On 29 October 1897 the department of medicine of the Kiev St Vladimir Imperial University took the decision to publish professor G. N. Minkh’s book on the history of the Vetlianka plague epidemic.\(^1\) Plague broke out in the village of Vetlianka, halfway between Astrakhan’ and Tsaritsyn on the Volga’s right bank, in September 1878, and in the course of a year killed 434 people. The Vetlianka epidemic cost the state budget dearly and also harmed the Russian Empire’s international reputation, especially in relation to Germany.\(^2\) Like a specter from the distant and dreadful past, twenty years on this plague continued to disturb the memory of Russia’s educated society. Yet in 1897, new threats tormented the scholars who decided to publish professor Minkh’s book posthumously. The southern and eastern frontiers of Russia were again threatened by plague, which had arisen first in Hong Kong (1894) and then in Bombay (1896).

The year 1897 saw the formation of pre-revolutionary Russia’s first anti-plague organization.\(^3\) On 11 January the tsar published a decree establishing a “Commission for measures to prevent and eradicate plague infection”. In the same month, to curtail contacts with Afghanistan, Iran and Turkey the southern borders and ports on the Black and Caspian seas were closed. V. K Vysokovich and a small team set off for Bombay in

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\(^1\) G. N. Minkh, *Chuma v Rossii (Vetlianskaia epidemiia 1878-79 g.)* Ch. 1, (Kiev: 1898).
February to study the plague epidemic there. During the same year experts at the St. Petersburg Institute for Experimental Medicine embarked upon the preparation of an anti-plague serum for cattle. The tsarist government, preparing for the arrival of plague, sent V. Likhachev, a high-ranking bureaucrat to the cities of the lower Volga on an inspection tour. He rapidly produced a major report on the sanitary conditions of the region, noting, “There is every basis for contending that…the city of Astrakhan with its fisheries is an open door, and the Volga itself with its riverside towns and villages, constitutes a broad way for any kind of epidemic to come from Asia to Russia and through Russia to Western Europe.”

Such words illustrate how educated Russian society clearly defined its geopolitical identity, considering itself and the Russian state as a part of Western civilization, the borders of which it was prepared to defend. In this enterprise, members of Russia’s emerging professional medical community began to play a significant role, using their expertise as a genuine “weapon of empire” in the colonization of its borderlands.

When the tsarist empire fell a new, Soviet, one took its place on the same territory. Regardless of what was said about breaking with the “dark” and “diseased” past, its founders eagerly made use of the tsarist legacy, including tools of rule such as medicine. Confronting the dilemma of plague on the very same limits of European Russia, the new rulers turned to the same specialists who had studied plague earlier. In

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4 V. Likhachev, Vsepoddanneishii otchet i sanitarnoe opisanie naseleennykh mest Povolzh'ia (St Petersburg, 1898), 27.
5 On medicine as a “weapon of empire” see Paula A. Michaels, Curative Powers: Medicine and Empire in Stalin’s Central Asia (Pittsburgh: University of Pittsburgh Press, 2003), 69.
the space of just a few years, from 1917 to 1925, the threat of plague epidemics was completely eradicated across this massive region.

In Soviet historiography this era has been portrayed as a heroic time when the young Soviet state implemented that which the preceding regime was incapable of handling.² Relying upon the latest scientific achievements, Soviet power answered the challenge of plague and other infectious diseases, and opened the door to a “bright” and “healthy” future. However the history of the response of early Soviet medicine to the challenge of plague in the vast south-eastern region of Russia remains relatively unstudied. New approaches permit this history of the response to plague in the region to be reconstructed not only as the liquidation of a dangerous natural phenomenon, but also as the establishment of new forms of social control, and the reinforcement of a political order. This chapter examines several episodes in this process as it took place in south-eastern European Russia.

Plague as social disorder and threat to civilization

Until the mid-1970s, the historiography of epidemics considered plague as a natural phenomenon that posed an extremely dangerous threat to human welfare. Historians emphasized the progress in knowledge that successfully enabled humans to eradicate infectious diseases which had exacted such a terrible toll on humanity from time immemorial. From the mid-1970s historians began to train their attention on the social significance of specific illnesses, and on relations between elites and social groups

² E. I. Lotova, Kh. I. Idel’chik, Bor’ba s infektsionnymi bolezniami v SSSR 1917-1967: Ocherki istorii (Moscow: Meditsina, 1967); O. V. Baroian, Itogi poluvelkovoi bor’by s infektsiiami v SSSR i nekotorye aktual’nuye voprosy sovremennoi epidemiologii (Moscow: Meditsina, 1968).
lacking in power (and knowledge), as the elite sought adequate responses to the challenge of disease.

Plague became one of the first objects of this renovated historiographical approach. William McNeill proposed an ecological reading of human history, demonstrating that infectious disease, or the invasion of a given human population by microparasites, is comparable in a cultural and biological sense to certain types of exploitative behavior that social elites practice – the bureaucracies, clergy, merchants, in other words the “macroparasites” living off the labor of the peasantry and urban poor. Human history, according to McNeill, offers many examples of the appearance of “new diseases” that bring in their wake particular forms of “experience” of the breakdown of the co-existence of a population and its parasites – large and small. Such “new” diseases are the consequence of the fact that a given human community lacks a biological, cultural and institutional memory of the disease; it lacks the necessary response to the disease. Thus human history becomes the history of the search for responses to these challenges.7

Similarly, Michel Foucault offered a radical approach to the history of epidemics and proposed the historical deconstruction of social institutions such as the clinic and social medicine. In his view the rise of these institutions at the dawn of the modern era signified not only progress in the fields of the prevention and curing of disease, but also the introduction of new forms of control over marginalized social groups. The West’s successful struggle against plague, according to Foucault, was enabled by the application of an administrative and political interpretation of plague as a large-scale social disorder, with the introduction of corresponding measures: police control, disciplinary measures,

quarantines. The establishment of control over plague in the West coincided with the rise of absolutism and the absolutist art of governance over populations, territories and their resources.⁸

