

AD 672 862

WARS AND EPIDEMICS

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1 July 1963

AD 672363

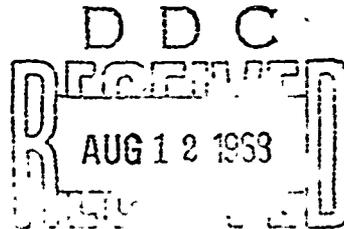
TRANSLATION NO. 456

DATE: 1 July 1968

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UNITED STATES ARMY
CHEMICAL CORPS BIOLOGICAL LABORATORIES
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Wars and Epidemics.

Chapter 6

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Translated from the book "Kurs Epidemiologii," pp 51-57, Medgiz, 1958, Moscow, by SFC Eldon E. Swing, Technical Library, Technical Information Division.

It is generally known that wars are always accompanied by epidemics and that epidemics are the inescapable fellow-travellers of wars. This is also quite understandable, because in wartime conditions the factors are laid which contribute to the spread of epidemics.

First of all, favorable conditions for the spread of epidemic diseases are created with the mass displacements of large groups of the population: troops are transferred; refugees and prisoners are moved from battle regions into the rear areas.

In addition, war is related to mass destruction, particularly of routes of communication and dwelling, and also to a significant decline in housing and living conditions.

War brings a deterioration of the population's material welfare, a drop in its material level of life. Connected with this are famine, illegal transportation and speculation of food, and the movement of people into richer regions in search of food.

All of this creates favorable conditions for the development of epidemics. From ancient times to the present the largest epidemics among the population have accompanied wars. In the sixth century in Byzantine, in the reign of Justinian, as a result of numerous wars, military insurrections and peasant-artisan revolts, a huge epidemic of plague broke out. It was known as "the plague of Justinian." The epidemic raged for a period of 60 years and spread to many countries.

In the 14th century, when huge expanses of Asia and Europe were conquered by the Mongols and the Tatars, and all Europe was enveloped in bloody wars, a devastating plague occurred. This plague was to be known in history as the "black death." In the course of four years (1347-1350) Europe lost one-fourth of its population (more than 25 million people).

In the 17th century the Thirty-Year War was accompanied by numerous epidemics of various infectious diseases.

The greatest pandemics of cholera in the 19th century, which enveloped almost all parts of the world, was also connected with military incidents. Typhus abdominalis, cholera, exanthematous fever, dysentery, and other infectious diseases have accompanied wars of all times.

There are known cases where whole armies have perished as a result of a spread of infectious diseases, and a war was lost because of the spread of mass epidemics. As F. Engels attests, during the Crimean campaign, "General Espinas . . . led his division to Dobrudzha and his entire success there boiled down to the fact that several splendid regiments had been half destroyed by cholera and had carried the cholera infection into the allied camp . . . They lost soldiers by the thousands, soldiers who had never even seen the enemy. The soldiers died like flies in their camp where they had quietly and peacefully been leading an almost sumptuous life."

The data presented in table 5 clearly proves that the contesting armies lost more men from diseases than from wounds.

At first glance it seems that the losses of troops from diseases have gradually decreased and ceded first place to the losses from enemy fire. In reality this is not so. The relative decrease in the specific number of losses due to disease is explained by a decrease in lethality from it. In spite of the rapid improvement of the fire-arm, the increase in its rate of fire and the increase of its destructive power, the number of sick exceeded the number of wounded. This is evident in the example of the German army in the First World War (table 6).

Table 6

<u>Years</u>	<u>Number of wounded</u>	<u>Number of sick</u>
1914-1915	1,252,862	2,700,695
1915-1916	1,146,942	3,768,721
1916-1917	1,137,045	3,906,685
1917-1918	1,277,708	4,281,259

Thus, over the course of many centuries diseases have claimed significantly more victims than the enemy's weapons. One should remember that among diseases the principal place is held by the infectious diseases.

In addition it is necessary to emphasize still another side of the question.

Usually, when one speaks about the evolution of infectious diseases, about their spread from country to country, a great attention is given to the evolution of trade and the trade routes of communication. An opinion exists that even the cholera pandemic of the 19th century followed along the trade routes as a result of the strengthening of trade relations. Of course the spread of infectious diseases along trade routes is possible, but only comparatively small groups of the population participate in trade. There are grounds to believe that

in the spread of epidemics, in the exchange of diseases between countries, wars have had the greatest significance. This is explained primarily by the fact that during a war huge masses of people are forced into motion. Should one examine in chronological order the history of wars and the history of the largest epidemics from ancient times to the present, one would be easily convinced that war alone is the basic factor in spreading epidemics in all countries.

