December 1972

of the Canadian Society for IMMUNOLOGY

BULLETIN

de la Société Canadienne d'IMMUNOLOGIE

vol. 6 no. 1

1972

Published by: The Canadian Society for Immunology
- La Société Canadienne d'Immunologie.

Council:

B. Rose	- President	(1973)	F. Paraskevas	(1975)
S. Dubiski	- Vice-President	(1973)	E. Diener	(1975)
P. Gold	- Secretary	(1973)	J. Bienenstock	(1975)
J. Shuster	- Treasurer	(1973)	D.G. Ingram	(1975)
A. Sehon	- Past President	(1973)	J.H. Dossetor	(1973)
			D. Dufour	(1973)

****

Paul Ehrlich medal, on the cover, by Dora de Pédery Hunt.

****

Editor of the Bulletin:

S. Dubiski
Department of Immunology,
The Toronto Western Hospital,
1 Spadina Crescent,
Toronto M5S 2J5,
Ontario, Canada.

Telephone: 928-6269
Area Code (416).

****

B U L L E T I N

OF THE CANADIAN SOCIETY FOR IMMUNOLOGY

DE LA SOCIÉTÉ CANADIENNE D'IMMUNOLOGIE

Vol. 6, No. 1 December, 1972.

C O N T E N T S

Page

EDITORIAL 1

Bram Rose: PRESIDENT'S MESSAGE 2

THE CANADIAN SOCIETY FOR IMMUNOLOGY

Minutes of the Business Meeting, June 14, 1972..... 3
New Members..... 5
Appeal from the Secretary..... 6

INTERNATIONAL UNION OF IMMUNOLOGICAL SOCIETIES.

Report on the Council Meeting, October 24-26, 1972..... 7
Memorandum Concerning a Permanent Secretariat of the IUIS Standardization Committee. 10
Second International Congress of Immunology..... 16
Preliminary List of Titles of Workshops to be Held During the II ICI..... 16

STANDARDIZATION WHY and HOW? 19

Alec Sehon: SOME CONCERNS ABOUT NEW MRC POLICIES AND PROCEDURES. 20

H.C. Goodman: WHO: INTERNATIONAL RESEARCH..... 26

D. Eidinger: WHERE TO PUBLISH, WHAT TO READ? 30

NEWS:

R.R. Race and Ruth Sanger Receive the Gairdner Foundation International Awards in 1972. 33
British Transplantation Society. 34
Immunodeficiency-Cancer National Registry. 34
Current Programs 35
Canadian Branch of Medlars and Medline 35
Canadian Association of Life Sciences Technicians 36
British Society for Immunology Monthly Newsletter..... 37

POSITIONS VACANT..... 38

FORTHCOMING EVENTS..... 39

EDITORIAL

Recently awarded Nobel prizes show that the role and importance of immunology among the other biological sciences is growing and that this is being recognized by the scientific community at large. It is always very difficult to single out one or two individuals as being responsible for a given discovery. It is perhaps even more difficult when we consider research on the structure of immunoglobulins. The present knowledge of immunoglobulin structure we owe to literally hundreds of scientists who painstakingly obtained and put together little bits of information. There is no doubt, however, that R.R. Porter and G. Edelman were leading in the research on immunoglobulin structure. They not only have been putting together information but injected new ideas, pioneered new approaches and produced important generalizations. It does not detract from Porter's and Edelman's role in the elucidation of immunoglobulin structure to feel that their award is also a recognition for all others who, to a lesser degree, contributed to this field of immunology.

Immunologists throughout the world are getting better organized, new national societies are being formed and the International Union of Immunological Societies is increasing its impact on a number of fields. An article describing activities of the IUIS and the announcement about the II International Congress of Immunology will be found in this issue.

Prospects on the local level are not as bright as the prospects on the international level. There is a growing concern about the future of biological research in Canada in general and immunological research, in particular. New MRC policies and their possible impact on immunology in Canada are being discussed by A. Sehon.

I would like to take this opportunity to extend to all our readers best wishes for the coming holiday season and for a very successful New Year 1973.

S. Dubiski.

****

PRESIDENT'S MESSAGE

The meetings in Quebec City this year were very successful with good attendance at the scientific sessions, particularly the symposium. I think it can be said quite safely that the standard of excellence of the abstracts submitted for the various scientific sessions is now of a high order. There is every reason to believe that this will be maintained and that the numbers of abstracts will increase. We, unfortunately, suffer now from a plethora with two sessions running simultaneously and, of course, this leads to a depletion of the audience at times. However, I suppose it is a sign of stature and happens inevitably as a society grows with the rapidity that the Canadian Society for Immunology has done.

As you will see from the minutes of the meeting, two questions were discussed about which we would like input from the members. The first has to do with the question of a journal. It seems rather clear that there are a sufficient number of top flight immunologists in Canada who, if their collected publications were gathered in one journal, could adequately provide for the publication of a first rate journal of Canadian origin. The question arises as to how many of you would be willing to submit sufficient papers, and your good ones, to such a journal. It was decided that a means of rapid publication which is not more than three months after the submission of the paper for its appearance might be a good incentive. In any case, the topic is uppermost on the minds of your executive, and again you will be hearing more about it. The second was the question of international symposia sponsored by the C.S.I. My own feeling is that one every two years is more than adequate. This would provide sufficient time for the organizers to raise the necessary funds as well as look after all of the many arrangements which go with such a symposium. I think that the organizers of the previous symposia are to be commended on the scientific excellence of the meeting and the subsequent publications.

We meet next year in Saskatoon. The chairman of the local committee there will be dr. Austin Sargent. I hope that you will again submit your abstracts in good time. I look forward to meeting you all next summer. Have a good holiday.

Bram Rose

****

THE CANADIAN SOCIETY FOR IMMUNOLOGY

Minutes of the Annual Meeting of the Canadian Society for Immunology held at Laval University, Quebec City, Quebec, on June 14, 1972.

The meeting began at 5:10 P.M. Dr. B. Rose presided. Motion by Doctor P.B. Stewart, seconded by Doctor A. Froese, that the Minutes of the last Annual Meeting be passed as circulated in the Bulletin of the CSI. The motion was approved unanimously.

Doctor Joseph Shuster presented the Treasurer's Report. He informed the meeting that, aside from stationery costs which had not as yet been billed, the CSI had a bank balance of $ 4,282.87. He also informed the meeting that he had been in contact with most journals which carried a high immunologically-oriented content, and that such journals could be obtained, at a 25% reduction in price, directly through the CSI. Further information will be circulated with the bills for dues, and the journals will then be ordered directly through Doctor Shuster.

Motion by Doctor E.F. Potworowski, seconded by Doctor J. Bienenstock, that the Treasurer's Report be approved as presented. The motion was passed unanimously.

Doctor Phil Gold, the Secretary, presented a list of the newly elected members to the Meeting. The list follows these Minutes.

Motion by Doctor J. Bienenstock, seconded by Doctor L. Gyenes, that the list be approved as presented. The motion was carried unanimously.

Presidential Address: Doctor Bram Rose, the President of the CSI, first extended his thanks to Doctor F. Daguillard, Chairman of the Local Organizing Committee, and to the members of his Committee, for the outstanding job which they had done in looking after the various aspects of the local arrangements.

Doctor Rose stated that it was the opinion of the CSI Council and Executive that it would be more realistic to attempt to have one International Symposium every two years, rather than annually. He invited members of the Society to volunteer to organize such symposia. Doctor R. Nelson and Doctor L. Gyenes tentatively agreed to look into the possibility of organizing a symposium on Transplantation for 1974.

The International Symposium for 1972 is to be held in Montreal, and will deal with the problem of the humoral mediation of hypersensitivity. The Society has donated $ 500.00 to defray the costs of the Symposium, and has encumbered another $ 500.00, if this should be necessary to look after any deficits which might develop.

Doctor Rose defined more clearly some of the roles to be played by Councillors and a number of other members of the present and past Executive of the Society.

1. Representative to the CFBS* and liaison officer to the SCITEC** and the BCC*** - Doctor A.H. Sehon.

2. Representative to the IUIS**** on the Committee concerned with Symposia - Doctor B. Cinader.

3. Representative to the IUIS on the Committees responsible for both Standardization and Nomenclature - Doctor J. Bienenstock.

4. Representative to the IUIS on the Committee concerned with Education - Doctor A.H. Sehon.

A Committee has been formed to undertake a revision of the present CSI constitution in order to delineate more explicitly the roles of the various members of the Executive Council, and to simplify the functions of the organization. The Committee is constituted of Doctors D. Dufour, F. Paraskevas, and J. Bienenstock, with Doctors J. Shuster and P. Gold to serve as ex-officio members.

Doctor Rose informed the Meeting that, on the basis of recent experience, it was the opinion of the Executive and Council, that where possible the Secretary and Treasurer of the Society should reside in the same geographic locale. This type of arrangement is most efficient and less costly in terms of telephone communication.

Doctor Rose reminded the Meeting that the CFBS would gather in Saskatoon in 1973 and that Doctor Austin Sargent had been appointed Chairman of the Local Organizing Committee.

There being no further business, the meeting adjourned at 5:25 P.M.

Respectfully submitted,

Phil Gold, M.D., Ph.D.,
Secretary,
Canadian Society for Immunology.

* Canadian Federation of Biological Societies.
** The Association of the Scientific, Engineering & Technological Community of Canada. (See CSI Bulletin No. 1, Vol. 5).
*** Biological Council of Canada.
**** International Union of Immunological Societies.

RECENTLY ELECTED MEMBERS - 1972.

1. DR. Jerry A. BASH, Immunology Laboratories, Connaught Medical Research Building, 1 Spadina Crescent, TORONTO, ONTARIO.

