

Interview with
Ilya Iosifovich Pyatetsky-Shapiro

BY E. DYNKIN: NOVEMBER 17, 1978. ITHACA, N. Y.

Ilya Iosifovich Pyatetsky-Shapiro: I am sitting in the splendid home of Evgeniï Borisovich Dynkin, having eaten a sumptuous dinner, and we are remembering the past. First my childhood. One of my first prewar memories is of the newspapers reporting the show trials. At the time of the last of the show trials I was around ten years old. I remember reading the list of the guilty, formerly great.

Evgeniï Borisovich Dynkin: You were born in 1927, weren't you?

I. I.: In 1929. The last show trial took place in 1939. And I remember that I clearly understood even then that it all came down to a elemental struggle for power. But that I should keep quiet. Already then there was dire hunger and a feeling of extreme oppression.

My memories of the war years are even worse. I was too young to take part in the war, and in 1941 I was evacuated with my family from Moscow to Kirov, a town in Russia's north. There for the first time I encountered rabid antisemitism. Doubtless this might be attributed to the general state of hunger and the natural enmity of every human being towards the outsider. I was, it seems, the only Jew in my class, and they all—the girls as well as the boys—bullied me, and generally made my life miserable. This was especially hard for me because my parents had brought me up in a way totally unsuited for coping with everyday life. I was a “mother's boy”, and for me to endure this sort of unceasing stress was very difficult.

So it was only then that I understood that I was a Jew—although, as I found out subsequently, my grandfather had held a position in the synagogue throughout his life. My parents were very afraid. Incidentally, I later heard the legend that my grandfather, carefully choosing a time when my parents

were out, circumcised me himself. He must have known where his grandson would go.

That was a terrible time in my life, when I really felt myself a Jew—but that might be a good thing.

E. B.: Tell me please (let this be a dialogue—it doesn't matter) was anyone from your immediate family persecuted, or did they remain safe in that sense?

I. I.: Yes, I had an uncle, Lev Grigor'evich, who was a well known lawyer in Moscow. He was sent to a camp because he was acquainted with a highly visible public figure: Krylenko, the first People's Commissar of Justice and the first Supreme Commander-in-Chief. That was the main reason. Uncle was imprisoned in a camp, and there he died.

E. B.: I understand. And what about your parents and grandfather?

I. I.: My father always managed to keep himself in such a low-level position that he was not persecuted. Grandfather was a nepman ¹, and they—how should I put it—robbed him, just as they robbed everyone. But—what can one say—that's neither here nor there. He died like everyone dies.

that's

E. B.: My own father—I don't know if you know this or not—was subject to persecution all his life, and finally, in 1937, he was arrested and sentenced to ten years of prison without the right to correspond. ² Later I received a rehabilitation certificate with a claim that he had died of high blood pressure in 1941.

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his bed.

I. I.: I think that the family of my uncle Lev Grigor'evich were also given the information that he had died in the camp in 1943, apparently from some medical ailment. In fact nobody knows, of course, the truth.

In 1946 I was enrolled in the faculty of mathematics and mechanics ³.

E. B.: Did you participate in mathematical circles prior to that?

I. I.: Yes, yes.

E. B.: Who ran them?

I. I.: I don't recall, but I do remember — that was a highly significant part of my life: I took part in mathematical circles, and in the mathematical olympiads, and I had no doubt what I would like to specialize in—although

¹The NEP (New Economic Policy) was introduced by Lenin in 1921 to forestall the collapse of the Russian economy. Small businesses were allowed to reopen for private profit, while the Soviet state continued to control banks, foreign trade, and large industries. It was ended by Stalin in 1928.

²Now it is common knowledge that was an euphemism for being immediately shot.

³Called "Mekhmat". This was at Moscow State University.

my father was very critical of my choice.

E. B.: Do you know what my mother opined when I, just before the war, decided to enter *Mekhmat*? She was of the opinion that I should go into medicine and become a doctor, since doctors, if arrested, had the best chances of surviving the camps.

I. I.: In my family the threat of the gulag didn't hang over us so oppressively—although my parents were very afraid.

E. B.: So you entered *Mekhmat* without any problems?

I. I.: Because I had participated in mathematical circles, I had met some people already, and I heard rumors that there was some discrimination in admitting students to graduate school. By comparison with the discrimination that goes on now, perhaps one shouldn't even call it "discrimination", but it was the beginning of what was to come later. Then I began my studies, and in the early years it somehow became clear who was Jewish and who not. For instance, there were Stalin stipends that were awarded not for mathematical accomplishments. Then as the time to enter graduate school approached, it became clear that I would not be accepted.

E. B.: Tell us something about your university years.

I. I.: My undergraduate years were very successful, I would say. I worked rather effectively and managed to produce several good papers.

E. B.: Who of your classmates became more or less well known?

I. I.: Various people. For instance, Lidskiĭ, Godunov, Mishchenko, the present deputy director of the Steklov Institute, a certain Fyodorov—but you probably do not know him.

E. B.: I don't know Fyodorov. Do you recall the "Close Friendship" ⁴? I was already *docent* ⁵ And I was present at that meeting.

I. I.: I remember. It was a dreadful business.

E. B.: Have you heard what happened at this meeting?

I. I.: Yes. We were all in a state of anxiety, understanding exactly what was at stake, but it was somehow clear that we had to keep quiet.