These two authors’ works stimulated many scholarly investigations in which the problem of curbing plague was examined in close connection with the problem of how ruling classes of various western societies sought adequate responses to the threat of plague infection. Naturally most attention was devoted to the early modern era, when plague was the main ecological and social calamity for western civilization. Ann Carmichael revised the history of the struggle with plague in towns of Renaissance Italy, showing that for the authorities plague constituted the inevitable companion of poverty and ignorance.⁹ Paul Slack explored the English experience of combating plague epidemics in the sixteenth and seventeenth centuries, which included the curbing of free movement of vagrants and beggars, combined with an ideology of the common good, promoted by the elite.¹⁰ Sheldon Watts, whose study did not limit itself to the history of the West in the early modern era, but included the experience of the Muslim Middle East, furnished a substantial account of how privileged groups distinguished themselves from the ordinary people in the search for responses to plague outbreaks. If the people responded to plague simply by fleeing, the elite was compelled to move from the passive tactics of departure to active measures to restore order. To do this, Watts showed, the

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restoration of order meant as a rule the introduction of severe police measures that disturbed the people more than plague, to which they had finally resigned themselves.\textsuperscript{11} Also important was Watts’s observation that from the eighteenth century in the West a geopolitical interpretation of the plague took shape. Once plague had been subdued in most western countries by about 1720, and after the war between the Habsburg and the Ottoman Empires in 1739, the Europeans began to conceive of the Muslim Near East as a world where plague was endemic, a threat to the civilized West. According to Watts, this concept of the East stamped itself indelibly on the popular memory in the West and even persists to this day.\textsuperscript{12}

The approaches and conclusions of these authors can be used as well to analyze Soviet attempts to combat plague as a social disorder and threat to civilization. In part it will be important to explore how the first Soviet bacteriologists and epidemiologist-physicians sought to resolve the problem of plague with administrative-political and socioeconomic measures. It will likewise be necessary to ask what role the confirmation of their ideals of civilization played in their struggle against this dangerous disease.

\textbf{Revolution, Civil War, and the transfer of medical knowledge about plague to the South-East}

The October 1917 Revolution led to the disorganization of the entire system of local medical-sanitary organizations that had developed in the country during the previous fifty years. The anti-plague organization of the south-east, in existence for two decades, also

\textsuperscript{11} S. J. Watts, \textit{Epidemics and History: Disease, Power and Imperialism} (New Haven and London: Yale University Press, 1999), 18.
\textsuperscript{12} Watts, \textit{Epidemics and History}, xvi, 25.
fell into disorder. In November-December 1917 in many of the territories controlled by the Bolsheviks problems arose with collecting reliable information about the extent of epidemics. A vivid example was the plague in Astrakhan province, spreading in various settlements on the Kirghiz steppe during November. According to data from Astrakhan doctors, from the beginning of the epidemic until 21 January 1918, there were 91 people ill with plague and 87 had died. These facts, along with the news that plague had broken out in the Urals province, aroused anxiety in Saratov, which was linked to Astrakhan by railway. While acknowledging the “vague information” from the south, the Saratov Physico-Medical Society and the [province’s] sanitary council nevertheless took measures to prevent the disease from entering the province.¹³

All sides strove to implement control over the epidemiological situation in the first months of the revolution. In March 1918, the leadership of the Pirogov Society established an epidemiological commission with representatives from the medical-sanitary organizations of regional and town councils, so that it could coordinate the flow of information about epidemics coming from the provinces. The country’s leading bacteriologists including P. N. Diatroptov, L. A. Tarasevich and E. I. Martsinovskii served on it. The central clearinghouse of this commission became the sanitary bureau of the Moscow provincial council (gubernskoe zemstvo).¹⁴ In their turn, the Bolsheviks attempted not only to take under their control the governmental structures that they inherited upon coming to power, but also opened talks with representatives of the medical community.

¹³“Chuma v Povolzh’e i Trapeszunde”, Vrachebno-sanitarnaia khronika Saratovskoi gubernii, no. 1 (Jan-Feb 1918), 57-62.
¹⁴Ibid., 62.
Similar activities took place on the lower Volga. In March 1918 in Saratov, where the Bolsheviks had disbanded local zemstvo bodies, they undertook vigorous discussions with members of the provincial sanitary council in order to convince doctors to serve the Soviet authorities. Commissars presented doctors with their own plan for sanitary organization, subordinated to the local organs of Soviet power and subject to the principle of centralism. Members of the former sanitary council (physicians and university scholars) were opponents of centralism, pointing to the experience of zemstvo medicine. Yet both sides with equal vehemence spoke of the necessity to preserve the link between physicians and the population, and also about the importance of preparing to combat looming epidemics, including typhus and plague.\footnote{“Protokol organizatsionnogo sobraniia vrachei po ob”edineniiu vrachebnykh uchrezhdnenii pri ispolnitel’nom komitete gubernskogo soveta rabochikh i krest’ianskikh deputatov”, Vrachebno-saintarnaia khronika Saratovskoi gubernii no. 2 (1918), 94-145.}

By their efforts the Bolsheviks soon won over many bacteriologists and physicians, and the establishment of the People’s Commissariat of Health confirmed their common purpose. Another reason for this commonality of purpose was the unprecedented increase in typhus cases in 1918 and 1919.\footnote{Typhus had already reached epidemic proportions in 1915 in the Volga region, a consequence of the influx of wounded military personnel and the evacuation of civilians from the west of Russia. See I. A. Dobreitser, “Sypnoi tif v Saratovskoi gubernii”, Vrachebno-saintarnaia khronika Saratovskoi gubernii no. 1 (1916), 31-38; N. I. Teziakov, “Sypnotizsanie epidemic v Saratovskoi gubernii”, Saratovskii vestnik zdravookhraneniia t. 1, vyp. 1-4, (1920), 25-41.} Typhus became a major problem of state for the Soviet Republic, and huge resources were thrown into the struggle with the illness. In this context the problem of plague lost urgency and leading state officials paid it little attention. Nevertheless there were scientists and physicians who continued to recall plague’s threatening presence on the threshold of European
Russia. The foremost among these experts was the country’s most important specialist on plague, D. K. Zabolotnyi.

Zabolotnyi belonged to a generation of Russian scientists who became the chief protagonists of what John Hutchinson called the “bacteriological revolution” in Russia.\textsuperscript{17} His support, along with that of many of his colleagues, for Social Democratic forces in the 1905 Revolution was a harbinger of his collaboration with the new regime. This collaboration ensured that in the first years of Soviet power this broad field achieved further institutionalization.

