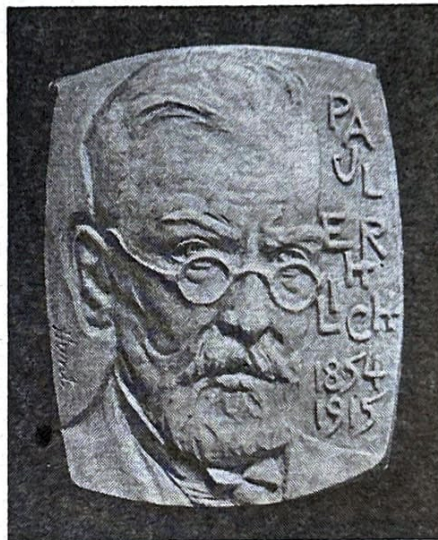


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C O N T E N T S

	<u>Page</u>
EDITORIAL	1
Bram Rose: PRESIDENTIAL ADDRESS	3
THE CANADIAN SOCIETY FOR IMMUNOLOGY	
C.S.I. Election	4
New Members	5
Notice	6
Second International Congress of Immunology in Brighton- Travel Bursaries	8
Pony Express System - Visiting Speakers	8
INTERNATIONAL UNION OF IMMUNOLOGICAL SOCIETIES	
B. Cinader: PRESIDENTIAL ADDRESS IN I.U.I.S. COUNCIL MEETING	10
FUNDING OF MEDICAL RESEARCH	
J. Bienenstock: SITUATION OF FUNDING OF MEDICAL RESEARCH	14
L.A. Herzenberg: CURING CANCER BY FEDERAL FIAT	15
APPLIED IMMUNOLOGY	
S.W.: THE TAB OF IMMUNOLOGY - A Commentary on the Canadian ALG Trial	21
NEWS:	
Avery-Landsteiner Prize Awarded to Drs. W.F. Goebel and J. Oudin	22
International Standard Serial Number Assigned to the Bulletin	22
New Journal	27
Fetal Bovine Sera	24
Another New Journal	24
POSITIONS AVAILABLE	
Canada	25
England	26
Australia	26
U. S. A.	27
POSITIONS SOUGHT	27

EDITORIAL

By the time this issue of the Bulletin reaches you, some of you will be packing for Brighton. The Second International Congress of Immunology offers a number of most interesting symposia, workshops and, last but not least, an extensive social and entertainment programme. We hope to be able to see most of our readers in Brighton, and also hope the Congress will be really enjoyed by all those attending.

For the past few years, we have been witnessing an enormous expansion of immunology. New areas of research, new Journals, an ever-increasing size of old established Journals, and a rising, impossible to digest flood of information characterize this expansion. Unfortunately, not all of the published information is first rate; some papers can be classified as second and third rate, but the most alarming symptom is that some papers contain data which are simply wrong. A case of fraud has recently been widely publicized in the popular press. A detached analysis of the whole problem has been published in "Science"¹. One gets suspicious that this may only be the tip of an iceberg.

It is often difficult to deal with fraud in experimental research since there is a gray area of transition between data obtained from inadequately controlled experiments and results that were deliberately falsified by the investigator. The degree of "falsification" varies too, making the results and conclusions more or less credible. Even in the known and exposed cases of fraud there has been an element of truth or, at least, plausibility which makes exposure difficult. In the majority of cases it is impossible to rule on the credibility of the author's results, even if the editor and referees scrutinize the manuscript thoroughly. The only way would be to repeat all the described experiments, and even then a negative result would not prove that the author's claims were wrong. Consequently, a proportion of papers with questionable results is accepted and published. It may take years for the truth to come out! One would expect that the rather rare cases of deliberate falsification would become exposed first: they tend to involve spectacular results which other investigators would eagerly try to reproduce. Unintentional falsifications caused by inadequate controls, over-eager or biased members of the team are likely to be discovered sooner or later by another member of the group when trying to follow-up the alleged finding. It then causes much embarrassment and an enormous effort is needed to put the record straight.

A special category of scientific fraud has been motivated by political pressures. Some of us remember the notorious Trofim Lysenko², genetic hoax, the outrageous claims of Olga Lepeshinskaya³, and a number of minor hoaxes concocted by other ideologically motivated scientists. At one time this practice started to encroach upon the area of immunology, when somebody claimed that bacteria can change into viruses and vice versa, and that these live viruses were the only antigens against which active immunity was possible. Needless

to say that he also claimed that active immunity and antibody production was maintained only in the presence of these viruses. His name and his "theory" passed into oblivion, even though he wrote several articles and a book describing his "discovery". Fortunately, the last category of scientific fraud seems to be at a low tide now. However, the ever-tightening spiral of grant support and publish-or-perish race will generate a higher than before proportion of "honest" frauds. In order to preserve its image and protect good (even if less spectacular) research, the scientific community will have to find ways of dealing with this problem.

This article has been precipitated by reading papers in recent issues of leading immunological journals. Certainly, some of them raise more suspicions than others. We would like to start a discussion on this issue which is so vital to all of us who are experimental immunologists. The long-term criteria for an important contribution are perfectly clear; the short term ones involve discrimination between the startling unexpected pace-making new discovery and the sensational interesting unexpected error of judgment.

S.. Dubiski.

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1. B.J. Culliton: The Sloan-Kettering Affair; Science 184, 644-650; 1154-1157.
2. T.D. Lysenko: The situation in biological science; New York International Publishers, 1949.
I.M. Sonneborn: Heredity, environment and politics; Science 111, 529-539, 1950.
H.J. Miller: Science in bondage; Science 113, 25-29, 1951.
3. O.B. Lepeshinskaya: Die Entstehung von Zellen aus lebender Materie und die Rolle der lebenden Materie in Organismus; Kultur und Fortschritt, Berlin 1952.

PRESIDENTIAL ADDRESS

Given on June 27, 1973, at the General meeting of the Canadian Society for Immunology, in Saskatoon, by the stepping-down President, Dr. Bram Rose.

I would first of all like to thank Dr. Austin Sargent who has been responsible for the local arrangements at this meeting. They have been superb. This marks the end of my two years of office of the Canadian Society for Immunology. I have enjoyed it immensely and the chief reason for this has been the ease with which all matters have been decided, quickly and without difficulty, through the grace of the secretary, Dr. Phil Gold, and the treasurer, Dr. Joe Shuster. There is much to be said in favor of a small committee residing in the same town when it comes to expediency.

