

“Science in a Democracy”

The Contested Status of Vaccination in the Progressive Era and the 1920s

By *James Colgrove**

ABSTRACT

In the first decades of the twentieth century, a heterogeneous assortment of groups and individuals articulated scientific, political, and philosophical objections to vaccination. They engaged in an ongoing battle for public opinion with medical and scientific elites, who responded with their own counterpropaganda. These ideological struggles reflected fear that scientific advances were being put to coercive uses and that institutions of the state and civil society were increasingly expanding into previously private realms of decision making, especially child rearing. This essay analyzes the motivations and tactics of antivaccination activists and situates their actions within the scientific and social climate of the Progressive Era and the 1920s. Their actions reveal how citizens of varied ideological persuasions, activists and nonactivists alike, viewed scientific knowledge during a period of swift and unsettling change, when the application of biologic products seemed to hold peril as well as promise.

In the summer of 1914, eleven-year-old Lewis Freeborn Loyster died three weeks after being vaccinated in the small town of Cazenovia, in central New York. An autopsy determined the cause of death to be infantile paralysis, and the boy's father, James, was convinced that vaccination was responsible. Spurred by grief, James Loyster began canvassing the cities and towns in the region for stories of children who had been similarly harmed and soon reached two conclusions: that the deaths alleged to have been caused by vaccination far outnumbered those from smallpox itself, and that sentiment in the area ran strongly against the practice—“a feeling almost insurrectionary in its intensity,” he claimed.¹ Loyster, who was active in Republican Party politics in the region, collected his findings into an illustrated pamphlet, which he distributed to members of the state legislature in an effort, ultimately successful, to overhaul the state's compulsory vaccination law for students in public schools.

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¹ James A. Loyster, *Vaccination Results in New York State in 1914* (Cazenovia, N.Y., 1915).

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Although opposition to vaccination in the nineteenth century has attracted considerable attention from historians, such activism during the early twentieth century—a time of great agitation and protest in the United States—has drawn little scrutiny.² In the Progressive Era and the 1920s, a wide range of groups and individuals articulated scientific, political, and philosophical objections to the practice. In addition to questioning the value of orthodox medicine, their arguments were strongly inflected with libertarian, antigovernment views and emphasized the protection of children from state intervention. They scored numerous legislative and rhetorical victories, engaging their opponents—public health officials, physicians, and scientists—in an ongoing battle for public opinion.

This essay examines the contested status of vaccination during the first decades of the twentieth century, as developments in scientific medicine sparked debates about the role elite knowledge should play in a rapidly changing democratic society. I describe the diverse voices that made up the antivaccination movement, the arguments they put forth, and the responses of public health and medical professionals. Opponents of vaccination brought about changes in law and policy around the country and in so doing left a legacy that had profound consequences for all vaccines that would be introduced in subsequent years. Their actions reveal how citizens of varied ideological persuasions, activists and nonactivists alike, viewed scientific knowledge during a period of swift and unsettling social change, when the application of biologic products seemed to hold peril as well as promise.

VACCINATION, SAFETY, AND COMPULSION

Opposition to vaccination, from its introduction at the beginning of the nineteenth century, was based on the linked claims that it was dangerous and that to compel it through law was an unacceptable invasion of personal liberty. Vaccination replaced inoculation, an older method of immunization in which smallpox material was transferred from the arm of a sick person to that of a healthy one to induce a milder form of the illness. Inoculation could inadvertently spread smallpox instead of preventing it and could transfer other blood-borne diseases as well. Vaccination, in contrast, involved the use of cowpox, a related disease that produced only mild illness in humans and provided cross-protection against its more dangerous cousin. After the use of vaccine made from glycerinated calf's lymph began to replace arm-to-arm transfer of disease material in the 1860s, the risk of accidentally spreading contagion declined. But poorly performed vaccinations and the use of

² This topic has only recently received attention from scholars. See Robert D. Johnston, *The Radical Middle Class: Populist Democracy and the Question of Capitalism in Progressive Era Portland, Oregon* (Princeton, N.J.: Princeton Univ. Press, 2003); and Nadav Davidovitch, "Negotiating Dissent: Homeopathy and Anti-Vaccinationism at the Turn of the Twentieth Century," in *The Politics of Healing: Histories of Alternative Medicine in Twentieth-Century North America*, ed. Johnston (New York: Routledge, 2004), pp. 11–28. Most of the literature on the nineteenth-century opposition has focused on antivaccinationism in Europe, especially Great Britain. On the British antivaccinationists see Dorothy Porter and Roy Porter, "The Politics of Prevention: Anti-Vaccinationism and Public Health in Nineteenth-Century England," *Medical History*, 1988, 32:231–252; Roy MacLeod, "Law, Medicine, and Public Opinion: The Resistance to Compulsory Health Legislation, 1870–1907," *Public Law*, 1967, pp. 106–128; and Nadja Durbach, "'They Might as Well Brand Us': Working-Class Resistance to Compulsory Vaccination in Victorian England," *Social History of Medicine*, 2000, 13:45–62. On opposition to compulsory vaccination in Germany see Claudia Huerkamp, "The History of Smallpox Vaccination in Germany: A First Step in the Medicalization of the General Public," *Journal of Contemporary History*, 1985, 20:617–635. On nineteenth-century activism in the United States see James Colgrove, "Between Persuasion and Compulsion: Smallpox Control in Brooklyn and New York, 1894–1902," *Bulletin of the History of Medicine*, 2004, 78:349–378; Martin Kaufman, "The American Anti-Vaccinationists and Their Arguments," *ibid.*, 1967, 41:463–478; and Judith Walzer Leavitt, "Politics and Public Health: Smallpox in Milwaukee, 1894–1895," *ibid.*, 1976, 50:553–568.

impure vaccine matter from disreputable drug firms remained sources of consternation for doctors: every swollen, infected, or abscessed arm that resulted was a black eye to the profession and its efforts to gain respectability with an often skeptical public.³ Safety improved further after the U.S. Public Health Service was given the authority to license and inspect vaccine manufacturers in 1902, although purity of vaccine continued to be a sporadic problem, and government inspection sometimes revealed contamination by tetanus bacilli or other microorganisms.⁴

The frequency of vaccine injuries during this period is impossible to determine, since there was no systematic collection of data about these occurrences. But after the turn of the century, practitioners increasingly insisted that vaccine-related injury was a thing of the past. “That tetanus, erysipelas and general infection have had their origin in the vaccination abrasion or sore we cannot nor do we wish to deny,” conceded a 1915 editorial in one medical journal, but such unfortunate incidents “under the present federal supervision can hardly occur again.” One health department pamphlet assured the public that “the chance of harm to-day from vaccination is very remote when the number of ill results is compared with the great number being vaccinated.” When injuries occurred, health officials contended, it was because proper hygienic care had not been taken with the vaccination scab. “Vaccination necessitates the production of an abrasion which is liable to the same infections to which wounds from other causes are subject,” said one physician. “Most of these infections occur in children in whom cleanliness and the subsequent care of the vaccination are but little regarded.”⁵

The improved safety of the vaccine coincided with a change in the epidemiology of smallpox. A milder form of the disease, *variola minor*, first appeared in the United States in 1897 and over the following two decades became the dominant strain. Although the pustular rash that spread across the body was similar to that seen in classic smallpox (*variola major*), the new form was less debilitating and left less scarring afterward. In contrast to the fatality rates of 20 to 30 percent that were typical of *variola major*, only rarely did a victim die from *variola minor*.⁶ As a result of this epidemiological shift, vaccination came to seem more dangerous and increasingly unjustified in the minds of those inclined to oppose it. A smallpox attack in a community no longer provoked the urgency that had led people to seek vaccination, and adverse events arising from the

³ On inoculation in the colonial period see Elizabeth A. Fenn, *Pox Americana: The Great Smallpox Epidemic of 1775–82* (New York: Hill & Wang, 2001). On the lessening of the accidental spread of disease with the calf’s lymph vaccine see Donald Hopkins, *Princes and Peasants: Smallpox in History* (Chicago: Univ. Chicago Press, 1983), p. 268. On the importance of performing vaccination properly see Frank S. Fielder, “What Constitutes Efficient Vaccination?” *New York State Journal of Medicine*, 1902, 2:107; and “Proceedings of Societies,” *Brooklyn Medical Journal*, 1901, 15:712–715.

⁴ See, e.g., correspondence in October 1917 between the Office of Hygienic Laboratory and the Surgeon General regarding the National Vaccine and Antitoxin Institute, a manufacturer headquartered in Washington, D.C., which had its license suspended after samples were found to be contaminated with tetanus: National Archives and Records Administration (NARA), Record Group (RG) 90, Box 370, Folder “Tetanus.” On this topic generally see Jonathan Liebenau, *Medical Science and Medical Industry: The Formation of the American Pharmaceutical Industry* (Basingstoke: Macmillan, 1987).

⁵ “Compulsory Vaccination,” *N.Y. State J. Med.*, 1915, 15:3; *Vaccination: What It Is, What It Does, What Its Claims Are on the People* (Albany, N.Y.: Lyon, 1908), p. 32; and Jay Frank Schamberg, “What Vaccination Has Really Done,” in *Both Sides of the Vaccination Question* (Philadelphia: Anti-Vaccination League of America, 1911), p. 42.

⁶ For example, in New York State between 1908 and 1920 the number of annual deaths from smallpox never exceeded seven and was sometimes zero; at the same time, deaths from conditions such as diphtheria, measles, and typhoid numbered in the hundreds or even the thousands: untitled typescript, New York State Department of Health Archives (NYSDOH), Series 13855, Roll 28. On the appearance and spread of *variola minor* see Hopkins, *Princes and Peasants* (cit. n. 3), pp. 287–292.

procedure, long the subject of popular lore, were magnified as the disease itself seemed less of a threat. "Dread of vaccination has been increased by the reports which fly about in regard to someone almost dying, and of arms being nearly lost, and of serious illness which is attributed to it," noted one health officer in upstate New York. "On the other hand the disease itself has been so mild that in the absence of deaths from it little real concern is felt, and it is regarded as an inconvenience rather than danger."⁷

Vaccination was mandatory in many places under a loose patchwork of state and local laws, with requirements for children attending schools the most common type of compulsion. Decades of court challenges to these exercises of authority culminated in 1905, when the U.S. Supreme Court issued a landmark ruling affirming the constitutionality of compulsory vaccination laws in the case of *Jacobson v. Massachusetts*.⁸ In the wake of the ruling judicial challenges declined, and activists increasingly turned to their legislatures to achieve what they were unable to win in the courts. But neither the epidemiological vagaries of smallpox nor the perceived or actual frequency of vaccine injuries fully accounts for the vehemence and persistence of the antivaccinationists' efforts during this era to change laws and practices around the country. Antivaccinationism was a response to two broad and interrelated trends in the new century: first, the proliferation of biologic products for preventing and treating illness; and, second, reform efforts that expanded the reach of the state into previously private spheres. Together, these two developments fueled bitter debates about whether the government and civic institutions should use advances in scientific medicine to dictate the actions of individuals.

