https://doi.org/10.26898/0370-8799-2022-2-10
УДК: 619:614.39(47+57)"1941/1945"
Тип статьи: обзорная
Type of article:

СТРАНИЦЫ ИСТОРИИ СОВЕТСКОЙ ВЕТЕРИНАРИИ В ПЕРИОД ВЕЛИКОЙ ОТЕЧЕСТВЕННОЙ ВОЙНЫ (1941–1945 гг.)

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Показана научно-практическая и военная деятельность советской ветеринарной службы во время Великой Отечественной войны 1941–1945 гг. Приведены данные о работе ветеринарных специалистов в условиях военного времени по обеспечению ветеринарно-санитарного благополучия животноводства страны, недопущению широкого распространения эпизоотических болезней и повышению эффективности лечебных мероприятий. Описана успешно проведенная эвакуация с оккупированных прифронтовых территорий людей, животных и соответствующей техники, затем реэвакуация животных с освобожденных районов. В начале войны военно-ветеринарная служба в короткие сроки была переведена на штатный режим военного времени: были созданы органы управления ветслужбой фронтов, армий, а также полевые ветеринарные учреждения. Уделено особое внимание конскому составу армии. Через ветеринарные лазареты Красной армии прошли 3 555 764 раненых и больных лошадей, из них вылечены и возвращены в строй 2 147 494 животных (91,59%). Приведены результаты деятельности Академии наук СССР в условиях военного времени. Научным учреждениям предлагалось пересмотреть тематику и методы научно-исследовательских работ по укреплению оборонно-военной мощи и народного хозяйства страны. Ветеринарная наука разработала и обеспечила гражданские и военные службы надежными способами профилактики опасных инфекционных болезней животных и эффективной помощи при хирургических и незаразных заболеваниях. Приведена оценка правительства страны работы военных, научных и гражданских ветеринарных специалистов. Многие из них получили государственные награды за доблестный труд в военное время.

Ключевые слова: Великая Отечественная война, эвакуация, фронтовые лазареты, болезни лошадей, ветеринарная наука

CHAPTERS OF HISTORY OF THE SOVIET VETERINARY SCIENCE DURING THE GREAT PATRIOTIC WAR (1941-1945)

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The research and military activities of the Soviet veterinary service in the context of the Great Patriotic War of 1941-1945 are shown. Data on the work of veterinary specialists under wartime conditions to ensure the veterinary and sanitary welfare of the country's livestock and to prevent the wide spread of epizootic diseases and increase the effectiveness of therapeutic measures are provided. The successful evacuation of people, animals and related equipment from the occupied front-line territories is described, followed by the re-evacuation of animals from the liberated

areas. At the beginning of the war the military veterinary service in a short time was transferred to a standard wartime mode: the bodies of the fronts and armies veterinary service management were established, as well as the field veterinary institutions. Particular attention was paid to the army's cavalry. 3,555,764 wounded and sick horses were treated at the veterinary clinics of the Red Army, of whom 2,147,494 animals (91.59%) were cured and returned to service. The results of the activities of the Academy of Sciences of the USSR in wartime conditions were given. Scientific institutions were asked to review the topics and methods of research work to strengthen the defense and military power and national economy of the country. Veterinary science developed and provided civilian and military services with reliable ways to prevent dangerous infectious and effective care for surgical and non-contagious diseases. The national government's assessment of the work of military, scientific, and civilian veterinary specialists was given. Many of them received state awards for their valorous labor during wartime.

Keywords: The Great Patriotic War, evacuation, front infirmaries, horse diseases, veterinary science

Для цитирования: *Донченко А.С., Голохваст К.С., Самоловова Т.Н., Донченко Н.А., Юшкова Л.Я.* Страницы истории советской ветеринарии в период Великой Отечественной войны (1941–1945 гг.), 2022, Т. 52. № 2. С. 82–94. https://doi.org/10.26898/0370-8799-2022-2-10. EDN NEBXQR.

For citation: Donchenko A.S., Golokhvast K.S., Samolovova T.N., Donchenko N.A., Yushkova L.Ya Chapters of history of the Soviet veterinary science during the Great Patriotic War. *Sibirskii vestnik sel'skokhozyaistvennoi nauki = Siberian Herald of Agricultural Science*, 2022, vol. 52, no. 2, pp. 82–94. https://doi.org/10.26898/0370-8799-2022-2-10. EDN NEBXQR.

Конфликт интересов
Авторы заявляют об отсутствии конфликта интересов.
Conflict of interest
The authors declare no conflict of interest.

The Great Patriotic War was a terrible ordeal for the Soviet people. By this time Hitler's Germany had conquered and enslaved half of Europe, while our country experienced years of devastation, war communism, prodrazverstka (requisitioning of agricultural products), the NEP and political repression.