At the beginning of the First World War, in what is now the Russian Federation, there were twelve bacteriological institutes operating with state and private support. With the collapse of tsarism some ceased to function. In 1918 however the establishment of “big science” got underway, and Soviet Russia began to create new scientific institutes and to re-establish old ones.\textsuperscript{18} By 1927 there were thirty-seven bacteriological institutes, including twenty-five brand new ones, in the Russian Federation.\textsuperscript{19} A large number of these bodies were in Moscow and Petrograd-Leningrad, but several were located far beyond the capitals.

The question of transferring leading segments of medical-biological knowledge from the center to the periphery was on the agenda in 1918. Moscow and especially Petrograd’s bacteriological institutes were housed in cramped quarters, and their leading figures were actively searching for locales in the regions where research activity could be

\textsuperscript{18} Alexei Kojevnikov, “The Great War, the Russian Civil War, and the Invention of Big Science” \textit{Science in Context}, 15, 2 (2002), 239-75.
\textsuperscript{19} Lotova, \textit{Bor’ba s infektsionnymi bolezniami v SSSR}, 199.
conducted with greater regularity. This expansionist ambition was not unusual. The
world-leading bacteriological center, the Pasteur Institute in Paris, had long been engaged
in establishing a global network of branches from Asia to South America.\textsuperscript{20} The Russian
Pastorian Zabolotnyi thought on the same scale, and the idea of a specialized
bacteriological institute to study plague in south-eastern European Russia found
significant support from his colleagues.

The city of Saratov, with its strong medical faculty in a new university founded in
1909, was selected as the location for this institute. The city was close to the areas where
plague outbreaks had been registered. As well, Saratov had a long tradition and a
significant contemporary presence as a center for renowned Russian bacteriologists and
epidemiologists. Privat-dozent (lecturer, later professor) A. I. Berdnikov, of the
university’s department of microbiology, was a colleague of Zabolotnyi’s in combating
plague. In addition there was privat-dozent Dr. P. K. Galler, who as early as March 1914,
in Samara at the first conference on the problem of gopher-borne plague in the region,
suggested the establishment of just such an institute in Saratov. In his proposal the
institute was to be a replication of the Petersburg Institute of Experimental Medicine,
with in addition a Pasteur-style research station and a serological department.\textsuperscript{21}

From the very start in 1918 Zabolotyni lobbied the Central Commission for the
Struggle with Epidemics, and then the People’s Commissariat of Health, for an anti-

\textsuperscript{20} First Pasteur Institute in Asia, see A. Guenel, “The Creation of the First Overseas
Pasteur Institute, or the Beginning of Albert Calmette’s Pastorian Career” Medical
History, 43, 1, (1999), 1-25; on the transfer of French science to Brazil, see I. Lowy,
“Yellow Fever in Rio de Janeiro and the Pasteur Institute Mission (1901-1905): The
Transfer of Science to the Periphery” Medical History 34, 2 (1990), 144-63.
\textsuperscript{21} Trudy s”ezda po bor’be s chumoi i suslikami v g. Samare, s 1 po 8 morta 1914 g.,
plague institute. Yet the decision was only taken at the end of 1918, following the first battles of the Civil War including the struggle for Tsaritsyn and for control of other Volga towns. The institute was officially named the Regional Institute of Microbiology and Epidemiology of South-Eastern Russia, but from the outset, it acquired the short name “Mikrob”, used to this day. It started operations on 1 January 1919.\textsuperscript{22}

Originally “Mikrob” was part of the university, and it was divided into three departments: for vaccination, epidemiology and plague. The Health Commissariat confirmed the institute’s charter, setting out its practical and scientific tasks: to conduct research in the microbiology and epidemiology of dangerous infections, to produce bacterial substances, to manage a network of anti-plague laboratories in south-eastern Russia and to assist local health departments in dealing with epidemics. In 1920, “Mikrob” was detached from the university and subordinated to the Health Commissariat as a state institute.

In 1919 “Mikrob’s” activity was extremely limited because of a severe deficit of resources and personnel, and the effective suspension of activities by the majority of anti-plague laboratories in the region. Yet by May 1920 it was able to organize the first regional anti-plague conference, to devise a plan of research activity and the restoration of laboratories. The conference in its resolutions acknowledged that the single functioning laboratory in the steppe region was in Urda (in the region of Khanskaia

\textsuperscript{22} Vsesoiuznyi ordena Trudovogo Krasnogo Znameni nauchn-issledovatel’skii protivochumnyi institute “Mikrob” (1919-1989) (Saratov, 1989), 3.
stavka), run by S. M. Nikanorov. It also noted that the only anti-plague work that was then possible consisted of sending epidemic teams to deal with outbreaks.²³

The first director of “Mikrob” was Berdnikov, but he scarcely made an impression, for in 1920 he fled Soviet Russia, apparently finding Bolshevik rule unsympathetic. Nikanorov took over the directorship in July 1920, and with his arrival activity increased, with lectures for doctors and the preparation of specialists. By 1922 five anti-plague laboratories were under “Mikrob” control, in Astrakhan’, Ural’sk, Tsaritsyn, Urda and Algai. In the same year the institute began publishing its own journal, The Herald of Microbiology, Epidemiology and Parasitology.

In May 1923 the third regional anti-plague conference agreed to establish an Anti-Plague Center within “Mikrob”, headed by Nikanorov, who simultaneously received the rank of a Health Commissariat plenipotentiary. The Center, with its plenipotentiary, was empowered to coordinate the anti-plague work of all local health departments and to convene special commissions of their representatives. The conference directed that the Center begin work on studying epizootic plague in rodents the steppe and desert of the south-east. Five investigation teams set out for the Urals province, Kalmykiia and Bukeevskaia orda. Each team had a doctor, fel’dshers and sanitary workers for their role was not only to conduct research but also to provide medical assistance and enlightenment to the population. Additionally, the conference called for the establishment of a material basis for anti-plague work, including a network of storage facilities, in Saratov, Tsaritsyn, Astrakhan’ and the Urals province, and also solutions to transport problems. Finally, decisions were taken about salaries for support staff and about

insurance to cover incidents of infection.\textsuperscript{24} Underlining the particular importance of the Anti-Plague Center, Nikanorov later called it “an inexhaustible reserve of personnel, material and other resources”.\textsuperscript{25} The creation of “Mikrob” and from it the later Anti-Plague Center for South-East European Russia meant that the production of new scientific knowledge about plague could be accomplished in more effective conditions.