The affairs of the C.S.I. are, I believe, in very good order. We have grown at a steady rate and it is obvious that this will continue. I think it fair to state that the excellence of research in the broad field of Immunology, as represented by this Society, is internationally recognized and will continue to do so. I am sure that you will all agree that today's Symposium was excellent and the contributors are to be congratulated.

As you know, we are all aware of the fact that the question of a Canadian Journal dealing with Immunology has been considered over these past two years. There is an active committee and it is too early to make any firm statement. Such a Journal would depend on commitments from all of you. Even though it might have an International Editorial Board, one has the feeling that if a piece of work is really outstanding and I suppose we all feel this about our own, it should go into a Journal where it would be recognized. I think we are probably a little premature at this time but I am sure that your incoming Council will be dealing with this topic. I really have nothing further to add excepting to thank you all for your kind support during these past two years. I wish the incoming Council the very best of luck and I am sure that with Dr. Dubiski as your President, you have everything to look forward to.

Bram Rose.

THE CANADIAN SOCIETY FOR IMMUNOLOGY

C.S.I. ELECTION - 1973

The following members were elected to the Council of the Canadian Society for Immunology for a two-year term:

PRESIDENT: Dr. S. Dubiski
VICE-PRESIDENT: Dr. P. Gold
SECRETARY: Dr. J. Bienenstock
TREASURER: Dr. D.Y.E. Percy
PAST-PRESIDENT: Dr. B. Rose
COUNCILLORS: Dr. P. Paraskevas
Dr. E. Diener
Dr. D.C. Ingram
Dr. B.G. Carter
Dr. L. Goodfriend
Dr. A. Sargent.

NEW MEMBERS

The following persons have joined the CSI during the last year:

1. DR. Sydney ABRAHMS, Dept. of Nephrology, University Hospital, LONDON, ONTARIO.
2. DR. Kenneth E. ALDRIDGE, Biology Department, University of Mississippi, University, MISSISSIPPI 38677.
3. DR. P.E. BARONOWSKY, Dept. of Biochemistry, Mead Johnson Research Center, Evansville, INDIANA 47721.
4. DR. J.C. CHAPMAN, Royal Inland Hospital, KAMLOOPS, B.C.
5. DR. R. CLANCY, Dept. of Medicine, McMaster University, 1200 Main St. West, HAMILTON, ONTARIO.
6. DR. S. COHEN, Dept. of Pathology, State Univ. of New York at Buffalo, 204 Capen Hall, BUFFALO, N.Y. 14221.
7. DR. R.G. DEVLIN JR., Mead Johnson & Company, Biochemistry Department, EVANSVILLE, INDIANA 47721.
8. DR. Gilles DUPUIS, Dept. de Biochimie, Centre Hospitalier Universitaire, Université de Sherbrooke, SHERBROOKE, P.Q.
9. DR. Howard ENGERS, Dept. of Immunology, Swiss Cancer Institute, 21 rue du Bugnon, 1011 Lausanne (SUISSE).
10. DR. E. Denis ERICKSON, Dept. of Veter. Microbiology, Washington State University, PULLMAN, WASH. 99163.
11. DR. N. FADIR, The Wellesley Hospital, 160 Wellesley Street, TORONTO, ONTARIO.
12. MRS. Judith FALK, Toronto Western Hospital, 399 Bathurst Street, TORONTO, ONTARIO.
13. DR. R.C. FITZSIMMONS, Dept. of Poultry Science, University of British Columbia, VANCOUVER 8, B.C.
14. DR. J.E. HALL, Department of Biology, University of Mississippi, University, MISSISSIPPI 38677.
15. DR. K.H.A. JACOB, Manitoba Cancer Foundation, 700 Bannatyne Avenue, WINNIPEG 3, MANITOBA.
16. DR. J.C. KENNEDY, Dept. of Pathology, Richardson's Laboratory, Queen's University, KINGSTON, ONTARIO.

17. DR. John KLASSEN, 10 Medicine, Royal Victoria Hosp. 687 Pine Ave. West, MONTREAL 112, P.Q.
18. DR. Norbert KRAFT, MRC Transplant Unit, Provincial Lab. Univ. of Alberta, EDMONTON, ALBERTA.
19. DR. Sho Tone LEE, Manitoba Cancer Foundation, 700 Bannatyne Ave., WINNIPEG, MANITOBA R3E 0V9.
20. DR. A. LIAKOPOULOU, Health Prot. Branch, Natl. Hlth. & Welfare, Tunney's Pasture, OTTAWA, ONTARIO K1A 0L2.
21. DR. E. M. LIBURD, University of Alberta, Room 1046. University Hospital, EDMONTON, ALBERTA.
22. MR. I.M. MacDONALD (Associate), Apt. 16N, 205 Vaughan Road, TORONTO, ONTARIO.
23. DR. J.M. MacSWEEN, Camp Hill Hospital, Medicine, Dalhousie University, 1763 Robie Street, HALIFAX, NOVA SCOTIA.
24. MR. Paul L. MANN (Associate), Institute of Medical Sciences, 7344 M.S.B., University of Toronto, TORONTO, ONTARIO.
25. DR. R.P. ORANGE, The Hospital for Sick Children, 555 University Ave., TORONTO, ONTARIO.
26. DR. B. SCHOBBER, Lions Gate Hospital, Nuclear Medicine, 230 E. 13th Street, NORTH VANCOUVER, B.C.
27. DR. D.M.P. THOMSON, The Montreal General Hospital, Room 7118, 1650 Cedar Avenue, MONTREAL 109, P.Q.
28. MISS Jena WEICKER, Medical Science Bldg, 4379, University of Toronto, TORONTO, ONTARIO. (Associate).
29. MR. H.D. WHITTEN (Associate), Immunology Research Unit, University of Mississippi, P.O. 2279, University, MISSISSIPPI 38677.

NOTICE

The following members of the Canadian Society for Immunology have not informed the Secretary of new addresses and correspondence has been returned to the Society. If you know of new addresses for these persons, we would ask that the Society be notified. Otherwise, these persons will be discontinued as members of the Society.

