Edward Marczewski

(November 15, 1907 – October 17, 1976)*

Edward Marczewski was born in Warsaw as the only child of J. and A. Szpilrajn. After his father, a renowned Warsaw surgeon, died in 1911, Edward was brought up by his mother (later, for many years, a Warsaw University librarian). He attended the Stefan Batory Secondary School, which enjoyed a reputation as the finest in Warsaw, in particular in mathematics. He always had a pleasant memory of his school years.

In 1925, after completing his secondary education, he began mathematical studies at Warsaw University. That was five years after the death of Zygmunt Janiszewski who had propagated new mathematical disciplines—topology and set theory—as the research areas most promising for young Polish mathematics. It was in these directions that the research activities of the Warsaw School developed and, at the time when Marczewski entered the university, they were already flourishing. The research was originally led by Mazurkiewicz and Sierpiński, and later also by Knaster, Kuratowski, Saks and others. In this mathematical community reigned an atmosphere of continuous vigorous cooperation and comradeship.

During his studies, not only did Marczewski reveal a great mathematical talent but also showed fondness of and a gift for organizing and editing, which later became an outstanding trait of his activities in Wrocław. He was an active member of the Mathematical and Physical Association of Warsaw University Students, serving as president for two years. In his student years he also developed an interest in the Polish language and literature, and established numerous and lasting ties with the youth of the Polish philology department. He never waived these interests. His favourite author was a late Romantic poet C. Norwid (cf. p. 675). Later, in the post-war period, Marczewski protected the purity and beauty of his native language from obtrusive and clumsy patterns which, spread by mass media, ousted simple Polish expressions.

In 1930, Marczewski published his first mathematical papers; in 1932, he received his doctoral degree for a thesis *On measures and the Baire property* prepared under

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* Translated from the Polish original by A. Iwanik and Z. Lipecki.

the supervision of Wacław Sierpiński. He then obtained an assistantship at the Mathematical Institute of Warsaw University. One of his main duties was to instruct classes in mathematics. He did it in an interesting manner, with an inborn pedagogical talent. Simultaneously, he taught mathematics in secondary schools. Some years before the war, even prior to obtaining "veniam legendi" (the right to lecture at the university), he was charged by the Faculty with lecturing, which was a great distinction for an assistant. At that time he already had a rich output of almost 30 papers (including joint work with Sierpiński, Kuratowski and Mazurkiewicz), mainly in set theory and measure theory. Subsequent progress of his scientific career was interrupted by the Second World War.

The outbreak of the war was a turning point for Marczewski, as for all his fellow citizens. He spent the years 1939–1941 in Lwów, which was then in the territory occupied by the Red Army. There he taught mathematics at the University together with Stefan Banach and Hugo Steinhaus.

After the Soviet-German war broke out in June 1941, Marczewski returned to the German occupied Warsaw, where his mother was living. His Jewish descent forced him to assume another name and hide the real one. Later, menaced with disclosure, he changed his name again, this time to the name of Marczewski. He managed to survive those days of blood and fear, although, unlike many others in his situation, he was not strictly in hiding. He belonged to those who in spite of being constantly exposed to a cruel death were able to remove that dreadful danger from their consciousness and live an active life. It was mathematics that helped him. He did not part with it even under these circumstances. He was then fascinated by the mathematization of the calculus of probabilities with measure theory taken for a basis, an idea which was still fresh at that time. Measure theory had already long been close to him. He had some very important papers in the field before then. Later, he continued that research in Wrocław. The subsequent work of Marczewski and Steinhaus on probability theory (with Marczewski closer to foundations and Steinhaus to applications) resulted in the founding and development of a probability centre in Wrocław, the strongest one in Poland. But that was later. Meanwhile, madness and crime were around, in the face of which mere living was a form of resistance. People, deprived of all their rights, organized resistance in various forms, both in the material and spiritual domains. As many other teachers, Marczewski took part in the underground education, all secondary schools having been banned by the German occupation authorities.

Emotions do not fade away in time of terror—sometimes they even grow. It was just then that Edward found his life companion in the person of Zofia Bursche, a daughter of an evangelical theology professor of Warsaw University. The Nazi authorities were hostile to the Bursche family because of their patriotic activities especially among Polish protestants. Zofia's father and his three brothers were arrested and martyred in concentration camp.

During the Warsaw uprising, after the Germans captured the quarter where the Marczewskis resided, the couple was taken by force to a labour camp in Wrocław. This happened in September 1944. A few months after their arrival, Wrocław was declared a fortress ("Festung Breslau") and was held by the Germans till the surrender of the Third Reich. Edward and Zofia had to wear a square badge with the letter P (for Pole) on it and were obliged, as "labour force" to do manual labour for the sake of the "Festung". After the war ended, they did not wish to return to Warsaw. As they were getting to know the new town, a will awakened to remain there and a hope was growing that this indeed would be possible.

If not for the war, Marczewski would doubtless have lived a quiet peaceful life, working on his beloved mathematics, enjoying good literature and the company of people congenial to him. The war destroyed that life, tore it out from his home town and displaced Marczewski to an alien environment, which was shortly thereafter devastated during the siege. But those new circumstances in which he found himself released the energy and talents which perhaps would not have manifested themselves under the pre-war conditions. Without giving up his own research, Marczewski became an outstanding organizer and creator of a scientific community which was to develop into the second strongest in Poland and earn the name of the Wrocław mathematical school.