The war interrupted the beginning of peaceful labor of the citizens of the country, aimed at implementing the third five-year plan for the development of the national economy of the USSR (1938-1942). Since the end of June 1941 all sectors of economic activity of the country switched to the rails of war, were subordinated to a single defensive goal - the fight against the Nazi invasion. To accelerate the mobilization and efforts in the economy, politics and ideology, an extraordinary body, the State Defense Committee (SDC), was created on June 30, 1941, where all the full power was concentrated, i.e. the state, military and economic leadership [1].

From the first days of the war, agriculture suffered enormous losses. The western regions were occupied by the enemy. The area under crops and the number of cattle decreased significantly. Gross agricultural output declined to 37% of the prewar level [2].

Great damage was done to livestock production. In the areas of the RSFSR temporarily occupied by the German fascist troops, the number of cattle was reduced in comparison with the pre-war level by 60%, horses by 77, pigs by 90, sheep and goats by 70% [3].

The Great Patriotic War was a challenge for the entire Soviet veterinary system: civil, educational, scientific and military. In the difficult wartime environment, the management of veterinary services had to promptly solve many new problems in organizational, personnel, treatment and evacuation and anti-epizootic directions.

In general, the veterinary service, as well as the whole country, was to some extent preparing for the beginning of the war. The management of the Glavvetupr of Narkomzem (Chief Veterinary Administration of the People's Commissariat of Agriculture) and the People's Commissariat of Defense were constantly practicing some elements of veterinary activities in wartime conditions. Before the war through the efforts of Narkomzem a food fund was created, in March 1939 a fund "Red Army Horse" (RAH) was organized, intended "to meet the needs of the workers and peasants of the Red Army in

the military remount horse". The fund was allocated the best part of horses meeting certain artillery and riding requirements for service in the Red Army. The work was carried out jointly with the district military committees in state farms, collective farms, state cooperative institutions and enterprises which had horses. The procedure for allocating horses and the responsibility for quality, maintenance, care and veterinary service were reflected in a special instruction approved by the commissariats of the People's Commissariat of Agriculture and the People's Commissariat of Defense of the USSR [4].

In the conditions of the outbreak of war it was necessary to evacuate people, livestock and appropriate equipment from the occupied and front-line territories. The People's Commissariat of Agriculture of the USSR and the People's Commissariat of Defense of the USSR state farms were in charge of the evacuation of the material resources of agriculture and the population.

Glavvetupr together with the Main Directorate of Livestock and other subdivisions of the Narkomzem of the USSR worked out the routes for the cattle evacuated to the east, the order of its veterinary service on the way, accommodation on the routes of ferrying and veterinary inspection points and provision of animals with forage, and also solved other organizational and special issues. A special group of veterinary specialists was formed to organize and accompany the animals, and the necessary veterinary supplies and service items were allocated.

In October 1941 the head of Glavvetupr G.G. Ryabov and the head of Glavzhivupr (the Main Directorate of Livestock) N.N. Terentyev were sent to organize the evacuation of cattle from Penza and Kuibyshev regions [5]. Much work was done by veterinary specialists on the preservation of cattle during their transfer from Ukraine, Belarus and the Baltic states to the eastern regions of the USSR. In 1941-1942 enormous territorial transfer of huge herds, amounting to many hundreds of thousands of animals, from the west to the east took place. Endless flow of animals, day and night, with small stops, moved eastward in numerous herds. It was necessary to get the cattle out of the combat zone and enemy fire quickly, to provide veterinary care for the weakened animals. Some herds were encircled and suffered heavy losses from bombing and shelling by the Nazi air force [6].

Rivers were a serious obstacle to moving cattle to the east. Animals swam across small bodies of water. In a short time, several crossings over the Volga were built. Many horses on the way were transferred to the army, some were sold for meat. On some crossing routes there were cases of foot and mouth disease outbreaks. Such herds were quarantined and slaughtered, and bypass roads were found for the following herds.

At the same time, it was necessary to save the number of animals in the rear, where there were no military operations. In March 1942 the Council of People's Commissars of the USSR and the Central Committee of the All-Union Communist Party approved the decree "On measures to preserve young stock and increase the number of cattle on collective and state farms", which established plans for the growth of the number of cattle, horses, pigs, goats, sheep, rabbits and poultry, It was prohibited to slaughter and sell adult cattle during the war without the permission of Rayzo (District Land Department), collective and state farms, collective farmers were asked not to slaughter young cattle under one year of age, a system of incentives for the preservation and growth of livestock was introduced. In 1942 5.4 million head of cattle were bought from collective farmers by way of contracting, which allowed to increase the public herd of cattle, sheep and goats in the collective farms of the rear by about 10% [7].

