

Progress in Immunology
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Preface

The International Congresses of Immunology have become for the science of the immune system what Olympic Games are for sports: the performance of the best that the different disciplines can offer, in a great friendly reunion of immunologists from all over the world. The Gesellschaft für Immunologie of the Federal Republic of Germany is grateful and proud that it was given the opportunity to be host to the international world of immunology.

The five themes of this Congress – structure and function of recognition and effector molecules; cell developments; effector phases; defense; and preventive and therapeutic manipulations – deal with the traditional areas of immunological research: biochemistry, cell biology, microbiology, and pathology. Despite the veritable explosion of knowledge in all disciplines of immunology, a strong sense of unity in scientific effort can be felt. Modern molecular and cellular biology and the exciting technical advances in our capacity to clone genes and cells, to express and engineer proteins, and to transfer, modulate, and eliminate single specific cells of the immune system have drawn basic, clinical, and technical immunology more closely together. Medicine is encouraged that the basic discoveries of the molecular and cellular functioning of the immune system may be applicable to the diagnosis, treatment, and management of many diseases, such as bacterial, parasitic, and viral infections, autoimmune diseases, immunodeficiencies, and cancer. Basic research is beginning to understand nature's unfortunate and often terrifying experiments. The hope is strong that our ever-increasing knowledge will improve the quality of our lives.

The proceedings, in particular the introductions to the 27 symposia, convey the impression of the maturity of this field which was felt so strongly at the congress in Berlin. They relive the excitement of new discoveries, not least in the late additions to the symposia. Perusing the reports in their written form helps us to absorb the enormous wealth of experimental data, leading to concepts of the structure and function of the immune system which provide unexpected views of the future of immunology. The aim of any international congress of this size and scope must be to disseminate the scientific information as rapidly and accurately as possible. Published in the same year in which the congress took place, these proceedings will allow thousands of scientists interested in the immune system – those who attended the Congress, and those who could not – to “take part” in all the symposia.

We expressed our gratitude at the beginning of the Congress (see p. XXX) to all the national and international advisors who helped assemble the program. We now wish to thank the 188 symposium speakers and 265 workshop chairpersons, who laid the basis for the scientific success of the Congress. We appreciate the cooperative spirit and disci-

pline of more than 90% of the symposia speakers who had their manuscripts ready at the congress or shortly thereafter. It is remarkable that 2 weeks after the congress these contributions are in our hands, although 36 of the 188 symposium speakers were only chosen shortly before or even at the congress itself.

Our heartfelt thanks go to Springer-Verlag, especially to Dr. Dietrich Götze and Ms. Barbara Montenbruck, and to the secretary of the program committee, Ms. Leslie Nicklin, for their extraordinary efforts to make Progress in Immunology, Volume 7, available in 1989. They, and all of us, are rewarded with a truly historic document representing a milestone in immunological research.

August 1989

For the Editors
FRITZ MELCHERS

Frau Bürgermeisterin,

President Nossal,

Guests of honor,

Ladies and gentlemen,

It is certainly one of the most significant moments in my life to welcome you, the international immunological community, to the city of Berlin. Today the 7th International Congress of Immunology is being opened. On this occasion, I extend a very warm welcome, from the depths of my heart, to all immunologist colleagues who have found their way to Berlin.

Although I would like to welcome all of you individually, I cannot do so for obvious reasons. I must therefore restrict my individual welcomes to a number of guests whose presence here is either an outstanding honor for the Organizing Committee of the Congress or a particular personal pleasure, or both. We are very much honored by your presence, Frau Bürgermeisterin Stahmer, as representative of the Governing Mayor of the City of West Berlin under whose patronage this congress takes place. I welcome you, Sir Gus Nossal as president of the International Union of Immunological Societies, which has given us the honorable task of organizing this congress. In addition, a very warm welcome to Alain de Weck, past president of IUIS and Jacob Natvig, vice president and president elect of IUIS. I should like to include in this welcome all other council members and official delegates, not only of IUIS but also of the European Federation of Immunological Societies and of each national immunological society.

