Cattle Plague in NYC: The Untold Campaign of America's First Board of Health, 1868

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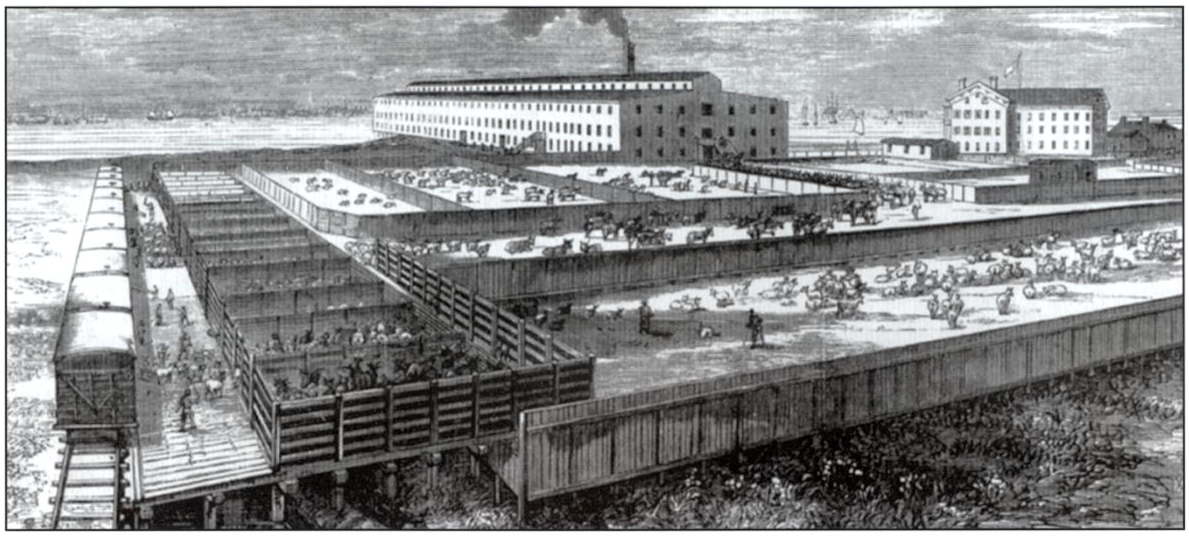

-Jersey City's Communipaw slaughterhouse, where the 1868 Texas cattle disease first appeared in the New York metropolitan Area.

New York City struggled to keep pace with astounding urbanization and immigration in the mid-nineteenth century. Hoping to leave the "painful thrift and drudgery" of agriculture, rural Americans flocked to the emerging industrial center to chase a higher quality of life.[1] Paralleling this rural exodus were circumstances in Europe which spurred American immigration, and both of these developments overwhelmed the city with newcomers. In 1845 roughly 370,000 people inhabited the New York metropolitan area. Fifteen years later, nearly one million lived in the city.[2] Unsurprisingly, such population growth created problems that grew with the burgeoning metropolis.

Deplorable living conditions were one of mid-nineteenth century New York City's many predicaments. Industrialization and the transportation revolution expedited American commercial and cultural progress, but failed to address severe public health issues in the decades preceding the Civil War.[3] Over time, urban apartments had been divided into smaller and smaller units to house more and more of the incoming people. These tenements housed roughly half of the city's population, and were located in an area of less than four square miles. In the 1850s and 1860s, population density in these wards was unrivalled by any world city – standing at 200,000 people per square mile. Such overcrowding created a disgraceful state of hygiene.

The streets were in a truly shameful state. As the "common receptacle of the refuse of families" in congested areas, streets were engulfed with waste;

> "'The filth of the streets is composed of house-slops, refuse vegetables, decayed fruit, store and shop sweepings, ashes, dead animals, and even human excrements. These putrifying organic substances are ground together by the constantly passing vehicles. When dried by the summer's heat, they are driven by the wind in every direction…It is a well-recognized cause of diarrhœal diseases and fevers.'"[4]

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[1]Daniel Walker Howe, What Hath God Wrought, New York: Oxford University Press, 525
[2]John Duffy, A History of Public Health in New York City 1625-1866, New York: Russell Sage Foundation, 1968, 577
[3]David Rosner, Hives of Sickness: Public Health and Epidemics in New York City, New Brunswick, N.J: University Press, 1995, 2
[4]Stephen Smith, The City That Was, New York: F. Allaben, 1911, 63, 66-67

Slaughterhouses in heavily populated districts made matters worse. From them, blood flowed into the streets, and the livestock driven to the abattoirs added to the existing heaps of waste from horse-drawn carriages which lined the streets.

The sewage system was also painstakingly inadequate. Latrines were shared by an outrageous number of people, drained improperly, overflowed and diffused "insalubrious emanations," and were disturbingly close to homes. Cesspools of human muck lingered in residential areas, prompting health inspectors to deem it impossible "for human beings to create or endure such vileness."

The most abominable conditions in this putrid environment were in the underground accommodations known as cellars. The dark, dank, and ill-ventilated residences were directly susceptible to the aforementioned filth because tides and rains carried in an amalgamation of unhealthy debris from the streets, including sewage. Consequently, cellar-dwellers were exceptionally vulnerable to disease, and saw decay and death "usurp the place of health and life."[5]

While public health was appalling, no municipal body in New York effectively dealt with these sanitary problems for much of the nineteenth-century. The 9th and 10th amendments of the US constitution delegated police powers (which could relate to safety, morals, health, or the general welfare) to states. On matters of health, states generally assigned these police powers to municipalities. As a result, public health was long considered an entirely local issue. No national public health organizations existed as they do today, and boards of health were rare at the state level, so localities were essentially on their own. Prior to 1866, public health institutions in New York and the greater United States were "simple in organization and limited in scope."[6] New

[5]Smith, 74, 82-87
[6]George Rosen, A History of Public Health, New York: MD Publications, 1958, 234

York had a group of health inspectors who attempted to enforce sanitary laws, but they survived only as a branch of the police department. While some health officers acted admirably, positions were valued for their access to large budgets, and the spoils system recurrently ensured administrative incompetence.[7] Although a contract system was designed to administer street-cleaning, contracts regrettably provided an opportunity for political patronage.[8]

Administrative ineptitude combined with the horrid environment allowed for the recurrence of fatal diseases. Like many urban areas during this period, New York was consistently visited by cholera, yellow and typhus fever, smallpox, tuberculosis, and diphtheria. Unlike today, serious sickness was a normal part of life. The yearly death rate was normally between 30 and 40 per 1,000 people, increased markedly during severe bouts of sickness, and went below 25 only twice between 1804 and 1860. After 1851, more than 20,000 residents died annually from largely unnecessary causes.

Feared epidemics emanated from preventable filth, but because they were most prevalent in impoverished districts inhabited by immigrants, they awakened little interest for decades. More fortunate New Yorkers regarded disease as a natural corollary to poverty, blaming paupers rather than the unclean conditions beyond their control. Cleanliness was regarded as the prerequisite for health, and for many, tenement dirtiness was thought of as a product of immorality and the "mysterious workings of Providence."[9]

Unlike many apathetic New Yorkers, however, a number of physicians tried to confront the city's sanitary dilemmas. In the early 1840s, City Inspector John Griscom was one of the first authorities to espouse the sanitary evils of tenement housing, and blazed a trail for future medical

[7]Stephen Smith, The City That Was, New York: F. Allaben, 1911, 234-35
[8]James C. Mohr, The Radical Republicans and Reform in New York During Reconstruction. Ithaca, N.Y.: Cornell University Press, 1973, 63
[9]Duffy, 576-77, 458

professionals by lobbying the state legislature for improvements to public health laws.[10] At winter legislative sessions in the 1850s and 1860s, Griscom and physicians Stephen Smith, Elisha Harris, and others began introducing bills for a New York City health department. They also gave public lectures, distributed literature, participated in reform organizations, and worked tirelessly to inform the public of the city's conundrums.

Despite practitioner activism, the quest for a health bill was an up-hill battle, and legislative failures were a yearly routine. In the winter of 1856 and '57, the New York Academy of Medicine petitioned representatives to overhaul New York City's public health laws, but the petition was unable to garner support and was denied renewal in the following year. In 1858, John Griscom confronted similar complacency on a Senate Committee investigating the existing, inept health department. Although the committee agreed that New York's exceptional mortality was a product of overcrowding, unclean streets, poor ventilation, an abominable sewage system, and most importantly, inadequate health administration, the sweeping health bill Griscom favored never came to a vote. After 1857's Metropolitan Police Bill transferred control of the police force from New York City to the state capital, Democratic congressmen opposed any legislation which would loosen Tammany Hall's grip on the city.

Reform was difficult in the face of this obstructionism, but organizations were prepared for a long battle. In 1859, the New York Sanitary Association used the same arguments as Griscom and the Academy of Medicine, but their bid for a health department was shot down. Even though every health bill in the early 1860s was defeated, the association's reformers kept pounding away at the legislature instead of conceding defeat.[11] Unfortunately, the outbreak of the American Civil War in April, 1861, further hindered the creation of a functioning health

[10]Gert H. Brieger, "Sanitary Reform in New York City: Stephen Smith and the Passage of the Metropolitan Health Bill," Sickness and Health in America Ed. Judith Walzer Leavitt and Ronald L. Numbers, Madison: University of Wisconsin Press, 1997, 437

[11]Brieger, 437-439

department. Urban health issues took a backseat to the Union war effort, and the war gave New York Republicans "sufficient political capital." Groundbreaking health reform that interfered with the city's Democratic machinery might hurt Republicans politically. At a time when the political winds were on their side, this kind of reform was deemed an unnecessary liability.[12]

In 1863, the tide for health reform turned with the formation of the Citizens' Association. The group was headed by the same outspoken physicians, swelled in membership, and introduced unsuccessful public health bills in Albany as the Civil War dragged on.[13] Soon though, the organization realized that legislation would continually fall short unless representatives truly grasped the enormity of New York's health problems, so the Citizens' Association created the Council of Hygiene and Public Health. This body was charged with gathering tangible data to strengthen the case for a health department and overcome political indifference. At the council's bidding, city physicians undertook door-to-door inspections of tenement districts. They discovered smallpox and typhus fever prevailing in every crowded area, and summarized a myriad of other findings in a publicly circulated report. The report noted that New York's mortality rate was substantially higher than comparable American and European cities, and that the causes of the astonishing rate were largely preventable. Between 1854 and 1865, Stephen Smith estimated that 77,000 unnecessary deaths occurred, and concluded that some wards consistently had a sickness rate of 50 and 70 percent. In 1865, the Citizens' Association returned to Albany, armed with this compelling data.[14]

The altered political reality of 1865 was another benefit for the Citizens' Association. In the elections of 1864 and 1865, New York Republicans gained the governorship and state congressional seats. Health reformers no longer had to fear a veto from Democratic Governor

[12]Mohr, 67
[13]Duffy, 534
[14]Mohr, 68, Smith, 57, Citizens Association, xliv, Smith, 121,123

Horatio Seymour, assuming they could get the legislature to vote on their bill in the first place. Republican congressmen were also beginning an experimental program of "civil and institutional reform" designed to undermine Democratic strength.[15] Consequently, Albany's Radical Republicans would likely be more receptive to public health legislation, as they could no longer rely entirely on the war for political gain.

Concrete statistics and the Republican reform agenda, however, failed public health advocates. In February, 1865, Stephen Smith passionately advocated for a non-partisan health department combining administrative and medical expertise, but health legislation stalled. Meanwhile, the mayor of New York still favored local control of sanitation. New York City needed an additional catalyst for health reform.

The threat of cholera in 1865 was the necessary impetus. Cholera was the most dreaded disease of the nineteenth-century, and had repeatedly ravaged New York City. The disease killed over 3,000 people in 1832 and 5,000 in 1844-45 (an equivalent death rate for modern New York would exterminate more than 100,000 people).[16] Many feared its 1865 European resurgence would reach America and have an equally grim effect. As minor cases surfaced in the United States, Republican newspapers sensationalized the disease's effects to support a health bill. Momentum for reform also grew when upstate New Yorkers petitioned their representatives in favor of sanitary legislation. Upstate residents feared that the state's increasingly integrated transportation network would spread the epidemic.[17] Once the legislature resolved a sticking point on the non-partisan appointment of health commissioners, the first American municipal public health authority was created. In 1866, a Radical Republican coalition had finally ended the decade-long fight for a New York City health department.

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[15]Mohr, 69
[16]John Noble Wilford, "How Epidemics Helped Shape the Modern Metropolis," *The New York Times*, April 15, 2008
[17]Duffy, 560, Mohr, 104

The Metropolitan Board of Health (MBH) masterfully confronted industrial society's most formidable problems under an expansive sanction of authority. Composed of the city's most ardent campaigning physicians, the board was legally "empowered to deal with any nuisances or situations which it regarded as dangerous to life or health."[18] With this broad mandate, it renegotiated street-cleaning contracts, made tenement owners clean their buildings, moved thousands of suffering cellar-dwellers into temporary housing, created disinfectant teams, collaborated with the police department for enforcement, streamlined garbage collection, removed tons of manure, and suspended businesses (such as slaughterhouses) for operations injurious to health.[19] Their crowning achievement was yet to come, however.

When cholera materialized in April, 1866, the board impressively contained it. With a strict new health code, essentially unlimited funds, and the power to force residents to go to care-centers they directed, the MBH embarked on an assertive sanitary program.[20] While some inevitably succumbed to the disease, cholera was remarkably controlled; "The loss of 600 residents was not insignificant, but when compared with the casualties during previous outbreaks, the loss seemed small indeed."[21] While it was newly created, the health agency was the first organization to blunt the impact of the most terrifying ailment of the nineteenth-century.