In December 1941 the Nazi troops were rapidly advancing and were on the outskirts of Moscow. The urgent evacuation of organizations and population from the capital began. A huge number of businesses of various kinds were evacuated to the eastern regions of the country. They had to be accommodated and put to work in completely new conditions.

The main apparatus of the People' Commissariat of Agriculture of the USSR and with it the apparatus of Glavvetupr and other veterinary

institutions of national standing were evacuated to Omsk, Kuibyshev, Petropavlovsk and other cities of the rear. An operative group headed by Commissar of Agriculture I. A. Benediktov remained in Moscow and then from 1943 it was headed by Commissar A. A. Andreev. The Omsk group of the People's Commissariat of Agriculture of the USSR was headed by People's Commissar E. M. Chekmenev.

The head of Glavvetupr NKZ (People's Commissariat of Agriculture) of the USSR G.G. Ryabov and his deputy N.I. Leonov organized the evacuation from Moscow to Omsk some of the staff of Glavvetupr and the allied research veterinary institutions: the All-Union Research Institute of Experimental Veterinary Medicine (VIEV), the State Scientific Control Institute of Veterinary Drugs (GNKI), the All-Union Research Institute of Helminthology (VIGIS) and others.

N.I. Leonov remained in Moscow, in the operative group of the People' Commissariat of Agriculture of the USSR, and acted as the head of Glavvetupr. At that time there were in fact two Chief Veterinary Administration groups: one in Moscow, which dealt with operational issues of the front, and the other, which ensured all the necessary veterinary activities in the rear, in Omsk. There was constant communication between both groups of the Glavvetupr. After the defeat of the Germans near Moscow in winter 1941/42 and a further successful offensive of the Red Army, in March 1942 the office of the Glavvetupr of the USSR NKZ returned to Moscow. During the war five heads of the Chief Veterinary Administration of Narkomzem of the USSR were changed for various reasons (V.S. Kiselev, G.G. Ryabov, E.I. Leonov, V.A. Ivanovsky, A.M. Laktionov). Despite the difficulties of the war time the well-established pre-war rhythm of work of the heads and local veterinary bodies remained, which allowed to promptly perform the necessary actions and solve the problems of veterinary service of cattle breeding in the country. In the difficult conditions of the defense of Moscow, the veterinary service maintained and ensured veterinary and sanitary order in the capital, headed by the chief veterinarian P.T. Orlov [8].

The war was a serious challenge for scientific veterinary medicine as well, which had to solve many new problems in both organizational and highly specialized areas of research. On June 28, 1941 the Academy of Sciences of the USSR appealed to scientists of all countries to rally their forces to protect humanity from Hitler's barbarians: "In these days, when by the fault of the fascist rulers the land is flooded with more streams of human blood, the USSR Academy of Sciences appeals to all scientists of the world, to all friends of science and progress, to rally all forces to protect human culture from the Nazi barbarians.

Can any of us - the workers of science - look calmly at the fact that the fascist soldier's boot threatens to crush the bright light of humanity all over the world - the freedom of human thought, the right of peoples to develop their own culture?

For eight years Hitler and his clique have been torturing Germany. What have they turned this country, which gave mankind great geniuses of science and art, into? What has become of German scientists? They are either destroyed or wandering in foreign lands. What has become of German science? It has been replaced by deeply anti-scientific misanthropic, racist racial nonsense that the German race is supposedly the chosen race and this gives it the right to dominate the world, the right to turn all other peoples into slaves.

Having trampled their own country in mud and blood, the Hitlerites have enslaved and robbed half of Europe and threaten the whole world. The scientists of the Soviet Union express their deepest sympathy for the nations groaning under the yoke of the most heinous regime known to history...

In this hour of decisive battle, Soviet scientists go with their people, giving all their strength to fight the fascist warmongers - in the name of defending their homeland and in the name of protecting the freedom of world science and saving the culture that serves all mankind...

All those who cherish the cultural heritage of the millennia, for whom the great ideals of science and humanism are sacred, must put all

their efforts to ensure that the insane and dangerous enemy is destroyed" [9].

In this difficult time the USSR Academy of Sciences moved to the wartime rails. Scientific institutions were asked to revise the topics and methods of research work, to direct the initiative and energy of scientific workers to the tasks of strengthening the defense and military power and the national economy of the country. The activity of the institutes was restructured in accordance with the needs of the front and home front. The country's leadership did its best to preserve scientific personnel and institutions.

The Presidium of the Academy of Sciences sought to organize the work so that the scientists were able to give the maximum benefit to the country. The heads of the Presidium, headed by Academician V.L. Komarov, were first evacuated to Kazan, then in 1942 - to Sverdlovsk, where necessary specialists were summoned to solve current problems. Academicians of VASKHNIL headed by T D. Lysenko, president of the Academy, V.P. Mosolov (vice president), E.F. Liskun (director of the institute of animal breeding), P.N. Konstantinov (agronomist) and M.M. Zavadovsky (biologist) were evacuated to Omsk from Moscow during wartime. The Presidium of the Agricultural Academy was housed in one of the buildings of the Omsk Veterinary Institute [10].