On May 10, 1945, after the capitulation of Germany, a group of about twenty members, mainly scientists, led by Stanisław Kulczyński, a pre-war professor of biology at Lwów University, arrived in Wrocław, which was still burning. Trusting that the town would be conceded to Poland, the group started working on the initiation of a Polish university and polytechnic. Marczewski immediately set to work with the group, beginning with gathering together mathematical books from abandoned libraries. As a result, as early as in the autumn of 1945, a germ of a mathematical workshop existed in the form of a library of several hundred volumes. (The former German mathematical institute and its library had been totally devastated.) Since some other "pioneers" came to the town at that time, it was possible to found four mathematical chairs at the Polish University and Polytechnic (Technical University) in Wrocław. The chairs held by Knaster, Marczewski, Steinhaus and Ślebodziński formed, first unofficially and since 1952 officially, the Mathematical Institute. From the very beginning Marczewski was its director, elected to this post by his colleagues.

Years came of his extremely intensive scientific, pedagogical and organizing activities. At first, his attention focused on the needs of the Institute, but he always possessed a wider vision of the scientific community. Besides the four outstanding mathematicians mentioned before, gradually arriving were younger ones, who either had to find a new home after having left the former Eastern part of Poland, or lost their home in the destroyed Warsaw. Marczewski had an exceptional gift for concentrating talented people around himself and kindling their enthusiasm for mathematics. His lectures, al-

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ways carefully prepared and beautifully presented, were intelligible and, at the same time, introduced the students to up-to-date research problems. It was there that many mathematicians-to-be started their scientific careers which were continued at seminars led by Marczewski—most often and willingly in collaboration with other colleagues. Nearly all Wrocław mathematicians of the next generation passed through his seminars. Those thirteen who earned their doctoral degrees under Marczewski's supervision are: Stanisław Hartman (1947), Maria Nosarzewska (1949), Kazimierz Urbanik (1956), Stanisław Gładysz (1956), Stefan Paszkowski (1958), Ira Koźniewska (1961), Bronisław Jasek (1962), Jerzy Płonka (1964), Siemion Fajtlowicz (1967), Kazimierz Głazek (1969), Józef Dudek (1970), Marek Wilhelm (1974), Edward Grzegorek (1975).

In the pre-war period and the first decade after the war Marczewski's interests mainly concentrated on set theory, measure theory, probability and ergodic problems. They brought several beautiful results, to mention only the theorem revealing a relation between measure and dimension [24], which Marczewski himself considered his most important discovery. He announced it in 1936 at the International Congress of Mathematicians in Oslo. In the sixties his interests turned and it was universal algebra that became his main field. He was particularly fascinated by the notion of independence which often occurs in various mathematical disciplines and has a variety of meanings. Marczewski managed to embrace many of those meanings in a general algebraic scheme. Under his influence, many Wrocław mathematicians were engaged in the new theory; some results and problems of that time found a world-wide response and are of interest up to now. Generally, Marczewski's scientific output is characterized by a tendency to fill gaps in the structure of mathematical notions, to systematize the disciplines of his interest, and to reveal the common meaning of various notions coming from different areas of mathematics, formulated in different languages.

Marczewski's wide interests and good style are seen not only in his scientific work but also in his book reviews, biographies of other mathematicians and historical, philosophical, recollective articles, which he published in dailies and literary journals.

Marczewski was on the staff of the Institute of Mathematics of the Polish Academy of Sciences, which he co-founded a few years after the war. From 1953 to 1957 he was Rector of Wrocław University. In the years 1958–59 and 1961–64 he was President of the Wrocław Scientific Society. In the years 1957–59 he presided over the Polish Mathematical Society. He made good use of his influence and positions to defend the sovereignty of science; the principles he propagated affected the atmosphere in and around the world of Polish science. In 1958 he was elected a corresponding member and in 1966 a full member of the Polish Academy of Sciences. From 1947 until his death he was the Editor-in-Chief of Colloquium Mathematicum, a journal founded under his initiative, jointly with Knaster, Steinhaus and Ślebodziński. He was also a member of the Editorial Committee of Fundamenta Mathematicae. Marczewski travelled to several countries and lectured in

Paris, Prague, Copenhagen and other university centres. He was a member of one of the committees of the International Mathematical Union. In 1948 he received an award of the Polish Mathematical Society, in 1953 was granted the Second Class State Prize, and in 1963 the First Class Prize of the Minister of Higher Education.

Marczewski had small predilections perfectly harmonizing with his character and attitudes. He liked social life in the circle of his friends, and intellectual delights stemming from witty intelligence; he loved literature and admired literary masters but he treasured not only the style: he looked for depth—as in Norwid.

From the early sixties this active and rich life was gradually overshadowed by an illness which, in the end, was to kill him. He stopped travelling abroad although invitations were pouring in and he always liked short trips. In 1967 he resigned his position as director of the Mathematical Institute of the University.

In 1969 Marczewski was forced to leave the University for political reasons. This was very painful to him. His house then became the main place where he worked and from which he supervised his section of the Institute of Mathematics of the Academy. Till the last, he took interest in the life of the mathematical community and tried, to the best of his ability, to help people.

Edward Marczewski passed away on October 17, 1976, at his home in Wrocław.