This remarkable competence garnered the organization widespread support through its early years, but the Board of Health had critics. Organs of the Democratic Party, particularly *The World* newspaper, regarded the MBH as an unwarranted imposition by Albany's Radical Republicans. New York City's predominantly Democratic machines opposed the board's creation because a state-authorized agency meant sacrificing local authority. While Republican papers like *The New York Times*, *Herald*, and *Tribune* sang the board's praises, *World*

[18]Duffy, 563
[19]Duffy, A History of Public Health in New York City 1866-1966, New York: Russell Sage Foundation, 1976, 1-29
[20]Mohr, 110-111
[21]Duffy, Public Health in New York City: 1866-1966, 19

columnists invariably denounced "dictatorial" MBH policy, arguing that the board's immense powers were unconstitutional.[22] This set up persistent conflict between the state and city government.

Despite opposition from Democrats, scholars now recognize the board's creation as a momentous event in the history of American public health. In the 1870s, health organizations in California, the District of Columbia, Minnesota, Virginia, and other states were modeled after the MBH because of the board's unprecedented containment of cholera. Public health institutions had been plagued by inefficiency, but could now look to New York's administrative achievements for guidance. In addition, the cholera campaign vindicated sanitary science in the eyes of the public and medical professionals. With no knowledge of bacteria, health authorities believed that dirt bred disease, and touted the abstract virtue of cleanliness. This paradigm was the cornerstone of widely applauded board policy.[23]

Hindsight shows historians the significance of the Metropolitan Board of Health, but in 1868, the MBH was still a nascent organization. Though reducing cholera's severity was impressive, New York City was accustomed to cholera epidemics in the nineteenth-century, meaning there was ample historical experience to draw from to allay the disease. In addition, cholera was the most feared ailment in this period of American history, so ordinary people were likely very compliant during the emergency. The Board of Health may have succeeded against a well-known disease, but was a brand-new organization in its first year of existence. Therefore, the agency's response to unfamiliar health problems had not been demonstrated. The Board of Health was just getting started, and how it would handle an obscure, unanticipated health issue was uncertain.

[22]James Mohr, (personal communication, June 30, 2011)
[23]Rosen, 246-248

As the MBH breathed a sigh of relief that cholera was over, another disease was brewing in the American interior. During antebellum decades, insufficient demand led to huge Texas cattle surpluses, and millions of longhorns roamed freely as untouched resources.[24] Descendants of Spanish herds brought to Mexico, Texas cattle were wild, medium-sized, and "valued mainly for their hides and tallow" before the Civil War because their flesh was "coarse, flabby, and stringy." Although they were physically inferior, Texas steer became appealing because they were abundant and cheap. Some Texas droves had been shipped to Missouri prior to the Civil War, but the South's rebellion "put an end to this recently opened traffic." Trade that would have otherwise occurred on the Mississippi River was stopped because of the Union's naval blockade. Nevertheless, agricultural and economic patterns changed after the war.[25]

A variety of factors incentivized the mass, northward movement of Texas cattle. Between 1860 and 1870, the population of the United States (especially in northern cities) grew 22 percent. In the same period, the number of cattle decreased seven percent, meaning that demand outstripped supply, which elevated market prices for beef. [26] To tap this lucrative opportunity, America's first big business was invaluable to cattlemen. Transcontinental railroads conveniently matured after the Civil War, and encouraged the movement of long-neglected Texas herds because they united frontier regions with huge supply centers.

Accordingly, long dormant longhorns were rounded up all over the state and driven north for urban mass-consumption. In 1866, drovers moved roughly 260,000 cattle to Missouri to be shipped to Chicago, beginning the Texas cattle drives which are now infamous in historical

[24]Joseph McCoy, Historical Sketches of the Cattle Trade of the West and Southwest, Washington DC: The Rare Book Shop, 1932, 19-20
[25]New York State Cattle Commission, "Report of the New York State Cattle Commission in connection with the report of the Metropolitan Board of Health in relation to the Texas cattle disease," in Documents of the Senate of the State of New York, Albany: The Argus Company, 1869, 92nd Session, No. 9, Transmitted , March, 12th, 1869, 16-17
[26]Ernest Osgood, The Day of the Cattleman. Minneapolis: University of Minnesota Press, 1929, 28

reverie.[27] In the following year, an Illinois cattleman named Joseph McCoy foresaw a favorable business opportunity in these initial drives, and travelled to Abilene, Kansas. Abilene was the western-most point of the Kansas Pacific Railroad, and connected conveniently with the Chisolm trail used previously by the Confederate army. McCoy began transforming the modest village into a cattle depot that could receive southern stock coming up the Chisolm route. In 1867, Abilene became the undisputed hub for beef shipments after McCoy advertised to Texas cattlemen. Over 35,000 cattle came through in that year, and a great "highway of commerce" was established.[28]

Moving cattle to fledgling Midwestern cow-towns was long, hard, and debilitating. The drives were hailed as the "greatest migrations of domestic animals in history," and were hundreds of miles long.[29] After reaching places like Abilene, cattle were often shipped to Illinois via rail, where they would pasture and prepare for slaughter in Chicago's meat-packing centers, or be sent to the eastern seaboard. Another popular route was to drive them to Louisiana seaports, and involved a boat-trip to Chicago.[30]

These enormous feats of transportation subjected cattle to abhorrent conditions. If New Yorkers demanded Texas meat, slaughtering could not occur on the frontier with the absence of refrigerator cars, and the cows themselves, rather than dressed beef, had to be transported thousands of miles. Already exhausted from their journey to places like Abilene, animals were then crammed into rail cars or boats. If trains slowed, cattle were jolted around, and the ones who fell were injured or killed amidst the horde. Transport on steamboats was similarly brutal; "When refusing by fright or terror, to go on board quietly, they are lassoed by the horns, neck, or

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[27]McCoy, 29

[28]Louis Pelzer, The Cattlemen's Frontier: A Record of the Trans-Mississippi Cattle Industry from Oxen Trains to Pooling Companies, 1850-1890, Glendale, Calif: Arthur H. Clark Co, 1936, 41-42

[29]Wayne Gard, "The Impact of the Cattle Trails," The Southwestern Historical Quarterly, 71.1 (1967) 1-6, 1

[30]For more on the rise of Chicago meat-packing see Howard Copeland Hill, "The Development of Chicago as a Center of the Meat-Packing Industry," The Mississippi Valley Historical Review, 10.3 (1923) 253-273

legs, as chance opportunity may offer, and hauled on decks, where they are crowded in the closet possible space, and securely railed in from escape." Once the boat landed, cows emerged "terribly bruised and mutilated from crowding, and [got] down and trampled upon by the others while on board." Worst of all, even longer railroad trips to places like New York immediately followed the boat trips to Illinois. Stops for food and water on the grueling journeys to urban areas were rare, and beeves were overcrowded, overheated, and surrounded in their own waste. Along the way, between six and nine percent died in a commercial practice that generated unparalleled damage claims. Surviving the offensive conditions was one thing, but emerging from railcars in a healthy state was nearly impossible.[31] In the late 1860s, such cruelty was the norm.

Other health concerns surrounding the Texas cattle drives, however, did arise. The northwardly-bound droves transmitted a mysterious disease to herds they came in contact with. Lone-star shipments shared pastures before being slaughtered, and within days of their departure, local herds were infected. Strangely, longhorns were immune to the disease, but the ailment killed other Midwestern cattle at astonishing rates. In 1866, ranchers in Kansas and Missouri staged grassroots protests to prevent droves from entering their states. In the following year, the Kansas and Missouri legislatures prohibited Texas cattle from certain counties.[32] Although the Texas cattle drives were transforming the American frontier, uneasiness surrounded this vexing ailment.

The MBH had heard of this "Texas cattle disease," but lacked specifics that would aid them if the affliction ever reached New York. Beginning in the mid-1850s, there were accounts of northern stock being taken "into regions of the Gulf of Mexico" and suffering "an enormous

[31]John H. White Jr., "Riding in Style: Palace Cars for the Cattle Trade," Technology and Culture, 31.2 (1990) 265-270, 266, "Report of the New York State Cattle Commission," 19
[32]Claire Strom, "Texas Fever and the Dispossession of the Southern Yeoman Farmer," The Journal of Southern History, 66.1 (2000) 49-74, 52, Osgood, 36

death rate from some unknown and un-described disease." No scientific or medical study of this vague malady had been published, so "nothing was known of its medical history."[33]

Forebodingly, New York was a prominent outlet for the booming western cattle industry. Beef had always been a staple in the protein-heavy American diet, but pork was usually the preferred meat, especially in the South and West. For agrarian families, beef was an impractical form of food, as cows were such large animals that great amounts of meat needed to be cured, and cured beef was not very appetizing. As a result, beef became most popular in northern urban centers where demand for fresh steak was high.[34]

During the Texas cattle bonanza, New York City was one of these places. Throughout the nineteenth century, urban centers gradually became dependent on livestock from the American West. The industrial revolution and urban population growth meant that nearby soils, instead of rearing livestock, "[were] needed for the necessary production of grains, roots, fruits, and other human edibles." As New York City became less self-sufficient in meat production, western states capitalized, and "found ready markets in those states which could no longer be supplied from their own soils."[35] The opening of the floodgates in Texas hastened this process. In 1860, the metropolitan area relied predominantly on homegrown or livestock from adjacent states, but by 1870 the city received over 200,000 Texas steer. New Yorkers began to eat beef at multiple daily meals, and steak became the most requested food article in New York City restaurants. To satisfy demand during some periods, the city needed to import over 5,000 cattle per week, which were predominantly from Texas. Shipments usually went through Chicago, Toledo, Buffalo, and Albany, and then arrived in New York City along the Atlantic, Great Western, Erie, or Lake

[33]Metropolitan Board of Health, "Third Annual Report of the Metropolitan Board of Health of the Metropolitan Sanitary District" in Documents of the Assembly of the State of New York, Albany: The Argus Company, 1869, 92nd Session, Vol. 4, No. 37, Transmitted Jan. 6th, 1869, 229

[34]Horowitz, Roger, Putting Meat on the American Table: Taste, Technology, Transformation, Baltimore: Johns Hopkins University Press, 2006, 18-20

[35]"Report of the New York State Cattle Commission," 14

Shore railroads.[36] The western termini of these lines - Jamestown, Dunkirk, Campville, and Salamanca - would soon become important. As eastern markets became more dependent on western steer after the Civil War, the mysterious cattle disease extended its reach beyond Kansas and Missouri. Soon, it would reach New York City, and force the successful yet inexperienced Metropolitan Board of Health to confront the affliction, in addition to their many other responsibilities.

Before the cattle plague reached New York, the MBH was preoccupied with rising mortality and legal battles with butchers. When the board convened on Tuesday, July 14th, 1868, Dr. Elisha Harris (the board registrar) brought distressing news. During the week ending July 11th, over 800 people suddenly died in New York. At the time, the causes of the spike were easily explained. Although the city was accustomed to summer humidity, no summer "in the previous 40 years was as hot, damp, and unhealthful." High temperatures caused fatal sunstroke, and the heat was conducive to "rapid changes of organic matter," meaning the aggregation of filth in the streets.[37] With an existing lack of cleanliness in tenement districts, conditions were ripe for sickness. The rapidly decaying organic material caused more diarrhœal disorders, which accounted for 29 percent of deaths in New York during the period.[38]

To make matters worse, Dr. Harris announced that 250 people had died on July 13th and 14th alone. In response, the Board of Health quickly recommended ways to avoid heatstroke, encouraged the domestic use of disinfectants, and had carts stock the streets with them. Dr.

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[36]Clara M. Love, "History of the Cattle Industry in the Southwest," The Southwestern Historical Quarterly, 19.4 (1916) 370-399, 386, 397, Richard J. Hooker, Food and Drink in America: A History, Indianapolis: Bobbs-Merrill, 1981, 221-222, *New York Times*, Nov. 12, 1868, 8, "Report of the New York State Cattle Commission," 21-23

[37]Metropolitan Board of Health, Third Annual Report, 12, 47

[38]*Times*, Jul 15, 1868, 8

Harris regrettably showed that the death rate of mid-July was three times higher than early June, and approached the level of the vanquished 1866 cholera scare.[39]

Between the 18th and 22nd, 240 more people died. The board still attributed the majority of the deaths to filthy streets, gutters, sidewalks, and garbage-boxes that "demanded the most speedy and practical attention." If waste remained in the streets, the weather would aggravate unsanitary conditions, but if waste was removed, the heat would be more benign (or so the sanitary philosophy went). In response, the board heightened its efforts to disinfect the most insalubrious wards, and issued more detailed instructions to families. Dr. Harris urged households to promote cleanliness by explaining the proper way to disinfect water closets, drains, stables, ditches, and other places.[40] As board efforts continued, deaths declined in late July.

In the summer of 1868, the Board of Health and local butchers also concluded litigation. Slaughtering within populated districts and the driving of animals through city streets were two issues that demanded the attention of the board since its inception. In the board's first year, "vigorous measures were adopted for the regulation of cattle-driving, and looking to the removal of slaughtering establishments." Massive new abattoirs outside the urban center were subsequently built in Harlem and Jersey City. Some butchers willingly relocated their small businesses, while others abandoned their enterprise with the creation of these behemoth slaughterhouses. Others challenged the Board of Health's actions in court.