THE STATUS OF SCIENCE AND THE REACH OF THE STATE

The pharmaceutical industry grew rapidly during this period, and drug firms became more rigorously scientific, employing larger staffs with training in bacteriology and medicine. As techniques for research, production, and marketing all became more sophisticated, companies brought many new products to market and established close relationships with universities, pharmacists, and the medical community. Vaccines against several diseases, including cholera, plague, and typhoid, were developed, and by the 1910s the term "vaccine," which originally had meant only the preparation of cowpox that provided immunity against smallpox, began to be applied more broadly to any preparation designed to produce active immunity. "The term vaccine," wrote the director of the U.S. Hygienic Laboratory in 1916, "has become too widely used, in its extended sense, to attempt to limit it at present to the original application." The typhoid vaccine proved the most valuable of these products because of its use in the military, where it had a substantial impact on troop mortality. Because the vaccine required a series of three shots over several months and conferred only short-term immunity, it was never widely used among civilians, though it was recommended for people living or traveling in areas with poor sanitation.⁹

⁷ Dr. Hervey to Deputy Commissioner, 27 Dec. 1926, NYSDOH, Series 13855-84, Reel 11.

⁸ John Duffy, "School Vaccination: The Precursor to School Medical Inspection," *Journal of the History of Medicine and Allied Sciences*, 1978, 33:344–355; and *Jacobson v. Massachusetts*, 197 U.S. 11 (1905).

⁹ George W. McCoy to Surgeon General, 10 Jan. 1916, NARA, RG 90, Box 368; Anne Hardy, "'Straight Back to Barbarism': Anti-Typhoid Inoculation and the Great War, 1914," *Bull. Hist. Med.*, 2000, 74:265–290; and Selwyn D. Collins, "Frequency of Immunizing and Related Procedures in Nine Thousand Surveyed Families in Eighteen States," *Milbank Memorial Fund Quarterly*, 1937, 15(2):150–172. On the growth of the pharmaceutical industry see Liebenau, *Medical Science and Medical Industry* (cit. n. 4); and Louis Galambos with Jane Eliot Sewell, *Networks of Innovation: Vaccine Development at Merck, Sharp & Dohme, and Mulford, 1895–1995* (Cambridge: Cambridge Univ. Press, 1995).

Scientific breakthroughs gained widespread attention in the press, as did the prospect that other diseases would yield to the principles of immunization that had brought smallpox under control. Newspaper and magazine articles expressed hope that prophylactic “serums” to combat tuberculosis, pneumonia, and cancer might soon be developed, and Americans looked optimistically to the improvements in their quality of life that such innovations promised. But these developments also provoked an antimodernist backlash against the paternalistic and potentially coercive uses to which scientific advances might be put. Antivaccination literature of the period reflected a pervasive fear that new vaccines and treatments—with all of their unknown and untoward side effects—would be made mandatory. The brief that Henning Jacobson, the plaintiff in *Jacobson v. Massachusetts*, filed with the Supreme Court gave voice to this concern:

The present tendency of medical science is toward the treatment of contagious diseases by the use of serums, and it is entirely possible that public authorities and physicians may be encouraged to extend the vaccination scheme to all other contagious diseases and set up a general compulsory medical regime, which will subject a healthy community to attack by boards of health under compulsory laws. If it be justifiable to compel the inoculation of a citizen for one disease, then by a parity of reasoning it is for the public interest that every citizen should be inoculated to render him immune against all possible contagions which may menace the community.¹⁰

Dovetailing with these scientific advances were broad social changes that altered the relationship between the citizen and the collective, as new institutions of the administrative state and civil society expanded their purview over matters once reserved to the individual, the family, or the church. Agents of expertise and authority such as social workers, visiting nurses, and educators, employed in both the public and private sectors, represented a threat to autonomy over family decision making. In part because of the rise of workers’ compensation programs, physical examination of employees became widespread in many industries after 1910. Around the same time, major life insurance companies began requiring such exams for their policyholders.¹¹ Whereas Americans in previous decades may have gone most of their lives without seeing a doctor, they increasingly came under the scrutiny of health professionals as part of the emerging practice of preventive medicine. In 1914 S. S. Goldwater, New York City’s health commissioner, announced his support for a plan (which was never instituted) to conduct mandatory annual medical inspections of all city residents for their own good. “I, for one, am not willing to cease short of a radical change in the manner of applying medical knowledge,” Goldwater said. “Preventive medicine cannot do its utmost good until physicians are regularly employed by the entire population,

¹⁰ *Jacobson v. Massachusetts, Brief and Argument for Plaintiff in Error* (New York: Eastern, 1904), p. 29. For optimistic views of the improvements offered see, e.g., “Will Vaccine Be the Greatest Cure in Medical Science?” *New York Times*, 21 Aug. 1910, sect. 5, p. 12: “The revelations of present-day medical science seem to point unerringly to the ultimate conquest of all diseases of germ origin.” On this topic generally see Terra Ziporyn, *Disease in the Popular American Press: The Case of Diphtheria, Typhoid Fever, and Syphilis, 1870–1920* (New York: Greenwood, 1988); and Nancy Tomes, *The Gospel of Germs: Men, Women, and the Microbe in American Life* (Cambridge, Mass.: Harvard Univ. Press, 1998).

¹¹ On the intrusions of the administrative state see Christopher Lasch, *Haven in a Heartless World: The Family Besieged* (New York: Basic, 1977); see pp. 12–21 for a discussion of “the appropriation of familial functions by agencies of socialized reproduction” (p. 15). See also Andrew Polsky, *The Rise of the Therapeutic State* (Princeton, N.J.: Princeton Univ. Press, 1991). On physical exams for employees see Angela Nugent, “Fit for Work: The Introduction of Physical Examinations in Industry,” *Bull. Hist. Med.*, 1983, 57:578–595; on exams required by insurance companies see Audrey Davis, “Life Insurance and the Physical Examination: A Chapter in the Rise of American Medical Technology,” *ibid.*, 1981, 55:392–406.

not merely for the treatment of acute and advanced disease, but as medical advisers in health." It is in the context of such bold assertions that one may better understand the claim of a leading antivaccinationist in 1920 that "there exists a well-laid plan to medically enslave the nation."¹² In this view, the very concept of preventive medicine represented a calculated effort by doctors to shift attention away from wellness toward sickness and foster the belief that only experts could legitimately make health decisions, moves that held obvious benefits for the medical profession.

Elite knowledge formed the basis on which experts could claim to be better qualified than parents to judge the well-being of children, and it was the medical control of children that fueled the most heated reactions from antivaccinationists. The periodic medical inspection of children in public schools, which had originated in the nineteenth century for controlling acute infectious diseases, was expanded in the early twentieth century to include screening for hidden or chronic conditions such as tonsillitis and vision defects. Such programs heightened anxiety that government bureaucrats were seeking to use bacteriology as a covert means of removing children from the control of their parents. "Little by little," wrote one activist in 1920, "an effort is being made to bring about the medical domination of the schools and the children attending them."¹³ The federal Children's Bureau, established in 1912, distributed millions of health education pamphlets aimed at teaching scientifically based methods of child rearing to mothers around the country.¹⁴ Perhaps the most extreme example of the medical control of children was the tuberculosis "preventorium" movement. These specially designed sanatoria were intended to provide a better environment for "pretubercular" children—those discovered through laboratory examination to be infected with the tubercle bacillus but not yet exhibiting symptoms—than they would experience at home. Separation from parents was a cornerstone of an overall plan to protect the children from unhealthy influences, and although the transfer of a child to a preventorium was ostensibly voluntary, there was sometimes implied coercion by the charitable organizations and health officials toward the poor, often immigrant families whom illness had struck.¹⁵

Closely related to concerns about the overreaching efforts of child welfare reformers were controversies over "state medicine," a protean term that encompassed a range of government programs to provide for health care through mechanisms such as universal

¹² S. S. Goldwater, "Wants Every New Yorker Physically Examined Yearly," *New York Times*, 10 May 1914, sect. 6, p. 8; and H. B. Anderson, *State Medicine: A Menace to Democracy* (New York: Citizens Medical Reference Bureau, 1920), p. 23.

¹³ Anderson, *State Medicine*, p. 23; see also pp. 65–81. On the rise of screening see Stanley Joel Reiser, "The Emergence of the Concept of Screening for Disease," *Milbank Mem. Fund Quart.*, 1978, 56:403–425; and Davidovitch, "Negotiating Dissent" (cit. n. 2).

¹⁴ Child welfare reforms during this period were multifaceted, of course, and included many realms beyond health, most notably the creation of new systems of juvenile justice and changes in child labor laws. On the wide array of "maternalist" programs for child welfare during the Progressive Era see Theda Skocpol, *Protecting Soldiers and Mothers: The Political Origins of Social Policy in the United States* (Cambridge, Mass.: Harvard Univ. Press, Belknap, 1992), pp. 480–524; and Linda Gordon, *Pitied But Not Entitled: Single Mothers and the History of Welfare, 1890–1935* (New York: Free Press, 1994). On Progressive Era reformers' quests for efficiency and rationality guided by expert knowledge see classic interpretations such as Robert Wiebe, *The Search for Order, 1877–1920* (New York: Hill & Wang, 1967); and Richard Hofstadter, *The Age of Reform: From Bryan to FDR* (New York: Knopf, 1955). See also more recent evaluations such as Alan Dawley, *Struggles for Justice: Social Responsibility and the Liberal State* (Cambridge, Mass.: Harvard Univ. Press, 1991).

¹⁵ The first preventorium was founded by the New York City philanthropist and child welfare reformer Nathan Straus in 1909, and by the end of the next decade approximately fifty had been established around the country. See Cynthia Connolly, "Prevention through Detention: The Pediatric Tuberculosis Preventorium Movement in the United States, 1909–1951" (Ph.D. diss., Univ. Pennsylvania, 1999).

health insurance and publicly funded clinics. To proponents of such programs, state medicine was a rational and economically efficient way of dealing with the vagaries of illness in society; to opponents, it represented an insidious attempt to transform the country into a socialistic state. Legally mandated vaccination, provided at public expense by city-employed doctors, was a paradigmatic example of the evils of state medicine. The campaign during the 1910s to establish a nationwide system of compulsory health insurance was at the center of extensive public debates about state medicine. In the 1920s, the lightning rod for criticism of expanding government involvement in health care was the enactment of the Sheppard-Towner Act, the culmination of years of efforts by Progressive reformers to devote federal monies toward the betterment of mothers and children. Enacted in 1921, Sheppard-Towner provided federal matching funds to help states set up programs to improve maternal and child health and required the establishment of a state-level bureaucracy to administer the work.¹⁶ To its opponents, Sheppard-Towner embodied the creeping expansion of a distant, centralized government, a trend that was especially threatening amid the postwar backlash against socialism. The antistatist mood of the period was captured in 1921 in the words of a congressional representative who attacked “Government supervision of mothers; Government care and maintenance of infants; Government control of education; Government control of training for vocations; Government regulation of employment, the hours, holidays, wages, accident insurance and all.”¹⁷

While suspicion of science and orthodox medicine and an antistatist ideology hostile to government intrusion in personal behavior provided common ground for antivaccinationists, this surface similarity masked important differences in background and outlook. Health officials of the day generally characterized antivaccination activism as a homogeneous movement, referring dismissively to “the anti’s,” and commentators in the popular press echoed this simplistic assessment. But it is erroneous to view the opposition to vaccination that took place across the nation during this period as representing a single, unified phenomenon. Antivaccination activity in the early twentieth century comprised a heterogeneous assortment of individuals and organizations that differed in their beliefs, tactics, and goals.

