# MISHA IN ITEP THEORY GROUP

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On the famous list of theorists who passed the so-called theorminimum exams, handwritten by Lev Landau himself some time before the tragic car accident, Misha Marinov's name is number 35. A total number of 43 students passed the exam from 1934 until 1961. Misha was one of the last students who was able to take the test. Isaac Khalatnikov told me once that Landau considered Misha a very promising student. At the present it is not as important to which extent Misha realized these expectations. The important thing for all the people who knew him is that he strongly affected everyone he interacted with at the ITEP Theory Division and is well remembered by all.

*Misha was erudite.* In the present day, in the time of Computer/Internet legacy, the role of an erudite scholar in the scientific research team may not be so important. Everyone can easily find references on any subject he is interested in on the Internet. However, in those pre-internet times, when we all started to do physics, it was extremely useful to have an erudite member of a team. Anybody could come to Misha and ask him who and when solved a particular problem and get an exhaustive answer. That's exactly what we all did, and Misha gave his answers with great pleasure.

It seems to me that he even enjoyed his work as an editor of the "Signal Information" at the All-Union Institute of Scientific Information (VINITI). It was a grueling task – going to the Institute once a week and having to look through a couple dozen journals on Particle Physics and Field Theory. He had to quickly grasp the content of each article and put a special code on it, depending on the article's content. Usually, this job began in the afternoon and lasted late into the evening. Misha complained to me how tired the work at VINITI would make him feel. Later on, when for a while I myself worked as an editor and performed the same job, I understood that he indeed had a right to complain – it was a really tough job. However, I think that he worked there not only for money: his encyclopedic mind received a huge dose of a fresh information.

*Misha was a great review writer.* His review on path integrals, published in Physics Reports after he left ITEP in 1979, was an excellent paper. Honestly, I do not understand why he did not write reviews for the Russian analog of the Physics Reports, Uspekhi Fizicheskikh Nauk (UFN). This was most likely the result of the editorial board policy: they ordered reviews mostly from the Lebedev Institute of the Academy of Sciences (FIAN).

*Misha was a pedagogue.* He loved to learn and he loved to teach other people. My generation of ITEP theorists, arriving too late on the scene to be in contact with the great Landau and Pomeranchuk, learned from their students, Misha being one of them. I think that out of all the theorists of the older generation I had the most contact with Misha. His stories about people and events were always witty, brief, and right on the mark. He had his own conversational style, which did not exclude certain swear words and obscenities. However, uttered in his soft manner of speech, these words did not seem out of place. I remember a remarkable story he once told me about the way he learned these swear words. As all other Physics students at the Moscow State University, he had to participate in construction work in Kasakhstan (at that time, this kind of work was mandatory for at least one summer). There he had to deliver water using a horse carriage. The horse that was given to him did not understand any other commands except the swear words, and so Misha had no choice but to learn them.

Misha had his own well-defined opinions of people and their actions; sometimes his opinions seemed strange to me,then a 25-year old young man. Many years later, I found myself in agreement with most of Misha's estimates of people and events.

Misha was a pedagogue by calling as well as by character. Events and phenomena were ideally sorted in his well-organized memory; he did not have to think how to explain these or other results or formulas; for him, it was as if the explanation was already attached to the phenomenon. The perfect order in Misha's brain needed an outlet, and Misha found this outlet in addressing us, the young people. His lectures at ITEP Winter Schools and his reports at Conferences and Seminars were always clear and very well organized.

The scientists from the ITEP Theory Division taught students from the Moscow Physico-Technical Institute (MPTI). There were two MPTI Departments where ITEP theorists could work part-time: the Department of Theoretical Physics chaired by Professor V. Berestetsky, and the Department of Elementary Particle Physics with Professor K. Ter-Martirosyan as a chair. Unfortunately, Misha did not teach at any of these departments and did not supervise students at ITEP. Other theorists did this work, some of whom felt their teaching responsibilities to be a burden, and who lacked the kind of pedagogical talent that Misha had. I do not know the reason why Misha did not teach; perhaps it was the traditional administrative anti-Semitism that prevented him from teaching, or perhaps there were some internal tensions and conflicts in the Theory Division that did not allow him to realize his teaching abilities.