We have, among the members of this congress, 5 Nobel laureates as guests of honor. These are Prof. David Baltimore, Prof. Baruj Benacerraf, Prof. Niels Jerne, Prof. Georges Köhler, and Prof. Suzumu Tonegawa. I welcome you and I am very happy that you accepted our invitation to be guests of honor to this congress. In recent years, Nobel prizes for physiology and medicine have been awarded with increasing frequency to immunologists. After the award to Edelman and Porter in 1972 it took 8 years until Benacerraf, Dausset and Snell earned it again for immunology in 1980. Only 4 years later the prize was awarded to Jerne, Köhler and Milstein and just 3 years later to Tonegawa. Nothing demonstrates better the impact that immunology presently has in medicine and biomedical research.

Guests of honor include further Prof. Michael Sela, former president of IUIS, Prof. Paul Klein, honorary member of the Gesellschaft für Immunologie, and Prof. Otto Westphal, and Prof. Niels Jerne honorary chairmen of this congress.

Prof. Michael Heidelberger, 101 years of age and honorary member of the Gesellschaft für Immunologie, was also invited as a guest of honor, but did not feel quite up to the strain of travelling. It is my special pleasure at this moment to convey the greetings and good wishes of this entire assembly to Dr. Heidelberger in New York, witness to almost the entire history of immunological research.

In the preparation of the congress, which started approximately 10 years ago but which reached a climax of activity in the last 3 years, several generations of immunologists have taken part. When IUIS decided to give the 1989 Congress to the Gesellschaft für Immunologie, Prof. Klaus Rother had just succeeded Prof. Otto Westphal as Chairman of our Society. I should like to use this opportunity to firstly thank our senior colleagues, not only for bringing this Congress to Berlin but also, in a much broader sense, for the scientific and organizational foundations they laid in the reestablishment of immunology in postwar Germany. Secondly, I would like to thank my contemporary colleagues Jochen Kalden and Fritz Melchers, with whom I shared most of the responsibility in my task. Thirdly, although I cannot mention all the members of the various organizing and program committees by name, these colleagues took most of the workload upon their shoulders and I thank them sincerely for their efforts. All of these people have worked tirelessly on the preparation of this Congress. Now the period of preparation is over, I think that I speak in all our names when I say that the overwhelming worldwide interest in this Congress more than compensates the burden of its preparation.

I must take this opportunity to mention gratefully the contributions of organizations, foundations and companies to the financial support of this congress, without which many of the scientific activities as well as some of the hopefully enjoyable social activities would not have been possible. Outstanding contributors were the Senate of the City of West Berlin, the Deutsche Forschungsgemeinschaft, the Federal Ministry for Science and Technology, and the companies Behringwerke, Hoffmann-La Roche, and Sandoz AG. I cannot mention all the other contributors, but their names are compiled in the Program booklet and I would like to express my gratitude equally to them. Each contribution has made our life a little easier.

It has become customary on this occasion to commemorate the immunologist colleagues who have died since the time of the previous congress. I should like to pay my respects to all colleagues deceased since the congress in Toronto in mentioning the names of four eminent immunologists whose contributions to science and whose reputation as teachers were outstanding. These are Ruggiero Ceppellini, John Humphrey, Peter Medawar, and Jacques Oudin. Their names will be remembered, as will those of all other deceased friends and colleagues. The members of the Gesellschaft für Immunologie also remember with affection our friend and Honorary Member Paul Kallos, who died in 1988.

In the phase of the preparation of the congress in which we collected the abstracts, we were amazed to see that about 14000 immunologists have contributed well over 5000 abstracts. Hence, judged from the number of abstracts, and perhaps also from the number of actual participants, this may be among the biggest of the international congresses thus far. Somehow I feel that this must have something to do with the attraction of a place like the City of Berlin, which lies between East and West Europe and which is thus an ideal place of contact between them. The Organizing Committee has taken every effort to facilitate the participation of as many colleagues from East European countries as possible, and I extend a special

welcome to these colleagues, hoping that their participation exceeds that of previous congresses. We are living in a time in which there seems to be increasing hope for a greater freedom of exchange between the West and the East, not only politically and economically but perhaps also in science. The 7th International Congress of Immunology, and the forthcoming 8th Congress in Budapest, could become landmarks in this development.

As you will see, Berlin is an enjoyable city and has much to offer for your relaxation after the scientific work. Nevertheless, August is the time of the general summer vacation in Germany, so that you may find the cultural program of the city not overwhelmingly crowded. Thus, the Organizing Committee felt obliged to offer an extensive social program highlighted by the boat party on Tuesday, the summer night party on Thursday, and the classical music concert on Friday. I would very much like to encourage everyone's participation, and I very much hope to see many of you there. I promise that it will be difficult to find equivalent entertainment for the same price in Berlin.

