

Alexandra Putrament, 1926-2003

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Abstract

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Wacslaw Gajewski, 1911-1997

Wacslaw Gajewski was largely responsible for the development of genetics following the Lysenko era in Poland, where he initiated the study of fungal genetics in 1958. The recent death of his close associate, Alexandra Putrament, provides an appropriate occasion for fungal geneticists outside of Poland to pay tribute to them both.

Gajewski graduated in biology at Warsaw University in 1934, followed in 1937 by a doctorate, then by postdoctoral work in Sweden, both on evolutionary aspects of plant cytogenetics. During the period of Russian domination following the Nazi occupation, he was one of the few Polish biologists who resisted Stalinist pressure and publicly criticized the Michurin-Lysenko "new biology." Consequently, he was dismissed from his teaching position at Warsaw University. However, he was allowed to continue research in the Botany Garden. In this period he worked on his well-known monograph, "*The cytogenetic study of the genus Geum*." Because he was recognized by the Lysenkoists as an influential scientist, he was invited to Moscow in an attempt to make him abandon his reactionary Mendelist-Morganist views. He describes that visit, which included an interview with Lysenko, in an article, "Lysenkoism in Poland" (Quarterly Review of Biology 65:423-434, 1990).

In 1958, Gajewski reported on his plant work at the International Congress of Genetics in Montreal. The Lysenkoists were still in power, but their position was weakening. Following the Congress he visited geneticists in the United States, including his friends Ledyard Stebbins and Theodosius Dobzhansky. It must have been about then that he decided to introduce fungal genetics in Poland, probably influenced by the consideration that 4:4 segregation in the asci provides a direct demonstration of Mendelian segregation and that this would confound the Lysenkoists. While at Stanford University, he requested marked strains of *Neurospora* to take back to Poland. These were apparently never used. Instead, work was begun on *Ascobolus immersus*, which had the advantage of much larger asci and clearcut autonomous ascospore-color markers.

Gajewski founded the Department of Genetics at the University of Warsaw and headed it for many years. He was also founder and head of the Department of General Genetics at the Polish Academy of Sciences. From 1967 until his retirement in 1981, he was director of the Institute of Biochemistry and Biophysics of the Polish Academy of Sciences. In these roles, he was responsible for training a new generation of geneticists. Among these were Alexandra Putrament, Anna Kruszewska, and Andrzej Paszewski. He and his students used *Ascobolus immersus*, *Aspergillus nidulans*, and *Saccharomyces cerevisiae* in studies of recombination, regulation of gene expression, mechanisms of DNA repair, and mitochondrial genetics.

Gajewski's lectures, popular writings, and textbook *General and Molecular Genetics* were influential. He was active in the Scientific Council of the Institute of Biochemistry and Biophysics of the Polish Academy of Sciences, and was a member of the Academy Presidium. He also served as President of the Polish Genetics Society and was on the editorial board of *Molecular and General Genetics*.

Gajewski once remarked to me, "Life in Poland may be difficult, but it is never dull." He was a lively intellect, cultured and cosmopolitan. He maintained his integrity during dark times, and when it became possible, he had the vision and drive to use fungi in resurrecting genetics and bringing Polish biology into the modern era.

David Perkins

Alexandra Putrament, 1926-2003

Alexandra Putrament's death on January 1, 2003 ended a career that is unique in the history of genetics. At age 13, as the Nazis advanced on Red Army-occupied Poland, the Russians deported her and her family to Siberia. There were no schools at the isolated site, and during the remaining war years she helped obtain food for her family by collecting resin in the forest. On return from Siberia after the war, her education resumed in a Soviet-liberated Poland where there were no textbooks, professorships were awarded on political merit, and the 'new biology' of Michurin/Lysenko was dominant. Thanks to Wacslaw Gajewski, she emerged from this morass to become his first doctoral student and his senior collaborator in restoring genetics in Poland. Her experiences and the events leading to her appreciation of 'western' genetics are described in a memorable article, "How I became a Lysenkoist" (Quarterly Review of Biology 65:435-445, 1990).

In 1961, after spending 10 months in Guido Pontecorvo's laboratory in Glasgow, she initiated work with *Aspergillus nidulans* in Poland. Her work in Glasgow led to a joint publication with Obaid Siddiqi on polarized negative interference. In Warsaw, she continued working on recombination and mutagenesis, first in *Aspergillus*, then in yeast. Her finding - that manganese ions induce specifically point mutations in mitochondrial DNA - allowed the isolation of hundreds of mitochondrial mutants in many laboratories and had an important impact on studies of fungal mitochondrial genome organization.

As senior person in the Warsaw genetics laboratory, she supervised and helped train new generations of students. In the 1970's, as co-investigator with Gajewski on an NIH-administered US-Polish grant for research on recombination and mutagenesis in fungi, she visited laboratories at Stanford, Berkeley, and Edmonton. To her friends abroad, she wrote wonderfully astute and witty letters commenting on science, politics, and the human condition. John Steinbeck was one of her favorite authors, and she took special pleasure while in California in visiting the Gabilans, Salinas Valley, and Monterey.

The work that she and Gajewski initiated is continuing in Poland, in able hands.

David Perkins