On the initiative of V.L. Komarov the Academic Commission on mobilization of resources of the Urals, Siberia and Kazakhstan for the needs of the army and national economy of the country was created. Prominent scientists of the Academy in close contact with practitioners - metallurgists and miners - organized intense work to fulfill the tasks, on which depended the production of weapons for the Soviet army. The Academic Commission also helped to solve national economic problems, including the country's agriculture. In August 1942 the section of zootechnics and veterinary science which was headed by the academician K.I. Skryabin was created under the Academic Commission in order to solve and coordinate the problems of cattle breeding and veterinary science and the relationship between science and practice. E.N. Pavlovsky was elected as the scientific secretary of the section, P.Y. Sergeev was elected as the scientific secretary of the section, and V.G. Mukhin as the deputy chairman of the section on zootechnics [11].

The main task of the scientific and practical veterinary science was to maintain veterinary and epizootic welfare of the front and rear, animal health, to provide the army with good quality livestock products. The newly created section of zootechnics and veterinary medicine also had to participate in this.

The Academy's work was of particular importance. The head of the Soviet government I.V. Stalin telegraphed to V.L. Komarov: "I express confidence that, despite the difficult conditions of the wartime, the scientific activity of the Academy of Sciences will develop in step with the increased demands of the country, and the Presidium of the Academy of Sciences under your leadership will do everything necessary to implement the tasks facing the Academy." [12].

At the beginning of the war the military veterinary service in a short time was transferred to a standard wartime regime: veterinary service management bodies of fronts and armies were established, as well as the field veterinary institutions. For stage treatment of the wounded and sick horses in the army a network of hospitals was deployed: in regiments - regimental, in divisions - divisional, in armies - field and evacuation, at the fronts - front hospitals. The work of the military veterinary service in wartime was solved by veterinary personnel in the necessary volume. From the beginning of the war almost 2/3 of civilian doctors and paramedics of the national economy were called up for military service. During the war alone the Military Veterinary Academy trained 1178 veterinarians, and the Leningrad Military Veterinary School trained 1220 paramedics [13].

Horses, i.e. the army's cavalry, were an important fighting weapon, a means of transportation in the artillery and the rear services. The mobility and combat effectiveness of cavalry and rifle units depended on the staffing of these units with healthy animals. By the end of 1941 the number of horses in the active army

increased significantly, the number of cavalry divisions increased from 13 to 22.

By the end of 1941, 8.4 million horses (39.8% of the prewar herd) remained in the countryside. During six months of the war, the collective farms of Western Siberia alone gave 202,100 horses to the army [14].

The large number of horses in formations, units, and rear facilities, and the harsh conditions in which they operated, dramatically increased the importance of the veterinary service in ensuring the combat effectiveness of the troops. The volume of its work was constantly increasing and often went beyond the functions stipulated by the previously issued instructions and statutes. By that time the veterinary service of the Red Army had an established structure and basically possessed the necessary administrative, educational, research, treatment, supply and other organs for veterinary support. All units of the army in service had full-time military veterinarians, in divisions and corps - division and corps veterinarians, in armies and at the fronts - veterinary departments. Veterinary service of the army in the field was headed by a single central governing body - Veterinary Administration of the Red Army, which included prominent specialists N.M. Vlasov, G.M. Gradyushko, B.A. Levadny, N.I. Titov, F.A. Shustovsky and others. The chief of the department was a talented organizer and an experienced manager, Lieutenant-General V. M. Lekarev (1902-1955) who did much for the development and improvement of organization of the veterinary and military service. In the military districts the veterinary service was headed by the chiefs of the district veterinary services, in the fronts and armies there were the corresponding heads of veterinary departments which had military veterinary chief specialists: epizootologists, surgeons, therapists. S.L. Alichkin, I.D. Bystrov, L.S. Goberman, P.G. Galushko, E.I. Kuznetsov, P.A. Kovalev, A.P. Kornienko, Y.A. Lyanda, I.V. Novikov, A. Ostrovsky, I.I. Rebrov, P.I. Svetlov, S.P. Finansov, A.V. Chesnokov, A.M. Penionzhko, A.A. Petukhovsky, N.M. Speyer successfully headed the front veterinary service. [15].

From the very first days of the war about 500 army and front-line veterinary units were formed within a short period of time.