1. DR. K.E. BARRETT, Birmingham Hospital, BIRMINGHAM, ENGLAND.

2. MR. Harry BARAKETT, 645 Woodlawn Avenue, Apt. 5, VERDUN 204, P.Q.
3. MISS J. BETHUNE, Ottawa General Hospital, OTTAWA, ONTARIO.
4. DR. B.L. GORDON, Department of Physiology, University of British Columbia, VANCOUVER 8, B.C.
5. DR. Maria GUIMARAAS, Department of Immunology, University of Manitoba, WINNIPEG, MANITOBA.
6. DR. A. GUINDON, Institute d'Immunologie et d'Hygiene de l'Universite de Montreal, LAVAL-des-RAPIDES, P.Q.
7. DR. H.W. MOON, Western College of Vet. Medicine, University of Saskathchewan.
8. DR. Billie-Rae SHIVERS, Faculty of Dentistry, 780 Bannatyne Ave., WINNIPEG 3, MANITOBA.
9. MISS L. STEEN, Ontario Veterinary College, GUELPH, ONTARIO.
10. Mr. Robert THIBERT, 544 St. Joseph Street, LACHINE 640, P.Q.
11. MISS Luce VALIQUETTE, 317-15th Avenue, LAVAL-des-RAPIDES, P.Q.
12. MISS Bernice WHELTON, 2275 Wilson Avenue, Apt. 1, MONTREAL 260, P.Q.

FOURTH SUMMER SCHOOL IN METHODS OF IMMUNOLOGIC RESEARCH AND
DIAGNOSIS

The fourth biennial course on current methods of immunologic research and diagnosis will be offered by The Center for Immunology of the State University of New York at Buffalo in July 1975. The deadline for applications is March 31, 1975.

Further information may be obtained from James F. Mohn, M.D., Director, The Center for Immunology, State University of New York at Buffalo, Buffalo, New York, 14214.

2nd INTERNATIONAL CONGRESS OF IMMUNOLOGY - TRAVEL BURSARIES

The Canadian Society for Immunology offered a competition for travel bursaries to assist young investigators financially to attend the 2nd International Congress on Immunology to be held in Brighton. Twenty-seven applications were received and five bursaries were awarded to the following individuals:

Dr. S. Assimeh, Toronto
Dr. T.L. Delovitch, Stanford, ex-McGill
Dr. S.T. Lee, University of Manitoba
Dr. P. Neveu, Laval-des-Rapides
Dr. M. Percy, Toronto.

The Canadian Society for Immunology wishes to express their grateful appreciation of the donations made by the following corporations:

Merck Frosst Laboratories
Fisons (Canada) Limited
Hoffman-La Roche Limited

PONY EXPRESS SYSTEM - VISITING SPEAKERS

The following correspondence is an example of similar letters criss-crossing the country several times a year. Several attempts were made to get such "pony express system" going, but nothing permanent has ever resulted. In view of the ever worsening tight money situation, any cost-sharing system could be highly beneficial for its users. Members and readers are invited to express their opinion.

Ed.

I was just trying to get in touch with Phil Gold on the matter of visitors, to be tapped for seminars when I received your letter. Here is what I have in mind: we, and perhaps others as well have very limited funds for inviting visitors, especially from overseas. If one centre in Canada was to invite a person, with a little persuasion and probably not much extra expenditure, he might be willing to extend his visit to other centres in Canada.

To make such arrangements, all centres should know of impending visits as much ahead of time as possible to enable them to communicate with the visitor prior to his departure. Since time is of utmost importance if this scheme is to succeed, the Bulletin of CSI would not provide a suitable vehicle for communication. Originally I thought that each centre should name one person, who should contact or be contacted by his counterparts at other centres as soon as he learns about an

impending visit by an immunologist to his centre. This could take the form of a circular from anyone individual to say 10 centres. All it needs to contain is the name and address of the visitor and the date of his intended visit. An even faster, and maybe less painful method would be to arrange this by phone. For example to announce a visitor coming to Montreal I would call Quebec City and Kingston; they in turn would relay the message to the next centre East or West as the case may be in a chain. Thus each person would only make 2 calls at most, and the information would be disseminated across Canada within a day.

If you think that such a scheme can work, we would have to seek names of representatives from each centre and acquaint them with the procedure. The Bulletin could acquaint all the members of CSI with the scheme. What do you think?

Julius Gordon, Ph.D.

Thank you for your note. I will ensure that this gets to the Bulletin of the CSI which Stan Dubiski will be putting together. It does remind me a little of the pony express but, as with the pony express, it probably is a practical and efficient system. I would let you know if we ourselves were, for example, interested in the people who will be visiting Montreal.

Very best wishes,

John Bienenstock.

INTERNATIONAL UNION OF IMMUNOLOGICAL SOCIETIES

PRESIDENTIAL ADDRESS IN I.U.I.S. COUNCIL MEETING

Strassburg, September 9, 1973.

The last 12 months of I.U.I.S. activity have been productive in the initiation of fund raising activities, preparation of congresses, international symposia, intensification of regional activities, development of several projects for standardization, preparation of nomenclature proposals, negotiations towards the foundation of an International Institute for Immunological Education in Amsterdam, development of a register for audio-visual immunological materials, foundation of new immunological societies and intensified consultation on educational work in clinical Immunology.

The last year has thus seen intensified activities of I.U.I.S. in intrascientific activities and in scientific-social interactions. It might be worthwhile to illustrate scientific-social activity by referring to certain aspects of I.U.I.S. endeavours to intensify the work on standardization of immunological reagents. Scores of such reagents are being used routinely in hospitals, but there are no standard preparations of defined properties by which the specificity or homogeneity can be assessed by manufacturers and consumers. The need for standardization in this area has been recognized for several years, but the Division of Immunology of W.H.O. has been hampered by lack of funds in its desire to remedy the situation. It was the aim of I.U.I.S. to participate in a joint I.U.I.S.-W.H.O. effort which would lead to the rapid evolution of a number of standard preparations. The appropriate I.U.I.S. committee has selected standards and has started work in several areas, and you will hear from the committee about the specific achievements and projects which have emerged from their meetings and from the laboratory work of committee members. It was quite clear that progress would depend on the availability of an adequate financial basis of operation. To this end a number of governments have been approached with the request for 3 years' support. Early in this year, a grant for I.U.I.S. standardization was made by the German Government to W.H.O. Shortly afterwards, a Canadian grant of \$10,000 per annum was made directly to I.U.I.S. More recently, the Swiss Government has intimated its intention to make a grant which would start next year and would be approximately \$3,000 per annum. Other governments are still considering our request and some agencies are discussing with us the possibility of placing specific contracts for I.U.I.S. standardization. The financial situation has thus made it possible to contemplate a vigorous program. Our first proposed step is to have Mrs. Irene Batty spend several months in Geneva with the W.H.O. Immunology Unit and to promote and design an active program of standard development. Her stay in Geneva will be financed through W.H.O.-mediated I.U.I.S. funds. I hope that the I.U.I.S. Council will agree that this should be done. The next step would be to call a W.H.O. Expert Committee, probably in November, which would consider proposals, developed by the I.U.I.S. standardization Committee and/or resulting from Mrs. Batty's work in Geneva. The expert committee would advise W.H.O. on a course of action which would result in W.H.O.-I.U.I.S. standards. An expert committee meeting of this type is quite costly since, unlike the I.U.I.S. Standardization Committee meetings,

