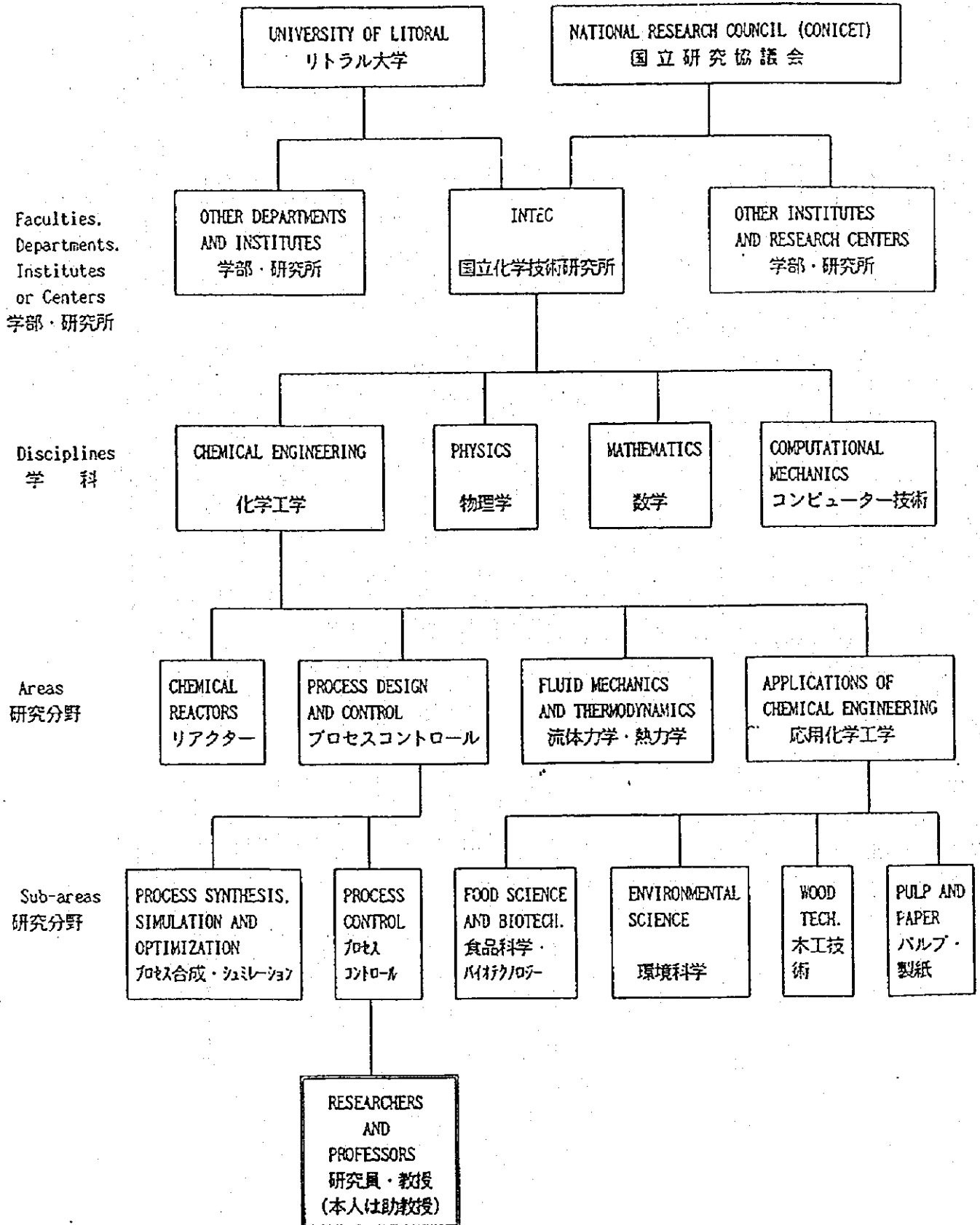
ORGANIZATION CHART

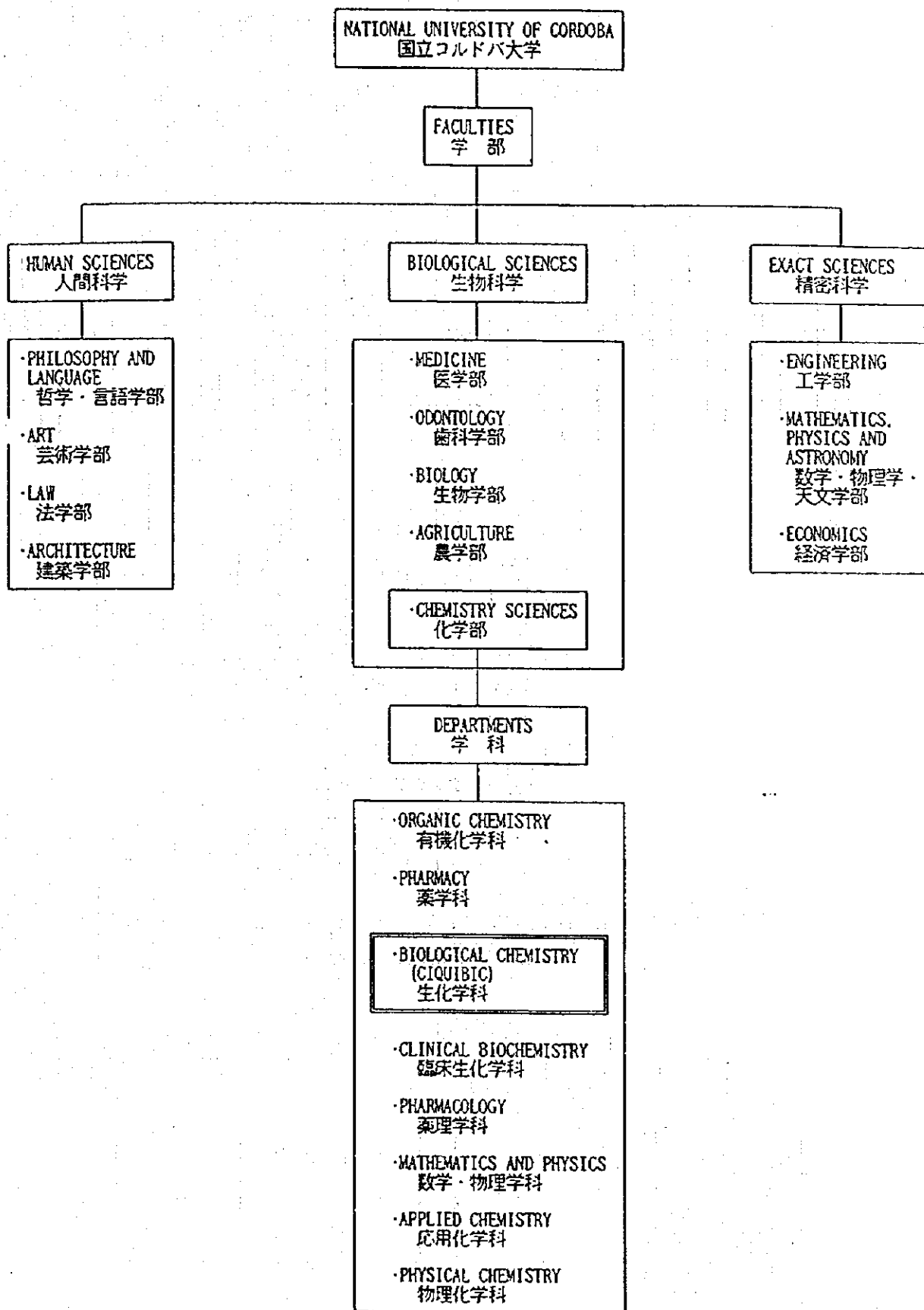


