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## Nec Soli Cedit (article dedicated to Professor Ludwik Hirszfeld)

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The life and work of Ludwik Hirszfeld was the subject of a deliberation by the well-known author Paweł Jasienica, and in 1984 a short book appeared entitled "Ludwik Hirszfeld" by Marek Jaworski. Of course, articles have also appeared on special occasions, including the enlightening and emotional recollections by Feliks Milgrom, one of Hirszfeld's close students, in his "My Association with Ludwik Hirszfeld, 1945–54" (*Arch. Immun. Ther. Exp.* 1998, 46, 201). In view of the fact that Hirszfeld's own work, "The Story of One Life", is well known, it is no easy task to provide new, hitherto unknown facts or evaluations. This article is therefore comprised of personal reflections devoted to Ludwik Hirszfeld, and is the product of both the contemplation and analysis of documents in our Institute's archives as well as discussions and encounters in which I have participated during the past five years of work in the Institute he founded.

Against the backdrop of these times, in which basic principles and values are undergoing devaluation, the figure of Ludwik Hirszfeld stands out with particular clarity. During his life he acted as a patriot, in the most irreproachable and refined sense of the term. This was expressed in his refusal of many unusually attractive professional propositions from abroad at the outbreak of World War II (including, for example, offers of directorships on Swiss Universities). At the end of August, 1939, he could have taken part in a congress on microbiology in the USA (as vice-chairman, in fact), but he declined this invitation as well, believing that with Poland facing the

threat of war he should remain in the country. He was soon to experience the dramatic consequences of this decision, but the career he might have had in the United States would certainly have been no less spectacular than those of two of his students. Feliks Milgrom was forced to emigrate after Hirszfeld's death and he went to the USA, where he attained the most prestigious positions in American microbiology and became Distinguished Professor of Microbiology at the State University of New York. The achievements and international position of the second student, Hilary Koprowski, are also very well known; in spite of his years he is still actively continuing his scientific work in the USA. In September we had occasion to host the director of the institute in Philadelphia where Koprowski works, Prof. Roger Pomerantz, who delivered the Ludwik Hirszfeld Memorial Lecture, and an article of his, dedicated to Hirszfeld, was published in the *Archivum Immunologiae et Therapiae Experimentalis* [1].

Not only did Hirszfeld reject the opportunity of leaving Poland before war broke out, but he even transferred the Swiss franks he had been saving from the time he worked in Zurich to Poland. This seemed an obvious thing to him: "after all, the country needs foreign exchange". In today's times, when the commercialization of academic life and the health services is describing ever wider circles, and often proceeds according to the principle of *per fas et nefas*, one is more likely to read news items describing exactly the opposite behavior.



In his youth, Ludwik Hirszfelf had excellent academic and scientific contacts with German-speaking circles, working closely with several eminent German, Swiss, and Austrian scientists, the foremost being von Dungern. Together with him he “brushed shoulders” with the Nobel Prize, a fact which has not received the emphasis it is due. It is therefore worth drawing your attention to the speech by the chairman of the Nobel Committee on December 10, 1930, at the ceremony presenting this prize to Karl Landsteiner (this document is available on the Internet). In this rather long introduction, describing the advances in research on blood groups, three names appear repeatedly, those of Landsteiner, von Dungern, and Hirszfelf. Reading it, one has the impression that the conclusion will be a justification to award the prize to all three scholars. This is not what happened, though, and one can only conjecture as to why.

As everyone knows, during the First World War Hirszfelf and his wife joined the Serbian army, which was struggling with the Austro-Hungarian offensive, later supported by the German army (he directed the central serological laboratory which carried out examinations of soldiers and the civilian population). It is clear that it was not easy for a scholar with such intimate connections with German science and culture to make such a dramatic decision, placed himself and his friends and former colleagues on opposing fronts. As we are already dealing with matters military, perhaps we should mention that in the list of casualties among Frederick the Great’s Prussian officers in the battle of Liberec in April, 1757 (in which Marshal von Bevern defeated the Austrian forces), the name Hirszfelf appears (this list is available on the Internet: *Gefallene und verwundete Offiziere aus preussischen Armee 1757*). We shall of course never know if this was just a coincidence of names or if an ancestor of Ludwik Hirszfelf actually did fall during the Seven Years’ War, which resulted in Wrocław coming under Prussian administration.