THE DIVERSITY OF ANTIVACCINATIONISM

One of the most prominent groups was the Anti-Vaccination League of America, which was formed in Philadelphia in 1908 by two wealthy businessmen, John Pitcairn and Charles M. Higgins. The group described itself as a “national confederation” of affiliated societies in states around the country, and its members devoted themselves to opposing compulsory laws at the state and local levels.¹⁸ Pitcairn, the group’s president, was born in Scotland in 1841 and immigrated as a teenager to western Pennsylvania, where he eventually made

¹⁶ On the campaign to establish a nationwide system of comprehensive health insurance see Ronald Numbers, *Almost Persuaded: American Physicians and Compulsory Health Insurance* (Baltimore: Johns Hopkins Univ. Press, 1978); on the Sheppard-Towner Act as the fruition of Progressive Era ideals see J. Stanley Lemons, “The Sheppard-Towner Act: Progressivism in the 1920s,” *Journal of American History*, 1969, 55:776–786. See also Richard A. Meckel, *Save the Babies: American Public Health Reform and the Prevention of Infant Mortality, 1850–1929* (Baltimore: Johns Hopkins Univ. Press, 1990), pp. 200–219; and Skocpol, *Protecting Soldiers and Mothers* (cit. n. 14), pp. 494–524.

¹⁷ Cited in Skocpol, *Protecting Soldiers and Mothers*, p. 500. On the opposition to expansion in the federal government in this period see Lynn Dumenil, “‘The Insatiable Maw of Bureaucracy’: Antistatist and Education Reform in the 1920s,” *J. Amer. Hist.*, 1990, 77:499–524.

¹⁸ A 1912 publication of the Anti-Vaccination League of America listed regional directors in eight states.

his fortune in oil, steel, and railroads. He was a civic leader in the town of Bryn Athyn, near Pittsburgh, where he had an estate; he was also an active member in and major benefactor of the Swedenborgian Church. Pitcairn came to the antivaccination cause late in life, after he became engulfed in a controversy in 1906 among church members who resisted the state's efforts to vaccinate them during a smallpox outbreak. Pitcairn's opposition to vaccination was rooted partly in Swedenborgian teachings and in his devotion to homeopathy, an alternative medical practice that many church members embraced. He was also influenced by the fact that, years earlier, his son Raymond had suffered an adverse reaction after being vaccinated as a child. Yet his position did not rest primarily on grounds of theology or medical practice but, rather, on a political basis: he believed it was wrong for government, no matter how worthy its intentions, to force people to act against their will. In a tract that cited, among other works, John Stuart Mill's classic defense of individual rights in the philosophical treatise *On Liberty*, Pitcairn asked rhetorically, "We have repudiated *religious* tyranny; we have rejected *political* tyranny; shall we now submit to *medical* tyranny?"¹⁹ (See Figure 1.)

After determining that Pennsylvania's efforts to compel his fellow Swedenborgians to be vaccinated was unjust, Pitcairn became politically active, lobbying the state's general assembly in Harrisburg for the repeal of the compulsory vaccination law, and in 1911 the governor appointed him to serve on a special commission to investigate the practice (after three years of study the panel recommended, over Pitcairn's minority objection, that the law be retained).²⁰ In 1908, as part of his newfound interest in the topic, Pitcairn bankrolled a national conference of vaccination opponents, held in Philadelphia, that led to the founding of the Anti-Vaccination League of America.

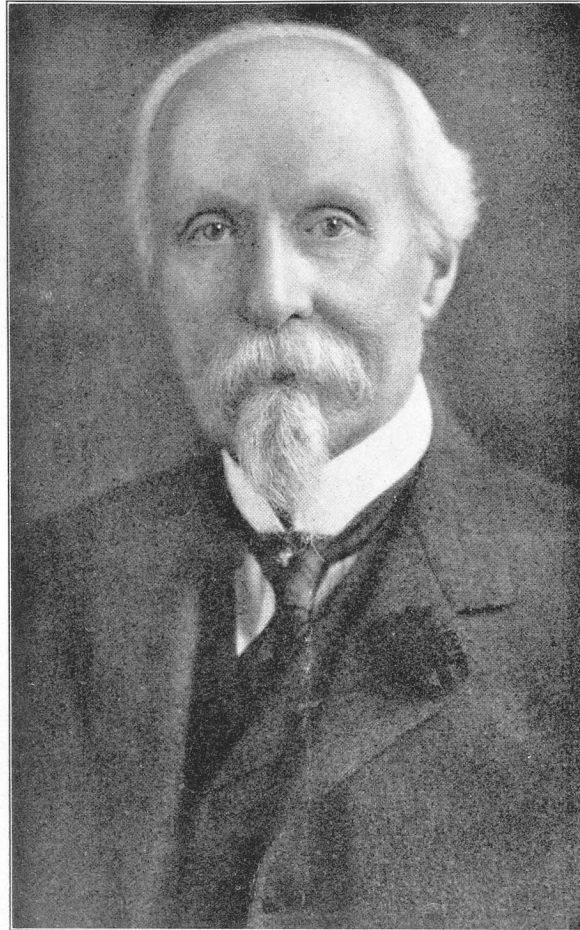
The league's cofounder, secretary, and most active member was Pitcairn's friend Charles M. Higgins of Brooklyn. Higgins had much in common with Pitcairn; he had emigrated from Ireland as a child and made his fortune as a manufacturer of a special type of ink he invented. He was also active in civic affairs, donating money for the renovation of historic sites in Brooklyn and serving as a cofounder of the Kings County Historical Society. Higgins was the league's chief spokesman and pamphleteer, writing numerous polemical tracts such as *Open Your Eyes Wide!* (1912), *The Crime against the School Child* (1915), *Vaccination and Lockjaw: The Assassins of the Blood* (1916), and *Horrors of Vaccination Exposed and Illustrated* (1920), which regaled readers with graphic descriptions and photographs of hapless victims who had been disfigured, blinded, and killed by vaccination.²¹ He made numerous attempts to overturn New York State's law mandating the practice for students in public schools. (See Figure 2.)

Another influential group in this period was the Citizens Medical Reference Bureau, founded in New York City in 1919. The bureau's mottos were "Against Compulsory Medicine or Surgery for Children and Adults" and "Advocating No Form of Treatment

¹⁹ John Pitcairn, *Vaccination: An Address Delivered before the Committee on Public Health and Sanitation of the General Assembly of Pennsylvania at Harrisburg, March 5, 1907* (Philadelphia: Anti-Vaccination League of Pennsylvania, 1907), p. 1 (emphasis in the original). On the relationship among Swedenborgianism, homeopathy, and antivaccinationism see Davidovitch, "Negotiating Dissent" (cit. n. 2), p. 315. On the reasons for Pitcairn's opposition to vaccination see Richard R. Gladish, *John Pitcairn: Uncommon Entrepreneur* (Bryn Athyn, Pa.: Academy of the New Church, 1989), pp. 330–335.

²⁰ Pitcairn, *Vaccination*; and Bernhard J. Stern, *Should We Be Vaccinated?* (New York: Harper, 1927), p. 110.

²¹ "C. M. Higgins Dies; Ink Manufacturer" [obituary], *New York Times*, 23 Oct. 1929, p. 27. Among his publications are Charles M. Higgins, *Open Your Eyes Wide!* (1912); Higgins, *The Crime against the School Child* (Brooklyn, 1915); Higgins, *Vaccination and Lockjaw: The Assassins of the Blood* (Brooklyn, 1916); and Higgins, *Horrors of Vaccination Exposed and Illustrated* (Brooklyn, 1920).

In Memoriam

JOHN PITCAIRN

Late President of The Anti-Vaccination League of America.
Born in Scotland, January 10, 1841. Died at Bryn
Athyn, Pennsylvania, July 22, 1916.

Figure 1. After John Pitcairn's death in 1916, Charles Higgins, with whom Pitcairn cofounded the Anti-Vaccination League of America in 1908, published a tribute to his friend and fellow activist as part of the book *Horrors of Vaccination Exposed and Illustrated*.

but in Defense of Parental Control over Children.” Rivaling Higgins in energy and devotion to the antivaccinationist cause was the bureau’s secretary and sole paid staff member, Harry Bernhardt Anderson. Little is known about the life of H. B. Anderson (as he typically identified himself in print), but for more than two decades his was the most prominent antivaccination voice in New York City, and his influence was felt nationwide by dint of his tireless letter writing to public health officials in cities and states around the country.

Appeal

TO ALL LEGISLATORS.

This pamphlet is a special appeal to you to repeal all compulsory vaccination as a needless legal and medical barbarism very dangerous to Public health and human life, and based on gross deception of the public mind as to the true facts about smallpox and vaccination.

It also urgently suggests to you the necessity of a new Law which will compel the record and publication in our Vital Statistics of all deaths caused directly or indirectly by Vaccination or other Inoculations.

Warning

TO ALL VACCINATORS.

See the Legal Warnings on pages 11 and 16 against medical falsehoods which falsely alarm and deceive the public mind and against forcing vaccination upon any person against free will and consent.

Open Your Eyes WIDE!

Parents
School Officers
Editors
Judges
Legislators
Doctors

And Look At These Facts About
Vaccination :: :: :: :: :: :: ::

BY CHAS. M. HIGGINS

Treasurer, Anti-Vaccination League of America

Second Edition - Enlarged
March 1, 1912.

Figure 2. This 1912 broadside, published by the Anti-Vaccination League of America, was aimed at various constituencies that might be in a position to oppose compulsory laws in their communities.

Anderson also published a monthly bulletin that he sent to supporters (and opponents) and used as a lobbying tool in his efforts to repeal compulsory laws.