In the "Butcher's Cases" of 1867, the plaintiffs "[obtained] injunctions against the board," delaying the removal of city slaughterhouses.[41] On July 2nd, 1868, however, the Court of Appeals (the highest court in New York State) "fully sustained" the board's desire to end

[39]*Times*, Jul 16, 1868, 4, *Times*, Jul 17, 1868, 8, *Times*, Jul 22, 1868, 5
[40]*Times*, Jul 24, 1868, 3, *Times*, Jul. 25, 1868, 2
[41]Metropolitan Board of Health, Third Annual Report, 42

slaughtering and cattle driving below 40th street. The decision also established the constitutionality of the MBH, and declared that board orders could not be challenged by jury trial or injunction in the future. Without this legal sanction, subsequent public health fights would not have been possible. Democratic sympathizers could still oppose the Board of Health, but its legality was no longer in jeopardy.

Health officials assembled on July 4th to organize a "reasonable time in which to complete the transfer" of abattoirs. Some board commissioners clamored for immediate removal and opposed a January extension others favored.[42] Eventually, the Board of Health acquiesced with the butchers at the legal counsel's bidding, allowing slaughterhouses until the following year to relocate above 40th street. One summer controversy had been settled, but a bigger one was about to arrive.

The first announcement of an impending cattle plague appeared in New York newspapers in late July. On the 22nd, a farmer wrote Illinois Governor Richard Oglesby saying that a "dreadful cattle plague" attributed to passing Texas droves had killed 40-50 of his cows, was "rapidly spreading over the prairies," defied any method of control, and was increasing in severity. The man warned that if no cure was discovered, the disease would "surely sweep the country."[43] Sickness erupted in Indiana at roughly the same time, and wiped out entire herds in certain counties. As soon as cattlemen in Illinois detected the disease, they rushed their droves to Chicago's Union Stock Yards to avoid financial loss, paying little heed to the health effects of these avaricious decisions. In an astonishing human error, no one halted Chicago's beef trade, and over 800 diseased steer arrived in Pittsburgh. If Chicago cattlemen had recognized the disease, then only apathy or ignorance could explain the carelessness of other, commercially-

[42] *Times*, Jul 3, 1868, 5, *Times*, Jul 5, 1868, 4, *Times*, Jul 31, 1868, 2
[43] *Times*, Jul 30, 1868, 5

involved parties. As eastern shipments continued uninterrupted, the disease crept closer to the New York metropolitan area.

To elucidate the origins of diseased cattle, the *Times* fielded an article from the agricultural magazine *Prairie Farmer*. Around 1,200 Texan cattle per week had arrived in Cairo, Illinois, from New Orleans beginning in late April. Cargo was "mercilessly packed," and went without water during the weeklong trip. When unloaded from the boat to graze for 24 to 36 hours in Cairo, cows showed signs of disability, overcrowding, and disease, particularly as spring progressed and the weather got warmer. After pasturing alongside native livestock, herds were sent via rail to Tolono, but scores were found dead and would not make it farther. Unperturbed by the deaths, shippers kept cars moving north. One caravan en route to Tolono stopped at Farina, however, and over 15,000 head grazed on Mr. Edward Richardson's prairie. As soon as the herd departed in mid-July, Richardson's livestock was decimated.[44] By way of the Illinois Central, Toledo and Wabash railroads, the disease arrived at Tolono's larger feeding grounds, where the plague "speedily [swept] away almost every native animal." In Champaign County alone, estimated losses to local herds were above five thousand, and "multitudes were dying" in other towns linked to the Texas cattle trade.[45] With the Tolono community alarmed, a local superintendent suspended shipments from Cairo. Instead of warning partnering cities, however, concern for one's own locality ruled the day, and beef shipments proceeded to the eastern seaboard.

Given the disturbing news from the west, MBH President George Lincoln feared that affected western cattle were on their way to the city, or might already be there. Accordingly, he requested that Sanitary Superintendent Edward Dalton send health inspectors "without delay" to

[44]*Prairie Farmer*, Aug 8, 1868, 39.6, 44
[45]"Report of the New York State Cattle Commission," 4

points receiving lone-star shipments. On August 8th, Dalton referred the telegram to health inspector Dr. Moreau Morris, who immediately visited the national drove yards at 100th St. and found all in order.[46] There was no such luck across the Hudson River. Dr. Elisha Harris was informed that large numbers of unhealthy, western cattle had arrived at the large, newly-relocated Communipaw abattoir in Jersey City, and more were on their way. The fledgling Board of Health now confronted a strange, new challenge.

Although other places had dealt with cattle epizootics in the past, the New York health department had little precedent to rely on when the cattle plague hit. A disease called "rinderpest" had swept Europe in the eighteenth century, killing approximately 200 million cattle. The ailment left animal excrement contagious for months, and was transmittable at a distance of 500 yards. Severe weather had aided the malady's spread, and therapeutic quackery and governmental inoculation had done nothing to stop it.

In the mid-nineteenth century, conditions in England were favorable to the resurgence of rinderpest. By the 1860s, stock and dairy farming had gradually usurped the production of grain. English farmers fattened their cattle in response to this market transition, and the new fat "impaired important tissues." A three year drought also negatively affected the health of livestock. In addition, England's Liberal Party had recently been elected, and was committed to an all-encompassing doctrine of *laissez faire*. This philosophy would prove deadly.

When rinderpest predictably made its return in July 1865, the Liberal Party responded incompetently. The government had organized a Royal Cattle Plague Commission to investigate rinderpest, but the recommendations promulgated by the body's scientific committee were ignored. Physicians, including veterinary professor John Gamgee, advised railcar disinfection, the quarantine, slaughter, and burial of diseased cattle, and stopping the transportation of cattle.

[46]Metropolitan Board of Health, Third Annual Report, 185

Political leaders, on the other hand, were worried about cries of creeping government, and authorized orders which only empowered local authorities, precluding the implementation of commission recommendations. In a perfect example of a toothless enforcement mechanism, municipalities could adopt the commission's proposals if they thought they were "necessary or desirable." Unsurprisingly, citizens who had recently elected the Liberal Party thought the requests were too radical, and followed them half-heartedly. For the moment, the transportation of diseased steer ran unabated across England.

Tragedy resulted from the political inertia, prompting demands for change. By January, 1866, 70,000 out of 120,000 infected cattle had died. Agricultural societies, newspaper columnists, farmers, and the general public began to clamor for government action. After being drafted by the commission's scientific committee, the Cattle Diseases Prevention Act was passed in February, 1866, and authorized health inspectors to examine areas of potential infection and issue sanitary recommendations. Stock yards, grazing areas, livestock waste, and the clothes of inspectors were to be disinfected, and could not be used for 30 days after disinfection. The legislation also banned the movement of cattle via rail, and mandated the slaughter of diseased herds and any new arrivals. Just compensation for preventive slaughter was arranged, and carcasses were to be deeply buried.

Although the epidemic dissipated soon after this policy was implemented, the lack of any substantive, immediate response was inexcusable. If stringent regulation on cattle movement had been adopted more promptly by a competent administration, five percent of the cattle population could have been saved, and volatile meat prices and shipping rates could have been averted. Due

to the ideological reluctance of the Liberal Party, however, the "most dramatic episode in nineteenth-century British agriculture" occurred.[47]

The English experience was fresh in the memory of New Yorkers and provided historical lessons, but gave the MBH little to work with holistically. The Cattle Diseases Prevention Act demonstrated that halting the transportation of cattle, disinfecting stock yards, and slaughtering diseased steer arrested one particular cattle disease. Prior to the legislation, however, little had been "published in the English language that was adapted to aid sanitary officers" during the outbreak of a cattle epizootic. The scientific committee of the Royal Cattle Plague Commission essentially went out on a limb by drafting the act, having no proven formula to rely on.

When Americans saw "Cattle Disease" headlines in 1868, they intuitively recalled the English rinderpest epidemic two years prior, but there was no evidence that the American cattle scourge was analogous to rinderpest. Convenient parallels between the two cases were therefore uncertain to be valid, but because there was no "published account concerning [the Texas cattle disease] that could aid sanitary authorities," England's example was essentially all that the MBH could look to.[48] Unfortunately, even the findings of the British commission were untested by historical standards and might not even apply. For these reasons, New York City's Board of Health appeared to have its hands full.

The British experience presented itself in a very literal sense when the United States Government arranged for the first real study of the Texas cattle disease. Horace Capron, commissioner of the US Department of Agriculture, enlisted the services of Professor John Gamgee, who happened to be in Chicago during the outbreak of the summer cattle plague. Gamgee was regarded as one of the "most learned surgeons in Great Britain," and was "famous

[47]Arvel Erickson, "The Cattle Plague in England, 1865-1867." Agricultural History. 35.2 (1961): 94-103, Christabel Orwin, and Edith H. Whetham, History of British Agriculture, 1846-1914, London: Longmans, 1964, 200-201
[48]Metropolitan Board of Health, Third Annual Report, 228-229

for his investigations" of rinderpest and drafting the Cattle Diseases Prevention Act as a part of the Royal Cattle Plague Commission.

While attending the fair of the Illinois Agricultural Society in June, 1868, Gamgee was called upon by Capron for his scholarly assessment of the American epizootic, which was just beginning to surface in the West, but would not reach the east for another two months. The USDA wanted Gamgee to investigate the cause and character of the disease, and provide a remedy. With assistant surgeons Dr. John Shaw Billings, Dr. Edward Curtis, and a prominent botanist, Gamgee began his study.

To provide the first professional pathology of the disease, Gamgee and the other specialists travelled to Central Illinois for post-mortem examinations. Gamgee promptly classified the disease as infectious rather than contagious. This meant that only those cattle that came into contact with the original Texan droves would become sick. Droopy head, arched back, labored respiration, runny nose and eyes, and frequent bloody discharges characterized the diseased beeves, who, according to the Englishmen, were out of help's reach once afflicted. As for the plague's origin, Gamgee identified it with obscure European blood diseases called "Anthrax Fever" and "Black Water." He attributed it to the consumption of "succulent shoots of peculiar trees, highly charged with astringent principles." Gamgee thought this particular fauna caused no harm to Texas stock, but it yielded the dreaded symptoms when the plant's associated materials were communicated in excrement or other forms.

While native cattle would not be able to infect other native cattle, Gamgee did not shy away from sensationalism, saying, "there seems never to have been a more fatal disease in any country." Nevertheless, he argued the danger would not reach the terrific levels of rinderpest, and that it could be managed "with perfect safety under proper management and regulation" with

a better understanding of the illness. If the disease arose, the professor advocated immediate quarantine, feeding diseased beeves, and treating them with purgative medicine. Until the onset of winter, which apparently suppressed the illness, cattlemen were advised to pasture their stock cautiously. Gamgee reasoned that beef and milk would not be dangerous for human consumption and that the disease would not be "anything in the nature of the terrible rinderpest." Reassured by these findings, *New York Times* columnists confidently proclaimed that prevention would "be so easy as to render curative measures of small importance," but communities should take preventative action just in case. Prevention would be anything but easy.

The MBH speedily embarked on disease prevention after discovering the cattle plague at Jersey's City's new abattoir. Dr. Elisha Harris spread the word about the emergency at Communipaw. After hearing from the registrar, Board President Lincoln demanded a prompt inspection of New York and New Jersey stock yards, and intelligence to determine if the disease prevailed within city limits. At Lincoln's bidding, board members visited all slaughterhouses supplying New York City on the afternoon of August 8th. Dr. Harris was sent to interview Henry Payson, the president, respectively, of the Communipaw abattoir. According to Payson, a large drove of Illinois stock had begun its journey from a town near Tolono named Homer. All cattle were perfectly healthy to begin with, but when signs of disease emerged in central Ohio on the second day of travel, the men on the train dumped thirteen sickened cows off the train, and continued east without batting an eye. Rather than having qualms about the death of 159 between Ohio and Pittsburgh, carriers shipped the Illinois cattle to Communipaw. On August 7th, only half of the original herd made it there.[49] As soon as the MBH arrived, sickened cows were quarantined like they had been in England after the Cattle Diseases Prevention Act.

[49]*New York Herald,* Aug 9, 1868, 9, *Times*, Aug 10, 1868, 8, *Times*, Aug 12, 1868, 8, Metropolitan Board of Health, Third Annual Report, 170

Having isolated diseased herds, the board moved to its next priority: exploratory medical investigations. From the beginning, board officers felt the cattle plague should be the object of meticulous study because its medical history had never been documented. On August 8th, Dr. Harris noticed abnormally high temperatures, rapid pulse, bloody secretions, and wobbly demeanor. From these observations, he concluded the ailment was not "the much-dreaded rinderpest," but was still extremely virulent.[50]

His calls for immediate scientific research were also influenced by the continued, unusual levels of human diarrhœal mortality in the city. In July, preventable filth triggered by excessive heat explained the uptick in fatal bowel disorders. The appearance of the cattle disease in August, however, offered a potentially new explanation. The board realized "that the alarming increase of obstinate and fatal diarrhœas in the metropolitan district was likely caused by the use of diseased meats."[51] In fact, the disturbing mortality rate was a "major incentive" behind studying the affliction. Harris decided that the viscera and fluids of dying cattle would shed light on what forms the disease took, and in turn whether the cattle disease was contributing to the heightened human death rate. The illness might be directly affecting human health if cuts of beef were unsafe to eat, and created gastrointestinal problems. To enhance his preliminary inspection, he asked abattoir president Henry Payson if board medical officers could make more examinations immediately. In what became a recurrent theme, Payson responded favorably.[52]

Unlike fellow commercial intermediaries, Payson, of the Communipaw slaughterhouse, cared tremendously about defending the public health, and was a key ally of the MBH. Whether out of greed, indifference, or ignorance, shippers along the way had squandered opportunities to stop the disease before it escalated. By not doing so, they handed a pestilence to their eastern

[50] *Times*, Aug 10, 1868, 8
[51] "Report of the New York State Cattle Commission," 4
[52] Metropolitan Board of Health, Third Annual Report, Pg. 53, 170, 226

countrymen in a stunning regulatory failure. Luckily, Payson displayed a greater regard for the public wellbeing. On Saturday, Payson submitted entirely to board authority by handing over slaughterhouse facilities to medical officers, even though the MBH was beyond its state jurisdiction. With the support of the board, he also advised the agent of the impure drove, John Alexander Fitch, to sacrifice all cattle to the fat rendering tubs so they would not reach meat markets.[53] Similar exemplary action occurred repeatedly.

