The Battles against Animal Diseases:
Science, Policy, and the Origins of Economic Regulation in the United States

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ABSTRACT: The Bureau of Animal Industry founded in 1884 was the key player in the battle to combat animal diseases in the United States. A series of spectacular successes made the BAI a world leader in the control of animal diseases. By 1940 it had rid the nation of seven major animal diseases and had established a template that would be copied around the world. The struggle to found the BAI was embroiled in a political controversy that lasted almost a decade. The eventual legislation, H. R. 3967, was the *only* significant bill passed in the century following the Civil War in which a majority of party in power (in this case the Democrats) opposed the bill. The paper analyzes the political economy of the legislation and traces how changes in scientific knowledge and the disease environment helped shift opinion. Our discussion adds significantly to the understanding of the origins of modern economic regulation in the United States because the BAI legislation confronted many of the same issues that would arise in the debates on the Interstate Commerce Act passed in 1887.

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" …the heroic treatment, the one man power, is necessary"

U.S. Commissioner of Agriculture N. J. Colman, 1886[1]

On 10 June 2008, over 100,000 South Koreans marched in the streets of their capital Seoul to protest against the renewed importation of American beef. The protesters were not, in the main, domestic producers of competing supplies but rather urban consumers who feared the foreign meat carried mad cow disease.[2] As the daily news indicates, food safety has re-emerged as a major concern in many countries. Today, in struggles against contagious diseases and contaminated food products, nation-states and international agencies draw on institutions—research systems, monitoring networks, and legal regimes—that were developed during past food crises.[3] In the United States, the epizootic crises of the late nineteenth and early twentieth centuries were the crucibles in which the modern-day agencies and programs to control animal diseases were forged.

In this period, a number of highly destructive animal diseases were spreading in the United States and Western Europe, sometimes at alarming rates. Improvements in transportation reduced costs and increased speed, contributing to a growing trade in animals. In addition, the increasing concentration of animals in dairies and stockyards, and the growing attention to herd improvement that required the intermingling of breeding stock all contributed to the worsening of the disease environment. Thus, many of the actions undertaken to improve animal quality led to the rapid spread of diseases. At the same time, the discovery and gradual acceptance of the germ theory of disease was revolutionizing the understanding of human and animal health.

Enlightened local and state animal health officials often enacted measures to control and stamp out diseases. But problems such as externalities, imperfect information, and economies of scale in enforcement hindered such efforts. Contagious diseases paid no heed to political boundaries and local and state initiatives were often overwhelmed as diseases re-infected recently cleansed areas. In addition, animal owners frequently spread contagions by knowingly moving suspect animals out of control areas. Aggressive jurisdictions were penalized by the inattention of others. Costly legal disputes and beggar-thy-neighbor policies were predictable outcomes in the absence of national standards. The push for federal intervention was further enhanced when foreign governments banned or restricted the entry of American products due to the threat of contagious bovine pleuropneumonia (CBPP), foot-and-mouth disease (FMD) , trichinosis, and hog cholera (swine fever), and other diseases.[4]

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[1] U. S. House of Representatives, unpublished Hearings of Committee of Agriculture regarding H. R. 7208, 30 January 1886, p. 5.
[2] *New York Times*, 11 June 2008.
[3] Justin J. Kastner, "Sanitary Related International Trade Disputes: A Multiple-Factor Analysis Based on Nineteenth-Century Precedents," PhD Dissertation University of Guelph, May 2003, pp. 2-7.
[4] Ibid., pp. 21-102.

Many Americans became convinced that only the federal government could enforce the collective action needed for success. Preventing the spread of contagious diseases required creating an authority with the power to act immediately to impose quarantines, enter private property without warrants, and destroy animals. Crisis conditions called for the "one man power principle," suspending time-honored checks and balances. Not everyone agreed. Special interests, most notably Texas ranchers, opposed any legislation that might threaten their access to northern markets. In addition states rights and civil rights issues galvanized the opposition. The stakes were enormous and farmers, railroads, meat packers, middlemen of all sorts, public health advocates in the medical community, veterinarians, and consumer groups chose sides. Fierce battles to give state and federal animal health officers the power to inspect, regulated the movement of animals, and condemn animals were fought in the press, state capitals, the halls of Congress, and the courts. On occasion, vigilantes took the law into their own hands interrupting trade, destroying property, and murdering government agents.

Gradually scientific advances provided a better understanding of specific diseases, emboldening animal health advocates and their political allies. At the same time the threat increased as diseases spread into new locales. After years of failed attempts, disease control advocates in Congress succeeded in creating the Bureau of Animal Industry in 1884. This was a historic achievement. Political scientists, Gary W. Cox and Mathew D. McCubbins, have spent decades making sense of the federal legislative process.[5] Their analysis in *Setting the Agenda* concludes that the Speaker of the House of Representatives will not allow significant bills that are expected to gain the approval of the Senate and President to come to a floor vote unless a majority of the majority party in the House supports the bill. Out of the thousands of bills that Cox and McCubbins analyzed, the 1884 legislation to establish the BAI was unique. H. R. 3967 was the *only* significant bill passed in the century between the Civil War and the 1960s in which a majority of party in power (in this case the Democrats) opposed the bill. At the time, the participants in the debate recognized that something unusual was going on.

The Bureau's history represents one of the most neglected aspects of U.S. agricultural development.[6] The agency became the central player in fight against animal diseases in the United States, and by the 1940s it had led efforts that eradicated seven major animal diseases from the United States: CBPP (1892), fowl plague (1929), FMD (1929), glanders (1934), bovine tuberculosis (1941), dourine fever (1942), and cattle tick fever (1943). In its successful campaigns against these diseases, the BAI established the model for regional eradication that would be used around the world in fighting both animal and human diseases. As an example, according to histories of the global smallpox eradication program, the BAI's

[5] Gary W. Cox and Mathew D. McCubbins, *Setting the Agenda: Responsible Party Government in the U.S. House of Representatives*, (New York: Oxford Univ. Press, 2005).

[6] It is not just agricultural and economic historians who have ignored the BAI's significance. Stephen Skowronek argues that the America's modern political system morphed between the 1870s and 1920 as the bureaucracy gained power relative to political parties and courts. He focuses on civil service reform, railroad regulation, and the reorganization of the army, but neglects animal and human health initiatives. Accounting for the BAI's story strengthens his analysis of the state-building process. *Building a New American State: The Expansion of National Administrative Capacities, 1877-1920* (New York: Cambridge University Press, 1982).

campaign against CBPP was the world's "first planned programme whose stated objective was eradication."[7] In addition BAI scientists spearheaded the quest to understand and control scores of other diseases enzootic in the United States including scabies in sheep (related to mad cow disease), and hog cholera; and the agency's quarantine network repeatedly blocked the entry of other diseases.

Our discussion adds significantly to the understanding of the origins of modern economic regulation in the United States, because many of the issues and important players were the same as those associated with the formation of the Interstate Commerce Commission in 1887. The ICC is often considered the first major federal regulatory body, yet the formation of the BAI occurred several years earlier and in an important sense blazed the way.

The BAI's campaigns against animal diseases would spawn many controversies, but few were as intense as that associated with the agency's creation**.** Two diseases, Texas fever and CBPP played crucial roles in this legislative struggle. Texas fever, which was enzootic to the Lower South, was an old problem, leading to regional and distributional conflicts. By the late 1870s the battle lines were largely fixed.[8] CBPP, by way of contrast, was an emerging threat. The contagion was recently introduced from Europe and began to spread in the 1860s and 1870s among northeastern herds. Advances in transportation sped the diffusion of both diseases, contributing to the urgency for regulation. But there was a tension because efforts to build national institutions with the power necessary to meet the CBPP threat inevitably became entangled with the long-standing struggles over Texas fever. Reflecting this tension was a congressional debate that pitted legislators demanding a powerful new federal bureaucracy, with "one man power," to protect the cattle industry from disaster against officials charging that the problems were overblown and the proposed laws bestowed dictatorial powers.

The existing histories of the BAI and of specific animal diseases offer little hint of the Bureau's birth pains. Two insider accounts provide the foundations for most subsequent treatments. Fred Powell picks up the legislative story of the BAI's origin in 1883, noting that to build grass-roots support, the Commissioner of Agriculture brought together a group of livestock breeders in Chicago in November, 1883. Powell then tells us that a sub-group of this meeting took on the task of drafting a document for creating a bureau of animal industry. At this point, Powell notes that "Favorable action of Congress soon followed…."[9] Not Quite! U. G. Houck is more informative. He devoted two paragraphs to the "serious opposition" in Congress centering on issues of states' rights and political patronage. He further noted that

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[7] Frank Fenner, Donald A. Henderson, Isao Arita, Zdeněk Ježek, and Ivan D. Ladnyi, *Small Pox and Its Eradication* (Geneva: World Health Organization, 1988), p. 372.

[8] Given the state of knowledge about Texas fever and the control technologies available before the end of the nineteenth century, eradication was not feasible. Quarantines aimed at preventing its seasonal spread to border regions were the only effective means of control. But such measures generated inter-regional conflicts because they served anti-competitive purposes as well as health goals. And note that even if Texas fever led to significantly higher mortality among northern cattle, importing low-cost Texas stock may have been economically efficient and benefited consumers.

[9] Fred Wilbur Powell, *The Bureau of Animal Industry: Its History, Activities and Organization* (Baltimore: The Johns Hopkins Press, 1927), p. 10.

the margin of victory in the House of Representatives was slim; the bill passed by a vote of 155 to 127.[10] This account also falls short because Chester Arthur's signature on H. R. 3967 on 29 May 1884 marked only the end of the first round of a legislative battle that had lasted six years and the beginning of a second round that would last even longer.[11]

In light of the analysis of Cox and McCubbins, H. R. 3967 represented a truly exceptional piece of legislation. The bill's critics from the majority Democratic Party repeatedly chided its sponsor, William H. Hatch (Democrat: Missouri) for advancing a Republican bill**.** Hatch responded that "whenever I say a thing that is true I am not particular where the applause comes from," eliciting further applause from the Republican side of the House.[12] This and numerous other exchanges suggest that many members of the Democratic majority did not appreciate getting rolled. Congressman William Eaton (Democrat: Connecticut) charged that "this is the most mischievous bill that I have seen…it is in utter violation of the Constitution of the United States."[13] The debate in the Senate was no less discordant with Florida Democrat Charles Jones proclaiming that "I have never known a bill that infringed those [states'] rights more that this does. In my opinion it violates nearly every principle of the Constitution."[14] To understand these fierce condemnations of the bill, and the equally ardent support of its proponents, requires some context.

The Background to the BAI

By the late 1870s several forces besides the worsening disease environment in the United States intensified the calls for a federal bureaucracy to regulate animal health. Leading Western European nations, most of whom harbored and exported livestock infected with contagious diseases, were erecting barriers to the importation of American products, ostensibly for health reasons. Particularly galling to American cattle interests were British moves to restrict live cattle imports due to CBPP. Many American officials and cattlemen asserted these restrictions were unjustified non-tariff barriers to trade. However, one of America's leading veterinarians, James Law of New York, sided with the Europeans, noting that cattle from disease-free areas in the West could easily contract CBPP while passing through infected

[10] Ulysses Grant Houck, *The Bureau of Animal Industry of the United States Department of Agriculture: Its Establishment, Achievements and Current Activities* (Washington, DC: By Author, 1924), pp. 32-37.
[11] This six-year struggle only pertains to the creation of an agency dedicated to animal health. Earlier railroad regulation dates at least to an 1873 act that proscribed minimal rest, food, and water standards for animals in interstate transit. In addition, a broader set of legislation to promote the USDA to Cabinet status often envisioned an animal health bureaucracy.
[12] *Congressional Record*, House, 48th Cong., 1st Sess., Part I, 25 February 1884, pp. 1362-63. *Chicago Tribune*, 29 February 1884, p. 1.
[13] *Congressional Record*, 6 February 1884, p. 929
[14] *Congressional Record*, 25 April 1884, p. 3392.

stockyards in the East.[15] Law was a leader of small but growing cadre of veterinarian scientists who would play a major role in shaping American policy toward CBPP and other threats.

CBPP is a contagious disease that attacks the lungs of cattle resulting in high morbidity and mortality rates. Infected animals exhibit elevated temperatures, difficulty breathing, and a frequent, painful cough. Dairy cows go dry. The incubation period of CBPP lasts from two weeks to six months, making it difficult to identify potential carriers. Detection, at least in the early period, required close physical examination and diagnoses often differed. CBPP "strikes slyly, hides it tracks, and, creeping into the stables unseen, it diffuses its poison, infects, benumbs, and paralyzes the lungs without the body appearing to suffer, and it only manifests itself by outward symptoms when all it lost."[16]

CBPP first entered the United States in 1843, carried by an infected "ship's cow" from England. The disease soon became enzootic in the New York City area (including New Jersey) and subsequently spread to Pennsylvania, Delaware, Maryland, Virginia, and the District of Columbia. In several instances, states succeeded in eliminating disease locally only to experience re-infection from neighboring states. In 1859, CBPP was independently introduced into the dairy herds of Massachusetts via Holland. On April 4, 1860 the Massachusetts legislature established a board of three commissioners with powers to quarantine, kill, and dispose of infected and exposed animals. In the first year officials ordered the destruction of 932 cattle, but the disease spread to other parts of the state. It required six years of such "heroic treatment" and strict quarantines for the state to extirpate CBPP. Connecticut followed the lead of Massachusetts. Their triumphs, together with successful stamping out efforts, in parts of Europe, convinced some veterinarians that it might be possible to purge the United States of the disease.[17] American veterinary leaders were further pushed to act by the experiences in Australia and South Africa where CBPP had spread onto the open ranges killing millions of cattle.[18]

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[15] Statement of James Law, *Congressional Record*, 46th Cong. 1st Sess., Vol. IX, 26 May 1879, pp. 1618-19. The British acted after veterinarians found evidence in CBPP lesions in the lungs of cattle that arrived in January 1879. American pathologists disputed the British findings claiming the cattle had a less serious disease, bronchitis. A Privy Council order of 6 February 1879 restricting beef imports took effect on 3 March 1879. In addition, Great Britain restricted sheep and mutton imports from the United States in 1879 asserting the presence of foot-and-mouth disease. In 1880 Germany banned cattle shipments from the United States citing health concerns. Houck, *Bureau*, pp. 10-12, 58. Justin J. Kastner, "Sanitary Related International Trade Disputes: A Multiple-Factor Analysis Based on Nineteenth-Century Precedents," PhD Dissertation University of Guelph, May 2003, pp. 31-35.

[16] Report of James Law to the International Veterinary Congress, In *First Annual Report of the Bureau of Animal Industry, 1884* (Washington DC: GPO, 1885), p. 326.

[17] More than the successes in New England, the veterinarians were keenly aware of the aggressive campaigns conducted in Britain, Scandinavia, and Switzerland to stamp out rinderpest, CBPP, glanders, and FMD. Dr. John Gamgee, the most vocal British advocate of the mass killing of valuable farm animals to control diseases, also had a strong effect in shaping the thinking of BAI leaders. O. H. V. Stalheim and W. M. Moulton, "Veterinary Medicine in the United States Department of Agriculture," In Vivian Wiser, Larry Mark, and H. Graham Purchase, eds., *100 Years of Animal Health, 1884-1984* (Beltsville, Maryland: Associated of the National Agricultural Library, 1987), pp. 24-25. *First Annual Report of the BAI, 1884*, pp. 35-50.

[18] See *New York Times*, 9 July 1860, and *First Annual Report of the BAI, 1884*, pp. 51-54 for a detailed account of the Massachusetts experience and pp. 297-309 for the history of the disease in New Jersey.

Domestic problems reinforced the drive for federal action. Cattlemen in many border and northern states faced the annual invasion of Texas fever that was mysteriously carried north by southern stock. Texas fever (later discovered to be transmitted by ticks) was enzootic in the American South and Mexico.[19] Figure 1 maps the portion of the country that officials labeled as Texas fever territory in 1884. In the early stages the symptoms include a high fever, weakness, constipation, and reduced milk secretion. As the disease advances, the muscle system deteriorates, the spleen and liver become enlarged, and the animal loses weight. Death can occur within a few days to several weeks after the onset of the fever. Southern cattle exposed at a young age generally developed considerable immunity to the disease and survived albeit with significant morbidity effects. However, the disease was often lethal for cattle first exposed as adults. The mortality rates sometimes approached 100 percent for northern cattle who caught the disease when imported into the South or when exposed to southern animals in route to northern markets.[20] Decades of close observation showed that southern cattle moved north during the cold winter months did not spread the disease.

Efforts to control Texas fever were particularly divisive as cattlemen in the northern and Border States clamored for protection, while Southerners insisted that they had a constitutional right to engage in interstate commerce and steadfastly maintained that their animals were healthy. The beginning of large-scale cattle drives of long-horns from the infected regions of Texas intensified conflicts, especially in Missouri and Kansas in the late antebellum period. The disease was purportedly first observed in Missouri in 1853 when about one-half of the local cattle along a highway used by Texas drovers succumbed to the disease.[21] Armed Missouri cattle owners soon took matters into their own hands by imposing "Shotgun"

Some accounts assert the disease entered the United States earlier, but was privately extirpated. *Breeder's Gazette*, 31 Jan. 1884, pp. 146-47.

[19] Texas fever is a common term for two parasitic blood diseases—babesiosis and anaplasmosis—carried by ticks that feed on cattle. The tick vector passes a protozoa parasite into the bitten cattle's blood stream that destroys its red blood corpuscles. Many tick species of the genus *Ixodidae* can carry the disease, with the cattle fever tick (*Boophilus annulatus*) and the southern cattle tick (*Boophilus microplus*) causing the greatest problems.