E. B.: Yes. Freiman also wrote a little about the Close Friendship. ⁶ Incidentally, I recall how Kurosh ⁷ became embroiled.

⁴A group of fifth-year students (mostly Jews) accused for "slander of the Soviet system" because they discussed the discrimination of Jews at the admission to the graduate school. Almost all of them were expelled from the University.

⁵Docent corresponds to Associate Professor in the USA.

⁶Grigory Freiman, It seems I am a Jew, Southern Illinois University Press, 1980.

⁷Aleksandr Gennadievich Kurosh (1908-1971), Soviet algebraist, well known for his

I. I.: The members were about one or two years senior to me.

E. B.: Kurosh got involved as follows: He was talking to one of his students—of course in a very benevolent way. Kurosh was a militant anti-antisemite, that is, was opposed to any expression of antisemitism whatsoever. So there he was explaining all this to one of his students. But then out of sheer naiveté the student—whose name I don't recall—told to somebody else about this conversation. As a result, Kurosh was in a very difficult position. At that meeting he had to repent: to say that he had been misunderstood, or something of that sort—it was a terrible sight.

Well, tell about your graduate study.

I. I.: I was a student of Gelfond ⁸. This is rather interesting, I must say. In some sense I was close to him in terms of personal relations, and furthermore I had even prior to university come to like number theory very much. But I was working all the time on certain problems not directly in number theory but on its border—on trigonometric series. All the same there was a tacit understanding between us, and he felt a responsibility to somehow fix me up. He was an exceptionally good person, amazingly good, gentle, and my memories of him are of the very best.

Then many years later I was working at his chair ⁹. That was when the situation had somewhat improved, and for a certain time I was a collegial professor in the department, but when he died, after a short interval they managed to find a way of getting me out of Moscow University.

E. B.: But Shidlovskii was also one of his students?

I. I.: Yes. It was Shidlovskii who dismissed me. Yet at the same time he had always been my friend, so to speak. He used to say: “Ah, Ilya...”. We always used the familiar “thou”. This all signifies that had the situation been otherwise, he really would have been a true friend. It was all one to him; he wasn't an antisemite out of principle. It was just a question of his career. And he produced some not a bad work. Aleksander Osipovich Gel'fond was simply a kind person and he helped everyone. That's just how it was.

Gel'fond's father had been a quite prominent revolutionary—a menshevik, it's true, whom Lenin had criticized. So his name appears in Lenin's works.

subgroup theorem for free products of groups and for his now classic textbooks on group theory and general algebra.

⁸Aleksandr Osipovich Gelfond (1906-1968), Soviet mathematician. Originator of basic techniques in the study of transcendental numbers.

⁹Every member of mathematical faculty in Russia belongs to a chair (“kafedra”) according to his or her field (analysis, algebra, number theory etc)

E. B.: As does that of Yushkevich. It would seem that political deviation correlates positively with mathematical ability—at least in the next generation.

I. I.: Yes, apparently, philosophical errors are related some way to mathematical creativity.

In connection with my time as graduate student I remember one of my friends, Lavut.

E. B.: The son of the “Silent Jew”?

I. I.: Yes, the son of Silent Jew¹⁰, as described by Mayakovskii. He was in my year, and I remember his very apt witticism to the effect that Moscow University and the Pedagogical Institute had both been competing to refuse admission to Pyatetsky-Shapiro, but, as Moscow University was the stronger contestant, the Pedagogical Institute was forced to accept him. Such was life.

In any case, thanks to the efforts of Aleksandr Osipovich [Gel’fond], I became a graduate student at the Pedagogical Institute. My friend Yuri Isaakovich Sorkin was admitted at the same time. He was not a bad mathematician, relatively speaking, who later, unfortunately, took to drink in a serious way, and I lost track of him. In Freiman’s reminiscences there is something about his son: he relates the story of how he also was refused admission to *Mekhmat*.

It’s interesting that in first years at the university Sorkin was a big shot: secretary of the local komsomol organization¹¹. But in the last year he had become one of the most victimized persons—everything had changed. “Small fluctuations”. Indeed, he was Yuri Isaakovich Sorkin, and he was perceived as a Jew.

E. B.: The main thing was not that he was Sorkin, nor that he was Yuri, but that he was Isaakovich.

I. I.: Yes. Those were my years as graduate student. They were hard, tense years. The doctors’ plot¹² dates from that time. And, naturally, even before it had been difficult. At a certain moment some bosses decided to

¹⁰Possibly P. I. Lavut, Mayakovskii’s “impresario” in the 1920’s.