*Misha was the Theory Department's conscience.* The inter-departmental conflicts, which had been altogether absent under the authority of Isaac Pomeranchuk, and which had been delicately suppressed by the well-respected Vladimir Berestetsky, came to a head at the Theory Department after Berestetsky's death in 1976. Quoting a keen remark expression of one of the ITEP experimentalists, each theorist was constantly trying to prove that his penis was longer. Naturally, it is very difficult to create a team out of gifted and talented individuals: in some institutions it works better than in others. Nevertheless, there were people at the Theory Department whose opinions were valued even by the harshest of opponents. One of these people was V. Berestetsky, and another one was M. Terentev. Misha, despite his much younger age, also played this very important role of a moderator. Perhaps the personalities, the scientific interests and the style of work of these three people had something in common; at different times, V. Berestetsky wrote papers with M. Terentev, and M. Terentev collaborated with Misha Marinov. Now they are all gone, and I do not know if anyone could ever take their place.

*Misha was a happy man.* He got married around 1967, when he was already in his thirties. When we first saw his beautiful wife Lilia, we were shocked. The shy Misha, who never told anyone about his love affairs (assuming he even had any), somehow ended up with the most beautiful woman among all the Theory Division wives and girlfriends. Lilia was younger than Misha by 6 or 7 years, and I still do not understand how he managed to conquer her. Rather quickly, Lilia gave birth to two beautiful daughters, and Misha felt himself a happy father. The family was indeed wonderful, and, despite Misha's rare complaints about Lil'ka (as he called his wife), I think that other women simply did not exist for him. Naturally, he now had more to worry about, and the real troubles began when he left ITEP in 1979.

*Misha was a Zionist.* I hope that the readers of this book realize that Zionism is not a swear-word used by anti-Semites, but a serious direction in Jewish socio-political thought, which sees its goal in the repatriation of Diaspora Jews to Palestine and in the creation of a Jewish State. Among all my Jewish friends, Misha was probably the only Zionist. As it becomes a real Zionist, Misha was also a Jewish nationalist and separated all people into Jews and non-Jews. I think he justly assigned me to the category of non-Jews, not only because I was registered as Russian (and this nationality was written in my passport), but because I was a complete dummy in all that concerned Jewish traditions, culture, and, of course, religion. Nowadays, when pseudo-religion became so popular in Russia, it is very interesting to look at the attitude different people had towards religion before it became a fad. I believe that despite of his Zionism, Misha did not believe in God.

Misha's nationalism was one of his features that I could not understand or accept. I remember his comment about one of theorists of my generation who had joined the Communist party. Misha said then that he felt closer to a Jewish party member than to a Russian non-member of the party. This statement was (and still is) in contradiction with my deep-seated belief that any member of the ITEP Theory Division who joined the Communist Party was either foolish or simply despicable.

Like for any Zionist, Misha's goal was to repatriate to Israel. As I understand it, he made his final decision after his father's death. I don't know what Lilia thought about all this, but the decision was made, and in 1979 Misha submitted his resignation letter.

Not long before Misha's resignation, sometime in 1975 or 1976, his supervisor K. Ter-Martirosyan organized a set of meetings with the goal to improve performance in his laboratory. Each staff member was to submit a report of his activity. At these meetings, Ter-Martirosyan usually asked me when I would submit my PhD thesis (actually I got my PhD in 1973, and Professor Ter-Martirosyan was one of my supervisors), and asked Misha when he would submit his Doctor of Sciences dissertation [Doctor of Science is a higher degree in Russia, an analogue of professorship]. Professor Ter-Martirosyan was right: each working theorist, by the time he is forty, should have enough results to defend a Degree of Doctor of Sciences. If, for some reason, a theorist does not submit his Doctor of Sciences thesis by this time, there must be something wrong with his performance. I think that Misha's thesis would have been supported not only by Ter-Martirosyan, but also by other prominent scientists from the ITEP Theory Division. However, Misha tried to avoid questions about his thesis, assuming that a Doctor's Degree would create problems for the immigration process. Unfortunately, he was wrong: problems were created for him anyway, even without a Doctor Degree.