[20] Tamara Miner Haygood, "Cows, Ticks, and Disease: A Medical Interpretation of the Southern Cattle Industry," *Journal of Southern History*, 52: 4 (November 1986), pp. 551-64; USDA, "Cattle Fever Tick Eradication Program: Environmental Assessment, January 2000," http://www.aphis.usda.gov/ppd/es/pdf%20files/Tickerad.pdf; John R. Mohler, *Infectious Diseases of Cattle*, revised ed. (Washington, DC: GPO, 1916), pp. 473-77; Jimmy M. Skaggs, *Prime Cut: Livestock Raising and Meatpacking in the United States 1607-1983* (College Station: Texas A&M University Press, 1986), p. 53.

The northern and southern animals did not have to come into direct physical contact—when northern stock entered pastures, stockyards, or railroad cars previously occupied by southern animals, ticks that had dropped off could find new hosts to fed upon and infect. The disease-carrying ticks cannot survive prolonged freezes, thus Texas fever could wreak havoc in the northern states during the warmer months, but it would not carry over the winter. Taken together, the role of the ticks as disease vectors, the partial immunity provided survivors, the seasonally-fluctuating range where the disease was prevalent, the apparent good health of infected southern cattle, and the possibility of its spread without direct contact between infected and susceptible cattle made understanding the Texas fever (specifically its etiology) exceedingly difficult.

[21] *Second Annual Report of Missouri Board of Agriculture, 1866* (Jefferson City, MO: Emery S. Foster, 1867), p. 18.

quarantines to halt or detour the drives. In 1859 and 1861 Kansas passed legislation against the movement of Texas cattle.

The Civil War put a temporarily halt to the problem by interrupting the South-to-North cattle trade. But in 1866, when cattle drives from Texas resumed, so did outbreaks of Texas fever. In 1868, southern cattle infected herds in New England.[22] At the same time, CBPP was slowing spreading on the Atlantic seaboard. These twin threats prompted J. R. Dodge of the U. S. Department of Agriculture to note in 1871 that "Either the general Government should enact a law providing for the suppression of contagious diseases of farm stock and for the regulation of the transportation and movement of farm animals, or the State governments should be induced to act simultaneously and harmoniously on the subject."[23] In fact many states had already worked in harmony. In response to the onslaught of Texas fever, Governor Richard J. Oglesby of Illinois called a convention of the affected states. Representatives from Kansas, Illinois, Indiana, Maryland, Massachusetts, Michigan, Missouri, New York, Ohio, Pennsylvania, Rhode Island, Wisconsin, and Ontario, Canada met in Springfield on 1 December 1868. "The convention recommended the enactment of stringent laws to prevent the transit of Texas or Cherokee cattle through their respective States between the first of March and the first of November, and to make their owner responsible for damages caused by the introduction of such cattle."[24]

In the late 1860s and the 1870s, Kansas, Missouri, Iowa, and Illinois passed tough quarantine laws aimed at Texas, Mexican, and Indian cattle.[25] Most other northern and border states prohibited the introduction of diseased animals. In the Northeast, many states had recently strengthened their laws to deal with CBPP.[26] Such legislation codified general powers that the states and local governments already possessed under the common law, which had long outlawed possessing animals with contagious diseases. Authorities could in principle immediately destroy such animals with the compensation, if any, to be considered later.[27] States could exercise broad police powers against these public nuisances and impose strict quarantines and inspection regulations against their importation.

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[22] *Fourth Annual Report of the Missouri State Board of Agriculture, 1868* (Jefferson City, MO: Elwood Kirby Printer, 1869).

[23] "Report of J. R. Dodge on the Progress and Results of the Texas Cattle Disease," in *Report of the Commissioner of Agriculture on* the *Diseases of Cattle in the United States*, 3rd edition (Washington DC: GPO, 1871), p. 197.

[24] "Report of J. R. Dodge," pp. 175-202; "Proceedings and Debates of the American Convention of Cattle Commissioners," held at Springfield, Illinois, 1-3 December 1868 in *Fourth Annual Report of the [Missouri] State Board of Agriculture for the Year 1868 to the General Assembly*, ed. by L. D. Morse (Jefferson City, MO: Ellwood Kirby, 1869), pp. 345-420. This report shows that considerable effort had already gone into trying to understand the disease. Numerous hypotheses were examined including the tick theory and possibility that Texas cattle carried some undetermined spores.

[25] Kansas loosened the enforcement of its 1865 quarantine after Joseph McCoy established a profitable trade shipping Texas cattle out of Abilene in 1867. Robert R. Dykstra, *The Cattle Towns* (New York: Alfred A. Knopf, 1968), pp. 16-21.

[26] "Report of J. R. Dodge," pp. 175-202.

[27] See Ch. 5 in James A. Tobey, *The National Government and Public Health* (Baltimore, MD: The Johns Hopkins Press, 1926), pp. 48-60. For a more general discussion, see William J. Novak, *People's Welfare: Law and Regulation in Nineteenth-Century America* (Chapel Hill, NC: University of North Carolina Press, 1996), Ch. 6.

The U. S. Constitution explicitly recognized in Article I, Section 10, that "No state shall, without the consent of the Congress, lay any imposts or duties on imports or exports, except what may be absolutely necessary for executing it's inspection laws...." Federal courts generally included animal health measures within the broad police powers reserved for state and local governments. For example, Supreme Court Chief Justice Marshall ruled in *Gibbons vs. Ogden* (1824) that navigation was a part of interstate commerce and therefore subject to federal, rather than state regulation, but he added add that "(i) inspection laws, quarantine laws, and health laws of every description" were among the "immense mass of legislation" which are "not surrendered to the general government" and "which can most advantageously exercised by the states themselves." But quarantine restrictions could be neither discriminatory nor unreasonable restraints of trade.

The single most important court decision driving demands for federal legislation to regulate animal diseases was *Railroad Co. vs. Husen* (1877). In this case the Supreme Court declared unconstitutional an 1872 Missouri statute that prohibited any Texas, Indian, or Mexican cattle from entering the state between March and November. The Court ruled this blanket inference with transportation went "beyond what is absolutely necessary for self protection." The *Husen* decision drastically limited the states' ability to police their borders; thereby increasing the pressure for federal relief.[28]

In the East local efforts to stamp out CBPP were hampered by the repeated reintroductions from neighboring states, often because unscrupulous cattle owners knowingly shipped their infected animals across state lines.[29] Some officials in the infected areas asked for federal prohibitions to stop this commerce. Others denied the plague's very existence, especially during the epizootic of 1878-79.[30] On 18 December 1878, the British threatened to restrict imports of American cattle unless accompanied by government-issued certificates of health. Responding immediately and without clear authority, U.S. Secretary of the Treasury, John Sherman, instituted a voluntary inspection program whereby customs officials would employ state veterinarians to certify the health of animals destined for England. When this proved inadequate, he issued a compulsory inspection edict on 1 February 1879, Sherman's initiatives were too little and too late. On 10 February, the Privy Counsel announced that, effective 3 March, that U.S. cattle

[28] The case arose because the St. Joseph and Missouri railroad contested Husen's claim of civil liability for damage to his animals caused by Texas cattle carried on the line. The decision affected quarantine laws in Illinois, Iowa, Kansas, among others.

[29] Not all cattle owners behaved in this opportunistic manner, some voluntarily slaughtered their herds to eliminate the disease. Kastner, p. 32.

[30] For denials by Maryland officials, see New York Times, 22 June 1882, p. 2; the editors of the *Breeder's Gazette*, 6 March 1884, p. 343, 15 February 1888, p. 161 were extremely critical of officials in Maryland and Pennsylvania for refusing to acknowledge and act against the CPBB threat.

would be subject to slaughter at the port upon arrival.[31] Canadian authorities, seeking to maintain their privileged access to British markets, cut off U.S. imports.[32]

Fearful that CBPP would spread domestically, powerful western cattle interests clamored for federal regulation. At the behest of the Treasury Cattle Commission, Illinois enacted legislation in 1881 to prohibit the importation of cattle from eastern states infected with CBPP. Several other western states followed Illinois's lead. The *Breeder's Gazette* maintained that although these laws were not seriously enforced, the underlying concern with CBPP ended what had been a thriving trade in breeding stock and young cattle. Shipments from New York fell from 100,000 young cattle in 1880 to "practically none at all" following the passage of the Illinois law.[33] The advocates of federal legislation felt a sense of urgency because if the disease ever became established in the open range, as it had in Australia, it would be nearly impossible to stamp out.

The concern with contagious diseases was evolving for yet another reason. Scientific breakthroughs were changing how many people perceived infectious diseases. New discoveries about the causes of diseases, their transmission mechanisms, and their dangers and economic consequences lowered the cost of control and helped build a consensus for more vigorous regulation. In addition, livestock owners were striving to improve animal productivity by importing breeding stock from Europe, but this was proving to be a risky business. Veterinarians had traced all the early outbreaks of foot-and-mouth disease and CBPP in the eastern states to recent animal imports.

The Preliminary Skirmishes

It was against this backdrop that momentum grew to expand federal powers to regulate the animal industry. The reality is that the sustained struggle to create the BAI did not begin in 1883 as Powell asserted and was far more torturous than Houck implied. Table 1 traces the evolution of federal animal health legislation. As early as 1865, Congress authorized the Secretary of the Treasury to prohibit the import of foreign cattle unless the President could certify the sending countries were disease-free. Concerned by the spread of livestock diseases, Commissioner of Agriculture, Horace Capron, asked Congress in 1869 to establish a Division of Veterinary Surgery within the Department. Although Capron and subsequent Commissioners made repeated requests, fourteen years would pass before Congress created a Veterinary Division in 1883.[34] Beginning in 1878 a number of bills were introduced into Congress to control animal disease. Senate bill No. 206, debated on 26 and 27 May 1879 offers an early example. It

[31] On 26 February, Sherman responded by forbidding the export of cattle to Britain. On 19 July 1879, Sherman replaced his prohibition with an order requiring a 90-day quarantine.
[32] *New York Times,* 1 February 1879, p. 5, 5 February 1879, p. 2; 16 February 1879, p. 5; Kastner, pp. 25-50. Published reports by U.S. authorities about disease problems contributed to the alarm and theCanadian official s also apparently bad-mouthed the U.S. product.
[33] *Breeder's Gazette*, 31 Jan. 1884, pp. 146-47. Illinois Governor S. Cullom, who as U.S. Senator later sponsored ICC legislation, issued the proclamation restricting cattle imports from eastern areas afflicted with CBPP in November 1881. *New York Times*, 2 Nov. 1881.
[34] Houck, *Bureau*, p. 2.

contained an amendment tacked onto a bill mandating railroads provide food and water to animals in interstate transit that authorized the Commissioner of Agriculture to employ inspectors at all ports to certify animals found to be free of infectious and contagious diseases. This provision was aimed at appeasing British concerns about CBPP, and would be a regular feature of subsequent bills. The debate occupies over 20 pages in the *Congressional Record*, with the leading opponents, including Samuel Maxey of Texas and Daniel Voorhees of Indiana, decrying the increase in the bureaucracy and the arbitrary powers granted the inspectors. Voorhees asserted that these political appointees would have the "power at any port to destroy the sale of any merchant's cattle… This power would open the doors to "constant bribery and corruption." Voorhees and his allies succeeded in killing Senate bill No. 206.[35]

In 1880 several bills were reported to the House and Senate dealing with the suppression of CBPP and other contagious and infectious diseases. By January and February of 1881 (in the Senate and House respectively) bills that explicitly called for the establishment of a "bureau of animal industry" had reached the floor. On 18 February 1881 the debate on S. No. 2097 began to heat up. This bill came out of the Select Committee on the Subject of Pleuro-Pneumonia and other Contagious Diseases of Cattle and Other Domestic Animals and was championed by Senator John Johnston (Democrat: Virginia). It would establish a BAI within the Department of Agriculture with a chief, two senior assistants, and agents in every state and territory. This bill authorized the Commissioner of Agriculture to set rules and regulations deemed necessary for the suppression contagious diseases and empowered the Secretary of the Treasury to set rules dealing with the interstate and international shipment of animals. It further granted the President the power to quarantine infected states that did not cooperate with guidelines established by the Commissioner.[36]

Opponents tore into the bill for creating partisan bureaucracy and bestowing dictatorial powers on the executive branch and for usurping the powers of the states and Congress. These criticisms would be repeated in subsequent debates about establishing a BAI. Some of the strongest remarks were directed at the clause stating that "The Secretary of the Treasury shall establish such regulations concerning the exportation and transportation of live stock as the results of such investigations may require." Republican Senator Roscoe Conkling of New York asserted that this provision represented an unconstitutional delegation of Congressional authority, and he questioned whether Congress or any state legislature had ever bestowed such power on one official who was to be guided only by his own judgment. That official could "evolve out of his own conscious such regulations, in the plural, as might then seem to him to be required by the investigation which he is authorized to conduct."[37]

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[35] *Congressional Record*, 46th Cong., 1st sess., Vol. 9 (Washington, DC: GPO, 1879), 26 and 27 May 1879, pp. 1610-20, and 1625-34; Voorhees quotation from p. 1618; Law letter on pp. 1618-1619. Voorhees appears to support strong stamping out measures in the East. pp. 1619-20. Also see, *Congressional Record*, 45th Cong, 3rd session, Vol. 8, Part 2, 21 Feb. 1879, pp. 1704-07.

[36] *Congressional Record*, Senate, 46th Cong., 2nd sess., Vol. X, Part 2, p. 1542; 46th Cong., 3rd sess., Vol. XI, 14 January 1881, p. 620; 27 January 1881, pp. 987-88; 18-21 February 1881, pp. 1796-97, 1829-38, and 1664-65; *New York Times*, 29 January 1881.

[37] *Congressional Record*, 19 February 1881, pp. 1830-31; Chicago *Tribune*, 20 February 1881.

Of special interest was a clause that read that "the provisions of this act shall not apply to cattle shipped from the Gulf States, or any of them, to the West India Islands." Several senators objected that such discrimination among ports was unconstitutional. Senator John Ingalls, a Kansas Republican who opposed the legislation, chided the bill's sponsors for caving into the demands of legislators from regions where Texas fever prevailed. He reasoned that "experienced officials" at the proposed bureau should determine whether Texas cattle posed a danger. Texas fever was now on the table. Texas Senators Richard Coke and Samuel Maxey, who over the next several years would raise a stream of constitutional objections to subsequent bills, found the exception of the Gulf ports perfectly acceptable.[38]

Five other features of the debate stand out as signs of what would come. First, there was the clear recognition that the Supreme Court's 1877 *Husen* decision had pushed the issue to the national level. The debate often centered on defining the constitutional limits of the federal role. Second, there were questions concerning which agency of the federal government should control animal diseases. Should these powers be placed with the Agriculture Department, perhaps as part of its elevation to cabinet-level status (which occurred in 1889)? Or with the Treasury Department in line with its control over borders, custom collections, and quarantines? Should the State Department with its consular service have a role? Or should the powers be centralized in an independent agency with expertise in public health?[39] Third, there was considerable concern about the administrative mechanics of any new bureau. Common questions included how much rule-making detail should be specified by Congress and how much should be left to the executive branch, how many staff to authorize, and where the BAI agents could operate. The debate reflected the novelty of granting the executive branch broad regulatory power. Fourth, there was strong opposition to compensating farmers for diseased animals even though the Salmon considered incentive-compatible compensation schemes essential to gaining farmer cooperation.[40]

Finally, individual Congressmen held widely divergent views on the dangers posed by CBPP that paralleled the division on Texas fever. The supporters of federal legislation saw the lung plague as a serious threat while opponent viewed it as a relatively benign irritant that was unlikely to affect well-tended animals. Reflecting this latter position, Senator John McPherson, a New Jersey Democrat with stakes in the Communipaw Stockyards and a patented line of "palace" railroad stockcars, argued that the disease only existed in closed "staples where there is a heated and tainted atmosphere…," and that "it is perfect nonsense to assert that pleuro-pneumonia or any other disease among cattle can be found in the western country, where they have a wide range, with plenty of pure air and plenty of wholesome food." Despite growing evidence to the contrary, McPherson would long advance this view. On 21 February 1881 the bill

[38] *Congressional Record*, 19 February 1881, pp. 1830-32.
[39] W. D. Miles, "History of the Bureau of Animal Industry," in James H. Steele, ed., *CRC Handbook Series in Zoonoses, Section A: Bacterial, Rickettsial, and Mycotic Diseases* Vol. II (Boca Raton, FL: CRC Press, 1979), pp. 545-52.
[40] *Congressional Record*, 19 February 1881, pp. 1831, 1835-36.

was tabled, but at least three other bills dealing with animal disease control were working their ways through the committee process. The issue was not going to disappear.[41]

When the BAI bill ran into trouble in the Senate in early 1881, New Hampshire Republican Edward H. Rollins introduced substitute legislation authorizing the Treasury Department to study the problem of animal diseases. The power and funding was granted as part of the Sundry Civil Appropriations Bill. On 16 July 1881, the Secretary of the Treasury established the Treasury Cattle Commission, appointing as commissioners, James Law, the aforementioned Cornell veterinarian; James Saunders, the Chicago publisher of the *Breeders' Gazette*; and E. F. Thayer, a Massachusetts physician. Over the next three years, the commissioners issue numerous calls for stronger federal action based on their first hand investigations of disease outbreaks in the United States and Europe.[42]

On 16 December 1881, Democrat William H. Hatch of Missouri introduced a new bill (H. R. 896) "for the establishment of a bureau of animal industry to prevent the exportation of diseased cattle and the spread of infectious or contagious diseases among domestic animals."[43] On 19 June 1882, the House took up debate under special rules allowing no amendments. This bill was similar in many ways to the earlier Senate version, but it called for a much reduced budget and limited the Commissioner of Agriculture's power to quarantine and slaughter animals to the territory of the District of Columbia.[44]

Once again Texas fever took center stage in the brief and relatively genial debate. Representatives Olin Wellborn, Roger Mills, and John Reagan of Texas raised the concern that the legislation might limit the movement of Texas cattle, or in Wellborn's words, even "strike down...the great cattle interest of the Southwest." Mills declared that he would not vote for a bill that would "obstruct the transportation of our stock to market" by establishing a "tribunal with authority to condemn our cattle and drive them from Northern markets...." The Texans' behavior was aligned with their perceptions of their constituents' economic interests. The bill passed on a voice vote.[45]

The road was rougher in the Senate and after a brief debate the bill was tabled by a vote of 27 to 22 on 3 August 1882, killing it for that session. Although CBPP was the only disease explicitly mentioned, the legislation would have applied to all contagious diseases. This created a major problem because the real bone of contention was Texas fever. Senator Coke admitted that his state's cattle suffered from the disease and that it was often fatal for northern animals, but he maintained Texans "know that they must not

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[41] *Congressional Record*, 19 February 1881, p. 1836. For McPherson's financial interests in the livestock trade, see *Chicago Tribune*, 20 February 1881, p. 2

[42] *New York Times*, 17 July 1881, p. 1. The commissioners did not pull any punches. In 1883, they wrote "nothing short of the absolute and undeniable extinction of this disease [CBPP] in the United States will reopen the British market to our live cattle, and save us those millions that we are now every year prodigally, and we might almost say insanely, throwing away." They estimated that $2,000,000 would be required to stamp out CBPP along with federal action to forbid the movement of cattle from infected areas. *New York Times*, 6 January 1883, p. 2. In early 1884, they recommended that the federal government prevent the shipment northward of cattle from the area infected with Texas fever, except from the beginning of November to the beginning of March. *New York Times*, 10 January 1884, p. 2

[43] *Congressional Record*, 16 December 1881, p. 158.