In a conversation with Dr. Harris earlier in the day, Payson asserted that

> "…it would be well to have the governors of New York, Pennsylvania, and New Jersey take such action, in concert with the governor of Illinois, as might lead to the proper investigation of local sources of the disease and to a proper restraint upon the transportation of cattle subject to it."

Not only did the abattoir president comply with board policy, but he dramatically influenced it with this astute suggestion, displaying how "judiciously and honorably" he dealt with the cattle plague.[54] The MBH asked New York governor Reuben Fenton, New Jersey governor Marcus Ward, and Pennsylvania governor John Geary to inspect important Erie and Central railroad stations (on which the beeves had travelled), and examine cattle trains bound for their states to assess the safety of incoming western shipments. Board President Lincoln told Fenton attention should be given to Buffalo, Salamanca, Elmira, and Albany (important points on railroads). Geary and Ward were advised to take action wherever necessary. After receiving the telegram on Saturday night, all executives replied saying they would enact the policies.[55] English events had also illustrated the merits of railroad regulation on a regional level.

For nineteenth-century public health institutions, dealing with an emergency in such sweeping fashion was uncommon. As explained previously, public health had been a perpetually

[53]*Herald,* Aug 11, 1868, 3
[54]Metropolitan Board of Health, Third Annual Report, 170
[55]*Times*, Aug 9, 1868, 4

local issue in the nineteenth century, so inter-state communication in the realm of health and disease was extremely rare in 1868, and beyond. A decade after the Texas cattle disease in 1879, for example, a serious yellow fever epidemic in the Mississippi Valley exposed the need for concerted public health policy, leading to the creation of a National Board of Health. When yellow fever repeatedly threatened New Orleans in the early 1880s, the federal agency wanted to intervene, but was fiercely opposed by the Louisiana Board of Health, which shrieked of violations to states' rights. Louisiana physicians thought federal intervention "aristocratically" threatened the American people's right to self-government. Having provoked state animosity in 1883, the National Board of Health was discontinued.[56] The 1868 Texas cattle disease presented a stark contrast. Collaboration between New York, New Jersey, and Pennsylvania was an early priority for the MBH, and was regarded as "the beginning of the most essential duty that [required] united action."[57] State alliances of this sort are historically uncommon in the nineteenth century.

The Board of Health expected naysayers to denounce its activism, but decided that the general public would not permit idleness. In reference to the laggard response to rinderpest in England, the MBH believed that historical experience did not "warrant the belief that it would have been safe or prudent to have delayed action." The board (and Americans in general) had the horrors of the British cattle scourge fresh in their memory, and had no idea if the American cattle sickness was more or less fatal than rinderpest, meaning that health officers should not neglect any precautions.[58] The swift mobilization of the board in early August reflected this approach.

Luckily, the MBH's job was made easier by selfless private parties. On August 10th, John Alexander Fitch ordered the sacrifice of his infected herd, forfeiting thousands of dollars out of

[56]Wilson G. Smillie, "The National Board of Health: 1879-1883," American Journal of Public Health, 33.8 (1943): 925-930, 929
[57]*Times*, Aug 12, 1868, 8
[58]Metropolitan Board of Health, Third Annual Report, 170-171

concern for the public welfare. Local butchers had been in his ear, eager for a bargain and ready to pay if cows were sick or well, yet Fitch spurned their advances and listened to the recommendations of Payson and MBH officers.[59] The *Times* retroactively commented on his decision; "A more manly and resolute sacrifice of pecuniary interest to the public health has rarely occurred."[60] After he bought back nine cows that had already been sold, the slaughter of diseased cows began, just as it had across the Atlantic two years prior.

Payson and Fitch invited board officers to examine the carcasses for the first post-mortems on the eastern seaboard. After reaffirming the health of cattle at 100th St., Dr. Moreau Morris traveled to Communipaw with Dr. Roger Stiles, Dr. Benjamin Howard, and Chemistry Professor Charles Chandler (who would become indispensable to the New York Health Department's food safety campaigns of the 1870s) to perform the first post-mortem exams. Corresponding to Gamgee's observations, Dr. Morris noticed arched back, lowered head, droopy ears, bloody excrement, rapid pulse, and high temperatures among the three most diseased. The temperature, viscera, and blood of the trio were identical, indicating that the effects of the disease were uniform. This meant the affliction was extremely dangerous. Stiles, Howard, and Chandler, who were better-versed in physiology and the other sciences, were then called upon for further observation. In a communication with Dr. Harris, Stiles reported abnormal blood and urine composition, a lack of blood cells and disks, and kidneys filled with dark serum. While the physicians did not arrive at a diagnosis in this first round of medical research, they confirmed the absence of rinderpest, and initiated medical observation the board registrar had requested.[61]

Although the board clearly acted with a sense of urgency, a *Herald* reporter visited the Communipaw slaughterhouse on Sunday, and unearthed disturbing news. He claimed that

[59]*Herald,* Aug 11, 1868, 3
[60]*Times,* Aug 12, 1868, 8
[61]*Herald,* Aug 11, 1868, 3, *Times,* Aug 12, 1868, 8, Metropolitan Board of Health, Third Annual Report, 172, 186

anyone who recognized the appearance of healthy food could discern that none was available at the abattoir. Cows ready for slaughter struggled to stand, resembling animals suffering from heat exhaustion, and meat was a sickly yellow and purple. The best available was said to convert anyone into a vegetarian and deter any starving person. Unsurprisingly, New Yorkers feared beef came from this source, and became more alarmed. Even worse, more soiled meat was on its way. Eighteen carloads from Pittsburgh were reputably bound for New York City, which meant roughly 250,000 pounds of diseased beef threatened to grace dinner tables. More gastrointestinal illnesses might be forthcoming.[62]

Despite the looming menace, board policy to ensure no infected meat reached the metropolitan area continued into the following week. Beginning on Monday, August 10th, squads led by Sanitary Police Captain Edgar Lord guarded isolated herds at slaughterhouses, and patrolled meat markets to remove sick cows and blemished meat. On the same day, Dr. Morris and his team of inspectors continued to monitor potential points of entry by examining hundreds of cows at Bergen's stockyards and slaughterhouses on 45th and 47th street. After finding all in order at these places, Morris traveled back to Communipaw to rendezvous with members of the Board of Health.

Five surgeons were at Communipaw trying to reach a more precise diagnosis, and were joined by President Lincoln, Dr. Harris, Gov. Ward, and Morris and his inspectors in the late afternoon. Together, these authorities toured the slaughterhouse, and found all cattle in fine condition, except for the quarantined herd being deposed of. During the gathering, Board President Lincoln told Gov. Ward he hoped he would "lend all his aid in preventing the deportation of infected droves across the river." The MBH was "just an interloper in New Jersey," but the board president confidently made this request nonetheless. Ward said he would

[62]*Herald*, Aug 10, 1868, 7

commence work to "liberally [aid]" the MBH in the morning.[63] Astonishingly, the state executive, like Payson before him, yielded to the board, even though the MBH had no authority in New Jersey. Compliance of this sort would likely not have occurred without the folly of government inaction during the British rinderpest scare. Shedding concerns of legal jurisdiction, Gov. Ward and Payson cooperated out of higher public health concerns.

The Board of Health also sought partnership from more distant states exposed to the cattle disease. Hoping to obtain "precise and circumstantial records" of sick cattle, "circumstantial accounts of each outbreak" among native herds, dates that would reveal the "length of incubation," information regarding the effects of the disease, and evidence on the origins of the plague, the MBH began a dialogue with health authorities from other states that would last until December. Hundreds of telegrams were dispatched to distant health officials "along the great routes of cattle transportation, from Kansas City to Cairo, to Toledo, Pittsburgh, Buffalo, and Providence." Over a four month period, the MBH contacted the Sanitary Superintendent of Chicago, the president of the St. Louis Board of Health, health authorities in Rhode Island, the mayor of Akron, Buffalo health inspectors, ordinary farmers across the Midwest, and countless others. Recipients sent the MBH information on herd history, symptoms, post-mortem exams, and local health policy. Like the initial telegrams to Fenton, Ward, and Geary, this inter-state cooperation is historically noteworthy. Conditions limited to New York City did not suffice for the Metropolitan Board of Health. New York health officers conceived of the cattle plague not only as something of local importance, but as a national concern, and wanted an amalgamation of intelligence to generate a holistic picture of the mysterious health problem.

[63] *Herald,* Aug 11, 1868, 3

World columnists were convinced that such concerted action would be sufficient. By saying that "it was all but certain" that no diseased cattle would reach the city, and that all western sources had been obstructed, the partisan press tried to downplay the danger of the pestilence, perhaps posturing to discredit the board's future activism. *The World* was also more inclined to congratulate anonymous "state authorities" for their actions, instead of explicitly recognizing the hated MBH.[64]

It was becoming clear, however, that the Board of Health was tackling a truly challenging health issue which required sustained diligence, and was doing so quite well. Good news came from the Bergen cattle yards in Hudson City, NJ, at the board's meeting on August 11th. The cattle disease made an additional appearance at Bergen, but was under control, and offered more opportunities for more medical research. On August 10th, the Bergen stockyard superintendent asked Gov. Ward and Dr. Harris how to handle sickened animals from Indiana now in his charge. The morning of the 11th, Sanitary Commissioner Stephen Smith, Dr. Harris, and Dr. Morris visited Bergen, which was a prominent Erie railroad outpost. After discovering 15 ill cows in a drove of 66, board authorities directed the superintendent to quarantine the prostrated beeves, unreservedly disinfect his establishment, and gradually boil down cows for tallow production. The cattleman quarantined them all, and fenced off the pasture they had previously occupied.[65] In such a fashion, Bergen was seemingly secured very quickly.

The symptoms of the infected Indiana cows mirrored those observed at Communipaw with stunning "completeness," which indicated that Communipaw's cattle disease was not an isolated case. With the aid of Gov. Ward, four of the herd were accordingly "made the subject of the most thorough investigation" in preparation for post-mortem exams. Before they were killed,

[64] *World*, Aug 11, 1868, 5
[65] *Times*, Aug 12, 1868, 3, Metropolitan Board of Health, Third Annual Report, 187

Morris recounted a grotesque scene. Bloody snot flowed from one of the cow's nostrils. The other three stood with their heads "firmly against each other," so impaired that they could not feel their horns piercing one another's flesh. Once slaughtered, board physicians immediately went to work. With his microscope, Dr. Stiles "revealed all the morbid phenomena in blood, bile and tissues." The board thought it was imperative to examine vital organs instantly after the carnage because such measures would hopefully yield the most accurate scientific results which were free from post-mortem alterations.[66] The MBH was using immense care for pathological accuracy.

Other intelligence at the August 11th meeting inspired confidence. Captain Lord noted that no unwholesome steaks had made it to markets thus far, but he promised to continue his surveillance of the epizootic. At the meeting, Lord and all board members were said to be acting with great efficiency. Sanitary inspectors at stock yards had "ferreted out the inlets and outlets of suspected meat in New York," and diseased cattle had disappeared from the Pennsylvania, Fort Wayne, and Chicago railroads.[67] Furthermore, the board noted that Gov. Ward, instead of idly handing the task to a subordinate, asked his attorney general how much he could personally do to restrain the disease's spread.[68]

The regulations Dr. Harris formulated in his reprinted public message were also encouraging. Transporting diseased meat to the metropolitan area was officially prohibited. If impure beef did find its way there, the following apparatus for food safety was established;

> "The offering of any such diseased animals, or any portion of their flesh, for sale for food within the Metropolitan district of New York will be regarded as a culpable offence against the sanitary ordinances relating to markets and food articles, and will be punished with the heaviest penalties the laws provide. No relaxation of this order can be allowed."

[66]Metropolitan Board of Health, Third Annual Report, 175
[67]*Herald*, Aug, 11, 1868, 5
[68]*World*, Aug 12, 1868, 5

Unlike England, the MBH enumerated very specific regulations from the beginning of the cattle disease. In the following months, American health authorities would persistently enhance a detailed regulatory framework.

Harris also advocated disinfecting railcars in his report. Board officers had disinfected Communipaw's stockyards the day prior, and Harris thought similar procedures should be applied for every railcar exposed to sick cattle. The floors, sides, and residual manure of used rail cars were to be thoroughly dosed with a combination of carbolic acid, quick lime, and oil of coil tar.[69] Despite no knowledge of bacteria, disinfection was an essential component of sanitary science and MBH policy. For now, New York physicians relied only on the abstract virtue of cleanliness, as the Bacteriological Revolution would come later in the nineteenth century.