In addition to opposing vaccination, Anderson spoke out at public forums and meetings on a wide range of health policy issues, including the medical examination of schoolchildren, requirements for premarital syphilis tests, and government antidiphtheria efforts. In 1922 he entered a formal protest with the New York City Board of Education in which he urged it to bar health department doctors from using the city's children as guinea pigs in the experimental use of toxin-antitoxin to produce active immunity against diphtheria. "The public schools should not be used for the exploitation of a medical procedure which is of such a controversial character," Anderson claimed. He was convinced that the health department was taking the first steps toward making diphtheria immunization compulsory, like smallpox vaccination. The common theme uniting these topics was the specter of "state medicine," which Anderson attacked in a 1920 book as "a state (or Federal) system of administration of compulsory allopathic medicine . . . untrammelled in the exercise of authority, reaching down through the subdivisions of county and township to the people; . . . in daily touch with every nook and corner of the state or nation."²² (See Frontispiece.)

²² H. B. Anderson, *Protest against Sending Nurses into Homes of School Children to Urge Medical Treatment, and against Using Public Schools to Promote the Schick Test, and Toxin-Antitoxin* (New York: Citizens Medical Reference Bureau, 1922); and Anderson, *State Medicine* (cit. n. 12), p. 15.

The Citizens Medical Reference Bureau had a family tie to the Anti-Vaccination League of America: its work was supported by two of John Pitcairn's sons, Harold and Raymond. The extent of the Pitcairn brothers' substantive involvement in the work of the bureau is uncertain; they served as directors from the 1920s through the 1940s, and it is likely that their primary role was in providing the financial support that made the organization's many publications possible. Illustrating the extent to which libertarian ideology was a part of some antivaccinationists' worldview, both Harold and Raymond Pitcairn were also major financial backers of Sentinels of the Republic, a right-wing political organization founded in 1922 and devoted to opposing the concentration of government power, counteracting radicalism and Bolshevism, and "checking the growth of Federal paternalism." For two decades the group fought against a variety of social reforms it viewed as communistic, including laws aimed at limiting child labor, a proposal for a federal department of education, and Franklin Roosevelt's New Deal program.²³

Founded around the same time as the Citizens Medical Reference Bureau, and similar in its outlook and mission, was the American Medical Liberty League, which fought ongoing battles during the 1920s against what it saw as the hegemony of allopathic practice. The group's letterhead described it as "a citizen's movement for medical liberty on the same basis as religious liberty with the same constitutional guarantees." The league's secretary was Lora C. W. Little, who had an active and successful career as an antivaccination agitator dating from the turn of the century. She was the editor and publisher for five years of the *Liberator*, a "journal of health and freedom," in Minnesota, and she preached a message of freedom from medical tyranny during travels in England, Scotland, and Massachusetts before settling in Portland, Oregon, where from 1909 to 1918 she led activities against the state's compulsory vaccination law. As the Liberty League's secretary and chief propagandist, Little published a monthly newsletter from the group's Chicago headquarters and sought to influence policy and law not only in Illinois but around the country; like Anderson, she conducted national letter-writing campaigns, engaging with health officials in Washington, D.C., and in state capitals. Like the Anti-Vaccination League, the Liberty League had affiliated chapters across the country, although the extent of the membership in these local societies is difficult to determine.²⁴

The rhetoric of "medical liberty" groups emphasized the legal and political aspects of vaccination; it was compulsion they found most objectionable. Other groups, however, objected to the practice because it was antithetical to a vision of health, healing, and the body. Perhaps the best known of these were Christian Scientists. Founded by Mary Baker Eddy in Massachusetts in 1879, Christian Science was premised on a belief that illness was a mental rather than a material phenomenon and as such could be overcome through prayer. Its adherents rejected allopathic medical interventions such as pharmaceutical treatments and surgery (though some did consult dentists and oculists). Christian Science grew rapidly around the turn of the century, counting roughly forty thousand followers by 1906,

²³ Norman Hapgood, ed., *Professional Patriots* (New York: Boni, 1927), pp. 170–172. On the Sentinels of the Republic see also Walter I. Trattner, *Crusade for the Children: A History of the National Child Labor Committee and Child Labor Reform in America* (Chicago: Quadrangle, 1970), pp. 166–167. The Pitcairn sons' commitment to the cause championed by their father recalls a similar legacy in Britain, where the work of one of the most prominent antivaccinationists of the nineteenth century, William Tebb, was carried on by his son, W. Scott Tebb. See W. Scott Tebb, *A Century of Vaccination and What It Teaches* (London: Swan Sonnenschein, 1899), which the younger Tebb dedicated to his father.

²⁴ An excellent account of Little's life and career is provided in Johnston, *Radical Middle Class* (cit. n. 2), pp. 197–217, from which this biographical sketch is drawn. In 1922 the letterhead of the American Medical Liberty League listed affiliates in thirty-six states and the District of Columbia.

and experienced a corresponding degree of public scrutiny and, often, hostility. Sensational cases of children dying, especially from diphtheria, while under the care of Christian Scientist parents and practitioners drew the wrath of the public, lawmakers, and officials, who increasingly brought charges of manslaughter and unlawful practice of medicine. In this hostile environment, the church adopted a stance that accommodation with the law wherever possible might be the better part of valor. Eddy told her followers in an official church publication in 1901, "Where vaccination is compulsory, let your children be vaccinated, and see that your mind is in such a state that by your prayers vaccination will do the children no harm." Around the same time she enjoined church members from publishing materials "uncharitable or impertinent towards religion, medicine, the courts, or the laws of our land."²⁵ Christian Scientists were thus not highly visible in spreading an antivaccination message in the early part of the century. Under frequent attack in the courts, they largely focused their advocacy efforts on changing the state laws that barred them from practicing medicine. Individual adherents of the religion, however, evaded compulsory laws, either taking advantage of lax enforcement or homeschooling their children when necessary, and attempted to sway legislators who were considering bills related to vaccination. The *Christian Science Monitor* also reported on the activities of antivaccination societies.²⁶

Another health movement that was antagonistic to vaccination, though less based in religion and spirituality, was physical culture. Founded and popularized by the fitness guru Bernarr Macfadden, physical culture entailed a spartan regimen of strenuous exercise, a diet of natural foods, and abundant exposure to fresh air and sunlight. Macfadden and his followers urged periodic fasting and opposed the consumption of coffee, alcohol, and tobacco. The movement rejected the germ theory and contended that those who lived a clean, natural life were not susceptible to disease. Macfadden's persistent opposition to vaccination dated from early in his career. In 1901, the Physical Culture Publishing Company issued the book *Vaccination a Crime*, which portrayed Edward Jenner's method as a dangerous delusion advanced to maintain the hegemony of allopathic medicine.²⁷

After establishing numerous exercise schools and sanatoria and the monthly fitness magazine *Physical Culture*, Macfadden built a media empire publishing tabloid magazines such as *True Story* and *True Detective Mysteries* and the *New York Evening Graphic*, a

²⁵ Eddy is cited in Rennie B. Schoepflin, *Christian Science on Trial: Religious Healing in America* (Baltimore: Johns Hopkins Univ. Press, 2003), p. 179; and in Edwin Frander Dakin, *Mrs. Eddy: The Biography of a Virginal Mind* (New York: Scribner's, 1929), p. 369. Schoepflin identifies thirty-six cases between 1887 and 1920 in courts around the country in which Christian Scientists faced prosecution for their practices; see Schoepflin, *Christian Science on Trial*, pp. 168–210 and App. 1. See also Stephen Gottschalk, *The Emergence of Christian Science in American Religious Life* (Berkeley/Los Angeles: Univ. California Press, 1973), pp. 224–225.

²⁶ Regarding individual actions to evade compulsory laws see, e.g., Julius Schiller to Edward S. Godfrey, 13 Jan. 1924, NYSDOH, Series 13855-84, Reel 10; and "Deny School Clash," *New York Times*, 27 June 1929, p. 28. See A. H. Flickwir to Surgeon General, 19 Dec. 1923, on Christian Scientists' effort to repeal the school vaccination requirement in Houston, Texas: NARA, RG 90, Box 368; and Orwell Bradley Towne to Shirley W. Wynne, 28 May 1930, inquiring on behalf of the Christian Science Committee on Publication about the specifics of New York City's school entry law: New York City Department of Health Archives (NYCDOH), Box 141356, Folder "Vaccination." On the activities of antivaccination societies see, e.g., "Public Defended as Schools Open," *Christian Science Monitor*, [Aug. 1921], reporting on the efforts of Lora Little and the American Medical Liberty League to resist Chicago's compulsory school vaccination law: NARA, RG 90, Box 366.

²⁷ Felix Leopold Oswald, *Vaccination a Crime: With Comments on Other Sanitary Superstitions* (New York: Physical Culture Publishing, 1901). On physical culture and the life of Bernarr Macfadden see William R. Hunt, *Body Love: The Amazing Career of Bernarr Macfadden* (Bowling Green, Ohio: Bowling Green State Univ. Popular Press, 1989); Robert Ernst, "Bernarr Macfadden," *American National Biography Online*, Feb. 2000, www.anb.org/articles/16/16-02450.html [accessed 16 Dec. 2002]; and "Macfadden Dead; Health Cultist, 87" [obituary], *New York Times*, 13 Oct. 1955, p. 31.

sensational newspaper specializing in stories of sex and crime. While Macfadden did not devote his energies to the antivaccination cause as single-mindedly as the prolific pamphleteers Charles Higgins and H. B. Anderson, he was arguably more influential because he was able to reach a far wider audience: during the 1920s the total nationwide circulation of his media holdings was estimated at as many as forty million people. Both *Physical Culture* and the *Graphic* ran numerous articles opposing vaccination. In a 1922 article in *Physical Culture*, for example, Macfadden claimed that deaths from vaccination outnumbered those from smallpox itself and that “it is now admitted by many of the ablest physicians and scientists that the constitutional taint produced by vaccination causes a tendency towards all pus-forming diseases like catarrh, consumption, pneumonia, etc.” The *Graphic* featured an article allegedly written by a physician entitled “Vaccination Killed My Two Sisters” (which Macfadden subsequently confessed was not written by a doctor at all) and ran a series of photographs of people whose ghastly skin diseases had been caused by vaccination. Macfadden also used his magazine’s mailing lists to urge readers to oppose New York’s compulsory law. This lobbying effort foreshadowed greater political involvement for Macfadden, who went on to run (unsuccessfully) for public office several times.²⁸

Ideals of bodily integrity also lay behind the opposition of another newly prominent form of healing: chiropractic. Founded in 1895, chiropractic stressed a holistic view of health and the belief that illness stemmed from an imbalance of or interference with the flow of energy from the brain, usually produced by misalignment of the spine. Chiropractors, embracing drugless healing and fighting disease through natural means such as skeletal adjustments, rejected the interventionist view of disease prevention that vaccination represented. Practitioners and their devotees advocated against the procedure through their journals and pamphlets, lobbied legislators and other public officials, and frequently made public protests out of their refusal to comply with compulsory vaccination laws.²⁹ The opposition of chiropractors may in one sense be seen as the last salvos in the decades-long battle between alternative and allopathic physicians for status and authority. The fight between regular and sectarian practitioners such as chiropractors, homeopaths, and naturopaths, centering on issues such as licensing and medical education, was coming to an end in the Progressive Era, especially after the famous Flexner Report in 1910 dealt a symbolic if not actual deathblow to the legitimacy of alternative sects. Chiropractors were the most active among sectarian practitioners in their opposition to vaccination; although a vocal minority of homeopaths opposed the practice, many supported it.³⁰

²⁸ The 1922 article is cited in Grace Perkins, *Chats with the Macfadden Family* (New York: Copeland, 1929), p. 81. On “Vaccination Killed My Two Sisters” see Hunt, *Body Love*, p. 105. Morris Fishbein, the editor of the *Journal of the American Medical Association* and Macfadden’s most vituperative critic, charged that *Physical Culture* frequently published articles by bogus medical professionals. See Morris Fishbein, *The Medical Follies* (New York: Boni & Liveright, 1925), pp. 177–178. On the pictures see Stern, *Should We Be Vaccinated?* (cit. n. 20), pp. 107–108. A letter urging opposition to New York’s compulsory law is Bernarr Macfadden to “Dear Friend,” 8 Feb. 1930, NYCDOH, Box 141356, Folder “Vaccination”; on the runs for political office see Ernst, “Bernarr Macfadden.”