the travel and living expenses of committee members will be borne by the initiating agency. It is proposed that this meeting would be largely financed by W.H.O.-mediated I.U.I.S. funds. This proposal is also submitted for your consideration. The question arises as to the mechanisms which should be used to determine priorities for the development of standards. We felt that there ought to be some input from those who use the reagents, i.e. from directors of diagnostic hospital laboratories and that this input should reflect regional needs and priorities. To this end, a list of directors of diagnostic laboratories is being prepared. It is hoped that we shall circulate to members of this world-wide panel enquiries as to priorities which they would assign, and that we would ultimately also place standards with them so that the implementation of quality control and recommendation for international units would be promoted through this group. It is clear that this roster of clinical immunologists will have to be developed as we gain experience with the individuals who are now on this list. The quality of the list will depend to a large extent on the I.U.I.S. Council members who must assure that the list is representative and that it consists of activists.

I have dealt at some length with the problem of standardization because it seems to me to illustrate the problems of financing and of broad consultation which apply not only in this but also in other areas. The activities of the nomenclature committee are a good example of this type, because it ultimately also depends on acceptance by a wider community and because progress is dependent on financial support. The rate of progress is determined by the ability of individuals to get together and to hammer out nomenclature proposals which may have been agreed upon by correspondence. In short, we must find the financial means by which people can be moved and housed. Similar financial problems are faced by the Education and by the Symposium Committee. The Symposium Committee has been the most active and successful agency of I.U.I.S. action. However, the financing of this work has been a repetitive nightmare to the organizers, since the burden of collecting money for each meeting fell on a relatively small group of individuals whose energies should have been confined to scientific and organizational aspects of the symposium:

It is clear that we have to attempt to raise money for general I.U.I.S. activities. I have approached a number of agencies in an attempt to generate funds for general I.U.I.S. activities. In many cases, my letter of request was orchestrated by supporting letters from national organizations and individuals from Africa to South America, but so far the concrete success of this endeavour has not been very great. We now have approximately \$4,000 per annum which is a modest beginning and which clearly has to be greatly enlarged. This can only be done through the active participation of all members of the Council so that appropriate national organizations can be approached by each individual council member and by every immunological society. I would like to ask you to think about this matter now and to make concrete proposals as to agencies in your areas which can be approached. In addition to these attempts to raise funds from the outside, there might be something that could be done directly by some, if not by all immunology societies. A greater number of societies might increase their annual contribution to \$1.00 per member and might undertake to support the travel expenses of one of their members to each of our committees. I have discussed this problem with the American Association of Immunologists. At their

Council meeting in Atlantic City on April 15, 1973, the A.A.I. committed itself to active participation in supporting the goals of the I.U.I.S. Consistent with this, the A.A.I. agreed to:

- 1) raise annual contribution to \$1.00 per member,
- 2) make every attempt to see that A.A.I. members on the I.U.I.S. Council and major committees are able to attend the meetings of these bodies. To insure appropriate representation on the I.U.I.S. Council and major committees, A.A.I. will propose individuals to fill positions of select present members for travel support,
- 3) support I.U.I.S. applications for funds from U.S. funding agencies, private foundations, etc. insofar as it may be helpful.

It is hoped that other immunological societies will follow the lead of the American Association of Immunologists which has acted at a time when the general funding situation in the United States is certainly more difficult than it has been for many years.

I have, so far, referred to our committees in terms of money only. Though this is a very pressing concern, it is of course not the only perspective for viewing their activities.

The Commission for Europe has been initiating its activity with the Strassburg meeting, which has just taken place and which has been such a great success that there is little doubt that European regional activities in Immunology will become a very important component of the scientific life of the world community of Immunologists.

There will be placed before you a proposal for an additional committee dealing with Clinical Immunology. It is clear that this is an area in which I.U.I.S. can make an important contribution, but it remains for you to determine whether we have found the best way for this much needed contribution.

Progress in organization has been made in several countries. The Czechoslovak society is now moving towards official establishment under the aegis of their Czechoslovak Biological Society. The immunologists of the U.S.S.R. are organized under the Micro-Biological Section of the Academy of Sciences. It is to be hoped that, in both instances, we shall be able to admit the Academy of Sciences to membership so that the immunologists of these two countries will participate as full members of I.U.I.S.

National societies have been formed in Austria, Brazil, India and Greece, and the nature of their participation in I.U.I.S. activities can be considered after the Secretary's report.

The relations of I.U.I.S. with a number of international agencies are progressing well. The most important of these relationships and the most intimate is with the W.H.O. As you know, I.U.I.S. has become a non-governmental member of W.H.O. and our intimate relationship with regard to standardization is an illustration of the fruitful cooperation between I.U.I.S. and the appropriate levels of W.H.O. W.H.O. through its Immunology

Unit has made important contributions to the International I.U.I.S. Symposium in Roumania. I.U.I.S. has actively participated in the W.H.O. Summer School in Chile, and the W.H.O. contribution to the Summer School has made it possible to follow it with an I.U.I.S. International Symposium. In this context of W.H.O.-I.U.I.S. cooperation, I am glad to report that the W.H.O.-C.I.O.M.S. news sheet "Immunology Meetings and News" will show I.U.I.S. in its future banner head.

We have in the past opened negotiations with I.U. of U. and have requested direct membership. Our participation in this organization is of considerable importance since they distribute funds which might be of great help in the development of our activities. We hope that, in the next 12 months, this matter can be taken up again with I.U.U., since we are gradually approaching the stage in which we have had the two congresses and the six years of existence, which are a condition of membership.

We have had a number of informal conversations with various officers of the International Transplantation Society about a future joint congress with I.U.I.S. and, alternatively, organizational correlation so that two congresses do not occur in the same year. We have excellent representation in and from the International Society for Allergology, and it is hoped that this will be intensified as the Committee of Clinical Immunology begins to unfold its activities.