Unfortunately, the MBH still lacked information on the true nature of the epidemic. Health commissioners thought ascertaining the cause of the disease should be the number one priority.[70] Regrettably, the board's own medical specialists, Dr. Morris, Stiles, and Howard, were unable to announce more than simply making their dissections at the Bergen yards. The violent progression of the disease made scientific investigation difficult. Fatal symptoms ensued so rapidly that observing quarantined cattle for more than 36 hours was almost impossible. Studying "wild bullocks" in open pastures without skilled aids also impeded the scientists.[71]

Although establishing a medical history of the disease might take longer than expected, the delay did not keep others from discussing medical topics. Confusingly, Harris would not rule out the possibility that the plague was contagious, yet hinted that Gamgee and Illinois authorities might prove that it was not infectious after all. Even if it was not infectious, Harris would not be

[69]*Herald,* Aug, 11, 1868, 5
[70]*World,* Aug 12, 1868, 5
[71]Metropolitan Board of Health, Third Annual Report, 236-238

reassured, since he believed the disease would still be transmittable where infected cattle had trodden.

Just as Harris remarked that the cattle disease might be contagious, a *Herald* article contended that it most certainly was not. Identifying it with an ailment well-known in southern Germany, eastern Austria, and Russia, the writer argued that after a winter of feeding on corn, Texas cattle consumed grasses in the spring, and this dietary change was so pronounced that cow kidneys filled with blood that was discharged during urination. Farmers familiar with the malady called it Spanish fever, and did not believe it was contagious.[72]

Amidst this hazy medical discourse, the board did conclude a few things about the obscure disease. Harris categorized the ailment as an infectious fever or plague, and a kind of malignant typhus that intensified with time.[73] The malignant typhus classification worried *New York Times* newspapermen, who pointed out that this was the term English veterinarians called rinderpest. They hoped that New York's cattle disease would be less severe than rinderpest, which "threatened to exterminate the entire stock of cattle in England" two years prior.[74]

In addition, the board was regrettably mute on personal safety. Health commissioners thought New Yorkers should be able to follow "simple rules" to avoid purchasing tainted steaks, meaning experts would have to definitively establish the "peculiar condition and appearance" of impure beef. The admirable request was rebuffed by Harris. According to the registrar, disease was easy to recognize in living animals, but impossible to identify in meat markets.[75] Metropolitan residents would have to continue to have faith in the Board of Health for food safety.

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[72]*Herald*, Aug 12, 1868, 5
[73]*Times*, Aug 12, 1868, 8
[74]*Times*, Aug 12, 1868, 4
[75]*World*, Aug 12, 1868, 5

Data fielded by the board was also disquieting. Diarrhœal deaths made up an increasing percentage of overall mortality. Over 700 people died during the week ending Saturday, August 8th, with 40 percent perishing because of gastrointestinal problems. Child and adults died more abruptly than in previous months, further heightening public angst. [76] Citizens of New York feared that tainted food (that "no civilized community should permit") had been sold in their areas.[77] Again, it seemed plausible that New York's food supply was affecting mortality just as much as the scorching, filth-friendly weather.[78] The connection between diseased meat and human diarrhœal deaths may never be proven empirically, but it is reasonable to speculate there was some correlation. Given the action of the Board of Health, however, journalists hoped foul foods would no longer contribute to preventable death.

Despite few pathological specifics and heightened diarrhœal disorders, there was no lack of action by the states involved. On August 12th, executives moved decisively. Gov. Ward requested that James Norris, the president of the New Jersey Agricultural Society, protect the public health under a law given to the association during emergencies. In 1866, people feared that rinderpest might enter the state if safeguards were not enacted, so the New Jersey legislature empowered the agricultural society to prevent the importation of cattle from any state or foreign country it deemed dangerous. If brought from prohibited areas, cattle could be seized by society agents and killed without compensation, and owners would face a considerable fine.[79] Norris carried out Ward's orders in August, preventing cattle from Illinois, Missouri, Texas, and any other infected state from entering New Jersey.[80]

[76]Metropolitan Board of Health, Third Annual Report, 54
[77]*Herald*, Aug 12, 1868, 5
[78]Metropolitan Board of Health, Third Annual Report, 54
[79]*World*, Aug 14, 1868, 8
[80]*Times*, Aug 13, 1868, 1

Gov. Fenton was also preoccupied by the cattle disease. Board President Lincoln telegraphed him again on Wednesday, requesting that Fenton order the inspection of cattle trains at Salamanca, Elmira, Buffalo, and Albany. The governor willingly responded by saying, "I have adopted measures in accordance with your views."[81] Daniel Merchant, Fenton's private secretary, announced that the governor had also contacted the mayors of Albany and Buffalo, and authorities at Dunkirk and Jamestown, to brief them on matters related to the cattle disease. "Prompt measures" were taken at these areas, and Fenton promised additional aid so "no danger to the public health should arise."[82] Together, Ward, Fenton, and Geary stationed guards along all state railroads to watch for ill cattle, and mandated that a "competent medical officer" ride with every cattle car. This way, if the disease appeared, the car could be stopped, and the cows could be quarantined or shot.[83] The latest executive decrees further demonstrated the lack of policy impediments on an inter-state level.

As these regional decrees were seamlessly enacted, a board committee returned to Bergen and Communipaw. At Bergen, eleven more cattle had fallen ill, and were quarantined for observation by Dr. Harris, and Dr. Morris.[84] The board managed the precarious situation with this persistent surveillance. At Communipaw, members saw "all things improving." Besides the few cattle retained for research, the last of Fitch's herd had been slaughtered and boiled down. No new cattle had arrived since Tuesday, and the herd that came then was perfectly healthy. More were expected on Friday, but only from railroad stations which had been briefed on precautionary necessities. Dr. Harris was very optimistic given these conditions, telling New

[81]*Times*, Aug 13, 1868, 1
[82]*Times*, Aug 14, 1868, 8
[83]*New York Observer and Chronicle*, Aug 13, 1868, 46, 33
[84]Metropolitan Board of Health, Third Annual Report, 187

Yorkers not to fear purchasing beef because spoiled steaks had been excluded from markets since Saturday.[85]

Board officers were convinced that diseased meat had not reached the metropolitan area since the 8th, but the economic effect of the cattle plague was unclear, with newspapers offering divergent interpretations. The *Herald* contended that the beef trade had fallen off 50 percent, causing prominent markets and restaurants to complain about recent business. On the other hand, *Times* writers noted that beef demand was stable, and had actually picked up in select areas. This upswing was accredited to trustworthy butchers, who did not want to jeopardize customer trust, and used "more than ordinary caution in selecting beef."[86]

The *World's* assessment lay somewhere in between. While the Democratic press agreed with the *Herald* that sales and prices were dull in mid-August, the paper's columnists characterized the butchers in a similar light as the *Times*. In contradiction to the Dr. Harris' claim, they argued that deleterious meat was "so plainly discoverable and so easily detected" that no butcher would purchase it. To reconcile this paradox, the *World* argued that butchers were acting honorably, and that the commercial dip was a result of a "foolish panic" regarding the "so-called Cattle Plague." Scoffing at the public health hazard, Democratic writers claimed that the unfounded excitement would disappear with a better understanding of the facts.[87] Conversely, the excitement of most sources was waning not because alarmism was dissipating, but because the MBH was so speedily confronting the cattle disease that many sources were convinced it would be short-lived.[88]

Modifying the orders of the NJ Agricultural Society further illustrated the board's political vigor. On August 12th, Gov. Ward had the society ban cattle imports from certain states.

[85] *Times*, Aug 13, 1868, 2
[86] *Herald*, Aug 13, 1868, 4, *Times*, Aug 13, 1868, 2
[87] *World*, Aug 11, 1868, 3
[88] *Times*, Aug 13, 1868, 2

As soon as New Jersey adopted the policy, the MBH advised Ward to revoke it on August 13th. Instead, the MBH preferred to have "inspectors at all the points where railroads enter the state and at their several termini near New York." Rather than a firm moratorium, inspectors at these places were to "thoroughly examine all cattle…and permit only those to go forward which are thoroughly healthy and quarantine all diseased and all that have been exposed to contact with the drippings and excrements of diseased cattle."[89] Instead of ignoring the MBH like he legally could have, Ward followed orders and retreated from the outright prohibition on cattle shipments. In such a manner, the Board of Health instantaneously corrected a policy it did not like in a neighboring state. Identifying the issue itself indicates how crucial inter-state railroad regulation was to the MBH.

Board officials complemented this railroad regulation with more sweeping guidelines which progressively enhanced health regulations. They were issued on August 14th, and were designed to be applicable across state lines;

"1. Herds of cattle now affected in pasture should not be transported, but all cattle sick should be immediately separated from the herd, and the herd moved to a new pasture, if possible.
2. No cars should be used in the transportation of cattle which have not been properly cleaned and disinfected according to rules herein given.
3. If the disease appears among cattle en route, they should be disembarked and separated from the well cattle, and the herd should be kept under skilled inspectors until sanitary restrictions are withdrawn. They should be supplied with pasturage and soft food, salt, and an abundant supply of fresh water.
4. The herd should not be in pens or pastures which have previously been used for diseased cattle, unless such enclosures have been thoroughly cleaned and disinfected.
5. Cattle, on arriving at market, should be yarded at a distance as far as practicable from enclosures where diseased cattle have been or are kept, and should be properly supplied with water and food.
6. When disease appears among cattle after arriving at market, the same care should be exercised as when the disease breaks out, but none of the exposed herds should be slaughtered until sanitary restriction is withdrawn.
In conclusion, we would suggest that at suitable places on the railroads over which diseased cattle are liable to be transported, and at every herd yard used by the transport

[89] *Herald,* Aug 14, 1868, 8

cars on such railroads, there should be a skilled and searching inspection of every animal that arrives from the west or from any infected district. The inspectors should be on daily communication with each other and with this board."[90]

If followed by railroad companies and cattlemen, the board was confident the recommendations would further constrain the disease's spread.

The epidemic seemed harder to contain in the Midwest. In an editorial appearing in the *Chicago Sun Times*, a farmer estimated that losses totaled roughly 1000 in Tolono, and the disease threatened to exterminate the majority of herds in neighboring areas of Central Illinois. Farther north, the cattle scourge was rampant in the Chicago Union Stock Yards (one of the nation's largest slaughterhouses and one of the most pivotal distribution centers). By August 14th, over 3000 cattle valued at $120,000 had died as a result. The Illinois legislature had banned the importation of Texan herds, but the bill's constitutionality was challenged, so municipalities took matters into their own hands. When a caravan of 360 longhorns approached a town north of Tolono, an angry mob forced the train to turn around before it unloaded. More attempts at the now illicit cattle trade were unsuccessful.[91] Excitement ran "unabated at every point" receiving cattle in the Midwest, and many ordinary Americans were hostile to the previously lucrative enterprise.[92]

New York was clearly better off than the American interior, but the specifics of disease transmission remained a thorn in the side of all parties involved. Thus far, the only results from medical investigations were disagreements among doctors.[93] Gamgee's team, which continued working in Central Illinois, had established that the disease was spread by Texas herds, was not rinderpest, and was not communicable by native cattle. The efficacy of quarantine and restricting

[90]*Herald*, Aug 15, 1868, 7
[91]*Herald*, Aug 17, 1868, 5
[92]*Times*, Aug 17, 1868, 5, *World*, Aug 17, 1868, 5
[93]*Prairie Farmer*, Aug 15, 1868, 39.7, 52, Times, Aug 17, 1868, 5

the trade during the winter were also ascertained by the USDA's team. Other than these basic facts, disparate opinion pervaded the medical discourse.

American doctors posited multiple epidemiological theories regarding the cattle disease. Gamgee contended that it was transmitted via animal excrement. Others deduced that it was spread by ticks which buried into skin and feasted on the blood of livestock. *The World* gravitated towards this hypothesis, mentioning earlier in August that all animals were covered in abnormally large ticks which "alone accounted" for the symptoms.[94] A foot-borne illness was also suggested. A *Prairie Farmer* columnist belittled the latter two theories by citing the deaths of tick-free animals, and arguing that no evidence supported a foot-borne virus. At other places, all infected cattle were covered with insects similar to wood ticks, so the tick theory commanded more support.[95] A Chicago investigatory team surmised an alternative explanation, saying that the "causes were nothing more nor less than the consequences of protracted ill usage and starvation."[96] The advocates of each theory assailed the ideas of their intellectual opponents, so it was impossible to tell which beliefs were accurate.[97]

Part of the problem was geography. The cattle disease had been confined to Kansas, Missouri, and other western states during the early years of the Texas cattle drives. Accordingly, eastern markets like New York City displayed a "profound unconcern" for the symptoms and history of the ailment.[98] Instead, these places supplied their booming urban centers with western beef through 1868, and neglected cautionary measures even though they had heard of a vague ailment spread by Texas herds. When sickness visited eastern stockyards, physicians scrambled to find an explanation. The Board of Health furiously searched for answers with its team of

[94]*World,* Aug 11, 1868, 5
[95]*Prairie Farmer,* Aug 15, 1868, 52, *Medical and Surgical Reporter,* Aug 15, 1868, 139
[96]*Herald,* Aug 17, 1868, 7
[97]*Times,* Aug 17, 1868, 2, *Medical and Surgical Reporter,* Aug 15, 1868, 139
[98]*Times,* Aug 17, 1868, 2

physicians (although this was also influenced by the summer diarrhœal mortality). Newspapers, laymen, and practitioners formed their own opinions about the ill-documented cattle plague. The result was a convoluted ruckus.