I now have the privilege of declaring the 7th International Congress of Immunology open. I wish you all very fruitful and informative days as well as relaxation and "Gemütlichkeit" in the evenings. I thank you for your attention.

K. EICHMANN

Professor Nossal, President of the IUIS,

Professor Kalten, President of the Gesellschaft für Immunologie,

Professor Eichmann, Chairman of the Congress,

Nobel laureates,

Ladies and gentlemen,

I am happy that you have come to Berlin and happy to open your Congress. Even for a city which has experienced as many conventions as Berlin, it is a special event to be accepted into the impressive range of venues of the International Congress of Immunology.

As mayor of this city and also on behalf of Governing Mayor Walter Momper, I bid you a cordial welcome. With your Congress opening you met exactly the day where Mr. Momper is already on vacation and I was supposed to be still on vacation. So I came back a little earlier to let this be my first official act.

Despite strong competition from other countries I understand it is no coincidence that Berlin was chosen as the venue for this. The location of the city, at the seam between East and West, lends itself to cross-border scientific dialogue. Against the background of a Europe that is on the move, Berlin is an excellent meeting place for scientists and artists, economic experts and politicians. The great number of representatives from the countries of Eastern Europe — I welcome you with special warmth — is proof that the choice of Berlin was right.

In this city lie the roots of immunology, which originated more than a century ago from the discoveries of Robert Koch and his disciples Ehrlich, Behring and Kitasato. The practical applications of their discoveries have since not only saved the lives of thousands of millions of people and eradicated epidemic diseases, but have been the basis of our present understanding of immunology. This is something of which Berlin — and especially the Robert-Koch-Institut — can rightly be proud.

But it cannot be passed over in this context, that immunologists at the Robert-Koch-Institut in particular, as historical records document, participated after 1933, following the expulsion of many of the most able members of the institute, in crimes against humanity, such as lethal human experiments with inoculation sera in concentration camps.

Following the exodus of distinguished scientists from Germany during the National Socialist years, the center of immunological research moved mainly to the USA and Great Britain.

In the Federal Republic of Germany, above all in Berlin, there have been great efforts since the 1960s to regain our traditional position in immunological re-

search. The 7th International Congress for Immunology will certainly strengthen Berlin's reputation as one of the leading research centers in the heart of Europe. The great resonance which this event has found in Berlin shows that Berlin is on the right path toward regaining its former prominence in science. It is in accordance with this goal that the chair of immunology, now occupied by Professor Diamantstein, was created at the Steglitz Clinic of the Free University Berlin in 1987.

I should like to express my thanks to the organizers of this international congress, mentioning particularly Professor Kalden, Professor Eichmann and Professor Melchers in the name of all the others.

Ladies and gentlemen, allow me to briefly outline the principles of the Senate of Berlin concerning the subject that brings you together here: The Senate puts at the forefront of a social and ecological renewal of public health policy for Berlin the striving to prevent disease, and not merely alleviate and heal it. We want to extend preventive care against disease-causing environmental conditions such as pollutants in air, water and soil. These are projects in which the achievements of immunology can help us.

There is one particular topic from the wide range of your schedules I want to refer to: You are going to discuss among other things, clinical immunology. To this field belong inherited and acquired immune deficiency diseases, such as AIDS. It is a further objective of this Senate to close as soon as possible the gaps in AIDS policy, particularly in the field of drugs, by new measures in the sense of protecting the most affected groups. This means group-specific measures such as a Stop AIDS project and low-threshold offers to drug addicts not willing to subject themselves to a therapy of total abstinence.

We hope that basic immunological research will show up ways of understanding disease-causing principles, and also ways of treating and preventing these and other chronic diseases.

I wish you successful and stimulating discussions and a richly interesting stay in our city. I also hope that you will not be immune to the variety existing in multicultural Berlin, that, on the contrary, you allow yourselves to be infected and succumb to the vitality of the city.

I thank you for your attention.

I. STAHRER

*Herr Vorsitzender,
Frau Bürgermeisterin Stahmer,*

meine Herren Ehrenpräsidenten Jerne und Westphal,

Dr. Kalden,

Dr. Melchers,

meine Damen und Herren,

Es ist für mich eine ganz besondere Ehre und auch eine große Freude, als symbolischer Kapitän der 25000 Personen starken Schar der Weltimmunologen, sie hier in Berlin herzlich willkommen zu heißen. Die Immunologie bringt uns zusammen; aber hier in Berlin gibt es doch soviel mehr zu genießen: Kunst, Kultur, die Schönheit der eleganten Großstadt, Geschichte und auch einen gewissen, hochinteressanten Blick in die Zukunft, auf den ich später noch eingehen werde.

