RUSSIAN CHEMICAL REVIEWS
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50 Years of the USSR

The Great October Socialist Revolution opened a new era in the history of mankind, the era of the downfall of imperialism and the consolidation of a new, socialist society. The whole world heard the first decrees of the Soviet regime: the Decree on Peace, the Decree on Land, and the Resolution of the Second All-Russian Congress of Soviets on the formation of Workers' and Peasants' Government. In the proclamation "To the Workers, Soldiers, and Peasants" of the 7th November, 1917, it was announced that the Soviet Government "would ensure for all peoples living in Russia the true right to self-determination". V. I. Lenin had the genius to foresee that the rigorous and consistent realisation of the right of peoples to self-determination under the conditions of the socialist system would provide a reliable basis for the democratic unification of nations. In January 1918, the Third All-Russian Congress of Soviets founded the first of the Soviet Republics —-the Russian Soviet Federative Socialist Republic. The Russian Republic was followed by the Ukrainian, Byelorussian, Azerbaidzhan, Armenian, and other republics. The tasks of protecting the achievements of the Soviet regime, the liquidation of the economic devastation, and the construction of socialism required the closest unification of all the resources of the Soviet republics. On the 30th December, 1922, in Moscow, there was held the First Congress of Soviets of the Union of SSR, which considered and approved the Declaration on the formation of the Union of SSR. It was not enough, however, merely to proclaim the freedom and equality of nations. It was necessary, in the shortest possible time, to liquidate the existing inequality of nations in economic and cultural development, inherited from the old system. In the course of Socialist construction, the historical problem of overcoming the economic and cultural backwardness of all the peoples living in Russia was successfully solved. The achievement of socialist industrialisation involved the surmounting of incredible difficulties associated with the technical and economic backwardness of the country. At the present time, in all the Union republics, modern industries have been established, national cadres of the working class and the intelligentsia have developed, and socialist culture has taken shape. The equalisation and the raising of the levels of economic, socio-political, and cultural development have been important factors in the rapid and comprehensive progress of all the republics; a striking example illustrating this growth is provided by indices of the increase in industrial production in some of them at the beginning of 1972 compared with 1913: by factors of 99 in the RSFSR, 113 in the Byelorussian SSR, 158 in the Kazakh SSR, 166 in the Moldavian SSR, and 211 in the Kirghiz SSR. The creation of a powerful industry based on modern science is an outstanding achievement of the Soviet nation, which by its selfless labour under the leadership of the Communist Party has brought about the transformation of the country into a mighty socialist power.

The cultural revolution in our country has brought the Soviet people education and the flowering of science, and has created a national intelligentsia. At the present time a vast army of specialists with higher and secondary specialised education are at work in the national economy of the USSR. In 1913 the number of such specialists was 0.5 million, whereas in 1941 the number was 2.4 million, and in 1971 the figure had risen to 17.9 million.

The Soviet Union is a country of highly developed science. One quarter of all scientific workers in the world work in our country. In the period from 1940 to 1971 the number of scientific workers in the USSR

increased from 98.3 thousand to 985.2 thousand. This increase in the number of scientific workers took place as a consequence of the creation of national cadres in all the Union republics. Thus from 1940 to 1971 the number (in hundreds of thousands) of workers in science increased from 61.9 to 631.1 in the RSFSR, from 19.3 to 129.8 in the Ukrainian SSR, from 1.7 to 26.8 in the Kazakh SSR, from 1.1 to 12.8 in the Armenian SSR, from 0.2 to 5.7 in the Moldavian SSR, etc. Our scientists have gained leading positions in a number of very important branches of science. Considerable progress has been made in the fields of chemistry and chemical technology.

Chemistry as a science had undergone appreciable development in pre-revolutionary Russia. The whole world knows the names of M. V. Lomonosov, D. I. Mendeleev, and A. M. Butlerov. A whole galaxy of outstanding Russian scientists in the nineteenth century and at the start of the twentieth century enriched science with their important discoveries: N. N. Zinin, A. M. Zaitsev, N. N. Beketov, V. V. Markovnikov, N. A. Menshutkin, D. K. Chernov, and others made a recognised contribution to the depository of learning. At that time, however, chemical science was represented by only a few schools in the largest centres in the country: Petersburg, Moscow, Kazan', Tomsk, Khar'kov, Kiev, and Odessa, Scientific research work was carried out generally by individual scientists in the universities and higher educational establishments. The number of chemists with higher education amounted to slightly more than one thousand. The training of chemists in pre-revolutionary Russia was carried out in only eight higher educational establishments and seven universities. The output of specialists did not exceed several dozen per year.

From the earliest days of the existence of the Soviet regime, the Communist Party and the Government attached great importance to the development of science, including chemical science, in all republics of the country. The Soviet regime opened wide the doors of the teaching and research establishments to broad strata of the population, of different nationalities. As early as the years of the Civil War, at the suggestion of V. I. Lenin, many Chemical Scientific Research Institutes were founded: the Central Chemical Laboratory of the All-Russian National Economic Council (now the L. Ya. Karpov Physico-chemical Institute), the Institute of Physico-chemical Analysis and the Institute of Platinum (now combined in the Institute of General and Inorganic Chemistry), the Institute of Chemical Reagents, the State Institute of Applied Chemistry, and a number of others. The training of specialist chemists assumed great importance. The country now has approximately twenty specialised chemical technology teaching institutes and more than sixty chemical faculties in Universities and Polytechnical Institutes. The number of chemists with higher education is now measured not in hundreds, as before, but in hundreds of thousands.

The realisation of Lenin's brilliant plan for the industrialisation of the country brought the Soviet Union into one of the leading positions in the world in the industrial sphere. The constant attention and care of the Communist Party and the Soviet Government have led to the rapid development of the chemical industry. In the years of Soviet power, hundreds of large factories have been built, and thousands of varied chemical industries have been established in various regions of our multinational country: in Central Russia, the Urals, Siberia, the Ukraine, Bashkiriya, the Northern Caucasus, Kazakhstan, Azerbaidzhan, Armenia, Georgia, Byelorussia, and the Baltic republics. The vast resources and the colossal labour which have been put into the chemical industry could not but have had an influence on the quantity and quality of production, which have greatly increased. Thus the production of sulphuric acid (as the monohydrate) in 1922, 1940, and 1970 amounted to 0.03, 1.6 and 12.8 million tons respectively. In 1940 and 1971 the output of mineral fertilisers (in conditional units) and chemical fibres were 3.2 and 6.4 million tons, and 11.1 and 676 thousand tons respectively.

This year the peoples of our country and all progressive humanity are marking the Fiftieth Anniversary of the Formation of the USSR, which consists of fifteen Union Republics and includes twenty autonomous republics, eight autonomous regions, and ten national regions. The Soviet voluntary multi-national state has shown an excellent example of the establishment and flourishing of large and small nations, developing their own national state organisations, and uniting in a single international brotherhood of nations, which combines the interests of the whole of society with the interests of each nation. In the resolutions of the Twenty-fourth Congress of the Communist Party of the Soviet Union it is emphasised that the present stage of the development of national relations in the USSR is based on the further expansion of mutual intercourse between nations, and their approach and unification. Soviet people of any nationality have the same aim—the establishment of the material and technical basis of communism, and the chemists of our country are making a worthy contribution to the united efforts of the workers, directed towards the creation of the new society.