On Sunday, August 16th, however, New York medical officers identified a potentially restorative treatment for infected beeves. *The World* had fielded an article from Buffalo on August 12th which claimed that sick cattle had been overheated, overdriven, and overcrowded, and that rest, fresh air, and food had helped cure certain cows. Providence also believed proper sustenance was a solution. According to a Rhode Island health officer who wrote Dr. Harris on the 14th, sick cows feeding on ocean-side salt pastures had rapidly convalesced.[99]

The Metropolitan Board of Health followed suit, and proper nourishment was just as effective in New York. Beginning on the 14th, the four cattle designated for observation at Communipaw were fed salt meadow grass, a diluted carbolic acid mixture, and had disinfectants dispensed in their pens. Although one cow was beyond assistance, the three others began improving on Saturday, and were nourished to greater and greater health as the week began. Inspectors could not yet publish the results of their study, but the discovery of a simple remedy was significant.[100]

The reassurance of discovering a remedy did not last long. On Monday, August 17th, 14 carloads of exposed cattle were received by the Bull's Head stock yards in the metropolitan area. The glaring breach in security suggested that more needed to be done regarding freight regulation. Nevertheless, the Board of Health sent Dr. Morris and a group of inspectors to handle the situation. The number of exposed cattle totaled 720, and 85 were already afflicted.

[99]*World,* Aug 13, 1868, 1, *World,* Aug 15, 1868, 5
[100]*Times,* Aug 18, 1868, 1, *Herald,* Aug 18, 1868, 10, Metropolitan Board of Health, Third Annual Report, 188

Predictably, all exposed herds at Bull's Head were quarantined, the yards were disinfected, and affected cows were boiled down.[101]

Butcher avarice was another challenge to board policy. While many cooperated with the MBH to prevent the introduction of impure meat, others who prioritized pecuniary gain over human life tried to smuggle sick cattle into the city. On August 13th, rumors abounded that small dealers had snuck in diseased meat. In many places, such as Albany, Buffalo, and Chicago, "shyster" butchers would buy "maimed, bruised, or diseased" cows, remove the foul cuts, and sell the beef for reduced prices. Poorer New Yorkers found the cheap meat they had always wanted in this unwholesome stock. Because they were "unwary" of its quality, however, the "poorer classes" were subject to a "cruel and inhumane imposition" by commercial interests.[102] *The World,* on the other hand, argued that smuggling was unproblematic because foul food was easily distinguishable to commoners, in contrast to the board registrar's earlier claims.[103] To Democratic writers, personal responsibility, rather than MBH policy, would ensure food safety.

Herald columnists took the threat more seriously. They praised board officer vigilance, which had been "taxed to the utmost," and railed against offenders who had "sacrificed the utmost honesty," and "trifled with human life." By August 17th, the last of the rogue cattle were thankfully rounded up. Republican writers wanted the perpetrators punished immediately, and hoped the MBH possessed sufficient evidence to enforce the food safety laws it had issued.[104] Successive hazards to the public health had been thwarted. Nevertheless, holes in the board's safety network had been exposed.

The continuing challenges posed by the cattle disease provoked an additional executive undertaking. On the 17th, Gov. Fenton organized a State Board of Cattle Commissioners to

[101] *Times*, Aug 18, 1868, 4, *Times*, Aug 18, 1868, 3, Metropolitan Board of Health, Third Annual Report, 189
[102] "Report of the New York State Cattle Commission," 23-24
[103] *World,* Aug 14, 1868, 8
[104] *Herald*, Aug 18, 1868, 10

protect cows from infectious diseases.[105] The 1868 cattle disease was so serious that it necessitated the creation of this entirely new organizational body via executive fiat. A law passed in 1866 authorized such a council, and was a defensive posture emanating from that year's rinderpest scare. The legislation reputably gave the commission immense authority, and the body was expected to augment the earlier measures of the governors and Board of Health.

The aforementioned expectations were sufficiently fulfilled. On Tuesday, August 18th, the chosen commissioners, Marsena R. Patrick (former provost marshal in the Army of the Potomac), John S. Gould, and Lewis F. Allen began their public message by outlining broad powers:

> "The commissioners have the power to act and are directed to establish all such quarantine or other regulations as they may deem necessary to prevent the spread of the disease 'Rinderpest' and other contagious diseases on its transit in railroad cars, by vessels, or by driving along the public highways, and also to appoint assistant commissioners whose duty it shall be to carry out such quarantine and other regulations, and who in order to affect this are clothed with all the power conferred by this act on the said commissioners or their agents or appointees."

With this expansive platform, the organization appointed assistant commissioners, including the board's own Dr. Moreau Morris. Morris was charged with monitoring the metropolitan district, and his position required informing all persons exposed to the Texas cattle trade of the measures adopted by the commission. Albany Medical College Prof. Jacob Mosher was made assistant commissioner of the Albany district, and Dr. William Manlius Smith was sent to secure the Niagara Falls Suspension Bridge. Buffalo, Jamestown, and Dunkirk were controlled by Buffalo's Board of Health, so no assistant commissioners were appointed for those areas. Assistant commissioners were supposed to talk daily with Patrick, Allen, Gould, Gov. Fenton, and Board of Health President Lincoln for future intelligence and orders. The

[105]Rhode Island governor Burnside and Ohio governor (and future president) Rutherford B. Hayes created similar State Cattle Commissions in their states, August 25th and 26th

commission also hoped that sanitary authorities in adjacent states would heed its recommendations.

In addition, the commission published stricter protocol for the transport and handling of cattle. The new regulations built on the earlier work of the MBH, in that they reiterated the importance of disinfecting stock yards, railcars, and all other places upon which diseased cattle had been moved. The commissioners also advised giving exposed cattle ample food and water - a nod to the curative measures the board made use of in mid-August. However, the directives deepened existing public health defense systems.

The cattle commissioners' first suggestion broadened the second article of the MBH's August 14th regulations. That earlier stipulation read, "No cars should be used in the transportation of cattle which have not been properly cleaned and disinfected according to rules herein given." The state commission clarified what this entailed. All railcars containing cattle were to be stopped at "convenient points" before entering New York State. If they were not in the "proper sanitary condition," the livestock, even if completely healthy, would be removed from the car, which was to be cleansed and disinfected. Once disinfection was finished, cattle shipments could resume, assuming cargo remained healthy. For the cars who failed the initial assessment, further points of stoppage, examination, and cleansing could be randomly assigned by the commission.

In its next provision, the commissioners strengthened the Board of Health's third proposition from earlier in the month. If any cows were slaughtered before making it to market, the skins had to be "disinfected, properly preserved and kept on the premises, or deeply buried." Carcasses could be converted into tallow, but could also be disinfected and buried. No sick cow was to be killed, however, before an assistant commissioner was on hand to pronounce it beyond

recovery. Interestingly, this latter requirement departed from the precedent of wholesale slaughter, which had been employed at Communipaw and other stock yards when the cattle plague first surfaced. Now, state authorities were more optimistic about livestock recovery. Commissioners Patrick, Gould, and Allen also added precision to herd isolation by mandating that quarantines be at least 1000 feet. With a more definitive regulatory blueprint, Governors Ward and Geary fulfilled the commissioners' aspiration for inter-state cooperation. Both swiftly adopted the new instructions, and the movement of impure herds was stopped in both states, making sanitary control of the metropolitan district "more complete."[106]

As such, state collaboration initiated by the Metropolitan Board of Health vigorously continued. Inter-state partnership began with a telegram on August 8th, and from a New York City agency evolved into a state organization whose recommendations were embraced by Pennsylvania and New Jersey. During this process, there were no signs of animosity, and states treated the epidemic with absolute diligence instead of worrying about local prejudice like they could have. The Board of Health catalyzed this extraordinary coalition, launching inter-state communication and affecting every shape it took. Involving Gov. Fenton from the beginning was crucial because he was the one responsible for the cattle commission which the board could work with for broader, regional control. Still, the commission drew heavily from early MBH policy, and promised to keep the board intimately involved, particularly with the selection of Dr. Morris.

This may not have been what the board wanted. Regular duties were so extensive that they hoped the State Commission, once formulated, could "assume all the responsibilities and expenses of the investigations which needed to be pursued."[107] Several days after the commission's creation, however, the necessary funds for this happen were unavailable.

[106]Metropolitan Board of Health, Third Annual Report, 55
[107]Metropolitan Board of Health, Third Annual Report, 173

Consequently, the commissioners advised the Board of Health and Sanitary Committee to independently continue their policies. Unable to transfer responsibility for the cattle disease, the MBH carried on, but "invited the cooperation and advice of the commissioners." While the commission did not have the financial means to handle the issue alone, it possessed broader, regional authority than the Board of Health. This meant there would still be a "hearty unity of effort" between the two bodies. The commission could issue more legally powerful recommendations, and could more widely dispatch health authorities, but could not relieve the board entirely.[108]

Thus far, New York's public health decrees expanded on, but were very similar to England's during the rinderpest crisis. Both the Metropolitan Board of Health and the 1866 Cattle Diseases Prevention Act mandated the disinfection of stock yards, pastures, railcars, excrement, and clothes. Quarantine and preventive slaughter were arranged, and the remains of livestock were dealt with almost identically. Halting the railroad transportation of cattle was also a priority. England's policy examples were paying dividends in the United States.

That the response of New York and other states was an extension of the British government's is both logical and peculiar. The initial failure of England's *laissez-faire* public health policy prompted an overdue but effective law. Understandably, Americans looked to this legislation during their cattle epizootic two year later. Nevertheless, adopting the English approach was a gamble. American doctors were very sure that the prevailing Texas cattle disease was not rinderpest. Mimicking a policy tailored to it was therefore unsure to thwart the American case. Other than the experience of England, however, American health authorities had little to rely on. The gamble seemed to be paying off.

[108]Metropolitan Board of Health, Third Annual Report, 179

Despite select similarities, differences abounded between the American and British diseases. New York's reaction to an outbreak was immediate, while England's was belated. The disease had an eight month head start in Europe, but barely got started in the United States. Perhaps the biggest take-home lesson from the rinderpest crisis, apart from the tenets of the Cattle Diseases Prevention Act, was that government inaction was not permissible during epizootics. New York was terrified by rinderpest and responded to the Texas cattle disease with greater urgency than the Liberal Party. American public health authorities seemed most determined to avoid England's critical mistake; not halting railway transport soon enough. As we have seen, much of the aforementioned public health politicking was related to regulating the movement of herds.

To continue fighting against the transportation of sickened cows, the State Cattle Commission wanted Dr. Morris to travel upstate to protect New York City. On the 19th, Morris received a telegram from the commission notifying him of his appointment to assistant commissioner. Commissioner Patrick ordered Morris to Millerton, NY (northeast of Poughkeepsie near the Connecticut border), where diseased cattle had been discovered. Millerton was a point on the Harlem railroad, and this connection was likely responsible for the cattle plague's appearance. There, Morris was to enforce the recommendations of the MBH and State Commission.[109]

Morris arrived on the evening of the 19th, and proceeded to gather intelligence regarding sickened beeves the following morning. He found a herd of cattle which belonged originally to Andrew and Nathaniel Smith, and was on its way to the metropolitan area. The Smith family lived in Albany, and had received a mix of Midwestern stock in early August which they had planned to ship to New York City. On August 9th, their herd of 65 had departed. On the 12th,

[109]Metropolitan Board of Health, Third Annual Report,189

twenty cows had been left at the town of Copake on the trip south, and one had died there on the 17th. The other 45 cows had been stationed at Millerton on the 13th, and five were noticeably sick when Morris arrived (both of these rural towns presumably served as intermediate resting points). From what Morris saw, the disease at Millerton matched what he had seen at Communipaw and Bergen.

To his dismay, Morris learned that 17 of the drove left in Millerton had been sent to New York City the day he had travelled north. The owner feared that the epidemic would spread and incur financial loss, so he selfishly shipped part of his herd to North America's biggest city. Morris hastily telegraphed MBH headquarters to ask sanitary officers to pursue the escaped group. Board agents tried to locate the missing cattle, but were unsuccessful.

Despite the mishap, the 24 head remaining at Millerton and 19 at Copake still demanded sanitary attention. Even though only two were visibly sick at Millerton, all cows were part of a suspected herd, and were quarantined. Because he needed to move on to Copake and other localities, Morris put William Barton in charge of the Millerton quarantine grounds. Barton was instructed to hold the 24 cattle for one month, keep other steer 1,000 feet from the quarantine line, provide the herd with salt and feed, isolate any more sickened cattle, disinfect stock yards, and use disinfectants during burials. With Millerton seemingly secured, Morris travelled 12 miles to Copake on the 20th, and issued similar orders.

While working in these two towns, Morris learned of more diseased cows in the same county. At Abiah Baylis' dairy farm in Amenia (7 miles south of Millerton), nine cattle had died over a period of four weeks. During the course of the malady, milk from exposed cows had been

sent to New York City daily. Morris quickly put an end to this, and gave a local doctor the same recommendations Barton had received.[110]

The work of Dr. Morris had a profound effect on the public mind. Morris had achieved high regard as the Board of Health's most active sanitary inspector during the cattle disease, and now his broader powers helped mitigate anxiety. His trip north had been a success, and on the 21st he returned to New York City, where he began to refurbish health organization. Because he might be needed elsewhere, Morris appointed a group of physicians to take charge of facilities at the National Drove yards, Communipaw, and Hudson City for "constant inspection and sanitary supervision." These men were required to report to Morris daily. With this "simply and readily managed organization," as well as the assistance of the Board of Health and Metropolitan Police Department, the "proper inspection and police of all herds and herd trains, and the timely care of all infected cattle" was further enhanced.[111]

On the same day they sent Morris upstate, Patrick, Allen, and Gould commenced their own work. With Allen in charge of western New York, Gould in charge of the east, and Patrick in charge of the central part of the state, the trio separated on the 19th, and began a "rapid survey of each district." Having completed their surveys, and appointed assistant commissioners to properly handle certain areas, the trio of commissioners convened at Buffalo three days later because the city was "the principal gateway through which cattle [entered] the state from the West." With the help of health officials, railroad officers, and the mayor, a system of inspection, quarantine, and disinfection was created on the 24th. The next day, the commission traveled to Dunkirk, the western-most point of the Erie Railroad, and issued similar regulations to be overseen by another assistant commissioner.