2. DR. M.A. BLAJCHMAN, Department of Medicine, McMaster University, HAMILTON, ONTARIO.

3. DR. Gerald BLANDFORD, Toronto Western Hospital, 399 Bathurst St., TORONTO, ONTARIO.

4. DR. Kilian WAI-KIT CHEUNG, (Associate member), Department of Immunology, Faculty of Medicine, University of Manitoba.

5. DR. Terry DELOVITCH, Room 56-/20, Massachusetts Institute of Technology, CAMBRIDGE, MASS. 02139.

6. DR. John T. FLICKINGER, Faculté de Médicine, Department de Chirugie Génerale, Centre Hospitalier Universitaire, SHERBROOKE, QUEBEC.

7. DR. John FOERSTER, 700 Bannatyne Avenue, WINNIPEG, MANITOBA.

8. DR. Raymond B. HESTER (Ph.D.) Division of Clinical Immunology and Rheumatology, The University of Alabama Medical Center, University Station, ALABAMA 35924.

9. DR. Patricia KONGSHAVN, University Medical Clinic, Room 1057, Montreal General Hospital, 1650 Cedar Avenue, MONTREAL 109, QUEBEC.

10. DR. W. LEITH, 4119 Sherbrooke St, West, Suite 8, MONTREAL 215, QUEBEC.

11. DR. George K. LEWIS, (Associate member), Immunology Research Unit, University of Mississippi, MISSISSIPPI 38677.

12. DR. Thomas J. MUCKLE, Department of Pathology, Room 2-703, McMaster University Medical Center, 1400 Main Street West, HAMILTON, ONTARIO.

13. DR. Mario S. NEMIROVSKY, Centre Hospitalier Universitaire, Université de Sherbrooke, SHERBROOKE, QUEBEC.

14. DR. Anthony S. RUSSELL, Room 9-112, Clinical Sciences Building, University of Alberta, EDMONTON, ALBERTA.

15. DR. Bakhshish S. SAMAGH (Associate member) Department of Microbiology, University of Guelph, GUELPH, ONTARIO.

16. DR. Jagat N. SINGH, Department of Physiology, University of Manitoba, WINNIPEG, MANITOBA R3E OW3.

17. DR. Mark A. WAINBERG (Associate member), Department of Microbiology, Columbia University, 630 West 168th Street, NEW YORK CITY, N.Y. 10032.

18. DR. Edna Sue WATSON (Associate member) Route 2, OXFORD, MISSISSIPPI 38655.

19. DR. Peter M. WELLS (Associate member) Department of Biomedical Sciences, University of Guelph, GUELPH, ONTARIO.

20. DR. Richard B. WHITNEY (Associate member), Ontario Cancer Treatment and Research Foundation, London Clinic, Radiobiology Section, LONDON 15, ONTARIO.

****

Appeal from the Secretary.

It has come to the attention of the Executive and Council of the Society that Visiting Scientists with interests in Immunology are frequently invited, from some distances, to various Centers in Canada in order to present papers at Meetings, University-organized courses, and "Antibody Clubs". Unfortunately, although there may be interested groups relatively close to the Center to which the visitor has been invited, full advantage is seldom taken of the situation. The request is, therefore, being made that any member of the Canadian Society for Immunology who is aware of a forthcoming visit to his area of a speaker concerned with the field of Immunology, contact the Secretary of the Society. In this fashion, this information may then be disseminated to various other groups in the country who might be interested in having this individual visit with them, and who could then contact him directly in order to make the appropriate arrangements.

By the same token, it would be of great value to the Secretary to have the names of those individuals who are members of the Society and who are Chairmen of "Antibody Clubs", or comparable organizations, which might take advantage of this type of service. In this fashion, as many members of the Society as possible, may benefit from the visit to our country of distinguished Immunologists.

Phil Gold, M.D., Ph.D.
Secretary, CSI.

****

INTERNATIONAL UNION OF IMMUNOLOGICAL SOCIETIES

Report on the Council Meeting, October 24-26, 1972.

The IUIS is continuing and increasing its role as a major force in international scientific co-operation. A successful Symposium on Genes and Antibodies in Gausdal, Norway, was organized by the Norwegian colleagues, in co-operation with the Symposium Committee of theIUIS. However, this was only the tip of the iceberg and the IUIS, besides organizing the Gausdal Symposium, has been working very hard on many fronts. Recently, a series of meetings of the IUIS Council, its various Committees and a newly formed IUIS body - the Commission for Europe - took place. These meetings were held in London, England, from Oct. 24 to 26, 1972. The following summary of the IUIS activities was given to us in an exclusive interview with Dr. B. Cinader, the President of the IUIS, and the Canadian representative.

New Member Societies.

Successful applications for membership were made by the National Societies of Argentina, Chile, Nigeria and Portugal. A number of other societies are in the process of being admitted and are currently represented by observers.

Second International Congress of Immunology.

The Congress will be held in Brighton, England, on July 22-26, 1974. The Secretary of the Organizing Committee is Dr. G.L. Asherson (Division of Immunology, Clinical Research Centre, Watford Road, Harrow, Middlesex HA13UJ, England). Emphasis will be placed on clinical immunology. As in Washington, a number of workshops will be held during the Congress. A preliminary list of the titles is given elsewhere in this issue. There will be one change in the format. During the First Congress, in Washington, a number of general sessions were held in which chairmen of the workshops reported on the highlights of their sessions. These reporting sessions were widely criticized (see CSI Bulletin vol. 5 No. 1) and it was decided that they should be replaced by informal open sessions for each workshop group, which will be held in the evening after the workshops. Nobody can predict the outcome of this new venture, but the willingness of the organizers to experiment to find better solutions is highly commendable. The proceedings of the Second Congress will be published reasonably quickly. The registration fee was previously set at 30 pounds. It is expected that a proportion of lodgings will be available at fairly low prices in dormitories.

The Third International Congress of Immunology.

Preparations are under way for the Third International Congress to be held in Australia in 1977.

Committee on Symposia (Chairman Dr. Askonas,
(Vice-chairman Dr. Rajewsky)

Three symposia are planned for 1973: Symposium on Differentiation and Function of Lymphoid Cells is to be held on Sept. 17-21, 1973, in Snagov, 40 km from Bucharest, Roumania. The local organizers are: Drs. I. Moraru and A. Sulica. The Symposium is organized jointly by IUIS and WHO.

Another symposium will be held in or near Mexico City. It is organized by a group of Mexican immunologists co-ordinated by Dr. Jesus Kumate in co-operation with IUIS. It will deal with the Mechanisms of Immune Damage; its date has not been fixed yet.

The possibility of organization of a Symposium in Chile is under active discussion. Details are uncertain, at the present time, and will be announced later.

Nomenclature Committee (Chairman Dr. Dray,
(Vice-chairman Dr. Natvig)

Several subcommittees on nomenclature are active and some are approaching conclusions which will be published in the not too distant future. One report has been already submitted for publication. A report on nomenclature of HLA antigens is being prepared in co-operation with the International Transplantation Society, and will be submitted for publication shortly.

Education Committee (Chairman Dr. Haber,
(Vice-chairman Dr. Roitt).

A "Summer" School is planned in Chile. The term "Summer School" is partly misleading, becase it will probably take place during the Chilean Winter.

Institute for Immunological Education and Studies

A proposal for the formation of this Institute has been discussed. It would be a joint venture of the IUIS, through its Education Committee and the WHO. It is envisaged that the Institute and the permanent secretariat of the Education Committee will be set up in Amsterdam. The Institute will also be linked with the famous Dutch blood transfusion service and with the University of Amsterdam. The main aims of this Institute can be summarized as follows:

1) Application of immunological principles to the medical and basic sciences;
2) Immunological methodology (techniques, reagents, etc.) in laboratory practice;
3) Diagnostic tests for immunologic disorders;
4) Therapy of primary and secondary immunologic disorders;

5) Integration of Immunology with other disciplines such as Pharmacology, Biochemistry, Endocrinology and Physiology;
6) Development of teaching methods.

The Institute will train medical and scientific graduates for diagnostic immunology and for research. It will also provide immunological training of non-academic laboratory personnel. An agreement has been reached with the Council of Europe with regard to definition of the levels of training. It is hoped that these levels can become international. The President of the IUIS will become a member of the Board of Governors of the Institute and the IUIS Educational Committee will be an advisory body to the Institute. The possibilities of the funding of the Institute are being negotiated with the Dutch Government.

The Commission for Europe

This new body has been formed to co-ordinate the efforts of the National Societies of various European countries. This Commission is chaired by Dr. Humphrey; one of the vice-chairmen is Dr. Bussard. The main activity of the Commission is the organization of annual meetings for presentation of free papers (Atlantic City-type meetings). Two National Societies will usually act as co-hosts at these meetings, which will be open to all members of IUIS. The first meeting will be held in Strassbourg and will be organized by the French Society and by the Gesellschaft für Immunologie. The Commission will publish a general monthly bulletin of vacant positions, post-doctoral fellowships, etc. The secretariat of the Commission will be handled by Dr. de Weck, who is also the Secretary General of the IUIS.

Clinical Immunology

An ad hoc Committee has been formed under Dr. Natvig to investigate whether any activities sponsored by IUIS are needed in this area. Anybody who has thoughts on this matter is invited to get in touch with Dr. J. Natvig, Research Institute of Rheumatology, F. Qvamsgate 1c, Oslo 1, Norway.

Standardization Committee (Chairman Dr. Raynaud, (Vice-chairman Dr. Evans, (Secretary Dr. Batty).