3,555,764 wounded and sick horses passed through the Red Army veterinary infirmaries, of which 2,147,494 animals (91.59%) were cured and returned to service. The incidence of contagious diseases in horses (in different years of the war) was 2.97 million head. - 8% to the average of the stock, while in the Civil War it was 36.01-44.71%. A great volume was also carried out on veterinary service of food cattle procurement, mastering and processing of trophy cattle and supervision over the supply of troops with meat and meat products. During the war about 20 million tons of food, including 3.4 million tons of meat and meat products, were subjected to veterinary and sanitary expertise [16].

Employees of almost all veterinary research institutes, including (VIEV): retired Colonel P.I. Pritulin, retired Major V.E. Shchurevsky, retired Captain V.A. Gorbatov, F.T. Tereshkov, V.M. Nakhmanson, V.A. Sharov, N.I. Korolev, A.A. Klochkov and others took an active part in the war. [17].

The Omsk Veterinary Institute organized the enrollment of volunteers in the active army and the national militia. N.A. Sokolov, A.M. Tsiro, K.P. Safronkov and S.I. Ivanov were the first to sign up. Through the military registration and enlistment office were called up and went to the front 25 scientific workers, 22 workers and employees, 103 graduates of the 5th year. Employees and students heroically fought at the fronts of the Great Patriotic War and were awarded high government awards. Among them I.S. Pomiluyko, A.I. Simkin, A.I. Averikhin, A.N. Kadenatsii, N.A. Obukhov, M.P. Solomatin and others. Eleven students and employees of the institute did not return from the fields of battle, were killed. And those who returned were engaged in the restoration of the institute's buildings, which during the war housed a factory of defense value and other services [18].

From the beginning of the war the staff of the Novosibirsk veterinary research station (NIVS) as well as veterinary specialists of the practical veterinary medicine in Novosibirsk were also drafted into the army. In June 1941

in Novosibirsk the Siberian Military District established the front veterinary infirmary under the number 365, subsequently assigned to the North-Western Front. With this veterinary front infirmary (there were various dislocations and relocations) academician of VASKHNIL A.A Sviridov as the chief of infectious diseases department (future first director of IEVSFE), N.N. Shabalin - the head of the surgical department, B.E. Krotkov - the head of the therapeutic department, M.M. Yagodin - the head of the remedial part of the infirmary, N.G. Kazantsev - the head of the training and construction department, veterinarian G.M. Ustyuzhaninov, served in the divisional infirmary experienced all the war hardships. A school of veterinary military paramedics was created at the infirmary. The veterinarians P.D. Shatko (director of the Novosibirsk NIVS), Sukhomlinov and Perevozchikov were appointed the teachers. During the war, the veterinary front infirmary No.365 (school) prepared several classes of veterinary military paramedics [19].

Fierceness and intensity of fighting, a massive equipment of troops with firearms led to the fact that the number of wounded and sick horses in the active army was increasing. If during the first month of the war, according to incomplete data, about 19 thousand wounded and sick horses were admitted to veterinary hospitals, then during the next two months - 76 thousand. The number of surgical patients and wounded horses in some years of the war ranged from 50 to 70% of the total sickness rate, but the therapeutic efficiency of the activities was quite high and in the last year of the war reached 93% for the war injuries of horses and 97% - for the operational injuries. This was facilitated by well-organized treatment and evacuation work. By the beginning of the war the medical institutions, from regimental to frontal, constituted a quite complete structure with evacuation stages in each rear area. Such a system was continuously improved. In the veterinary infirmaries of formations, armies, and fronts 46.9% of the listed horses were treated in the first and second years of the war, 44.3% in the third, and 27.4% in the fourth [20].

Throughout the war the veterinary and sanitary condition of the active army and the troops in the rear was stable. Of the total number of wounded and sick horses treated, more than 90% were returned to service.

For the first time in the history of Russian military veterinary medicine the military field surgery became an independent clinical branch. Creation of the institute of military surgeons in the center, at the fronts and in the armies during the war resulted in increasing the efficiency of the treatment work and raised the veterinary military field surgery to a higher level. The chief veterinary surgeons of the Soviet Army were Professors G. V. Degtyarev and I. D. Medvedev.

During the war the veterinary military field therapy, which in the previous wars did not exist as an independent direction, got its organizational form. The therapeutic service at the center was headed by the chief therapist Professor P.S. Ionov. The well-arranged prophylactic work provided the reduction of noncontagious diseases of horses from 38.7% in the first year of the war to 19.6% - in 1945. 2.1 million horses were returned to the service during the war [21].

The constant recruitment of horses threatened to introduce various infections into the troops. In 1943-1945 trophy and derelict horses were a serious source of disease entering the troops. For example, among trophy horses many were found to be sick with glanders, infectious anemia, and the incidence of scabies reached 60-92%. During the Great Patriotic War for the first time in the history of veterinary service of our country it was possible to prevent wide spread of epizootics - inevitable satellites of the past wars that caused great damage to the combat ability of troops.