[44] *Congressional Record*, 19 June 1882, p. 5113.

[45] *Congressional Record*, 19 June 1882, pp. 5115-16.

drive their cattle at a time when this disease can be communicated." This assertion incited John Williams, Democrat of Kentucky to respond that he had personal knowledge of tens of thousands of northern cattle were killed by the disease.[46] In subsequent debates on later bills the importance of Texas fever would become much more evident and the language considerably more strident. Congress met only briefly in 1883, leading to no action.

The "Entering Wedge"[47]

In January 1884, Hatch introduced legislation (H. R. No. 3967) that would eventually pass, with major amendments and after months of acrimonious debate.[48] The new bill had many working parts: (a) It proposed the creation of a bureau within the USDA to collect information on domesticated animals and on contagious animal diseases; (b) Like the 1882 bill that passed in the House, it provided for four employees—a chief, a clerk, and two "competent agents" and set their precise rates of pay; (c) It authorized the Commissioner of Agriculture to set rules for disease suppression and to certify the rules of the various states and territories; (d) It provided for the compensation of the owners of diseased animals and stipulated that if the states cooperated with the federal program, the states and the federal governments would equally split all expenses of the eradication programs; (e) Should a state not cooperate with federal authorities, Section 4 authorized the President of the United States to quarantine any state (or part of a state); (f) To promote animal exports the Commissioner was instructed to inspect animals and report to the Secretary of Treasury who was "to take such steps and adopt such measures…as he may deem necessary" to insure the health of the livestock exported; (g) The bill prohibited railroads, ship companies, corporations and individuals from knowingly transporting animals with contagious diseases across state lines, and provided for the prosecution, fining, and/or imprisonment of those who knowingly violated its provisions. The bill appropriated $250,000 to finance these varied operations. As in previous bills, CBPP was the only disease explicitly mentioned, but the proposed legislation would have applied to all contagious diseases.[49] The bill that finally passed after over 150 pages of Congressional debate would be a mere shadow of that submitted.

By 1884 the battle lines were drawn. The bill came out of a Democratic-controlled Agricultural Committee, chaired by Hatch, but was opposed by most House Democrats. Hatch stressed the grass-roots support for the bill, including endorsements by "the Representatives of twenty-seven of the States in the national convention of cattle breeders and others held at Chicago; by resolutions of a dozen or more States

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[46] *Congressional Record*, 3 August 1882, p. 6830.
[47] The phrase "entering wedge" appears in a critical editorial about the bill in *New-York Daily Tribune*, 18 Feb. 1884, p. 4; *Breeder's Gazette*, 3 April 1884, p. 503 observed the opponents regarded the 1884 pleuro-pneumonia bill "as the opening wedge or precedent which will lead in the future to some effective legislation" against Texas Fever.
[48] *Congressional Record*, 26 January 1884, p. 682; 30 January 1882, p. 754; 5 February 1884, p. 899.
[49] *Congressional Record*, 5 February 1884, p. 899. Unlike Hatch's H. R. 896 of 1882, his 1884 bill included no role to the National Board of Health (NBH). Public health historian, W. D. Miles, "History," p. 552, argues the success of H. R. 3967 was due chiefly to "elimination of all mention of the NBH."

of this Union; by every single agricultural commission that has met in the United States to consider this subject with the past five years; by the last assembly of the national Grange of the United States—all of them live farmers representing the agricultural interests of the country."[50] For the supporters the Commerce Clause in Article 8, Section 4 provided ample grounds for federal intervention. It read in part that Congress shall have power "to regulate commerce with foreign nations, and among the several States, and with the Indian tribes." If that were not enough, Congress also had the duty to provide for the "General Welfare."[51]

Texans again championed the opposition in both Houses of Congress. They were joined by Bourbon Democrats fearful of expanding a federal bureaucracy employing Republican placemen; by strict constructionists from both parties and regions, who saw the bill as a threat to states' rights; and by those apprehensive about the possible abuse of power, and especially of "one man power" imposing the heroic treatment (rigorous quarantines and complete elimination of infected and suspect stock) as later advocated by Commissioner of Agriculture Colman.

Scientific opinion played an important role in the debate and the eventual outcome. Hatch led off his introductory remarks with a lengthy statement prepared by Daniel E. Salmon, who was a veterinary surgeon in the USDA and would become the BAI's founding chief.[52] Salmon described the dangers the nation faced and the hope that science offered. "Our [animal] losses are now heavy, but they must increase as our animal population increases, as new diseases are introduced, and fresh areas are infected." But "the cause of these plagues, which has been an impenetrable mystery during all the past ages of the world, is being revealed by the science of to-day, and the infinitely small organisms which are able to produce such terrible havoc in our flocks and herds are at last being brought under subjection themselves…." Salmon also explicitly touted the positive spillovers on human health.[53] The bill's advocates were typically sympathetic to science and understood that contagious diseases ignored state lines. They saw a dynamic world filled with both dangers and opportunities for progress. But progress required social investments. This was indeed a Republican bill spurred on by the nineteenth century activist's philosophy that it was proper to use the power of the federal government to promote the common welfare. In the words of

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[50] *Congressional Record*, 25 February 1884, p. 1364. The one counter example was the Chicago stock-dealers who "sent a remonstrance to Congress against the passage of the bill." *Congressional Record*, 23 February 1884, p. 1326. The stock-dealers petition was the handy work of famed Chicago lawyer, Emery Storrs who was hired by Sam Allerton, a major investor in the Chicago stockyards, to drum up opposition. The Chicago dealers were said to be "Kicking like Steers" against the BAI bill because they asserted the existence of CBPP (in the West, at least) was a myth, perpetuated by "unscrupulous office-seekers" whose "sensational reports have damaged the export trade." *Chicago Tribune*, 13 February 1884, p. 7.

[51] http://www.archives.gov/national-archives-experience/charters/constitution_transcript.html. The "one man power" principle was explicitly part of the debate.

[52] Salmon worked closely with the bill's supporters. In January 1884 he invited agricultural committee member James Wilson to an autopsy of two suspect cows found in the District of Columbia and provided the congressman with specimens of the infected lungs to exhibit to the other House members. *Breeder's Gazette*, 17 January 1884, p. 75.

[53] *Congressional Record*, 5 February 1884, pp. 901-902.

Representative Reuben Ellwood (Republican, Illinois): "The great central thought of the Constitution of the United States is the promotion of the good of the whole people…."[54]

For the most part, the opponents saw a different world. "Veterinary surgeons" like Salmon and Law were "horse doctors," who were harming the nation's commerce by spreading rumors and frightening consumers in order to create jobs for their ilk. Some opponents asserted that the "cure"—expanding bureaucratic power—was worse than the disease. As in previous debates, many denied that CBPP was a serious threat, that it could spread to the open pastures of the West, or that it could be wiped out in the East. In the words of Senator William Sewell (Republican, New Jersey) CBPP would always be around like "chicken-pox in children."[55]

Hatch feared that CBPP would soon jump the Alleghany Mountains. The only way to prevent this was a stamping out policy with "the destruction of the animals that may be diseased and of such stables or barns as it may be thought expedient." Every state had to develop its own disease control bureaucracy and carry a heavy share of the burden. It was the duty of the federal government to help by setting standards, providing expertise, and even money. Woe to a state that chose not to cooperate. Section 4 of the bill granted the President the authority to place an infected state (or part of it) under federal quarantine. Hatch noted "I would erect a Chinese wall around it; … high enough and broad enough to hem the disease in … I would make that wall a wall of fire if it were necessary…." Violators of the quarantine or shipping regulations would be prosecuted in federal not state courts, making it much harder for offenders to walk free due to local cronyism.[56]

The bill's supporters were well informed about the devastation CBPP had caused as they repeatedly detailed the experiences of several eastern states and foreign lands. Snippets include the *London Times*' claim that "Great Britain and her dependencies have lost $500,000,000" due to CBPP; and that Australia had lost 40 percent of its cattle between 1858 (when CBPP first appeared) and 1873.[57]

The Texans were alarmed by Hatch's heated rhetoric and by a recent report of the Treasury Cattle Commission recommending a quarantine of Texas cattle. Congressman Samuel Lanham countered that neither CBPP nor Texas fever was a problem in his state, and that the bill would inflict "a severe blow…upon a great and material industry" of his state. The legislation was "a part of a systematic plan which has for its object every impediment to cattle exportation from Texas."[58] Echoing earlier debates, Lanham decried "the lodgment of extraordinary power and authority in the hands of a few" to control and manipulate the nation's cattle trade.[59] Section 4, would result in quarantines based on the findings of a

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[54] *Congressional Record*, 26 February 1884, p. 1406.
[55] *Congressional Record*, 3 August 1882, p. 6828.
[56] *Congressional Record*, 5 February 1884, pp. 902-03.
[57] *Congressional Record*, 5 February 1884, p. 904; 23 February 1884, p. 1333; 25 February 1884, p. 1365; *Breeder's Gazette*, 31 January 1884, pp. 146-47.
[58] *Congressional Record*, 6 February 1884, p. 926.
[59] *Congressional Record*, 6 February 1884, p. 926. There was widespread concern that USDA officials would exercise dictatorial powers. Congressman Thomas Hardman, Jr. of Georgia noted that professed to support the bill's general goals, "but the grants of power in it are so broad and so dangerous and, as I believe, so repugnant to the Constitution, that I am forced…to oppose the bill…." 23 February 1884, p.

"'horse-doctor'," and of Section 5, would compel railroads to refuse "to transport live-stock in consequence of imaginary *contagia*...."[60] Lanham then yielded the floor to his Texas colleague John Reagan. Reagan who was respected for his legal expertise, attacked the bill's key provisions for trampling on Constitution. The bill was a serious threat to "liberty" and to "property and personal rights," usurped police powers reserved to the states. James Broadhead (Democrat: Missouri) charged that "The power to regulate commerce… does not imply the power to destroy commerce."[61]

Reagan's persistent opposition to the BAI bills bears special attention because of his key leadership role in establishing of the ICC. In their analysis of the ICC, Keith T. Poole and Howard Rosenthal note that for a decade after 1878 Reagan managed "his railroad regulation bill" in the House. They assert that "Reagan did not believe federal regulation to be constitutional until the *Munn v. Illinois* decision of 1 March 1877. Reagan was evidently influenced by the Court's reasoning that 'when private property is devoted to a public use it is subject to public regulation.' This declaration of the Court about the nature and function of railroad property coupled with the unquestioned authority of Congress over interstate commerce evidently changed Reagan's mind."[62] Poole and Rosenthal further argue that in the case of the ICC "Confederacy and Border congressmen overwhelmingly favored regulation of the railroads."[63] The South was "the root of the proregulation coalition." This interpretation is part of their larger argument that the economic self interests of a congressman's constituency was of relatively minor importance compared to more deep-seated philosophical values (ideology), party loyalty, and north-south location. But there is a conundrum. In both the ICC and BAI legislation the Constitutional debates struggled with defining the boundaries Congress's authority to regulate railroads. (The BAI legislation would eventually go beyond regulating railroads to sanction federal powers to quarantine and destroy diseased animals within states.)

In both cases key court decisions (*Wabash* (1886) regarding the ICC and *Husen* (1877) regarding the BAI) struck down state attempts to regulate commerce thereby putting more pressure on the federal

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1328. It was not just southerners who feared the abuse of powers. Representative Orlando Potter (Democrat: New York) condemned the bill because "it invades the domestic life, the domestic concerns of the States, and it undertakes by a system of espionage to enter our cattle-yards, our very domestic homes, upon our farms, and to regulate them by a corps of officials sent from the central capital of the United States." *Congressional Record*, 23 February 1884, p. 1333.

[60] *Congressional Record*, 6 February 1884, p. 926.

[61] *Congressional Record*, 6 February 1884, p. 929; 26 February 1884, p. 1401; 24 April 1884, p. 3343.

[62] Keith T. Poole and Howard Rosenthal, "Congress and Railroad Regulation: 1874-1887," in Claudia Goldin and Gary D. Libecap, eds., *The Regulated Economy: A Historical Approach to Political Economy* (Chicago: University of Chicago Press, 1994), p. 99; entire article is pp. 81-120.

[63] Keith T. Poole and Howard Rosenthal, "The Enduring Nineteenth-Century Battle for Economic Regulation: The Interstate Commerce Act Revisited," *Journal of Law and Economics*, 36: 2 (October 1993), p. 837; whole article is pp. 837-60. This article revisits, in particular, an interpretation of the passage of the ICA emphasizing constituents' interests advanced by Thomas W. Gilligan, William J. Marshall and Barry R. Weingast, "Regulation and the Theory of Legislative Choice: The Interstate Commerce Act of 1887," *Journal of Law and Economics*, 32: 1 (April 1989), pp. 35-61, See also Thomas W. Gilligan, William J. Marshall and Barry R. Weingast, "The Economic Incidence of the Interstate Commerce Act of 1887: A Theoretical and Empirical Analysis of the Short-Haul Pricing Constraint," *RAND Journal of Economics*, 21: 2 (Summer 1990), pp. 189-210

government to step to the forefront (although Poole and Rosenthal maintain that the *Wabash* case came too late to have much effect on the ICC passage). However, Reagan's emphatic stance that Congress lacked constitutional authority to regulate the interstate shipment of animals while simultaneously upholding the constitutional right to regulate railroad rates suggests that philosophical principles took back seat to narrow economic interests. Furthermore, contrary to Poole and Rosenthal's generalizations, in the BAI debate southerners generally spearheaded the anti-regulatory forces in the name of defending states' rights.[64]

One of the prevailing states' rights arguments in the BAI debate was that the national government possessed authority only at the state line and the federal facilities located within a state's boundaries were subject to its jurisdiction. This contention attracted the ire of the bill's supporters. Congressman John Anderson, (Republican: Kansas) asked how wide was a state line?

> It is not as wide as this strip of paper in my hand is thick. Here is a cow, let us suppose, standing over such a line, with her tail and body in Kansas, say, while her neck, head, and horns, are sticking over into Missouri.... under the Democratic construction of the State-rights doctrine you might possibly find a point the hundred-thousandth part of an inch wide just above the State line into which you might constitutionally put a knife and kill that part of the cow. But you would have no right to kill either part of the cow which was sticking over.

Under this doctrine, contagious diseases could threaten the entire livestock industry with annihilation and federal government was powerless to "save this industry except upon an imaginary line between two states."[65]

For the bill's supporters, the states' rights argument advanced contradictory positions which guaranteed inaction.[66] The Texans denied that the federal government had the power to regulate the trade in diseased animals while simultaneously applauding the *Husen* decision that forbid the states from imposing effective quarantines.[67] William Hepburn (Republican, Iowa) pointed to 1879 legislation that created the National Health Board. Many of the BAI's opponents had supported federal power to quarantine humans to prevent the spread of yellow fever and cholera. The federal "power was not confined by the law to ports of entry, but extended to every city and village of this country…. If the bill under consideration is unconstitutional, so was the act of 1879."[68] Representative Broadhead countered that

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[64] Poole and Rosenthal emphasize the importance of coalition building within Congress as over many years in explaining the eventual passage of the ICA. Exogenous shocks such as court cases might change perceptions, coalition strength, and voting behavior. In the case of the BAI debate exogenous changes appear to have been more important than in the ICC debate. Scientific advances were changing the perceptions of the causes and transmission of diseases and new (and suspected) outbreaks of CBPP and FDM had a sobering effect on some opponents to the BAI.

[65] *Congressional Record*, Feb. 6, 1884, p. 930.

[66] See as examples, *Congressional Record*, 6 February 1884, p. 934; 23 February 1884, p. 1327.

