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Analyzing living conditions of Tomsk physicists' scientific community in the period of social and economic upheaval (1930 - 1945)

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Abstract

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The article presents the reconstruction of living conditions of Tomsk physicists' scientific community in the period of social and economic upheaval (1930 - 1945). The reconstruction is based on published and unpublished sources. The author analyses the formation and development stages of the named community, give the characteristics of Tomsk physicists' living conditions. The author draws the conclusion that the severe conditions which Tomsk physicists' scientific community lived in did not cause deceleration in development of the scientific community and the studies conducted. The scientists made strenuous efforts to carry out their tremendous research which resulted in crucial practical and fundamental outcome. The article is intended for those who are interested in the Russian history, the history of Great Patriotic War, the history of higher education and science and the Soviet period of Russian history.

Keywords: Keywords should be separated by a semi-colon ; Times New Roman 8

1. Introduction

The years 1930-1945 became the period of the radical modernization transformations which affected all spheres of life of the Soviet society. Large-scale economic (industrialization, collectivization, evacuation and militarization of the industry in the Great Patriotic War period) and political (the Communist party cleanings and repressions) processes led to modernization of the Soviet society. In the modern conditions of Russian society modernization and the social and economic transformations happening in the country which are aimed at creation of "economy of knowledge" and a country exit to innovative boundaries, the appeal to studying scientific community as specific and

unique component of the Russian society is especially critical. Considering this issue on a regional example will allow us to reveal the concrete features and peculiarities of scientific community formation and development.

The research literature on the Soviet and Post-Soviet periods devoted to history of the higher education and science in the period of the Great Patriotic War is rather extensive. In this regard it is necessary to mention the works by L. Graham and I.G. Dezhina in which the authors characterized the basics of scientific activity organization in the USSR and analyzed the issues of Russian science in the 1990th and at present (Graham, Dezhina, 2008). Various aspects of Siberian scientists communities' activity were investigated in the works by T.N. Petrova (1954), T.N. Ostashko (2002), S.F. Fominykh (2013) etc. However, nowadays there are no researches on the history of Tomsk scientists' committee.

2. Materials and methods.

The materials of "CPSU Tomsk City Committee" fund (Fund 80) stored in the Center of documentation of Tomsk region contemporary history were the main source for writing of article. The author drew on the protocols and extracts from protocols of plenums of Committee of scientists presidium, the protocols of city meetings of scientists and engineers, the reports of Committee of scientists, the reviews of works of Tomsk higher education institutions and research establishments, reports, addresses of scientists, scope of scientific researches, etc. The considerable part of those documents is directly connected with the research work which wascarried out in Tomsk university. The materials of Tomsk region State archive fund (F.R.-1638) have a considerable source potential.

In the article the author drew on comparative-historical which allows to discover the essence of the studied phenomena both on similarity and on distinction of properties inherent in them/ The chosen method also enables to carry out comparison in space and time, allows to present an overall picture of Tomsk scientists committee's activity and to reveal the general and special in development of schools of thought and the directions in comparison with the existing organizations of this kind. When determining various quantitative and qualitative characteristics of scientific researches, the statistical method, the historical and sociological analysis were widely used.

3. Discussion of the research outcomes

3.1. Formation and development stages of Tomsk physicists' scientific community.

The origin of Siberian physicists' scientific community is connected with opening Imperial Tomsk university (ITU, nowadays - National research Tomsk state university), the first one in the Asian part of the country in 1888. The university laid the foundation to process of formation and development of schools of thought, including ones in the field of physics. The beginning of development of physical researches in Siberia dates back to the year 1888 and is connected with the name of the first professor-physicist of ITU - N. A. Gezekhus. At the initiative of full professor N. A. Gezekhus the office of physics was opened in 1888. He also made the first acquisitions of the equipment and devices for the office. N. A. Gezekhus offered the program of meteorological researches in Siberia. However, his short period of work in Tomsk university which coincided with the first steps of university formation as

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scientific educational institution didn't allow N. A. Gezekhus to be engaged closely with research. The physical researches in Tomsk university found further development during the period when the department of physics was headed by professor F.Ya. Kapustin. In 1896 when there was the first publication about opening by the German scientist V. Rentgen X - rays (the discovery was made in November, 1895), F.Ya. Kapustin ordered an X-ray tube from Germany. For the first time in Tomsk X-ray photographs were taken. It was F. Kapustin who also mastered glass-blowing business and could blow X-ray tubes himself (Annual report of the Imperial Tomsk University of 1896, 1897).

