Notes to Volume 2: Domination

The following notes are intended as a companion and additional resource to The Yankee Road, Volume 2. As you read Volume 2, you will find references to these notes throughout the text. Should you have additional questions or have feedback, you are invited to contact the author at j.mcniven@theyankeeroad.com.

Chapter 1

1. Salsbury, *State, the Investor, and the Railroad*, 111.
2. Gould made his statement in the late 1860s; quoted in Martin, *Railroads Triumphant*, 373. The company's capital, whenever there were earnings, was retained and used to improve the railroad or buy other lines. The Erie paid some dividends in the 1850s and then not until 1942. Johnson (*History of the American People*, 551) suggests that one was paid in 1873, after Gould was forced out.
3. Gordon, *Passage to Union*, 250.
4. Much of this section parallels and is enlightened by Crump, *Brief History of the Age of Steam*, chaps. 1–7.
5. Even the US Congress took an interest in marine railways in the 1820s (Gordon, *Passage to Union*, 14).
6. Harlow, *Steelways of New England*, 18. Crump (*Brief History of the Age of Steam*, 28) suggests this method was in use in German mines as early as the fifteenth century. A similar gravity railroad was developed near Chester, Pennsylvania, in 1810 to move granite blocks; another was made in 1810 near Lewiston, New York, for military haulage; see John Westwood and Ian Wood, *A Historical Atlas of North American Railroads* (Edison, NJ: Chartwell Books, 2007), 28.
7. Dalzell, *Enterprising Elite*, 85.
8. There is an interesting description of Josiah Quincy and his railroad in Louise Hall Tharp, *Until Victory: Horace Mann and Mary Peabody* (Boston: Little Brown, 1953), 62–3. The horse moved around a capstan that had chains attached to two cars, an empty one being pulled up and a full one being lowered. See also Paterson H. Browne, *Quincy* (Charleston, SC: Arcadia Publications, 2004), 10–11; Carter, *When Railroads Were New*, 12–13; Douglas, *All Aboard*, 18; and Harlow, *Steelways of New England*, 25–7, 31–5. Incorporation was seen as a way to expropriate land for the railroad's right-of-way and to use the power of government to enforce a monopoly on the route, which was necessary to entice investors. The Quincy, though, was not a real railroad but what the British, who had been using them for a long time, called "a tramway"; see Charles Francis Adams Jr.,. *Railroads: Their Origin and Problems* (1878; New York, London: G.P. Putnam's Sons, 1987), 37. See also Salsbury, *State, the Investor, and the Railroad*, 45. The Quincy was, for a time, a tourist attraction as well.
9. The earliest guided and wheeled transportation is in a 1430 military drawing in which a rutted path is used to move wagons of earth from trenches to the top of ramparts. The modern railroad evolved from the idea of putting wooden strips in the ruts made by coal wagons as they hauled their contents down to water and boats. The idea of a mechanical way to move the cars came later; see Crump, *Brief History of the Age of Steam*, 22–52; and John Moody, *The Railroad Builders* (New Haven, CT: Yale University Press, 1919), 2–3.

10. The use of rails in mines goes back a long way — even the ancient Greeks apparently used "rutways" to reduce friction; see Douglas, *All Aboard*, 14; and Gordon, *Great Game*, 73.
11. Crump, *Brief History of the Age of Steam*, 52.
12. For the reaction in Boston, see Harlow, *Steelways of New England*, 3–20; and Gordon, *Passage to Union*, 16.
13. Crump, *Brief History of the Age of Steam*, 180.
14. Oddly, although the steamboat created an instant sensation and was soon put to use as far west as the Mississippi River, it did not seem to create any logical connection to land travel in the public's mind for another twenty years; see Douglas, *All Aboard*, 8, 13. Henry Shreve was piloting a steamboat up and down the Ohio-Mississippi system as early as 1814, and also went as far north as present-day Galena, Illinois, to trade for lead with the local Indians (Crump, *Brief History of the Age of Steam*, 79–82. A steamboat finally made it all the way upriver to the present site of Minneapolis in 1823, two short years before the opening of the Erie Canal (Martin, *Railroads Triumphant*, 9-10). Even so, the growth of trade in the interior of the country was such that steamboat traffic on the rivers making up the Mississippi system constituted three-fifths of the steam power used in the 1840s; in the 1850s, New Orleans surpassed New York in the volume of shipping, with half of American exports moving through its ports (Crump, *Brief History of the Age of Steam*, 82).
15. Before the Erie Canal was built, the natural outlet for the produce of farmers in western New York was northeast on Lake Ontario to Montreal. Canadian traders opened up stores on the lakeshore before the War of 1812 and bought potash and salt. When Thomas Jefferson proclaimed an embargo on foreign trade in 1808, a "Potash Rebellion" developed in the area and trade northwards jumped. By 1815, the British were building canals around the rapids on the St. Lawrence River and launching steamships to capture the western New York trade. Transportation costs are estimated to have been 30 percent lower to Montreal than to Albany for Western wheat (Koeppel, *Bond of Union*, 52, 72, 83, 85, 114, 118).
16. Horses and mules were used in British mines to pull rail cars as early as 1806. A quick synopsis of the diffusion of steam technology can be found in Martin, *Railroads Triumphant*, 12–14.
17. Weightman, *Industrial Revolutionaries*, 101–2.
18. See Crump, *Brief History of the Age of Steam*, 148–53; Douglas, *All Aboard*, 17; and Hobsbawm, *Age of Revolution*, 44–5. Its builder, George Stephenson, established the rails at 4 feet 8½ inches wide, the width used in the mines he knew and also the width, more or less, of Britain's ancient Roman roads. It is still the standard width used by most of the world's railroads today. For a Boston account of the opening of the Stockton and Darlington, see Salsbury, *State, the Investor, and the Railroad*, 44–5.
19. Gordon, *Business of America*, 92. Clearly, if a steam engine could propel a boat, there was no reason it could not also propel a carriage; see idem, *Great Game*, 74; and Hobsbawm, *Age of Revolution*, 44–5. For an account of the Boston reporting on the progress of the Manchester and Liverpool, see Salsbury, *State, the Investor, and the Railroad*, 54–6. Horatio Allen, son of an engineering professor at Union college in Schenectady, New York, was commissioned to go to Britain in early 1828 to investigate the use of steam for railroading by the Delaware and Hudson canal company. In 1829, he

