

## **The role of academician A.N. Terenin in the organization of the Siberian school of spectroscopists**

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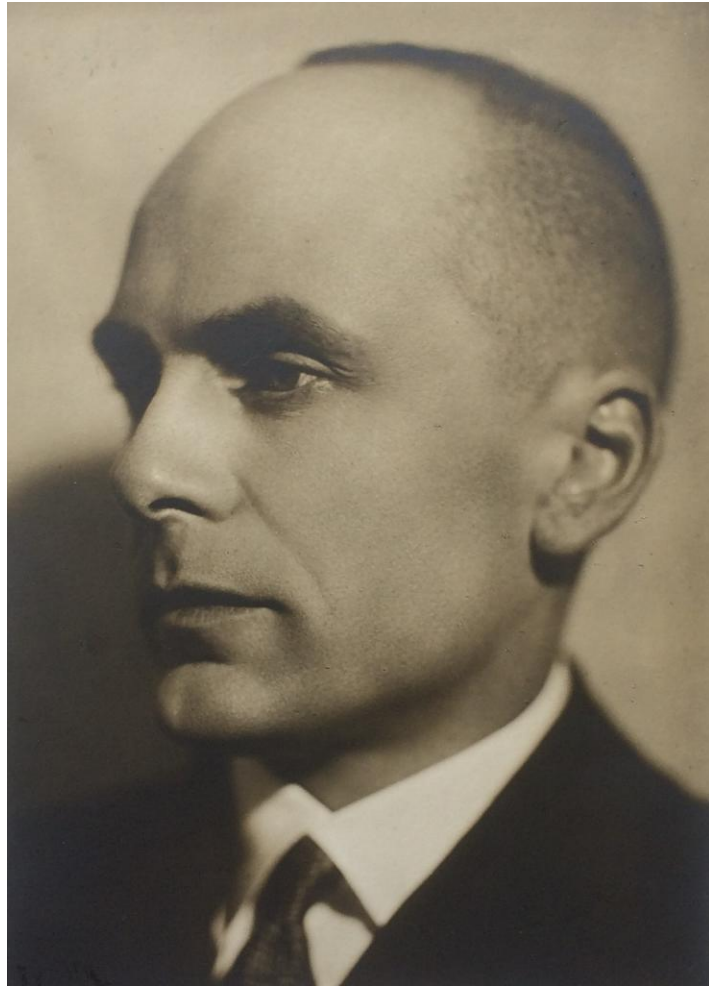
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Natalya Aleksandrovna Prilezhaeva's father (1876–1934) was a well-known professor in Leningrad in the Department of Practical Mechanics and Precision Instrumentation at the Educational Plant of Precision Mechanics and Optics. Mother Marianna Sergeevna (1880–1949) came from the nobility, graduated from 3 courses of the Higher Courses for Women. Natalya Alexandrovna began her scientific career as a third-year student at the University in 1928 under the guidance of Professor Terenin.

Alexander Nikolaevich Terenin is a colorful figure in all respects, was in those 20–30s of the last century a model of Jules-Vernes' scientist eccentric. He was a talented experimenter, deep theorist, brilliant humorist and ... a convinced misogynist. And this celebrity, who did not let a single woman enter the threshold of her laboratory, was a learned girl with glasses on a long nose and with a referral to industrial practice in her pocket. At the time of the appearance of the violator of the prohibition, the professor was photographing the spectrum of the arc discharge. Having found out that the girl considered herself competent in the technique of this experiment, the professor sat the impudent woman in his place, gave the proper strict instructions and ... fled. Perhaps he went to complain to his superiors. He was absent for a long time. Photographing spectra is a time consuming task, but not too burdensome. Miss Natasha combined her duties with the study of an English article found on the professor's desk. She took care to learn English in her junior years. When the professor finally returned, he found in the laboratory almost idyllic. The spectrum was safely photographed, and the learned girl diligently absorbed scientific information. The iron taboo had to be broken – Natasha was admitted to the holy of holies. "Do you know how to photograph?" – "I do" – Natasha lied. "Come back tomorrow". Father's resources were mobilized at home, something was purchased on Nevsky. And in the evening Natasha personally photographed three small chamber pots that were solemnly placed on the table: father's, mother's and her own. With her own hand, she carried out all the stages of processing up to obtaining a photograph, which unfortunately did not survive ...