Thanks to the selfless work of a large group of specialists-epizootologists of fronts, armies and military districts, infectious diseases of animals were not widespread in the units of the active army. In the first year of the war in horses they amounted to 6.6% to the list composition, in the second - 8, in the third - 4.08 and in the fourth - 2.97% [22]. This is a great merit of the Soviet scientists of the leading veterinary

research institutes, which laid the foundations for the prevention and elimination of such infectious animal diseases as sap, plague of cattle, pneumonia, ringworm, blastomycosis, etc. (VIEV, VIGIS, GNKI, SibNIVI, etc.).

One of the main tasks of the science of those years - in the near future to develop a set of measures to combat injuries of horses in the front conditions and to offer a typical harness for cattle in the rear for practice , because in the collective and state farms almost all the horses were taken to the front, and the main tractive force were cows and bulls.

A lot of damage was caused by the loss of young animals. First of all, infertile mares had to be eliminated, because they were essential for replenishing foals both for the army and the rear. There was a lack of disinfectants, without which it was impossible to carry out veterinary and anti-epizootic measures. For this purpose, local suitable raw materials were often used as disinfectants.

The war undermined the material and personnel base of scientific institutions and made adjustments to the thematic plans of the R&D, slowing down the development of some current areas and outlining a new "defense" theme. Some employees of research and educational institutions went to the front. The rest, together with the structural subdivisions, were evacuated to the interior of the country.

In Omsk on the basis of the Siberian Research Veterinary Institute (SibNIVI) some laboratories and staff of the VIEV and GNKI, evacuated from Moscow, conducted scientific research.

While being evacuated to Omsk, the staff of the GNKI had a close connection with the Omsk biofactory. In particular, the future corresponding member of VASKhNIL S.G. Kolesov, head of the laboratory for control of siberian-ulcer preparations, was appointed the chief veterinarian of the Omsk biofactory, M.A. Babich, the head of the biochemical laboratory of the GHKI, during the war years was sent to Alma-Ata, to the Kazakh Research Institute of Veterinary Medicine, and there he organized a biochemistry laboratory; A.G. Malyavin, the head of the paratyphoid laboratory (GHKI), in 1942-1945, being in Omsk, served as an authorized director of the GHKI branch. Of great importance was the fact that the evacuated researchers of the GNKI were able to timely bring to Omsk the production strains of microorganisms and viruses, ensure their safety, maintenance and organize their shipment to biofactories for the production of vaccines, serums and other biopreparations (A.G. Malyavin, N.M. Nikiforova and A.O. Kolesova) [23].

The methods and means of fighting many animal diseases developed during this period by scientists of the Veterinary Institute were included in the guiding materials of the military veterinary service and veterinary legislation of our country. Subsequently, veterinary schools were established: helminthologists (Academician K.I. Skryabin), epizootologists (Academician S.N. Vyshelessky), pharmacologists and toxicologists (Professor N.A. Sohestvensky), microbiologists (Professor N.A. Mikhin), immunologists (Academician Y.R. Kovalenko), protozoologists and arachnologists (Professor A.A. Markov), physiologists and hematologists (Professor A.A. Kudryavtsev), zoohygienists (Professor N.M. Komarov), biochemists (A.N. Bakh), infectiologists of pig pathology (A.P. Uranov), mycologists and mycotoxologists (Academician A.Kh. Sarkisov) etc.

The SibNIIVI (Omsk) research plan was also adjusted in accordance with the wartime requirements. Most of the researchers of SibNIIVI were drafted into the army. Nevertheless, the institute worked quite effectively. It was headed by V. V. Slivko, then N.E. Sarminsky, from April 1943 - Associate Professor D.V. Kopyrin. During the war years the Institute organized manufacturing of glandered antivirus, trypanosome antigen, positive trypanosome serum, established a chemical laboratory for manufacturing saponin, which was extremely necessary for biological industry (earlier it was imported from Germany), ammargene, copper sulfate, potassium iodide, urotropin and other preparations. Employees of the Institute provided practical assistance to land bodies, collective and state farms in organizing scientifically substantiated measures to eliminate foot and mouth disease, scabies, helminthia-

sis, anthrax, epizootic lymphangitis and equine influenza, sheep brucellosis, young animals diseases (Sarminsky N.E., A.V. Kopyrin, V.Y. Fishbein, S.K. Bezzubets, Z.A. Norkina, A.V. Romodanovskaya, A.N. Kadenatsii, O.A. Amelina, etc.) [24].

The Scientific Council of the Red Army Veterinary Administration, the Veterinary Section of VASKHNIL (headed by Academician K.I. Skryabin) and scientists from the country's veterinary institutes provided great assistance in the generalization and dissemination of best practices and the latest scientific achievements.

