MY EARLY ENCOUNTERS WITH SZEMERÉDI

ANDRÁS HAJNAL

I first met Endre in Szigliget, a place on Lake Balaton, about forty five years ago, in the summer of 1965. We were staying as guests in the Retreat House of the Writer’s union with Erdős and his mother. The idea was to have a quiet place to work with Paul on one of our lengthy projects. Among the numerous visitors of Paul was Endre, a shy student of twenty five, attired in an old jeans quite long for him that looked preowned. He hitchiked from Budapest and complained that the police had stopped him several times objecting to his outfit (a novelty in those years in Hungary) He claimed to have told them that the farmer was that much taller and complained that the police would not understand it. (Jeans are called farmers in Hungarian.)

I knew that everybody referred to him as “Srác” (pronounced Shratz), meaning “Kid”, a habit I soon accepted and still practice. He was not like our other stars, who could solve all the problems of the Schweitzer competitions by the second day, but he had original ideas and a deep insight in the Erdős type combinatorics. In fact after graduating from high school he attended medical school for a year and switched to math because he could not stand autopsies. Paul soon recognized his exceptional talents and expected great things from him. Later they became good friends and bantered a lot. Paul called him a mediocre old tennis player if he played too much and Endre pulled his leg by claiming that Jean-Claude Killy (the ski champ) was a greater man then any mathematician.

Soon, in 67 or early 68, Endre lived up to Paul’s expectations. He proved his first famous result that a sequence of integers of positive upper density contains a four element arithmetic progression. The result for three element arithmetic progressions was proved by F. K. Roth, a Fields medal winner in 1958, and was considered as one of his major achievements. The problem of writing down the result was solved, as Halberstamm invited him to Nottingham for two months where Endre lectured in a seminar and a
manuscript materialized. Witnesses say that Srác, who then hardly spoke any English, left his room only for the seminars and to buy some beer.

I happened to be in England about the same time, I visited Richard Rado in Reading for six weeks, to discuss our joint book with Paul. Because of shortage of funds I had stayed with the Rados. It goes without saying that we were both happy when we arrived to a prearranged meeting to the Piccadilly. I found him soon among the other two hundred youngsters sitting around the fountain. We had a pleasant dinner in a French restaurant in the Soho. This involved a lengthy discussion with the waitress explaining his position that even if the vegetables contained green peas, these unwanted objects should not touch the beef. During our long friendship this conversation was repeated many times, in many languages, in Hungarian, in Russian, and even in Polish which neither of us could speak. Endre mentioned that he never saw striptease before, so I suggested we go to a striptease bar. We were of course cheated with the obligatory consumption. We had to wait in a very hot small theatre quite long for the first girl to come out, and as soon she started her production I fainted. As many times later in our lives Srác had to save me. He dragged me to the street, where I soon recovered. I just had nicotine poisoning from the cheap cigars I smoked to save money on cigarettes. I have no information if Endre has ever seen striptease in a bar again.

The next year found us both in Moscow, in the Soviet Union. In his quest to learn modern abstract mathematics, Endre came to work with Israel Moiseevich Gelfand as a graduate student for three years. I was on an exchange program of the Academies in the Steklov Institute for six months. I did not speak Russian, and there was no one in the logic department interested in my work. None of them accepted the Axiom of Choice. I was hoping that this visit would help me with ‘joe’ to get an exit visa to Canada next year. I had an invitation to Calgary, then recently taken over by the British mathematicians. Still, this was quite a good deal. We stayed in a three bedroom apartment with my wife and three year old son, and I had lots of time to work.

Endre had to stay in a student hostel, and being finicky about food he was practically starving. His interest in functional analysis rapidly diminished. Now he wanted to learn forcing. Here he made some progress, but soon we started to talk about Paul’s conjecture about the uniform decomposition of graphs into the union of $D + 1$ independent sets, where $D$ is the maximal degree. I started to admire his way of thinking and learned to translate or formalize his thoughts. He claimed that he can only think