The preparations of the Second Congress of Immunology are advancing well and you will no doubt hear about this more at the appropriate point of our Agenda. The Australian Society is actively pursuing its preparation for the Third Congress of Immunology which we have entrusted to them. The Australian Academy of Science has received a proposal from the Australian Society of Immunology to become associated with the organization of the 3rd International Congress. The Academy has agreed in principle and is now moving to:

- (a) appoint an official organizing committee, which will consist of Dr. G.N. Cooper, Dr. D. Nelson and representatives of the Academy (including Gus Nossal).
- (b) approach the Federal Government with a view to obtaining financial assistance.

A detailed budget for the Congress was included in the submission to the Academy. Present indications are that congress fees, etc., will be very similar to those which pertained to the 1st Congress in Washington. At the time of the next I.U.I.S. Council meeting in Brighton, 1974, Dr. Cooper will present a complete and detailed report of arrangements and plans for the 3rd Congress.

B. Cinader.

FUNDING OF MEDICAL RESEARCH

CURRENT SITUATION OF FUNDING OF MEDICAL RESEARCH

A little more than one year ago a Brief was submitted on behalf of the Canadian Federation of Biological Societies, the Association of Canadian Medical Colleges and the Canadian Society for Clinical Investigation to the Ministers of Health, and State for Science & Technology. The tone of the meetings which occurred between representatives of the Societies and the Ministers was considered to be sympathetic to the general point made in the Brief which was that there had been a continual erosion of funds available to medical research, particularly in those funds coming from the Medical Research Council, for the previous three years. Further, with inflation considered at that time at a rate of 6% per annum, the amount of money being made available to medical research was declining and would reach alarming proportions relatively soon.

For a variety of reasons which are still not clear, little of note occurred between then and the Fall Grants Committee Session of the MRC. At this point it became clear that alarming proportions had in fact been reached because the rejection rate and termination rate of grants appeared to reach an all time high. Rapid discussions between the CSCI, the CFBS and the ACMS ended with the suggestion that all information relating to current granting must be rapidly obtained and collated so that at the January meeting of the CSCI a press conference could be held and the public acquainted with the problems. This was done at the same time as in the background as much pressure as possible was brought to bear on all Cabinet Ministers, who were contacted in a variety of ways. Whether because of this pressure, or for other reasons, the MRC budget which had risen by 2.2% (in face of an inflationary figure this year of at least 9.5%) was suddenly increased by a further million dollars found from other funds by the Minister of Health from within his own budget. This brought the total amount of increase for this year to 5.1% for the MRC.

The press conference was held and a systematic effort has been made since then to communicate the nature of the plight of medical research in this country not only to Members of Parliament but also to all interested persons. Lay people particularly have been encouraged to write to their Members of Parliament and the result of this, according to informed sources, is that the correspondence reaching the Minister of Health relating to medical research is running at the moment at 4 to 1 relative to that on the Toronto Northmen and Mr. Bassett.

The Standing Committee on the budgetary estimates of the Department of National Health and Welfare recently requested two expert witnesses to attend a whole session which was devoted to the current state of medical research funding. Accordingly, Dr. Scriver, current President of the CSCI, and Dr. Bienenstock, attended this meeting which lasted two hours. The Minutes of the meeting of April 2nd, for those who are interested, could be obtained from the Secretary of the Standing Committee on Health, Welfare and Social Affairs. In all, the Parliamentary Committee has devoted now three full sessions to

this subject and have openly, clearly informed the Minister of Health that they think that the budget of the Medical Research Council should be increased well beyond its current level. This, in itself, is an extraordinary action, and although it may not lead to a practical outcome, certainly indicates the mood of this Committee. The Minister indicated that he would try and be favourably inclined to this view during the coming year.

The group, consisting again of the ACMS, CFBS and CSCI is considering at this point trying to obtain a further hearing with the Minister of Health and is preparing further documentation of the current situation concerning the impact of current funding policies and lack of money on medical research in Canada.

In terms of the CFBS, Neil Madsen has much of the appropriate information in the Department of Biochemistry in Edmonton. Alternatively, I, at the Department of Medicine at McMaster, would be happy to discuss the situation with any of you who are interested. Another possibility would be to contact Dr. John Dirks in the Royal Victoria Hospital, in Montreal.

The question of the Medical Research Council's budget and the amount of money available is not one decided by logic and rationality. It must be understood that this is a political decision and that to change it requires political pressure. The best political pressure has been for Members of Parliament and Members of the Cabinet to hear from those interested people, not as a polemic but as a reasoned indication to them of the impact of the current policies on medical research. This is particularly impressive if the letters come not from concerned self-interested individuals such as ourselves but from lay people who themselves may express sufficient interest to write to these Members of Parliament. Do not forget in this regard that today's Opposition may well be tomorrow's Government and do not just address yourselves to the party governing at present.

John Bienenstock.

CURING CANCER BY FEDERAL FIAT

The following is an article by Leonard A. Herzenberg, published as an editorial in Hospital Practice (June 1973, vol 8, No. 8). Since we think that this journal is not widely read by the members of the CSI, we decided to acquaint them with Dr. Herzenberg's views by re-printing his article in the Bulletin. The readers are also referred to the special issue of the Bulletin (Vol. 7 No. 1, May 1973) and to the article by Dr. Bienenstock published in this issue.

Ed.

There have always been trends in science, or bandwagons to get onto, like the current cancer crusade. But because the federal biomedical research budget has now come under considerably more political control than ever before, the cancer bandwagon is threatening to become almost the only vehicle in the parade.

President Nixon and the entire Congress have declared that cancer will be cured. In keeping with this declaration, the National Cancer Institute (NCI) has offered up a systems engineering approach called the National Cancer Program Plan (NCP) that promises to do the job by applying the same management techniques to cancer research as those used to put our astronauts on the Moon.

The new plan, which has largely captured the funds used previously to support traditional bio-medical research, will favor directed research in areas chosen by officials of the NCI. Administered concomitantly with the tightened funding for independently conceived research projects, its intent is to channel scientists into developing areas that the systems analysis approach deems important. Thus, by diagramming what needs to be done, and offering contracts to those researchers who contend they can do the particular jobs required, the NCI proposes to steer its team to victory and eliminate cancer as a major human killer by the end of this decade.