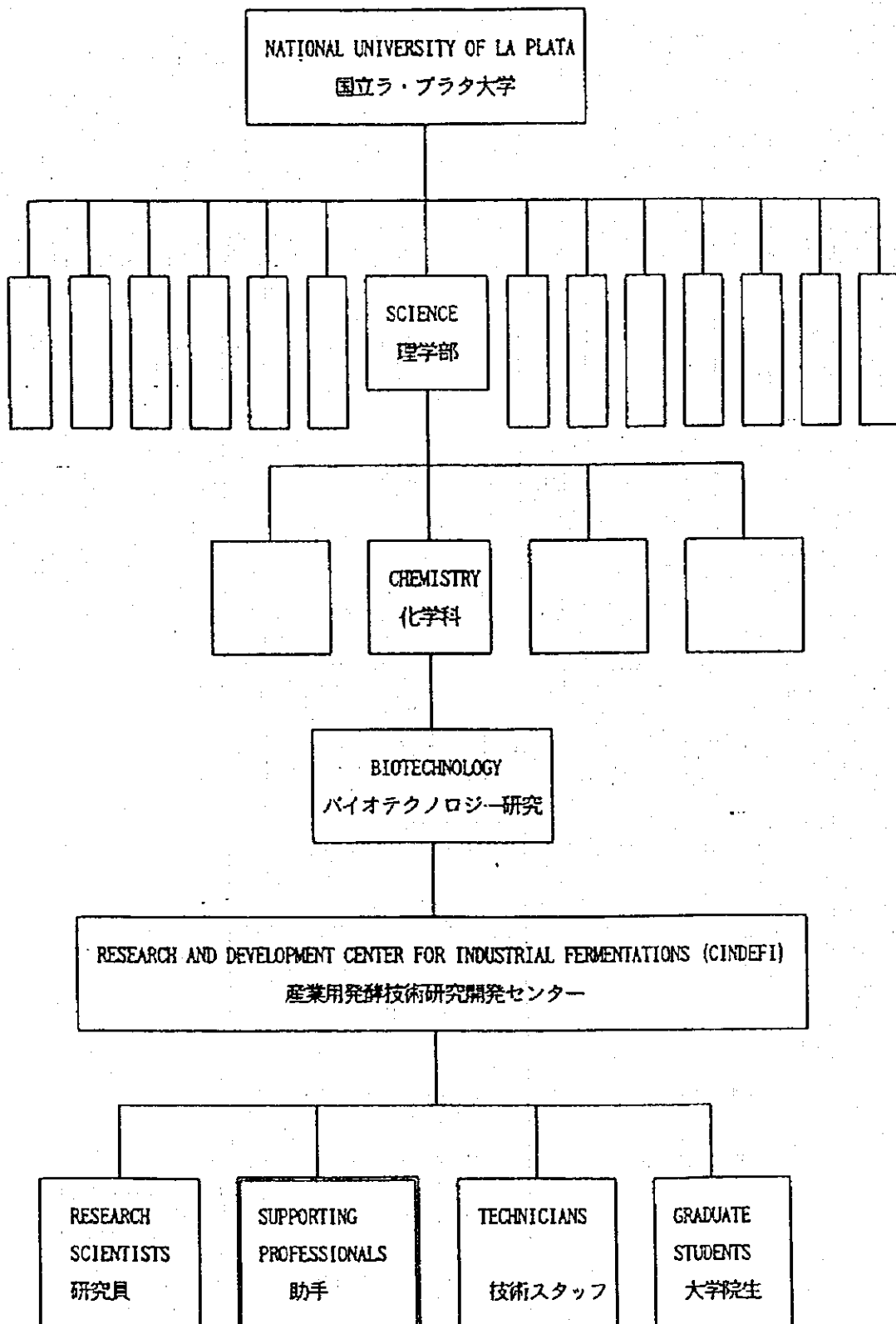


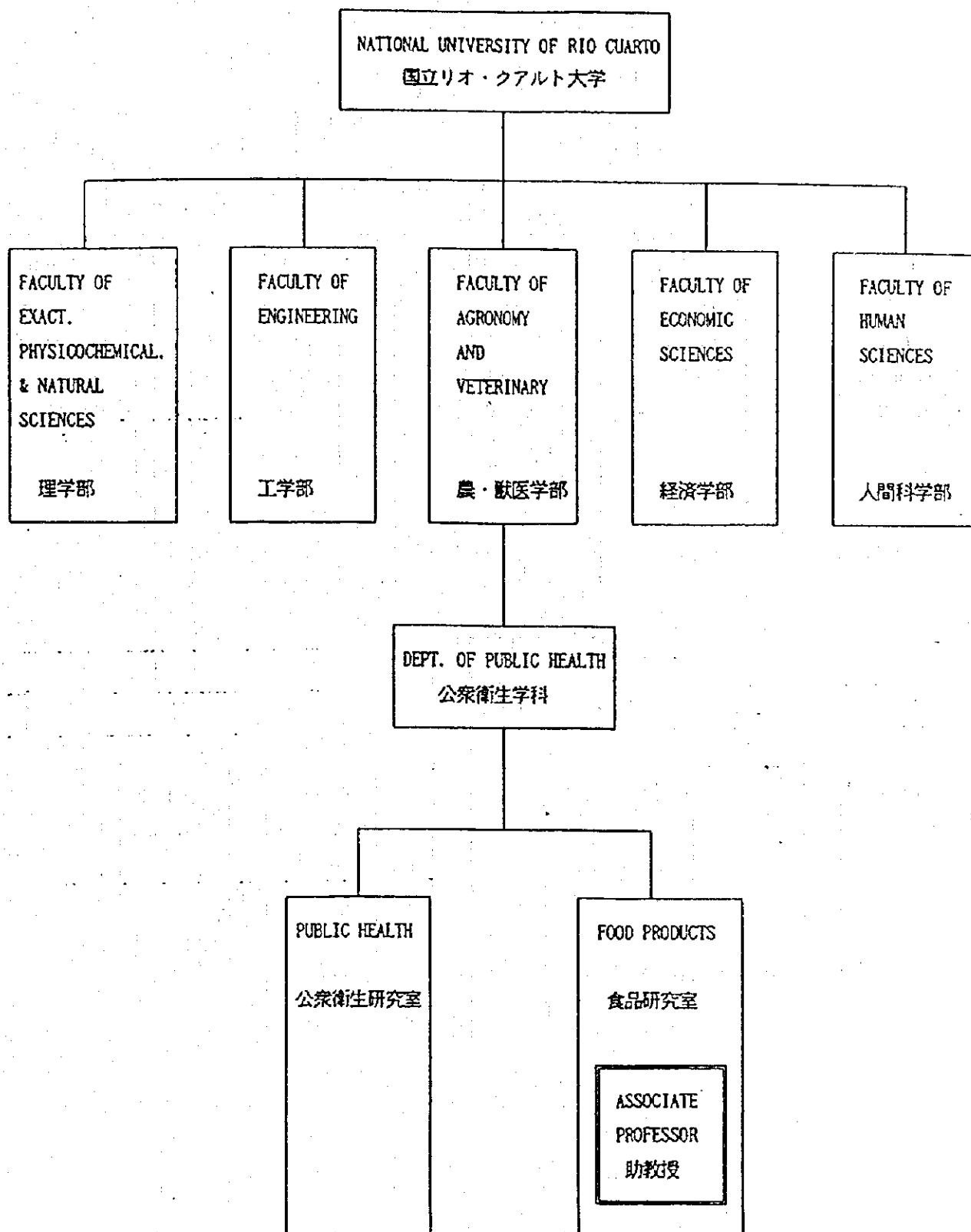


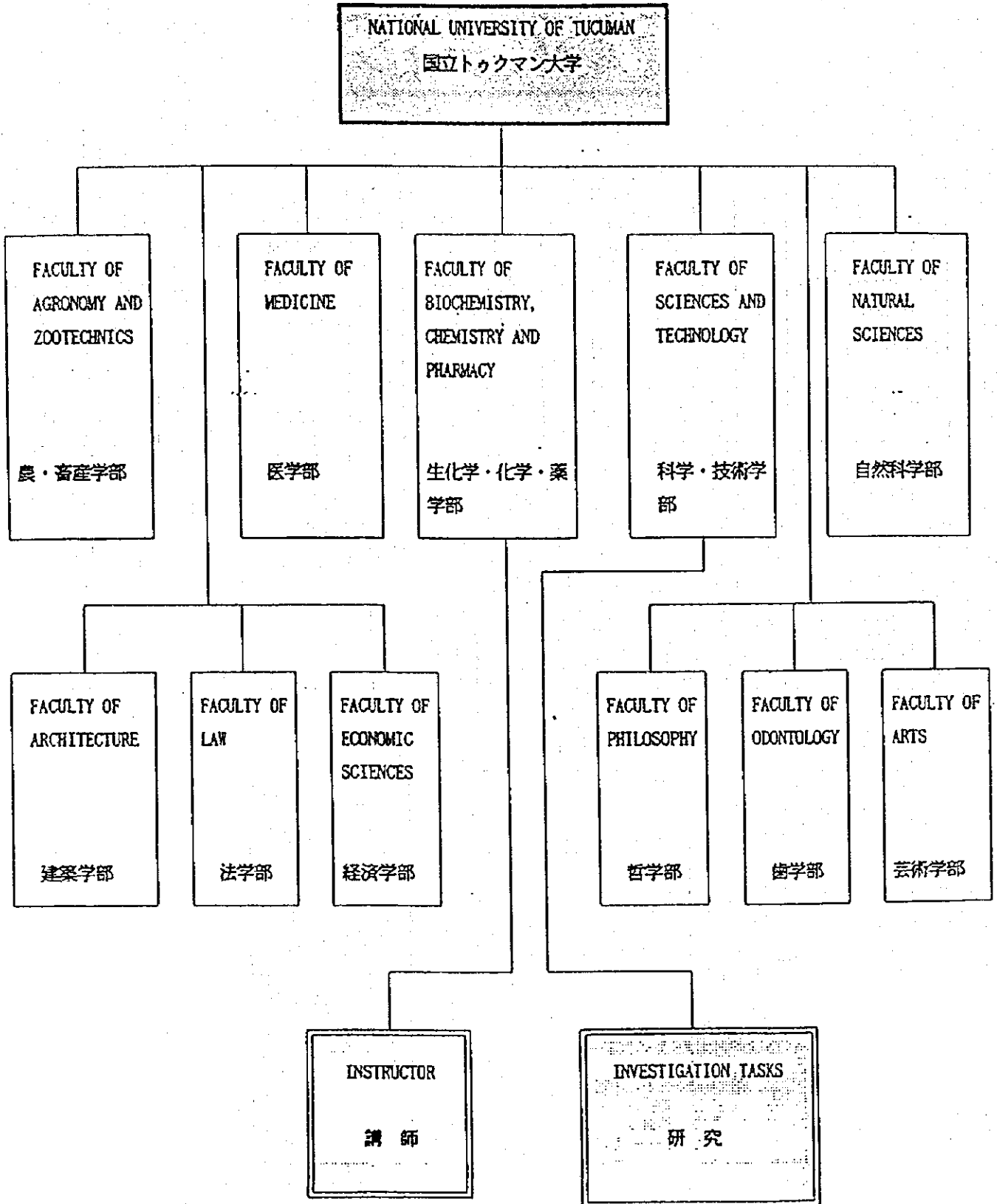