There is no doubt that standardization of immunological reagents has been badly neglected in the past and that there is a growing backlog of work to be done in this area. To be effective, the effort on standardization must be undertaken on an international scale. The IUIS is in an excellent position to do so in collaboration with W.H.O. However, this poses financial problems. Contributions from member societies just about cover the postage needed for the IUIS internal communication. So far, all other IUIS activities were financed by separate fund-raising drives. The standardization project differs

qualitatively from all previous activities. To be really efficient, it requires assured, steady financial support. Indeed, it will cost approximately $ 60,000.00 per annum for the first three years. This sum seems astronomical when compared with the money raising potential of the member societies. On the other hand, this sum is trivial if one compares it with the amounts of money which are wasted because of lack of standardization by various directly and indirectly government financed institutions and by hospital laboratories. Clearly, national governments would be the logical source of financial support for a Standardization Secretariat. If IUIS could secure financial support from six governments, each contributing $ 10,000.00 per annum, all financial difficulties would disappear and the project could be launched. On behalf of the IUIS, the President of IUIS and National Societies approached their governments asking for such support. It is hoped that a majority of national governments will recognize the importance of the project.

In Canada, Dr. J.M. LeClair, the Deputy Minister of Health, and Dr. A.B. Morrison, Director, Food and Drug Administration, were approached. We are awaiting a decision and the membership of CSI hopes that it will be favourable.

Following is the text of the Memorandum prepared by IUIS which is being used to explain and justify the proposed activities of the Permanent Secretariat of the IUIS Standardization Committee and to generate financial support for these activities.

****

Memorandum concerning the Operation of a Permanent Secretariat of the IUIS Standardization Committee.

Since its foundation in 1969, the International Union of Immunological Societies has considered one of its most important tasks to ensure and foster the establishment of immunological standards which should be made widely available at the international level. The increasing significance of immunology and immunological reagents for biological and medical research, as well as in most fields of public health makes it imperative that agreed international standards for a wide variety of immunobiological substances should be established. Aside from its interest and utility in research, an international standardization programme also appears a prerequisite for the establishment of legislative controls on the production, sale and quality of immunobiological products which are of increasing importance in public health.

Problems Involved in Standardization of Immunological Reagents.

The mechanism for setting up international standards was established about fifty years ago, and this mechanism now exists in the form of the Expert Committee on Biological Standardization of WHO (ECBS). This Committee has established many international standards and international

reference preparations both for immunological materials and for other substances, for example antibiotics, hormones, and enzymes. Standards may be established by the ECBS when a need has been demonstrated and when the offered material has been shown to be suitable for a standard.

However, before a material is established by the ECBS there is a period of time, sometimes of many years, during which there is a need for some reference material in order to correlate the results of research workers, or of clinical pathologists, or of those engaged in epidemiological research and surveillance. To begin to meet this need, several laboratories, notably the Division of Biological Standards in London (DBS) in collaboration with the Immunology Unit of WHO, have been producing "research standards"*) and making them available to all countries.

It has been the policy of the DBS that when any one of these materials had been sufficiently studied, both by collaborative assays in the laboratory and by field use, and had been shown to be widely needed, it should be documented and submitted to ECBS for consideration as an international reference preparation or an international standard. During the last eight years, five immunological standards (three separate preparations) of this type have been accepted and established by the ECBS and some have been deferred for future consideration.

The resources of a single laboratory in the DBS are not sufficient to produce all the research standards now required. Furthermore, the number of substances of which standards are needed and the use of such standards is increasing, and some international scientific organizations**) are already pressing for the development of more immunological research standards. Consequently, the Standards Committee of the IUIS has encouraged other laboratories, e.g., the Central Laboratory of the Red Cross Blood Transfusion Service, Amsterdam, to continue current work on the study and preparation of immunological reagents.

There are, therefore, two problems:

1. The Division of Biological Standards in London is providing considerable effort and expertise for the production of national research standards. These are requested by workers in many countries, to whom they are sent free of charge. The facilities of DBS in London are already fully extended by this work.

2. Other laboratories are producing standards or have expressed the intention to produce immunological standards for national or international use. Without some international agreement on the quality of such standards, and co-ordination of the programmes leading to the production of research standards and research reagents, a duplication of work and a confusion of standards may well develop.

*) The term research standard is explained and defined in paragraph III (b) of the "Notes on Biological Standards, issued from the Division of Biological Standards, May, 1968". The word "research" does not

imply that research standards are used only in research; many are used primarily in diagnostic procedures in clinical pathological laboratories. The term "research reagent" as used here has much the same relation to "research standard" as the WHO term "international biological reference reagent" has to "international biological standard". Standards are for quantitation, "reagents" are for qualitative assessment.

**) Some of these international scientific organizations are the World Association of Pathological Societies, the International Federation of Clinical Chemists and the International Committee for Standardization in Haematology, which is the Standardization Committee of both the International Society of Haematology and the International Society for Blood Transfusion.

The IUIS Standardization Committee

The International Union of Immunological Societies has endeavoured to solve the most urgent problems in standardization of immunobiological reagents by establishing a Standardization Committee, operating through a Permanent Secretariat in charge of co-ordinating the standardization activities of highly specialized laboratories throughout the world qualified and willing to undertake the preparation and characterization of immunological standards. Since the International Union of Immunological Societies represents all countries where immunology is studied (with the exception of the Chinese People's Republic), its Standardization Committee will be able to call on a wealth of information and scientific skills available to no single country or government.

At the First Congress of the International Union of Immunological Societies in Washington, in 1971, two meetings of the Standardization Committee were held at which a Permanent Secretariat was established to be housed at the Wellcome Research Laboratories, Beckenham, Kent, England.

The Secretariat will be under the control of the Standards Review Committee - Secretariat Committee, consisting of:

Dr. S.G. Anderson,	Division of Biological Standards, MRC Laboratories, Holly Hill, London NW3.
Dr. H. Baer,	NIH, Bethesda, U.S.A.
Dr. I. Batty,	(Secretary), Wellcome Foundation, London.
Dr. J. Bienenstock,	McMaster University, Hamilton, Ontario, Canada.
Dr. G. Eyquem,	Institut Pasteur, Paris, France.
Dr. K.W. Pondman,	Central Lab. of Blood Transfusion Service, Amsterdam, Netherlands.
Dr. C. Reimer,	CDC, Atlanta, U.S.A.
Dr. M. Raynaud,	Institut Pasteur, Paris (Chairman).
Dr. D. Rowe,	WHO, Immunoglobulin Lab., Geneva, Switzerland.

Operation and Planned Activities of the Standardization Secretariat.

The Secretariat will:

a) arrange for the writing of specifications for selected immunological reagents;
b) foster the development of immunological research standards and arrange for their preparation, examination, storage and distribution;
c) disseminate criteria for the acceptance and establishment of materials as immunological research standards;
d) obtain documentation of available "proposed immunological research standards" and submit this documentation to the Standards Review Committee. The Secretariat would not accept and establish research standards. This would be done only by the Standards Review Committee.
e) Work in co-operation with all interested bodies; for example - the World Health Organization, the World Association of Pathology Societies, the International Committee for Standardization in Haematology, the International Federation of Clinical Chemists etc., in the work of producing immunological research standards, and in the writing of specifications.
f) Arrange for annual meetings of the Standards Review Committee (Secretariat Committee).

The Secretariat Committee will welcome information from other bodies seeking to set up standards for substances of importance in medical research and clinical pathological diagnosis, so that they may collaborate where appropriate and avoid duplication of effort.

Since a number of its members are already concerned with standardization activities in connection with WHO Reference Centers or of National Agencies or Laboratories, this should ensure that the work of the Standardization Committee will not lead to waste or duplication of efforts but to the best use of scientific resources at the international level, and at the lowest possible cost.

Among the immunological reagents for which the establishment of international standards are currently considered the most urgent, by the Standardization Committee, are:

Reagents	Significance
Albumin	Clinical-pathological diagnosis, e.g.- in malnutrition and in oedema.
α1 anti-trypsin	Inhibitor of initiation of blood fibrinolysis.
Complement	For measurement of complement deficiencies in diagnosis.
Complement components, particularly C3	Research.
Fibrinogen	Quantitation in fibrinolysis in therapy and diagnosis.

Reagents	Significance
Fluorescent conjugates	For defining sensitivity of tests, e.g.- for T. pallidum, malaria, viruses and auto-immune diseases. Diagnostic and epidemiological investigations.
Hepatitis associated antigen	Diagnosis and epidemiology of hepatitis. Screening of blood and tissue donors.
Histocompatibility antigens	Tissue typing for transplantation procedures.
Immunoglobulin G	Specification of antisera for diagnosis of immunodeficiencies and of myelomas.
Immunoglobulin A	
Immunoglobulin M	As for immunoglobulin G, but also in perinatal immunity and in tropical epidemiology.
Immunoglobulin E	For diagnosis and research on allergic disorders.
Immunoglobulin kappa and lambda chains.	Biochemical and genetic research.
Radioimmunoassay reagents	Measurement of small concentrations of antigens, e.g.- insulin, growth hormone and thyrotropic hormone in blood.
Serum proteins other than immunoglobulins	
Transferrin	Research and diagnosis of anaemias and iron metabolism.
Tumour associated antigens	Examples are α1 foetal protein for diagnostic of adult primary hepatoma and colonic antigen for diagnostic of carcinoma of the colon.
Animal antigens - serum of guinea pigs, mice, rabbits and rats.	Research.

Leading immunological laboratories throughout the world would be requested to co-operate in establishing physico-chemical and biological criteria for proposed international standards. The Permanent Secretariat would arrange for their preparation, examination, storage and distribution.

Funding Activities

Obviously the international co-ordination activities and the distribution of immunological standards will require a stable level of funding for a period of at least five years, possibly 10 years. Since the whole project is designed to face the most urgent needs and to fill

only the immediate gap present in standardization and control of biological reagents, it is expected that after an initial period, the Standardization Committee will have become self-sustaining and/or that WHO and National Governments will have established the standardization and control mechanisms presently lacking in the immunological field.

A minimum budget for the first three years has been evaluated as $ 60,000.00 per year (see Annexe 1). It is intended in the first instance to approach governments in order to obtain the corresponding commitment of funds, since the project should be of prime interest to the Ministries of Health of numerous countries. The IUIS project has been thoroughly discussed with WHO and Public Health Officials. It has received support from the Director of the Immunology section of WHO. The IUIS as a non-governmental organization is already in official relationship with WHO.