²⁹ Walter I. Wardwell, *Chiropractic: History and Evolution of a New Profession* (St. Louis: Mosby, 1992), esp. pp. 51–130. On chiropractors’ advocacy against vaccination see Frederick R. Green to Hugh S. Cumming, 5 Apr. 1920, NARA, RG 90, Box 369; Ennion G. Williams to Cumming, 20 June 1922, NARA, RG 90, Box 367; Mosby G. Perrow to Cumming, 31 Oct. 1923, NARA, RG 90, Box 368; Flickwir to Surgeon General, 19 Dec. 1923, NARA, RG 90, Box 368; “Offer to Risk Smallpox,” *New York Times*, 11 Jan. 1925, p. 2; “Vaccination Is Assailed,” *ibid.*, 2 Mar. 1925, p. 21; “Opposes Vaccination of Daughter; Jailed,” *ibid.*, 16 Dec. 1926, p. 49; and D. Pirie-Beyea to Wynne, 12 Dec. 1929, NYCDOH, Box 141353, Folder “Vaccination.”

³⁰ Eberhard Wolff, “Sectarian Identity and the Aim of Integration,” *British Homeopathic Journal*, 1996, 85:95–114; Davidovitch, “Negotiating Dissent” (cit. n. 2); “Against Compulsory Vaccination,” *New York Times*, 22 Apr. 1894, p. 12; and “Anti-Vaccinators Busy,” *New York Herald*, 28 Apr. 1894, p. 4. On the end of the fight

Because smallpox vaccine was made from the lymph of calves deliberately infected with cowpox, vaccination also drew the wrath of antivivisection groups. Antivivisectionists did not necessarily believe that vaccination was ineffective; rather, they held that the suffering it imposed on animals made its use ethically unjustifiable. Although animal rights activism lacked the explicit libertarianism that underpinned much antivaccination rhetoric, it expressed a similar belief that the scientific establishment could not be trusted to act in the best interests of the public, and the two movements had a long association dating from their origins in mid-nineteenth-century England. American antivivisectionists experienced a heyday at the turn of the twentieth century, when they enjoyed wide public recognition and support. Their battles to end the use of animals in laboratory experimentation were largely unsuccessful, however, and the steady increase in the prestige of scientific inquiry eclipsed their efforts.³¹

As these brief sketches have shown, the antivaccination camp encompassed a wide range of beliefs and activities, and it is difficult to generalize about the people who made up this heterogeneous movement. Most of the authors of antivaccination tracts and pamphlets were men (Lora Little being a notable exception), but the officers and directors listed on groups' letterheads and publications included a few women. Many women were Christian Scientist practitioners and teachers, and the majority of antivivisection activists were women. While some prominent antivaccinationists had considerable financial resources and social standing, it is also clear that many of those who spurned the practice were of the middle class.³² One very significant personal characteristic shared by prominent activists was family tragedy: Henning Jacobson, John Pitcairn, James Loyster, and Lora Little all had children who had either died or suffered injury following vaccination.

Activism and lobbying represented only part of the overall picture of public opposition, of course. Far greater were the numbers of ordinary citizens who opposed the practice not because of philosophical principles but because they objected to the discomfort and inconvenience—the transient fever and swelling caused by vaccination often resulted in time missed from work—in the absence of an imminent threat of disease. For example, the crusading spirit of Higgins, Little, and Anderson contrasted sharply with the pragmatic concerns of the more than one hundred residents of Van Buren, Arkansas, who in 1918 took the unusual step of petitioning President Woodrow Wilson to excuse them from the state's new compulsory vaccination law, citing both the \$1.00 cost of the procedure and attendant economic losses:

between regular and sectarian practitioners, and the ascendancy of the former, see Kenneth Ludmerer, *Learning to Heal: The Development of American Medical Education* (New York: Basic, 1985); and Paul Starr, *The Social Transformation of American Medicine* (New York: Basic, 1982).

³¹ Susan Eyrich Lederer, "Hideyo Noguchi's Luetin Experiment and the Anti-Vivisectionists," *Isis*, 1985, 76:31–48; Lederer, "Political Animals: The Shaping of Biomedical Research Literature in Twentieth-Century America," *ibid.*, 1992, 83:61–79; and Lederer, "The Controversy over Animal Experimentation in America, 1880–1914," in *Vivisection in Historical Perspective*, ed. Nicolaas Rupke (London: Croom Helm, 1987). On antivivisectionists' opposition to diphtheria immunization see "Beware the Schick Test," leaflet [undated], New York Anti-Vivisection Society, NYCDOH, Box 141359, Folder "Diphtheria." On the early development of animal protection societies in the United States and Britain see James Turner, *Reckoning with the Beast: Animals, Pain, and Humanity in the Victorian Mind* (Baltimore: Johns Hopkins Univ. Press, 1980); on affinities between antivaccinationists and antivivisectionists in nineteenth-century England see Richard D. French, *Antivivisection and Medical Science in Victorian Society* (Princeton, N.J.: Princeton Univ. Press, 1975).

³² Johnston's study of antivaccinationism in Portland, Oregon, finds strong middle-class roots among movement activists ("a plebian alliance solidly anchored in the world of lower-level white collar work"); see *Radical Middle Class* (cit. n. 2), p. 216 and *passim*. On female Christian Scientists see Schoepflin, *Christian Science on Trial* (cit. n. 25), pp. 52–54; on female antivivisectionists see Lederer, "Political Animals," p. 63.

. . . it is not the cost of the Vaccination alone that we are opposed to, but also the loss of the childrens time from the field from the effect of same, as well as the uncalled for suffering, after a carefull investigation, we can find no record of there being a case of smallpox in this vicinity for the past ten years or more. . . . According to the Laws of this State, we are forced to send our children to School (which is right) But if we have our Children Vaccinated now, It will keep them out of the field untill School begins, Then School, and after loosing as many boys as we have, who are in the Army, it will make it impossiable for us to harvest what crop we have, and sow our Wheat and other Fall crops without a loss to one or the other.³³

The most familiar public face of the antivaccination movement emerged through its literature. The numerous tracts, pamphlets, and books emphasized the danger of the procedure in rhetoric that tended to be highly polemical, designed to incite outrage and public revolt. Vaccination was “barbarous medical child-slaughter,” while its compulsory enforcement was “based upon superstition, commercialism and paternalism.” Vivid descriptions of the injuries and deaths attributed to vaccination figured prominently, and many pamphlets used photographs showing the side effects allegedly caused by the procedure: deep abscesses, scarring, missing limbs and eyes. (Provaccination propaganda published by health departments often used photos to similar effect, showing the gruesome symptoms endured by smallpox victims.)³⁴ The claim that the decline in smallpox over the previous century was due to sanitary reforms and improvements in standards of living rather than to vaccination was a recurrent theme; so too was the charge that compulsory policies were a profit-making scheme in which doctors, health departments, and vaccine manufacturers colluded to enrich themselves by forcing the public, through the threat of civil or criminal penalties, to submit to the procedure. Lora Little’s early tract *Crimes of the Cowpox Ring*, for example, characterized the practice as a conspiracy perpetrated by entrenched interests: “The salaries of the public health officials in this country . . . reach the sum of \$14,000,000 annually. One important function of the health boards is vaccination. Without smallpox scares their trade would languish. Thousands of doctors in private practice are also beneficiaries in ‘scare’ times. And lastly the vaccine ‘farmers’ represent a capital of \$20,000,000, invested in their foul business.”³⁵

Though diverse, the groups opposed to vaccination were in regular contact with each other. They sometimes worked together in loose coalitions, as when Christian Scientists, chiropractors, and antivivisectionists joined in 1910 under the organizational umbrella of the National League for Medical Freedom to campaign against a federal-level department of health. The groups distributed each other’s literature, lent rhetorical support to each other’s efforts, and shared officers and members.³⁶

³³ NARA, RG 90, Box 364 (spelling and punctuation as in the original).

³⁴ Higgins, *Vaccination and Lockjaw* (cit. n. 21), p. 11; and Anderson, *State Medicine* (cit. n. 12), p. 82. For illustrated provaccination propaganda see, e.g., the New York State health department publication *Vaccination: What It Is, What It Does, What Its Claims Are on the People* (cit. n. 5).

³⁵ Lora C. Little, *Crimes of the Cowpox Ring: Some Moving Pictures Thrown on the Dead Wall of Official Silence* (Minneapolis: Liberator, 1906), p. 6. Some pharmaceutical companies that manufactured vaccines did experience rapid growth in profits during this period; see Galambos with Sewell, *Networks of Innovation* (cit. n. 9), pp. 24–25. But people could typically obtain vaccination for free, and there is no evidence that the practice was highly lucrative for either health departments or physicians. Nor was it the case that health boards would have languished without vaccination programs, which constituted only a small part of their work during this period; see, *inter alia*, John Duffy, *The Sanitarians: A History of American Public Health* (Urbana/Chicago: Univ. Illinois Press, 1990), pp. 205–220 and *passim*.

