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INTERNATIONAL RAPPROCHEMENT, 50 YEARS AGO

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In September 1953, Donald Michie and I attended the International Congress of Microbiology in Rome (at that time, we were postdoctoral workers in Medawar's department at University College London). There, we met Jaroslav Sterzl, a microbiologist from the same Institute in Prague where Milan Hašek was working. He described to us Hašek's results on chick parabiosis. (This technique of joining the vascular systems of two embryos is described in the accompanying article.) On our return to London, we told Medawar about Hašek's immunologic results; he was of course very interested although perhaps somewhat disconcerted. He wrote to Hašek, and subsequently arranged for Hašek to publish his results in English in *Proceedings of the Royal Society* (*1*). Ivanyi (*2*) has a charming photo of Medawar, J. Z. Young, Hašek, and Leslie Brent drinking together at a conference in 1955.

Hašek was interested primarily in his main immunologic result, which he rightly characterized as "extraordinary," namely, the failure to form antibodies after reciprocal immunization between cocks or hens that had formerly been parabiotic partners. This demonstration of serologic nonreactivity neatly complemented Billingham et al.'s demonstration of nonserologic transplantation tolerance. Hašek clearly understood the implications of his finding, because in his Summary, he questioned whether it was attributable to an induced "permanent change in reactivity" or to the permanent persistence of the partner's antigens. Billingham et al. posed a similar question in the first paragraph of their Discussion. Neither question was resolved.

Whether any induced changes might be heritable was never Hašek's main concern. His use of the term "vegetative hybrid" is clearly defined at the start of his article. It implied that combining the characteristics of two strains vegetatively (e.g., by grafting or parabiosis) is analogous to combining them sexually by crossing. Hašek was clearly pleased by his "vegetative heterosis" results, because the practical implications would have found favor with his funders. I liked them, because I had predicted that mouse chimeras (another type of vegetative hybrid) would show heterosis, a prediction that was finally validated by Mikami and Orishi (*3*).

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COMMENTS FROM THE TRANSLATOR OF HAŠEK'S ARTICLE

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I recently reflected on the broader context of Hašek's contribution to the discovery of immunologic tolerance (*1*). In that article, I reviewed the influence of the Lysenkoist genetic dogma, Hašek's motivations and experimental ingenuity, his brinkmanship between scientific interpretations and political "correctness," and his influence on immunology by building a strong research "stable" in Prague, from which a number of his disciples had disseminated around the world. Here, I restrict this brief commentary to my perceptions while translating the original article from 1953. Having spontaneously accepted John Fabre's impromptu invitation to translate Hašek's article, it felt motivating to enable readers worldwide to read this article for the first time. This is paradoxical, considering that the experiments reported in this article as well as Hašek's name had been widely known, at least between the scientists of his generation who were involved in the field of transplantation biology and immunologic tolerance. This outcome clearly demonstrates that discoveries of importance can reach wide publicity and recognition without the extra boost from being printed on the pages

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of a high-impact journal. This case history emphasizes, however, the importance of verbal presentation of research and informal contact with colleagues at conferences, when the speaker is of Hašek's strong personality.

Translating the text compelled me to its first in-depth reading and at times I felt concerned about whether access to the original article would add or detract from the perceptions of those who remember the early stages of research on immunologic tolerance and also those of the younger scientists who were already trained to the high standards of current research communications. Nevertheless, the article remains of great interest for the way it illustrates the political context of that period (eg, aiding Soviet ideas on agriculture and fighting "bourgeois" genetic theories of the Weissmanist-Morganists) and for its meticulous way of describing some details of the experimental methodology and design. Accommodating this enormously wide scope must have been quite a challenge for the intellect. The reader will need to search for the pearls of the crucial immunologic discovery between ballasting data on body weights (eg, "tug of body weight" between the duck and chick parabiotic partners) and also for the succinct, but remarkably accurate, description of the key findings on tolerance, apart from the farfetched lip service to Soviet dogmas of that period. Note the detachment between the political "spin" in the introduction and discussion (ie, Darwin, Pavlov, Lysenko, Lepeshinska, and Engels all put together!) when compared with the accurate description of methods and experimental results. Paragraph 5 of the Summary shows also Hašek's in-depth thinking on the interpretation of his immunologic results.

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