[67] *Congressional Record*, 6 February 1884, p. 933.

[68] *Congressional Record*, 23 February 1884, p.1327; also see 25 February 1884, p. 1364; this issue also came up repeatedly in the Senate debates, see examples, 25 April 1884, p. 3395, and 28 April 1884, pp. 3464-65. The controversies surrounding the creation of the National Board of Health mirrored, in many ways, those involved with the formation of the BAI. Following a severe outbreak of yellow fever in 1878, President R. B. Hayes demanded greater federal authority. Political scientist Edwin Maxey later observed: "Many of the rockribbed Democrats from the southern states had been impelled by the ravages of the yellow scourge to forget their extreme state-rights theories and were ready to place in the hands of the

Congress was on a slippery slope: "Power grows by what it feeds upon. One step taken in the exercise of arbitrary and unauthorized power [a reference to the 1879 Board of Heath bill] gives an excuse if not a justification to claim still greater powers." Broadhead argued, despite the *Husen* decision, that the states retained the exclusive right to impose quarantines. Hatch disagreed, noting that the state and federal courts had undermined all state attempts to regulate Texas fever. [69]

The debate heated up when Hatch charged the Texas delegation was afraid "science may find out how the Texas or Spanish fever is communicated from the native cattle of Texas to the cattle of Illinois and other Western States; and …. their State will be quarantined. For five years as member of the Committee on Agriculture, I have fought your battle to keep out by name the Spanish or Texas fever from this and similar bills, because I happened to know by actual professional and practical experience that we have never been able to find out the link by which the disease is communicated…. And, therefore, all the litigation in reference to the effects of Spanish or Texas fever has failed. Not a single suit in the State of Missouri has been successfully prosecuted of a single dollar of damages recovered where thousands and millions of property have been destroyed."[70] Hatch's statement struck at the heart of the dispute over the *Husen* decision. Although many northerners understood that Texas cattle were killing their animals, nobody could prove how or even which Texas cattle were diseased. Thus the need for a blanket quarantine which, in light of *Husen,* only the federal government could impose.

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federal government for the protection of the public health, far greater powers than it had hitherto exercised. To this end several bills were presented by southern senators." Edwin Maxey, "Federal Quarantine Laws," *Political Science Quarterly* 23:4 (Dec. 1908), pp. 617-36, quote on p. 625. See also *New York Times*, 28 May 1879 pp. 1, 4. After several months of intense debate (*Congressional Record* pp. 1539-52, 1634-60), Congress established the National Board of Health on 3 March 1879 as an independent agency to deal with national issues of public health and gave it powers in legislation passed on 2 June 1879 to impose national quarantines where local rules were lacking. William H. Allen, "The Rise of the National Board of Health," *Annals of the American Academy of Political and Social Science* 15 (Jan. 1900), p. 64 Whole article is pp. 51-68.

[69] *Congressional Record*, 23 February 1884, pp.1331-32; 25 February 1884, p. 1360; 26 February 1884, p. 1401. As the dangers of animal diseases, and in particular of Texas fever and its transmission process, became better understood the courts began to change their tune and the fine line shifted to allow more state control of interstate trade. With *Rasmussen vs. Idaho* (1901), the Supreme Court began to issue a series of rulings sustaining more narrow state quarantines on cattle. The courts also granted states and localities broad authority to destroy contagious animals without compensation to their owners. In *Illinois Central Railroad vs. J. U McKendree* (1906) and *T. C. Edwards* (1906), the US Supreme Court ruled the BAI overstepped its constitutional authority when it established quarantine lines preventing the movement of diseased cattle within a state's boundary. *Washington Post* 18 December 1906, p. 15; 23 December 1906, p. 12. In *Lawton v. Steel* (1894), 152 U.S. 136, 38 L. Ed. 338, 14 S. Ct. 4999, the U.S. Supreme Court affirmed that the government police power "is universally conceded to include everything essential to the public safety, health and morals, and to justify the destruction or abatement, by summary proceedings, of whatever may be a public nuisance (including) the destruction of a house falling to decay or otherwise endangering the lives of passers-by;… the slaughter of diseased cattle; the destruction of decayed or unwholesome food." By this reasoning the courts held the destruction of diseased animals was an abatement of a public nuisance rather than a taking of private property for public use requiring compensation. *Legal Aspects,* pp. 77-81. These legal developments occurred after the BAI was established and were all set in the context of a parallel set of scientific and public policy advances aimed at understanding and controlling animal diseases.

[70] *Congressional Record*, 25 February 1884, p. 1364.

Hatch emphasized that under the bill only the states would police and destroy diseased animal. The federal government would provide oversight and "aid the States" by providing one-half of the eradication cost. Hatch failed to mention what would happen if a state chose not cooperate, but the opponents did so for him. As one example, Broadhead maintained that the law would give BAI agents the power to go into any state and "enter upon a man's farm, inspect his cattle, determine that some of them are diseased, and have them taken out and shot…." Such power was more than "an exercise of the power to regulate commerce."[71]

Many representatives were clearly concerned with the quarantine provisions in Section 4, and they struggled to find a way to limit this authority. On 27 February 1884 the House amended the bill by a vote of 115 to 64 requiring the President to gain the assent of a state's governor before imposing a quarantine. This would be the first of a series of amendments passed in the House and Senate that would drastically limit the BAI's clout. Following the passage of an amendment that limited the President's quarantine powers to CBPP, Hatch moved to delete the gutted section entirely. Next, James Throckmorton of Texas moved to strike out the enacting clause of the bill—a motion that would have killed it. The initial vote to kill the bill ended in a tie, 114 to 114. After a call for tellers, the amendment lost by a vote of 114 to 118. Thus the movement to create a BAI had barely survived.[72] Henry Muldrow of Mississippi then moved to limit the entire bill to CBPP by striking out clauses that referred to other "contagious, infectious and communicable diseases." This was hotly contested. Thomas Ryan (Republican, Kansas) recounting the losses in Kansas and Missouri to Texas fever, charged that Muldow's amendment "emasculated the bill." The amendment failed by a wide margin—56 ayes to 124 noes.[73]

The final House consideration of H. R. 3967 took place on 28 February 1884 when the House met and "voted on the floor" instead of in "the Committee of the Whole."[74] The first order of business was an amendment to delete Section 4 on quarantine powers from the bill.[75] This passed by a vote of 155 to 116. An attempt to kill the bill by recommitting it to the Agricultural Committee then failed by seven votes—138 to 145. This was followed by a vote on the weakened bill which passed 155 to 127. Many congressmen, who had been critical of the early drafts, including Representative Muldrow of Mississippi, voted in favor of final passage. These legislators presumably found merit in the federal government

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[71] *Congressional Record*, 25 February 1884, p. 1365; 26 February 1884, pp. 1401-02.
[72] *Congressional Record,* 27 February 1884, pp. 1436-38, 1441. An attempt the next day to insert a new amendment that would have been similar to Section 4 also failed by a vote of 73 ayes and 131 noes, "The Northwestern Democrats voted almost solidly for the bill, while the Southern Democrats, with seven exceptions, voted against it."
[73] *Congressional Record,* 27 February 1884, pp. 1436, 1438-1440.
[74] Until 28 February 1884, all discussions and votes were conducted in the "Committee as a Whole **House on the state of the Union."((note state not State))** Under the rules in effect, the House did not record the roll calls of the votes taken in the Committee of the Whole. The names of representatives voting were recorded under the "Vote on the Floor" rules that were in effect on 28 February 1884. We thank Brian Sala for helping unravel some of the intricacies of Congressional procedures.
[75] As we noted the Committee of the Whole voted to delete section 4. House rules allowed for this issue to be placed before the House under the "vote on the floor" rules which would require the names of those voting to be recorded.

helping in the control of contagious animal diseases but were not willing to grant strong powers to the executive branch.

The *Chicago Tribune* noted "The passage of the bill is rather remarkable. Only one-fourth of the Democratic membership, and the Democrats have a seventy majority, voted for the bill."[76] The *New York Times* noted in the lead-up to the final vote: "the Democrats have indulged in some acrimonious flings at their own demoralized party… the Republicans must win the largest share of the credit for helping the measure to a favorable conclusion, for the opposition speeches have come from the Democratic side, and the amendments which would, in the estimation of Mr. Hatch, ruin the bill, have emanated from Democrats. These have all been voted down by a solid Republican opposition, made effective by auxiliary Democratic support."[77]

The Senate took up debate of H. R. 3967 on 12 March 1884 with the Chair of the Committee on Agriculture and Forestry, Warner Miller of New York shepherding what he termed "the Pleuro-pneumonia bill." The Senate Committee had made many changes, which would later be voted on as amendments to the House version. Most importantly the committee had reintroduced the essence of the old Section 4. In Miller's words without the quarantine provision, "the efficiency of the measure might be entirely destroyed."[78] The other major change made the federal government assume all the costs rather than obligating each state to pay one-half of the expenses of eradication incurred within its boundaries. Under the version first presented to the Senate, the federal government would pay the entire costs. Miller thought that the eradication endeavor would not operate effectually with "the money power…divided between the State and Federal authorities."[79]

Numerous Senators waded into the debate with Coke of Texas charging that "this bill will hand over to the custody of the Commissioner of Agriculture and the Secretary of the Treasury all the cattle from Virginia between the coast and the foot of the mountains in North and South Carolina and Mississippi and Alabama and Louisiana and Florida and Texas." The Commissioner of Agriculture and his agents would have absolute power over "untold millions of dollars worth of stock…."[80] "He is to be judge, jury, and executioner."[81] Although Miller had introduced his committee's draft as the "the Pleuro-pneumonia bill," this debate centered on Texas fever. Coke noted that so-called Texas fever had long existed throughout much of the South and that the cattle in this vast region "are in a perfectly natural and normal condition of hearth. …The people need no assistance form the Government." The bill would "destroy the market value of cattle throughout the South…. No foreign country will take them when denounced as infected with disease which is classed with pleuro-pneumonia, lung-plague, and other deadly diseases." He would

[76] *Chicago Tribune*, 29 February 1884, p. 1.
[77] *New York Times*, 28 February 1884, p. 1.
[78] *Congressional Record*, 12 March 1884, pp. 1791-92. The quarantine provision was not buffered by a stipulation that a state's governor or legislature must approve the quarantine.
[79] *Congressional Record*, 12 March 1884, p. 1792. Miller would be proven wrong on this score as federal-state cooperation became the model for most future eradication programs. There were many other changes such as the removal of "infectious" in a number of sentences.
[80] *Congressional Record*, 12 March 1884, pp. 1793-94.
[81] *Congressional Record*, 12 March 1884, p. 1795.

support a bill to suppress CBPP and FDM, but this bill is "monstrous."[82] After several procedural skirmishes the Senate turned to other business.

In the midst of the debate on the pleuro-pneumonia bill, the Senate turned to confront the apparent outbreak of FMD in Kansas. On 13 March 1884, Senator Preston Plumb (Republican, Kansas) introduced S. R. 75 calling for an appropriation of $25,000 to help his state stamp out an alarming new disease spreading among its cattle. Ardent backers of the BAI such as William Sherman (Republican, Ohio) and Shelby Cullom (Republican, Illinois) preferred that FMD be dealt with in the more general legislation. But they came to realize that such legislation might not pass for months, if at all, and thus pushed for a more limited, emergency appropriation bill. The debate on the FMD bill took place on March 14th and 17th occupying roughly 33 pages in the *Congressional Record*. Given reports the FMD had spread to Illinois, Iowa, and Missouri the bill was amended to include all states.

There were many parallels with the more general debate. Plumb and his allies emphasized the spillover effects of FMD arguing that even if it only appeared in one locality it could soon spread across the continent as it done in Europe and Australia. With the coming of spring, farmers would turn their animals loose on the open range, rendering it impossible to contain the disease. Only rapid control efforts could prevent serious losses. Plumb argued that federal involvement was needed to counter the self-serving behavior of farmers in infected states: "After the first alarm it is to the interest of the people in the locality where the disease occurs to belittle it…. until they can get rid of their cattle, until they can send them away. So the very moment the disease is well defined in any locality the men ship the cattle off." Only federal officials could credibly guarantee that a disease had been eradicated and that cattle and meats were safe to enter other regions—nobody would believe the reports from officials of the infected state.[83] The threat of foreign quarantines against all cattle shipment also made the outbreak a national rather than merely local problem.

The opponents suspected that the whole crises was overblown (with the aid of hindsight they were correct) and maintained that the individual states were capable of controlling the problem. The federal government had no authority to meddle in the internal affairs of the states, even in light of the Constitution's language about providing for the general welfare. Senator Thomas Bayard (Democrat: Delaware) pounded on the moral hazard problem noting that there has been a cattle mania with very high prices for highbred cattle. If there were a crash, "it may be that a great many gentlemen in possession of these herds would be only too happy to have the disease break out among them that they might find a ready market, to be paid for out of the United States Treasury."[84]

Both sides recognized this FMD bill bore on the more general BAI debate. Senator Maxey (Democrat: Texas) was clear on this point: "Sir, this is simply the advance guard, the skirmish line, of the pleuro-pneumonia bill. We are starting out upon the most dangerous route in my judgment that this country ever traveled." He further objected that "I do not fancy the manner in which this measure has

[82] *Congressional Record*, 12 March 1884, pp. 1794-95.
[83] *Congressional Record*, 17 March 1884, p. 1968.
[84] *Congressional Record*, 17 March 1884, p. 1963.

come in, right upon the heels of the great stock-destroying bill now pending, the most dangerous bill upon our Calendar." Following a number of amendments, including an increase the appropriation to $50,000, the FMD bill passed the Senate by a vote of 29 to 14 and was sent back to the House.

On April 23 the Senate returned to the pleuro-pneumonia bill and undertook the process of amending the bill in the Committee of the Whole. Recognizing their weak position, the BAI's supporters immediately offered a substitute bill that was very close to that passed in the House; most importantly it did not contain the offending quarantine provisions. However, they also proposed to double the appropriation to $500,000. Coke of Texas again went on the offensive repeatedly noting that Texas fever "is not a disease," and that Texas cattle "are fat and sleek." Even the concern with CBPP was a hoax. He emphasized that CBPP had been in the country for 40 years and yet only existed on a handful of farms in five states. "Why all of this cry about pleuro-pneumonia when there is none of it?" Here he was supported by McPherson who repeated his earlier assertion that CBPP "could not exist in New Jersey for an hour under our laws." McPherson continued that "The only basis for this bill is sensational reports gotten up by gentlemen belonging to the Agricultural Department for the purpose of building up the importance of that department and getting a large expenditure of public money, the creation of fat places, and the exercise of more power."[85] Senator Williams of Kentucky took the lead on behalf of the bill, condemning the Texans for sending "a constant stream of disease and death into her sister states…."[86] The debate continued to occupy the Senate for four more days (April 24, 25, 28, and 29) with new participants rehashing old arguments.[87]

On the last two days of debate a series of amendments significantly limited the power and jurisdiction of the proposed bureau. Most notably on 28 April, Texas' senators obtained an amendment declaring that "Texas fever shall not be considered a contagious, infectious, or communicable disease … as to cattle being transported by rail to market for slaughter, when the same are unloaded only to be fed and watered in lots on the way thereto." In addition to the Texas fever exclusion, the agency's budget was cut from $200,000 to $150,000, and the Senate prohibited the Commissioner of Agriculture from paying indemnities.[88] The Senate also removed the House's funding formula that stipulated that the federal and state governments equally divide eradication costs. With these amendments the Senate passed the bill by a vote of 34 to 9 on the 29th of April and sent it to conference committee. By a count of 92 to 40 the House voted to non-concur in the hope that its conference committee members might gain back some of what was

[85] *Congressional Record*, 23 April 1884, pp. 3288, 3292; 24 April 1884, pp. 3336-37. In fact, on 13 March 1879 a tough law went to effect in New Jersey granting the governor the authority to quarantine, condemn and destroy cattle infected with CBPP. Legislation passed in 1877 provided for the payment of compensation. *First Annual Report of the BAI, 1884,* pp. 299 and 302. Denial of the existence of the disease was common in infected areas. As an example the *New-York Daily Tribune* 18 Feb. 1884, p. 4 attributed the drive for the BAI to the self interests of a few office seekers and ridiculed the notion that CBPP was a serious threat.
[86] *Congressional Record*, 23 April 1884, pp. 3291-92.
[87] *Congressional Record*, 29 April 1884, pp. 3523-25.
[88] *Congressional Record*, 24 May 1884, p. 4477; 28 April 1884, pp. 3461-62.

lost. After the Senate refused to budge, the House accepted Senate version on 24 May 1884, and President Chester Arthur signed it into law on the 29th of May.[89]

With the organic legislation in place the BAI's powers were gradually increased so that before long the dreams of the advocates and the worst nightmares of the opponents came true. The President and his appointees would soon exercise "dictatorial" powers as Voorhees, Lanham, Coke, Morgan and many others had foretold. This process began with the appropriations act of 30 June 1886 (for the FY 1886/87) which granted the BAI the authority to purchase, condemn, and destroy infected animals. The new authority included the power to compensate the owners of condemned animals to encourage the farmers to reveal rather than conceal sick stock.[90] In that year the Commissioner of Agriculture also issued quarantine rules but these were not universally accepted. On 3 March 1887 Congress further strengthened the BAI's powers by authorizing the establishment and strict enforcement of quarantines, providing funds for the purchase and destruction of both sick and exposed animals (effective July 1887. Congress also increased the agency's budget to $500,000.[91] By the 1920s BAI officials (in agreement with the states) were entering farms, testing animals, and destroying them, generally with only partial compensation. Most states generally cooperated, even enthusiastically, but there was a price to be paid for those that did not. As the Texans feared, Hatch's "wall of fire" became a reality.