³⁶ Manfred Waserman, “The Quest for a National Health Department in the Progressive Era,” *Bull. Hist. Med.*, 1975, 49:353–380; and Martin Kaufman, *Homeopathy in America: The Rise and Fall of a Medical Heresy* (Baltimore: Johns Hopkins Univ. Press, 1971), pp. 162–166. The American Medical Liberty League included

While antivaccinationists tended to espouse strongly libertarian views, their politics did not map neatly onto a Republican/Democrat dichotomy. John Pitcairn was a major donor to the Republican Party, while his friend and cofounder of the Anti-Vaccination League Charles Higgins was a strong supporter of Woodrow Wilson; Bernarr Macfadden backed Franklin Roosevelt's candidacy for president but later turned against the New Deal and sought public office as a Republican. Mentions of party affiliations were virtually absent from antivaccination literature, and the most consistent thread in this political outlook was hostility to state intervention in personal decisions. Charles Higgins, Lora Little, and Harold and Raymond Pitcairn all campaigned against Prohibition, for example, with Higgins claiming that "religious freedom, medical freedom, and alimentary freedom are equally unalienable rights of the American people and must be kept inviolate."³⁷

The politics of vaccination proponents also defy generalization. While health officials typically supported an activist role for the government, the political positions of public health and medical professionals varied because of the diversity within both professions in terms of background, training, and occupational setting. Nor were the medical profession's political interests always consistent with those of public health practitioners. After Congress passed the Sheppard-Towner Act, for example, the American Medical Association became increasingly concerned about incursions on its professional turf by government-run health clinics and began to attack the program. In so doing, ironically, the association found itself in common cause—united against the specter of "state medicine"—with groups such as the Citizens Medical Reference Bureau and the American Medical Liberty League, which it bitterly denounced in other contexts.³⁸ Such shifting alliances illustrate the difficulty of pigeonholing the politics of either pro- or antivaccination activists.

"SCIENCE IN A DEMOCRACY"

At the heart of the ideological battles over the legitimacy of vaccination were differing views of the role elite knowledge and scientific expertise should play in a rapidly changing liberal democratic society. The U.S. Public Health Service, state and city health officials, state and local medical societies, and the American Medical Association all sought to convince legislators and the citizenry that scientific elites should have broad latitude in

copies of the newsletter of the Citizens Medical Reference Bureau in its mailings to legislators; see NARA, RG 90, Box 367. The letterhead of the American Medical Liberty League identified the group as "endorsing the principles and aims of the anti-vivisection societies." H. B. Anderson of the Citizens Medical Reference Bureau also spoke at antivivisection conferences. See "Foes of Vivisection Hold Annual Meeting," *New York Times*, 18 May 1927, p. 28. Activists who belonged to more than one organization opposed to vaccination included Diana Belais, the president of the New York Anti-Vivisection Society, and Nellie Williams, a member of the society, both of whom served as directors of the American Medical Liberty League; Williams was also a vice president of the Citizens Medical Reference Bureau. Jesse Mercer Gehman, a doctor of naturopathy who worked as an associate editor of Macfadden's *Physical Culture* magazine, became the secretary of the Citizens Medical Reference Bureau in the 1930s and ultimately carried on the bureau's work after H. B. Anderson's death in 1953. See Donald R. McNeil, *The Fight for Fluoridation* (New York: Oxford Univ. Press, 1957), p. 121; and Hunt, *Body Love* (cit. n. 27), p. 109.

³⁷ Charles M. Higgins, *Unalienable Rights and Prohibition Wrongs* (Brooklyn, 1919), p. 5.

³⁸ On the political positions of public health and medical professionals see, *inter alia*, Daniel M. Fox, "Accretion, Reform, and Crises: A Theory of Public Health in New York City," *Yale Journal of Biology and Medicine*, 1991, 64:455–466; Duffy, *Sanitarians* (cit. n. 35), p. 275 and *passim*; and Starr, *Social Transformation of American Medicine* (cit. n. 30), pp. 180–197. On the AMA's opposition to Sheppard-Towner see Sheila M. Rothman, "Women's Clinics or Doctors' Offices: The Sheppard-Towner Act and the Promotion of Preventive Health Care," in *Social History and Social Policy*, ed. David J. Rothman and Stanton Wheeler (New York: Academic, 1981), pp. 175–201.

making decisions about health. The AMA kept a running file on medical “dissidents,” and Morris Fishbein, the editor of the *Journal of the American Medical Association*, ridiculed many of them in his book *The Medical Follies* (1925).³⁹ A lay organization that took up the cause of scientific medicine was the American Association for Medical Progress, a group made up of prominent academics and civic leaders. Founded in Massachusetts in 1923, the AAMP was devoted to public advocacy on behalf of modern methods of investigation—especially animal experimentation—to counteract what it saw as the forces of ignorance and superstition. Association representatives spoke before legislatures, community groups, and educators on the importance of research and criticized the propaganda of antivivisection and antivaccination groups, which it termed “chronic opponents of scientific medicine.” The group’s 1924 book *Smallpox—A Preventable Disease* collected data from countries around the world in order to demonstrate the connection between the systematic application of vaccination and the control of smallpox. Eschewing the scornful tone that Fishbein took in his attacks on the medical profession’s opponents, the book offered a more measured assessment of the apathy brought on by decades of steadily declining smallpox rates:

In this complacent state of mind we become a ready prey to the propaganda of the many high-minded, but misinformed or prejudiced persons who hold that power for harm in smallpox does not exist. . . . Cults and societies have arisen to break down the barriers that years of scientific investigation and endeavor have set up against disease. We are told that our “personal liberty” is being impaired—and we forget that there is no such thing as personal liberty apart from the liberty of the community in which we live. . . . We are accused of being the dupes of “state medicine”—and we do not trouble to look back and see for ourselves what our health officials have done for the people of this country.⁴⁰

In his essay “Science in a Democracy” the group’s managing director, Benjamin Gruenberg, sought to reconcile liberal democratic values with the growing complexity of the modern world that technological advances were creating. “Most people would not venture an opinion on the feasibility of producing transparent lead, or steel-hard aluminum, or synthetic proteins,” Gruenberg wrote. “Yet these same people insist upon the right to hold opinions (and to act according to these opinions) upon such highly technical questions as the efficacy of vaccination, the value of serums, or the causation of cancer.” With such rhetoric, Gruenberg sought to move a contentious issue—how to protect the self and the community from disease—out of the realm of popular knowledge and into the domain of the expert. The AAMP deplored the trend of “placing the decision on scientific matters on a popular vote,” noting that “by specious arguments for personal liberty, by subtle appeals to tender emotions and kindly sentiments, many voters have been led to oppose well founded measures for the protection of the public health.”⁴¹

³⁹ *The Medical Follies* (cit. n. 28) attacked alternative healers such as chiropractors, homeopaths, and naturopaths, as well as popular fitness movements such as physical culture.

⁴⁰ Benjamin C. Gruenberg, “Diphtheria Statistics,” *New York Times*, 21 Sept. 1927, p. 28; and American Association for Medical Progress, *Smallpox—A Preventable Disease* (New York: American Association for Medical Progress, 1924), pp. 8–9. The group’s honorary president was Charles W. Eliot, the former president of Harvard University, and its members included Yale University president James Rowland Angell, former New York governor and presidential candidate Charles Evans Hughes, and Edward Wigglesworth, the director of the Boston Museum of Natural History.

⁴¹ Benjamin Gruenberg, “Science in a Democracy,” in *Modern Science and People’s Health*, ed. Gruenberg (New York: Norton, 1926), pp. 11–12; and “Friends of Medical Progress,” *Journal of the American Medical Association*, 1923, 81(17):1443–1444.

But antivaccination activists refused to be excluded from decision making about such "technical" matters. The ongoing debate between proponents and opponents of vaccination centered on a set of related empirical questions: To what extent was the practice truly responsible for the decline in smallpox that had been observed over the previous century? Could the decline be traced instead to improvements in sanitation and environmental conditions? Were the low rates of smallpox that were seen in some countries and in some regions of the United States due to the level of vaccination in the population? Were periodic outbreaks of smallpox attributable to the lack of vaccination? Activists such as Lora Little and H. B. Anderson attempted to meet scientific experts on their own territory. Astute in their use of statistics, they sought to persuade legislators and policy makers by the same technique the public health officials used: careful marshaling of epidemiological data. Both the American Medical Liberty League and the Citizens Medical Reference Bureau seized on reports of high levels of smallpox in the Philippine Islands, where vaccination was widespread, as evidence that the practice was ineffective. In the spring and summer of 1922 Little sent letters to Surgeon General Hugh Cumming and the health commissioners of several states declaring that the demonstrated failure of vaccination warranted the repeal of any compulsory laws.⁴²

The U.S. Public Health Service, for its part, offered a contrary interpretation of the data: the Philippines epidemic was due to incomplete levels of immunity resulting from the lax enforcement of vaccination and from the fact that the vaccine itself, which had been stored for a long period without proper refrigeration, was insufficiently potent. "I would no more permit the incident in the Philippine Islands to weaken my faith in the value of vaccination than I would lose faith in the principles of engineering because a great bridge in process of construction collapsed," one state health officer wrote in response to Little. Moreover, Public Health Service officials saw a clear correlation between compulsory laws and a low incidence of smallpox. A study by the service published in 1921 found that disease incidence was higher in central states with no laws (such as Utah, the Dakotas, and Colorado); lower on the Eastern Seaboard, where the most expansive requirements were in place; and increasing in western states such as California and Oregon, where antivaccination sentiment was on the rise. "In the absence of compulsory features in the law, or where there is no law at all, smallpox reaches a high rate," the study's authors concluded. Echoing Gruenberg's concerns about the damage that the democratic process could do to public health, they declared, "Smallpox in the United States is dependent on the popular vote."⁴³

Some scientists contributed contrarian views to the debate. Raymond Pearl, the eminent Johns Hopkins University biologist and statistician, claimed in a controversial 1922 book *The Biology of Death* that much of the work of public health officials over the previous decades had had no effect on patterns of sickness. Intended partly to warn his colleagues against professional hubris, Pearl's work, though it did not specifically discuss the correlation between the use of vaccination and the decline of smallpox, gave ammunition to those who claimed that there was no relationship between the two. Supporters of vaccination were dismayed. In a rebuttal to Pearl's claims published in the popular magazine the *Survey*, Louis Dublin, chief statistician for the Metropolitan Life Insurance Company

⁴² Lora Little to Cumming, 5 June 1922, NARA, RG 90, Box 367. See also letters from Little to the health commissioners of Colorado, Virginia, South Carolina, Iowa, and New York in the same box.

⁴³ Cumming to Godfrey, 21 June 1922, NARA, RG 90, Box 367 (lax enforcement, faulty refrigeration); Williams to Little, 20 June 1922, NARA, RG 90, Box 367; and John N. Force and James P. Leake, "Smallpox in Twenty States, 1915–1920," *Public Health Reports*, 1921, pp. 1979–1989, on p. 1989.

and a champion of vaccination, ruefully predicted that medical dissident groups “will probably get a great deal of satisfaction out of the spectacle of a professor of a school of public health shattering the gods of his colleagues.”⁴⁴

The Metropolitan Life Insurance Company, which at the time provided life or disability insurance to one out of every six Americans, was a powerful institutional supporter of scientific medicine. In response to the brouhaha over the Philippines smallpox data, Met Life issued a press release claiming that antivaccination propaganda was responsible for continued outbreaks of smallpox and charging that children were its chief victims.⁴⁵ The company’s special concern for the well-being of the young reflected an important shift in public perception in this period: vaccination was increasingly seen as a procedure not for adults but for infants and schoolchildren. A legislative fight in New York State illustrates the extent to which schools became the primary battleground for antivaccinationists.