The Republic and plague

The period from 1917 to 1920 when the Soviet government was fighting for its life was also a time when Soviet medicine was struggling to defend the country against epidemics caused by wartime disorders. In official declarations the leaders of the Soviet state accorded the most dangerous status to cholera and typhus; in V. I. Lenin’s opinion these epidemics threatened socialism the most.\textsuperscript{26} Just as in the struggle with armed counterrevolution the Soviet authorities set up the so-called “Extraordinary Commission” – the Cheka (secret police) – it set up specific extraordinary bodies for combating typhus and cholera. In northern and central provinces of Russia, extraordinary commissions for

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\textsuperscript{24} “Postanovleniiia 3-go protivochumnogo soveshchaniia pri Gosudarstvennom kraevom institute mikrobiologii i epidemiologii Iugo-Vostoka Rossii, s 11 po 15 maia 1923 g.”, Trudy 4-go protivochumnogo kraevogo soveshchaniia pri Gosudarstvennom kraevom institute mikrobiologii i epidemiologii Iugo-Vostoka rossi, s 19 po 23 marta 1924 g. (Saratov, 1924), 180-84.
\textsuperscript{25} S. M. Nikanorov, Chuma i mery bor’by s nei. Nastavlenie dli lits meditsinskogo i administrativnogo personala, rabotaishchego po obnaruzheniu i bor’be s chumoi (Saratov: Izdanie gosudarstvennogo Kraevogo Instituta Mikrobiologii I Epidemiologii Ju.-V. RSFSR, 1927), 23.
\textsuperscript{26} V. I. Lenin, “VII Vserossiiskii s”ezd Sovetov” in Polnoe sobranie sochinenii, 5\textsuperscript{th} ed., v. 39, (Moscow: Izd-vo polit. Literatury, 1981), 410.
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combating epidemic typhus and cholera appeared in summer 1918, and a similar body was formed in Saratov in early 1920.\(^\text{27}\)

In the next two years, as the Civil War ended in European Russia and the territorial integrity of the state was consolidated, Soviet scientists addressed the question of a new threat – plague. In contrast to typhus and cholera, which were associated with the forces of counterrevolution, plague was seen to be primarily an external threat on the borders of the state. In August 1922, the chief Soviet epidemiologist I. A. Dobreitser, described in military terms outbreaks of plague located in the Far East, on the lower Volga, and the Black Sea coast of the Caucasus:

> Considering these outbreaks from the point of view of threats to the Republic, we can only look to the near future with alarm. Plague centers surround the borders of the country in a ring… Therefore we need to exercise exceptional vigilance on our borders, and sanitary surveillance should be set at its maximum heights. Additionally the current, small epidemic outbreak of plague on the Kirghiz steppe should be the subject of intense attention.\(^\text{28}\)

Analogous comments, but in a more concrete form, were heard at the regional level. In February 1922 “Mikrob” director Nikanorov wrote, “There was a time when in Saratov province no one feared or even knew about the dozens of plague epidemics that

\(^{27}\) Lotova, Bor’ba s infektsionnymi bolezniami v SSSR, 125; On Saratov: “Prikaz No. 14/136 po Gorotzdravu Saratova 18 febralia 1920 po chastii obshchei”, Gosudarstvennyi arkhiv Saratovskoi oblasti (GASO), f. R229 (Otdel zdravoohraneniia Saratovskogo gubernskogo Soveta), op. 1, d. 248, l. 30a-31a. Note that this commission’s work was wound up in 1923 and the role of extraordinary commission for the struggle against plague was assumed by Nikanorov’s “Mikrob”-based Anti-plague Center that was set up in 1923.

\(^{28}\) I. A. Dobreitser, “Chuma na granitsakh Rossii v 1920-21 gg.”, Gigiena i epidemiologiiia, No. 1 (1922), 96-97.
annually appeared on the neighboring Kirghiz steppe… Mutantur tempora… Not a trace remains of the Kirghiz steppe’s powerful anti-plague facilities. There are no forces or resources to combat it.”

The leaders of Soviet medicine thus turned their attention to the situation on the south-east frontiers of the state, after the end of the active phase of the Civil War. In August 1921, just five versts (5.3 kilometers) away from the border of Saratov province, in the Kirghiz district of Talovka, an eruption of plague was registered. Nikanorov claimed that against the backdrop of raging cholera, the population, to say nothing of local doctors, failed to notice the plague outbreak. The relatively modest appearance of plague in Talovka served as a point of departure for a revitalized discussion about plague as a threat from the East.

In his comments Nikanorov clearly indicated the reason why plague from the south-east was becoming such a threat to the social and biological body of the Soviet Republic. That reason was the famine that arose in summer 1921 and hit the Volga region with particular strength. Nikanorov predicted that with the arrival of spring in 1922 starving Russian and Kirghiz inhabitants would start catching gophers as a source of food. A decade ago bacteriologists were already firmly convinced that the gopher was the predominant carrier of plague infection in the south-east of European Russia, especially in grain-growing regions. One such proof was the death by plague infection of doctor I. A. Deminskii, after identifying and dissecting a plague-infected gopher in

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30 Nikanorov, “Chumnaia vspyshka v raione Talovki”, 16.
31 Nikanorov, “Chumnaia vspyshka v raione Talovki”, 16-17.
Rakhinka (Tsarevskii district, Astrakhan’ province). It was an experiment that demonstrated, fatally, what many of his colleagues had long failed to prove: the role that gophers played in the transmission of plague in the grain-growing areas of the south-east.

The concerns of specialists about the prospect of plague penetrating European Russia acquired a realistic basis as a result of the famine spreading in the agricultural regions of the country. Yet there was nothing new about the linkage of famine and plague. As early as the Renaissance, educated Western Europeans noted that hunger was the companion of extreme poverty, and the harbinger of epidemics. An elite bacteriologist with many years’ experience of work in his laboratory in distant Urda, Nikanorov would have had little difficulty predicting this outcome.