The First World War, 1914-1918, was a well-known exception. The governments of the capitalistic countries, interested in preserving the fighting strength of their armies, used all of the scientific achievements to prevent the spread of infectious diseases among the troops. And they succeeded in this in many instances. But, at the same time, when the armies entered into extremely unfavorable epidemiological conditions on many sectors of the front, the morbidity among the troops became extremely high. Thus, in the English army that served in East Africa, for each 1,000 personnel there were registered only for the dysenteric illnesses: in 1916 - 182.2 cases; in 1917 - 277.0 cases; in 1918 - 80.28 cases.

The Second World War, 1941-1945, was distinguished from all preceding wars by the unprecedented concentration of troops, the unheard of destructive force of the weapons used, the unparalleled destruction by the enemy of industrial installations, communication routes, cities and villages, the barbaric cruelty exhibited against the peaceable population in the territories occupied by the fascists, and the huge migration of millions of population masses. And, in spite of this, there were no huge epidemics among our civilian population during the course of the entire war. Thus, in the Soviet Army during the entire war there were only 2-3 % of all hospital losses caused by infectious illnesses.

It would be incorrect to state that epidemic security was observed in all places during the Great Fatherland War. In the territories occupied by the fascist troops a most cruel exploitation and pillage reduced the population to a half-starving existence. In order to billet their troops separately from the civilian population the German command drove the inhabitants of villages and cities together into isolated houses, and villages were often completely cleared of their populations, which were then forced to find shelter in unheated barns, cattle-sheds, barracks or bunkers. Many inhabitants wandered from village to village in search of food and shelter. A large movement of population was observed also in connection with the raids by punitive detachments. All of this was creating favorable conditions for the development of epidemics. It was not without cause that during the three years of occupation the morbidity of exanthematous fever in the Ukraine increased by 26 times and in Belorussia by 4 times as compared with the prewar era.

In separate regions in the rear area, primarily in the first part of the war, there was some increase noted in the infectious disease rate. This was in connection with hundreds of thousands of inhabitants from the front areas and industrial regions being evacuated to the rear together with factories, establishments and herds from the kolkhozes, which led to extreme overpopulation of many cities and villages in the deep rear. As a result the infectious

illnesses developed first among the evacuees and then among the local population. However, thanks to the anti-epidemic measures that were timely and energetically adopted, the infectious illnesses did not receive a wide spread.

Now and then, separate outbreaks of infectious illnesses developed also in the military units serving on different sectors of the front. During almost the whole war, however, the infectious disease rate among the troops took on no large proportions and caused no more than 3% of all hospital losses (the total number of sick and wounded).

Isolated outbreaks of infectious illnesses were noted during the period of the war when the Soviet Army went into the offensive, liberating regions that were formerly occupied. The illnesses developed principally in the military units that participated directly in the offensive operations. The infection of the troops occurred in epidemic foci among the civilian population. There was still another route by which infectious diseases penetrated to the front-line troops - replacements from rear-area units. Prior to reaching the front, the replacements travelled a long route by rail and by dirt roads. It was natural that while enroute there were disruptions of the sanitary-hygienic norms; as a result, diseases developed among the transient units, usually, dysentery, less frequently other diseases.

The experience from the Great Fatherland War teaches also that infectious illnesses can also be carried from the front to the country's rear area. Such cases were observed during actual battles for the liberation of occupied regions when cases of exanthematous fever were detected among the wounded being evacuated. There were instances when such patients were delivered by sanitary expedience to rear-area cities along the railroad. Thus, if timely prophylactic measures had not been adopted the infectious diseases could have been carried into the rear-area hospitals and from there spread among the population. During the Great Fatherland War, only isolated cases of infectious illnesses were noted among the wounded in the hospitals; these were not allowed to spread.

Tularemia and leptospirosis illnesses were observed in military units that had served in natural foci of these diseases in periods of an active epizootic among the rodents - the reservoirs of infection in nature.

All that has been said before about the interrelationship between wars and epidemics has concerned only the natural conditions of the origin and development of epidemics in wartime. But also possible is the induced spread of epidemics, which in the past has been utilized by aggressors in all eras. Thus, in the 14th century the Tatar troops that were besieging the Genoan fortress of Kafa (presently Feodosia) threw the bodies of plague victims into the fortress with the assistance of slings. With this they caused an epidemic among the defenders of the fortress. In the 18th century, during the conquest of America, the English General Amherst and Colonel Buke induced the spread of a smallpox epidemic among the recalcitrant Indian tribes of New Scotland. During the First World War the Kaiser's Germany sent diversionists into Russia, Rumania, Greece and other countries. These diversionists were equipped with cultures of glaucomas, plague and anthrax.

In the period between the First and Second World Wars, in spite of the Geneva protocol of 1925 that forbade the use of chemical and bacteriological weapons, in the fascist countries preparing for a new war, there were extensive investigations on the development of methods for a bacteriological attack. The German General Schreiber disclosed before the International Military Tribunal at Nuremberg that Hitler's command had considered their preparation for bacteriological warfare as being complete, and only the rapid offensive by the Soviet forces prevented them from using the bacteriological weapon.