But can the "crash program" methodology that led to the construction of the atomic bomb before the end of World War II and to the landing of men on the Moon in 1970 be successfully transplanted to cancer research today? The answer, depending as it must on the state of knowledge in the field, most probably is no!

Both the Manhattan (atomic bomb) Project, which started in 1942, and the Apollo program of the 1960's were simply massive technologic tasks. They required virtually no acquisition of new fundamental scientific knowledge; rather they demanded the practical extension and application of existing knowledge. The years of basic research that preceded both programs had established a firm scientific ground that enabled the program architects to lay their plans and see their way clear to the successful completion of the projects.

Unfortunately, no such firm scientific base for the development of a centrally directed cancer program currently exists. Many competent scientists are concerned about the NCP for this reason. They fear that failure to acknowledge this point, and movement into "directed" pathways too soon, may actually risk lengthening the time until we are able to cure various kinds of cancer. A distinguished and competent group set up by the Institute of Medicine of the National Academy of Sciences to review the NCP at the request of the National Cancer Institute recently commented:

It seems to us a defect of the National Cancer Program Plan that the enormity of our ignorance about cancer receives less emphasis than its merits. Much is said about the lines of research that appear most promising today - virology, cellular immunology, and

genetics, for example - but too little acknowledgement is made of the genuine possibility that any or all of today's leads ... could turn out to be the wrong leads The (cancer) plan fails (because) it leaves the impression that all shots can be called from a central headquarters; that all or nearly all, of the really important ideas are already in hand Science, March 30, 1973, pp 1305-1308.

This is not to say that we are at ground zero in our search for understanding cancer, nor is it to say that there are no areas in which well-coordinated, rather massive efforts will prove fruitful at this time. For example, many types of human cancer are already known to be due to environmental agents. Most of these were discovered because of obvious occupational relatedness - lung cancers in uranium and asbestos miners - or because of very extensive statistical studies - lung cancers and cigarette smoking.

The NCPP very appropriately emphasizes programs that would lead to prevention by identifying cancer-inducing environmental factors. Certainly, research decision by committee under directed contracts is a good way to go for such work. But while this kind of work is necessary, it should by no means be allowed to replace the traditional system of creative medical science that has yielded so much of the basic knowledge upon which recent medical advances depend.

Basic research needs considerable freedom to flourish, and its funding must reflect this fact. It can only very broadly be directed towards an applied goal before its value as a pioneer for medical advances begins to be lost. By its very nature it is interdisciplinary. Its success depends on the diversity of information that the investigator can bring to bear in solving his particular problem, and its usefulness depends on the ability of the investigator or his colleagues to recognize the applications of any discovery to as many different areas as possible. The NIH has long recognized the difficulty in classifying basic research projects according to their relevance to individual diseases. Although most grants go through institutes oriented to a particular disease (e.g., National Heart Institute), they are generally evaluated on the basis of their potential contribution to general medical knowledge. Although such a system makes administrative accountability with respect to a given disease a little more difficult, it greatly enhances the efficiency with which basic research findings may be applied wherever they are useful.

Let me exemplify on the basis of my own experience. Although my research in cellular immunology and genetics could be considered cancer research, and is funded through the NCI, we have recently found that we are solving problems of importance to the early detection of fetal abnormalities. In a more directed situation, we might not have been allowed to pursue this line of research, which promises, perhaps, to create a major breakthrough in prenatal medicine. Similarly, many of the basic studies in virology now considered to be important in cancer research were funded originally through the NIH

because of potential usefulness in solving problems of communicable diseases such as polio.

This serendipitous nature of basic research makes the NCPP intention to delineate narrowly the confines of cancer research both dangerous and shortsighted. The danger is compounded by the overall decisions of the Bureau of the Budget to shift funds from "noncancer" research to the cancer program. While there will be a tendency of investigators whose work has been more appropriately funded by other NIH institutes to try to shoehorn the programs into the NCI slipper, undoubtedly some investigators doing important work will not meet the NCI's narrow-gauge standards. In such cases, it may well be the cancer victim who suffers.

Even if the NCI administrators were to take a broad-minded attitude with respect to which basic research programs are funded, progress would still be hampered because of the heavy emphasis on contract-style funding. The new system of issuing large research contracts, often for piecemeal work, is creating a radically different structure, which undercuts the foundations of basic research. It is destructive to both the supply of competent researchers and the environment in which good research can be done. At the scientific workbench level, the contract structure fosters groups of technically competent scientists directing large numbers of technicians in doing rather routinized, prescribed kinds of work. It offers little creative challenge or opportunity for education of younger scientists, except in the development of more efficient ways to manage a large laboratory. This, in turn, means that young, ambitious, creative graduate students and postdoctoral fellows will not be drawn into biomedical research, and therefore they will not be alert to the aberrant result or chance observation that may yield a minor or major new clue to understanding cancer (or some other human disease).

On the institutional level, the great increase in contract research means that industrial firms, which are organized for this kind of work, will compete more favorably for the federal cancer dollar than the less commercial institutions. Whereas universities and research institutes encourage long-standing excellence and are staffed by people with continuing commitment to research in a given discipline, profit-oriented industry buys short-term capabilities, rarely greater than the immediate contract requires and allows only the intellectual leeway to get the job done. Although this creates an apparent efficiency and allows industry to bid low, the product delivered is often of the economy-model variety.

A good example of this is a contract for over two million dollars to an industrial firm for the preparation of a large quantity of a human virus purported to be associated with cancer. Informed sources report that although the firm followed the protocol outlined in the contract, and therefore satisfied its obligation, the "virus" they produced was so degraded as to have very limited use.

More important than the waste inherent in the premature letting of large industrial research contracts, however, is the effect of the drainage of research funds from the traditional research institution. The starving of these institutions weakens their ability to train competent and critical basic researchers. This, in turn, means a decrease in the flow of new approaches to biologic problems, which, as we have pointed out, depend heavily on the continued entrance of men and women with fresh young minds into the field and their interaction with established investigators.

The net result of the crash program to cure cancer may well be to slow down rather than speed up progress toward solution of the problems. This is not likely to sit well with Congress and the public who have been virtually promised a cure to cancer. In 1970, Congress, with some blessing and certainly no massive objections from the scientific community, unanimously passed a resolution that called for a "national crusade" for the conquest of cancer by 1976 "as an appropriate commemorative of the 200th Anniversary of our country." Does the Congress really believe this can be done? Is Congress and the public really convinced at this point that all that is needed is another Apollo program? Certainly the NCI, with its new program, is doing nothing to dispel the illusion. At some point, the gap between expectation and reality will become apparent. Then it is likely that a severe backlash will occur with attempts to find out who made the mistakes and to find new ways to be more efficient about research. This can only result in another wave of disruption and more delays in solving important medical problems. It bodes little that is constructive for the future.