The 1921-1922 famine arose because of the Civil War and economic collapse. The deficit in basic foodstuffs was also the consequence of the policy of forced requisitioning of food from the peasantry, inflicted by Soviet authorities during the previous three years. Recognizing its failure, in 1921 the Bolshevik leadership introduced the New Economic Policy (NEP). Yet it was impossible to forestall the advancing famine and the population sought whatever relief that they could find. Naturally the starving

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were demoralized and there were outbreaks of thievery, revolts and other social disorders. Epidemics took hold in the vast territories where hunger reigned.

Actually, the image of disorders, hunger and illness, combined in a unified panorama of epidemics, remained in the consciousness of the Soviet organizers of the fight against dangerous infections. They were aware that the starving and long-suffering population of the south-eastern region still saw the gopher as a key to their survival. Children and young women, traditionally the guardians of crops and granaries, continued to catch gophers. After the 1921-1922 famine there were likely fewer gophers, but their skins were eagerly sold on to tanners, bringing the peasant family a modest profit. For that reason in the second half of 1925 (as in the previous two years), doctors ordered the distribution of leaflets in Russian and Arabic, warning against contact with gophers. One showed, in a series of pictures, how the plague microbe was transferred from gopher to human. In boldface it declared:

You can be infected with plague from the gophers on our steppe! Do not touch gophers! Combat them in their nests using carbon bisulphate or poison gas. Sell a gopher skin for three kopecks, and infect yourself with plague and die from it, at the same time. On our steppes the gopher is infectious with plague only in the summer. Exercise caution with them.\(^{36}\)

By means of such propaganda, relying upon the latest scientific findings, medical experts sought to deal with some of the everyday practices of the rural population suffering from poverty and hunger.

\(^{36}\) Trudy 5-go protivochumnogo kraevogo soveshchaniia pri Gosudarstvennom kraevom institute mikrobiologii i epidemiologii Iugo-Vostoka Rossii v g. Saratove 5-9 oktiabria 1925. (Saratov, 1926), Prilozenie.
In 1922, noteworthy ecological interpretations of the reasons for hunger appeared. The author of one article in the popular socio-political review *Red Virgin Soil* argued that climate changes were responsible for the worsening of the south-eastern region’s agricultural output. “The Asian desert is not merely advancing, but is bursting in through the great gates between the Caspian Sea and the Urals”.\(^{37}\) This onslaught by the desert in this author’s words accounted for a series of hungry years in the early twentieth century. The image of the Asian desert bringing hunger to the civilized European part of the country clearly reflected the conception of the barbaric and backward East, threatening Russia with plague, an idea widespread among medical administrators.

The assault on plague did not commence before spring 1923, for Soviet leaders viewed it as an external threat, and could only begin to consider it once famine had receded along with the last popular uprisings. By this time the Soviet republic absorbed the Far East and Turkestan, and diplomatic relations with Turkey, Iran and Afghanistan were re-opened, that is, with countries that Russian experts traditionally regarded as sources of plague. At the same time Mongolia, yet another supposed natural center of plague, became a de facto Soviet satellite. The appropriate political circumstances were now in place to permit a transition from the sporadic struggle with outbreaks of plague to its prevention and wholesale eradication.

The prevention of plague became the motive for escalating Soviet sanitary measures beyond the boundaries of territory already under control. By the end of 1923 basic anti-plague activities had already reached far beyond the left bank of the Volga. Reconnaissance teams from the Saratov bacteriological institute penetrated deeper and

deeper into the Kirghiz steppe, as far as the Aral Sea. In 1924 Nikanorov spoke of “Mikrob’s” need to acquire automobiles and an airplane, not only to relieve the local population of the burden of providing transport to the experts but to enable the surveillance of even wider prospects.\textsuperscript{38}

The successful activities of “Mikrob” operatives across a vast territory as far as the Caspian Sea were noted in 1925. Major plague outbreaks were no longer registered in the region. Collaborating with the People’s Commissariat of Agriculture, the eradication of rodents was pursued more broadly. Plague was forced farther away from regions inhabited by Russians; the success of such efforts was plainly evident. The celebration of this long-awaited victory took place on 7 February 1926, when People’s Commissar of Health N. A. Semashko, on behalf of the Soviet government, awarded professor Nikanorov the Red Banner of Labor order. The assembled leadership of Soviet bacteriology and epidemiology hailed the director of the anti-plague organization.\textsuperscript{39} The holding of the first All-Union Anti-Plague Conference, in May 1927, in the city on the lower Volga was yet another mark of “Mikrob’s” success. This gathering was a genuine celebration of the banishment of plague beyond the borders of European Russia.

Nevertheless Soviet medicine’s struggle with plague in the early 1920s did not limit itself to the elimination of infection in regions inhabited by Russian peasants. During the same years work began in order to establish control over the areas where nomadic populations lived.

\textsuperscript{38} Trudy 4-go protivochumnogo kraevogo soveshchaniia, 127.
\textsuperscript{39} “Chestvovanie prof. S. M. Nikanorova po povodu nagrazhdeniiia ego ordenom Trudovogo Krasnogo Znameni”, Gigiena i epidemiologii, 2 (1926), 103-104.
Soviet medicine and the nomads of the south-east

Bacteriologists from the capital initiated scientific expeditions to the arid steppe of the south-east in 1899, when an outbreak of plague took place in Kolobovka. M. G. Tartakovskii, director of the St. Petersburg Institute of Experimental Medicine’s laboratory for anti-plague formulae worked there in 1900, seeking confirmation of his hypothesis that steppe rodents transmitted the plague bacilli. With his own hands he dissected 4,000 gophers, mice and jerboa, hoping to detect infection, but without success. An expedition led by the renowned I. I. Mechnikov met the same failure while working in Astrakhan’ province in 1911. Only following the successful results of Deminskii’s work in 1912 did the missing link in the chain of transmission of the Yersinia pestis microbe become apparent, and experts drew the conclusion that plague was endemic to the south-east. Immediately after this discovery in October 1912, the Institute of Experimental Medicine set up a commission to study plague on the Astrakhan’ steppe, sending Zabolotnyi there to conduct his research. After brief reconnaissance forays in late 1912 the major work was completed in spring and summer 1913.

One of Zabolotnyi’s colleagues, Dr. N. A. Gaiskii of the Algai laboratory attempted to discover if plague bacteria preserved their virulence in hibernating gophers. His experiments, in combination with those of A. A. Churilina from the Tsaritsyn laboratory, demonstrated that plague retained its dangerous force in the bodies of

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hibernating gophers from autumn through to spring. These experiments continued from 1913 to 1918, when the work establishing “Mikrob” commenced.