Pretty soon Natasha became her own person in Terenin's laboratory. She took part in all humorous escapades and out-of-town tours, where bloodthirsty mosquitoes showed preferential attention to Alexander Nikolaevich, neglecting the merits of accompanying sapiens. They were blissful and sarcastically accused the stubborn mosquitoes of Terenin's mischief. The professor laughed it off. He was a witty man, he did not go into his pocket for a word. Practice in Terenin's laboratory served as the beginning of the beginnings of a further path in science. SOI (The State Optical Institute) in those years gathered the cream of young talents. Naturally, Natasha also entered this elite. After graduation, she became a research assistant at Terenin's laboratory. Soon the first scientific publications appeared in the most famous foreign journals in collaboration with Alexander Nikolaevich. A persistent breach was made in Terenin's misfortune. Alexander Nikolaevich became Natasha Prilezhaeva's adored teacher and good friend. Under his leadership, first as a student, and then as an equal employee of the Photochemistry Laboratory of the Optics and Spectroscopy Department of the State Optical Institute, she completed twenty scientific works. Then several fruitful joint years of work in the SOI laboratory passed. The teacher and the student became friends with each other to such an extent that the future academician gave her a photograph of himself with a handwritten signature in English "To a dear and true friend", which she kept for the rest of her life separate from her album.



In 1934, Prilezhaeva's father suddenly died of an apoplectic stroke. Leading optics scientists, whom you can see in the photographs of that time, came to see him off on his last journey. You can recognize A.N. Terenin on this photo.



Who knows what else their joint work could have resulted in and what brilliant results this harmonious cooperation of two such consonant talents could have led, if not for the ridiculous reference of Prilezhaeva. After Kirov's assassination, all "noblemen" were evicted from Leningrad without exception. The SOI protection letter, which the Prilezhaevs had, did not help either, and her mother was evicted from Leningrad and sent into exile in Tomsk for her noble origin. From Leningrad, the Prilezhaevs had to get out, it seems, in 36 hours. True, they were not evicted to Kolyma, but given the opportunity to choose a city. Prilezhaeva chose Tomsk, since there was a person she knew from conferences, Tartakovsky. Of course, some of the things were shoved into their relatives, some were taken with them. It is unlikely that the choice was very sensible. The most overwhelming thing – the library – had to be left. From the books they took with them only Italian stories in French. Uncle Kolya, possibly the brother of Marianna Sergeevna, also went with them. He disappeared soon after. Where and how is not known. It is unlikely that Uncle Kolya left, taking advantage of the gracious permission. Most likely hit by the broom of the thirty-seventh.

Her leaders, first of all Terenin, tried to help her by organizing two letters to the then head of the NKVD, Commissar Yagoda, with a request to return a valuable employee back. Letters signed by Academicians A.F. Ioffe, I.V. Grebenshchikov, S.I. Vavilov and Professor A.N. Terenin are published in an article by V.A. Goncharov, V.V. Nehotin, *Academicians in defense of repressed colleagues*, Bulletin of the Russian Academy of Sciences, 2002, N6, p.530. Here is their content.

**# 1. To The People's Commissioner of the Internal Affairs G.G. Yagoda**

The laboratory of photochemistry of the State Optical Institute, which develops fundamental issues of photochemistry under the leadership of Corresponding Member of the USSR Academy of Sciences A.N. Terenin, is of leading importance in the Union in this area, which was noted in the resolutions of the 11th All-Union Physico-Chemical Conference in February of this year and the last session of the Academy of Sciences in May of this year. The indicated laboratory, which consisted of 4 employees, is currently in an extremely difficult situation due to the departure from Leningrad at the suggestion of the NKVD in March of this year. two highly qualified employees (N.A. Prilezhaeva and B.V. Popov, who have worked in the laboratory for over 5 years). N.A. Prilezhaeva has 14 publications, B.V. Popov has 5. Both were preparing to defend a thesis for a doctorate; possessing also high pedagogical qualifications (both had the title of associate professor), they were the most suitable leaders for training young specialists in photochemistry who could conduct independent research work in other institutes of the Union. Their departure caused a sharp reduction in the volume of work of the laboratory (1 researcher and 1 laboratory assistant remained), and also made it difficult for the laboratory to train new personnel in a specialty of great theoretical and practical importance. There is no other similar laboratory in the Union. It is not possible to get highly skilled workers as indicated in the near future. Taking into account that at the May session of the Academy of Sciences a resolution was passed on the all-round development of the work of the above laboratory, we ask you not to refuse to clarify the issue of the possibility of returning the main laboratory worker N.A. Prilezhaeva to Leningrad at the State Optical Institute. It should be noted that N.A. Prilezhaeva moved to Tomsk, accompanying her mother, and that there was a favorable decision of the prosecutor in favor of her leaving in Leningrad, which could not be used due to the short time allowed for departure.