*Totally
11
Schools





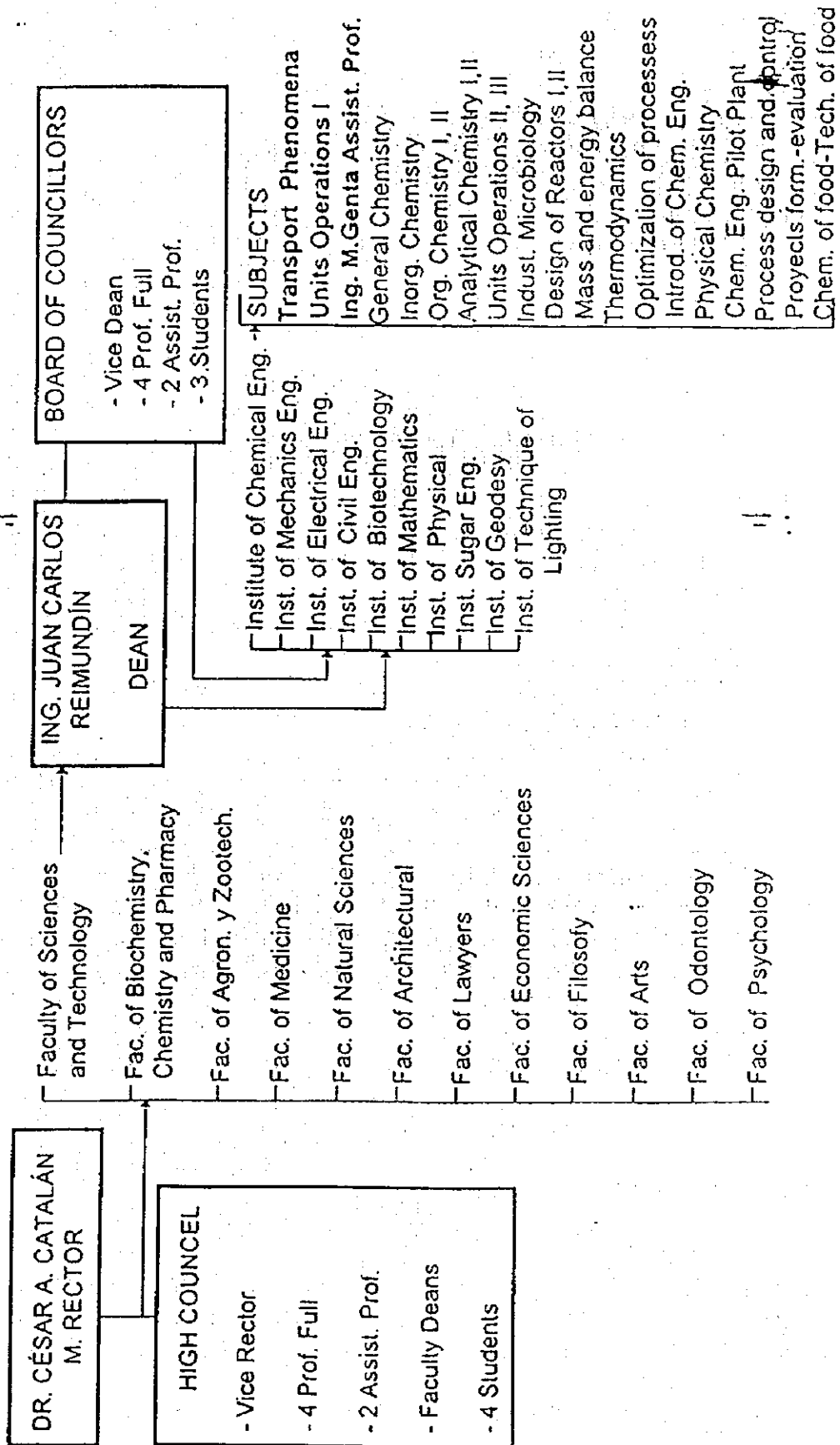






5.- Organizational Chart

NATIONAL UNIVERSITY OF TUCUMÁN



8. バイオインダストリー集団研修概要

1. コース名等

(1) コース名

(和文) 平成10年度(第11回)バイオインダストリー集団研修コース

(英文) THE 11TH GROUP TRAINING COURSE IN BIOINDUSTRIES, FISCAL 1998

(2) 研修期間

平成10年5月5日から平成10年7月31日まで

(3) 定員

8名

2. コースの目的・背景

(1) コースの目的

バイオテクノロジーの応用は、医薬品工業、化学品工業、食品工業はもとより、食料増産や質の向上、畜産や水産物産業の向上、環境浄化など幅広い分野で実施され、人々の生活向上に大きく貢献してきた。