shipped four locomotives, the first seen in America, to the company for testing, but little came of it. Allen then went to South Carolina to become the chief engineer for the new Charleston and Hamburg Railroad; see Carter, *When Railroads Were New*, 12–23.

20. Crump, *Brief History of the Age of Steam*, 154–63; and Harlow, *Steelways of New England*, 61–2. Three locomotives were imported into Pennsylvania for mine haulage in 1829; though only one was temporarily used, it was enough to show the practicality of steam.
21. Adams Jr., *Railroads*, 3, 5.
22. Berstein (*Wedding of the Waters*, 344) has a somewhat garbled rendition of this early railroad. A broader context for the creation of early railroads in New York can be found in Billington, *Westward Expansion*, 328–30.
23. Martin, *Railroads Triumphant*, 15. The steamship line was part of Cornelius Vanderbilt's growing coastal empire (Adams Jr., *Railroads*, 15). It was opened as a steam railway in 1830, and had to compete with a new canal project up the Potomac from Washington, DC (Crump, *Brief History of the Age of Steam*, 98–9). In August 1830, the Baltimore and Ohio held time trials between a horse and a steam engine; the horse won when the engine broke down (Adams Jr., *Railroads*, 43–5). For a chronicle of the failure of governments and entrepreneurs to open up a Potomac-Ohio connection to compete effectively with the Erie Canal and the northern railroads, see Goodrich, *Government Promotion*, 75–9.
24. Harlow, *Steelways of New England*, 76–7.
25. Ibid., 86–91. The first locomotive to run on the line was the "Patrick," named after Lowell executive Patrick Tracy Jackson. The first ride was rather exciting, if only because of the sparks from the smokestack that singed everyone's clothes (Douglas, *All Aboard*, 30–1). It took three hours to cover the forty-two miles (Carter, *When Railroads Were New*, 8–9). By 1838, the shop had made thirt-eight locomotives for various lines throughout the country; see Weible and Lowell Historical Society, *Continuing Revolution*, 149. Most of the work on this and other New England railroads was done by imported Irish workers (Struik, *Yankee Science in the Making*, 310).
26. Until the late 1830s, corporations could only be created by an act of the State Legislature, called a "charter." The charter spelled out the objectives, powers, and capital requirements of the new company. Because these were State charters, companies whose lines crossed State boundaries had to gain a charter in the next State as well and treat the extension as a different railroad. This obviously created another nuisance for companies that were taking on a regional or national scope (Gordon, *Passage to Union*, 108). For an account of the conflicting regional interests that led to Massachusetts staying out of the railroad business, unlike the State canal efforts in New York and Pennsylvania, see Salsbury, *State, the Investor, and the Railroad*, 62–79.
27. Harlow, *Steelways of New England*, 78. Adams (*Railroads*, 66) says 1835; others say 1834. It may be that Adams was referring to the official opening, while the others mean the line's physical completion.
28. Martin, *Railroads Triumphant*, 15. The rest of New England followed suit — one estimate is that 60 percent of all the railroad mileage constructed in the 1840s was in that part of the country (Douglas, *All Aboard*, 34–5).
29. Patrick Jackson, who had become manager of the Waltham mill on the death of Lowell, became the superintendant of the Worcester line (Dalzell, *Enterprising Elite*, 88).