ADULTS, CHILDREN, AND THE SCOPE OF COMPULSION

Charles Higgins and the Anti-Vaccination League of America made repeated attempts, all unsuccessful, to modify or repeal the law in New York State that required all children to undergo vaccination before enrolling in a public school. It would take the crusade of a savvy political insider—and grieving parent—to achieve that goal. James A. Loyster was a lawyer active in state politics, serving as a delegate to the Republican state committee from his hometown of Cazenovia in central New York. He was not affiliated with any antivaccination society and claimed that earlier in life he had been a believer in the procedure. But in 1914 his only son, Lewis, died after being vaccinated, and Loyster began a personal crusade to investigate what he saw as its dangers. He surveyed upstate residents in towns and villages, sending out hundreds of fliers and letters to find other cases of vaccination-related injuries and deaths in the rural regions of the state. Over the next several months he received reports from parents indicating that in 1914 at least fifty children had been killed and countless more injured by vaccination—a figure that dwarfed the three deaths the state had recorded from smallpox itself during the year. Loyster collected the damning statistics and heart-rending personal testimony from grieving parents into a booklet he published at the beginning of 1915 and began lobbying members of the New York legislature to modify the state’s compulsory vaccination law.⁴⁶ (See Figure 3.)

Although Loyster favored a complete repeal of the law, the resulting bill was a political compromise, reducing the use of compulsion in the state’s rural areas while expanding it in the largest cities. The existing law, which had been enacted in 1893, required that all public schools in the state exclude from enrollment any pupil who could not present proof of having been vaccinated. The Jones-Tallett amendment, named for the bill’s two sponsors, modified the law so that it applied only to cities with populations above fifty thousand (of which there were ten in the state). In all other cities, towns, and villages the school

⁴⁴ Raymond Pearl, *The Biology of Death* (Philadelphia: Lippincott, 1922) (see pp. 223–258 on the effects of public health efforts on mortality patterns); and Louis I. Dublin, “Does Health Work Pay?” reprint from *Survey*, 15 May 1923, Louis I. Dublin Papers, Box 7, Folder “Does Health Work Pay? 1923,” National Library of Medicine, Washington, D.C.

⁴⁵ “Child Toll of Smallpox,” *New York Times*, 13 Aug. 1922, sect. 2, p. 14.

⁴⁶ For Higgins’s ongoing efforts see Charles M. Higgins, *Repeal of Compulsory Vaccination: Memorial to the Legislature and Governor of the State of New York* (1909); and “Renew War on Vaccination,” *New York Times*, 17 Mar. 1911, p. 3. On Loyster’s role in the Republican Party see “Poll Gives Tie Vote in Fight on Barnes,” *ibid.*, 27 May 1913, p. 2; and “Keynote Address by Root,” *ibid.*, 10 July 1914, p. 4. For his book see Loyster, *Vaccination Results in New York State in 1914* (cit. n. 1).

CASE No. 25



LEWIS FREEBORN LOYSTER

LEWIS FREEBORN LOYSTER, son of James A. Loyster,
Cazenovia, N. Y.

Age 11.

Vaccinated Aug. 29, vaccine "E."

Commenced to complain Sept. 10,—11 days from vaccination.

Died Sept. 21.

Diagnosed "Infantile Paralysis."

This boy was the picture of health. To quote the attending physician, he was "a splendid specimen" physically. On the night of Sept. 10 he had a bad headache. The next morning at six was no better. At ten he was found by his mother unconscious. He was very constipated and slightly nauseated. Vomited once. Examination of urine showed indican in considerable quantities. The initial diagnosis was acute indigestion. Blood examined and found normal except for an excess of white corpuscles, explained as a natural sequence of vaccination. Unconsciousness continued. On Sept. 13 lumbar puncture made. Fluid from spinal cord not under pressure; perfectly transparent, subject to microscopic and culture tests; proved absolutely sterile. Case diagnosed as infantile paralysis of the cerebral type. Temperature very high, ranging from 104 to 106 rectal. About Sept. 14 throat became paralyzed. For five days could not swallow a drop. Food administered through rectum; medicine hypodermically. Paralysis of right leg and arm appeared about Sept. 17. Lungs filled with thick mucus. Respiration labored. Slight cyanosis. Small amount of oxygen administered continually after Sept. 16. Death occurred at 10:10 p.m. on Sept. 21 from paralysis of respiratory muscles. Temperature about 107 at death. Microscopic examination of spinal cord after death confirmed diagnosis as infantile paralysis.

Figure 3. One of the cases collected by James Loyster for his booklet *Vaccination Results in New York State in 1914*—that of his own son, Lewis, who died three weeks after being vaccinated.

entry requirement could be enforced only during a local outbreak of the disease, if the state health commissioner certified in writing that smallpox had been diagnosed in the area. At the same time, the bill expanded the scope of compulsion in the ten largest cities: under the new law, private and parochial schools, which had previously been exempt, would have to enforce the vaccination requirement.

The state medical society and virtually all of the local societies lined up against the measure, believing that it would inevitably bring about a lower level of vaccination cov-

erage in many areas of the state and, consequently, higher rates of smallpox.⁴⁷ Abraham Jacobi, a prominent New York City physician and pioneer of pediatric medicine, spoke of the necessary function of compulsory laws. “I have met in the bulk of our population with more indifference than farsighted public spirit,” he testified to the legislature. “It takes the collective thought and activity of a political center like the Legislature to instill a democratic soul into the big political body.” But state health commissioner Hermann Biggs stunned his colleagues by declining to oppose the bill. Biggs had been associated with compulsion during his tenure with the New York City health department; he was instrumental in enacting laws requiring physicians to report cases of tuberculosis and venereal disease to the department and had enforced strict quarantine measures against recalcitrant tuberculosis patients who would not submit voluntarily to hospitalization. To Biggs’s colleagues, his accommodating stance toward the proposed change was an apostasy. But Biggs was more a pragmatist than an ideologue; he believed in using compulsion judiciously, when it could accomplish his goals. The existing law had never been systematically enforced, he noted, and because of the decline in the incidence of smallpox it was engendering opposition that outweighed whatever value it might have. “I would rather have the sentiment of the community strongly supporting the health authorities without legislation than compulsory legislation and an antagonistic public sentiment,” Biggs testified to the state legislature’s public health committee. “An attempt at the present time to enforce strictly the present law will in many of the rural communities of the State result in my judgment in much harm to the public health without any equivalent return.”⁴⁸

In part because of Biggs’s support, the bill passed the legislature and was signed into law. But—in an illustration of the extent to which the goals of activists could diverge—Charles Higgins of the Anti-Vaccination League of America bitterly attacked the Jones-Tallett amendment. In Higgins’s view, the new law was a craven political capitulation, representing “every evil against which we had been working steadily for years and . . . a complete surrender to the advocates of medical compulsion.”⁴⁹ The ten cities in which compulsion was expanded contained the majority of the state’s population, Higgins pointed out. But the bill clearly accomplished Loyster’s primary goal: it removed the burden of compulsion from the state’s rural areas, where it was most resented.

The change in New York’s law was typical of activity in states around the country during this period, as attempts were made to narrow the scope of legally permissible compulsion. Utah and North Dakota both enacted laws expressly forbidding compulsory vaccination. Massachusetts, which had one of the most forceful laws in place, saw efforts to repeal it every year from 1915 to 1918. Much of the activity nationwide focused on school entry requirements. Washington State repealed its mandatory school vaccination law in 1919, and Wisconsin did the same the following year.⁵⁰ But not all efforts produced

⁴⁷ In February 1915, when the bill was introduced, Louis Neff, president of the Medical Society, wrote to U.S. Surgeon General Rupert Blue asking for any statistics on the efficacy of vaccination that might provide ammunition for the upcoming legislative fight. See Louis K. Neff to Rupert Blue, 1 Feb. 1915, NARA, RG 90, Box 251, Folder “2796 (1915).”

⁴⁸ Abraham Jacobi, “Address in Opposition to the Jones-Tallett Amendment to the Public Health Law in Relation to Vaccination,” *N.Y. State J. Med.*, 1915, 15(3):90–92; and Hermann M. Biggs, “Arguments in Favor of the Jones-Tallett Amendment to the Public Health Law in Relation to Vaccination,” *ibid.*, pp. 89–90. On Biggs’s career see C.-E. A. Winslow, *The Life of Hermann M. Biggs* (Philadelphia: Lea & Febiger, 1929); on his use of compulsion and the politics of such policies see Daniel M. Fox, “Social Policy and City Politics: Tuberculosis Reporting in New York, 1889–1900,” *Bull. Hist. Med.*, 1975, 49:169–195.

⁴⁹ Higgins, *Crime against the School Child* (cit. n. 21), p. 9.

⁵⁰ Stern, *Should We Be Vaccinated?* (cit. n. 20), p. 109 (Utah and North Dakota); Samuel B. Woodward,

victories for the antivaccination cause. In 1916 Oregon voters narrowly rejected a citizen initiative that would have made it a felony for schools, public agencies, or employers to mandate vaccination; a similar measure was defeated by a wide margin in 1920. The latter initiative was sponsored by a group called the Public School Protective League, which sought in the same year to abolish California's school entry law. The league espoused a libertarian philosophy and also opposed several other bills related to child health, including one that would establish a bureau of child hygiene in the state government. Also on the California ballot were two other populist medical measures, one outlawing vivisection and one allowing chiropractors to practice in the state. All were defeated by substantial margins.⁵¹

Even states where general vaccination remained legally enforceable for children rarely saw concerted attempts to achieve the widespread protection of adults.⁵² The eighteen months in which the United States was involved in World War I represented one of the last systematic and large-scale efforts to secure the vaccination of the adult civilian population. In this context, health officials reframed vaccination as a patriotic measure designed to protect the nation's wartime industrial capacity.⁵³ Surgeon General Rupert Blue issued a general advisory to all state public health officials urging them to work with their local officials to achieve universal vaccination, especially among workers in war-related industries and in areas near military cantonments. But the campaign achieved little success. In Arizona, a state important to the war effort because of its copper mines, the health commissioner complained to Blue that the compulsory vaccination law was a "dead letter" owing to widespread opposition and that his efforts to enforce the policy simply exacerbated resistance. A plant manager at a steel company in Albion, Michigan, one of many in the state engaged in war production, noted that only some plants were enforcing the order and that in so doing they placed themselves at a competitive disadvantage: "Some laborers will refuse to be vaccinated, and will go to the other plants where vaccination is not required." In Chicago, many employees in war industries refused not on philosophical grounds but "because they are not paid for the time lost, which amounted to from one to five days in some cases."⁵⁴

"Legislative Aspects of Vaccination," *Boston Medical and Surgical Journal*, 1921, 185(11):307–310 (Massachusetts); C. C. Pierce, "Some Reasons for Compulsory Vaccination," *ibid.*, 1925, 192(15):689–695 (Washington); and Force and Leake, "Smallpox in Twenty States" (cit. n. 43), p. 1989 (Wisconsin).

