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HORSE DISEASES DURING THE EASTERN CAMPAIGN (1941 - 1945)

I. General

The eastern countries have always been considered the main source of various animal epidemics because of inadequate precautionary veterinary measures. Experiences gained during World War I are still fresh in our memories. At that time the horses of the German units, through contact with Russian animals, contracted much-feared contagious diseases, in particular glanders and mange, on such a wide scale that units up to entire divisions had to drop out of military operations.

Therefore it was once again to be expected that upon entry into Russia, these old, contagious, war-time epidemics would show up primarily among the horses sooner or later. The effect of these epidemics upon operation was not to be underrated.

Actually, it became apparent much to our amazement that during the two decades before the war Russian veterinarians had achieved considerable success in eliminating animal epidemics. Glanders, the most feared disease of horses, also communicable to man and usually incurable, appeared on such a small scale that little importance was attached to it. During the second half of the winter 1941 - 42, isolated cases of mange, a skin disease, occurred on a tolerable scale, but during subsequent years and especially in the wintertime, it mounted to an exorbitant figure (from two to ten percent of the number of horses) and spread along the entire Eastern Front.

As the German Army pushed further into Russian territory, it became acquainted with piroplasmosis, a contagious horse disease known already in World War I, principally in the Balkans. Of course, it had been studied by the Russians.

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Even though this disease was localized, -- it appeared in districts where the carriers of the disease, certain types of ticks, had their local habitat -- nevertheless in some instances it caused considerable losses among the horses which were affected. As a matter of fact, casualties were known to be far higher, than for instance in Rumania in World War I. On the other hand, contrary to expectations, contagious pneumonia appeared rarely, and then only in a very mild form; probably this was due to the climatic conditions in the interior of Russia, particularly during the severe winter of 1941-42 which was not interrupted by thaws. On the basis of this observation the opinion was advanced by various quarters that contagious pneumonia is a negligible factor in Russia. That, however, is not true. During subsequent years this contagious disease occurred more frequently, and quite often in a severe form, although it never really reached epidemic stages such as we knew in World War I, and in other theaters of operations. The vast germ-free areas of Russia, the open-air positions, and the conditioning of the horses, etc., no doubt counteracted this disease which was wide-spread elsewhere.

-2- No new experiences were made with regard to other horse diseases, which differed from observations of World War I, as recorded by the war-time veterinary corps of the German Army from 1914 - 18. The knowledge and experiences which were thus recorded were mostly confirmed again by observations made in World War II. Field Manual (HDV) 56, Part III, in which the experiences of World War I were incorporated, contains the veterinary measures for preventing and combatting animal epidemics in the German army; they proved entirely satisfactory.

Aside from mange -- cause of the worst epidemics of World Wars I and II -- no other contagious horse disease spread to the extent that the employment of

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larger units or even planned military operations were endangered. Among the measures for preventing and combatting epidemics the following are mentioned as particularly vital: Availability of a sufficient number of unit veterinary officers; regular health supervision of horses in units without an assigned veterinary officer; instruction of troops concerning the most important diseases, including recognition, prevention, and initial treatment; information regarding the extent of animal epidemics; rapid dissemination of information about animal epidemics; employment of supervisory personnel familiar with horses; as few personnel changes as possible; availability of diagnostic aids (such as mallein for glanders) and medicines for prompt treatment (Sulpholiquid, etc., for mange, Acaprin, etc., for piroplasmosis and other diseases); veterinary hospital installations to give rapid and effective aid; a simplified remount system.

No animal epidemics worthy of mention occurred among the animals belonging to the civilian population. There were no reports of wide-spread epidemics of hoof and mouth disease, salmonellosis [hog cholera], or rabies.

## II. Types of Contagious Diseases

### A. Mange

As mentioned previously, the most important disease, mange at the outset occurred initially during the winter 1941-42 -- at first only on a small scale. In the beginning, Dermatocoptes prevailed in a mild form. However, it soon gave way to the more severe type of mange, sarcoptes (itch mites), which became the prevalent form during the following years.

In many units during the summer of 1942 there was a notable decline, and frequently even complete absence of mange. However, by continuing to use

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stables which once had become infected, the disease increased to such an extent during the winter that the number of diseased horses in the different divisions varied from two to ten percent. A high percentage of disease was observed particularly among those divisions which were frequently shifted along the front and thus had no time to give the necessary attention to the prevention of mange.

-3- The state of exhaustion of the horses, which could be traced back to lack of adequate fodder and over-exertion, also was an unfavorable factor.

Even though it was possible in many units to control the spreading of mange every summer and often to eliminate it completely, nevertheless from 1942 on during both summer and winter that disease remained a constant scourge of the German Army horses. Thus it repeatedly proved necessary to refrain from withdrawing badly afflicted divisions from the front and employing them elsewhere, but rather leave them in their present area in order to combat mange more effectively. Many a wide-spread contamination of units could no doubt have been avoided at the outset if more attention had been paid to this disease.

As far as losses from mange are concerned, they were as a rule caused by a combination with exhaustion, or other accompanying diseases.

No new observations regarding the care and treatment of mange were made beyond the experiences of World War I.