The opening of Tomsk of Institute of technology (nowadays – National research Tomsk polytechnical university) in 1900 became an impulse for the development of the local scientific community. The department of physics in the Institutewas was headed by B. P. Veynberg since 1909. During the pre-revolutionary period, no one of professors-physicists created a school of thought. Nevertheless, in Siberia several scientists laid foundation of radiology (F.Ya. Kapustin) and geophysical surveys (F.Ya. Kapustin, D. A. Smirnov).

The second stage of Tomsk physicists' scientific community development was connected with the year 1917 when the department of physics and mathematics was established in Tomsk university. In the years of the Civil war, N.N. Semenov, future Nobel prize winner, worked as teaching assistant in that department.

However, large-scale researches in physics began in the 1920-30-ies. During that period, the state conducted the policy of highly qualified specialists' mobilization for the regions lacking such specialists. That policy was aimed at solving the problems of the forced industrialization. In the late 1920-ies the expansion of scientific institutions' peripheral network in the field of physics took place. That phenomenon was connected with the issue of industry modernization of the industry and the state objective to reach new technological boundaries. Therefore, in Tomsk in 1928 the Siberian Physics and Technology Institute (SPhTI), the first research institute of physical profile beyond the Urals was founded. From the moment of creation, its value was in consolidation, preparation of highly qualified personnel of scientists-physicists in Siberia. In SPhTI Siberian first schools of thought in the field of solid body and spectroscopy physics appeared. SPhTI scientists regularly gave consulting help to their colleagues from research establishments and the industrial enterprises of Siberia, creating all the necessary conditions for advanced training. SpHTI specialist also visited other establishments of the region to deliver consultations and series of lectures.

At the initiative of SPhTI scientists the first regional conference of physicists in Siberia was organized and held in the spring of 1934. 130 delegates, including 43 non-residents participated in the work of conference. They were the representatives of higher education institutions and technical colleges, research institutes of Tomsk, Novosibirsk, Omsk, Krasnoyarsk, Irkutsk, the employees of factory laboratories from Stalinsk (present Novokuznetsk), Anzherki (present Anzhero-Sudzhensk), Sverdlovsk (present Yekaterinburg), etc. The Ural physics and technology institute and Physical and chemical institute of L. Ya. Karpov (Moscow) also took part in the conference work. The conference outcome consisted in consolidation of efforts of scientists-physicists and representatives of the industrial enterprises for the purpose of industrial development acceleration in Siberia and the solution

of a problem of transformation of Kuzbass into the second Donbass, a burning one at that time (GATO).

The period of the Great Patriotic War became the next stage of scientific community of Tomsk physicists development. The wartime demanded absolutely new forms of the scientific research organization. It was crucial as to reduce much as possible the terms of performance and realization in practice of the received results, and to modify the scope of research according to the interests of defense and the national economy. At the beginning of the war Tomsk committee of scientists was created with the active participation of the director of SPhTI V.D. Kuznetsov. The aim of the Committee was to help the Soviet industry, agriculture, transport in wartime. SPhTI became the committee headquarters. The committee of scientists is of interest as a unique form of coordination of scientific institutions work in the wartime, mobilization of scientists' efforts. Tomsk physics modified their scope of research, concentrated on the solution of crucial issues of that period, to the meeting the demands of the Red Army and the Soviet industry. The researches in the field of piercing performance, substitutes of scarce materials from local raw materials were conducted, the new type of gas preserver with increased efficiency, the device for detection of metal inclusions in the wounded body, new methods of spectral and luminescent analyses were developed, etc. (Fominykh, Sorokin, 2013).

3.2. Analyzing living conditions of Tomsk physicists' scientific community in the 1920-1930-ies.

The period of the 1920-30-ies was characterized by difficulties in ensuring material and living needs of the Soviet population. The shortage of food and the high prices were evident and sharply felt. In 1929 the food rationing system was launched. Throughout the 1930-ies and even after the rationing system was abolished, Tomsk stores offered a very modest range of commodity goods and foodstuff, salt, tea, vegetable oil, footwear, kerosene quite often disappeared from the counters. There were no textiles, outer garments, footwear, recreational goods. In the orders on SPhTI dated for revolutionary holidays on May 1 and on November 7, the employees were rewarded with textile pieces for a dress or a suit, footwear, etc. Only by the end of the 1920-ies the situation food and commodity goods began to improve a little bit. Also living conditions were very harsh. The institute had the hall of residence on Cherepichnaya St., 5 (the former student's canteen built at the end of the XIX century) and several wooden buildings located on Cherepichnaya St., 6, 25, 28 (nowadays Kuznetsov St. and Belinsky St., 11). They needed repairing and had no elementary conveniences (Kudrjavceva, 1998).