30. Harlow, *Steelways of New England*, 123–30. Salsbury (*State, the Investor, and the Railroad*, 146–55) estimates the Western received $5 million in loans from Massachusetts and the City of Albany and $1 million in stock purchases by Massachusetts, out of a total invested of $8 million. Three directors out of nine were appointed by the Commonwealth, which held significant amounts of common stock (Mazlish, *Railroad and the Space Program*, 173). The loans by Massachusetts and the City of Albany were repaid (Goodrich, *Government Promotion*, 126–8).
31. Salsbury, *State, the Investor, and the Railroad*, 172. The line cost $8 million to build; even twenty years later, few mills and ironworking facilities were capitalized at more than $2 million (Chandler Jr., *Visible Hand*, 89).
32. Fares were not cheap: a $5.50 ticket to go from Boston to Albany would be the equivalent of about $550 in today's money (Gordon, *Great Game*, 74; for a sample of fares, see Gordon, *Passage to Union*, 83). In the early 1800s, it took a steamboat as long as thirty-two hours to go from New York City to Albany; thirty years later, that time should have been significantly reduced, but the railroad time was still faster (Douglas, *All Aboard*, 9).
33. Quoted in Harlow, *Steelways of New England*, 131–2.
34. Ibid., 134. George Whistler was also in charge of constructing this line. He left for Russia in 1842 to construct the line from St. Petersburg to Moscow and died there some years later.
35. Chandler Jr., *Visible Hand*, 91. Yankee rail executives dominated the railroad business until at least 1890, and "Boston capital" was ubiquitous in the West (Martin, *Railroads Triumphant*, 212).
36. Though there was an attempt in the 1850s by the Western to take over the New York Central, in 1900 the latter, Corning's and Vanderbilt's creation, took over what came to be known as the Boston and Albany (Harlow, *Steelways of New England*, 330–1).
37. From a report by the New York City Board of Aldermen, 1842 (quoted in ibid., 132–3).
38. Canal boats could be rafted down the river to New York in groups of fifty or more, bypassing the need to transship freight at Albany, as the Western required (Crump, *Brief History of the Age of Steam*, 95).
39. Salsbury, *State, the Investor, and the Railroad*, 284–5. There was an attempt by the leadership of the Western Railroad in 1854–55 to interest Boston investors in acquiring control of the Grand Central Railroad in New York to gain control of the trade with the West, but there was a lack of interest. See also Berstein, *Wedding of the Waters*, 368. The smaller railroads in New England were never coordinated or amalgamated until after the Civil War, and therefore had only a local purpose (Martin, *Railroads Triumphant*, 44).
40. Carter, *When Railroads Were New*, 75–6.
41. Adams Jr., *Railroads*, 39. The chief engineer of what was then the longest railroad in the world was Horatio Allen, who had been active in the promotion of steam transportation between the Delaware and Hudson Rivers. His father was a graduate of Brown University in Rhode Island and taught at Union College in Schenectady, New York. The basic story of the creation of the line is in Carter, *When Railroads Were New*, 23–5.
42. The engine was made at a foundry in West Point, New York (Adams Jr., *Railroads*, 39). The first such trip on the line took place on Christmas Day 1830, the train hauling 141 passengers six miles (Paquet, *Wanderlust*, 101).
43. Carter, *When Railroads Were New*, 77.