So in welcoming you to Berlin as your President and as we begin this serious and adventurous week, the first and also the most important thing that I have to do, in the name of the IUIS, is to thank our German colleagues for the three years of hard and painstaking work that have prepared the way for our deliberations. No one could have done more to ensure that the presentations have a true international perspective, a fine balance between the many elements of our great discipline, and a modernity which gives due emphasis to recent discoveries and to younger workers. As an Australian — our country had the privilege of hosting the 3rd Congress — and as an avid student of all 7 Congresses since Washington in 1971, I know very well the immense amount of patient and self-sacrificing effort involved in ensuring that all the pieces of the jigsaw puzzle fit together.

To the democratic co-leadership of the Congress, Professors Eichman, Kalden and Melchers, and to all the many who worked on committees, subcommittees and as advisors, our heartfelt thanks from IUIS.

Ladies and gentlemen, a tragic pandemic has given immunology a new prominence in society, even a kind of fame. However, for those of us who have been in world immunology for some time, it really did not require the tragedy of AIDS for us to realize that communicable diseases, including vaccine-preventable communicable diseases, continue to take a devastating toll, particularly in the developing countries. I want to say to this large gathering here that one of the most satisfying things of my three years as president has been the excellence, warmth, depth and breadth of our relations with WHO. Yes, we must make every effort to control AIDS, of course, sincerely; but also YES we must link arms with WHO in the struggle against other communicable diseases, the struggle to devise new and im-

proved vaccines. Dr. Lambert of WHO has informed us of new research plans in this field, which we must strongly support.

All of us share, I think, a huge sense of excitement about the progress of immunology. The revolutions in DNA technology, protein chemistry including structural analysis, and cell biology have given us depths of understanding not dreamt of even a decade ago. So it is with a huge sense of confidence and adventure that we begin our week at the 7th Congress.

We are meeting here in Berlin, the city, as others have said, of heroic figures in the history of our discipline. (I warmly recommend to you the historical display on ground level.) Is it not also the case that we approach political life with a new sense of hope and adventure when we are here in Berlin? Some of the developments in superpower relationships, in the arms race, in the rhetoric governing discourse between nations, have recently taken a truly revolutionary turn. And, somehow, the new Berlin, a crucible of social change, symbolizes so much of what is in the air. There is history in the making at this meeting point of east and west; a sense of exhilaration about the possibility of a peaceful future that I have not experienced in my adult life, lived totally in the nuclear age.

As immunologists, we can do so much to promote and accelerate goodwill among nations. As IUIS, we have a long tradition of breaking down national barriers, finding our collaborations where the scientific impulse demands; finding our friendships where shared intellectual concerns bring us together. We have our own particular brand of glasnost that we can practice with vigor and optimism, here in Berlin and beyond.

Meine Damen und Herren, nach diesem Kongress verlasse ich meinen Posten als Präsident der Internationalen Vereinigung der Immunologischen Gesellschaften. Ich kann Ihnen tatsächlich versichern, daß sich die Immunologie in einem brillant guten Zustand befindet. Meine "State of the Union" message ist vollkommen positiv.

In closing, I want to thank the many colleagues who have made my three years as President so happy and, I believe, productive: my fellow officers of the Council; all the Council members; the Chairpersons of the many hard-working Committees; the Assembly; the whole wide family of the IUIS. This afternoon, we elected Dr. Jacob Natvig of Norway to succeed me as President of the Union immediately at the conclusion of the Congress. His dynamic personality, dedication, energy and true internationalism will ensure that the Union is led with distinction, and my congratulations and very good wishes go with him.

Thank you.

G. J. V. NOSSAL

Frau Bürgermeisterin,

Sir Gustav,

Nobel laureates,

Ladies and gentlemen,

Dear friends,

As President of the Gesellschaft für Immunologie, I would like to extend a warm welcome to all of you who have come to the 7th International Congress of Immunology in the City of Berlin.

Over the last century, this City has experienced very different times, good ones as well as bad ones, and its eventful history reflects — at least in certain aspects — the situation of immunology in Germany over the last 8 — 9 decades.

