

JAROSLAV STERZL - AN AFFECTIONATE TRIBUTE

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I dedicate these reminiscences to Jaroslav Sterzl on the report of his death just prior to his 87th birthday. What follows was originally published (Silverstein, 1995) on the occasion of Sterzl's 70th birthday.

I was honored in 1985 to be invited by the Czechoslovak Immunological Society to help celebrate Jaroslav's 60th birthday at their meeting in Marianske Lazne. In the 1985 issue of *Folia Microbiologica*, dedicated to Sterzl, I wrote a short paper on "Immunology in Prague: Critical Contributions to a Biological Revolution" (Silverstein, 1985). In it, I reviewed some of Sterzl's important contributions to the transition of immunology from chemical to more biological interests. Now, 10 years later and deeply immersed in the history of immunology, I have come to appreciate Sterzl's contributions even more, both scientifically and organizationally. Having known him as colleague, collaborator, and friend for over 30 years, I feel competent to speak to his accomplishments.

STERZL THE SCIENTIST

Between the First World War and the mid-1950s, immunology was primarily concerned with chemically-oriented studies of the structure and specificity of antibodies and antigens. But during the 1950s, and with ever increasing momentum, interest developed in the more biological questions of the anatomy, the physiology, and the pathological implications of the immunological apparatus (Silverstein, 1991). It was during this period that Sterzl entered immunology, and both he and his contemporary Milan Hasek jumped right into the middle of the new immunobiological movement. Almost immediately they started to put Prague immunology on the world map, such that when a summary meeting of Czechoslovak immunology was held in 1954, several of the world's leading immunobiologists saw fit to attend.

Thenceforth, Prague became an important contributor to progress in our understanding of the biological aspects of antibody formation. The work of Sterzl and his coworkers on the ontogeny of the immune response in piglets and rabbits, on the adaptive transfer of immunocompetent cells, and on the inductive phase and cellular dynamics of antibody formation made his Immunology Department in the Czech Academy's Institute of Microbiology in Krc an obligatory stop for investigators in the forefront of progress. The impressive body of work from Sterzl's laboratory is well summarized in the proceedings of the three International Symposia which Jaroslav and his colleagues organized (Holub and Jarosková, 1960; Sterzl, 1965; Sterzl and Rihá, 1970).

The topic closest to Sterzl's heart was undoubtedly the work on developmental aspects of antibody formation. When, after the 1964 Prague symposium, John Humphrey suggested that I collaborate with Jaroslav on a major review of this field for Advances in Immunology, I was flattered. Jaroslav and his colleagues had helped to open up the field of ontogenetic studies with their work on fetal and newborn piglets and on newborn rabbits. I had done some studies on immunogenesis in the fetal lamb, but it was clear that with respect to quality and quantity of work, that of Jaroslav's team far surpassed my own efforts. Thus, I was pleased to be a junior partner to so distinguished a senior, and the resulting review (Sterzl and Silverstein, 1967) represented a definitive summary of the growing field of ontogeny of the immune response, thanks in great measure to Jaroslav's contributions.

Not only was Jaroslav invited to important international conferences, but the symposia that he organized in 1959, 1964, and 1969 became the scientific and social highlights of their respective immunological years, as will be detailed below. Finally, his important contributions to immunology were recognized not only by various medals, prizes, and other honors in his own country, but also by honorary memberships in a number of foreign immunological societies and the editorship of numerous international journals.

THE ORGANIZER

It is one thing to work by oneself, perhaps with a few assistants, and produce important scientific data; it is quite another thing to exercise the leadership necessary to organize and lead the professional activities of an entire generation of scientists within a country.

It is this latter that Sterzl was able to accomplish within a relatively short period of time. Within seven years of his actual start in immunology (at the time of the 1959 symposium), he had already become head of the Division of Immunology of the Institute of Biology, later the Institute of Microbiology of the Czechoslovak Academy of Sciences. Already he had gathered an outstanding group of aspiring immunologists, including among others M. Holub, M. Hrubesová, L. Jarosková, I. Rihá, and Z. Trnka. The group rapidly expanded, and soon became a world-class organization whose members contributed importantly to many aspects of the new immunobiology. Once again Prague figured importantly in international immunology. Early in the century, E. Weil and O. Bail had contributed significantly to immunology and later, F. Haurowitz helped to establish the immunochemical paradigm that ruled the field for so long. Now it was Sterzl and Hasek who put Prague back on the immunological map.

