

Yury Ivanovich Poljansky — from far afar

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Author, a senior American-Hungarian protistologist, tells about his meetings with Prof. Yu.I. Poljansky and his efforts to make Poljansky and Russian protistology better known in non-Russian speaking countries.

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The internationally renowned and highly respected Russian protistologist, Yury Ivanovich Poljansky, who died 26 years ago was remembered at a meeting in Sankt-Petersburg last year. Although invited, sadly I could not attend but did send a brief note to the participants of the meeting to express my admiration for him. I am honored with the invitation to submit a more detailed paper here.

The signal role of Yury Ivanovich in Russian biology is well known. He is also well known all over the scientific world. I can only state here the reasons why he was one of my scientific heroes and tell something about his influence on someone way beyond the borders of the Soviet Union. I was hoping to have a much closer relationship with him by becoming his graduate student (заочный аспирант) but that was not to be my fate. Probably because our family was considered of intelligentsiya, for political reasons, I was not eligible to obtain a higher degree in the Soviet Union. Had I been his student, then the title of this essay could have been “Yury Ivanovich up close.”

Already as a high school student I was fascinated with protists and tried to read as much as possible about these beasts. I had a microscope so I could see them as living and exciting organisms. After I started my medical studies, I joined the student circle (kruzhok), of the Department of Histology and Embryology of the Medical Faculty of the Eötvös Loránd University (now Semmelweis Medical University) in Budapest. Here I not only taught classes, but started histochemical explorations of protists with methods widely used in the Department. This led to a series of publications on protist food vacuoles, linking them to the recently described lysosomes of higher cells (see eg. Müller et al., 1963). These results were subsequently also mentioned in Dogiel’s English version (1965, p. 217).

It was at this time when I first encountered Poljansky’s name. I had learned how to read Russian science soon after the end of WWII and was fascinated with Russian biology. The publication of Dogiel’s excellent textbook (1951) was a major event for me. I got it soon after it became available in Hungary. Having encountered mostly Michurinist texts before, Dogiel’s book with its superior presentation of modern biology was a real eye opener.



Fig. 1. Yu.I. Poljansky in the cabinet of the Department of Invertebrate Zoology. LGU, 1969
(from the collection of S.I. Fokin)

After graduating from medical school in 1955, I continued my studies in cell biology using protists as experimental material. I continued to explore protist morphology, biochemistry and molecular biology until my retirement in 2008, switching at that time to science history. Now I study the history of the difficult years of biology in Eastern Europe in Stalin's time (see e. g. Müller, 2017, Müller, Palló, 2017).

I will mention some of my contacts with Poljansky himself, as well with his coworkers, students, and with his activities. I do this not to talk about myself but because my impressions and my admiration for him were formed this way. I was fortunate to cross paths with him on several occasions.

I first met Yury Ivanovich in Leningrad in 1958 when I visited the Soviet Union on an exchange between the Hungarian and Soviet Academies of Science. Of two months in the USSR, I spent one week in Leningrad, primarily meeting protistologists at the Leningrad State University and the recently founded Institute of Cytology of the Soviet Academy of Sciences. Poljansky was a gracious host as was his coworker Igor Borisovich Raikov who helped organize my brief stay. Many years later a friend of mine came across Igor's report in the Archives of the Academy of Sciences in Moscow. It is a curious memento with kind words without any political content.



Fig. 2. Yu.I. Poljansky. The talk on the 100 anniversary of V. A. Dogiel. LGU, 1982 (from the collection of S.I. Fokin)

Our second personal encounter was in 1961 at the First International Congress of Protozoology held in Prague, (and still at that time) Czechoslovakia during ominous international times — the Berlin Wall was being erected. Fortunately this did not prohibit the attendance of scientists from many countries, including a large delegation from the USSR. I was pleased to meet Poljansky again as well as others I had met before. I also made many new friends.

I was fortunate to visit the USSR again in 1962, spending some time with protistologists in Leningrad and Moscow. Again, Poljansky was a wonderful host.

In 1964 Poljansky was a guest of the Hungarian Academy of Sciences. To my great pleasure I was asked to be his guide for most of his stay and also could entertain him for dinner in my home. My first wife still fondly remembers his visit. During his stay I interpreted his talk on temperature adaptation of protists that was subsequently published (Poljanszkij, Szuhanova, 1964).

Our most memorable meeting was in Budapest in 1985. The Hungarian Academy of Sciences commemorated the centenary of the birth of József von Gelei, noted cell biologist and protozoologist. Yury Ivanovich was among the numerous participants from abroad and I was also privileged to speak about Gelei's international recognition (Müller, 1986). Prof. Poljansky chose a topic strongly relevant to the meeting — „József Gelei's works on regularities of protozoan evolution and the current state of the problem” (Polyansky, 1986) One of the last papers of Gelei was an analysis of morphogenesis in protist evolution (Gelei, 1950). In this he

evaluated the principles promulgated by the great Russian evolutionist, Sewertsoff (1931) as applied to single cell evolution. Gelei must have been thinking about this problem for many years but the year of its publication is exciting as 1950 was just two years after the August Session of VASKhNIL and it was the year of the Joint Meeting endorsing Lepeshinskaya's New Cell Biology. Hungarian biology was supposed to be Michurinist but here we had Gelei, a senior Hungarian biologist exploring a topic that had nothing to do with creative Darwinism. Instead there was a strong emphasis on classical cell biology. We might make assumptions but we will never know the exact motivation behind the timing of Gelei's publication.