¹¹“Komsomol” — Communist Youth League

¹²The most dramatic antisemitic episode of Stalin’s rule, involving the “unmasking” of a group of prominent Moscow doctors, predominantly Jewish, as conspiratorial assassins of Soviet leaders, and accompanied by antisemitic propaganda in the state-run mass media and the persecution of many Soviet Jews. After Stalin’s death in 1953, the Soviet leadership declared the case a fabrication.

send us to a railroad school in Central Asia.¹³

E. B.: After completion of your graduate work?

I. I.: No, while we were still in the process of finishing it.

E. B.: They simply expelled you from graduate school?

I. I.: Yes. An order came down from the ministry to dismiss us. There was, as you know, an official system of assignment of graduating students, and, although initially we had been assigned to graduate school, it was now claimed that this had been the result of some misunderstanding, so that we were now to be reassigned to a railroad school. So next, the railroad school formally requested that we be assigned to them, and the ministry dismissed us from the graduate school of the Pedagogical Institute. But this is what is interesting for the light it shines on the character of the antisemitism then in vogue: the director of the Pedagogical Institute—a Russian through and through, who was to rise in the ranks again after Stalin's death—refused to obey the ministry's order on the grounds that our professor had told him we were capable students. This shows that in spite of everything, at that time the old guard in the Party still considered Jews useful people, the new ideas about Soviet Jewry had not yet fully gotten through to them. Ten or fifteen years later such an action would be absolutely impossible. Nowadays antisemitism in Russia has become everybody's business, so to speak. But back then the situation was different. So the director refused to obey the ministry's order.

E. B.: Do you recall his name?

I. I.: Polikarpov.

E. B.: And who was the professor that stood up for you? Gelfond again?

I. I.: Yes, it was Gelfond. But then thanks to Yura Sorkin's imaginative-ness, we found a way of ensuring that the school refused us. Thus was the problem solved.

E. B.: Was Gelfond's authority already being limited then? Who was your formal supervisor at the Pedinstitute? I don't think Gelfond had an appointment there, did he?

I. I.: My formal supervisor was Bukhshtab.

E. B.: And did Bukhshtab behave well?

I. I.: Yes, he did. I should say that by then we all understood very clearly that we are Jews. The process whereby we were admitted to the Pedinstitute

¹³Some of elementary and high schools serving families of railroad workers were controlled by the Railroad Ministry.

was interesting.

E. B.: By “we” whom do you mean?

I. I.: Sorkin and I. Together we went from the university to the graduate program of the Pedinstitute. This was somewhat mysterious in view of the fact that one had to pass the entrance exams, one of which was an examination on philosophy or Marxism-Leninism, I don’t recall which. The discipline in that department was rigorous. The examination was famous for the very simple principle according to which all Yids got two ¹⁴. There had been a few absolutely mysterious departures from this rule where some Jews were given threes. Those occasions were known to everyone. No other institution in Moscow or even in all of the Soviet Union, I believe, would accept someone with a three in the main speciality Marxism-Leninism. However, the morals of that department were well known to the Pedinstitute’s governing body, and they did admit students with threes in that subject since no Jew could ever get a three, let alone more than three. In fact threes were given out quite rarely.... And yet some Jews did get admitted.

Our professor made sure to be present at that exam, since that was the only way for him to exert any influence.

E. B.: You mean Bukhshtab?

I. I.: Yes, Bukhshtab. He was then head of the chair (“kafedra”). He asked the examiners on the spot what grade we’d been given. Although we had answered every question that had been asked, they said they could not assign a grade without consulting with the head of the chair. Hence our grade was decided by Bukhshtab quite independently of our answers.

E. B.: You know, once I myself, as member of the State Examination Committee, at a certain juncture in my career participated in an examination on Marxism-Leninism—not an entrance exam but a final. I have to say that it was awful. No, I think I did it twice. One of those occasions coincided with a period of a certain thaw, so that the examiners were very liberal, and passed everyone easily—even pushed people through, asking leading questions. I don’t recall the year, but a year or two later that had all changed. But then they asked such questions as: “Who are your parents?” and “Do you believe in God?”—very odd questions for an exam. And there was a certain “atmosphere”. I of course, just sat quietly nearby.

So that was your experience as graduate student. And afterwards?

¹⁴In Russia the system of grading both in Soviet times and earlier was out of five points, with three or more representing a pass, and two or less a fail.

I. I.: After finishing my graduate work I went to Kaluga¹⁵ for three years. Even there I continued my research. As a graduate student I had begun to work with Shafarevich¹⁶ on automorphic functions. After graduating I continued to work on that. And then I returned to Moscow.

E. B.: How was that managed?

I. I.: The simple fact was that I wasn't really needed at the Pedinstitute in Kaluga. Usually people came for only six months, so that after I had been hanging around there for three years they were in a state of befuddlement, and gladly let me go.

At that time I met Gelfand¹⁷ who suggested—perhaps on the advice of Shafarevich, I'm not sure—that I work under him in a “secret” institute, that is, secret in the “Russian sense” of the word. This institute was OPM — an abbreviation [in Russian] for the full name: The Applied Mathematics Section of the Steklov Mathematical Institute. In fact, this was a separate research institution. The shorter name served as a sort of camouflage.

E. B.: What year would that have been?

I. I.: That was already after the death of Stalin. I defended my candidate's¹⁸ dissertation in 1954, and my doctoral dissertation in 1959. So it must have been in 1958.

Incidentally, it is interesting to remember time when the doctors' plot was announced in the press. I was possessed by a feeling of dread. On an unconscious level I had the feeling that any moment we, the Jews, would all be expelled. I don't remember discussing this with anyone, only this constant pervasive feeling. For some reason I recall a strange experience: I went to the baths, and I felt that maybe this would be the last time I go to the baths in Moscow. It was a very strange unconscious feeling; I can't explain it rationally. But look at how oddly the Soviet bureaucracy worked: almost at the same time I was awarded the prize of the Moscow Mathematical Society—an award that had to be approved by the ministry. It seems, at that moment it could not be approved.

