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# A Word On Professor Jan Krzyż

Dr Jan Krzyż, full professor of mathematics, passed away on Dec. 6, 2009. Since 1944 he had been associated with the Maria Curie-Skłodowska University (UMCS), so he was a living history of both the University and its Department of Mathematics.

Jan Krzyż was born on May 23, 1923 in Lublin. His mother Taisja was a Russian who survived the Bolshevik approach to "bielorutchkis" by a miracle only. His father Stanisław, a former officer of the Austrian Army and a graduate of the University of Lviv, had a rank of a colonel of the Polish Army and held a position of Commander of the Lublin Military Base. In late twenties he resigned from the service and moved with his family to Poznań where he was employed in the City Council to be responsible for military affairs. At the outbreak of the war in 1939, he was ordered to supervise the transfer of the military archives to Lwów. When that part of Poland was occupied by the Red Army, he was arrested by N.K.V.D and there was no trace left of him. Some 50 years later the Ukrainian government imparted to Poland documents concerning Polish P.O.W-s murdered on the Ukrainian territory. Among them there was the so-called Cvietuchin list with the name of colonel Krzyż. On the grounds of that one can infer that S. Krzyż was murdered in one of the extermination places – Starobielsk or Bykovnia.

Jan's life was not easy.

As a teenager he fell ill with the spinal disease and in the period 1934–1939 he was treated in the famous hospital – KBK – in Zakopane. There, being confined to bed, he completed the grammar-school education. At that time his dream was to study either philosophy or physics in Germany. The young boy, by self-study mostly, mastered Latin and became fluent in German. At the beginning of war, his mother took him from the hospital. It was forbidden to go to Poznań, so they came to Lublin to stay with their relatives for the period of the German occupation. In 1940 Mrs. Krzyż learned that in Hungary a new medicament for the spine disease was discovered. Overcoming difficulties she got the medicament. Jan recovered but he had to learn how to walk.

Jan Krzyż all the time improved on his education by self-study mostly. Family friends asked Mieczysław Biernacki, a professor of mathematics, who was expelled by the Nazis from the University of Poznań and stayed in Lublin, to see the young boy. Biernacki immediately realized that Jan was gifted and interested in mathematics and physics, and became his informal teacher.

In 1944 the Maria Curie-Skłodowska University in Lublin was created. Jan Krzyż did not possessed the necessary certificates of his education, but was admitted to the School of Medicine (life experience!). After a few months, however, he decided to study mathematics. Being a student, he passed examinations to get the second education diploma and to fulfill all the requirements to become a university student. Being an outstanding sophomore he was appointed a teaching assistant in the chair led by Mieczysław Biernacki. In 1948 Jan Krzyż received the MS degree in mathematics. He planned to prepare his PhD thesis within 2–3 years. Then, unfortunately, adversities met him. He talked about them among close friends, only. He did not care neither for words of sympathy nor for the status of a victim of the communist regime. I am not sure, that this information will accord with Jan's principles.

One day Jan and his friend who came to visit him, decided to go to the Old City of Lublin to take pictures. One picture was taken at the place where they had the Castle of Lublin in the background. (At that time there was in the Castle a severe prison for political prisoners). They were observed by the secret police who came and arrested them. Jan's friend was released after a month but Jan stayed in prison for six months, being transferred from one place to another to be confronted with imprisoned members of the Ukrainian Insurgent Army (UPA). All of that because one of the commanders of the UPA operating on the Polish territory, used the nickname "Krest" what one can translate as Krzyż.

In the early fifties Jan was arrested for the second time. At that time there were rations for food. Jan was in charge of distribution the coupons among the faculty members. It happened, that one of his colleagues did not come to collect his allotment. Jan was his next-door neighbor, so he had gone with the coupons to the guy. There in the flat the secret police set up a trap. It turned out that the man was involved in anticommunistic activities. It took six months for Jan to get out.

Can anyone not aware of the reality of those days of contempt and lawlessness understand that?