During the war, enterprises of the biological industry of the USSR NKZ worked at full capacity. They provided the front and rear with the necessary therapeutic, prophylactic and diagnostic biological preparations despite the fact that some of them (from the Orel, Kursk, Kharkov regions, etc.) were evacuated to the east. During the wartime, new biopreparations were mastered at the biofactories of the People's Commissariat of Agriculture of the USSR: serums against tetanus, anatoxin, STI vaccine, anti-vax vaccines, bacteriophages against diseases of young animals, mass production of gramicidin. New technological processes allowing to save livestock raw materials were introduced into practice. In particular, the use of hydrolysate agents in the preparation of nutrient media provided great savings of meat [25].

The leadership of the Chief Veterinary Administration of Narkomzem of the USSR (A.M. Laktionov, V.A. Ivanovsky, A.I. Glumakov) together with scientists placed special emphasis on rehabilitation of the livestock industry from contagious diseases. Much work was done to eliminate infectious anemia in horses. Special courses for the retraining of veterinary surgeons were organized at the Institute which were able to eliminate the centers of that desease very quickly applying the scientifically grounded measures. In June 1943 Lieutenant-General Lekarev, the head of the Red Army Veterinary Department, approved and "put into effect" three documents on combating infectious anemia in horses (Order No. 251 of June 2, 1943, Moscow): the instruction on combating anemia in military units, the instruction on its diagnosis, the instruction on making a biological diagnosis of infectious anemia in horses. Responsibility for implementing preventive measures against infectious anemia and, where it appeared, for its rapid and complete elimination was assigned to commanders and veterinarians of military units.

Epizootic lymphoguitis of horses caused considerable damage to horse breeding in the pre-war and war periods. Many herds of animals even before the war were susceptible to this disease. A comprehensive study of epizootic lymphogoeitis was entrusted to the staff of the Novosibirsk Research Institute of Veterinary Medicine (N.S. Shepilov, K.F. Lamikhov, B.I. Bogoletov, N.A. Sviridov, P.D. Shatko). During the war period and in the following years the biology of the pathogenic agent, diagnostics and pathogenesis of the disease were studied, the schemes of sanitation measures with the use of isolators for the maintenance and treatment of sick horses were worked out. According to the results of the scientific work, the NIVS staff published and defended four Ph.D. theses [26].

Throughout the war years the main goal of the country's veterinary specialists was to maintain the epizootic well-being of livestock, fully promote the growth of livestock and its productivity. Military veterinary medicine was a single unit with civil veterinary medicine of all departments. The unity and coherence of action was the key to the successful fulfillment of common goals and objectives - ensuring the veterinary welfare of animals in the rear and at the war fronts. In March 1942 the USSR PCU and the Central Committee of the Communist Party (b) adopted a resolution "On measures to increase the number of cattle on collective and state farms and increase their productivity", according to which veterinary specialists were assigned responsible tasks for the development of livestock on collective and state farms and the prevention of epizootics [27].

Anti-epizootic work faced great difficulties: many farms were economically weak, there was a shortage of antipsoric preparations and disinfectants, vaccines, syringes, needles, thermometers and other veterinary supplies for animals. Despite this, veterinary specialists carried

out extensive measures to improve the health of horses, cattle, sheep and prevent contagious and other diseases, so during the Great Patriotic War there were no mass epizootics in the country. Small pockets of infection appeared in some areas were quickly eliminated. In 1941 9 times less cattle died of brucellosis than in 1940; 16 times less cattle died of equine encephalitis and 10 times less cattle died of anthrax and infectious anemia. The same was true of other diseases. The total withdrawal of animals from all contagious diseases during the war was steadily decreasing. Thus, in 1942-1943 it decreased by 13.5% as compared with 1939 [28]. The rear veterinary specialists withstood the test of war by preventing the widespread development of glanders, foot and mouth disease, widespread pneumonia in cattle and other diseases.

After the defeat of the Nazi troops near Moscow, Stalingrad and at the Kursk Bulge, a significant part of the country, which was under temporary occupation, was liberated. The Party and the government undertook a number of measures to restore the liberated areas. In August 1943 the USSR PCU and the Central Committee of the CC AUCPb (the All-Union Communist Party of the Bolsheviks) issued a decree "On Urgent Measures to Restore the Economy in the Areas Liberated from the German Occupation" [29]. The leadership of the Glavvetupr Narkomzem of the USSR organized veterinary reconnaissance in the liberated territories, again developed routes and determined the order of veterinary service for livestock returning from the east to the west. At the same time, measures were taken to restore the veterinary institutions in these territories.