¹⁵A city 188 km southwest of Moscow.

¹⁶Igor Rostislavich Shafarevich, b. 1923, an outstanding Soviet mathematician, working in algebraic number theory and algebraic geometry. Was a dissident in Soviet times, but latterly published antisemitic essay “Russophobia”.

¹⁷Israel Moiseevich Gelfand (1913-2009), the great mathematician, contributed to many areas of mathematics, including Lie groups, representation theory, and Banach algebras. Immigrated to the US in 1990, where he held a position at Rutgers University.

¹⁸The candidate degree is roughly equivalent to the Ph. D.

E. B.: But the ministry did approve it. At least in that sense the Moscow Mathematical Society did not kowtow to the powers that be.

I. I.: No, they didn't. But it's true that the prize was given to Yuri Vasil'evich Prokhorov as well as me.

E. B.: Well, yes. They gave me the prize jointly with Stechkin, although it would seem that our work had nothing in common, and he gave a speech on behalf of both of us. I don't remember precisely what year that was, only that it was overall a very rough one: 1951-1952. Yes, the Mathematical Society is a sort of anomaly.

I. I.: Evidently the Mathematical Society has not been under hard pressure.

E. B.: To some extent it remains an anomaly to this day.

I. I.: Yes, it's astonishing. Judging by the tempo of new developments that won't last very long, however.

That was a very pleasant moment in my life, when I received the prize of the Mathematical Society.

E. B.: Yes, generally speaking, the Mathematical Society prize was, in a way, something better than the Lenin or Stalin prize. Later I was for a long time a member of the Council that awarded the prize so I understand very well that human relations play a very big part in deciding such awards. Although people tried hard to be objective, the decision always depends to some extent on whom one knows better, whose results one knows, which speciality is closer to your own...

I. I.: I remember that it was Nina Karlovna Bari who presented my case, supported by Aleksander Osipovich Gelfond. But the main reason I got the prize had to do with my work on trigonometric series.

E. B.: Yes. The prize was not given to Minlos because objections of Kolmogorov¹⁹ even that was an outstanding work.

I. I.: Something about it didn't appeal to him. However, I don't think his reasons were personal; he simply felt on some mathematical grounds that the work was inadequate in some respect.

E. B.: Kolmogorov had, generally speaking, a complex personality.

I. I.: Well, yes, but everyone has a complex personality. Especially Gelfand.

E. B.: Tell us about your relations with Gelfand.

¹⁹ Andrei Nikolaevich Kolmogorov (1903-1987), one of the greatest mathematicians of the twenties century

I. I.: Well, our mutual relations were very complicated. It would be better to begin with my estimate of him. I think he is one of the very greatest mathematicians of this century, one of a very small set. But apparently a great man cannot at the same time be simply a good person. I remember that my very good friend Misha Tsetlin (although partially Gelfand's pupil, in some sense his personal relations with Gelfand were those of equals) said the following about Gelfand: "Ask yourself if you think Gelfand is a good person. You will ponder this for a while, and then ask for the definition of good person." This is a very apt response.

The main consideration here is Gelfand's desire to write a large number of papers—so many papers, in fact, that he was simply unable to go into the details of all of them. And with such a large number of collaborators that it was impossible for him to get to know them all properly. I myself agreed to co-author some papers with him, in each case feeling that I should explain to him at least some of the details of our collaborative work. In a few such cases, I began to feel that his contribution was nil, and even that he didn't understand what we were supposed to be doing together and that I should do everything by myself—which gave rise to a certain tension. All the same one has to give Gelfand his due: he always knew when a protest had become too strong to ignore and at that moment he would back off. In addition to all that, his personality was very human, he was not merely a mathematician, he was—and is—a person with a large number of human failings, in particular an excessive love for the powerful of this world, but nonetheless....

E. B.: I had the impression that he thought himself a great diplomat and politician, when in fact he was nothing of the sort.

I. I.: I agree with the first part of what you say: he thought he was extraordinarily adroit—that's a better word to use. And I would not say that this was not so. No, he showed himself to be an extremely deft and capable administrator. For example, he established several first-class biological laboratories. Moreover, he managed to hold on to his department at the Steklov Institute. No, generally speaking I would have to say that in many respects he was a person of ability. Perhaps this was not evident at first, but compared with the run-of-the-mill, he had a good understanding of the structure of Soviet life and was quick to grasp any new concrete situation and oriented himself very well. Perhaps even better than it was necessary. So I think that he was undoubtedly a capable administrator.

And I must say that when a certain set of people decided to emigrate—it would seem that I was the first of these among those closest to him—he

solved the problem very cleverly, so that in any case his department did not suffer as a result.

E. B.: Tell us the story of how you emigrated.

I. I.: It is first necessary to explain Gelfand's attitude to the idea. Perhaps the first thing that I have to say is that, since he placed obstacles in my path to emigration I was very angry with him, although now I can be more objective and positive about him.

E. B.: "Objectively" does not necessarily imply "positively": to be objective might entail being partially positive, and partially negative.