Having explained how gophers transmitted plague in the grain-growing regions of the south-east, experts turned to examine the question of the distribution of plague in the semi-desert regions of the Kirghiz steppe, where nomadic and semi-nomadic populations lived. The so-called “Kirghiz” people consisted of ethnic groups later labeled Kazakh, Tatar and Kalmyk. Nikanorov again made the fundamental resolution to the question while working in his Urda laboratory. He established that in the absence of gophers, mice served as the natural transmission of plague. Mice died upon contracting plague, and hence did not transmit the disease for extended periods while alive, as was the case with gophers. There had to be another reason for the epidemics on the steppe, and Nikanorov proposed it.

He argued that mice carried plague as a result of eating corpses of humans or even camels that had died of the illness. The plague microbe managed to survive in the desert environment this way. Another means of extended survival of the plague contagion was, according to Nikanorov, to be found in the fleas – carriers of the plague microbes – which survived in old “Kirghiz” household goods, especially in the felt blankets used to cover persons dying of plague. Despite the accumulating denials of the idea by many bacteriologists Nikanorov insisted on the validity of this hypothesis. Such was his influence that when the Soviet authorities eventually declared a conclusive war against

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43 On the culture of the “Kirghiz” see V. S. Vul’fson, Kirghizy (Moscow, 1913).
44 Nikanorov, “K epidemiologii chumy Astrakhanskogo Kraia”, Saratovskii vestnik zdravookhaneniiia, t. 1, vyp. 5-6 (1920), 7-15.
plague, experts contended that in addition to the significant role played by animals as carriers of the disease, another factor was the Kirghiz population itself with its specific cultural practices.

Among the causes in the nomadic population the experts cited living conditions. Comparing the situation in the south-east of European Russia with that in Manchuria, Zabolotnyi wrote: “In the Kirghiz habitation people live much worse than even rodents in their nests. Entering through a narrow, dark passage, the nomads must feel their way around in a darkened filthy mud hut, the place where they live. Masses of mice and fleas come in contact with anyone living in these primitive quarters, where, even in summer, when the inhabitants move using covered wagons, their clothing is covered in a black layer of starving fleas. It is unsurprising that those living in these huts and wagons perish from plague.”

This image that Zabolotnyi sketched resembled those used during the previous fifty years by Russian hygienists. From the days of F. F. Erisman, a personal acquaintance of Zabolotnyi’s, they had argued that the question of housing was paramount in the struggle with epidemics. At the fourth anti-plague conference in Saratov in 1924, Zabolotnyi in a passionate moment declared that it would be better to put money into improving housing rather than attempting to eradicate gophers.

46 At a 1911 hygiene exhibition in Dresden, “on the initiative of D. K. Zabolotnyi a tribute to Erisman from Russian doctors was held”. See V. A. Bazanov, F. F. Erisman (1842-1915) (Leningrad: Meditsina, 1966), 148.
47 Trudy 4-go protivochumnogo kraevogo soveshchaniia pri Gosudarstvennom kraevom institute mikrobiologii i epidemiologii Iugo-Vostoka rossii, s 19 po 23 marta 1924 g. (Saratov, 1924), 110.
However ridding the steppe of gophers was the first spending priority, as Nikanorov informed the conference in his report on the spring 1924 campaign.\(^4\)

It is simple to suggest that such a strategy was dictated by a lack of funds. Yet there were principled reasons too. Convinced proponents of bacteriological solutions to the spread of plague insisted on the primacy of natural-biological factors over socio-cultural ones. Zabolotnyi’s approach in his polemics with Nikanorov was a traditional, hygienic, one. At the fifth anti-plague conference in October 1925 Zabolotnyi reacted to Nikanorov’s presentation in precisely the same way: “I think that while the general lifestyle remains uncultured and the housing question remains unresolved in this region, it will be difficult to have any effect.”\(^4\)

This discussion by two of the leading experts took place against a backdrop of extremely intense struggle with epidemics. In steppe and desert regions of the south-east, from the tsarist regime the usual method of disinfection was the destruction by fire of dwellings where inhabitants had died of plague.\(^5\) Even Nikanorov admitted that disinfection by compulsory incineration was necessary.\(^5\) Yet speaking of the need to transform the socio-economic and cultural life of the steppe population, Zabolotnyi presented the nomads as savage and ignorant, incapable of defending themselves independently from plague. In contrast, while the position adopted by Nikanorov was

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\(^4\) S. M. Nikanorov, “Ot bor’by s chumoi k ee profilaktike. Opyt vesenne-letnei kampanii 1924 g. po obsledovaniu grysunov i bor’be s nimi v mashtabe Iugo-Vostoka Rossii”, Gigiena i epidemiologiya, 1 (1925), 78.

\(^5\) Trudy 5-go protivochumного kraevogo soveschaniia pri Gosudarstvennom kraevom kraevom institute mikrobiologii i epidemiologii Iugo-Vostoka Rossii v g. Saratove 5-9 oktiabria 1925, 39-40.

\(^6\) For photographs of burned huts on the Kirghiz steppe, see G. I. Kol’tsova, “Otchet Dzhambeitskoi laboratorii Ural’skoi oblasti”, Chuma na iugo-vostoche SSSR i prichiny ee endemicnosti, 61-63.

\(^7\) Nikanorov, Chuma i mery bor’by s nei, 61.
severe, he nevertheless asserted that the “Kirghiz” knew perfectly well how plague was spread, and even took utterly sound measures against it: they avoided contact with persons suffering from plague, and with mice when haymaking, for example.52 Having lived many years in Urda, the very heart of the Kirghiz steppe, Nikanorov apparently had a higher opinion of the culture of the nomads than his colleague working in the capital.

Along with housing as a factor contributing to the spread of plague, experts also cited the funerary practices prevalent on the Kirghiz steppe. When committing the corpse of a plague victim to burial, nomads did not bury it deep enough. As a result these bodies were accessible to mice and other rodents, which became infected and transmitted the infection to all who came in contact with them. More people suffered from plague as a result.