The connection with Russian protistology was real. For example, Dogiel included the description of Gelei's work in his textbook that had been reworked by Poljansky and Cheisin. And Poljansky (1986) has chosen to talk about Gelei's work and to evaluate it at this conference. This gesture toward Gelei was most appreciated by the scientists and country hosting the meeting. Here was a real encounter of Hungarian biologists with genuine Russian science after receiving so much of Michurin, Lysenko, Lepeshinskaya and Bosh'yan.

In 1996 I encountered his name and fame unexpectedly in Australia at the meeting of the organizational committee for the forthcoming International Congress of Protistology. Andrew Warton, a friend of mine at Monash University mentioned that he just read Poljansky's autobiography (Полянский, 1997). He kindly lent me the book for a night and upon his request V. Kallnikova sent a copy to me from Moscow. I was so fascinated with it that I decided to share it with others. With the encouragement of John Corliss, a renowned ciliatologist and historian of protistology, I wrote a detailed review for the journal *Protist* (Müller, 1999).

I was always impressed with the contributions made by Russian and Soviet protistologists and was chagrined that non-Russian speaking scientists had limited knowledge of them. This observation was also emphasized in the preface of Dogiel's English version: "A great deal of work is being done in the Soviet Union, but many of the Russian papers remain relatively unknown in Western Europe and on the American continent" (Dogiel 1965, p. vi). As a young scientist, I tried to help to fill some of this void. For example, I translated into English, and arranged publication in Western journals of E.M. Cheissin's pioneering work on the ultrastructure of *Giardia* (Cheissin, 1964) and of a review of protist motility by L.N. Seravin (1971). This was the time the genetic code was deciphered and I suggested to A.L. Yudin that he write a popular article for publication in Hungary (Yudin, 1962). Poljansky organised the publication of informative volumes on different topics of protistology. I enjoyed reading them and published reviews in the international *Journal of Protozoology* (Müller, 1979, 1982).

I eagerly accepted a request to write a review of the English translation of Dogiel's capital text revised by Poljansky and Cheissin while I was working in Copenhagen. I still use this excellent work from time to time. In this review I noted that "The main achievement of the work lies in the very profound treatment of reproduction, life-cycles, evolution and ecology. These parts contain much original material never treated anywhere before...Familiarity with their content will give the experimental protozoologist and cytologist a more profound biological foundation to their considerations; and evolutionist and general biologist a possibility to update his knowledge in a basic aspect of his activity" (Müller, 1966, p. 376). In conclusion I stated that "This work is a great achievement and a very important contribution both to protozoology and to general biology. It can be highly recommended to all who have interest in these areas." (Müller, 1966, p. 376).

My last encounter with Poljansky's work happened not long ago. Currently, I spend time on reconstructing the history of O.B. Lepeshinskaya's "New Cell Theory." This phantom theory of the origin of cells from non-cellular living substance was one of the first aspects of Michurinist biology I had experienced as student of Professor Imre Törő, who received the Kossuth Prize

(the highest state prize in Hungary) for allegedly confirming Lepeshinskaya's theory (Müller, 2013). I had translated her monograph (Lepesinszkaja, 1951) from Russian to Hungarian for publication by the Hungarian Academy of Sciences. As I was working on the historiography of the "New Cell Theory", I perused the protocols of the Leningrad Branch of the Society of Anatomy, Histology and Embryology and found there Poljansky's excellent summary commemorating the 150th anniversary of the Cell Theory (Poljansky, 1990). One paragraph of his talk is in particularly worth reading again:

"...in our country much has been done to develop cytology. But this development was not always smooth. The cult of Stalin that generated in biology such monstrous antiscientific phenomenon as the lysenkovshchina, also affected cytology, seriously inhibiting the development of our science. We talk of O.B. Lepeshinskaya's "new theory of the living substance", of the birth of cells from "living substance", and similar unlikely "discoveries". We should add that her theory was fully accepted by T.D. Lysenko and she was supported by Stalin. It would make no sense to dissect in this article the "works" of Lepeshinskaya and of her adherents, including Bosh'yan. This has been done by many. We just mention with disbelief and chagrin that there were at that time histologists and cytologists who supported her "theory" irrespective of its obvious absurdity and antiscientific nature, thus significantly impeding the development of science in our country (e. g. A.N. Studitskii, V.G. Shchipashev, P.V. Makarov and others). Fortunately after Stalin's death it became possible to return to normal development of science" (Poljansky, 1990 p. 17).

Poljansky fought steadfastly against the doctrine of Lepeshinskaya and this was a fitting coda to his fight.

The last physical contact I had with the Sankt Petersburg School of Protistology members was during the European Congress of Protistology in 2007, when I visited the Department of Invertebrate Zoology at the State University and spent several pleasant hours working in the "Professors' office" where I met Yury Ivanovich and his colleagues many years earlier. This brought back many pleasant memories.

I can state without exaggeration that I owe a great debt of gratitude to Poljansky and his colleagues for helping to shape my career, I will never forget them.

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