1992年6月、リオデジャネイロで開催された「環境と開発に関する国連会議」は、地球の環境破壊が急速に進んでいることと共に生物資源が大きく減少していることが確認され、この環境改善策の一環として多様な生物資源の保全と持続的開発を枠組みとした「生物多様性条約」が採択され、バイオテクノロジー応用の期待が一段と高まってきている。

一方、生物資源が比較的豊富である開発途上国においては、国家の経済開発計画達成に必要な重要先端技術の一つとしてバイオテクノロジーの開発と応用を取り上げ、食料の増産、森林の保全、並びにバイオ関連産業の育成を鋭意推進している。

また、開発途上国の多くはバイオテクノロジーの開発・応用を推進するための能力構築(Capacity Building)に努力中でもある。

世界のバイオインダストリーのリーダーの一員であるわが国が、これまで蓄積してきた知識や技術について最新のかつ幅広い視点からの研修を行い、研修参加国の当該分野の研究者や政策立案者を養成・支援することが本コースの目的である。

(2) 設立年度及び経緯

昭和63年度に設立された。研修参加国のニーズに、より適合した研修を実施すべく、毎年改善を加えつつ、今年度で第11回を数える。

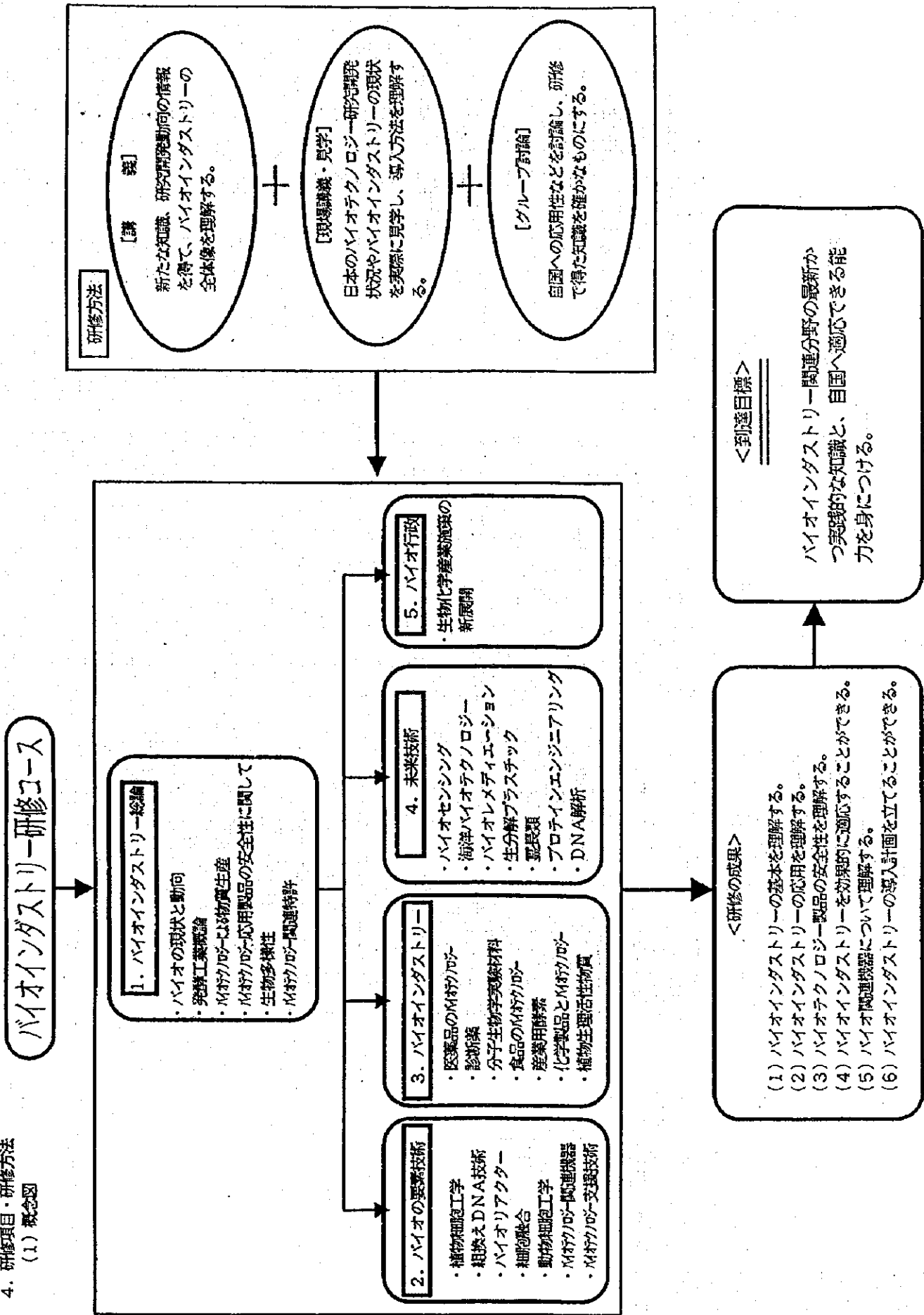
3. 到達目標

バイオテクノロジー全般について総括するとともに、バイオインダストリーを支える基盤技術(細胞融合、バイオリアクター、遺伝子組換え技術等)や未来技術(バイオエレクトロニクス、海洋バイオテクノロジー等)並びにバイオ行政に関する講義等を通して、またバイオテクノロジーの研究動向やバイオ関連産業界の現状を理解するために大学、国公立研究機関及び民間企業を訪問、見学することによって、

(1) バイオインダストリー関連分野の最新知識を習得するとともに、関連施設での実際活動を見学・体験すること。