What can we do to move in a more positive direction? We must continually educate the public and its representative to how real research progresses. We must continue to insist that there is much basic research to be done in many areas of biology before it is likely that we will be able to understand, prevent, and control most malignancies. A most important thing is to insist the decision to end training grants and fellowships for young basic researchers be reversed. Without a continued influx of the new, prepared minds that these awards provide, research will soon return to the scholasticism of the middle Ages mixed with the supertechnology of our own times. Thus, mountains of data will be piled up but the important new insights or breakthroughs will be fewer and farther between.

It may be useful to emphasize that the trend towards centralized control of cancer research is in complete accord with the whole Nixon approach of attempting to control the entire country from the White House. The powers of Congress and even of independent departments are being abrogated by the President and his White House staff members whose authority seems to supercede even that of Cabinet officers. The first- or second- level positions in the departments of Defense, Health, Education, and Welfare, Commerce, Treasury are being filled with former White House staffers. Initiative and even the checks and balances provided so wisely by the framers of our

Constitution are being destroyed or ignored by the President and his close advisors. The solution of the "Cancer Problem" may need a sweeping reversal of this whole trend.

L.A. Herzenberg.

APPLIED IMMUNOLOGY

THE TAB OF IMMUNOLOGY

A Commentary on the Canadian ALG Trial

The poor hard-working B-lymphocyte
Makes antibodies both day and night
Which circulate and bind, to fight
Most foreign raiders,
With complement the lytic bite
Will crush invaders.

His less-known brother T-cell,
Does his job just as well
By bringing up A-cells 'neath his spell
To digest cancer.
On xenografts the truth to tell
Is even fancier.

But if their militant protection
Saves their host from strong infection
It also shows a bad direction
In allergies,
And T-cells often force rejection
Of grafted kidneys.

For Imuran will not suppress alone
Or even together with Prednisone:
Though ALG will atone
For a month or two,
Eventually the T-cells clone
And destroy the tissue.

S. W.

NEWS

AVERY-LANDSTEINER PRIZE AWARDED TO DOCTORS W.F. GOEBEL and J. OUDIN

During the meeting of European Societies for Immunology, held on 4 to 7 September, 1973, in Strassbourg, Doctors Goebel and Oudin received the first Avery-Landsteiner Award. This prize was initiated by the Behringwerke, A.G. Company in 1968. It will be awarded every second year for special achievements in the field of immunology.

Dr. Walther Frederick Goebel was born in California, graduated from the Chemistry Department of the University of Illinois and spent a year with Professor Willstaetter, at the University of Munich. Since 1924, he was working at the Rockefeller Institute for Medical Research. In his early years at the Rockefeller, he was also working with Dr. Oswald T. Avery himself.

Dr. Jacques Oudin has been associated with the Pasteur Institute, in Paris, since 1937. He is Head of the Department of Analytical Immunochemistry of this Institute. His contributions to immunology are, among others, his brilliant analysis of antigen-antibody interactions in gel, and its application to qualitative and quantitative immunochemical analysis. His pioneer work on allotypy and idiotypy is also widely known.

INTERNATIONAL STANDARD SERIAL NUMBER (ISSN 0068-9653)

ASSIGNED TO THE BULLETIN.

In January 1973, the National Library of Canada was designated the Canadian centre for the International Serials Data System. As such it is responsible for assigning ISSNs to Canadian serials and submitting information about them to the system's central files in Paris. The purpose of the International Serials Data System is to provide an up-to-date record of world serial publications. Each serial is to be given a unique number (ISSN) to facilitate its identification, location and ordering. At present, ISDS Canada is undertaking the registration of new serials published in Canada from January 1, 1974 and at the same time is beginning retrospective coverage.

NEW JOURNAL

Journal of Immunogenetics, edited by K. Bauer (Heidelberg) started to appear in January 1974, published by Blackwell Scientific Publications, Oxford, London, Edinburgh, Melbourne.

The new Journal will be published bi-monthly, at \$ 50.00 per annum, post free. The members of the Editorial Board are:

K. Berg, Oslo; B. Cinader, Toronto; H.H. Fudenberg, San Francisco;
K. Furukawa, Maebashi; H.M. Grey, Denver; R. Grubb, Lund; S. Iseki,
Tokyo; Alena Lengerova, Prague; J.J. Marchalonis, Melbourne;
O. Prokop, Berlin; J.J. vanRood, Leiden, and G.F. Springer, Evanston.

The Chairman of the Editorial Board is Ruth Sanger, London.

The purpose of this new journal is to provide a medium for the rapid publication of research papers and review articles of high quality in the field of immunogenetics. Its scope includes the immunogenetics of antigens, such as proteins, histocompatibility and blood antigens; of antibodies as well as the ontogenetic development and the evolution of immunoglobulins, the immune response and the complement system. Other topics include the genetics of tolerance-induction and of membrane antigens of the immunocyte. Immunogenetics is a relatively new field and literature on it has been scattered in several journals whose principal concern has been with immunology, genetics, biochemistry, primatology and anthropology. It is however a field that is rapidly expanding and already showing important results particularly in cancer research and in its effect on legal problems in medicine and surgery. The increasing interest in immunogenetics has prompted a call for a medium of publication in which all its aspects can be concentrated in one source and the *Journal of Immunogenetics* was conceived to meet this need. Scientists in this field now have a journal in which they can learn without delay of the work of others throughout the world and for the rapid publication of the results of their own research. The spread of ideas which the Journal will thereby help to achieve must stimulate and contribute to further development of the science.

Papers and short communications on original research and review articles are invited from scientists working in immunogenetics and related fields. Contributions which the editors consider suitable for publication will be passed with a minimum of delay to Blackwell Scientific Publications who will undertake publication within about four months of the receipt of manuscript. The Journal will be printed on art paper for the clear reproduction of illustrations and the publishers can redraw figures when this is necessary to achieve consistency of style. The *Journal of Immunogenetics* intends to maintain a high standard of editorial selection and contributors should in the first place submit their papers, in triplicate, to Dr. K. Bauer, Rohrabacher Strasse 8/III/3, 69 Heidelberg, Germany.