But Sterzl did more organizationally than to establish a leading research laboratory. He helped to found the journal Folia Microbiologica, which served to disseminate the new developments in immunology throughout the Czechoslovak medical world. He helped to give immunology an important place in the Czechoslovak Society for Microbiology, in the Czechoslovak Biological Society, and in the Czechoslovak Academy of Sciences. But in addition to the institutionalization of immunology in Czechoslovak science, Sterzl contributed to its worldwide institutionalization in another important way--the three international symposia mentioned above.

I have written a paper on the importance of international meetings in establishing and validating research advances and interdisciplinary developments (Silverstein, 1994). I point out there that the gathering together of international leaders to present data and to discuss a given area of their science underlines the importance of these recent developments and publishes this importance to the rest of the world. So it was with the Prague meetings on antibody formation, the first at the castle at Liblice and the latter two at the resort at Slapy. At this critical time, when only a few meetings on transplantation and on immunopathology and hypersensitivity were held, the early Prague meetings served as yet another signal to the biomedical research community that immunobiology was a growing force in the world. In addition, the Prague meetings were extraordinary experiences for the foreign participants, thanks to the warm hospitality of Jaroslav and his colleagues, and thanks to the extremely congenial meeting places that they chose. They were, in fact, the social as well as the scientific highlights of the respective immunological seasons.

In my 1985 paper, I recalled for the foreign visitors some of the highlights of the Prague meetings: the Charles bridge across the Vltava; Hradcany castle; Kampa in the

Springtime; U Fleku, U Zlate Konvice, and U Dvou Kocek; Bob Good crazily steering the boat on the river at Slapy; and Pierre Grabar flirting with all the pretty girls. As I said then, "Those who had the good fortune to attend these meetings will ... remember the good old days in Prague."

THE PATRIOT

In his introduction to the 1969 symposium on Developmental Aspects of Antibody Formation and Structure, Academician Ivan Malék expressed his hearty thanks to the foreign guests "for having come to participate in this symposium, in spite of the complicated situation in this country which could, we understand, have changed their decision to come" [my italics]. Of course, Malék was speaking about the uneasy situation that followed the Soviet invasion of Czechoslovakia, which had quenched the joyful spirits that accompanied the Prague Spring of Alexander Dubcek. It is Sterzl's response to these sad events that I wish now to discuss.

At the time of the invasion in August, 1968, Jaroslav was travelling and speaking in the United States, in anticipation of attending an important international conference on "Immunological Tolerance," at Brook Lodge, Michigan (Landy and Braun, 1969). Since the borders were by then closed and the situation uncertain, Sterzl (and Milan Hasek, who was also to attend the Brook Lodge meeting) postponed any decision on how to respond to the invasion of their country, and attended the meeting in mid-September. They both contributed significantly to the scientific sessions, but were obviously very troubled by the political situation back home. As an old friend, I was permitted to sit with them late into the last night of the meeting, while they debated back and forth what to do. Each of them could very easily have stayed on in the United States, since both had received excellent offers of professorships in several distinguished academic institutions. But love of their country and a sense of obligation made both of them decide otherwise. As Jaroslav explained the decision to me (as best I can recall his precise words), "I must go back to Czechoslovakia. We have waited 20 years for this new democratic opening. If we older ones do not return, who will be there over the next years to help bring about another change to the system?"

Not only did Jaroslav return to Prague, but that Autumn he sent a letter to immunologists around the world reminding them that another International symposium was scheduled in Prague for 1969, that the Soviets had illegally invaded his country, and that he hoped that all immunologists would attend the symposium "to show their solidarity with Czechoslovak science." Indeed, at the same time, Jaroslav "disinvited" the Soviet immunologists, a move that would obviously cause great political problems for him and his family later, but which his patriotism demanded that he do.

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Perhaps the best way that I can end this tribute on the occasion of his 70th birthday is to repeat the words that I used to end my contribution to Sterzl's 60th birthday celebration.

For all of these pleasant memories, and more, those who were privileged to attend these conferences and to enjoy such marvellous hospitality must thank and honor Jaroslav Sterzl, his immediate colleagues, and the Czechoslovak Academy of Sciences. Perhaps the most fitting way to end this tribute is to repeat the words with which Gerald Edelman ended the 1969 Prague conference Developmental Aspects of Antibody Formation and Structure: "Science is imagination in the service of the verifiable truth, and knowing the truth requires courage and freedom. Jaroslav Sterzl and his co-workers understood these words, and gave them new and enlarged meaning.

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