(2) ひいては、開発途上国の特性に合致したバイオテクノロジー応用技術の向上を図り、バイオインダストリーの発展に寄与することを目標にしている。

4. 研修項目・研修方法
(1) 概念図



(2) 研修項目・研修指導手法

ア. 講 義

(ア) 導 入

バイオテクノロジー全般について総括するとともに、我が国バイオの現状と世界の動向、発酵と利用工業について講義を行う。また、バイオテクノロジー応用製品の安全性、生物多様性の保全と持続的利用について紹介する。

(イ) バイオ技術要素

遺伝子組換え技術、細胞融合技術、植物細胞工学、動物細胞工学、バイオリアクター、バイオテク支援技術、バイオ関連機器に関する基本概念、手法、応用例等について講義を行う。

(ウ) バイオマス工業

生物資源活用による有用物質の生産について講義を行う。

(エ) バイオインダストリー（物質生産）

医薬品分野、食品分野、化学薬品分野のバイオインダストリーに関し、その現状と将来展望並びに特許関連について講義を行う。

(オ) バイオ行政

我が国のバイオ関連施策について講義を行うとともに、援助の枠組を展望し、開発途上国に対する技術協力のフレームワークについて紹介する。

(カ) 未来技術

バイオエレクトロニクス、マリンバイオテクノロジー、バイオレメディエーション、生分解プラスチック、蛋白質工学、遺伝子解析等バイオテクノロジーの未来技術について講義を行う。

イ. 現場講義・見学

バイオテクノロジーの研究動向、産業界のバイオテクノロジーへの取組み、今後の産業化への展望を明らかにするため関連する大学並びに国公立研究機関、民間企業の研究所、工場を訪問し、見学、現場講義を行う。

ウ. グループ討論

上記研修の成果を踏まえ、研修の最終とりまとめとして、バイオインダストリー導入戦略を中心に生物資源の有効活用方法等、開発途上国の特性に合致したバイオインダストリーの導入方法についてインストラクターの指導のもとに討論を行う。