Analysis of Votes and Debates 1879-1884

Why did a bill to establish a BAI finally pass after over five years of failure? To get a better handle on this issue we can analyze the shifting support for a Bureau in Congress. As a first step to advancing our understanding, Table 2 provides information on the changing composition of the House of Representatives and the Senate over the relevant sessions of Congress. In the 46th Congress, the Democrats controlled both Houses. In the 47th Congress, the Republicans took charge of both, although the margin in the Senate was razor thin. With the 48th Congress, an era of split control began. The Republicans controlled the Senate and the Democrats the House.

The House

For the House, the *Congressional Record* records three roll call votes regarding the formation of the BAI—all from 28 February 1884. (There were no relevant roll calls in the earlier seesions.) The 1884

[89] *Congressional Record*, 28 April 1884, pp. 3471-73; 29 April 1884, pp. 3530-31; 7 May 1884, p. 3944; 24 May 1884, p. 4477.
[90] Wiser, *100 Years of Animal Health*, p. 22.
[91] Although controversial, compensation schemes for diseased animals were not new. In the 1860s, Massachusetts compensated the owners of cattle infected with CBPP, as did New Jersey starting in 1877. There was a long history of paying compensation in Europe. In 1714 the City of London briefly compensated cattle owners in an effort to stamp out rinderpest, and the British government reportedly had paid 220,000 pounds in compensation between 1745 and 1758 in its fight against that disease. Spinage mentions similar compensations programs in parts of Switzerland, Germany, Italy, and France. C. A. Spinage, *Cattle Plague: A History* (New York: Kluwler Academic, 2003), pp. 125-27. For a study of compensation programs in a number of countries, see *Second Annual Report of BAI, 1885*, pp. 150-56.

votes concerned (1) amending the bill to strip out Section 4, thereby eliminating the President's power to establish quarantines; (2) recommitting the bill to committee (to die for that session); and (3) for passage of the bill as amended. As noted before, the amendment passed 155 to 116, the motion to recommit failed 138 to 145, and the bill passed 155 to 127. Proponents of a strong BAI (such as the bill's sponsor, Hatch) voted nay on the first vote, nay on the second, and aye on the third. Figure 2 maps the House votes on 28 February 1884 on H. R. 3967 by congressional district. It provides a breakdown by party and support/opposition to a strong BAI.[92] The core of support for the Bureau in New England and the upper Midwest is evident as is the core of opposition in the South.

As the contemporary press suggested, party membership mattered. As the logit regressions for these votes and the combined average in Table 3, Panel A show, Democrats were far less likely to support a strong BAI. Thus, it is a surprise the bill even came to a vote in the House in the 48th Congress when the Democrats were in the majority. The presence of the diseases also mattered as the results in Panel B indicate. Representatives from districts with Texas fever were strongly in favor of the amendment stripping the President's power to quarantine. Representatives from districts with either Texas fever or CBPP were significantly more likely to vote to kill the bill or against its passage. The intensity of the effect for Texas fever was much larger than that for CBPP.

Panel C places these votes into the standard Poole-Rosenthal framework. The dependent variables are the Poole-Rosenthal dwnom1 and dwnom2, which each range from -1 to 1. The standard interpretation is that dwnom1 captures the representative's ideal point along economic conservative-liberal dimension and "almost always divides the two major political parties."[93] (Indeed in our analysis, including the dwnom1 variable capture the effects of the party variable.) And that for the late nineteenth century, dwnom2 revealed inter-party divides, capturing the representative's position in the regional conflicts.[94] Figure 3 graphs the voting patterns using their Voteview software. For each vote, the slope of the cutline is negative. The success of the bill passage came from the support of Northern Democrats with medium values in the first dimension and high values in the second dimension. Or examined in another but related way, the margin came from the 35 representatives who voted to weaken the BAI legislation by the amendment but supported the revised bill. (Only two representatives opposed the amendment and the final bill).

Panel D adds the variables capturing whether Texas fever or CPBB was present in the district. The dependent variables also include an indicator reflecting whether the representative was a member of the agricultural committee and an indicator of the extent of meat packing in the district, specifically the log of one plus the 1880 value of product of commercial slaughter houses per capita. There are some issues of collinearly because the presence of the animal diseases was correlated with the Poole-Rosenthal scores.

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[92] According to the *Chicago Tribune*, 29 February 1884 p. 1, several BAI supporters were so opposed to the deletion of the quarantine powers that they voted to recommit, that is, to kill the bill in its revised form.
[93] Keith T. Poole and Howard Rosenthal, *Congress: A Political-Economy History of Roll Call Voting*, (New York: Oxford Univ. Press, 1997), p. 35.
[94] Ibid, p. 43.

(Specifically, the correlation of the presence of Texas fever with dwnom1 was -0.47 and with dwnom2 was -0.21; the correlation of CBPP with dwnom1 was trivial but with dwnom2 was -0.29. Combining the diseases, the union of the two has a -0.40 correlation with dwnom1 and -0.37 with dwnom2.) The regressions show the power of the Poole-Rosenthal variables, especially relative the indicator of the present of Texas fever. Nonetheless, other effects mattered as well. The extent of meat packing was positively related to voting against quarantine power. And the presence of CPBB has a negative and marginally significant influence throughout against final passage. Perhaps, most interestingly, the organization of Congress mattered in that membership in the agricultural committee signaled strong support on the bill. Only two members of the 16 person committee voted against its passage. This voting block together with the leadership of William Hatch (and the implicit support of Speaker Carlisle from northern Kentucky) likely explain why the majority of the majority were rolled on this bill. Another possibility is that the House leadership expected the bill to suffer the fate of previous bill and die in the Senate.

The Senate

For the Senate, the *Congressional Record* records seven roll call votes at various stages of the debate in 1884 and one each in 1882 and 1883. Analyzing these roll calls helps us understand why the BAI bill passed in 1884 whereas it died in 1882-83 and why the Bureau's powers subsequently expanded. Table 4 presents the results of logit regressions explaining voting patters in the early pre-passage period (1882-83), the middle passage period (1884) and the late, power-expanding period (1887-88). Figure 4 graphs the Poole-Rosenthal cutlines for the individual measures while Figure 5 displays the geography of voting patterns for the key 1884 roll calls. The regression results indicate that a strong, negative relation between dwnom1 and support for the BAI in the 1882-83 roll calls but a shift to a strong, positive relation in 1884 and 1887-88 votes. This is consistent with Republicans shifting from opposition toward support for a strong BAI. The coefficient of dwnom2 shifts from neutral to positive whereas the dummy indicating the presence of Texas Fever shifts from neutral in 1882-83 to negative in 1884 to strongly negative by 1887-88. This represents a partialing out of the effects of Texas Fever and the Poole-Rosenthal 2-dimension score, which tend to be correlated. Finally, Senators in states with CPBB oppose the BAI in 1884 (when no compensation was included) but have no statistically significant differential effect at other times.

Tracking the votes of individual senators between the pre-passage and passage confirms that the legislation's reversal of fortune resulted from gaining the support of a large group of Republican senators. Twelve senators who voted to postpone and thus effectively kill the 1882 bill (on 3 August 1882) voted yes on the final bill on 29 April 1884. All 12 were Republicans; six from New England, four from the upper Midwest, and one each from New York and Nebraska. Five other New England and Midwestern Republican senators, who had vote to table in 1882 were absent for the final tally in 1884 but indicated their support by pairing with senators who were also absent and inclined to vote no. Thus a total of 17

Republican Senators effectively switch sides.[95] No Democratic opponent in 1882 switched to support the bill in 1884, although two who were absent in the first vote, did vote for passage in 1884 (Garland of Arkansas and Lamar of Mississippi). Seven Democrats voted in support of the measure in both years, while only two senators Coke and Maxey—both Texas Democrats—voted against the bill on both occasions. Two other Democrats, Morgan of Alabama and Hampton of South Carolina, sided with the proponents in 1882 but voted against the bill in 1884. Although southerners tended to oppose the measure there were key exceptions. Both of Mississippi's Senators, Lamar and George, voted yea on the final ballot, as did Senator Call of Florida, and Garland of Arkansas. The voting pattern for the Border States for final passage was mixed. In the East the four Democratic senators from Maryland and Delaware voted or paired with the nays; those from West Virginia split; for both Tennessee and Kentucky, one voted in favor and the other was absent or abstained; and both senators from Missouri sided with the advocates. All of these senators were Democrats.

In 1884 opponents and supporters introduced numerous of amendments. The *Congressional Record* reports six roll call votes on key procedural motions and amendments in addition to the vote to pass the bill. Four of these offer a clear division of sentiment with the hard-line proponents and opponents lining up on opposite sides. An examination of these four votes and the final vote to pass the bill shows that a large number of the Republican senators who switched between 1882 and the final vote in 1884 and many of the Democrats who voted for the final bill were ambivalent at best on the earlier ballots, often voting with the opponents to dramatically limit the legislation's coverage or to delay its consideration. Amendments (mostly made without roll call votes) included eliminating the power of the President to quarantine states (or parts of states) that harbored diseases, the provisions to compensate the owners of condemned animals, a cut in the budget from $250,000 to $150,000, and a tight limit on the number of BAI employees. For the bill's advocates one of the most galling amendments was a stipulation specifically exempting Texas fever as a contagious or infectious disease under the interstate transportation provisions of the act. After five years of debate the advocates were ready to take a partial victory to get their foot in the door. To keep the most ardent supporters from defecting, the bill's managers repeatedly noted that once the organic legislation establishing a Bureau of Animal Industry was passed, the agency's powers could be strengthened in future appropriation hearings.

A look at the record of a few key senators further adds to our understanding of why the bill finally succeeded. In 1881, when a similar bill (S. No. 2097) died in the Senate, the leader of the opposition was Senator John Ingalls, a Republican from Kansas.[96] He left no doubt as to his opinion:

"...I feel impelled to say that it is without any exception the worst bill that I ever read upon any subject. It is bad in principle; it is bad in theory; it is bad in policy, and worse in detail. He went on to assert that every one of its provisions "is directly at variance with the Constitution…." Ingalls further charged that the

[95] An early sign of the change is the negative correlation (-0.22) in votes regarding the initial procedural measures to consider the BAI legislation in February 1883 (47th Congress) and in March 1884 (48th Congress).

[96] *Congressional Record*, 16 December 1881, p. 158.

legislation would "put the entire live-stock business of this country at the mercy of a totally irresponsible machine…."[97] "It is a hydra-headed monster, it is a regular octopus, a legislative devil-fish, with its arms extending in every direction, and gasping within its pernicious embrace every feature of one of the most valuable industries of this country, without one single particle of responsibility to any source whatever."[98]

This 1881 "devil-fish" died in the Senate without a roll call being recorded.[99] In 1882 Ingalls spoke against and voted for killing a similar bill (HR No. 896). In 1883 he again sided with the opponents in a vote on the same bill (HR No. 896).[100] By 1884, Ingalls was an ardent supporter of the FDM bill to help fight the suspected outbreak in Kansas and went so far as to declare that "the doctrine of State rights and State sovereignty dies hard, but I think it is moribund and in the course of time will eventually be buried." Where in 1881 States Rights was a sacred principle for the Senator, it was now an "exploded, abandoned, and defunct interpretation of the Constitution."[101]

Apart for one procedural comment, the Senator was mute in the debates and voted with the bill's hard-line supporters on two of the key early skirmishes.[102] Ingalls was absent for the remained of the ballots, but it is likely that he had changed his colors. What in 1881 was an unconstitutional "hydra-headed monster" was now worthy of his support. What had changed? Precisely at the time that Ingalls flipped a FMD scare erupted in five counties of his home state as well as in Missouri and Illinois. On 3 March 1884, Kansas Governor G. W. Glick alerted Commissioner George Loring of a probable FDM outbreak, asking if he could send "a competent veterinary surgeon? No one here can advise what to do." On the 5th Glick sent another telegram noting that his veterinary surgeon had positively confirmed FMD. The disease had evidently been simmering on farms near Neosho Falls, Kansas, since December 1883 and other outbreaks were reported over 175 miles away in Osborne County. The Department of Agriculture rushed a reliable veterinarian, M. R. Trumbower to Kansas. On 10 March, he confirmed the local veterinarian's diagnosis of FMD, but on March 13th he began to have doubts due to the lack of excessive saliva flows and because pigs had not also fallen ill. With several states on the verge of quarantining all cattle, sheep, and hogs shipments from the Kansas, Governor Glick called a special session of the state legislature which rushed through bills by nearly unanimous votes to grant unprecedented powers to the executive branch. State officials were also pleading for federal financial assistance and manpower. In response Congress made an emergency appropriation of $50,000 to help fight the FMD outbreak.

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[97] *Congressional Record*, 19 February 1881, p. 1831; pp. 1829-38.
[98] *Congressional Record*, 19 February 1881, p. 1832.
[99] At that time there were at least four other bills in senate committees dealing with some aspect of the interstate shipment of animals and animal health. *Congressional Record*, 19 February 1881, p. 1838.
[100] *Congressional Record*, pp. 6827-32.
[101] Many of Ingalls' colleagues took delight in reading his past statements and roasting him on his flip-flop. Ingalls countered that "only dead men and fools" never change their opinions, and in a confusing exchange implied that he still might vote against the general bill. *Congressional Record*, 14 March 1884, pp. 1898-1901.
[102] Every senator that voted with Ingalls on these two amendments and subsequently voted or paired on the final vote, voted for creation of the BAI; every senator that voted nay on these two early measures and subsequently voted or paired on the final vote, opposed the BAI.

In the meantime, Trumbower's report prompted Salmon to see for himself. He arrived in Kansas on March 15th and immediately tested the suspect herds. Salmon concluded that the cattle were not infected with FMD, but with a far less dangerous look-alike illness. Salmon also inspected suspect herds in Missouri and Illinois, reaching the same conclusion. He then sent reports to several states that were contemplating quarantines thereby averting "an almost complete suspension of the live-stock business of the West...." But the problem did not disappear because inspectors sent by other states and Canada were not convinced. On 9 April 1884 the Canadian representative positively pronounced that the cattle were infected with FMD and Kansas officials continued to hold this view into mid April. Only after Salmon returned to Kansas and Illinois in late April and again declared the cattle free of FDM did the scare subside. Although we can only speculate, the threat of FDM destroying Kansas' cattle industry was likely a wake-up call for Ingalls and others. Salmon's constructive role helping state officials may also have created good will. Certainly the often-heard claim by many of the BAI's opponents that FMD and CBPP could not thrive in the pure and wholesome atmosphere west of the Allegany Mountains had lost some of its appeal.[103]

One might have expected that the same logic should have held for senators with CBPP spreading within their own states. It did in some cases, but, as we have noted, New Jersey's Senator John McPherson remained a consistent opponent even though by the early 1880s CBPP had become entrenched in much of his state. The state's other senator William Sewell appears to have been wavering or may even have changed his mind. An early opponent, he did not vote or pair on the final vote, but on a key vote to kill the legislation in 1884 he sided with the BAI's enthusiasts.

The BAI in Action

Growing concern with CBPP was a driving force behind the creation of the BAI, and combating this disease would dominate new Bureau's early agenda.[104] This emphasis was in part dictated by events, because in summer of 1884 CBPP was discovered in Ohio, Illinois, and Kentucky. By early 1885 it also appeared in Missouri and perhaps Tennessee. The nightmare that the disease would take hold in the West

[103] *Congressional Record*, 23 April 1884, p. 3286. Salmon ruled out FMD because animals inoculated with fluids drawn from sick animals did not fall ill. There is no doubt that a plague of some sort had hit Kansas, Missouri, and Illinois. The cattle examined had elevated temperatures; blisters in their mouths, tongs, udders, and hooves; and many had lost one or more feet. Salmon and Trumbower's conclusion was that the cattle suffered from ergot poisoning that was the result of eating ergotized grasses. *First Annual Report of the BAI, 1884,* pp. 175-85, 310-20.

[104] Salmon (of Salmonella fame) was one of America's leading veterinarian scientists who, by the time of his appointment chief of the BAI at the age of 34, had already conducted research on pleuropneumonia and Texas fever. He established a scientific and administrative foundation the served the Bureau for decades. John R. Mohler, "Infectious Diseases of Cattle," pp. 356-509 in Bureau of Animal Industry, *Special Report on Diseases of Cattle*, (Washington DC:GPO, 1916), pp. 364-77; O. H. V. Stalheim, *The Winning of Animal Health: 100 Years of Veterinary Medicine* (Ames: Iowa State University Press, 1994), p. 8; Stalheim and Moulton, "Veterinary Medicine"; Houck, *Bureau*, pp. 33-47; Powell, *Bureau of* A*nimal Industry*, pp. 2-6 and 11-12.

was becoming a reality. And, for advocates of a strong BAI, the shortcomings of the 1884 act were becoming all too evident. In particular, the difficulties in gaining rapid state and local cooperation and the limit of 20 employees caused serious problems.[105]

On 15 July 1884, Trumbower, now a BAI veterinarian, discovered a CBPP outbreak in a herd of Jerseys near Sterling, Illinois. Immediately the BAI's alarms sounded, and the agency interdicted shipments from infected herds to Tennessee, Nebraska, North Carolina, along with a large number of animals scheduled to pass through the Chicago stockyards.[106] If CBPP had contaminated the stockyards, it could have rapidly spread throughout the country. Further investigations identified the disease in additional herds in Sterling, Geneva, Peoria, Danvers, Springfield, Jacksonville, and Rushville. On 20 August 1884, the U.S. Commissioner of Agriculture, George B. Loring requested the owners of Jersey cattle who had received new stock since the beginning of the year, cease all future shipments. He also reminded cattle owners and railroads that under the 1884 BAI law knowingly shipping diseased animals across state lines was a federal crime. Finally, he requested the "cordial co-operation of State authorities and of all persons interested in the welfare of our cattle industries...."[107] Under the organic legislation of 1884, the federal government had to request state help and hope for the best. Even many state officials who wished to cooperate were hamstrung by rigid legal codes that prevented or delayed effective action.