Professor V. A. Arnol’dov proposed a radical measure against this tradition at the fourth anti-plague conference. “It is absolutely necessary to introduce cremation, which is now permitted in legislation.” He suggested the idea of a mobile crematorium, and also proposed his own project, a mobile canvas gas chamber (a chamber-sack) for transporting infected corpses by camel.53 Insisting on cremation, medical experts such as Arnol’dov naturally viewed the traditional burial practices of the steppe population as evidence of

52 “The Kirghiz are convinced that the appearance of hordes of mice is a sign that plague is approaching… The link between the harvest of “kumarchik”-grass, the colossal multiplication of mice and the appearance of plague in the same region is often remarked upon by the Kirghiz; they usually expect plague where they see “kumarchik” is born… Once I heard a story from a Kirghiz about how he noticed many dead mice in the hay; he forbade his sons from gathering up the lower strata of it, for fear of infecting his family.” See Nikanorov, “K epidemiologii chumy Astrakhanskogo Kraia”, Saratovskii vestnik zdravookhraneniia t. 1, vyp. 5-6 (1920), 8-9.

53 Trudy 4-go priviochumnogo kraevogo soveshchaniia, 123-25. See also V. A. Arnol’dov, “Proekt podvizhnui iz tkani gazokamery”, Gigiena i epidemiologiia, 1 (1926), 62-65.
their stagnation and ignorance of the transmission-vectors of plague. For this reason, at the same conference the physician M. M. Chumbalov underlined the importance of conducting sanitary-enlightenment work among the “Kirghiz” population.54

A fundamental feature of funeral tradition on the south-east steppe was the rite of distributing the deceased person’s goods among his relatives. Epidemiological teams often observed this practice among the Kalmyks. Pointing to this rite, the doctor A. A. Bezsonovaia commented that it was of a piece with the Kalmyks’ misplaced faith in folk medicine, and their degeneration as a result of syphilis and mass alcoholism.55

One of the most authoritative plague specialists, professor N. N. Klodnitskii, director of the Astrakhan’ laboratory well before the revolution, also raised the issue of cultural practices as a factor in the spread of plague. In his opinion the consumption of infected camel meat played a significant role in epidemics of the disease. “The Kirghiz population cannot accept the idea that camels can be infected with plague and therefore constitute a danger, an idea that contradicts the teachings of sharia law, which says that an animal can be considered clean and edible if it has been slaughtered and drained of blood.”56

Specialists discussed these socio-cultural factors contributing to the spread of plague among nomads of the south-east at the anti-plague conferences in Saratov, where strategies for dealing with epidemics across the vast region were devised. The delegates to these conferences eagerly concluded that it was necessary to eradicate these significant factors. Especially evident in this regard were the resolutions of the fourth regional anti-

54 Trudy 4-go priviochumnogo kraevogo soveshchaniia, 96.
55 Trudy 4-go priviochumnogo kraevogo soveshchaniia, 187.
plague conference (1924), when experts voted to introduce monitoring of household
disinfection where cases of the disease were registered, and monitoring of burial practices
as well. They also supported Arnol’dov’s suggestion for mobile crematoria. Taking into
account the unsanitary nature of traditional nomadic habitations (the yurt and mud hut),
delegates proposed establishing model housing on hygienic principles, to serve as
examples for the backward nomads, in the Bukeevskaia orda region.57

In her excellent work on the role of Soviet medicine in the Stalinist modernization
of Central Asia, Paula Michaels vividly describes the origins of Soviet expert and
Western medical views of the culture of the nomads of the Kazakh steppe.58 Her
approach is extremely useful for considering the situation in south-east European Russia,
geographically contiguous with Kazakhstan. In particular, the majority of Soviet experts
on plague in the south-east saw it not merely as an infectious disease, but as a product of
nomadic culture. The way of life itself in this region, the population’s ignorance,
religious beliefs, funerary practices and diet were all evaluated as major contributors to
the survival of plague there. Experts might dispute whether the plague microbe was most
likely to be found in steppe rodents, in insects or plant life, however they all shared the
opinion that the lifestyle of the nomads was primitive and that it played a decisive role in
spreading the threat of disease. They argued that nomadic life had to be transformed so as
to bring it the achievements of civilization. Aside from the fact that they had observed
individual elements of nomadic life considered positive (for example, the use of koumiss

57 Trudy 4-go priviochumnogo kraevogo soveshchaniia, 139.
58 Michaels, Curative Powers, 164.
to treat tuberculosis, or the consumption of soured milk products that prolonged lifespan)\textsuperscript{59} experts viewed it as dangerous and requiring regulation.

The chief sign of civilization in the view of these experts was settled life and occupations in agriculture or work in city factories. Yet for the majority of herdsmen of the south-east, a transition to settled existence was inappropriate. Already under pressure for several centuries from in-migrating Russian peasant colonists, they preferred to retreat to poorer pastures rather than alter their way of life.\textsuperscript{60} During the 1920s the peasant advance into the south-east steppe was supplemented by a new type of colonization, one agent of which was Soviet medicine. Instead of the peasant plow the new tools against nomadic culture were the medical examination, quarantine, and intervention in the population’s daily life during epidemics.

This concept of intervention was expressed, for example, in an “Instruction Manual” issued by Nikanorov in 1927.\textsuperscript{61} The author wrote that the manual was the result of fourteen years’ labor as a plague expert. Addressed to doctor-epidemiologists and to officials in local government, the “Manual” explained in detail his recommendations for conducting examinations of patients suspected of suffering from plague, how to isolate infected persons and their families, dispose of corpses, disinfect dwelling-places, spread lime in graves, as well as how to organize medical-observation stations, sanitary-protection teams and how to explain these measures to the population.

\textsuperscript{61} S. M. Nikanorov, Chuma i mery bor’by s nei. Nastavlenie dli lits meditsinskogo i administrativnogo personala, rabotaushchego po obnaruzheniiu i bor’by s chumoii (Saratov: Izdanie Gosudarstvennogo Kraevogo Institue Mikrobiologii i Epidemiologii Iu.-V. RSFSR, 1927).
His instructions for collecting information from the population about neighbors suffering from infection are of interest. Nikanorov thought that without such activity the work of anti-plague organization would fail. He specifically described “sanitary monitors”, persons selected or designated by local authorities to act as observers of their neighbors and to report any suspicious conditions to their local anti-plague organization.62 Typical is the following: “Local authorities will explain to the population its obligations with regard to the Sanitary Monitors.” The population probably did have contact with medical personnel at this time, but it was far from routine. A tradition of reliance on medical assistance had developed during the pre-Revolutionary era of zemstvo medicine, but the Civil War years with the fear of all outsiders and informers undercut that habit. The people avoided all contact with authority, including Soviet medical personnel, who acquired, as this Manual illustrates, a significant degree of administrative power. In the case of nomads, for whom the Russian language was alien, that contact was still more problematic.