Annexe I

Provisional budget for the first five-year period of the Secretariat of the IUIS Standardization Committee.

Yearly budget

1.	Personal		
	1 MD or PhD	$ 14,000.00	
	1 Typist (correspondence and administration of reagent library)	6,000.00	
	1 Senior technician	6,000.00	
	Social security 30%	7,800.00	
	Salaries		$ 33,800.00
2.	Lodging		
	Rent of room & Lab. space		2,000.00
3.	Administrative costs		
	Paper, stamps, photocopies, printing expenses	$ 3,000.00	
	Telephone, telegrams	1,000.00	
	Office furniture and material	2,000.00	
			6.000.00
4.	Packing charges & international transports		2,000.00
5.	Materials and supplies		5,000.00
6.	Cool cabinets (write off 20% per annum)		4,000.00
7.	Travel expenses		
	4 meetings secretariat and 1 general committee meeting in Geneva (6-7 persons)		4,000.00
	Subsistence (3 days/meeting)		2,500.00
	Travel expenses secretariat		1,500.00
8.	Contingencies		2,200.00
			$ 63,000.00

****

Second International Congress of Immunology.

Preliminary notices announcing the Second International Congress of Immunology have been already sent to all the members, by the Secretary. It is essential that all those who plan to attend, answer the questions on the post card and return it to the organizers. This will be a great help in planning all activities. Those who did not get their preliminary notices may obtain them by writing to Dr. Phil Gold, the Secretary C.S.I. Room 7135, 1650 Cedar Avenue, Montreal 109, Quebec, or directly to the organizers: The Secretariat, Second International Congress of Immunology, Institute of Biology, 41 Queens Gate, London SW7, 5 HU, England.

****

Preliminary List of Titles of Workshops to be Held During the II ICI.

1. Complement

Early complement components; Alternative pathway of complement activity; Complement and coagulation; Complement and chemotactic factors; Complement damage to membranes.

2. Immunoglobulins

Electron microscopy and X-ray studies of immunoglobulin; Tertiary structure of immunoglobulin; Immunoglobulin structure; Genetic coding of immunoglobulins; J chains; Monoclonal immunoglobulin; Myeloma protein with antibody activity; Secretory immunoglobulins; Assembly of the immunoglobulin molecule; Evolution of immunoglobulin molecules; Allotypes; Idiotypic antibody; Catabolism of immunoglobulins; Structural requirement for immunogenicity; Antibodies to enzymes.

3. Lymphocyte Physiology

Subclasses of T cells; T & B cell interaction in vivo; Soluble mediators of thymus bone marrow interaction; Thymic hormones; Origin of B cell; Markers for T and B cells; Functional cell markers; Ultrastructure of lymphoid cells; Multipotent stem cells; Continuous lymphoid cell lines; The earliest stages of lymphocyte activation; Mitogens for T and B cells; Chemistry of lymphocyte receptor sites; Cell electrophoresis; Cell migration; Embryology of the immune system; Biological activity of lymphocytes in continuous cell lines.

4. Immunological Unresponsiveness

Tolerance to homographs and tumours; Tolerance to proteins and haptenes; Inhibitory T cells; Depression of immunoglobulin synthesis by anti-immunoglobulin sera; Immunosuppression by microorganisms; The biochemical basis of the action of immunosuppressive agents; Target cell for the action of immunosuppressive agents; The use of anti-lymphocyte serum in clinical practice.

5. Immune Responses

Genetic control of immune responsiveness; Macrophages: their role in the induction of immune response; Primitive macrophage recognition mechanisms; Antibody synthesis in vitro; Antigenic competition; Mode of action of adjuvants.

6. Cellular Immunity

The evidence for peripheral sensitization in cellular immunity; The role of antibody in allograft rejection and delayed hypersensitivity; In vitro models of allograft rejection; The kinetics of lymphocyte populations during induction and manifestation of cell mediated immunity; Transfer factor; Jones-Mote reactions.

7. Tumour Immunology

Tumour antigens; Carcinoembryonic antigen; Immunotherapy of tumours; Immunology of oncogenic viruses.

8. Immunological Aspects of Inflammation

Pharmacological mediators of immediate hypersensitivity, I polymorphs and platelet factors, II plasma factors, III mast cells; Complement and phlogistic factors; Biological actions of anaphylactic antibodies; The role of immune complexes in immunological inflammation; Immunology and pharmacology of asthma; Lymphoid cells in inflammation; T cell cytotoxicity; Non T cell cytotoxicity; Cyclic AMP in immunological phenomena.

9. Immunology of Infectious Diseases

Immunity to mycobacterial infection and leishmania; Immunity to other bacteria; Immunology of venereal disease; Bacterial endotoxin and the Schwartzman reaction; Immunity to viruses; Immunity to malaria; Immunity to trypanosomiasis; Immunity to worms; Immunopathology of virus infections; Australia antigen; Immunity to fungal infections.

10. Clinical Immunology

Immunology of thyroid disease; Pernicious anaemia and other endocrine diseases; Myasthenia gravis and thymic disease; Experimental model of systemic lupus; Animal models of arthritis; Allergic vasculitis and polyarterities nodosa; Spontaneous animal disease resembling human disease; Rheumatoid arthritis and systemic lupus erythematosus; Immunology of renal disease; Immunology of respiratory disease; Immunology of gastro-intestinal disease; Immunology of liver disease; Immunohaematology, I Haemolytic anaemia, II Rh and isoimmunization, III Blood group substance, IV Antibodies to leucocytes; Immunology of skin diseases; Immunology of the eye; Immunological aspects of infertility; Immunology of clinical and experimental neurological disease; Mechanism of autosensitization; Primary immune deficiency disease;

Bone marrow transplantation; Immunology of granuloma; Human histocompatibility antigens; Immunology of ageing.

11. Immunological Techniques

Techniques of immunoelectron microscopy; Techniques of radioimmunoassay; Techniques for detecting immune complexes; Single cell techniques; Techniques of immunofluorescence and peroxide labelling; Techniques for separating lymphocytes; Techniques for affinity chromatography of cells; Techniques for assessing delayed hypersensitivity in vitro; Separation of lymphokines; Standardization of vaccines; Standardization of lymphokines; Automation in the clinical immunology laboratory.

12. Miscellaneous

Invertebrate immunology; Avian immunology; Primitive vertebrate immunology; Foetal maternal interactions; Antigenic modulation; Heterophile antibody; The role of the clinical immunologist; Immunological education; History of immunology.

Your comments on topics to be added or deleted would be welcomed. Please write to G.L. Asherson, Secretary, Congress Organizing Committee, Division of Immunology, Clinical Research Centre, Watford Road, Harrow, Middlesex, HA1 3UJ, England.

****

STANDARDIZATION WHY and HOW?

During the past few years remarkable progress has been made in appreciating and unravelling the complexities of host defense responses to external threats and internal challenges; these developments have made immunology one of the most stimulating areas of current scientific research. We are witnessing a rapid expansion in the number of human diseases recognized as having major immunologic involvements. Immunologic diseases have, therefore, come to be recognized as constituting a major segment of modern medicine. In this context, and also in the broad area of infectious disease control, there has emerged in recent years a massive application of immunologic knowledge to the diagnosis, management, and therapy of a large array of clinical disease states. These key functions and services depend to a large extent on an expanding, varied and diverse array of immunologic reagents. Early in the development of such reagents they were prepared by investigators as needed. Later on, as their use became widespread, commercial organizations began to take over the manufacture and distribution of these materials. This business has grown enormously in recent years, both as regards the number of new concerns organized and entering the field, and also the number and kinds of reagents produced in response to a great demand by clinicians and experimentalists alike. There has thus resulted in both a proliferation of new companies and the entry of a number of large, established firms; this activity is now big business. From the professional point of view, there exists little or no control or regulation with respect to the actual identity of many of these products, nor their specificity or potency. In this national and international, free-wheeling marketplace, the motto: "Let the buyer beware" really applies. The potential for trouble or even disaster is very real. Clearly, what is urgently needed is an appropriate organization to standardize these key reagents that now play such a vital role in clinical immunology. The International Union of Immunologic Societies is the logical organization to assume such a responsibility and, given the modest support requested, it can begin to redress the present imbalance, totally in favor of the commercial producers of immuno-diagnostic reagents. Indeed, the hope is that eventually commercial producers would find it difficult to effectively market improper reagents without the testing and certification in terms of the standardization unit proposed. Conversely, the knowledge that a commercial product had been checked and approved by a standardization unit would give valuable assurance to the clinician, depending on the quality of the reagent in question.

****

SOME CONCERNS ABOUT NEW M.R.C. POLICIES AND PROCEDURES

Submitted by Dr. A. Sehon to Dr. Mark Nickerson* on May 24, 1972, for possible transmission to the "M.R.C. Priorities Selection and Review Committee" at its meeting in early June.

Financial Support

While I recognize the need for continual vigilance by the Medical Research Council in re-assessing its policies and scale of priorities as regards its support of training and research projects in health-related biomedical fields, particularly in these days of an accelerating rate of change of knowledge and scientific methodology, I am deeply disturbed by:

(i) The imbalance between the almost imperceptible increase (of the order of 5% per annum) in the M.R.C.'s budget for 1972-73and the realistic needs to raise the M.R.C. budget to offset at least the rate of inflation. Failure to do this must be considered a convert policy by the Government to reduce the overall research operations in academic institutions, since it will result in the elimination of many ongoing, active research programs. This financial imbalance has been rendered particularly acute because the increases in M.R.C. budgets in the last 2-3 years have barely compensated

(a) for the increase in costs of scientific supplies, instruments, experimental animals, and in salaries of professional and technical personnel, due to inflationary trends, and

(b) for the effective loss of M.R.C. funds due to taxation of trainees' stipends;

(ii) The continual funnelling of funds, in these times of severe economic constraints, from the overall M.R.C. budget to new programs (e.g. M.R.C. groups, negotiated development grants, special fellowships for areas in which "research training appears to be at a low ebb", etc.), which are not subjected to the <u>same</u> peer review as operating grants and which are supported at the cost of the latter grants;

(iii) The unreasonably high "cut-off point" (which is according to rumours close to 70 percent of the highest rating) for approval of M.R.C. support, which is the result of the above two factors and which eliminates an increasing number of qualified research workers.