I. I.: The first thing to note is that, without any doubt, Gelfand was himself thinking of emigrating.

E. B.: But said nothing, of course?

I. I.: In frank discussions with his students he would sometimes talk in such a way as to hint that he would emigrate—especially when talk came round to the Jewish question. He would say that the situation of Jews [in the USSR] had been condemned, the comparisons had been made with Nazi Germany, and so on. With his closest students—and I was very close to him—he would discuss Jewish topics. He never, especially in later years, tried to argue that there is no antisemitism [in the USSR]—he was, and is, too clever for that. Thus sometimes he would give the impression that he would apply [to leave] any minute. I must say it was difficult for me to comprehend how it was possible to make such incendiary remarks yet take no action. Occasionally conversations with him left one with the impression that he had said: "What will happen? Well, I'll apply. Then will you follow me?" or something similar, but nothing direct of this sort was ever actually spoken.

I should mention that when I arrived in Israel, I met a children's doctor who had cured Gelfand's grandson [in Moscow]. A doctor who treats your children is of course close to the family, although not necessarily *very* close. This doctor emigrated to Israel, and became a convinced Zionist—a very good children's doctor and at the same time a friend of all the most prominent fighters, a friend of Voronel²⁰, and so on. His first name was Emil—I don't recall his last. He said that Gelfand's son Seryozha had told him in Moscow that the question of applying to emigrate was for them a practical matter.

Talking about all this, my memory has been jogged. I have just remembered that in one of the conversations with Gelfand that took place after I

²⁰See his Intervie on this site

had applied, when there was no longer any question of changing my mind, he told me that they had also thought [of emigrating], and that when he decided against it life became easier for him. I think he was sincere; about having thought about it and also about how he could breathe easier once they had decided not to do it. Apparently, the example of Lerner and Levich had been the main deciding factor. And certainly, we now know that Levich was made to wait seven years, so that it seemed quite possible that Gelfand, a much greater scientific figure and also occupying a higher post than Levich, would not be allowed to leave.

E. B.: Gelfand had little chance of leaving; I don't think they'd have let him go.

I. I.: I don't think so, especially now. So I think he made the right choice. All the more since ultimately his present situation is generally speaking....

E. B.: Yes, by Soviet standards his situation is relatively good.

I. I.: Good, excellent. Moreover he has certain scientific obligations: he runs a splendid seminar, and he would have been leaving many people in the lurch [if he had emigrated]—of course this applies to everyone [who emigrates].

E. B.: On the other hand fortune has latterly foisted on him to nurture a state grandchild.

I. I.: Yes, Gvishiani ²¹. This, apparently, is a key element. One has to say that this is another example of Gelfand's ability: he knew how to use Gvishiani. His hiring the daughter of the Minister of Health Care Petrovskiĭ is another example of his perspicacity.

E. B.: Someone told me that she procured medications for everybody.

I. I.: Yes, she provided medications. Of course, hiring the daughter of the Minister of Health Care does not by itself represent a great achievement, but only someone with foresight would do it in anticipation: Gelfand hired her several months before Petrovskiĭ was appointed Minister—which does indeed show perspicacity.

E. B.: What about Kosygin ²²?

I. I.: Of course, Kosygin had become prime minister long before. Gelfand

²¹Alexei Dzhermenovich Gvishiani, b. 1948, now member of the Russian Academy of Sciences and Chair of the Department of Function Theory and Functional Analysis, Moscow State University. Kosygin was his grandfather.

²²Alexei Nikolayevich Kosygin (1904-1980), high-ranking member of the Soviet government, especially influential during the 1960s when he promoted economic reform. He was prime minister under Brezhnev from 1960.

knew how to exploit his connection with him, that was the main reason he was allowed to travel abroad.

E. B.: When we discuss here problems of inviting any mathematician from the Soviet Union, some colleagues say “Look but Gelfand is allowed to travel abroad!”. And I reply: “You shouldn’t be wondering why someone is *not* allowed abroad, but what the special conditions might be explaining why he *is* allowed abroad.” In Gelfand’s case explanation is simple— a little favor of a very important person.

I. I.: I had the impression that the Central Committee Communist Party had determined on according Gelfand membership [of the Academy], but the powerful stream of anti-semitic academics, led by Ivan Matveevich [Vino-gradov]²³, strained every sinew to prevent this. And the Communist Party was unable to move them. There’s no fighting with Ivan Matveevich.

E. B.: So Ivan Matveevich is stronger than the Communist Party?

I. I.: As far as certain questions are concerned, yes. But at least Gelfand did manage to travel several times abroad. Well, all right, now I’ll turn to the the very last episode.

E. B.: Tell us about your emigration to Israel.

I. I.: With regard to that there is a complex problem that I’d rather not go into: my son lived with his mother separately from me, and I was not prepared to leave unless they also left, since otherwise I would be leaving him forever. It’s absolutely true that if they had decided not to emigrate, then I also would have stayed. At the time when all this was coming to a head, I had my first conversation with Gelfand [on this topic] in autumn [of 1973], and got permission to leave in 1976.

E. B.: So about two years had passed.

I waited about two years, having applied in 1974. My son departed on March 10, 1974, and I left on February 20, 1976. This means that the first time I broached the topic with Gelfand was in the autumn of 1973. And that means that there must have been some chance then—the possibility must have become greater—that my son would emigrate.