[110]Metropolitan Board of Health, Third Annual Report, 189-190
[111]Metropolitan Board of Health, Third Annual Report, 179,180

To completely sever Buffalo's connection to the Texas cattle trade, however, the commission would have to again tread on shaky legal ground. Erie, Pennsylvania, was fifty four miles from Dunkirk, and was an important point on the Lake Shore Railroad which led into Buffalo, yet had done nothing to prevent the spread of the cattle disease. Like the Metropolitan Board of Health earlier in August, the State Cattle Commission exerted its will on an area beyond its jurisdiction. The commissioners met with an Erie transportation agent, who agreed to mimic Buffalo and Dunkirk's regulatory system. This extended the commission's "quarantine regulations some twenty five miles beyond the limits of [New York State]." In addition, Jamestown, the last "gateway for cattle to enter [New York] from the West," was attended to on the 27th. In a week, the State Cattle Commission seemingly "established a system of inspection at every point where western cattle [entered]" the state.[112]

New York's new, regulatory bureaucracy aligns with broader historical trends in the late-nineteenth century. The success of government-led mass mobilization during the Civil War made it difficult to denounce the efficacy of the state, and "convinced many Americans of the need and usefulness of government regulatory control." For instance, the public health controls of the United States Sanitary Commission were valued in Union military camps and later in cities, but regulatory administration soon encompassed more than public health issues. After the war, more and more private ventures fell under the blanket of the public interest, as states created railroad regulatory bodies, restricted the use of dangerous chemicals, regulated utilities and grain elevators, and as we have seen, the transport of Texas cattle. The creation of a State Cattle Commission in New York reflects the rise of the "administrative regulatory state" in the late

[112]"Report of the State Cattle Commission," 6-7

nineteenth century (for a heated debate on the growth of government regulation, see the holding and dissent in the 1877 Supreme Court case *Munn v. Illinois*).[113]

As New York's Cattle Commission cracked down on the transport of diseased longhorns, intelligence from the American interior continued to be disconcerting. This furthered the perception of the epizootic's east-west dichotomy. In contrast to what New Yorkers read about the MBH and the State Cattle Commission, Gamgee's team incessantly heard sobering news while traversing the Midwest. The disease exterminated entire Midwestern herds, and depleted the wealth of entire families, who angrily barred and sometimes shot the Texas culprits. The English veterinarian constantly heard of new locations where the plague erupted, and grassroots organizations assembled at more and more of these places to prevent the importation of southwestern cattle.[114]

Comparatively, the eastern seaboard looked like the epitome of sound health policy. The "most energetic" measures had been taken, and board members devoted as much time "as [could] be spared" to the Texas cattle disease.[115] In New York, infected herds had been immediately slaughtered or quarantined. Health inspectors were stationed across the state, and the cattle disease was unsurprisingly less prevalent. Whereas Gamgee's contingent was almost entirely concerned with the ailment's medical aspects, the eastern seaboard was lucky to have the country's most active municipal health agency adopting astute policies with stunning alacrity.

Attributing these regional disparities entirely to policy failures or successes would be incorrect, however. As time passed, different regions appeared to be confronting different cattle

[113]Kermit Hall, William M. Wiecek, and Paul Finkelman, American Legal History: Cases and Materials, New York: Oxford University Press, 1991, 367-369.
[114]*Prairie Farmer*, Aug 22, 1868, 39.8, 60, *NY Observer and Chronicle*, Aug 20, 1868, 46.34, 270
[115]*NY Observer and Chronicle*, Aug 20, 1868, 46.34, 270, Times, Aug 28, 1868, 2

diseases.[116] By August 22nd, a *Prairie Farmer* writer believed that, unless the malady had simply worsened with the longer journey, eastern health authorities "[had] some other disease to deal with." Dissecting animals "bruised" medical specialists in the west, differentiating the disease from New York's affliction, which had not produced such odd effects during post-mortems. The disease was called "Spanish fever" on the frontier, but was known in northern states as the "Texas cattle disease."[117]

Further distinguishing New York's version was the infectious designation. Prof. Gamgee had originally classified the cattle disease as infectious, but his team moved away from this label as time progressed. On the 22nd, they reported that the Midwest was "not [dealing] with a contagion or an infectious plague, but with a form of poisoning due to native cattle eating off plants polluted by droves of Texas steers." This directly contradicted what Elisha Harris concluded on August 11th; that the disease was an infectious fever/plague, and malignant typhus that intensified with time.

A remedy was also unique to the eastern seaboard. Cows had been nourished to health in New York and Rhode Island, but Gamgee's group believed that "no system of medical treatment [could] be relied on or conveniently applied." They believed preventives, not remedies, should be sought for their malady.

Being better off than the American West did not eliminate isolated cases of the cattle plague in New York City, however. After returning from Millerton, Copake, and Amenia, Dr. Morris resumed daily inspections of all New York and New Jersey slaughterhouses. On the 24th, he found two sick bullocks at Bull's Head which had left Missouri on August 9th. In St. Louis, the two cattle that subsequently became ill were added "to fill the car." From there, the drove of

[116]This suspicion was later confirmed in Prof. Gamgee's report published by the US Department of Agriculture in 1871. Gamgee argued that Midwestern localities mainly battled a lung disease called "pleuro-pneumonia." A fever-inducing blood disease was more prevalent on the eastern seaboard.
[117]*Prairie Farmer*, Aug 22, 1868, 39.8, 60, "Report of the New York State Cattle Commission," 4

85 came through Buffalo and Albany, and arrived at Bull's Head on the 19th. By the 22nd, the condition of the two supplemental cows was declining rapidly. On the 24th, the pair was quarantined for observation, but 50 of the herd they travelled with had already been sold. Morris was convinced there were diseased cattle among them.

Fifty cattle had evaded public health defenses, so Morris thought more should be done to prevent the diseased beeves from escaping. He did this by expanding quarantine facilities. On the 25th, he made the entire Bull's Head establishment, which spanned 97th to 100th St. and 3rd to 4th avenue, a quarantine grounds so that no cattle could leave without proper inspection and his signature.[118]

The Board of Health also had its weekly meeting on the 25th. Diarrhœal deaths "[continued] to predominate over all other preventable mortality." In the week ending August 23rd, 723 New Yorkers died, with bowel disorders again accounting for almost 40 percent of the total. The mean temperature during the week was 78˚, and Dr. Harris stressed that the "almost tropical" conditions necessitated strict sanitation, watchfulness against gastrointestinal problems, and intelligent diet.[119]

While it was common for persistent summer heat to increase city mortality, the spike was increasingly attributed to one cause: meat unfit for human consumption. Despite the protection of the MBH and State Commission, columnists wholly attributed the excessive death rate to the introduction of beef from sickened cows.[120] Whether it was the 17 from Millerton, 50 from Missouri, or steer unbeknownst to the board earlier in August, rogue cattle still avoided the board's grasp, meaning the enforcement of food safety had yet to be perfected.

[118]Metropolitan Board of Health, Third Annual Report, 190-192
[119]*World,* Aug 26, 1868, 2, *Herald,* Aug 26, 1868, 8
[120]*Times,* Aug 25, 1868, 4

Thankfully, the MBH reported in Friday's meeting that it had mended a major hole in its defenses. In their reprinted public report, the board revealed that when the first afflicted steer were discovered at Communipaw on August 9th, health authorities had learned that droves of the same sick cattle had been arriving at Albany and Buffalo for over a week. Drove yards in these two cities were thought to be the "greatest sources of danger" because of a commercial practice for shipments to the metropolitan district. Small dealers in Albany would often sell "cheap purchases of damaged cattle or 'mussy' beef" called "small lots." Before Dr. Morris was named assistant commissioner, sanitary officers had no way to monitor this trade in "small lots." Morris' trip upstate was designed to solve this problem. Nevertheless, unless a four-week quarantine was universally implemented or all western cattle imports ceased completely, individual cases of the cattle plague would likely continue to appear.

Although the Board of Health and State Commission were polishing their security apparatus, health authorities still erred on the side of caution. At the bidding of Board President Lincoln, Morris and Metropolitan Policemen inspected nearly 1,500 suspect cattle at the National Drove yards on the morning of the 27th. All were found healthy. The assistant commissioner concluded that it would be tough to transport infected herds into the city by any "usual route," given that assistant commissioners and inspectors were on alert at all "prominent stopping and feeding places." New York City was not like other urban centers, however, and provided a multitude of "exposed points at which cattle may enter." As a result, Morris wanted to restrict the number of operating slaughterhouses, and believed the chosen locations should have "the largest facilities for observation."[121]

Democratic writers thought that this kind of continued activism was a preposterous hindrance to business. *World* columnists blamed the MBH for lagging meat prices throughout

[121] *Times,* Aug 28, 1868, 2

August. Disgruntled at slumping demand, they thought that "fussy" health authorities, with their "parade of ineffectual efforts to prevent sick bullock," were deterring consumers from purchasing beef. Unwholesome veal was often sold during the spring, so sending feverish cows to the rendering tanks without compensating owners seemed inconsistent. They also argued that there was no reason to believe that any diseased beef had been sold or would be, unless a butcher existed who would "steal the tombstone from his dead mother's grave." Consumers always had to trust butchers, so *World* writers felt as safe as ever from diseased meat, and proudly reported eating daily helpings of beef.[122] In this way, the Democratic press tried to restore confidence in the cattle trade and simultaneously discredit the Metropolitan Board of Health.

On August 31st, Morris successfully consolidated the city's stockyards in another move that would have inflamed *The World*. He required all cattle landing in New York City be inspected at two large quarantine grounds created between 97th and 100th streets on 3rd avenue and between 40th and 41st streets on 11th avenue. If their shipments were healthy, owners would be given a permit signed by Morris. Without the documentation, any cow in New York City could be seized and quarantined beginning on September 3rd, but this did not entirely satisfy the assistant commissioner. Morris expected that cattle would "surreptitiously be taken to slaughterhouses without the proper inspection," so he telegraphed the President of the Metropolitan Police Department to ensure no undocumented cattle roamed the streets. At a regular meeting on September 2nd, the board endorsed the idea of two large quarantine grounds, and encouraged policemen to obey Morris' orders.[123]

For the remainder of autumn, Moreau Morris, the Metropolitan Board of Health, and the State Cattle Commission controlled the cattle plague with little disruption. With "unceasing

[122] *World*, Aug 29, 1868, 3
[123] Metropolitan Board of Health, Third Annual Report, 194-195

watchfulness," Morris raced around New York City into December to detain individual cases of the disease, examine thousands of arrivals, and administer post-mortem exams. The malady did not disappear entirely, but large amounts of sick cattle no longer made it to New York, as those found sick were outliers of shipments.[124] Assiduous health policy contained the disease in the summer, and winter frosts eliminated it as Gamgee had predicted. On September 17th, the ailment was "almost eradicated," and by early November, *Prairie Farmer* blissfully announced that it had ceased entirely.[125] The fledgling Board of Health had defeated an unfamiliar and formidable public health issue by slaughtering exposed livestock, instituting rigid quarantines, disinfecting stock yards and railcars, regulating transportation, patrolling meat markets, meticulously examining new cattle shipments, collaborating with other states, and cracking down on the business of slaughtering in New York City. In 1866, Rinderpest had killed over 70,000 cattle, but the bovine death toll in the metropolitan area was in the low hundreds during the 1868 cattle plague. Rinderpest had terrified American health officers, and activated tremendous political will at a time when American public health was still in its infancy.