The most effective, economical, and rapid treatment consisted of exposing the horses to sulphur dioxide in gas chambers. These gas chambers had been in use in Russia even in peace-time. The absence of mange among Russian horses no doubt may be ascribed to the use of these gas chambers where sulphur dioxide was produced by burning sulphur. The German Army received the gas in cylinders.

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In the course of time it became apparent that, in addition to the gas chambers in the army veterinary hospital, every division should be provided with at least one -- more during wide-spread epidemics -- portable gas chamber which could be set up at different points in the division area when a division was committed along a wide front or in roadless terrain. If there is sufficient time, permanent gas chambers may also be constructed without great difficulty, particularly at the hospital facilities of the veterinary company.

A constant flow of supply of gas cylinders filled with sulphurous acid was essential so that sick horses could be treated without interruption. By installation of simple combustion units it was also possible to burn sulphur in the portable gas chambers. Consequently, it was advisable to maintain a supply of sulphur whenever possible so that during periods when the shipment of cylinders stopped, treatment of sick horses could be continued by burning sulphur, until gas cylinders once more arrived.

Regarding further details about prevention and control of mange, the "Pamphlet on Mange" remains applicable.

B. Glanders

As mentioned previously, during operations in Russia glanders among horses generally was localized, contrary to all expectations. It occurred only on a small scale without ever becoming important. Entire German armies had not even one case of this disease.

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By means of the well-known and approved diagnostic procedure -- the ophthalmic mallein test in connection with the blood test -- it was usually easy to determine and exterminate the cause of the epidemic.

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For general protection against either latent or unrecognized cases, the periodic ophthalmic mallein and blood tests of all horses (once or twice a year, depending upon the danger of infection) proved to be particularly satisfactory and necessary. Veterinary blood testing stations should be readily accessible.

In view of the small number of cases it may be assumed that glanders was largely brought under control in Russia during the period before the war; thus the danger of epidemics had been reduced considerably.

#### C. Piroplasmosis

Piroplasmosis was a horse disease with which we had already become familiar during World War I in the southeast, particularly in Rumania; but it had occurred only sporadically and received minor consideration. In the interior of Russia, however, the German Army encountered large, fairly well-defined areas, where piroplasmosis was indigenous and regularly took its toll. Experiences gained by the Russians showed that horses recently brought into these areas became afflicted while native horses displayed immunity. These piroplasmosis districts were epidemic centers where conditions were most favorable for the carriers of the disease, certain types of ticks.

According to Russian veterinary publications, in the areas under discussion the disease occurs twice a year in conformance with the life cycle of the ticks, with fairly severe symptoms in spring -- for that reason the disease is also called May sickness -- and then once again in a much milder form in autumn. Actually, there were many severe cases of the disease among German horses coming into these infected areas in spring and milder cases in fall. They caused not only large numbers of casualties, but a loss of time as well, since the

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convalescent period following a severe case of piroplasmosis lasts for months.

Further, deaths among sick animals occurred especially when horses continued working during the early stage of the disease, which is characterized only by fever and consequently easily overlooked. If such horses recuperate at all, convalescence takes a long time. In order to diagnose the disease in its initial stage, it was therefore absolutely necessary in such districts to take the horses' temperature daily before putting them to work.

As for treatment of horses, a new medicament, Acaprin, was of great benefit if used at the very beginning of the illness. In addition, medicines employed by the Russians such as Trypaflavin and Trypanblue showed good results.

-5- It should be noted that the Russians also employ prophylactic treatment which is timed in accordance with the ticks' cycle of development and consists of two intravenous injections of trypanblue in the spring, at an interval of several weeks, to prevent harmful action by the agent of the disease, the piroplasma. This prophylactic treatment proved very satisfactory in experiments with German Army horses. Since during the war not all exposed horses could be treated, no conclusive opinion can be given as the effectiveness of this treatment.

In order to minimize the casualties caused by these epidemics as much as possible, the following measures proved effective: If possible, only motorized units should be committed in areas where piroplasmosis prevails. Where that is not practicable, horse-drawn divisions should not be shifted since fresh horses will contract the disease in a more severe form. Furthermore, in piroplasmosis-infected areas horses are to be employed only on the roads if at all possible, and not off the roads in underbrush which is infested with ticks. It is possible to detect the early stages of the disease by taking the temperature every morning,

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and to isolate afflicted horses. Provisions should always be made for having the necessary drugs available for immediate treatment, and for moving up additional supplies in ample quantities. Following the sickness the horses should be given sufficient time for convalescence.

D. Contagious Pneumonia

As has been mentioned briefly, the climate, etc., of the interior of Russia seemed to prevent the occurrence of contagious pneumonia on a large scale; nevertheless, this disease was observed in connection with various related contagious diseases, as for instance colt distemper [strangles], especially among horses in remount depots; cases ranged from light to severe. Moreover, after-effects and convalescence meant that the horses could not be used for a considerable period.

No special experiences were gained with regard to this disease.

E. Other Epidemics

There were no cases of contagious anemia, pleuropneumonia, erysipelas, rabies, dourine, infectious lymphangitis, anthrax, etc., and it is therefore not necessary to go into details.

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