We spoke outside. I wasn’t then able to tell him categorically that I had decided to leave, but I spoke of it as a practical possibility, and discussed with him what I should do so as not to put him in a difficult position should I apply. It seemed that at that time Gelfand was not yet fully decided on

²³(1891-1983) Soviet analytic number theorist. Director of the Steklov Institute from 1934.

not leaving, so the conversation was exceptionally amicable—he more or less encouraged me while at the same time pointing out difficulties. He had always been interested in foreign politics, and, I must say, was well versed in them, and it had always been very pleasant discussing them with him: Who wants what, who's going to do what. Well, he explained to me that the political situation at that moment was unclear, and gave me reasons—which impressed me at the time, but which, alas, I've forgotten—as to why it would be appropriate to postpone applying for six months or so—taking into account the international political situation. Since in any case I was not ready to make a decision just then, I agreed with him.

The situation took on a completely different slant when my son decided to leave. It's interesting that he continued to live in his institute's student residence; for some reason it only became known that they had applied to emigrate at the moment when they actually got permission. As soon as they got permission, the whole institute seemed to know they were leaving for Israel.

E. B.: Which institute was that? OPM²⁴?

I. I.: Yes, OPM, which was then called IPM, the Institute for Applied Mathematics. And once this came out I met with Gelfand again. Again we conversed outside—all conversations on that topic were held outside. (Perhaps that was not such a bad thing: being outside in the fresh air was doubtless good for our health.) Americans have difficulty understanding this; it would appear that that could not happen in America. And will we perhaps also cease to understand at some time in the future? He rather brusquely told me that I should resign of my own accord.

Well, at that very moment I decided that I would definitely apply to leave, so that his suggestion suited me entirely, and the only thing we discussed was when I would be asking for a reference letter. (The documents are not considered without one.)²⁵ For some reason I had the idea that I should personally ask Keldysh for one; I felt optimistic about his helping me. Strangely enough this idea was a good one, because later, during the struggle to get permission to leave, I went to the reception area outside Keldysh's office and he told me that they had finally written up a reference letter for me stating that I hadn't been working on any secret projects. And

²⁴The Applied Mathematics Section of *Mekhmat*.

²⁵Reference letter (the so-called "kharakteristika") was requested in the USSR for any change of a status like admission to college, getting a job, promotion, travel abroad and so on.

the fact that I am sitting here before you is, I would say, evidence that he was telling the truth. Most people thought badly of Keldysh, but I have good memories of him.

E. B.: Someone told me that Keldysh was appointed president of the Academy of Sciences on condition that he make Soviet science *judenfrei*, which he did.

I. I.: That may be. But at a personal level he treated me well. He helped me find a apartment initially.

E. B.: And didn't take offence then, that you were after all leaving. You may know that our Fedorenko also helped someone get an apartment, and then when that person applied to emigrate, he became frightfully angry with him.

I. I.: No, I sensed nothing like that. I had had little to do with him, but all the same it was clear that I existed for him as a person since he took my wishes into account.

E. B.: Well, how did the business of your leave-taking proceed? After all, it was not just of personal, but of far wider import, I think. You opened a breach through which many mathematicians rushed. Which mathematicians left before you?

I. I.: Moishezon.

E. B.: O yes, Moishezon. But he was somehow more isolated. Although his name was known the world over, he was not so very well known within the Soviet establishment.

I. I.: His emigration made a big impression on me—as next in line.

E. B.: So Gelfand proposed you quit your position “voluntarily”?

I. I.: Yes. We had agreed to this in our first conversation. However, there was an essential difference—well, there was his tone, but that's minor—to do with the fact that in our first conversation, in autumn, we had agreed to the following: that I would apply to emigrate and request a reference letter simultaneously. However, now he asked me to separate the two actions by and interval. I can honestly say that that request did not at all sit well with me—it was not very pleasant to get such a request. But on reflecting I considered that I would in any case be leaving sooner or later, and fulfilling his request would cost me only a few months of additional struggle. And I had worked with him for many years, and would be leaving him with certain unpleasantnesses to deal with; and there was the burden of guilt I would carry around with me—so I said “Agreed.” And that was the right decision.

E. B.: Clearly, although this resulted in certain complications, in the long

run it allowed you to feel better about things.

I. I.: Yes, in the distant future. I also recall that not very long ago—six months or a year ago—when Gelfand was in Paris he met with the well known Israeli physicist Yuval Ne’eman, who later told me that Gelfand spoke very warmly about me....

I gave notice at the institute, but I had another unpaid position there in the applied mathematics laboratory, and since it was unpaid I reckoned I might continue on there, not wishing to leave till I obtain Gelfand’s agreement concerning my request for a reference letter. Apart from that, I also indulged in a little cunning: I did not give up my institute pass. My main concern in doing this was that I should be able to enter the institute when the time came for me to pick up my reference letter; they were quite strict about requiring a pass [of anyone wanting to enter]. (My action in giving notice, and forfeiting my salary, was generally attributed to distress over my son’s departure.) As a matter of fact, both then, and for many years previously, no one at the institute was working on any secret project. The only activity that might be so classified was the computation of the motion of sputniks and rockets, but this merely involved solving equations, and I’m sure that, although such solutions can be very subtle, in America analogous computations were even being published. Apart from that, they were working on the construction of roving apparatuses for walking on the moon. The “secret” section involved in that project reported on their work at an open seminar at Moscow University; they considered that publishing their results was to their advantage since this might lead to contacts with foreign scientists and the chance to travel abroad.