FETAL BOVINE SERA

INFORMATION CONCERNING FETAL BOVINE SERA FOR CELLULAR IMMUNOLOGICAL STUDIES
IS AVAILABLE TO ALL INTERESTED INVESTIGATORS

Under the auspices of NIH Contract No. 1-CB-23883 extensive screening of fetal bovine sera for use in *in vitro* culture studies of mouse cells is being conducted.

Tests include generation of primary humoral and cell-mediated cytotoxic response *in vitro* and proliferative responses to mitogens, antigens and factors within the sera.

Participating manufacturers have agreed to hold selected lots for up to 3 months for the exclusive use of investigators involved in *in vitro* immunological studies.

For further information on procedures and results of screening, contact:

Dr. Stanley Shiigi, or Dr. Robert Mishell,
Department of Bacteriology and Immunology,
University of California,
Berkeley, California 94720.

ANOTHER NEW JOURNAL

Immunogenetics, Editor-in-chief George D. Snell; Managing Editor Jan Klein.

Immunogenetics publishes original full length articles, brief communications, and reviews on research in the following areas:

Immunogenetics of cell interaction,
Immunogenetics of tissue differentiation and development.
Phylogeny of alloantigens and of immune response.
Genetic control of immune response and disease susceptibility.
Genetics and biochemistry of alloantigens.

Subscription Information: 1974 Vol. 1 (6 issues) \$55.00 including postage.

POSITIONS AVAILABLE

CANADA

Dept. of Immunology, Univ. of Manitoba, Winnipeg, Canada. As a result of recent addition of major laboratory facilities and the establishment of the MRC Group for Allergy Research, the following vacancies are available:

- 1) Two academic staff positions for clinical immunologists: qual. in allergy and/or auto-immune diseases, in the Depts. of Medicine and Paediatrics with cross-appointment in the Dept. of Immunology. The clinical and teaching duties will be discharged within the Univ. Health Sciences centre with research facilities in the Dept. of Immunology. Rank and salary according to qualifications and experience.
- 2) Postdoctoral Fellowships: for holders of Ph.D. or MD degrees, for research programmes in allergy, tumour immunology or rheumatology. Sound knowledge of immunochemistry, and/or immunobiology, and/or tissue culture procedures desirable. Salary according to MRC scales. Predoctoral stipends for students proceeding to M.Sc. or Ph.D. Research assistantships for technically qualified individuals with experience in immuno biology or related fields.

For preliminary interviews in London during the last week in April, candidates are invited to submit curriculum vitae, description of experience and names of 2-3 references by April 20th to Prof. A. Sehon, c/o Tumour Immunology Unit, Zoology Dept., University College, London WC1E 6BT.

Department of Biology, University of Windsor invites applicants for the following positions:

- 1) Molecular Biologist: Full Professor. Qualifications: An established research reputation in cell regulation mechanisms, preferably with interest in development. Duties involve some undergraduate and graduate teaching and research. Salary negotiable.
- 2) Immunologist: Assistant or Associate Professor. Salary dependent upon qualifications. To teach immunology and some microbiology and pursue active research in cellular aspects of the immune response.
- 3) Biologist: Lecturer. Salary minimum \$ 10,250. Qualifications: Honours B.Sc. or M.Sc., some teaching experience desirable. To coordinate the laboratory in an audio-tutorial course in introductory biology and teach anatomy and physiology to nursing students. Research commitment is not expected.
- 4) Post-Doctoral Fellow or Research Associate: Microbiologist or biochemist with interest in polysaccharide chemistry, ultra-structure or cell regulation mechanisms for research on

prokaryotic developmental systems (myxobacteria and blue greens).
Salary \$8,500 and possible teaching supplement.

To apply, send curriculum vitae, copies of reprints (where applicable) and names of three referees to:

Dr. H.D. McCurdy, Head Biology Department,
University of Windsor, Windsor, Ontario.

ENGLAND

- 1) Allen and Henburys, Ware. Senior Research Biologist (Ph.D. or equiv. in Immunology or Biochemistry with extensive experience in both) needed to take charge of allergic asthma and inflammation project work within the Biochemical Projects group. Responsibility for work of up to 15 biologists testing novel compounds etc. Practical contribution in developing projects expected. Write with details, present salary etc. to Mr. G.R. Jones, Personnel Officer, Allen & Henburys Research Ltd. Ware, Herts, SG12 0DJ.
- 2) National Institute for Biological Standards and Control, Holly Hill, Hampstead, London NW3 6RB. Post-doctoral scientist in division of hormones and blood products. Sal. range Lbs. 1, 668 - Lbs. 3, 192. Knowledge of immunological aspects of haematology desirable; experience in clinical haematology useful. Work involves biometry of components of blood and blood cells and carries some responsibility for control of blood products. Good opportunities for individual and international collaborative research. Applications to the Director.

AUSTRALIA

The Australian National University, John Curtin School of Medical Research. Applications are invited for the following:

Senior Fellow in Immunology (42-A26) Appointment will be made in the Department of Immunology (Head: Professor Bede Morris). Preference will be given to applicants who have worked in the fields of self-not self discrimination and immunological tolerance.

U. S. A.

- 1) Cellular Immunologist with Ph.D. degree or equivalent and an active interest in teaching and research wanted for the position as assistant professor in the Dept. of Biology, University of Missouri. Interested persons may write to Dr. John T. Fales, Chairman, 109 Biological Sciences Building, Kansas City, Missouri 64110. (An equal opportunity employer).
- 2) Dept. of Chemistry, Florida State University is seeking candidates for the position of assistant or associate professor starting September 1974. Women members and minority groups are especially encouraged to apply. Interested persons should write to Dr. E. Frieden, Professor of Chemistry, Florida State University, Tallahassee, Florida 32308.
- 3) Candidates with doctorate in microbiology, bacteriology, immunology or biology, or with considerable experience in these areas, are wanted for the position of Technical Director for a midwestern pharmaceutical firm. For information, write to Mr. Roy C. Pruitt, Director, Evans Associates, 44 Montgomery St., San Francisco 94104.

POSITIONS SOUGHT

Immunologist, A.I.M.L.T., Ph.D. Research experience and publications in tumour immunology, transplantation and cellular immunity. Teaching experience in immunology. Clinical laboratory experience in biochemistry, serology, immunology and radioisotopic assays. Seeks industrial, hospital or academic position. Please direct all enquiries to the Editor of this Bulletin.