The scale of preparation for bacteriological warfare that the Japanese imperialists resorted to in the Kwangtung Army, which was occupying Manchuria, became known from the Khabarovsk court proceedings. In this army's complement, special commands had been created. Each of the detachments numbered 3,000-4,000 coworkers. These huge special military units were commissioned to develop methods for the conduct of bacteriological warfare. A huge experimental work was conducted; the first time in the history of mankind that barbaric experiments have been conducted on humans on such a wide scale.

It is known from the Khabarovsk court proceedings that the Japanese imperialists used the bacteriological weapon at Khalkhin-Gol and in the war against China in 1942-1943. The Kwangtung Army was already prepared for a large bacteriological offensive against the Soviet Union, and only the unexpected strike of Soviet forces, which smashed this army, saved mankind from the horrors of bacteriological warfare.

Illustration

Title page of the record of court proceedings in the case of personnel of the Japanese Army accused of preparation and use of the bacteriological weapon. . . . Published in 1950 by the State publishing house of political literature.

Illustration

The report by the International Scientific Commission for the investigation of the facts of bacteriological warfare in Korea and China (Peking, 1952).

Starting with 1941, the largest research on the development of methods for the use of the bacteriological weapon were being conducted in America. In 1941 the National Academy of Sciences of the U.S.A. selected a group of specialists to prepare a report for the government about the possibility of waging bacteriological warfare and about the measures to be taken for its preparation. As a result a special organization was created, and in 1942 a huge center was built for a manifold preparation for biological warfare. With the end of the Second World War the American aggressors induced the German and Japanese bacteriological-warfare specialists to work in their "death factories."

In 1949, items reached the press concerning the fact that in the North of the U.S.A. an experiment had been conducted by inducing a spread of plague among the Eskimos in order to test the possibility of using this weapon among the populations of the extreme North. In 1952 the American aggressors made

long and protracted use of the bacteriological weapon in Korea and Northeast China. An authoritative international commission of scientists proved that the Americans attempted to spread plague by the use of infected fleas, field mice and rats, and also to infect potable water-supply sources with cholera. Insects and various objects infected with anthrax and also infected food products were dropped from airplanes.

The American militarists were unsuccessful in causing huge epidemics in Korea and in influencing the outcome of the war. The people of the Korean People's Democratic Republic successfully withstood the bacteriological attacks of the American invaders.

The bacteriological weapon is one of the weapons of mass destruction of population and troops for the primary purpose of disorganizing the rear area and affecting the economic and military potential of the enemy. According to the conclusions of the American specialists who are developing the agents and methods for bacteriological warfare, the use of pathogens of the following diseases is most probable for this purpose: plague, anthrax, tularemia, brucellosis, cholera, typhus abdominalis, dysentery, glanders, melioidosis, yellow fever, psittacosis, exanthematous fever, and Q fever, and also the toxin of the botulism bacillus because it is not destroyed in the stomach and it possesses an exclusively high toxicity.

Based on what has been published in foreign literature and also on the materials from the Khabarovsk trials and the international scientific commission for the investigation of the facts of the bacteriological warfare in the Korean People's Democratic Republic and Northeast China, it is possible to state that the air attack is the most probable in the use of the bacteriological weapon.

Pure pathogenic cultures, toxins in aerosol and infected vectors or products can be dropped from airplanes; also attempts to infect open water sources can be undertaken from airplanes. The most dangerous, undoubtedly, are the bacterial aerosols.

But the bacteriological weapon can also be used with the help of saboteurs sent into the rear area by the enemy. The diversionists can infect food products in the places of preparation, the drinking water in water conduits, wells, reservoirs, etc. They can throw infected vectors into places of public use and also infect the air in plants, shelters, train stations, etc.

The Communist Party of the Soviet Union and the Soviet government are conducting a consistent policy for peace; our people are struggling for peace throughout the world. But one must not forget that in the capitalistic countries there are forces that are attempting to loose a new war. The governments of many imperialistic countries are preparing strongly for war and are developing atomic, chemical and bacteriological weapons of mass destruction. Therefore, questions of protection for the population against the bacteriological weapon must be given adequate attention. Everyone must master the existing effective means of defense.

Table 5

The ratio of wound fatalities to disease fatalities.

<u>Name of Army</u>	<u>Number of wound fatalities</u>	<u>Number of disease fatalities</u>	<u>Ratio</u>
British Army at war with France, 1793-1815. . .	25,569	193,851	1 : 7.6
Russian Army at war with Turkey, 1828-1829. . .	20,000	110,000	1 : 5.5
French Army in the Crimean War, 1854-1856. . .	20,193	75,375	1 : 3.7
British Army in the Boer War, 1899-1902. . . .	7,534	14, 382	1 : 1.9
Russian Army at war with Japan, 1904-1905 . . .	31,458	12,983	1 : 0.4
German Army in the First World War, 1914-18	1,061,740	140,302	1 : 0.1