Scientists during the war proposed and put into practice dozens of effective methods and means to combat contagious and noncontagious animal diseases, significantly expanded the arsenal of the means ensuring a good therapeutic effect. The major achievements of the veterinary science during the years of war include a quinazole vaccine and an immunotherapeutic serum against leptospirosis (S.Y. Lyubashenko, 1941), an anti-syribriosis vaccine STI (N.N. Ginsburg, 1943) and a hydroxylurea formolvaccine against sheep pox (N.V. Likhachev, 1944). Reconvalescent sera were widely used as a prophylactic agent against foot and mouth disease in calves, piglets and lambs. Bacteriophage therapy for diseases of young animals was successfully used.

In 1941, Academician S.N. Vyshelessky was awarded the State Prize for his scientific work on the study of infectious diseases of animals and the development of methods of their treatment [30].

Widespread development of traumatism in connection with the war necessitated the search for more effective methods of wound treatment. In this direction many new methods were proposed: treatment by leukocyte transplantation, autoanavaccines, reticulin (Bogomoletz cytotoxic anti-reticular serum), Gramicidin, onion plant antisepticophytocide, para-drug treatment of wounds, bacteriophage therapy in purulent lesions, tissue therapy in purulent-necrotic processes by Filatov and others. New chemical therapeutic and prophylactic agents, including sulfamide agents (red and white streptocide), successfully used for streptococcal and other infectious diseases of animals, etc., were widely introduced into medical practice [31].

With the development of the Soviet army's offensive operations, the veterinary service faced a very difficult task of organizing the collection and servicing of captured animals sent into the interior of the country. In 1944-1945 a significant number of reparation cattle began to arrive in the country from Germany. The veterinary and sanitary condition of these cattle was extremely unfavorable (glanders, foot and mouth disease, tuberculosis, brucellosis, etc.). Heads of the Glavvetupr together with the scientists determined the locations of livestock, measures for its treatment and quarantine. Some of the cattle affected by tuberculosis, brucellosis and foot-and-mouth disease were forced to be slaughtered for meat.

Domestic animal husbandry suffered great losses during the war. During the occupation Nazi invaders destroyed or took away to Germany 7 million horses, 17 million head of cattle, 20 million pigs, 27 million sheep and goats and 110 million poultry. The number of all kinds of cattle by the end of 1944 in the coun-

try decreased significantly in comparison with 1940. The occupants completely demolished and destroyed 2,180 veterinary institutions in the Ukrainian SSR, and in the Belarusian SSR almost all were destroyed [32].

In the closing period of the war the military veterinary service together with the civil veterinary service solved the main task of preventing the introduction of infectious diseases into our territory. For this purpose, an indissoluble connection of military and civil veterinary services, mobilization and effective use in the interests of the front of all the country's veterinary personnel potential were carried out.

Thousands of military veterinarians, paramedics and nurses were awarded orders and medals for their self-sacrificing service.

In 1945, after the victorious end of the Great Patriotic War by the decision of the Presidium of the Supreme Soviet of the USSR a large group of scientists and practitioners, organizers of the Soviet veterinary was awarded orders and medals for the successful fulfillment of the government's task in difficult war conditions to provide the front and the population, and the industry with agricultural raw materials. The Order of Lenin was awarded to A. M. Laktionov, head of the Main Veterinary Administration of the People's Commissariat of the USSR, the Order of the Red Banner of Labor was awarded to Academicians S. N. Vyshelessky (VIEV), K.I. Skryabin (VIGIS), Professors P.N. Andreev, N.A. Mikhin, V.M. Koropov, A.A. Polyakov, D.S. Ruzhencev, V.V. Slivko, A.P. Studentsov, A.A. Sviridov, P.D. Shatko, etc.

Thus, veterinary specialists of the USSR front and rear withstood the test of war, preventing the widespread development of epizootics of glanders, foot and mouth disease, widespread pneumonia in cattle and other infectious diseases. Stable veterinary and sanitary welfare and high therapeutic and prophylactic effectiveness of measures were achieved. The Soviet veterinary profession fulfilled its tasks thanks to the inseparable link between the military and civil veterinary services, mobilization and effective use of the country's veterinary personnel potential, the selfless work of scientific and practical veterinary specialists as well as the organizational activities of the heads of veterinary departments of the Soviet army (Lieutenant General of Veterinary Service V. I. Lekarev, N.V. Vlasov) and the Main Veterinary Administration of the People's Commissariat of Agriculture of the USSR (G. Ryabov, N. Leonov, V. Ivanovsky, A. Laktionov). Veterinary science provided the veterinary service with reliable ways and means of mass prevention of dangerous infections and effective help for surgical wounds of horses and non-communicable animal diseases.

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Дата поступления статьи / Received by the editors 25.01.2022
Дата принятия к публикации / Accepted for publication13.04.2022
Дата публикации / Published 25.05.2022