Fortunately, Jan Krzyż did not experience any adversities later and he was able to concentrate on his research. In 1954 he defended his PhD thesis and earned the exotic title of "Candidate of Sciences". (In 1955 I started studying mathematics. Candidate Jan Krzyż was our instructor on mathematical analysis. We called our teachers at high schools – professors, we addressed a pharmaceutist-magister , we visited doctors in hospitals, but how important was a candidate, we did not know). In 1959, dr Krzyż got a position of a research assistant to Professor Walter Hayman at the Imperial College of London. Jan was the first mathematician from UMCS to work abroad. M. Biernacki and K. Kuratowski, the chairman of the Institute of Mathematics of the Polish Academy of Sciences, helped Jan to overcome the secret police

obstacles and to get the passport. In 1961, having returned to Poland, Krzyż presented to the Faculty of Mathematics of the Jagiellonian University of Kraków his habilitation paper, and soon after was offered the associate professorship at UMCS. He helped the Department of Mathematics significantly because of shortage of professors.

A few years later Jan Krzyż became a full professor of mathematics at UMCS.

Professor Krzyż was a scholar of unusually broad mathematical knowledge, that surprised many. He was a humanist, a man well educated in classical philosophy and contemporary history. He was an outstanding lecturer. When he lectured in Polish or in a foreign language, the form of his talk was excellent, examples were well-chosen, the time properly measured. Jan Krzyż was a teacher and master to many. He evaluated his co-workers according to their teachings and research. He was always ready to help and to advise. He supervised seven PhD-s. They are now professors at various universities. He supported many in making their academic carriers. On seminars he discussed the most recent results and trends. For his students he was demanding but lenient. He lectured on International Congresses of Mathematics – Stockholm, Moscow, Helsinki, Berlin, and on many conferences. He gave colloquium talks at many scientific centers in America, Asia and Europe. He worked as a visiting professor at renowned universities in Canada, Germany, India and the United States. He was a reviewer for Zentralblatt and for Mathematical Reviews. For many years he was an editor of the university journal Annales UMCS. His knowledge of mathematics and good command of several foreign languages improved the level of the journal. Mathematicians from Europe, America and Asia publish their papers in the Annales.

The list of scientific publications of Professor Krzyż covers 78 items. This number, if compared with list of publications of representatives of other scientific branches, does not bring a man to his knees. The results contained in the papers are widely known, cited in monographs and many people all over the world make use of them. I can say, for example, that the method to tackle extremal problems for bounded convex functions and presented in one of Krzyż's papers was the basic tool in the research that let several people do their PhD-s, in Poland and in the States.

In view of the fact that higher mathematics is not addressed to general audience, I am not going to talk here about Krzyż's specific achievements. I shall present here just one fact. In 1967 at a conference in Kraków, Jan Krzyż asked a question, which in the literature of the subject is known as Krzyż's Conjecture. A third year student of mathematics is able to understand the problem. Over the past years many people in various countries tried to answer the question. They were

able, however, to get partial results only. Recently a solution to the problem was announced in the Internet.

It is nice to set up a problem which is easy to understand but specialists have serious difficulties to solve!

Professor Krzyż is the author of the *Collection of Problems In Complex Analysis*, the first book of this kind published in Poland. It had several editions in Poland, had been translated into English and published abroad. He is a co-author of an excellent text book on complex analysis and two books edited by Springer-Verlag.

The Professor was engaged in administration duties. He was a dean of the Faculty of Physics, Mathematics and Chemistry, he organized and was the first chairman of the Department of Mathematics and he led the Chair of Analytic Functions. His work was highly evaluated. He received an important award from the Polish Mathematical Society and several times awards from the Ministry of Higher Education. The president of Poland bestowed upon him the Officer Cross of Merit.

How long does a man live? As long as his wandering on Earth lasts? Wasn't Horacy right saying "Non omnis moriar"? A man lives as long as memory about him persists and there exist his achievements. Professor Krzyż lives in memories of his students, that owe him so much and in memories of his friends dispersed all over the world. He lives in his papers and books, in mathematics which will last forever.

*Eligiusz Złotkiewicz*