Chairman of the Physical Group of the USSR Academy of Sciences,  
Academician Ioffe.

Head of the Chemical Sector of the State Optical Institute,  
Academician Grebenshchikov.

Head of the Photochemistry Laboratory of the State Optical Institute,  
Corresponding Member of the USSR Academy of Sciences, Professor Terenin.

June 25, 1935

## **# 2. To The People's Commissioner of the Internal Affairs G.G. Yagoda**

In a petition dated June 25 of this year, sent to you personally, a copy of which is attached, we drew attention to the plight of a laboratory of great scientific importance in the Union and widely known abroad, namely the laboratory of photochemistry of the State Optical Institute, headed by a corresponding member Academy of Sciences of the USSR, Professor A.N. Terenin. This situation was created as a result of the departure of the main researcher of the laboratory, Natalia Aleksandrovna Prilezhaeva, who left with her mother, at the suggestion of the NKVD, from Leningrad to Tomsk in March of this year. The absence of such a highly qualified worker and the impossibility of replacing him in the coming years makes it extremely difficult for the laboratory to develop the leading problems of photochemistry, damaging its importance both in our Union and abroad. In view of the above, we again appeal to you with a request to reconsider the case concerning Natalia Aleksandrovna Prilezhaeva in order to clarify the possibility of her returning to Leningrad to the State Optical Institute.

Academician (A.F. Ioffe)

Academician (I.V. Grebenshchikov)

Academician (S.I. Vavilov).

Corresp. Member of the Academy of Sciences, Professor (A.N. Terenin)  
December 29, 1935

**CA FSB RF, F. 3, Op. 2, D. 897, L. 97. Typescript. Publication after: V.A. Goncharov, V.V. Nehotin.**

**Academics in defense of repressed colleagues // Bulletin of the Russian Academy of Sciences. 2002, No. 6, p. 530**

Having thundered to Tomsk by mistake, Prilezhaeva lost real hope of marriage. Her idol and chief at SOI, Professor Terenin, who had a reputation as an ardent misogynist, not only allowed Prilezhaeva into his laboratory as an exception, but also clearly favored his ward. Departure to Tomsk canceled plans and illusions. But fate wanted to compensate for lost hopes to make her the head and ancestor of all optical-spectroscopic schools in the Trans-Urals. So she excelled in science. Perhaps, if she remained in Leningrad, she would only be an echo of the dear Terenin. It seems that a year later they apologized to the Prilezhaevs, the mistake, they say, came out of excessive zeal. They offered to return. Where to? In the ashes? Natasha refused. In Tomsk science, it has already taken root, has taken root. Presumably, she was afraid of a repetition of sanctions.

Nevertheless, Terenin also found an opportunity here to help his student. He first initiated the defense of her Ph.D. thesis, and then her doctorate for two years! In 1938, Natalya Aleksandrovna defended her doctoral dissertation "Transformations of Electronic Energy in Elementary Processes". At the same time, Vera Mikhailovna Kudryavtseva becomes a doctor of sciences. The inseparable "Curies" experimented together, discussed the results together, completed the work together, using another vacation for this, rested together and rode bicycles to the dacha and to pick mushrooms. Even opponents from other cities they had in common – Grigory Samuilovich Landsberg (Moscow) and (of course!) Alexander Nikolaevich Terenin (Leningrad). Only the locals, Tomsk, were different: Ivan Fedorovich Ponomarev opposed Kudryavtseva, and Boris Vladimirovich Tronov opposed Prilezhaeva. And they were the first women – doctors of science physicists in the USSR. Natalya Alexandrovna had just turned thirty at that time.

Not without punctures. For some reason, highly educated opponents did not get off the train in Tomsk Perviy, where a cab was waiting for them, but moved to Tomsk II. And there they blinked in confusion, looking for the greeters. In the end, a man with a cart was contracted. So, sitting on a lumbering cart, and arrived at the indicated address, without losing either optimism or favor for the nervous dissertators. To Terenin, in general, mosquitoes and absurdities stuck. After his election to the Academy of Sciences, Kudryavtseva and Prilezhaeva sent a congratulatory telegram signed: "*Happy dissertators*". A telegram came to the indicated address to a certain academician *Terekhin* from "*happy disserans*".

In 1961 Terenin sent his second photograph to Prilezhaeva with the dedication *"To dear Natalya Aleksandrovna Prilezhaeva in memory of past adventures in science and nature to the croaking of spring frogs. Leningrad, June 5, 1961"*.



*60 years have passed since that time, but the past is still remembered.*

*The article uses materials from the archive of the Museum of the History of Physics of TSU and unpublished memoirs of N.V. Kudryavtseva.*