The first scientists from the ITEP Theory Division to immigrate to Israel were Sergei Gurvitz, who left in 1972 and Dima Roginsky in 1973; Victor Mandelzweig left a bit later. Dima was a graduate student at MPTI, and Professor Ter-Martirosyan had to suffer twice, as his supervisor and as the Department Chair. As I understand, I. Shapiro was also punished for Victor's departure. I think it was for this reason that, before accepting me to the ITEP Theory

Division in 1973, K. Ter-Martirosyan asked me about my intentions to leave the USSR. I honestly answered that I had none. Until the collapse of the Soviet Union at the end of 1991, I considered myself to be restricted by that promise, but in 1994 I finally left ITEP and emigrated from Russia. I doubt that Isaac Pomeranchuk asked Misha the same question at his admission interview; otherwise Misha would not have taken a position at ITEP, or would not have left the country.

In 1979 two people from ITEP submitted their resignation letters and applications for emigration: Asya Lapidus and Misha Marinov. Two or three years before that, Naum Meiman had left ITEP and applied for repatriation. All three were from Ter-Martirosyan's group. Naum Meiman's application was immediately rejected because of his classified work in the late forties. Asya was considered by the KGB as a person worth of emigration, and she was allowed to leave (now she is an analyst on Wall Street). I do not know exactly why Misha became a "refusnik." People said that one of his "good friends" from ITEP wrote a letter to the KGB stating that Misha was a talented theorist. Unfortunately, the KGB had a very particular relationship with talented people.

For a period of time after leaving ITEP Misha was able to work part-time at VINITI, but after a while the KGB forced the VINITI administration to fire him. After that came hard, desolate times. Recalling his student experience as a construction worker, Misha began his "shabashnik" career. Fortunately, he had good company around him: a former staff member at the Kurchatov Institute Tolya Dolgov, the younger brother of Misha's close friend Sasha Dolgov, and Lev Ponomarev from ITEP, one of the future democratic leaders of the early Perestroika and a future member of the Russian Parliament. I also earned some money as a "shabashnik," but I worked mainly in the summer, while Misha had to work in all seasons. Misha had to quit "shabashka" after he had broken his leg falling down from the ladder at the construction site.

As far as I know, the KGB offered Misha to retrieve his position at ITEP in exchange for giving up his plans for repatriation. Naturally, Misha rejected this offer. Sasha Dolgov was not allowed to travel abroad for some time. Nevertheless, this story had a happy end: Gorbachev came to power in 1985 and, as the pharaoh in Ancient Egypt, let the Jewish People go. Misha left the USSR in the spring of 1987 with his family. On our way to see him off at the Moscow International Airport, we all felt so happy that we missed the right turn on the highway and had to make a U-turn to come back.

Naturally, I was afraid to write and call Misha from the USSR. However, beginning in 1987 I was permitted to travel abroad and used this chance to write letters to Israel. In 1989 I spent three months alone at Kyoto University in Japan, where I had enough time to write Misha letters. How he managed to find time to respond to me, I do not know, but I received several letters from him then. Many things that he wrote to me then became clearer when I myself immigrated in 1995. I remember being surprised when he wrote that in Israel he intended to work in the industry, and considered the fact that he got a professorship at Technion in Haifa a lucky chance. Nowadays, a lot of former theorists from ITEP, including myself, successfully work in private companies, and this no longer causes any surprise.

My relationship with Misha ended abruptly in 1991. Till this day I do not know why he broke off our relations. After his death I called Lilia to offer my condolences, but obviously did not try to figure out why he had broken off contact with me.

Thinking about Misha, I hope that in Israel he finally could realize his teaching abilities, however my own experience in teaching in the USA does not give me ground for such optimism.