Among the different activities during this congress, an exhibition has been organized which is called Berlin — Roots of Immunology. It highlights major scientific contributions which originated from this city at the turn of the century. They are connected with names such as von Behring and Kitasato, Koch, Ehrlich and von Virchow. However, when we display in an exhibition major achievements of immunology in Germany from earlier in this century, it does not mean that we, the Society for Immunology, do not remember that those early flourishing times of immunology came to an abrupt end in 1933 when about 500 medical professors had to leave this country. They represented almost half of all the professors teaching at German universities at that time, and included quite a number of famous immunologists. You might forgive me if I just mention, as *pars pro toto*, Ernest Witebsky.

After the Second World War, the emerging science of immunology at the universities of the Federal Republic was substantially and overwhelmingly supported by all the major countries doing research in immunology, offering and providing training facilities for young German scientists. I hope you will forgive me for not naming all the famous institutions in the different countries which provided assistance and with which — in many cases — scientific exchange

I myself, as one of many who were trained in immunology abroad, and the Society for Immunology are deeply grateful for this help in reestablishing immunology research in the Federal Republic of Germany, and without any doubt this support helped to found the Gesellschaft für Immunologie in 1967, which — I believe — is quite a young Society for Immunology, although two years older than IUIS.

The present activities and contributions to Immunology from our Society are summarized in the August issue of *Immunology Today*, including a special section on Immunology in the Federal Republic of Germany, published on the occasion of

this Congress. The scientific contents of that journal correctly reflect — in my opinion — the immunological activities which are being pursued in the Federal Republic of Germany. However, although German immunologists too know that eagles have an immune system, I would have preferred to see the cover and logo for this special issue similar to the poster designed by Jean Tinguely for this congress, which in my opinion, expresses in a fantastic way the ever-moving immune system, and which much better reflects the feelings, "die Stimmung", of the members of the Society.

By now, the "Gesellschaft für Immunologie" has roughly 1000 members, and more than half of them are in their early thirties and enthusiastically involved in immunology research. However, with regard to the institutionalization of departments in basic as well as clinical immunology at German universities there is still a deficit, so a lot of work still has to be done. Perhaps this 7th International Congress of Immunology will help to further improve the situation.

The "Gesellschaft für Immunologie" is proud that it has been entrusted by the IUIS to organize the 7th International Congress of Immunology. Since organization means people, I would like to thank Klaus Eichmann and Fritz Melchers who took over the task of organizing this Congress as Chairman of the Organizing Committee and Chairman of the Scientific Program respectively. Furthermore, I would like to thank all the members of our Society who have been actively involved in the organization helping us to make this 7th International Congress of Immunology a success.

The Society for Immunology and I hope that all of you are not only going to experience a week full of exciting scientific information and exchange, but that you will also find time and opportunity to see and explore the uniqueness of Berlin's life by day and maybe also by night, if time permits.

Let me finish with a personal wish: I do hope that the young members of our Society as well as doctoral and postdoctoral fellows attending this Congress will take the opportunity of establishing fruitful relations with scientists from all the different countries who are here in Berlin, in order to exchange ideas and to discuss possible cooperation projects. This, hopefully, would result in a continuing exchange of scientists, helping us to further develop immunology in this country in the same international way as has been the case in the past.

J. R. KALDEN

Frau Bürgermeisterin Stahmer,

Sir Gustav Nossal,

Honorary Chairmen Niels Kaj Jerne and Otto Westphal,

Guests of honor,

Friends and colleagues,

More than three years ago, when the Gesellschaft für Immunologie set up a Program Committee for the 7th International Congress of Immunology, one of the first decisions taken was to organize a scientific program which would combine topics of basic, clinical and industrial immunology — all under one roof. This was decided because it was felt that the often divergent interests of these fields of immunology are clearly in need of each other. None of them can prosper without knowing the progress of the others.

In your program book you will find the three years of our efforts summarized in 27 symposia and 130 workshops. We hope that they will cover the most important issues of immunology today, and we hope that you will find this program interesting, stimulating, informative, exciting and rewarding.

At 8.30 in the morning and at 2.00 in the afternoon no other scientific activities are scheduled than the 30-minute long introductions given by the chairpersons of 27 fields of immunology covered by the symposia. We hope that these half-hour introductions will serve as overviews of recent exciting discoveries and of current problems, and will give the nonspecialist a chance to learn where a given field of immunology stands — and in which direction it is moving.