* Chairman, Board of Can. Fed. Biol. Societies, 1971-72.

Procedure of Assessment

I should like to re-affirm my belief that the M.R.C.'s method of allocation of funds to individual investigators, which is based on a rigorous peer review, is probably the most effective way to ensure that high quality standards be maintained and that excellent research workers be supported across the country. However, I also believe that anyone who has been a member of a review panel would recognize the difficulty, if not the impossibility, of establishing "absolute" standards for judgement of applications containing untested ideas and original approaches, since each peer's judgement is by necessity coloured by his expertise and prejudices.

Obviously the present method of assessment ensures the unqualified support for grantees submitting an excellent application with a first-rate record of publications and productivity, and the unqualified rejection of mediocre and sub-mediocre projects. But what about the large number of applications which embody solid and sound research programs, and occasionally also highly original but unfashionable topics? These (controversial) applications are difficult to judge in absolute terms, and I would expect that they probably represent the majority of all applications receiving average ratings, e.g. this year they may have fallen in the broad spectrum range of 55-70% of the highest mark, reflecting the lack of a firm conviction on the part of individual reviewers to damn these applications categorically, i.e. reflecting a rating of a "hung jury". It would be interesting and important to establish the actual "distribution curves" of the ratings allocated by different panels. If the majority of ratings fall indeed into this middle category, I would question not the fairness of this assessment procedure but the validity of this basis for distribution of funds. Whether or not an application in this category receives a grant would be a matter of chance rather than a reflection of its intrinsic scientific value, since a fraction of a rating point would make all the difference between outright support or a "terminal" grant (if not a rejected application).

From the limited information released in the M.R.C. Newsletter of April 15, 1972, (Vol.2, No. 3, p.4), it is obvious that only 66% of the applications considered by all the M.R.C. grants committees in November 1971 and February 1972 for the current fiscalyear of 1972-73 were approved for funding (the allocated funds amounted to 50% of the funds requested). It would have been enlightening to have the additional information as to how many of these applications were rated as "terminal" grants. From a random evaluation of this problem, based on my personal impressions gained in talking to M.R.C. grantees from three centers, I have the feeling that about 1/3 of the applications approved are in the "terminal" category. If this guess is close to being correct, it would then follow that less than 50% (i.e. close to 44%) of the applications submitted received the unqualified blessing for support and that some of the current "terminal" projects eould end up next year as "rejected" projects without any support whatsoever.

The next question we ought to ask ourselves is "where are we going to draw the cut-off point next year"? Will it rise to a higher level of, say 70-80%, because of further diversion of funds to special programs, and thus eliminate more of the individual research workers? If this analysis is approximately correct (and this I cannot ascertain because of lack of hard data), I could not hold any longer the view that the present procedure for distribution of funds in support of research in our medical schools is fair, since 50% of our colleagues will be eliminated from active research and the standards of teaching in our medical schools are bound to be undermined. To avoid the discontinuation or disruption of many good research projects, the following modification of the present system of awarding grants is suggested:

(i) The minimum cut-off level for outright rejection be predetermined, say at the level of 50% of the highest rating;

(ii) Only applications with ratings above 70% receive the funds recommended by the review panels;

(iii) The remainder of the funds available be divided according to some equitable formula to applicants with ratings between 51 and 69%.

This procedure, although also far from ideal, would at least ensure that most of our colleagues with a reasonably good research record be kept intellectually alive,

Duration of Operating Grants

To provide stability for planning effectively, a research program and the possibility for exploring new ideas and leads, and in order to save the grantees', as well as the reviewers' time (which is becoming progressively more heavily taxed), it is recommended that operating grants be awarded for longer periods than at thepresent, i.e.:

(i) The minimum term of a new grant or of a renewal grant, receiving a high priority rating, be three years;

(ii) The term of a grant with a high priority rating to an "established investigator" (i.e. to a grantee who has demonstrated continuous research productivity for a number of years and who has the confidence of the review panel to be capable of a continuing, first-class research performance) be extended to a term of five or in some cases, seven years:

(iii) The present practice of awarding one-year "terminal" grants be continued when a renewal application is considered to be below the acceptable level for unqualified support.

Professional Personnel Support

While I am in agreement with M.R.C.'s well intended decision to regulate the growth of our professional population, in relation to the predicted needs of the Canadian scientific market, by stipulating the maximum number of trainees (graduate students and postdoctoral fellows) who may be employed on a given grant, I am concerned about the delecterious effects of the recent rulings:

(i) To limit financial support of pre-doctoral trainees, paid from research grants, for the first four years of their training only. Such a policy would clearly discriminate against students who received first a Master's degree and then wish to continue their studies for a Ph.D. degree. It is the exception, rather than the rule, that a student can obtain both degrees within four years; normally, it takes two years for completion of an M.Sc. program and 3-4 additional years for a Ph.D. degree.

(ii) To reduce the period of eligibility for support of P.D. fellows from three to two years and the changes in regulations pertaining to the maximum age in this group; many trainees of merit, particularly if they have switched their research area or technical approach, may find their fellowship terminating just as fruition of their work is in sight. Furthermore, the productivity, quality and long-term impact of the work undertaken by P.D. fellows will be limited because of the deliberate selection of problems that can be completed in less than two years.

Training of graduate students and P.D. fellows entails expenditure of effort, time and funds on the part of a grantee and does not necessarily lead to publishable data. It might, therefore, be worth considering establishing a category of "training grants" (distinct from research grants) in a few centers, which possess the critical mass of investigators capable of providing uptodate training in specialized areas.

(iii) To maintain the salaries of Professional Assistants at an unreasonably low level. From a comparison of the maximum salaries payable to postdoctoral trainees and Professional Assistants, which are listed below, it is evident that the Professional Assistant is being discriminated against by being forced to accept a loss in salary (of the order of $ 1,200) in his initial appointment to this category of scientific personnel.

(a)	P.D. fellow in his first year following Ph.D.	$ 8,300	increment of $ 850.
(b)	P.D. fellow in his second (and last permissible) year	9,150	
(c)	Professional Assistant - i.e. in his third year after Ph.D. (i.e. after two years as P.D. fellow)	8,600	decrement of $550 (instead of increment)

It would be reasonable and justifiable that a Professional Assistant in the third year after his Ph.D. be paid a salary of the order of $ 10,000. per annum, which is not an excessive salary if one considers that the current starting salary for research technicians with a Master's degree (i.e. with 6-7 years of research experience less than that of a Professional Assistant) is in the order of $7,500. per annum, and that the minimal annual increments in recognition of good service and of the higher cost of living is of the order of 6% per annum. Moreover, it is worth pointing out that according to the M.R.C. 1971 booklet "Grants and Awards guide", the scale of salaries for Professional Assistants is stated to be an extension of the maximum salaries authorized by Council to be paid to research trainees with a Ph.D. or professional degree. On the basis of this apparent inconsistency, it would seem that M.R.C. is making a disguised effort to eliminate this category of professional worker from Canadian laboratories.

I believe that, on general grounds, for the optimal utilization of grant funds and the grantee's time, the M.R.C. ought to reconsider these rules so as to provide maximum flexibility to the grantee within the budget approved for his research program by his peers, since flexibility is particularly important when funds are limited.

Research Priorities - Centers of Excellence

I should like to emphasize that, in principle, I favour the establishment of M.R.C. groups and of centers of excellence (I prefer the term "centers of specialization"), since it is obvious that the likelihood of success of a well co-ordinated group of investigators working in harmony towards achieving well-defined goals, with adequate financial support guaranteed for an extended period of time, would be larger than that of individual investigators working in isolation on diverse projects supported on a short term basis. Indeed, if one were to consider the source of major contributions in biomedical research in recent years, one would trace them to research centers with integrated programs and with a multi-disciplinary approach (e.g. M.R.C. units in the United Kingdom, Karolinska Institute, National Institutes of Health, Pasteur Institute, Wistar Institute, Weizmann Institute, Walter and Eliza Hall Institute for Medical Research, Worchester Foundation, etc.).

However, I doubt that proliferation of "centers" at this time is wise, if additional funds are not provided by the Government for these ventures and if they are to be developed at the cost of ongoing, individual research programs.

The idea that M.R.C. should decide on research goals and priorities is obviously attractive. However, this exercise is not without risk since it is difficult, if at all possible, because of the quickly shifting trends in research, to be sufficiently clairvoyant to be able to predict a set of priorities which will be valid for a sufficiently long period. Nevertheless, if in the Committee's view

there are underdeveloped areas which require urgent bolstering by infusion of personnel and resources, these should be developed with supplementary government funds earmarked for these specific goals and not at the expense of the existing programs which in some cases are barely surviving on meagre budgets. In any case, if the Committee considers that channelling of funds for specific aims is absolutely warranted, even if supplementary funds for these projects do not become available, this should be done but only without bypassing the existing appropriate review panels; otherwise a category of privileged research grants awarded on the recommendation of ad hoc committees will be established in what might appear at this time as fashionable or politically expedient priority areas.