The most radical solution to the problem of plague in nomadic populations, from the viewpoint of experts, would be not only the eradication of rodents but the eradication of the nomadic way of life as such. Yet to do this would be to deprive them of the chance to pasture their livestock on the arid south-east steppe, that is, to transform their pasture into arable land. In the 1920s Soviet authorities could hardly engage in such a strategy.63 There was simply not enough funding to do it. The land in the region between the Volga

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62 Nikanorov, Chuma i mery bor’by s nei, 34-36. For similar structures of sanitary surveillance, see Trudy 5-go protivochumnogo kraevogo soveshchaniia, 25-30.
63 Even when collectivization in the USSR began in 1928, it was not accompanied by the plowing up of the steppe in the left-bank Volga region or in Kazakhstan. See K. A. Chuvelov, “O reorganizatsii kochevogo i polukochevogo khoziaistva Kazakhstana”, Narodnoe khoziaistvo Kazakhstana, 2 (1928), 50-51.
and the Urals remained virgin soil, not tilled until the 1954 Virgin Lands campaign. Instead, cooperation between the People’s Commissariats of Health and Agriculture in the 1920s consisted primarily of the use of Agriculture Commissariat reserves to eradicate rodents on the steppe. In these circumstances, to assert control over the regions that threatened the rest of Russia with outbreaks of plague meant attempting to establish control over the consciousness and bodies of the people who lived there.

The autumn and winter epidemic in 1923-1924 in Bukeevskaia orda became the decisive pretext for introducing medical surveillance in the nomadic territories. The outbreak began in October 1923 and spread to eleven local districts (volosti); 339 cases of plague of which 315 were fatal, were registered. Teams of anti-plague epidemic personnel were sent to deal with the consequences of the outbreak, but the number of doctors was small. The team led by physician A. Iu. Niaazov registered 69 separate concentrations of plague. Moving from one concentration to another the team did what it could. They separated the healthy from the sick, established household quarantines, measured patient temperature, and conducted a universal inspection of the population in a radius of ten to fifteen versts (10.6 to 15.9 kilometers) from each concentration. It must have been an unprecedented exertion for the Niaazov team, as during the Bukeevskaia epidemic it had to do literally everything: conduct the disinfection of the property of infected families, incinerate dwellings that appeared suspicious, conduct autopsies on the deceased, organize burial while preventing funerals and other gatherings of inhabitants in the infected zone, and conduct sanitary enlightenment work and distribute leaflets.64

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64 *Trudy 4-go protivochnogo kraevogo soveshchaniia*, 156-57.
The Anti-Plague Center in Saratov counted the successes and failures of these efforts. It mobilized doctors to assist with combating the epidemic. In winter 1923-1924 there were nine, by the following winter forty, and by summer 1925, forty-eight. By summer 1925 there were ten teams working on the steppes, observing epizootic mice and gophers, attempting to prevent the transmission of infection from rodents to the human population. According to Nikanorov, it was only in winter 1924-1925 that “hospitalization and the proper care of patients” was at last established, hospitals were restored to working order and cleaned to remove fleas. “Systematically, and on a mass scale, individual isolation was applied” to cases and the chief medicine used was glycerin vaccine. As a result by autumn 1925, the entire expanse of south-eastern European steppe was covered by a network of medical-observation stations, anti-plague laboratories and anti-plague hospitals. The directors of the Anti-Plague Center, restoring the interaction of local medical organizations, created a functioning structure that was capable of seeking out and examining bodies – of persons and animals – carrying plague microbes.

Conclusion
The history of the struggle against epidemic plague in the south-east of European Russia in the first years of Soviet power is an example of the successful wedding of medical practice and bacteriological science, showing the revolutionary potential of this alliance. The process, begun under tsarism, developed energetically once the authority of the Bolshevik regime was confirmed, and members of the medical and biological scientific

65 Trudy 5-go protivochumnogo kraevogo soveshchania, 22, 24-25.
communities found themselves able to realize their professional interests and ambitions. A rapid export of science began from the national capital cities to the edges of Russia’s “civilized” territory, where useful objects of study were discovered. At the head of this movement were specialists, closely tied to the leaders in world bacteriological developments. Among them was Zabolotnyi, the foremost Russian expert on plague, who with his scientists and colleagues established a far-flung anti-plague network with the “Mikrob” institute at its center.

The wide contacts between the leaders of Russian bacteriology, and the nation’s first healthcare ministry – the People’s Commissariat of Health – enabled them to elevate anti-plague work to a national level. Yet discussions about plague dropped down the agenda in the conditions of the Civil War. Only once military action ceased in European Russia was the issue of plague raised again, with much of the same symbolism as in the distant past. Leaders of Soviet healthcare spoke of plague epidemics threatening the state from its savage and ignorant south-eastern flank, and scientists predicted the arrival of plague in regions gripped by famine.

In the early 1920s, experts working in the field on the fringes of European Russia and officials higher up in medical administration interpreted the problem of plague in identical terms. They demanded a strengthening of the porous Soviet border, supported the restoration of social order and the liquidation of famine, all harbingers of epidemics. Moreover, in the name of Soviet civilization they demanded the introduction of greater surveillance over territories where recently plague had been imagined as endemic. On the way to this goal experts confronted a problem well known to them from tsarist times, the nomadic culture of the population inhabiting the borders of European Russia. Viewing
this culture as primitive and health-threatening for the urban worker and village peasant, they took up the goal of changing it, proposing that this transformation would help the nomads of the Kirghiz steppe to become healthier and more resistant to infection.

Founding a comprehensive epidemiological science on the causes of the origins and transmission of plague in the south-east, Soviet experts of the early 1920s embarked on a path toward the radical transformation of the way of life, in nature, and in culture, for a vast number of people who had lived in the region for centuries.