

**ORIGINAL  
INVESTIGATIONS IN  
CATTLE  
DISEASES IN NEBRASKA**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649531042

Original Investigations in Cattle Diseases in Nebraska by Frank S. Billings

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**FRANK S. BILLINGS**

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ORIGINAL INVESTIGATIONS  
IN  
CATTLE DISEASES  
IN  
NEBRASKA.

SOUTHERN CATTLE PLAGUE.—THIRD EDITION.

REVISED AND AUGMENTED WITH MANY NEW INVESTIGATIONS, AND THE TRUE  
PLACE OF THE TICK AS A VEHICLE OF INFECTION  
UNQUESTIONABLY DEMONSTRATED.

BY

  
FRANK S. BILLINGS,

*Director of the Patho-Biological Laboratory of the University of Nebraska.*

ANIMAL DISEASE SERIES No. V.

LINCOLN, NEB.:  
STATE JOURNAL COMPANY, PRINTERS.  
1893.

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## THE ETIOLOGY OF SOUTHERN CATTLE PLAGUE— TEXAS FEVER.

BY FRANK S. BILLINGS, DIRECTOR OF THE PATHO-BIOLOGICAL LABORATORY OF THE  
STATE UNIVERSITY OF NEBRASKA.

In the year 1888 I published my first investigations in the etiology of this disease, and in 1889 a second edition was published under the title of "Original Investigations in Cattle Diseases in Nebraska," those on the "Corn-Stalk Disease, Hydrophobia in Cattle," and on an infectious disease of the external sexual organs, and of the cornea in cattle having been added. As has thus far been invariably the case, the Agricultural Department in Washington soon after began to throw doubts on the reliability of these investigations, so far as the announcement of a specific micro-organism had been made, and in the case of southern cattle plague to assert the existence of an entirely different organism as the cause of that disease. This was done absolutely on unscientific grounds and utterly without proof. With regard to the "corn-stalk disease," a member of the department has also said, "*I do not take very much stock in the germ theory of this disease, because to accept that we must throw aside pretty much of our experience.*" As the etiology of that disease is now established beyond question, supported as it is by the work of Nocard in France, and Bowhill in England, it is evident that the "stock" which the farmers of the United States and scientific investigators should take in announcements on the etiology of specific diseases, from the National Agricultural Department at Washington, should fall very much "below par." In reality, they must always be taken *cum grano salis*.

That same individual has also said of the Nebraska investigations, "Billings has boldly announced a great many discoveries that have not fulfilled the expectations of his friends." (Reply to Dr. Peters, *Journal of Comp. Med.*, vol. XIII, p. 35, 1892.) *Let me again, with equal boldness, announce my utmost confidence that all my discoveries will eventually fulfill the most exacting expectations of my friends, and*



*equally disappoint those who are not, even to inoculation, against swine plague.*

I am only too well aware that the unfortunate polemical discussion which circumstances have forced me into has essentially militated against the acceptance of my work, and often prevented an unbiased appreciation of it by other investigators as well as many intelligent readers in the lay public. Still, the general result has been perfectly satisfactory to me as well as those most directly interested, the stock breeders of Nebraska, as is evinced by their insisting on my recall here and my retention in the face of the most bitter and determined opposition of the National Agricultural Department. I was fully aware that my true purpose in this polemic would be misunderstood. I knew full well that European investigators would be a long time in coming to an appreciation of the fact, that dishonest and unreliable work could possibly be put on the public by a department of government. I have in my possession scores of letters, from among the ablest men in Europe, asking me, "Is it possible that such things can be?" "Was I sure that I was not mistaken in the matter?" They repeatedly said, "that such things must be impossible; that no investigator, who would do as I claimed, would be retained an hour in the employ of any European government;" which is true.

While European governments undoubtedly are still very imperfect organizations, politics in those countries have not yet degenerated to the machine-rottenness and corruption which is fast threatening republican institutions in this country with disruption or the land with dangerous revolution. We cannot go on in our present course many years longer without one or the other occurring. The despotism of these rotten-machine politics is fast driving reflecting and honest-minded citizens to a condition verging on desperation, without regard to their fortunate or unfortunate position in the social scale. These forces will eventually unite, and then look out. No man can foretell what the result may be. The people are honest at the bottom, though much enslaved at present. Republican institutions are much slower in their movements than rebellion under monarchical governments, but the resulting revolution is liable to be much more radical and far reaching its effects. I have thus plainly stated my opinions in order to show my readers the true spirit which has actuated me in my attack on the work of the Department of Agriculture. To those who know me, to my professors and colleagues in Germany, who know that from the day I began to study, *my ambition has not been to gather honors as a discoverer in the realm of investigation in the branch of science in*