I realize that some of these comments may be redundant, since I should obviously not preach to the converted, but I feel that one of the principal preoccupations of the Committee on Priority Selection and Review should be to find a reasonable solution for obviating the frustration and the plight of an ever-increasing fraction of Canadian biomedical scientists, who have initiated in recent years active and challenging research programs and who, because of the present shortage of funds, have their grants terminated on a somewhat haphazard basis, although the peer evaluation system is in itself fair and beyond obvious criticisms. Under the able chairmanship and leadership of Dr. Malcolm G. Brown, the M.R.C. has been able to emerge from a state of utter penury and recently Canada has appeared to be on the way to developing strong centers in a number of fields, and has been able to attract excellent research workers from many countries. However, if the present trends continue, some of these newer research ventures will be nipped in the bud and we shall return to our former conditions of relative mediocrity, primarily because of our inability to sustain effective research programs capable of competing with similar projects in other countries. This comment is not to be regarded as a criticism of the policies of the Medical Research Council, but is aimed at some of our politicians who because of lack of vision expect quick returns from inadequately supported research programs. To bring this into proper perspective, one must remember that the total M.R.C. budget for 1972-73 is less than $ 37.5 millions, (i.e. less than 75% of the cost of two 747 jumbo jets), a sum representing a small fraction of the total economic benefits derived from medical research, as substantiated by the cost-benefit evaluation provided in the attached copy of the recent article by Dr. Hugh Fudenberg of San Francisco (J. Lab. Clin. Med., 79, 353, 1972).

Alec Sehon

Winnipeg, May 24, 1972.

****

WHO: INTERNATIONAL RESEARCH

There is no doubt that the flood of new knowledge that is being acquired through biomedical research in countries with highly developed technologies could be applied more effectively for the control of many of the diseases in the developing countries of Africa, Asia and Latin America. To meet this challenge in the field of immunology, the WHO Immunology Research and Training Centres (IRTCs) were created. Their aim is to increase the small number of scientists capable of doing research in the immunology of the parasitic and other tropical diseases, which affect so large a part of humanity.

It is easy to see why immunology was chosen as a discipline in which research and training centres should be developed; not only does immunology provide new insights into the mechanisms which the body has developed for protection against infectious agents, but often only a relatively short time is required to translate the results of basic research into means for diagnosing disease, or vaccinating against them.

The guiding aims and principles of the IRTCs are:

1. To help develop a nucleus of immunologists in each of the several regions of the world where immunological research is needed but difficult to organize, so that the indigenous basic and medical scientists can devote their efforts to solving the disease problems peculiar to their own region.

2. To bring experienced immunologists from other regions to one of the centres to help in training students and to work in collaboration with local scientists doing research on diseases of special local significance, such as malaria, leprosy and sleeping sickness. The visiting scientists learn of the challenging immunological problems relating to diseases in different areas of the world, and when they return to their own countries they often continue to work on research related to these problems.

3. To carry out the initial training of immunologists in their own country or region. This reduces the risk of loss through emigration as a result of prolonged training abroad and also increases the likelihood that their research will be directed towards the solution of regional or national disease problems.

4. To create, with initial WHO support, an immunological centre of excellence that can become a continuing freaure of the host institution. In a university setting, an immunology research and training centre can serve as a centre of experience and knowledge, It can also act as a means for maintaining direct contacts with other research workers throughout the world.

5. To train enough local scientists in adequately equipped and supplied laboratories, so that when the WHO personnel leave there will be an actively functioning unit which is an integral part of a medical school.

WHO Immunology Research and Training Centres have been designated in Ibadan, Nigeria, Sao Paulo, Brazil, Mexico City, Singapore, Beirut, and New Delhi. Thw WHO International Reference Centre for Immunoglobulins in Lausanne, Switzerland, became a Research and Training Centre for advanced training in immunology in 1968. Two other centres for advanced training in immunology will be designated at the Basle Institute of Immunology in Switzerland, and at the Weizmann Institute in Rehovoth, Israel. As the oldest IRTC, the Ibadan Centre will be used as an example and described in some detail, although similarly important developments are taking place in Lausanne, Sao Paulo, Singapore, Mexico and in the newly established Beirut Centre.

The Ibadan Centre in Nigeria, at the University College Hospital, an integral part of the University of Ibadan, has held five annual intensive post-graduate courses in immunology. The course lasts for four months and each year up to eight participants (medical scientists from various fields, including veterinarians) receive a thorough grounding in basic concepts and laboratory techniques in immunology.

Research is concentrated on malaria and trypanosomiasis, as well as on parasitic diseases that may produce a high concentration in Africans' blood of a special class of antibody that is usually thought to be responsible for common allergic reactions. For malaria, three techniques are being compared as methods to test the level of antibodies against malaria parasites in a savannah area where malaria eradication procedures are being employed. The hope is that these blood tests will be more accurate, sensitive and specific for detecting exposure to malaria parasites than present methods of taking temperature to detect fever or examining thick blood smears to detect the presence of malaria parasites. Such tests could then be used to judge the success of malaria eradication programmes in other parts of the world. Another study in malaria is of nephritis that is frequent in parts of Africa and is apparently associated with certain types of malaria. Evidence has been collected that the complexes formed by malaria antigens and with anti-malaria antibodies have localized in the kidneys of such patients; these antigen-antibody complexes may well be what sets off the nephritic reaction.

WHO immunologists also head the Lausanne and Singapore Centres, but in Mexico, Sao Paulo and Beirut the centres are run by local immunologists. They receive support in the form of visits by consultant immunologists to help in training and research in specialized areas of immunology.

The Lausanne Centre (at the Institute de Biochimie and Institute Suisse pour Recherches experimentales sur le Cancer) runs courses for advanced training in immunology. At the 1970 course

fourteen participants attended, from Brazil, Chile, Hungary, India, Japan, Lebanon, Mexico, Nigeria, Poland, Singapore, Spain, Thailand, Yugoslavia, and USSR. The Centre also serves as an immunoglobulin reference centre and provides reference reagents for measuring levels of the different classes of antibodies in human serum. Research projects include studies of "local"immunity", e.g. the antibodies made locally in the gastro-intestinal tract which appear in intestinal secretions in cholera and in other enteric infections, and studies of the role of cellular immunity in resistance to leishmaniasis. In the Singapore Centre, participants from Singapore, Indonesia, Malaysia, Thailand, Burma, India, Japan, Ceylon, Taiwan, Fiji and the Philippines have learned techniques and concepts of modern immunology in three annual four-month courses. Research projects are varied. One is directed to methods for detection of Australia antigen in hepatitis. The antigen is closely associated with serum hepatitis. This is of great potential importance to blood transfusion because detection and exclusion of blood donors carrying the antigen could significantly reduce the risk of hepatitis from transfusions. Another study comprises an attempt to discover why certain Chinese in Singapore have a higher incidence of nasopharyngeal cancer than other ethnic groups in that city. There are also research projects on population genetics and disease incidence, as well as cellular immunity in leprosy, filariasis and toxoplasmosis. In the Sao Paulo centre (Butantan Institute, University of Sao Paulo) a crippling skin disease, pemphigus, which is rare in North America and Europe but which is a public health problem in certain parts of Brazil, has been found to be associated with high levels of auto-antibodies to skin. Research on protective antibodies to snake venoms is under way. Participants from Argentina, Brazil, Chile, Peru and Uruguay have received instructions in the latest immunological methods.

The Beirut Centre (American University of Beirut) will provide training in immunology, and research projects will concern the important problem of the effect of nutritional deficiency on immune responses. Advanced training in specialized areas of immunology will be available at the Weizmann Institute in Rehovoth, Israel, and the Basle Institute of Immunology in Switzerland. In Mexico City, advanced training in the form of a three-year doctorate course in immunology is given, as well as shorter courses, such as in 1971 on the techniques used in clinical immunology. It is planned that the New Delhi Centre will also organize courses; research projects already under way there include studies of cellular immunology in leprosy and cancer.

WHO fellowships support foreign trainees in the Centres, and small amounts of money are made available for reagents, glassware and some equipment. However, in all the Centres of the laboratories and classrooms, the heavy equipment, specialized laboratory facilities and local counterpart personnel are supplied by the national host institution.

It might be thought that a more efficient way of solving research problems in immunology of a tropical disease would be to send in a research team, without taking the additional time and expense needed to

train local people. However, in WHO's experience, such undertakings are usually effective only if co-operation is arranged with local scientists and practitioners who are included in the work and in the evaluation of the results, and if trained personnel are prepared to carry on the research when the visiting team leaves.

More and more graduates are returning to the developing countries and need the kind of further competent guidance and training that can be provided by research teams sponsored by national and international organizations. The effectiveness of any research programme will be increased by including guidance or training for graduates in the developing countries, and the participation of local scientists in truly collaborative research projects will lead to better communication and form a bridge between developed and developing countries.

H.C. Goodman,
CHIEF, IMMUNOLOGY, WHO.

(Reprinted with permission from "World Health").

WHO IMMUNOLOGY RESEARCH and TRAINING CENTRES:

1.	Ibadan	(Nigeria)	6.	New Delhi	(India)
2.	Sao Paulo	(Brazil)	7.	Lausanne	(Switzerland)
3.	Mexico	(Mexico)	8.	Basle	(Switzerland)
4.	Singapore	(Singapore)	9.	Rehovoth	(Israel).
5.	Beirut	(Lebanon)			

WHO INTERNATIONAL REFERENCE CENTRES:

Serology of autoimmune disorders:

1. London (United Kingdom)
2. Buffalo (U.S.A.)
3. Melbourne (Australia)

Human Immunoglobulins:

1. Lausanne (Switzerland)
2. Bethesda (U.S.A.)

Prevention of Rhesus Sensitization:

1. London (United Kingdom)

Genetic factors of Human Immunoglobulins:

1. Rouen (France)
2. Lund (Sweden)
3. Cleveland (U.S.A.)

Tumour Specific Antigens:

1. Moscow (U.S.S.R.)

Natural Resistance Factors:

1. Prague (Czechoslovakia)

****

WHERE TO PUBLISH? WHAT TO READ?