The Texas cattle disease had ended, but it had a substantial impact in following months. Illinois Gov. Richard Oglesby worried that the New York Cattle Commission had "carried its [regulatory] schemes to needless requirements." Many Illinois cattlemen had been subject to "expensive delays and losses," and criticized New York's health administration by invoking the spectre of big government.[126] To protect Illinois from "unnecessary restrictions" to the free trade of longhorns, Oglesby sent special commissioners Harvey Edwards and Edmund Piper to New York to consult Gov. Fenton and the New York Cattle Commission to see if New York's public health decrees were really necessary. After their examinations concluded in October, they made

[124]Metropolitan Board of Health, Third Annual Report, 195-208, 236
[125]*NY Observer and Chronicle*, Sep. 17, 1868, 36.48, 304, *Prairie Farmer*, Nov. 7, 1868, 39.19, 145
[126]*Prairie Farmer*, Sept 12, 1868, 39.11, 81

no objections. Contrary to their mission, Edwards and Piper requested that Gov. Fenton call a "convention of commissioners from all the states interested in breeding, feeding, handling, and shipping cattle as well as from the eastern consuming states where cattle are marketed." Fenton complied on October 13th by suggesting that a convention be held in Springfield, Illinois, on December 1st.[127]

The convention would consider the history, pathology, and symptomatology of infectious cattle diseases, the best methods for their prevention, the best methods for inspection, slaughter, and meat preparation, and sanitary necessities for the feeding and resting of cattle.[128] The goal was to agree on a standard set of recommendations state legislatures could adopt. During the cattle epizootic, state laws frequently conflicted with each other, inhibiting policy on a public health issue that transcended state lines. The crisis taught ranchers, drovers, and meat consumers that "harmonious" legislation conducive to "mutual protection" was essential. The National Cattle Convention would host three commissioners from every state, and would be a forum in which different groups could "fully elucidate" the Texas cattle disease, and draft an effective law.[129] Marsena Patrick, Lewis Allen, and John Gould would represent New York. Additional cattlemen voiced their approval at state fairs in October, and governors promptly appointed commissioners to attend the convention.[130]

After three days of convention meetings in early December, John Gould (the chair of the Committee on Legislation) published the following suggestions, which were grouped into three categories:

"**First General Division**

[127]"Report of the New York State Cattle Commission," 9, 36
[128]*Ohio Farmer*, Oct. 31, 1868, 42.44, 696
[129]"Report of the New York State Cattle Commission," 36-37
[130]*Ohio Farmer*, Oct. 31, 1868, 42.44, 696

1. Three Commissioners, or such other number as the legislature shall deem proper, shall be appointed by some competent authority; to hold their office for five years, and report annually to the legislature.
2. Such Commissioners shall have power to watch over the general welfare of animals within the state for which they are appointed, and particularly to prevent the spread of dangerous disease among them, and to protect the people of the state from the dangers arising from consumption of diseased meat.
3. They may, from time to time, appoint such assistant commissioners to aid them in the discharge of their duties, as the welfare of the public may require
4. They all have power to administer oaths, and to prescribe, from time to time, such rules and regulations as may be necessary to accomplish the objects of their appointment.
5. They shall give public notice of the outbreak of any dangerous disease, and such practical directions for its avoidance, as they may deem necessary.
6. They may either place such diseased cattle in quarantine, or cause them to be killed, as may seem necessary for the public protection; but in the latter case they shall cause an appraisal of such cattle to be made, and the county or state shall pay such proportion of the appraised value as may be provided by law."

Second General Division
1. The Commissioners, or any assistant Commissioner, located on the frontier of any state, shall have power at such times as may be prescribed by the Commissioners, to inspect all the animals brought into such State, whether by railroad cars, vessels, or common roads, and shall have power to detain such railroad cars, vessels, and droves, or animals on common roads, long enough to make a proper investigation of them, for the purpose of ascertaining their sanitary condition.
2. No animal shall be permitted to enter the state, which shall be deemed by such assistant commissioner to be capable of diffusing dangerous diseases, or of injuring the health of inhabitants; but an appeal shall be allowed to the majority of the commissioners, in cases where there is disagreement.
3. No train shall be allowed to proceed unless the animals contained therein have been supplied with food, water and rest, within twenty four hours next preceding the time of such inspection.
4. All animals shall rest and have access to food and water for 24 hours, after having traveled a similar period.
5. The railroad companies shall provide suitable yards for feeding, watering, and resting the animals traveling on the trains, and for quarantine purposes; which shall be kept in cleanly and wholesome condition, to the satisfaction of the commissioners.
6. Each train, on leaving its point of departure, shall have certificates, signed by an assistant commissioner, which shall certify that all the animals therein contained were in a healthy condition at the time of its departure, and also the exact time of leaving; and such certificates and endorsements thereon, of the time of resting and time of departure of the train, at subsequent resting and feeding places, shall be exhibited to proper authorities, whenever required.
7. Proper penalties should be inserted to prevent the bribery of officers charged with the execution of these provisions.
8. Proper penalties should also be provided for those who interfere with or resist the officers charged with execution of these duties.

Third General Division
Resolved: That this convention earnestly recommend the enactment by those states, of stringent laws to prevent the transit through their limits of Texas or Cherokee cattle, from the 1st day of March to the 31st day of October, inclusive (modified to March 1st to November 1st).
Resolved: That the interests of the community require the enactment of laws making any person responsible for all damages that may result from the diffusion of any dangerous disease from animals in his ownership or possession."

With Gould heading the effort, similarities between the above recommendations and those of the New York Cattle Commissioners are unsurprising. On many points, such as commission organization, quarantine, slaughter, railroad sanitary inspection, and commercial documentation, the convention's advice directly mirrored the policies of the New York State Cattle Commission and Metropolitan Board of Health. New York had led the fight against the 1868 Texas cattle disease.

Most significantly, the convention advised banning the Texas cattle trade in all but winter months, and attempted to correct animal abuse on the railroads. In the future, the once-booming Texas cattle industry might be confined to a few months every year because of public health concerns. As for animal abuse, treating livestock more humanely continued to gain traction in months preceding the cattle convention. The New York State Cattle Commission mentioned the idea in a September report, claiming that the disease's early symptoms disappeared when cattle were unloaded, and "allowed suitable food and drink with rest and fresh air." When these "hygienic measures" were neglected, the malady assumed its most malignant form.[131] William Reid, a Scotsman who had published extensively on American agriculture, offered a similar perspective;

"Our beef and mutton supply is wasted and a large proportion of it rendered unwholesome from the starvation of our livestock when traveling from one place to another by railway. The common and indeed almost universal practice of withholding from them such essential necessaries of life

[131] *NY Observer and Chronicle*, Sep 17, 1868, 46.38, 304

while on their journey as water and food causes the death-rate to be so great from infectious diseases."[132]

Over-crowding, starvation, thirst, physical exhaustion from the drives, heat exposure and other forms of animal cruelty were increasingly linked to the propagation of the Texas cattle disease, and suggested that animals needed to be treated with more care.[133]

Such beliefs were gaining momentum precisely at this time in American history with the rise of the animal rights movement. By the mid-nineteenth century, industrial development and mass consumption finally sparked humanitarian attitudes. Henry Bergh, a New Yorker who had dropped out of college and made a literary career in Europe, was disgusted by public listlessness towards widespread animal abuse, and decided to devote his life to the issue after returning to the United States. One element of his outrage was directed at the booming meat industry's use of railroads. As demonstrated in 1868, the commercial practices "played an integral role in amplifying the exploitation of food animals." During the Civil War, Bergh began his first campaign by petitioning in New York City to create a Society for the Prevention of Cruelty to Animals (SPCA). Fortuitously, he was indirectly aided by the abolitionist movement. The end of slavery ushered in a "broader definition and application of natural rights" that Bergh and others believed would extend to non-human species. Abolitionism was also an important "wellspring" for many social movements like Bergh's. In 1866, growing public support prompted Bergh to travel to Albany to lobby for an SPCA charter. On April 19th, 1866, he convinced representatives to create the first animal rights organization in the United States. The American Society for the Prevention of Cruelty to Animals (ASPCA) was formed with Bergh as president. Municipal branches sprouted up in many cities.

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[132] *Times*, Oct 16, 1868, 5
[133] *The New England Farmer: A Monthly Journal*, Nov 1868, 2.11, 526

One of the ASPCA's early campaigns was directed at changing how livestock were transported. The organization thought *laissez faire* commercial practices injured livestock in appalling fashion, and wanted to prosecute railroad and meatpacking companies for their wrongdoings. To take on these corporate giants, the ASPCA realized more public support was necessary. Accordingly, the advocacy group issued public pamphlets filled with brutal images of injured cattle, hoping the literature would elicit a visceral response. Connecting animal maltreatment to human health issues was a superior campaign strategy, however. In the late 1860s, the ASPCA repeatedly "sickened Americans with vivid descriptions of 'decomposing carcasses converted into human food,' and equally disturbing cases of pre-slaughter livestock suffering from tuberculosis, 'hog cholera,' and 'putrid, malignant tumors,' as well as 'infected wounds.'" The 1868 Texas cattle disease was likely one of these incidents the ASPCA used to its advantage. In summary, the National Cattle Convention's emphasis on animal rights was part of a bigger, historical phenomenon. Long before Progressive Era food safety reforms, Henry Bergh and the ASPCA were trying to prevent animal cruelty from adversely affecting the American diet.[134]

Animal welfare also figured prominently in the Metropolitan Board of Health's third yearly report submitted to the New York State Assembly and Senate in January, 1869. Moreau Morris, perhaps the most experienced and knowledgeable figure who worked on the cattle disease, vociferously condemned customary shipping methods. He argued that the cruelty and misery cattle faced in transportation by "the greedy cupidity of speculators" demanded "prompt and decisive interference by constituted authorities," which should punish guilty parties with

[134]Diane Beers, For the Prevention of Cruelty: The History and Legacy of Animal Rights Activism in the United States, Athens, Ohio: Ohio University Press, 2006, 20, 22, 24, 36, 41-44, 66-69

unrestrained severity. The MBH also offered concrete evidence that poor care exacerbated the ailment, confirming earlier sentiment surrounding animal mistreatment;

> "Plainly, it does not originate from such causes, but there is evidence that the Texas cattle that are crowded upon the boiler deck of Mississippi Steamboats, and subjected to thirst and fasting on the voyage up the river, have thus far been themselves the greatest sufferers by disease, and have proved to be the most frequent carriers of the cause."

While not the cause of the disease, inhumane treatment significantly contributed to the disease's spread.

Dr. Stiles, Chandler, and other experts had completed their scientific investigations by January, so the Board of Health's report also included intriguing pathological conclusions. In accordance with Prof. Gamgee's initial assessment that the disease originated from Midwestern fauna, the board believed the cattle plague was caused by a species of fungal parasite called "micrococcus" (micrococcus is a cryptogamic organism, meaning it comes from a plant which reproduces by spores, such as ferns). The parasite was rumored to derive from Southwestern "indigenous herbage," and destroyed red blood cells and plasma proteins in such startling fashion that board scientists proclaimed that "no disease or poison known to medical men [had] ever presented a more striking example of an incubating blood poison." Micrococcus also structurally altered organs, enlarging and damaging the liver, stomach, spleen, and kidneys. Board specialists cultivated fungal spores for experimentation in hopes of ascertaining how the disease was transmitted. Their trials were unfortunately inconclusive. For the moment, a great point of contention surrounding the Texas cattle disease would remain unresolved.

While physicians might not have referred to micrococcus as "bacteria" or a type of "germ," postulating that a specific microbe caused a disease was a novel, unverified idea. In the early 1860s, French chemist Louis Pasteur had tested if micro-organisms caused disease, but these were preliminary experiments, and the "Germ Theory" of disease did not gain widespread

acceptance until the Bacteriological Revolution of the 1880 and '90s. As mentioned before, the foundation of public health in the 1860s was the abstract virtue of sanitation, not microbiology. Findings surrounding the 1868 Texas cattle disease, however, hinted at the presence of bacteria long before the "Germ Theory" was popularized.

Additionally fascinating was that the Texas cattle disease shed light on human epidemics. Shockingly, the board found similarities between the cattle disease and a more prominent nineteenth-century human horror: yellow fever. Specifically, the epizootic produced "identically the same pathological changes and all the essential phenomena that are found to characterize yellow fever in man." Elisha Harris speculated that discerning the "precise nature, origin, propagation, and pathological effects" of the cattle disease might "enable medical men to soon grasp and unfold the hitherto mysterious laws that govern the propagation of yellow fever." Therefore, studying a seemingly esoteric health issue was incredibly practical. To flesh out this surprising connection between the human and animal world, the board wanted the medical profession to conduct more comparative research on human epidemics and epizootics.[135]

In 1869, having heard the advice of the National Cattle Convention, MBH, and State Cattle Commission, the New York State legislature responded appropriately. With only one dissenting vote in both chambers, the assembly and senate reauthorized and strengthened the 1866 bill that had prevented rinderpest and other infectious animal diseases. Both houses also passed "an act for the more effectual prevention of cruelty to animals."[136] With these new laws, New York would hopefully avoid epizootics in the future, and be better prepared to handle them if they arose.

[135]Metropolitan Board of Health, Third Annual Report, 227, 230, 233, 274-276, 280
[136]*NY Senate Journal*, 199, 389, 402, 686, 690, 715, 1000, *NY Assembly Journal*, 52, 56, 231, 285, 474, 498, 732, 780, 907, 1335, 1401, 1629

Concluding Remarks

In the initial years of America's first board of health, scholarship has understandably focused on the success against cholera in 1866, but there is more to the early history of the MBH than this campaign. While there had been ample experiences with cholera in nineteenth-century American history, the Texas cattle disease was a big challenge that no one knew about, and demanded an incredible amount of attention from New York health officials, but has never been covered by secondary literature.

For an ill-documented affliction accompanied by no proven policy prescription, the 1868 cattle disease was remarkably contained by the recently-created MBH. The agency had achieved high-regard for its activism by 1868, but the campaign to control the cattle plague was nonetheless characterized by extremely rare occurrences for public health institutions in the nineteenth century. Examples of voluntary cooperation between states on matters of health and disease were few and far between, yet unquestioned compliance was regarded as essential and happened frequently during the cattle plague. This thesis has argued that such uncommon partnerships have a twofold explanation.

First, the incredible political will was sparked by England's inadequate response to rinderpest in 1866. The failure of the Liberal Party showed Americans the consequences of government obstinance during epizootics, prompting health officials to respond more urgently in 1868. Second, the mysterious levels of diarrhœal mortality in New York City made the MBH take a closer look at the disease as a possible explanation. Sure enough, there seemed to be a relationship between bowel disorders and impure meat. Overall, the mobilization of health officials in variety of organizations during the Texas cattle disease is a significant and untold story in the history of American public health.

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