E. B.: As far as I understand it, the main secret was that there *was* no secret—that all of the activity was such that nothing emerged worth keeping secret. That’s the chief secret.

I. I.: Yes, yes. But when they really *did* create a secret institute—when they were doing the computations for an atomic bomb—that period ended approximately at the time when I started work at the institute. Over all those years from then till I left, nothing really secret was going on in the whole institute, I think—although I cannot be absolutely sure since the institute was designed very cleverly: it was actually the case that no section knew what was being done in other sections. The only place where this could be found out was in the meetings of the scientific councils. However, for many years all the members of the scientific section led by Gelfand stopped to attend the meetings of the scientific council which were considered secret. So therefore was a hope that no knowledge of secrets can be attributed to me.

E. B.: At a certain juncture—I don't now recall when exactly, sometime in 1966, I think—Gelfand also summoned me....

I. I.: To talk about emigrating?

E. B.: No, no. To work in his group part-time.

I. I.: Yes, there was a time when he wanted to invite Arnold, Sinai, and certain others.

E. B.: He had a collector's passion—he wanted everybody in his group.

I. I.: Yes, and by the way, Keldysh would have gone along with these offers, but Arnold and Sinai considered that it would be unfair to Kolmogorov.

E. B.: But it seems he got Kirillov?

I. I.: He got Kirillov. But Kirillov is his own student. And he was working under Gelfand only part-time while keeping a full-time position at the university.

E. B.: Gelfand is of course a complicated person— and difficult. My close relations with him had been broken long ago. As a student I went to his seminar (at the age of about twenty). But then I stopped to do this because of incompatibility of our characters. When I emigrated, I phoned him—on the very day of my departure, just before leaving for the airport—to say good-bye. He said just two or three words, but said them warmly, the tone of his voice was ... very warm.

I. I.: What happened next was the following. I continued to work in the laboratory, and as it happens I worked even more intensively than before. Then at a certain moment Gelfand summoned me to talk with him—it was obvious about what. So I went to his apartment, and we went outside. He told me that I had caused people to be placed in a difficult situation, that because of me they were closing down this, that, and the other. And furthermore, he said, he would in any case reorganize the laboratory—introduced certain organizational measures—after which I would in any case cease to belong to the leading group. Well, I said, I'm agreeable to all that, but I can't do it until I'm in a position to tender my resignation. Then he said that of course I may request a reference letter. But when I brought my resignation documents to the laboratory, they told me right away that it had already been reorganized in such a way that according to the new protocol I was no longer considered a member of the leading group. However, all these games didn't bother me much; I understand that he had simply taken fright.

So I went to request the reference letter. Unfortunately, at that moment Keldysh was ill. I don't remember whom I spoke to, how I requested the reference letter—or did I apply for it in writing? That's gone completely out

of my head.

E. B.: They gave you the reference letter without any trouble?

I. I.: Yes. Maybe I spoke with Chentsov.

E. B.: By the way, what's your opinion of Chentsov? I taught him when he was a schoolboy.

I. I.: I think him an intelligent person; I feel positive about him.

E. B.: As far as I recall, Chentsov was in a mathematical circle I led; he would then have been 15 or 16 years old.

I. I.: Generally speaking, fate has treated him badly, because he came into Gelfand's sphere of influence, while if he had worked instead in Vinogradov's group, he would have become a corresponding member of the Academy long ago. His only fault was to have been attached to Gelfand. However, he didn't try to get away from him, and apparently still hasn't.

E. B.: No, probably not. But of course he would still like to become a corresponding member.

I. I.: Yes, but having Gelfand as his patron, is almost like being a little Jewish himself. And the same applies to Kirillov, they say.

E. B.: But Kirillov is not even permitted to attend the International Congress of Mathematicians.

I. I.: Perhaps because he signed the petition about Essenin-Volpin ²⁶.

E. B.: My God, how many years have passed, surely all is forgiven by now.

I. I.: All are forgiven, you say? Well then, for some other reason.

E. B.: Well, that is, all are forgiven who ought to be forgiven at the time, and the rest never will be forgiven.

I. I.: No. I don't believe they've forgiven Manin yet.

E. B.: Manin has an extra burden of guilt: his mother was Jewish.

I. I.: But before he signed the petition to release Esenin-Volpin he was permitted to travel abroad.

E. B.: Maybe they had her racial credentials confused, or perhaps it was difficult to pin them on him, I don't know....

I.I.: What about his wife? Did he remarry?

²⁶Aleksander Sergeevich Essenin-Volpin, b. 1924, is a prominent Russian-American poet and mathematician, and the son of the famous "peasant-poet" Sergei Essenin. In the USSR he was a notable poet, mathematician, and human rights activist, and spent in all 14 years in confinement or exile. In 1968, when he was confined to a Soviet mental institution, 99 Soviet mathematicians signed a petition requesting his release. He emigrated to the US in 1972.