Who knows whether Hirszfelf’s voluntary engagement on behalf of Serbia during the First World War may have resulted in his not being awarded the Nobel Prize? When he passed through Vienna on his way to Poland after the war, “...Paltauf, the famous director of the Institute of Serotherapy, looked upon me with unfriendly eye. I had returned from the enemy camp, and he did not wish me to work in (his) Institute” (“The Story of One Life”, *Czytelnik 2000*, p. 92).

I should mention parenthetically that similar grievances were articulated against Prof. Weigl (who, as Hirszfelf confirmed in his letters, sent his vaccine into the Ghetto). The Germans held a grudge against him for refusing their offer of a chair in Berlin and for treating all patients, including soldiers of the Red Army, while the Soviets were angry for his refusing a chair in Moscow and treating soldiers of the Wehrmacht. Nor did Weigl enjoy favor among the powers that be after the war, and even Wrocław’s renaming of Czerska street to Weigla street (where the L. Hirszfelf Institute is located) did not always meet with favorable commentary (contrary to diverse speculation, Weigl’s family was of German-speaking Austrian background). This outstanding scientist has also not received the esteem he so deserves, and it is impossible to forget his warm relationship and collaboration with Hirszfelf.

Characteristic of Hirszfelf was his understanding, tolerance, and human kindness (traits which were not always answered in kind). It is striking that the envy which one often encounters in the world of science, especially towards successful colleagues, was foreign to him. Although he did not share the Nobel Prize with Landsteiner, we find no mention of feelings of disappointment or injustice done; rather, in all his recollections, Hirszfelf writes about the laureate only with warmth and enthusiasm, stating that he had earned that prize many times over.

As Milgrom states in his recollections mentioned above, Hirszfelf’s idea concerning the mechanism of antibody production assumed that their repertoire exists as natural antibodies, while the role of antigen is to find the antibody suitable to it and to induce the proliferation of the B lymphocyte clone producing that antibody (presented in the book “Constitutional Serology and Blood Group Research”, published in 1928). This, according to Milgrom, may have inspired Nils Jerne to his hypothesis in the 1950’s, for which he received the Nobel Prize. Incidentally, Jerne conducted his crucial experiment on an antibody model directed against bacteriophages (see our page cited below).

Ludwik Hirszfelf tried to soothe and defuse quarrels, including those with an ethnic context; he strove to detect and bring to the fore people’s better sides and trusted that the good in them may subdue the evil. Several times he stressed the fact that people who otherwise did not hide their anti-Semitism had risked their lives saving Jews. Describing the torment in the extermination camps he wrote, “Against this gloomy background, the Polish farmer’s attitude stood out like a bright spot. He seriously empathized with the prisoners and often gave or sold them bread, although that was a punishable act. I was told of the priests’ sermons in which they exhorted the flock to take pity and to help.”

Allow me here to quote a fragment of the article “Memories of the War” by Prof. Marian Górski (my father), who served during the September campaign as a lieutenant of the medical platoon of the Podlaska Cavalry Brigade, the only unit of the Polish Army to conduct offensive operations on the territory of the Third Reich in the first days of September, in East Prussia (near what is now Pisz), to be exact.

“We reached the town of Strable during the night with a few soldiers; the church and presbytery were bathed in moonlight. I knocked on the pane of an open window. The priest, awoken, appeared and provided me with information and advice ...towards the end of the occupation, the priest in Strable was arrested by the Gestapo and shot along with three Jewish doctors, schoolmates from our university times, whom he was hiding” (*Arch. Historii Medycyny*, 1983, 46, 91).

Ludwik Hirszfelf, like Rudolf Weigl and the priest from Strable – and like other people of good will – did not conduct their lives coldly calculating potential profits and losses, did not indulge in grand politics, or even minor politics. He believed in and realized the maxim expressed in the Hippocratic oath: “I will keep pure and holy both my life and my art” (from: *The Encyclopedia Britannica*). Many times in his life he himself was the victim of manipulation and politicking, and under the most drastic, dramatic

circumstances. Such openness, sincerity, and dedication to the sick, to his students, to science, and to his ideals certainly also brought him pain and bitterness, and most often brought sacrifices in life. Towards the end of his life he would often brood and ponder over the past and the decisions he had made – perhaps these dramatic reminiscences were why he was often out of sorts during the last years of his life, and he must have felt deeply wounded, as his last words expressed the hope that people will improve...