The recent surge in interest in Immunology has been marked by a plethora of new journals of Immunology which have appeared throughout the world. Consequently, it was deemed useful to provide Society members with a list of the recent journals as well as some information regarding the names and the addresses for submission of articles and for acquiring journal subscriptions. In enumerating the list below, attention was given to the degree of content in that only those journals whose primary or total content is related to Immunology are listed. Before submitting a manuscript to a given journal, it would be advisable to check the information given in the latest issue of this journal, since some journals have regional editors. Because of lack of space we are unable to give the names of all the regional editors.

Name of Journal	Address for Submission of Manuscripts	Publisher and Address for Subscriptions.
Journal of Immunology.	Dr. Joseph D. Feldman Department of Experimental Pathology, Scripps Clinic and Research Foundation, LA JOLLA, CALIFORNIA 92037, U.S.A.	Williams & Wilkins Co. 428 East Preston St., BALTIMORE, MARYLAND, 21202.
Immunology	Dr. L.E. Glynn MRS Rheumatism Research Unit, Canadian Red Cross Memorial Hospital, Taplow, Maidenhead, BERKSHIRE, ENGLAND.	Blackwell Scientific Publications, 5 Alfred St., OXFORD OX 1 4HB, ENGLAND.
Immunochemistry	Prof. Fred Karush, Dept. of Microbiology, School of Medicine, U. of Pennsylvania, PHILADELPHIA, PENNA. 19104.	Pergamon Press, Subscriptions Manager, Headington Hill Hall, OXFORD OX3 OBW ENGLAND.
Clinical and Experimental Immunology.	Dr. W.J. Irvine, Dept. of Endocrinology, Royal Infirmary, EDINBURGH EH3 9YW, SCOTLAND.	Blackwell Scientific Publications, 5 Alfred Street, OXFORD OX1 4 HB, ENGLAND.

Clinical Allergy	Prof. J. Pepys, Dept. of Clinical Immunol. Institute of Diseases of the Chest, Brompton, LONDON SW3 ENGLAND.	Blackwell Scientific Publications, 5 Alfred Street, OXFORD OX1 4 HB, ENGLAND.
Transplantation	Dr. E. Eichward, Transplantation, Main Editorial Office, University of Utah Medical Center, SALT LAKE CITY, UTAH 84112.	Williams & Wilkins Co. 428 East Preston St., BALTIMORE, MARYLAND 21202/
Tissue Antigens	Tissue Antigens. Dr. F. Kissmeyer-Nielsen, Blood Bank, Kommune Hospitalet, DK-8000 Aarhus C. DENMARK.	Munksgaard, 35 Norre Sogade DK-1370 COPENHAGEN K, DENMARK.
European Journal of Immunology.	Dr. A. Mitchison, Medical Research Council, National Institute for Medical Research, Mill Hill, LONDON NW 7, ENGLAND.	Verlag-Chemie, 6940 Weinheim/Bergstr. PAPPELALLEE 3 GERMANY, OR Academic Press, 111 Fifth Avenue, NEW YORK, N.Y. 10003.
Scandinavian Journal of Immunology.	Dr. J.B. Natvig, Institute of Immunology, & Rheumatology, Rikshospitalet, OSLO 1, NORWAY.	Universitetsforlaget, P.O. Box 307, Blinden, OSLO 3, NORWAY, OR P.O. Box 142, BOSTON, MASS. 02113, U.S.A.
Journal of Experimental Medicine.	Editors, Journal of Experimental Medicine, The Rockefeller University, NEW YORK, N.Y. 10021.	The Order Service of Rockefeller University Press, 66th St. & York Avenue, NEW YORK, N.Y. 10021

Journal of Immunological Methods.	Dr. J.R. Battisto, Executive Editor, Albert Einstein College of Medicine, Department of Microbiology and Immunology, Eastchester Road and Morris Park Avenue, BRONX, NEW YORK 1046, U.S.A.	Elsevier/North Holland, P.O. Box 3489, AMSTERDAM, THE NETHERLANDS.
International Archives of Allergy & Immunology.	Dr. F. Milgrom, State U. of New York, School of Medicine, Dept. of Bacteriology & Immunology, Sherman Hall, Science Drive, BUFFALO, N.Y. 14214.	S. Karger, P.O. Box 352, WHITE PLAINS, N.Y. 10602.
Cellular Immunology.	Dr. H. Sherwood Lawrence, Infectious Diseases & Immunology Division, Dept. of Medicine, New York University Medical Center, 550 First Avenue, NEW YORK, N.Y. 10016.	Office of the Publishers, Academic Press, 111 Fifth Avenue, NEW YORK, N.Y. 10003.
Immunological Communications.	Editorial Office, The Center for Immunology, 203 Sherman Hall, School of Medicine, State University of New York, at Buffalo, BUFFALO, N.Y. 14214.	Marcel Dekker, Inc. 95 Madison Ave., NEW YORK, N.Y. 10016

In addition to the above list of journals there are a diverse number of journals which regularly possess a considerable content of Immunology. These would include the weekly periodicals Nature, and Science, as well as monthly journals such as some of the clinical journals in rheumatology, internal medicine, and microbiology.

This has been a rather brief description of what is now a rather crowded area. It is hoped that the list provided will assist readers in making a decision as to where they might publish their work.

Compiled by D. Eidinger.

****

NEWS

R.R. RACE and Ruth SANGER receive the Gairdner Foundation International Awards in 1972.

This year's Gairdner Awards were given to K.S.D. Bergstrom, B. Chance, O. Hornkiewicz, and last but not least to R.R. Race and Ruth Sanger, a couple well known to every immunologist. Drs. Race and Sanger, by a rare combination of brilliance and hard work, technical skill and gift for generalization, patience and sharpness of observation, have made unsurpassed contributions to an understanding of every aspect of human blood groups. Their book "Blood groups in Man", now in its fifth edition, is an essential piece of equipment in every blood group and immunogenetics laboratory. As in previous years, the Foundation has made an excellent choice.

The official citation for the award is:

"Robert Russell Race, C.B.E., Ph.D., F.R.C.S., F.R.S.
Ruth Sanger, B.Sc., Ph.D., F.R.S.
London, England.

For their many important contributions to our knowledge of human blood groups, and for their brilliant application of this knowledge to problems in the fields of immunology, genetics, and clinical medicine."

The Gairdner Foundation was established by Mr. James A. Gairdner (1893-1971) in 1957. Since 1959 the Foundation has been giving the Gairdner Foundation International Awards. It is the purpose of these awards to confer signal and substantial recognition to individuals whose recent work or discoveries constitute tangible achievement in medicine, especially in the fields of arthritis, rheumatic, cardio-vascular, allergic and auto-immune diseases. The list of the Gairdner Award winners since 1959 has grown to over 80 names and includes such well known scientists as C.H. Best, F.H.C. Crick, and F. Sanger.

Among the immunologists, the Gairdner Award winners were: Dr. B. Chown (1968), R.R.A. Coombs (1965), A.H. Coons (1962), Deborah Doniach (1964), R.A. Good (1970), J.L. Gowans (1968), P. Grabar (1963), N.K. Jerne (1970), H.G. Kunkel (1962), P.J. Moloney (1967), J. Oudin (1968), K.R. Porter (1964), I.M. Roitt (1964), and J. Waldenstrom (1966).

****

British Transplantation Society.

This Society was established at an Inaugural Meeting under the Chairmanship of Sir Peter Medawar, FRS, on April 12th, 1972. The Society will be affiliated with the British Society for Immunology and joint membership (5 pounds) will be possible. The Officers of the Society are as follows:

General Secretary: Professor L. Brent (address as below)

Meetings Secretary: Mr. A.D. Barnes, FRCS,
25 Metchley Park Road,
EDGBASTON, BIRMINGHAM 15.

Treasurer: Mr. John Hopewell, FRCS,
The Royal Free Hospital,
LAWN ROAD, LONDON NW3.

Committee: Professor J.R. Batchelor,
Professor R.Y. Calne,
Dr. H. Festenstein,
Dr. E.M. Lance,
Sir Peter Medawar, and
Dr. J. Salaman.
Professor J.L. Turk will be
B.S.I. representative.

Anyone wishing to join the Society and/or to obtain further information should write to Professor Brent at the Department of Immunology, St. Mary's Hospital Medical School, LONDON W2.

****

Immunodeficiency-Cancer National Registry.

The registry is being established at the University of Minnesota, under the direction of Drs. R.A. Good, J.H. Kersey, W.J. Runge and Ms B.D. Spector. The impetus of this project stems from the recommendation of the WHO Expert Committee on Immunodeficiency Diseases ("Primary Immunodeficiencies", WHO Bulletin, 1971, 45:125-142 and 946). The Committee recommended the establishment of two separate registries; one for immunodeficient patients who have been treated with organ or cell transplantation and the second for those cases in which malignancies have occurred. A review of some of these cases can be found in an article by Gatti and Good ("Occurrence of Malignancy in Immunodeficiency Diseases: A Literature Review", Cancer, 1971, 28:89-98).

It is intended to contact physicians who are treating patients with immunodeficiency diseases to inquire if malignancies have occurred among their patients. Descriptive and clinical data will be collected

and compiled as part of the Immunodeficiency-Cancer Registry program. Information from participants in the Registry program will be useful in establishing incidence figures of malignancy among patients with immunodeficiency diseases. If available, serum and fresh or cultured tumor material will be obtained from these patients for laboratory study. The cultured tumor will then be available to all participants in the Registry program. Anyone interested in the Registry programme is asked to contact Ms Beatrice Spector, Research Specialist, Department of Pathology, 198 Jackson Hall, University of Minnesota, Minneapolis, Minnesota 55455, U.S.A.

****

Current Programs

Current Programs, a new monthly publication, is expected to publish the scientific programmes of about 1,200 international, national, and regional meetings each year. These meetings will include about 120,000 papers covering the life sciences and medicine, chemistry and the physical sciences, and engineering. Current Programs will give the titles of the papers, and the names and addresses of the first authors as listed in the programme.