E. B.: I don't know. Generally speaking, there are people who are Jewish not by blood but in spirit.

I.I.: Evidently, he is merely a "Jew in spirit" and not of Jewish blood, since this would explain why they keep him on at the Steklov Institute and the university. But for travel abroad—for the higher-ups who consider questions of foreign travel—the deep roots are scrutinized. And then they recognize his intrinsic Jewish essence, though 'tis a great pity.

I have just now remembered how I composed the text of my own reference letter, and how there ensued a rather tense struggle; certain phrases were deleted, some others added.

E. B.: It's a paradoxical situation when the worse it is, the better.

I. I.: Yes. In the end I got the reference letter and submitted it with the covering document.

Certain stages in my struggle to emigrate are interesting. One such—perhaps the funniest episode—occurred when the scientific seminar was about to start, organized by Voronel and Azbel; this caused a great deal of unpleasantness for the KGB, as a result of which they came to detest that seminar. There was a professor by the name of Semyon Izrailovich Zukhovitskii, whom at that time I often visited in his apartment; he was very close to applying to emigrate, but then, when I had already been refused, had not yet actually done anything about it. He knew Hebrew, having as a child received a traditional Jewish education, and even had a Rabbi's diploma in some form or other; he loved Hebrew: that language was for him one of the most important features of his life. Thus wanting to guarantee passage abroad, but without actually agreeing to anything specific beforehand, we decided on the following gambit: we would discuss over the phone what would happen in the event that he was refused.

E. B.: Playing to the recording device, to the tape?

I. I.: Yes. We also discussed the new seminar that we would organize if he applied and was refused. But these conversations were never in Russian. This topic was always discussed in Hebrew. Thus while most of our phone conversations were in Hebrew, those on this theme were exclusively so.

E. B.: You were thinking that that would be more likely to get under their skin?

I. I.: Yes, in this way we were making it seem more "secret". In fact neither of us had the slightest intention of organizing any seminar. My students used to come to see me, and that was a sort of scientific seminar, but it wasn't advertised, and was kept quiet so as not to cause trouble for

my students.

E. B.: And that's why you played to the tape?

I. I.: Yes. I had no wish to start up a second seminar—a semipolitical one—since the seminar of Azbel and Voronel was in fact to a large extent politically motivated, although conducted professionally enough. Now it is said that you can't fool the KGB. So we were amazed—I especially—at how readily they took the bait. This occurred at a moment when they were close to granting me permission to leave; it was already a year and a half since I had first applied, or a little over a year, somewhere around the time of some celebration or other of the Academy of Sciences. (It was some sort of special anniversary, a tricentenary of something perhaps? They were terrified of inviting the wrong people, so only very thoroughly vetted foreign mathematicians were invited; of the mathematicians I recall that Leray came.)

Thus the KGB was making preparations for avoiding any incidents. They summoned me, and told me that they would soon be permitting me to emigrate, and that they would like me to desist from starting a new seminar. I must say that this came as a complete surprise to me, since I had been thinking I would have to wait many more years. And that is why I then committed a cardinal error: I immediately—and far too readily—agreed not to start a seminar. But then I actually believed the agent, whereas the KGB is often rather deceptive in its dealings—but I believed the agent before me, and in this case I was right to do so.

E. B.: Did you have some sort of personal Godfather?

I. I.: Yes, the agent assigned to me was a certain Gruzlov, the same one who earlier worked on the case of my student Novodvorskiĭ. He had phoned me back then.

It may be interesting to describe how the KGB summons you. He rang, and said that he was the one who had worked on the case of my pupil Novodvorskiĭ.

E. B.: Did he say who he was?

I. I.: He gave his last name.

E. B.: Did he mention what institution he was representing?

I. I.: He said he is a representative of the Commission for State Security [KGB]. "I worked on your pupil's case, and thanks to me he received permission. Please come and see me."

E. B.: Well, completely honest. At least he didn't pretend to be somebody else.

I. I.: No, no. As a matter of fact, it is very important for the KGB

people that those summoned come to them voluntarily, that is, without being taken, since this serves as evidence to the higher-ups that they are capable of working with the people. For that reason they have to know how to introduce themselves intelligently.

E. B.: So it was indeed comrade Gruzlov?

I. I.: Gruzlov. He it was who later interviewed Azbel and also Branlovskii, several times, I think, although I'm not completely sure—perhaps that was earlier.

Although that was a rather frightening experience—as indeed it would be for any Russian—I remember that I was basically in possession of myself, and apparently assessed the situation correctly. If I hadn't believed him, I would not, of course, have promised him anything, but since I did believe him, I made the promise. That was the same time as someone called Zhishchenko who worked under Bogolyubov.

E. B.: Wait a moment, didn't he just recently accompany Pontryagin to the International Congress of Mathematicians in Helsinki?

I. I.: Yes, he did. He is another complex person, who has come in for quite a bit of criticism, for instance from Shafarevich, whose student he was—and in some ways perhaps quite justifiably. Zhishchenko's behavior would indicate that he is connected to the KGB somehow, but, on the other hand, he represents a rational seed, a germ of reason in that institution.

E. B.: Someone among the Jews told me that it's better to have dealings with the KGB than with your local party organization.

I. I.: True, yes.