It has often been regretted that symposia of large international congresses must be planned so far in advance that the latest news is most often omitted, or is not publicized widely enough. We have therefore reserved at least one half hour of each symposium for such latest news, chosen at the last minute by the chairpersons. You can find these late additions on display at the entrance of the congress center, and in the symposia halls. We hope that this gives recent exciting discoveries a chance to be presented to a wider audience, and will heighten the curiosity for what is really new. I would like to thank all the symposia chairpersons for these additional efforts to make the congress scientifically even more lively.

The programs of the workshops, and the styles in which they are to be held, have been planned entirely and only by the chairpersons. In fact, the chairpersons were encouraged to solicit contributions. This, we hope, will give life and excitement to the workshops — and I thank all the chairpersons for their efforts.

All participants who so wished were given the opportunity to present a poster. As a result, over 4300 posters will be presented in the one week of the congress, and

this requires skilful and devoted planning. I would like to thank Angelika Reske-Kunz and Reinhard Burger for their enormous organizational efforts.

It takes the cooperation and attention of all the poster presenters to make this part of the congress a success. Imagine that every morning and every noon, 400 to 600 posters will have to be mounted, and at the same time an equal number will have to be removed! I urge all poster presenters to follow the instructions in the program very carefully indeed.

At lunchtime, four respected immunologists will talk about their scientific and personal recollections of important milestones in the discovery of the immune system, and the four national societies of the USSR, China, Hungary and Brazil will introduce you to their interests and efforts to conduct immunological research in their countries.

Now that the congress is ready to begin, I wish to thank those who helped to assemble the scientific program of 27 symposia, 130 workshops, 4300 posters and 5140 abstracts, submitted by over 14000 authors.

First, I would like to thank the 17 subcommittee chairpersons, the over 100 national, and the over 250 international advisors for their suggestions and criticisms. Then I wish to thank Boehringer-Mannheim and the Deutsche Forschungsgemeinschaft for their financial support of the planning meeting at Schloss Elmau, and Hoffmann-La Roche for their support of the Basel Institute for Immunology which housed the scientific secretariat.

I want to thank the staff of the secretariat for their devoted efforts. More than anyone else I would like to thank Leslie Nicklin, secretary of the program committee, for the three years of her life which she devoted to this congress — and I do so from the bottom of my heart. She kept order in the correspondence with over 350 advisors and over 500 chairpersons and speakers. She ordered and edited the program, received and ordered the abstracts, and assembled the authors' index. She was always in command of the situation, and stayed calm, helpful and friendly. It is very simple: she deserves a big hand of applause from all of us.

Let me also thank two people who are not scientists. Anne-Sophie Mutter and Jean Tinguely, two outstanding artists of our times, are giving their precious time and their unique talents to our congress. Jean Tinguely has created our congress poster, and Anne-Sophie Mutter will play Dvořák's Violin Concerto on Friday night. Finally, I would like to thank the Gesellschaft für Immunologie and all its members, particularly my two friends and colleagues Klaus Eichmann and Jochen Kalden, for entrusting me with the organization of the scientific program of this congress, held in the city where I was born. I have felt the fun and excitement of discovering new areas of immunology and the frustration that all of the areas of immunological research had more talented scientists than could be considered to participate as chairpersons and speakers.

And I would like to thank the many immunologists who chose to attend this congress, and thereby to reward us as organizers by making this one of the most popular international congresses of our field held so far.

The immune system protects us from the hostile environment which is full of infectious diseases. A hundred years ago Koch, Behring and Ehrlich, in this town, were already fascinated by the idea that we could understand the structure and function of our immune system so well that we could protect ourselves against this hostile environment even better than we do naturally. One hundred years have

brought tremendous advancement of our knowledge of the immune system, and with it the realization that it sometimes does not function properly, and that it sometimes attacks what it should not attack: our own body. We still need much more basic knowledge of the system, and we need to apply this knowledge: to get better protection, to fight autoimmune disease, and to strengthen against immunodeficiencies. I hope that this congress will publish new knowledge, air new views, discuss new strategies, and start new cooperations between scientists all over the world with the aim of achieving these goals. Welcome to Berlin. This is the moment for which we have been waiting for three years. We now light the immunological flame with talks by the two Honorary Chairmen of the Congress.

F. MELCHERS