In several states, BAI officials faced outright hostility. In the summer of 1884, the BAI tracked a shipment of suspect cattle from Illinois to Kentucky and discovered CBPP on a farm owned by H. D. Frisbie and J. K. Lake of Cynthiana. Kentucky had no emergency powers to condemn or even quarantine the diseased animals. For many critical months, the state took no effective action. To make matters worse, in early 1885, Frisbie and Lake began shipping potentially infected stock to Texas. Commissioner Loring telegraphed Texas Governor John Ireland to warn him that the animals were coming and requested the state bar their entry, but to no avail. The new Chief of the BAI, Daniel E. Salmon then traveled to Austin to implore Ireland to inspect and quarantine the animals, but under Texas law the governor was powerless to act even if he had been so disposed. More generally, Texas state authorities and the local press proved highly antagonistic to the BAI and expressed sympathy for Frisbie, asserting nothing was wrong with his stock even though more than half of his animals died in the next six months. By some extraordinary stroke of good luck the disease did not take hold in Texas.

The legal and administrative barriers that hampered the Bureau's containment efforts in 1884-85 had been anticipated in the debates leading to the BAI's creation. Gradually, powers that had been stripped from the stronger proposed bills were inserted into the annual appropriation bills for 1886 and 1887. In addition to gaining new powers, the USDA began encouraging the states to pass legislation authorizing

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[105] Houck, *Bureau*, p. 40. In this early period, cumbersome legal checks and balances also made it difficult to contain the disease. On one Illinois farm it required a full day to dispose of just 10 animals because the BAI agent had to find a justice of the peace and three disinterested appraisers to accompany him onto the farm. The appraisal documents then had to be taken to the town magistrate for his signature and returned to the farm, before the agent could begin his work. *Chicago Tribune*, 28 August 1884, p. 3.
[106] Houck, *Bureau*, pp. 41-42; *First Annual Report of the BAI, 1884*, pp. 16-24 and 62-63.
[107] *First Annual Report of the BAI, 1884*, pp. 22-24.

cooperation with the Bureau, increasing their own police powers, and creating stronger animal-health bureaucracies. Step by step the state-federal cooperative system to identify and control animal diseases was taking shape. The Department of Agriculture issued its first set of uniform rules and regulations for dealing with CBPP in July 1885 and a revised set in August 1886. A number of states acted quickly, but many did not. On 15 April 1887 Commissioner Norman J. Colman distributed a stronger set of rules and regulations, reflecting the BAI's new powers and funding. Salmon noted that "the governors of thirty-four States and Territories at once accepted these rules and regulations and agreed to co-operate with the Department…."[108]

The Governors' acceptances were increasingly dictated by the threat of costly quarantines imposed by other states and by the pressure imposed by the federal government. The BAI supplied the governors with a form letter to sign, date, and return. The whole process smacked of the "one man principle" that had so alarmed the Bureau's congressional opponents. A governor's acceptance gave the BAI Chief absolute power to declare quarantines within his state, slaughter infected and exposed animals, inspect transportation lines and stockyards engaged in interstate commerce, and make all necessary rules and regulations to ensure effective quarantines and cleanup operations. Acceptance committed state and local police to aid and protect federal agents; the failure to do so could trigger the intervention of federal marshals.[109] The power of the federal bureaucracy was expanding quickly. Because many states still lacked effective legislation to combat diseases and to allow for cooperation with the federal government, the BAI also supplied a template law for the states to consider. Five states (New Hampshire, Massachusetts, Rhode Island, New York, and Virginia) promptly adopted the proposed law and other states worked out compromises acceptable to the BAI.[110]

Although the subsequent campaign involved many state-federal jurisdictional conflicts and farmer complaints against "heroic measures" and the "one man principle," the contagion was stamped out. Table 5 provides a sense of the subsequent progress of the CBPP campaign, showing its build up in 1887, peak in 1888, and the final mopping up operations. Underlying the data was an ongoing struggle to gain effective support and cooperation from the states.[111]

The last infected animal was discovered New Jersey in March 1892. On 26 September 1892 Secretary of Agriculture, J. M. Rusk, officially declared the United States free of CBPP. In about five years and with a cost to the federal government of $1,509,100.72, the BAI working in partnership with the infected states had achieved a spectacular success. Thus the total federal expenditure compared quite favorably to the Bureau's estimate that American farmers had been losing about one million dollars annually due to the lower price for cattle received in the British market alone. Of course the actual losses

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[108] *Third Annual Report of the BAI, 1886*, pp. 15-19; *Fourth and Fifth Annual Reports of the BAI, 1887 and 1888*, pp. 10-13

[109] *Second Annual Report of the BAI, 1885*, p. 39 *Fourth and Fifth Annual Reports of the BAI, 1887 and 1888*, pp. 10-16, Houck, *Bureau*, p. 44.

[110] *Fourth and Fifth Annual Reports of the BAI, 1887 and 1888*, pp. 13-16.

[111] *Fourth and Fifth Annual Reports of the BAI, 1887and 1888*, pp. 9-38, especially pp. 6, and 12-35; *Operations of the Bureau of Animal Industry, 1890*, p. 5.

would have been much larger if the disease had spread unchecked. In his official history of the BAI, Houck did not hide his enthusiasm for the agency's achievement:

> The United States was the first of the large nations of the world…which, having been extensively infected with contagious pleuropneumonia, was able to extirpate it completely. When it is considered that there were greave doubts entertained of the possibility of eradicating pleuropneumonia, that the States were not prepared to cooperate effectively, that serious opposition was met on almost every hand, and that other countries had labored a much longer time and made greater expenditures of money without success, the favorable outcome must be regarded as a great achievement for the new Bureau of Animal Industry. It accomplished the first great thing it undertook, the paramount propose for which it was created.[112]

More than ensuring the agency's future, the campaign to eradicate CBPP helped forge the organizational guidelines for state-federal cooperation, pressured the states to strengthen their legal and administrative structures, and gave leaders in the veterinary community the confidence to undertake even greater challenges. In addition the powers and size of the Bureau expanded rapidly as more members of Congress saw the need for heroic animal disease measures directed by a larger federal agency. The BAI's influence continued to grow under both Republican and Democratic Presidents. In 1884 the agency was limited to 20 employees (plus four enumerated staff). The 1888 Annual Report listed 279 employees; this force was augmented by a large number individuals employed by the various states and put under the BAI's command. Events fulfilled the 1882 prophesy of BAI opponent, Senator Charles Van Wyck (Republican: Nebraska), that the Bureau "would live…long after the pleuro-pneumonia had been stamped out."[113]

Conclusion

Over the coming decades, BAI scientists became world leaders in advancing the understanding of animal (and human) diseases and in devising extension programs that brought the new scientific breakthroughs onto American farms. Historians of science and technology often focus on the scientific advances of which there were many. However, perhaps the BAI's most significant achievement was to develop political alliances and incentive-compatible programs to gain widespread support and compliance. This required considerable acumen. The agency gradually built coalitions with industry groups and local governments, it developed educational campaigns, it experimented with pilot programs to improve its methods and technologies, and it fine tuned compensation schemes. Without well-designed extension programs many of the scientific breakthroughs would have had little effect because of market failures arising from the need for collective action. In fact, in the early twentieth century, the same science and the same technologies were available to all the developed nations, but many lacked the political resolve and

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[112]Houck, *Bureau*, pp. 44-47; Mohler, "Infectious Diseases," pp. 366-67; Lise Wilkinson, *Animals and Disease: An Introduction to the History of Comparative Medicine* (Cambridge: Cambridge University Press, 1992), p. 52. *Eighth and Ninth Annual Reports of the Bureau of Animal Industry, 1891 and 1892*, pp. 23 and 71-74.

[113] *New York Times*, 4 August 1882, p. 1; *Fourth and Fifth Annual Reports of the BAI, 1887 and 1888*, pp. 22-79.

infrastructure to devise successful control or eradication programs. This was especially true in the case of bovine tuberculosis.

There were several common elements in these efforts to create national legislation and to enforce animal disease regulations. Both public policy and the public's support for control measures evolved rapidly as scientists advanced the understanding of diseases, improved diagnostic methods, and in some cases offered cures. The link between science and public policy ran in both directions because the BAI's leaders were actively directing fruitful research efforts. In the later part of the nineteenth century, although the powers of state governments to control animal diseases increased, there was a far more rapid growth in the federal authority. Classic problems of asymmetric information and large negative spillovers across state lines generated a need for an agency with regional and national powers. The highly contagious nature of some diseases, and the enormous dangers that they posed, created the need to bypass time-honored checks and balances, concentrating vast power in the hands of a few unelected bureaucrats—what contemporaries dubbed the "one man power principle." The proposals for such changes engendered heated opposition and only began to gain acceptance after an acrimonious national debate that lasted well over a decade. Experiments with private initiatives and state and local regulations to prevent the spread of contagious diseases were often ineffective and sometimes counterproductive. As one example, the piecemeal state and local pure-food campaigns aimed at controlling bovine tuberculosis, paradoxically, contributed to a wider geographic dispersion and more rapid increase in the overall incidence of the disease. This problem was not limited to bovine tuberculosis because it was all too common for stockmen to knowingly sell diseased animals to unsuspecting buyers. Local and state inspections and quarantines might help, but if neighboring jurisdictions did little or nothing, a reservoir of the disease remained to re-infect cleansed areas. State and local efforts to restrict trade had a further complication. Drovers often claimed (sometimes with merit) that the threat of disease was simply a ruse, and that state trade barriers were simply an attempt to limit competition.

Initially the BAI's mandate was limited by a Congress concerned with protecting state's rights, fearful of a powerful and potentially arbitrary bureaucracy, and divided by regional factionalisms. However, a series of serious disease outbreaks, coupled with scientific advances and spectacular successes by the new Bureau, inspired confidence and silenced at least some critics. Step by step Congress and the courts expanded the Bureau's authority, giving it inspection and police powers to set standards, restrict internal and international trade in animals and animal products, quarantine whole states, condemn animals, shut down stock yards, and certify healthy animals for consumption and export. To detect diseases in their early stages and restrict the flow of contagious animals, the BAI established inspection stations at major railheads, stockyards, and packing plants. When a disease did erupt, the Bureau rapidly dispatched teams of veterinarians to limit its spread, often by shutting down commerce and destroying the host animals. The agency with the help of consular officials tracked disease conditions around the world and operated extensive quarantine and inspection depots at American and border crossings. The underlying logic was

that it was far more efficient to fence off and monitor one national frontier than to police dozens of state borders.

American constitutional and economic history has devoted considerable attention to the federal government's emergence as a regulator of economic activity. In this literature the first significant federal economic regulatory initiatives date to the passage of the Interstate Commerce Commission Act (1887) and the Sherman Anti-Trust Act (1890). These measures are traditionally viewed as part a long narrative of the rising federal power to confront big business, especially to take on monopoly power in transportation and manufacturing. The literature makes no mention of the establishment of the Bureau of Animal Industry in 1884 and the subsequent rapid expansion of its powers. This omission seems unjustified for several reasons. First, the livestock industry, while smaller than the railroad industry, was not much smaller. There were $1.85 billion invested in livestock inventories and $2.62 billion in railroads in 1880, and the two industries were closely dependent on one another.[114] The interregional and international trade in livestock and meat was growing rapidly in the 1870s and 1880s. Second, the debate to create a federal bureaucracy with powers to regulate diseased livestock preceded and in many ways anticipated the problems confronted in the creation of the ICC. For this reason our analysis of the controversy surrounding the birth of the BAI sheds light on the growth of regulation more generally. In both the arenas of animal health and railroad regulation, the expansion of federal power involved extensive debates over several sessions of Congress, and both engaged many of the same legislators (e.g. John Reagan of Texas) and interest groups (e.g. railroads, farmers, and shippers). Elizabeth Sanders and others have depicted farmers and agricultural interests as driving forces behind much of the nineteenth regulatory legislation, including the ICC. The struggle to create state and federal authorities to regulate the animal trade represents an early case of farmers organizing for a national cause; the episode also highlights the enormous schisms within the agricultural community.[115] There are other parallels as well. For example, in both cases, a Supreme Court decision limiting the power of state governments to interfere with interstate commerce intensified demands for federal action. The U.S. court system, especially the U.S. Supreme Court, was also deeply involved during this period in creating a national market by defining the authority of the states and the federal government in interstate commerce.[116] The debates surrounding the formation and early operations of the BAI played an important role in delineating the new balance between state and federal powers. And finally, while the Interstate Commerce Commission and the Sherman Anti-Trust Acts were largely neutered by court and enforcement decisions in the mid-1890s (and only subsequently revived), the BAI began to exert significant powers immediately. The Bureau's powers rapidly expanded as part of the growth of the regulatory state.

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[114] Gallman, Tables B-4, H-6.
[115] Elizabeth Sanders, *Roots of Reform: Farmers, Workers, and the American State, 1877-1917* (Chicago: Univ. of Chicago Press, 1999).
[116] Richard Franklin Bensel, *The Political Economy of American Industrialization, 1877-1900* (New York: Cambridge Univ. Press, 2000), pp. 9-10, 321-54.

Figure 1

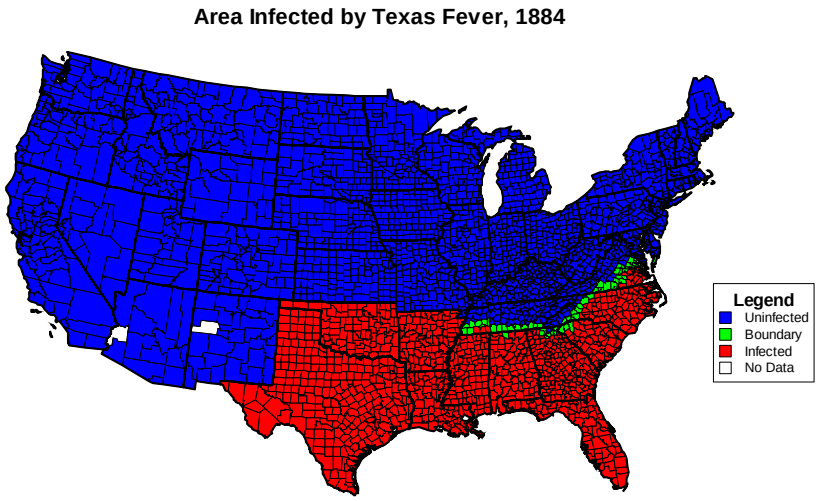
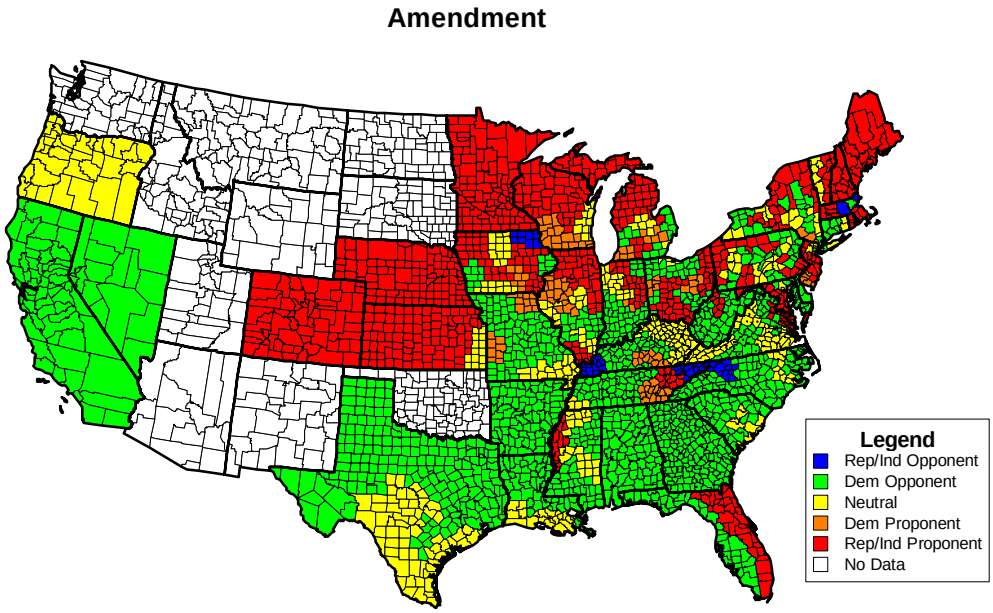
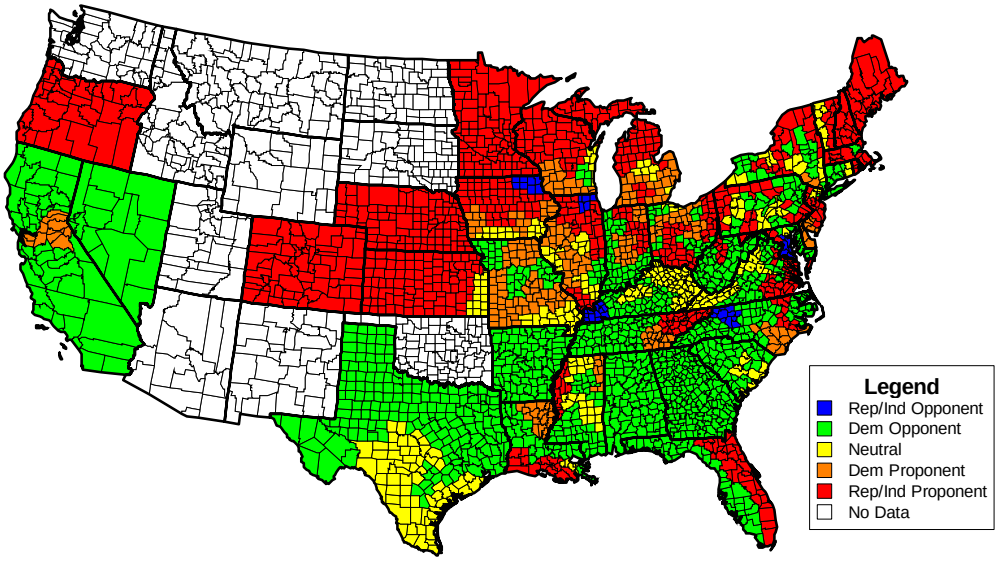