One should mention, that SPhTI employees' living conditions left much to be desired. However, Tomsk scientists seemed to be accustomed to such conditions while new employees who had arrived from other cities were not satisfied with them.

For instance, G. G. Bervaldu was promised by the institute administration to get 3-roomfurnished apartment (GATO 2). The administration assured G.G. Berwald that the apartment would be prepared for him by September 1, 1935. G.G. Berwald arrived in Tomsk on October 25. How surprised was he when he found out that there was no trace of the promised living space. Further it became clear that the apartment provided for the scientist was already partially taken by other employees. Nevertheless, the problem of housing provision for G.G. Berwald was solved within a month.

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Money delays for the experts coming to Tomsk were the ordinary phenomenon of that time. Thus, for instance, V. N. Kessenikh got money to cover his traveling expenses with a week delay. He emotionally described the financial position in the letter to his wife (written on October 25,1930), "I was wandering angry, cold and hungry and, the main thing, had the right to get my money! But today I, at last, got it! They gave me 100 rublesles" (Letter V. Kessenih to his wife on 25.10.1930).

Further he wrote that all these days she almost tarved. "Today I after all afforded luxury on the occasion of long hunger strike– I went to the canteenNo. 6 and had dinner for 4 rublesles. Remember that once I had dinner for 8 kopeks" (Letter V. Kessenih to his wife on 25.10.1930).

V. N. Kesenikh was not the only employee in such severe position. He wrote that M. I. Korsunsky and A.M. Venderovich also experienced certain material difficulties.

The salary of SPhTI laboratory head in 1930 was about 140 rublesles. Besides their work at institute practically all leading institute researchers worked part-time in Tomsk university. And university salary was much higher than in SPhTI. The reason was that in the university, besides lecturing, many employees of SPhTI headed chairs. So, V. N. Kessenikh received 386 rubles in SPhTI from September to November, 1930, and in TSU – only for September and October - 378 rubles. The total income of the 1st category research associate in SPhTI was about 400 rubles per month. To compare – they spent about 70 rubles to eat in the canteen, it was equal to the sum sum required for purchase of firewood to heat an apartment for 2 months. For instance, at the end of 1930 in Tomsk stores man shirt cost 2.97 kopeks, a light overcoat – 30.67 rubles, 1 liter of sunflower oil – 2.50 rubles, 100 g of tea – 0.63 rubles, 1 kg. of white bread – 0.15 rubles (GATO - 3).

Thus, the income of employees covered the most necessary needs. However, despite the severe living conditions of life Tomsk physicists experienced, they continued to conduct research actively. In many respects, due to their devotion and tireless energy, during the pre-war period SPhTI successfully went through formation and development stages.

3.3. Analyzing living conditions of Tomsk physicists' scientific community in the war period.

Great Patriotic war negatively influenced the living conditions of Tomsk universities and research institutes' professors and research staff.

On the basis of the government decision and the order of the USSR People's Commisariat No. 1/953 September 1, 1941 in Tomsk, along with other cities of Novosibirsk region, the rationing system of population supply with the main products was launched. Two categories of supply were established.

Especially in the war years universities and research institutes were poorly supplied with commodity goods. Supply was sporadic. However, in December, 1944 Tomsk scientists were given out woolen, half-woolen and silk materials. But there was a need in linen material, footwear, jersey (socks, stockings), clothes, etc. There was a great shortage of children clothes.

From the war beginning universities and scientific research institute were poorly supplied with fuel, electric power, water, materials for laboratory work apart from educational literature and textbooks. Preparation of firewood, production, loading and unloading of coal, their delivery to Tomsk became vital and daily care of Tomsk students and scientists.

Shortage of fuel quite often led to the situation that in winter some classrooms, offices, laboratories almost were not heated at all during several months. For some period the premises of Scientific library where the huge number of books and museum pieces was stored were not even heated. Besides the most valuable documents and hand-written materials that made national property of the country –A.S. Pushkin, L.N. Tolstoy, A.M. Gorky, S. A. Yesenin's hand-written heritage, exhibits of Tolstoy museum in Yasnaya Polyana were stored in the library building at this time. The special order of the authorities was required to emit fuel to main the necessary temperature in the Library. Also the greenhouses of the university Botanical garden were heated which allowed to preserve completely its richest collections.

