To the 90th Birthday of Professor Igor O. Kulik (1935–2019)

This Issue of the journal "Fizyka Nyzkykh Temperatur/Low Temperature Physics" is devoted to the memory of Igor Orestovich Kulik, one of the prominent members of the great Kharkiv school of theoretical physics. I am only one of many physicists who had the privilege of knowing him and learning from him. I had the even greater privilege and rare luck of having him as a teacher and mentor and working in Kulik's Department of B. Verkin Institute for Low Temperature Physics and Engineering of the National Academy of Science of Ukraine. Never and nowhere else have I met such a concentration of talent and knowledge as at B. Verkin Institute, then, when you could literally walk along a corridor and find a world-class expert in practically any field of physics, who would be ready and willing to explain whatever you want to know. Never, and nowhere else, did I see such a high standard required of research to be considered for submission as those set by Igor Orestovich and his rule: "Not everything you calculate deserves publication." I wish I could always follow this rule, but nowadays, it has become outright impossible. But if your work survived a seminar at the Kulik's Department, it would survive anything, and it would certainly contain something worth telling the world about.

To give its due to Kulik's contributions to physics would require a large review paper. It is sufficient to mention his discovery of Andreev levels, the explanation (with Robert Shekhter and Alexander Omelyanchouk) of the nonlinear conductance of point contacts, which became the theoretical basis of point-contact spectroscopy, and the prediction of persistent currents in small non-superconducting rings. In short, he developed mesoscopic physics before the very term existed. And, of course, the authoritative book on the Josephson effect, co-written with Igor Kindratovych Yanson, his lifelong friend and colleague. And what a school of theoretical physics he built, where the high level of analytical techniques would never obscure the clear physical meaning of the result.

One of his admirable features, which I believe rubbed off on everyone he worked with, was the tenacity to never leave a question unanswered, once asked. He would never let go, returning to the problem again and again, and expected the same of others. ("Sasha, you spent 15 minutes telling me why your approach did not work – and I want to know what works.") He could also somehow find the right problem, one to which you would keep returning on your own. One of the first tasks I was given as a student was to prepare a report on 1/*f*-noise; that became my diploma topic – and years later, sources of 1/*f*-noise and their influence on quantum bits remain part of my research interests.

It is sad to think of how much more Igor Orestovich could have done if not for the turbulent 90s, which scattered so many of us far and wide. But his work, his influence, his lessons remain. Nothing good disappears, and Kulik's school even thus acquired a global scale.

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