⁵¹ On the Oregon initiatives see Johnston, *Radical Middle Class* (cit. n. 2), pp. 207–217. The California bills are discussed in Chester H. Rowell, "Medical and Anti-Medical Legislation in California," *American Journal of Public Health*, 1921, 11:128–132. The vote on the antivaccination measure was 57 percent opposed and 43 percent in favor; see "Defeat of Antivaccination and Antivivisection Measures on the Pacific Coast," *Public Health Rep.*, 1920, 35:3040.

⁵² About a dozen states at this time had laws authorizing the compulsory vaccination of the general population; most of these laws were permissive rather than mandatory—that is, they allowed but did not require localities to enforce compulsory vaccination should officials deem it necessary. See William Fowler, "Smallpox Vaccination Laws, Regulations, and Court Decisions," *Public Health Rep.*, 1927 [Suppl. 60], pp. 1–21.

⁵³ The government's vigorous campaign against venereal disease during the war represented a similar push to frame the control of disease in terms of patriotic duty through elaborate war metaphors in which disease was equated with the enemy. See Allan Brandt, *No Magic Bullet: A Social History of Venereal Disease in the United States since 1880* (New York: Oxford Univ. Press, 1987), pp. 52–121.

⁵⁴ For Blue's advisory see Circular Number 116 of the Public Health Service, NARA, RG 90, Box 363; see correspondence between the PHS and state and local health officers in NARA, RG 90, Boxes 363, 369. On the problem in Arizona see clippings and correspondence in NARA, RG 90, Box 363. The Michigan plant manager's complaint is expressed in President, Union Steel Products Company, to Blue, 8 July 1918, NARA, RG 90, Box 369. The Chicago employees' refusal to be vaccinated is noted in W. D. Heaton to Medical Officer in Charge, 29 July 1918, NARA, RG 90, Box 363. On wartime labor unrest see David Kennedy, *Over Here: The First World War and American Society* (New York: Oxford Univ. Press, 1980), pp. 258–270.

In the context of labor shortages and bitter struggles over union organizing brought on by the war, some in government felt that vaccination was not sufficiently important to risk inflaming sensitive workplaces. The War Department recommended to Blue that “this measure not be too aggressively advanced at this time or at least until the War Labor Policies Board, has an opportunity to secure a better stabilization of labor matters. Numerous instances have been reported to this Branch of the loss of labor in large numbers due to the enforcement of inoculation and vaccination.” Similarly, the U.S. Railroad Administration expressed concern that “a very considerable number of employees would leave” their jobs if a compulsory vaccination policy were enforced. The American Federation of Labor also fought during the war against the compulsory physical examination of munitions workers, illustrating the extent to which threats to bodily integrity were a flashpoint for factory unrest.⁵⁵

In this highly charged climate, several health officials sought to have antivaccination literature suppressed on the ground that it was impeding the war effort—“I can see no difference between this propaganda and any other anti-war pro-German propaganda,” said Arizona’s superintendent of public health—though there is no evidence that these attempts were successful. Antivaccinationism also fell victim to the suppression of radicalism and dissent that marked the war effort. Lora Little was arrested in North Dakota in 1918 under the Espionage Act for attempting to cause insubordination and mutiny in the military after she distributed pamphlets attacking the compulsory vaccination of soldiers. She was eventually freed after the state supreme court threw out the case against her.⁵⁶

In the postwar years, rates of vaccination in the population dwindled steadily. A study of child health in 1930 found that in the average U.S. city only 13 percent of preschoolers had been vaccinated. Age five was the most common time to have children protected against smallpox, reflecting the effect of school entry requirements around the country; it was during that year that almost 75 percent of vaccinating was done. There was little variation in the incidence of vaccination by income level, another reflection of the public settings in which the procedure was performed. In a survey asking physicians about patient attitudes toward vaccination, most reported that their patients were favorably disposed toward it—suggesting a gap between what people may have believed about the practice and what they actually did.⁵⁷

Another survey conducted at around the same time found distinct differences between densely and sparsely populated regions: vaccination was much more common in large cities than in rural areas.⁵⁸ Regardless of where they lived, children tended to be vaccinated only once, most commonly at age five, and almost no one underwent the procedure after puberty; very few adults heeded public health officials’ recommendations about renewing

⁵⁵ For the War Department recommendation see Fred C. Butler to Surgeon General, 10 July 1918, NARA, RG 90, Box 369; the Railroad Administration’s concern appears in Walker Hines to Blue, 7 Aug. 1918, NARA, RG 90, Box 369. On the AFL’s fight against compulsory physicals see Nugent, “Fit for Work” (cit. n. 11), p. 591.

⁵⁶ For the Arizona superintendent’s complaint see W. O. Sweek to Blue, 22 Mar. 1918, NARA, RG 90, Box 363. For efforts to suppress antivaccination literature see, e.g., Walter A. Scott to U.S. Public Health Service, NARA, RG 90, Box 369; and Blue to Solicitor, Post Office Department, 28 Oct. 1918, NARA, RG 90, Box 364, Folder “October 1918.” On Little’s arrest see Johnston, *Radical Middle Class* (cit. n. 2), p. 210.

⁵⁷ George Truman Palmer, Mahew Derryberry, and Philip Van Ingen, *Health Protection for the Preschool Child* (New York: Century, 1931), pp. 50 (75 percent of vaccinations at age five), 51 (little variation by income), 7 (survey of patient attitudes). Alternatively, of course, this last finding may indicate that physicians were not reliable judges of the attitudes of their patients.

⁵⁸ Collins, “Frequency of Immunizing and Related Procedures in Nine Thousand Surveyed Families” (cit. n. 9)

protection against smallpox every seven years. The survey revealed the extent to which vaccination was coming to be perceived as a procedure for children, something that adults rarely, if ever, considered undergoing themselves.

THE WANING OF ANTIVACCINATIONISM

Antivaccinationism in the United States declined dramatically in the 1930s. Few efforts were made to modify or repeal laws around the country after the mid 1920s, and court challenges to compulsory laws, which had numbered in the dozens during the late nineteenth and early twentieth century, became rare. The question of whether mandates for vaccination prior to school attendance violated any constitutional rights—a point that had not been directly addressed in *Jacobson v. Massachusetts*—was settled in the U.S. Supreme Court in 1922 in a case arising from Texas, where Rosalyn Zucht, age fifteen, was expelled from Brackenridge High School in San Antonio after her parents refused to have her vaccinated. In a unanimous decision relying primarily on the earlier opinion in *Jacobson*, the court determined that no constitutional right was infringed by excluding unvaccinated children from school. Justice Louis Brandeis, who wrote the opinion, subsequently claimed that the court should not have taken the case as it presented no new constitutional issues.⁵⁹

The Anti-Vaccination League of America faded from prominence during the 1920s and vanished after the death of Charles Higgins in 1929; the American Medical Liberty League underwent a similar decline after Lora Little's death in 1931. The disappearance of these organizations revealed the extent to which the movement depended on the persistence of a few dedicated leaders. The activist with the most longevity was H. B. Anderson, who continued to fight against vaccination and other "socialistic" medical programs during the 1930s and 1940s. Although chiropractors and Christian Scientists remained significant forces for alternative medicine, parents increasingly relied on the child-rearing advice of allopathic physicians who supported vaccination.⁶⁰

Disputes over vaccination returned to the public stage in the 1980s, with a highly visible controversy over the safety of the pertussis vaccine, and since then allegations of harm attributed to routine childhood immunization have drawn widespread and often sensational attention in the media and prompted a series of congressional hearings. The issue remains emotionally charged in the United States and many other industrialized democracies, with a new generation of activists, as diverse as their historical predecessors, questioning the orthodox view of vaccination.⁶¹ Many of these debates have resonated with the chords that were struck in the Progressive Era.

The polemical and highly charged language and imagery that characterize much of the

⁵⁹ *Zucht v. King*, 260 U.S. 174 (1922); and Louis Brandeis to Felix Frankfurter, 17 Dec. 1924, quoted in "*Half Brother, Half Son*": *The Letters of Louis D. Brandeis to Felix Frankfurter*, ed. Melvin Urosky and David W. Levy (Norman: Univ. Oklahoma Press, 1991), p. 186.

⁶⁰ For Anderson's continuing fight see, e.g., his testimony against federal support for maternal and child health programs: Statement of H. B. Anderson, "Economic Security Act: Hearings before the Committee on Ways and Means, House of Representatives, Seventy-Fourth Congress, First Session, on H.R. 4120." On the continuing influence of chiropractors and Christian Scientists see Louis S. Reed, *The Healing Cults: A Study of Sectarian Medical Practice* (Chicago: Univ. Chicago Press, 1932); on the increasing influence of medical experts on child rearing see Sydney A. Halpern, *American Pediatrics: The Social Dynamics of Professionalism, 1880–1980* (Berkeley: Univ. California Press, 1988), pp. 90–98.

⁶¹ Robert M. Wolfe, Lisa K. Sharpe, and Martin S. Lipsky, "Content and Design Attributes of Antivaccination Web Sites," *J. Amer. Med. Assoc.*, 2002, 287:3245–3248; and P. Davies, S. Chapman, and J. Leask, "Antivaccination Activists on the World Wide Web," *Archives of Disease in Childhood*, 2002, 87:22–25.

antivaccination literature of the early twentieth century—along with the fact that vaccination subsequently assumed the status of medical orthodoxy—make it easy to dismiss these activists as cranks. But their views on vaccination, though in the minority in the early decades of the century, were persuasive to considerable numbers of Americans, as evidenced by the extensive legislative activity of the period. Newspapers and magazines throughout the Progressive Era continued to present debates over the merits of vaccination, albeit with a distinct bias toward the view of vaccination as a mainstream and accepted practice.⁶² Antivaccinationists based their arguments in large measure on a careful reading of available data on the safety and efficacy of vaccination, and if they did so with strong biases in favor of an *a priori* assumption, the same accusation could be made against the defenders of the practice. Their writings provide a unique lens through which to examine how a diverse range of Americans viewed the place of scientific knowledge in civic life. To view the antivaccinationists as simply paranoid or reactionary obscures the significance of their fight within the broader social and political environment over questions central to liberal democracies: the relationship of the citizen to the state, the proper reach of government into the lives of the people, the legitimacy of some forms of knowledge over others, and the appropriate role of science in guiding decisions about health and the body.

⁶² See, e.g., “Both Sides of the Vaccination Question,” a pair of columns pro and con that appeared in the May 1910 and June 1910 issues of the *Ladies Home Journal* (and were subsequently published as a pamphlet by the Anti-Vaccination League of America [cit. n. 5]).