During the wartime in the apartments of university professors and staff of university there was often no electricity. Only in the academic year of 1944/45 the university professors and associate professors heading chairs began to receive the electric power according to the special list. Other scientists had no electric lighting during the whole year (GATO - 4). Kerosene for lighting and cooking on the paraffin stove was given out according to coupons. In the evening people burned down oil lamps.

Heating of premises was a serious problem in the war years. Fuel had to be prepared, but very few people could afford gathering firewood and then took it by their own efforts on carts and a sledge. Because of a lack of fuel tolerable temperature quite often was maintained only in y one of apartment rooms where all dwellers gathered together in winter (GATO - 5).

In the first year of war when the rationing system of population supply was launched, employees including students received 400 g of bread for day and 200 g of sugar for a month by a card. In the university canteen the lunch of two courses was served: the first course – soup from cabbage leaves or flour (a so-called ‘zatirushka’ from ‘zatirat’ – to mash), the second course was mainly fish. Caloric content of a daily diet was about 1300-1500 calories. Since March 1, 1943 the norm was increased by a student's card: to 600 g of bread per day and 400 g of sugar for a month. The cards on meat (1,8 kg), grease of 400 g, a croup – 1,2 kg per month were introduced. In the canteen the students received the vegetables which were grown in the subsidiary farms. Caloric content of a daily diet for students was raised to 2400 calories.

Caloric content of food for teaching and research assistants was 2100 calories, for employees – 1400, for workers – 2150. University professors, associate professors, candidates of science had a better food conditions. Since July, 1942 the norm of bread for scientists was increased to 600 g per day, sugar - to 400 g a month. Since July 1, 1943 they were transferred to so-called warranty food (dry ration). The average caloric content was raised from 1040 calories in January, 1942 to 3550 calories per day. Salaries or stipend were not enough to provide better food supply. A salary of professor, doctor of science, head of a department or a chair depended on the length of their work and was from 1100 rubles to 1500 rubles per month while the employees who had no doctor degree earned from 900 to 1200 rubles.

A professor of chair, a doctor of science earned from 1000 to 1300 rubles; employees without doctor degree got from 800 to 1000 rubles. An associate professor and the senior instructor, the candidate of science had salary from 700 to 900 rubles; employees without degree - from 600 to 700 rub. An assistant and a professor, a candidate of science earned from 600 to 800 rubles; employees without degree – from 500 to 600 rub. The senior laboratory assistant earned from 450 to 550 rubles. The

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laboratory assistant who had secondary vocational education from 350 to 450 rubles; the ones with general secondary education earned from 225 to 325 rubles (GATO - 6).

The stipend for first year students was 130 rubles, for second year students – 150 rubles, for senior students – 175 rubles. Stalin stipend was 500 rubles, the stipend named after Kuibyshev – 250 rubles (GATO - 6).

Those who had something to - clothes or jewelry went to a flea market. In the market it was possible to buy a potato bucket for 300 rubles, half a kilo of oil cost 250 rubles, liter of milk – 5 rubles Vodka was equal to currency. Thus, in the market people had no money to buy food therefore it was necessary to sell or exchange the clothes which remained since pre-war times, linen, footwear. On the market people took the things of value, quite often family relics (watches, earrings, wedding rings, etc.) so on the money obtained they could buy some food (Ulyanov, 2007).

4. Conclusion

In general, one can say that throughout all the war material the living conditions of Tomsk physicists' scientific community, as well as of all the Soviet people, were harsh ones. However, at the price of incredible efforts it was possible to organize massive works and to receive necessary results. Tomsk physics modified their scope of research, concentrated on the solution of crucial issues of that period, to the meeting the demands of the Red Army and the Soviet industry, agriculture and health care. The words of professor V.D. Kuznetsov pronounced at the meeting which took place in Tomsk on the Square of Revolution on May 9, 1945 will become the logical end of our article. He said, "We, scientists, together with all the people rejoice over the great holiday of Victory, we rejoice as much as free, happy people can rejoice. We rejoice because we took part in gaining this Victory, that our conscience is clear. In the laboratories we worked for the front, for the Red Army, to destroy the terrible monsters – the German aggressors. Now with new energy, with enthusiasm, with new forces we will work on healing the wounds the country got and to provide unprecedented blossoming of science and culture, further rough raising of power of our great Homeland".

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