Figure 2: Maps of House Votes concerning H. R. 3967 on 278 February 1884



Recommit



Pass Feb. 28, 1884

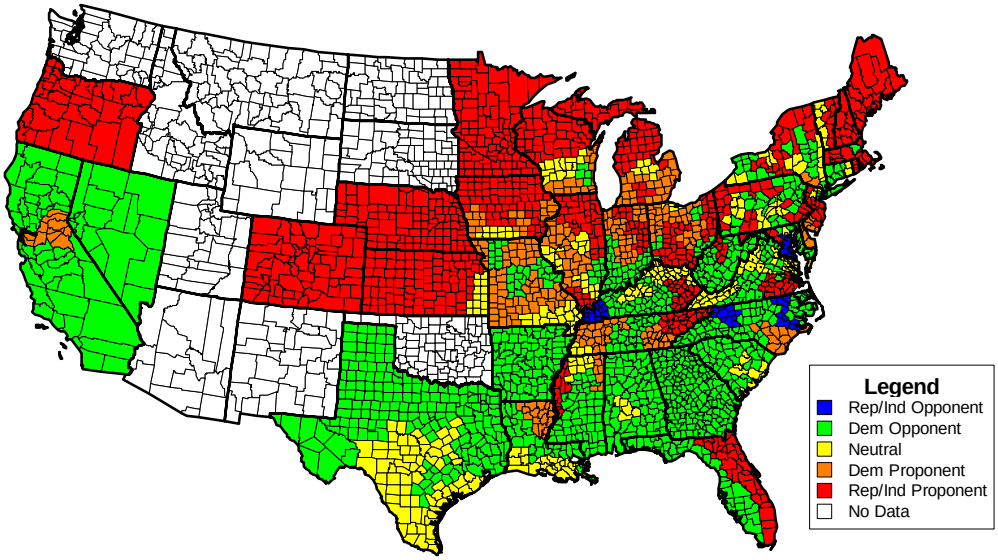
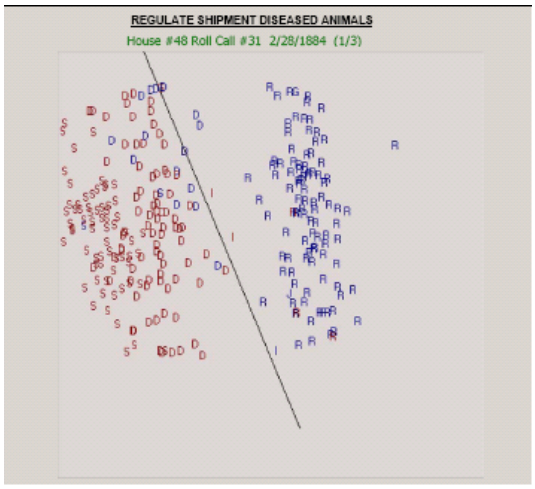


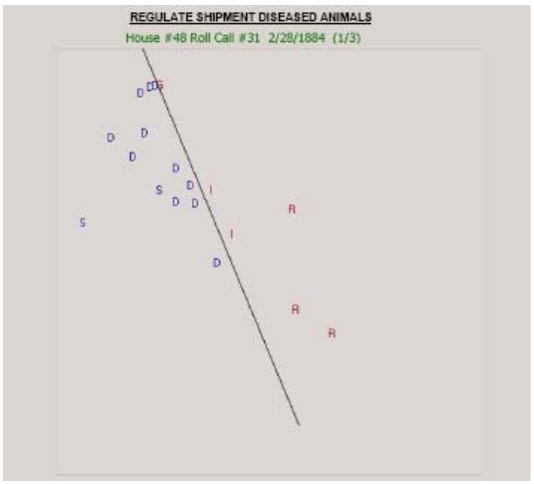
Figure 3: House voting on H. R. 3967 from Poole-Rosenthal's Voteview

Roll Calls

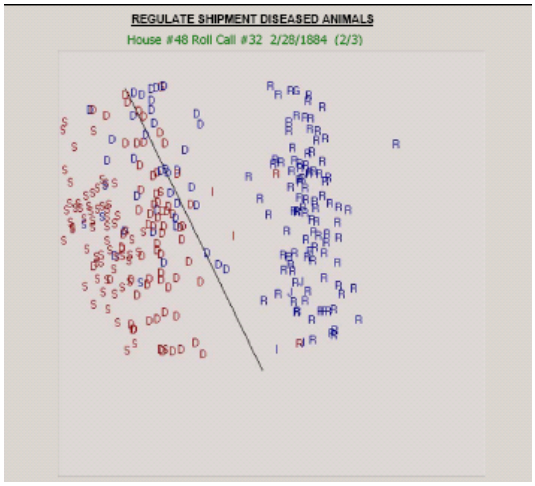
Errors (relative to estimated cut-line)

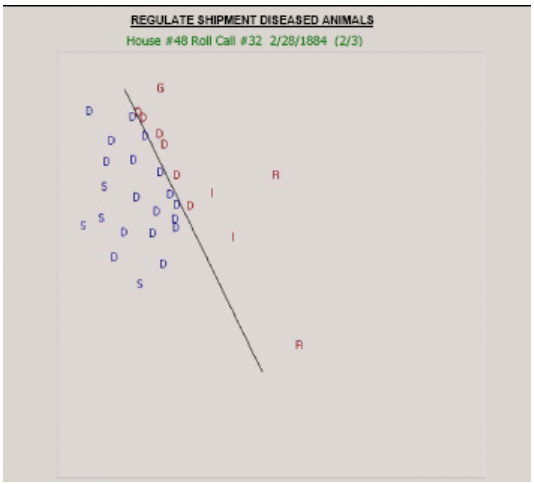
Vote 1: Amend



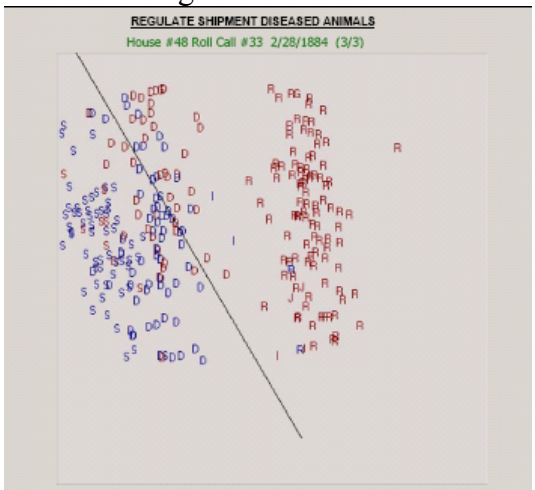


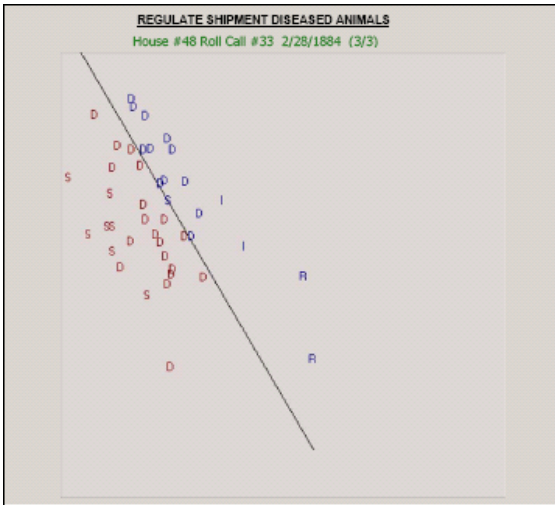
Vote 2: Recommit





Vote 3: Passage



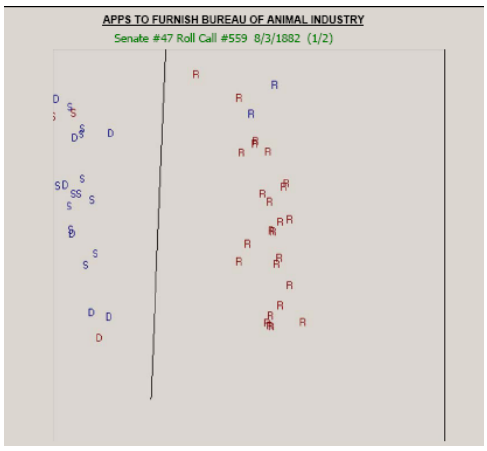


Legend: Red=yes; Blue=no;

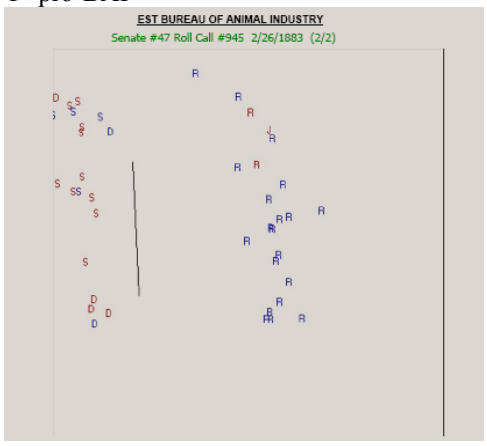
X-axis=Dwnom1; Y-axis=Dwn

Figure 4: Senate Votes on BAI legislation

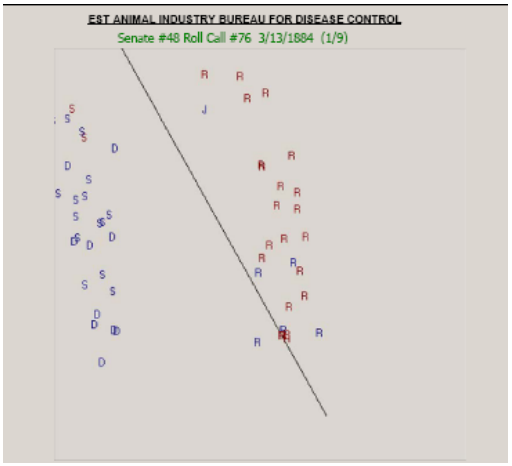
Using the framework of Poole and Rosenthal, the relevant roll calls may be classified as follows:
559 CR--13-7-6832 J 47-1-1075 HR896
Aug. 03, 1882 S471298 Y=27, N=22
Aldrich, R I To postpone, until 2pm tomorrow, further consideration of H.R. 896,
a bill establishing a Bureau of Animal Industry, to prevent the exportation of diseased cattle and the spread of infectious or contagious diseases among domestic animals. (p. 6831-1) N=pro-BAI



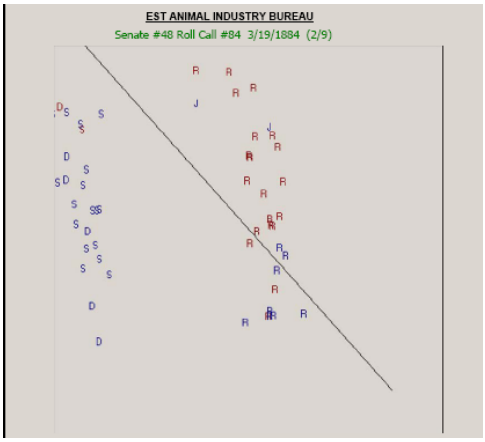
945 CR--14-4-3283 J 47-2-427A PROC
Feb. 26, 1883 S472355 Y=17, N=26,
Williams, KY. To consider H.R. 896, a bill establishing a Bureau of Animal Industry, to prevent the exportation of diseased cattle and the spread of infectious or contagious diseases among domestic animals. (p. 3283-1E) Y=pro-BAI



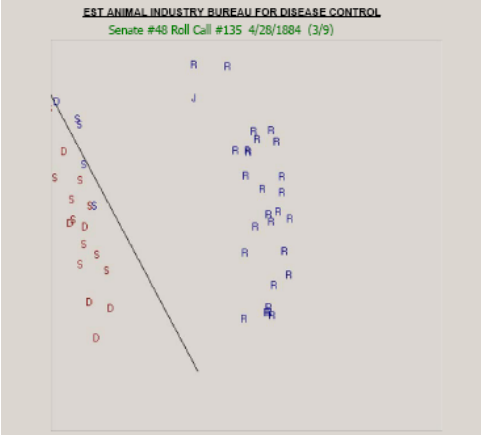
76 CR-15-1-1795 J 48-1-420 HR3967
March 13, 1884 (or March 12) S481066
Y=23 N=34 Miller, NY To consider H. R. 3967, providing for the establishment of a Bureau of Animal Industry, to prevent the exportation of diseased cattle and to provide means for the suppression and extirpation of pleuro-pneumonia and other contagious diseases among domestic animals. (J P. 420) Y=pro-BAI



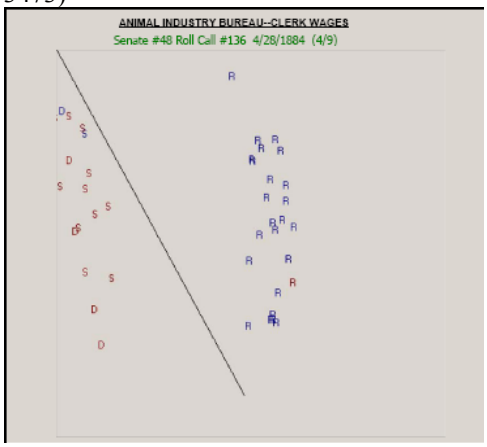
84 CR-15-1-2061 J 48-1-443A S3967
March 19, 1884 S481074 Y=22 N=33
Miller, NY To consider H. R. 3967, providing for the establishment of a Bureau of Animal Industry, to prevent the exportation of pleuro-pneumonia and other contagious diseases among domestic animals. (J P. 443) Y=pro-BAI



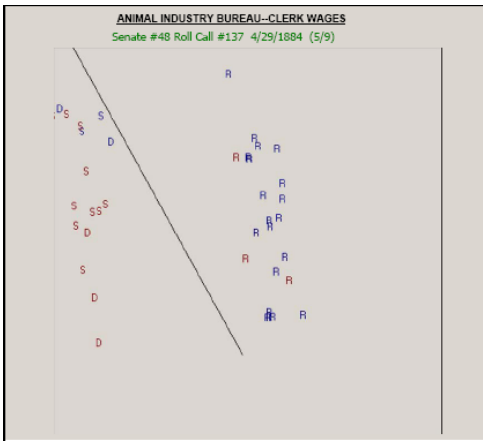
135 CR-15-1-3461 J 48-1-590 HR3967
April 28, 1884 S481123 Y=13 N=30
McPherson, N. J. Recommit to Committee on Agriculture and Forestry (p. 3461)



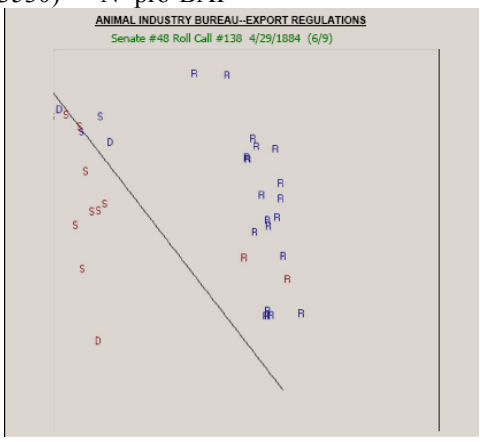
136 CR-15-1-3475 J 48-1-591 HR3967
April 28, 1884 S481124 Y=16 N=27
Morgan, AL To amend H. R. 3967, by fixing compensation of clerks to not exceed $5/day. (p. 3473)



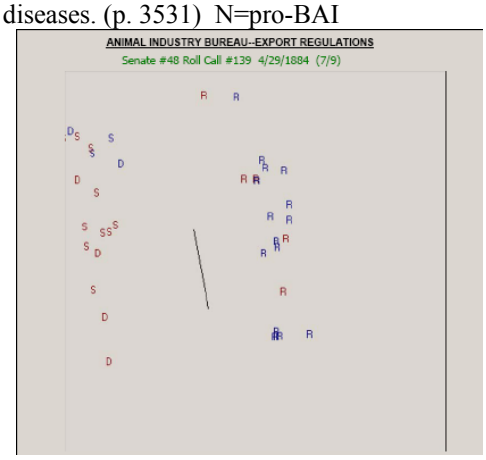
137 CR-15-1-3530B J 48-1-595B HR3967
April 29, 1884 S481125 Y=16 N=25
Morgan, AL To amend H. R. 3967, by fixing compensation of clerks to not exceed $5/day. (p. 3530)