It is clear that the work and achievements of Ludwik Hirszfeld's life have not been appreciated as they deserve to be, neither at home nor abroad. Do many people know that he published two papers in the leading medical journal, *The Lancet*? Almost half a century has passed, and yet you could count the Polish authors who have since managed that feat on one hand. In fact, it seems that Hirszfeld was the first Polish scientist ever to appear on the pages of *The Lancet* [2,3]. The third and last time we find him there is in a posthumous tribute [4].

Hirszfeld's role in introducing research on bacteriophages and phage therapy in Poland has also gone wholly unrecognized. This is all the more striking as publications and other documents attest to this, as well as to his bringing phages to our Institute from the National Institute of Hygiene in Warsaw. In his "A Story of One Life", Hirszfeld recalls his group's research on bacteriophages. One of his assistants at the National Institute of Hygiene "has published a valuable paper about bacteriophages," a second "has won herself an international name thanks to a beautiful paper on bacteriophages" (*Czytelnik 2000*, p. 399). In fact, there is no doubt that it was Hirszfeld who began the work which resulted in the unique position which our country and Institute have attained in this field. A scientist's calling is to serve the truth, so this truth must also be articulated.

The first documented description of phage therapy in Poland comes from the Surgical Clinic of the Jagiellonian University in Cracow in 1926–27, and the author expressly stated that he had received the finished phage preparations from the National Institute of Hygiene (at a time when Hirszfeld was head of its scientific sector and the department of bacteriology and experimental medicine). This article is also available on our phage page: <http://surfer.iitd.pan.wroc.pl/phages/phages.html>.

Hirszfeld's publications of 1946–52 provide additional confirmation of his contribution to this research (see our

phage page). He underscored in these, for example, that the potency of phages' antibacterial effect is greater than the strength of resistance of the organism. In 2004, the year in which we are paying tribute to the memory of Ludwik Hirszfeld on the 50<sup>th</sup> anniversary of this death, we formulated a hypothesis which suggests that endogenic bacteriophages (present in our bodies) may play a significant role in immune regulation (thus fulfilling functions ascribed till now exclusively to the immune system) [5]. I am convinced that dedicating our article presenting this hypothesis to the memory of Ludwik Hirszfeld is fully justified and renders just tribute to his pioneering research on bacteriophages in Poland.

Whenever I am going to the train station in Wrocław I pass by a monumental building on Joannitów street, high on the front of which is a cartouche depicting a large bird (Icarus, or an allusion to him?) in the rays of the sun, with the inscription: *Nec Soli Cedit* (he does not yield to the sun). Ludwik Hirszfeld was also like that: to a certain degree a dreamer, yearning for scientific freedom and the freedom and equality of man, not always coldly calculating to the end the effects of his activities as regards risking his personal safety or even life, prepared to sacrifice these for the sublime ideals he believed in, not unlike in the antique tragedy of Daedalus and his son Icarus.

*Daedalus interea Creten longumque perosus exilium tactusque loci natalis amore clausus erat pelago* (Ovid, *Metamorphoses*). As Daedalus, he found no joy in staying at attractive centers abroad (*Creten perosus*), did not bear long periods outside the county well (*longum exilium perosus*), and longed for the places connected with his birth (*loci natalis amore tactus*), and most of all, wanted to fulfill his life's mission here at home. He survived the return home alone, but lost his only child, as did Daedalus. Icarus' wax wings melted when he came too close to the sun, and he fell and died, but the longing for freedom and for man's ability to tear himself away from the earth have been realized, while both Daedalus and Icarus live and shall live forever through Ovid.

*Non omnis moriar, multa que pars mei vitabit...* (Horace, *Carmen III 30*)

Let us hope that that is how it will be with the character, the ideals, and the dreams of Ludwik Hirszfeld, in harmony with both parts of the last quotation (the first, generally known part is on his gravestone).

## PIŚMIENICTWO

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