*which I have worked, but rather to do the best I could in order to demonstrate the value of scientific investigation to the people of this country, that it might be inaugurated and supported by them through their governments, national and state.*

It is well known, that before I came to Nebraska I had given fully as much, if not more, attention to the diseases of human life than of animal, and that it was my earnest hope to have given my entire energies to the study of the infectious diseases of child life. In that I completely failed. Neither the intelligence of any representative body nor the public spirit of any of our citizens were capable of being aroused to any enthusiasm in that direction. Necessity, in one form or another, has been the stimulus to every advance made by the race in its historic evolution. Necessity, the great losses in live stock from disease, was the cause of my call and recall to Nebraska. The necessity of saving the "Almighty Dollar" has thus far been the only stimulus to the investigation of infectious diseases in this country. The necessity of saving a human life from the miseries of disease has not yet made itself apparent to the American people. When it does, the work will be inaugurated and well started. To educate the people in this direction has been the stimulus to, and earnest purpose of, my own work. To attain this end the best I could do was necessary. I am absolutely without ambition for priority as a discoverer, as I am fortunately beyond the necessity of looking to my position for daily support. If I am a "crank" on any one thing, it is for honesty, to a fanatical degree, in the public service. Though a democrat of democrats I know no party, and am absolutely free from party affiliations. "*The good of the people first, the good of the people last, and the good of the people every time,*" is the one and only principle which I lay any claim to in my actions. With such ideas any one can readily see what must have been the sentiments and results when I found the reports of the Agricultural Department, from the year 1880 to 1885, to be absolutely and unequivocally false; to be a tissue of impossibilities so far as they had reference to the specific cause of swine plague, with the exception of the investigations of Dr. J. Detmers, which were claimed to be wrong by the government itself, but were reasonably correct.

With an effrontery that could only come from one hardened with the brazen corruption of an American politician, the Agricultural Department at Washington now tells the people of this country, and defies any high moral character they may have, that the germ of hog cholera (swine plague) was not discovered until late in 1885. "*The first tests in this direction (of preventive inoculation) were made at the*

*experiment station early in 1886, soon after the hog-cholera bacillus had been discovered.*" (Report of Dept. Agr., 1890, p. 110, issued 1891.)

In the report of 1884 that same Department said: "In a former report have (been) given details of experiments; which demonstrate beyond question that the microbe of swine plague (H. C.) is a micrococcus, and the evidence furnished was all that could reasonably be required to decide a scientific question of this kind." (P. 222.)

"In the many cultivations which I have made from material obtained from slaughtered animals I have never found bacilli, except in a very few cases, where the virus was not obtained until after contact with the air, where the vacuum tubes had not been properly sealed, or where the animal was not slaughtered until in the last stages of the disease." (P. 225.)

Certainly these quotations amply justify the severest criticism of a department of government issuing such reports to the public that created it. If the bacillus of hog cholera (swine plague) was not discovered until late in 1885, certainly the micrococcus of 1880 to 1885 must have been a dream, and the "evidence furnished" anything in value than that which was claimed for it. The most exact and unbiased search over the experiments reported by the government in proof of the fact that the germ of swine plague (H. C.) was discovered and demonstrated as such by them will utterly fail in revealing that fact. They stand to-day in no more favorable position as actual demonstrators of that germ than did Dr. Detmers in 1880. There is not an iota of proof that they discovered the germ even (except they say so) in the report of 1885.

It has been said that my denunciation of the germ of 1885 as a "forgery" is false. A "forged" note, though false in description, may bring the money at the time. Let any one who has carefully investigated this question, and stained the bacilli of this disease, compare the illustration and description given in the Agricultural Report of 1885, p. 212, "*the darker portion is not localized at the two extremities as in the bacteria of septicæmia in rabbits, but is of uniform width around the entire circumference of the oval,*" with his own observations and then with the illustration, "Fig. 2" (comparing Fig. 2 with Fig. 1) of plate (Special Report on "Hog Cholera," 1889), and say whether that description and illustration in report of 1885 is false or not. Let him remember that in 1885 the government distinctly says, *the darker portion is not localized at the extremities as in the bacteria of septicæmia in rabbits.*" What then can any unbiased and honest man