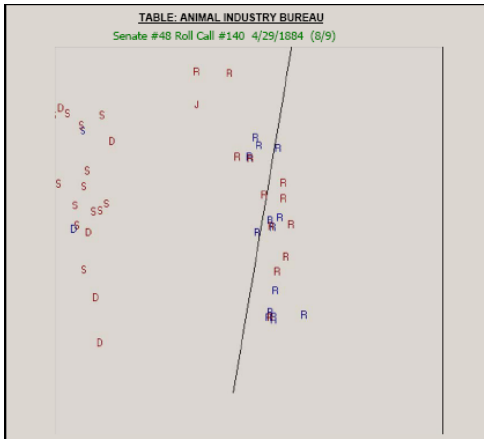
138 CR-15-1-3530A J 48-1-595A HR3967
April 29, 1884 S481126 Y=12 N=24
Morgan, AL To amend H. R. 3967, by directing that the Bureau of Animal Industry shall be guided by the results of investigations, and establish, from time to time, regulations concerning the exportation of livestock. (p. 3530) N=pro-BAI



139 CR-15-1-3531 J 48-1-596A HR3967
April 29, 1884 S481127 Y=18 N=21
Morgan, AL To amend H. R. 3967, by requiring cooperation with State and municipal authorities and corporations engaged in the transportation of meat cattle by land or water, regulating conveyance of such cattle from the interior to the seaboard and shipment thereof, so that such cattle may not be exposed to serious infections and other communicable diseases, and devising means to prevent the spread of such diseases. (p. 3531) N=pro-BAI



140 CR-15-1-3534 J 48-1-596B HR3967
April 29, 1884 S481128 Y=31 N=14
Plumb, KS To table an amendment to H. R. 3967, which amendment deals with certain additional sections. (p. 3533-2) Unclear



141 CR-15-1-3536 J 48-1-596C HR3967
April 29, 1884 S481129 Y=34 N=9
Miller, NY To pass H. R. 3967. (p. 3535)
Y=pro-BAI

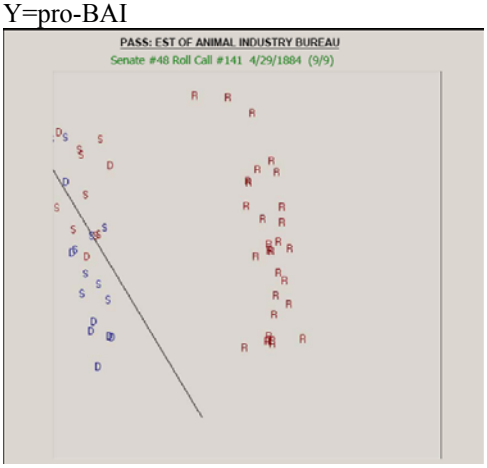
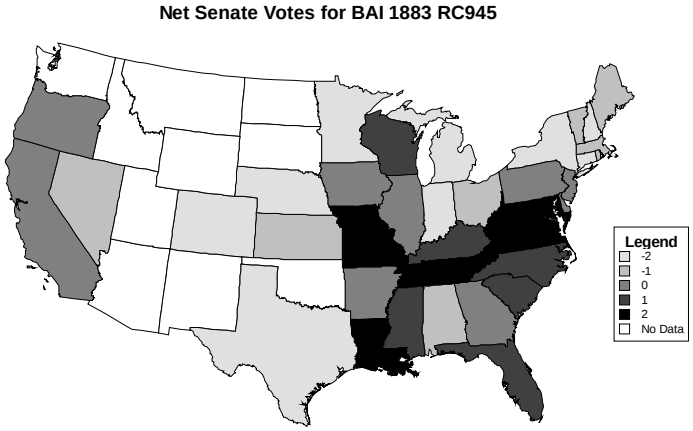
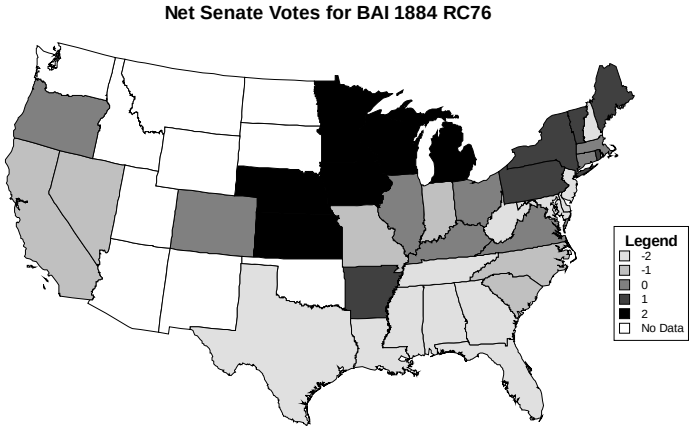


Figure 5: Key BAI Senate Votes





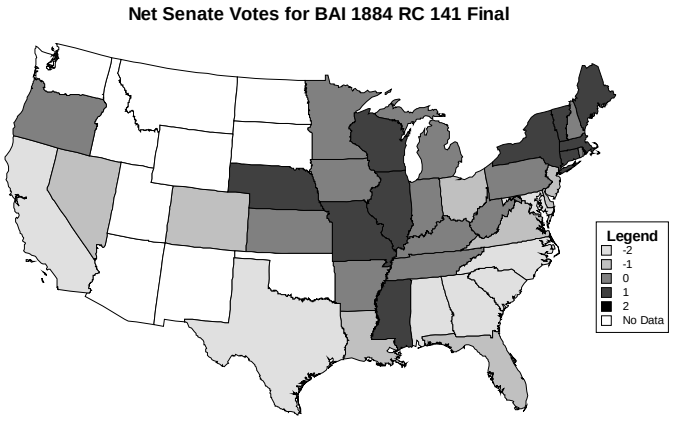


TABLE 1: Evolution of Federal Animal Health Legislation

1	Bill				
2	Date	December 18, 1865	March 3, 1869	1873	1875, 1877, 1878
3	Author				
4	Statute		15 Stat. L. 283	yes	Not Passed
5	Agency	S. of Treasury	C. of Ag		
6	Treatment of Animals in Transit			limit interstate transit w/o food, water, and rest to 28 hrs	limit transit to 24 hours; 1878 requires palace cars
7	Regulation of International Transit				
8	Import Inspections and Quarantines	Emergency prohibitions of foreign cattle.			
9	Regulation of Shipment of Diseased Animals				
10	Regulation of Railroad Shipments				
11	Export Inspection and Certification at Ports				
12	Set Animal Health Regulations				
13	Condemn and Destroy Animals				
14	Impose Domestic Quarantines				
15	Compensation for Animal Owners				
16	Federal State Cooperation				
17	Staff Size and Professionalism		Hires professional veterinarians		
18	Gather Information		Investigates cattle diseases		
19	Conduct Research				
20	Diseases Covered or Excluded				
21	Exceptions	March 6, 1866: limited to neat cattle			
22	Budget				

TABLE 1:continued

1	Orders of S. of Treasury	S. 206	Senate No. 2097	Civil Appropriation Act
2	1878-80	1879	January 25, 1881	March 3, 1881
3			Johnston	
4		no	not passed	21 Stat. 442
5	Treasury	Commissioner of Agriculture	Bureau of Animal Industry	Treasury Cattle Commission
6		limit transit w/o water and food to 24 hours		
7		yes	S. of Treasury sets rules and regs deemed needed	
8			establish inspection and Q stations; illegal to import diseased animals; slaughter diseased	establish stations at ports
9		yes	yes; can quarantine	
10		yes	yes	
11	S. of Treasury requires inspection of Brit. bound cattle		yes; C. of Ag, Sec. of Tres., Pres.	Sec of Treas. inspects cattle exports
12			C of Ag, with aid of National Board of Health, to draft rules and regs as necessary for speedy suppression	
13			must be done by states	
14			yes; Pres. can prevent movement to another state	
15			of value as if healthy, but not over $100	
16			C. of Ag instructed to work with state and municipal authorities	
17		men at every port	Chief to be a veterinary surgeon approved by National Board of Health; Also agents in every state and chief and two competent cattle men	Three Commissioners
18			yes	yes
19				
20			amended to exclude Texas Fever	
21			cattle shipped from Gulf ports and to West Indies	
22			$200k	$15k

TABLE 1: continued

1	H. R. 896		Order of C.of Agriculture	H. R. 3967 as introduced
2	June 19, 1882	March 3, 1883	May 1, 1883	January, 1884
3	Hatch			Hatch
4	yes House; no Senate	22 Stat. 603		
5	Bureau of Animal Industry		USDA Veterinary Division	Bureau of Animal Industry
6				no
7	S. of Treasury sets rules and regs as deemed needed			S. of Treasury sets rules and regs as he deems needed
8		affirms S. of Treasury's power to quarantine cattle imports		Per previous leg, Treas. controls
9				yes
10	illegal to knowingly ship diseased animals across state lines			illegal to knowingly ship diseased animals across state lines
11				
12	C. of Ag draft rules and regs as necessary for speedy suppression			C. of Ag draft rules and regs as necessary for speedy suppression and certify rules of states and territories
13				in cooperation with states
14	only in DC			yes; if state does not cooperate Pres can quarantine a state or part of a state
15				yes: fed state split 50/50
16				yes
17	yes			yes
18	yes			yes
19			Coordinates research	
20				
21				
22	$50k			$250k

TABLE 1: continued

1	H. R. 3967 as enacted	1887 USDA Appropriations Bill	1888 USDA Appropriations Bill
2	May 25, 1884	July 30, 1886	March 3, 1887
3			
4	23 Stat. 31	24 Stat. L 100	
5	Bureau of Animal Industry	Bureau of Animal Industry	
6	no		
7	C. of Ag. investigates and reports to S. of Treasury who can make such rules as needed		
8	Per previous leg, Treas. controls		
9	yes/no--see RR provisions--no authority to stop shipments in progress		
10	RR, ship owners, etc. not to knowingly ship diseased animals across state lines--excludes Texas fever--no authority to stop shipments in progress		
11			
12	C. of Ag. sets rules and regulations deemed necessary for the speedy and effective suppression of said diseases		
13	only in DC		
14	If a state is willing to cooperate, then C. of Ag. spend money to quarantine and disinfect to prevent spread to other states		
15	no	Authorized the purchase of diseased animals	authorized purchase and destruction of diseased and exposed animals if states cooperate
16	Invite states to cooperate in execution and enforcement of the act; Commissioner sets rules but needs state cooperation to enforce them.		Publish revised rules and regs. "The Governors of 34 states and Territories at once accepted these regulations and agreed to cooperate"
17	Bill listed 4 named positions and allowed Chief to employ a force not to exceed 20 persons at one time--for a total of 24. Set salaries of chief and key assistants.		
18	yes; and report on the best means for treating, transporting and carrying for animals and means for suppression of CBPP		
19		Relaxed restrictions on BAI size	
20	Excludes Texas Fever in transport and export provisions		
21			
22	$150k		

Table 2: Composition of Congress, 1879-89

Years	Congress	House			Senate			President
		Rep	Dem	Oth	Rep	Dem	Oth	
1879-81	46th	130	**149**	14	33	**42**	1	Rep
1881-83	47th	**147**	135	11	**37**	37	2	Rep
1883-85	48th	118	**197**	10	**38**	36	2	Rep
1885-87	49th	140	**183**	2	**43**	34	0	Dem
1887-89	50th	152	**152**	4	**39**	37	0	Dem

Majority party in **bold**.

Table 3: Determinates of House Votes on H.R. 3967
Logit Regressions

	Amend	Recommit	Passage	Combined
Panel A: Party				
Constant	-2.649	-2.862	3.025	3.602
(Robust SE)	(0.392)	(0.420)	(0.459)	(0.586)
Democrat	4.813	4.056	-3.878	-4.441
(Robust SE)	(0.468)	(0.458)	(0.488)	(0.608)
No. of Obs.	271	283	282	292
Pseudo-R^2	0.564	0.405	0.349	0.383
Pseudo-Log(L)	-80.51	-116.63	-126.37	-123.44
Panel B: Disease				
Constant	-2.842	-3.368	3.538	4.178
(Robust SE)	(0.449)	(0.515)	(0.498)	(0.689)
Democrat	4.588	3.963	-3.732	-4.375
(Robust SE)	(0.484)	(0.511)	(0.512)	(0.671)
Texas Fever	1.966	1.841	-1.930	-1.868
(Robust SE)	(0.604)	(0.423)	(0.452)	(0.423)
CPBB	-0.0348	0.983	-1.224	-1.089
(Robust SE)	(0.461)	(0.486)	(0.480)	(0.458)
No. of Obs.	271	283	282	292
Pseudo-R^2	0.593	0.460	0.419	0.447
Pseudo-Log(L)	-75.24	-105.88	-112.84	-110.74
Support Strong BAI	No	No	Yes	Yes

Combined= average of three votes in favor of a strong BAI position.

Panel C	Amend	Recommit	Passage	Combined
Constant	-0.393	-1.248	1.379	1.696
(Robust SE)	(0.290)	(0.258)	(0.224)	(0.237)
DWNom1	-9.848	-7.818	6.499	7.355
(Robust SE)	(1.314)	(0.877)	(0.678)	(0.757)
DWNom2	-3.044	-2.414	2.362	2.338
(Robust SE)	(0.622)	(0.482)	(0.425)	(0.434)
No. of Obs.	270	282	282	291
Pseudo-R^2	0.724	0.583	0.494	0.526
Pseudo-Log(L)	-50.92	-81.58	-98.08	-94.62
Panel D				
Constant	-0.334	-1.462	1.514	1.843
(Robust SE)	(0.417)	(0.314)	(0.262)	(0.284)
DWNom1	-10.394	-8.143	6.513	7.495
(Robust SE)	(1.413)	(1.012)	(0.778)	(0.827)
DWNom2	-2.923	-2.124	2.005	2.027
(Robust SE)	(0.767)	(0.546)	(0.482)	(0.499)
Ag_Cmt	-2.983	-2.174	2.439	2.387
(Robust SE)	(1.713)	(1.324)	(1.054)	(1.086)
Texas Fever	0.160	0.294	-0.562	-0.362
(Robust SE)	(0.916)	(0.607)	(0.627)	(0.582)
CBPP	-0.359	1.021	-0.940	-0.832
(Robust SE)	(0.629)	(0.650)	(0.554)	(0.568)
LMeat Packing	13.431	10.672	-1.863	-5.929
(Robust SE)	(7.446)	(11.986)	(16.137)	(16.234)
No. of Obs.	270	282	282	291
Pseudo-R^2	0.747	0.603	0.518	0.546
Pseudo-Log(L)	-46.53	-77.58	-93.57	-90.53

Table 4: Senate Voting on Key BAI Bills, 1882-1888

		Entire Period	Early 1882-83	Middle 1884	Late 1887-88
Poole-Rosenthal DWNom1 "Party"	Coeff.	2.714	-4.473	3.044	4.515
	S.E.	0.223	0.933	0.468	0.440
Poole-Rosenthal DWNom2	Coeff.	1.618	0.300	2.386	2.321
	S.E.	0.188	0.649	0.385	0.417
Presence of:					
Contagious Bovine Pleuropneumonia	Coeff.	-0.314	0.537	-0.871	-0.010
	S.E.	0.232	0.980	0.432	0.440
Texas Fever	Coeff.	-1.368	-0.578	-1.439	-2.192
	S.E.	0.219	0.814	0.386	0.474
Constant	Coeff.	1.196	-0.967	1.427	1.688
	S.E.	0.105	0.448	0.204	0.215
No. of Obs.		1182	92	361	556
Pseudo R2		0.33	0.43	0.35	0.60
Estimated Effects					
Poole-Rosenthal DWNom1 "Party"	One SD Shift	0.295	-0.451	0.620	0.462
	0 to 1	0.310	-0.252	0.303	0.292
	Marginal	0.649	-1.012	0.718	1.063
Poole-Rosenthal DWNom2	One SD Shift	0.190	0.035	0.276	0.259
	0 to 1	0.263	0.071	0.291	0.284
	Marginal	0.387	0.068	0.563	0.547
Contagious Bovine Pleuropneumonia	0 to 1	-0.025	0.121	-0.203	-0.002
	Marginal	-0.075	0.121	-0.205	-0.002
Texas Fever	0 to 1	-0.145	-0.130	-0.328	-0.477
	Marginal	-0.328	-0.131	-0.339	-0.516

Entire Period includes FMD votes in 1884

Table 5: Progress of the Bureau of Animal Industry Campaign Against CBPP

	1887	1888	1889	1890	1891	1892	Total	Percent
Cattle Inspection								
New York	25122	99726	149396	150474	136111	49925	610754	38.0%
New Jersey	16461	72095	76001	60659	68262	128017	421495	26.2%
Pennsylvania		72565	24003	24388	55533	66487	242976	15.1%
Maryland	57868	60312	79606	108376			306162	19.1%
Illinois	24059	285					24344	1.5%
United States	123510	304983	329006	343897	259906	244429	1605731	
Percent	7.7%	19.0%	20.5%	21.4%	16.2%	15.2%		
Infected and Exposed Cattle Purchased for Destruction								
New York	1002	4772	3872	2411	309	0	12366	54.8%
New Jersey	211	1447	830	286	275	262	3311	14.7%
Pennsylvania	0	194	11	0	0	0	205	0.9%
Maryland	3006	1495	383	20	0	0	4904	21.7%
Virginia	0	102	0	0	0	0	102	0.5%
Illinois	1547	130	0	0	0	0	1677	7.4%
United States	5766	8140	5096	2717	584	262	22565	
Percent	25.6%	36.1%	22.6%	12.0%	2.6%	1.2%		

Source: USDA, *Yearbook 1892*, pp. 86-88; *Eight and Ninth Annual Reports of the Bureau of Animal Industry for the Years 1891 and 1892*(Washington: GPO, 1893), pp. 72-73.