Literature, describing Current Programs, and full information on subscription may be requested from World Meetings Information Center, 824 Boylston Street, Chestnut Hill, Massachusetts 02167.

****

Canadian Branch of MEDLARS and MEDLINE

The National Science Library (NSL) of the National Research Council has operated since August 1970 the Canadian branch of MEDLARS (Medical Literature Analysis and Retrieval System), the mechanized information retrieval facility of the National Library of Medicine of the United States. One of nine computer-based tape services used by the NSL in its current-awareness service (CAN/SKI), MEDLARS provides an important information source for clinicians, practitioners and researchers in the health sciences.

In October 1971 a new feature of the MEDLARS system was introduced: on-line search capabilities for a large portion of the data base. The service, which is called MEDLINE, covers about 1,100 of the basic journals of the health sciences for the period January 1969 to date. The system can be accessed through several types of terminals (Teletype TWX, IBM 2741, Execuport, etc.). It is linked through the Tymshore Communications network, with nodes in various cities across the U.S. so that participating libraries pay telephone line charges only to the node nearest to them.

In June of this year, a formal agreement was reached between NLM and NSL concerning MEDLINE access, so the National Science Library, in Ottawa, is now authorized to offer the service to Canadian users. During an initial experimental period there will be no charge.

Brief bibliographies can be printed on-line "instantly". There is no arbitrary limit to the number of citations but, as a general rule, printing more than 25-30 references is too time-consuming. If a longer bibliography is required, citations (up to 300) can be printed off-line at NLM overnight and mailed to the user thefollowing day.

As Dr. Jack E. Brown, National Science Librarian, explained, "MEDLINE is designed as an interactive system; it works best if the user is either sitting beside the terminal operator, or actually operating the terminal himself. No one knows better than he what references are relevant". Therefore, it is hoped that in the near future some of the medical school libraries will be able to provide direct access to MEDLINE. Under the present agreement with NLM, NSL would be responsible for administration of such terminals, and the training of operating personnel. Under such an arrangement the participating library would be responsible for providing the terminal and paying telephone line charges to the nearest Tymshore node.

Further information on MEDLINE may be obtained from:

Tape Services,
National Science Library,
National Research Council of Canada,
Ottawa, Ontario. K1A 0S2.

****

Canadian Association of Life Sciences Technicians.

This new Association was formed at the meeting held on June 13, 1972, at the Laval University. Copies of the general minutes of this meeting may be obtained by writing to David Constemanche, Manager of Program Development, Conestoga College of Applied Arts and Technology, Guelph Centre, 460 Speedvale Avenue West, Guelph, Ontario. An ad hoc committee was selected, which is composed of: George F. Bigonese (Chairman), Research Technician C.H.U., University of Sherbrooke, Sherbrooke, Quebec; Collin Patterson (Secretary), Senior Technician, Department of Pharmacology, University of Western Ontario, London, Ontario; J.G. Richard, Technician, Department of Biology, College of Sherbrooke, Sherbrooke, Quebec; Barbara Atkinson, Technician, Department of Microbiology, College of Biological Sciences, University of Guelph, Guelph, Ontario; Dr. L.R. Christensen (Ad Hoc Committee Advisor), Faculty of Medicine, University of Toronto, Toronto, Ontario.

****

British Society for Immunology Monthly Newsletter.

This Newsletter, which usually consists of two typewriteen pages, is edited by Dr. P.C. Wilkinson, University Department of Bacteriology and Immunology, Western Infirmary, Glasgow G11 6NT. It always lists amazing numbers of vacant posts in Great Britain and informs about meetings and other activities of interest to immunologists.

****

POSITIONS VACANT

Naval Medical Research Institute, National Naval Medical Center, Bethesda, Maryland - 20014.

The purpose of the following announcement is to encourage applications from qualified candidates in immunochemistry, immunobiology and immunopathology for our civilian Post-doctoral Research Associateship Program. The research undertaken by the individuals supported under this program will be carried out at the Naval Medical Research Institute in Bethesda. Appointments will be made in March, 1973 for Research Associateships starting from July to September, 1973. This program has been developed in co-operation with the National Research Council and is administered under their auspices. All those within five years of their doctorate (M.D., Ph.D., D.V.M.) are eligible to apply for the program. We would encourage all interested candidates to contact us so that we may forward them a brochure and detailed information about the Fellowship Program, and have the opportunity to discuss areas of common interest and detailed program possibilities with the candidates. The date for final submission of the completed application forms for Research Associateships is January 15, 1973. This program is not a substitute for a military service obligation.

The Experimental Immunology Division of the Naval Medical Research Institute has a broad program of research in immunology including basic and applied laboratory research and clinical immunology. The program is directed toward the immunologic aspects of transplantation and infectious disease. Our transplantation interests include the study of histocompatibility antigens, tolerance, graft-versus-host reactions, enhancement, immunosuppression, bone marrow transplantation, immunogenetics, mechanisms in delayed hypersensitivity, and in vivo antigen processing. The problems of actively and passively acquired immunity in both infectious disease and parasitic disease are under study. The roles of soluble immune complexes, immunoglobulin components and immediate and delayed hypersensitivity mechanisms in the immunopathology of disease are also being studied.

We would appreciate your bringing this opportunity to the attention of possible candidates.

John L. Curry, M.D., Ph.D., LCDR MC USN; Head, Tissue Bank Division. K. Darwin Murrell, Ph.D., Head, Parasite Immunology Branch. Kenneth W. Sell, M.D., Ph.D. Capt. MC USN: Director, Clinical Medical Sciences Department. Wilton E. Vannier, M.D., Ph.D. Head, Experimental Immunology Division. Richard Wistar, M.D., Ph.D., Head, Immunopathology Branch.

****

FORTHCOMING EVENTS

MAY 31 - JUNE 1, 1973, - BALTIMORE, MARYLAND.

The Seventh Miles International Symposium, "Role of Immunological Factors in Viral and Oncogenic Processes" will be held in two sections: the Western Hemisphere Section, May 31 - June 1, 1973, at the Johns Hopkins Medical Institutions, in Baltimore, Maryland; and the Eastern Hemisphere Section, June 6 - 7, 1973, at the Hotel Inter-Continental, Vienna, Austria.

For information and reservations, Dr. C.J. O'Donovan, Symposium Co-ordinator, Miles Laboratories, Inc., Elkhart, Indiana, 46514, should be contacted. The program is in the formation stages but should be completed by January 1, 1973.

****

JUNE 1 - 2, 1973, - PAMPLONA, SPAIN.

Annual Meeting of the European Academy of Allergology and Clinical Immunology will be held in Pamplona, Spain. The programme is centered around four main topics: "Behaviour of the Antibodies in Allergic Reaction", "In-vitro diagnosis in Allergy", "Digestive system and Allergy", and "Action Mechanism of the anti-allergic Drugs". There will be simultaneous translation in English, French, German and Spanish.

For further information, please address: Secretary, Annual meeting of the European Academy of Allergology and Clinical Immunology, c/o Dept. of Allergology, Clinica Universitaria, Apto. 192, PAMPLONA (SPAIN).

****

JULY 1 - 7, 1973, - STOCKHOLM, SWEDEN.

Ninth International Congress of Biochemistry sponsored by the International Union of Biochemistry, and organized by the Swedish National Committee on Biochemistry and by the Royal Academy of Sciences, will be held in Stockholm on July 1 - 7, 1973.

The scientific programme will include:

a) Four plenary lectures, two of which will be presented at the opening session and two at the closing session of the Congress.

b) Nine sections, one of them on immunochemistry; each session programme will be composed of a symposium, consisting of about

twenty lectures, approximately 30 minutes each, by invited speakers and a number of short, submitted communications. Each presentation will be followed by a discussion.

c) Four colloquia, each consisting of five lectures by invited speakers and a panel discussion. The panel discussion will include a number of brief, submitted discussion comments.

The poster sessions are an interesting innovation. It is expected that some communications will be presented orally, whereas others will be presented in the form of posters on billboards, at which the authors are to be present at fixed time for discussion of their results.

Hotel reservations will be handled by RESO Travel Bureau, S-105 24 Stockholm, which will also organize post-congress tours.

For registration, contact The Secretariat, Ninth International Congress of Biochemistry, c/o Svenska Kemistamfundet, Wenner-Gren Center, 6 tr. S-113 46 Stockholm, SWEDEN.

****

AUGUST 13 - 24, 1973, - WOODS HOLE, MASS.

The Annual Survey course in Immunology, sponsored by the AAI will be held at the Woods Hole Marine Biological Laboratory, Woods Hole, Mass., August 13-24, 1973. The course is intended primarily for university or college instructors. The number to be selected will be limited to approximately 50. Selection will be on a competitive basis and decided by the Committee on Admissions.

Applicants should submit a letter to Dr. Elmer L. Becker, Professor of Pathology,University of Conn. Health Center, Farmington, Conn. 06032, not later than April 1, 1973. The letter should be accompanied with the following information, and supplied in quadruplicate: 1) curriculum vitae, 2) current research and teaching activities, 3) reasons for wanting to enroll in the course, and 4) background in immunology.

A $100.00 registration fee will be charged. Per diem costs for dormitroy type facilities are approximately $10.00

****

SEPTEMBER 2 - 8, 1973, VIENNA, AUSTRIA.

Fourth International Conference on Birth Defects will be held at the 'Hofburg Kongresszentrum' in Vienna, Austria. The Conference is sponsored by the National Foundation - March of Dimes. Those interested in giving a paper should send the abstracts of their papers for review by the Scientific Program Committee (International Medical Congress, Ltd., c/o The National Foundation, 1275 Mamaroneck Avenue, White Plains, New York 10605 U.S.A.) Those interested in receiving further information and/or attending the Conference should contact The Secretariat of the Fourth International Conference on Birth Defects, c/o Holland Organizing Centre, 16, Lange Voorhout, The Hague, the Netherlands.

****