44. Ibid., 76–7. Henry and Maria's son, George, graduated from Yale in 1854 and had a career in Chicago real estate; see Yale University, *Obituary Record of Graduates of Yale University Deceased during the Academical Year ending in June, 1905* (New Haven, CT); available online at http://mssa.library.yale.edu/obituary_record/1859_1924/1904-05.pdf. By the 1820s, the Ramapo Works were producing both textiles and iron fittings, primarily for the local and New York City markets (Jeremy, *Transatlantic Industrial Revolution*, 102).
45. After the opening of the Erie Canal, the State Legislature authorized a survey to be made for a road through the southern part of the State, but the terrain was so rough that the project was abandoned. Political opposition from north of New York's "Southern Tier" also contributed to its failure; see Moody, *Railroad Builders*, 66–7; and Fox and Remini, *Decline of Aristocracy*, 334–5.
46. Douglas (*All Aboard*, 24) refers to a "mild epidemic" of enthusiasm.
47. At first, the project seemed too large for one company, but Lord managed to convince everyone that it should be done that way (Carter, *When Railroads Were New*, 78–9).
48. Charles Francis Adams Jr., *Chapter of Erie* (Boston: Fields, Osgood, 1869), 1. The promoters had to raise $1 million in subscriptions before the charter could come into effect (ibid., 76–7, 80; see also Gordon, *Business of America*, 92).
49. Its charter said it had to have $10 million in subscriptions, with 5 percent paid in before it could operate (Carter, *When Railroads Were New*, 79).
50. Douglas, *All Aboard*, 38–40.
51. Adams, Jr., *Chapter of Erie*, 1. The survey was apparently carried out by DeWitt Clinton Jr. (Moody, *Railroad Builders*, 67).
52. Other entrepreneurs built a connection from Ramapo to Jersey City, saving Erie passengers a lot of time. The line could not literally connect with the Erie, but Ramapo was a small town. In 1851, the rules were changed and the Erie leased the connection (Carter, *When Railroads Were New*, 102–3).
53. Gordon, *Business of America*, 92–4
54. The freight from the West that would make Buffalo, but not Dunkirk, was flour. Although wheat was carried by lake steamer, it was more profitable to transport it to the eastern end of Lake Erie and there to have it milled, in huge quantities, into flour and shipped onward. Flour was a more valuable product than wheat, and the railroads did better by it (Martin, *Railroads Triumphant*, 168).
55. See, for instance, Bethany Anderson, "A Political Fire," *Quarto* 29 (spring-summer 2008): 5–7; and Carter, *When Railroads Were New*, 80–1.
56. Moody, *Railroad Builders*, 68.
57. The story is told in Carter, *When Railroads Were New*, 82–4, 94–5.
58. Chandler (*Railroads*, 45–6, 56) explains how these syndicates made their money; see also Carter, *When Railroads Were New*, 93. Alexander Divan, a lawyer from Elmira, New York, who had been involved in a line south from Elmira to Pennsylvania in the 1830s, proposed the first construction syndicate. He was involved in railroads, especially the Erie, almost until he died in the 1890s. The most infamous construction syndicate was the Crédit Mobilier of America, which was created by the management of the Union Pacific as it proceeded with construction across the Great Plains from 1867 to 1869. A scandal broke when it was found that the syndicate had been distributing some of its shares to congressmen to secure less onerous legislation governing the railroad. The vice president

was implicated as well, and was dropped from Ulysses S. Grant's re-election team in 1872.

59. Upon completion, the State cancelled $6 million in Erie bonds that it held, thus helping relieve the line's heavy indebtedness (Goodrich, *Government Promotion*, 59).
60. The story is told in detail in Carter, *When Railroads Were New*, 77–8, 95–100. See also Burrows and Wallace, *Gotham*, 655–7.
61. Martin, *Railroads Triumphant*, 207; see also Moody, *Railroad Builders*, 70.
62. Gordon, *Business of America*, 94. There may have been other dividends before the late 1850s, but, after that, none until 1942. Things only got more difficult during the Civil War, as expansion and financial depredations raised the debt load to $16 million (Adams, Jr., *Chapter of Erie*, 2).
63. Carter, *When Railroads Were New*, 78
64. Gordon, *Business of America*, 94.
65. Douglas, *All Aboard*, 38–40. Although the Erie had no local industry of any size along its route, as did the New York Central and the Pennsylvania Railroad, its two chief competitors, it did gain a certain advantage from the discovery of oil in Pennsylvania, just south of its line.
66. Harlow, *Steelways of New England*, chap. 20. Another study of railroad executives active in the 1840–90 period includes material on sixty-one men, thirty of whom were from New England and five others from upstate New York, which demonstrates the Yankee influence on railroad development; see Thomas C. Cochran, *Railroad Leaders, 1845–1890: The Business Mind in Action* (New York: Russell & Russell, 1965), appendix.
67. During the English Civil War, Corning's ancestors had supported Oliver Cromwell and left for New England around the time of the Restoration. A short, useful family history is given in Kennedy, *O Albany!*, 328–31; see also Paul Grundahl, *Major Erastus Corning: Albany Icon, Albany Enigma* (Albany: SUNY Press, 2007), chap. 2; and Irene Neu, *Erastus Corning: Merchant and Financier, 1794–1872* (Ithaca, NY: Cornell University Press, 1960).
68. Corning's ironworks provided the plate that was used in the construction of the USS *Monitor*, which fought the CSS *Virginia* (formerly the *Merrimac*) during the Civil War, in the first of the modern iron-plated naval battles.
69. Featherstonehaugh led an interesting and varied life. He was apparently a wealthy British cattle breeder living in Duanesburg, west of Albany, who posted a proposal to incorporate a railway in an Albany paper in 1825. He became a director of the railroad when the charter was issued in 1826. He then suffered a number of personal losses, including a spouse and children, and left the area before 1831. He moved to Philadelphia, where he became interested in science and geology. He was appointed a government geologist and went off to the (then) Southwest — Missouri and Arkansas. In 1840, he returned to England, where he was appointed one of the British commissioners tasked with settling the boundary dispute between Canada and America. Then he was appointed British consul for the Seine department in France, and was central in helping King Louis-Philippe escape to Britain in the Revolution of 1848. See Brian Solomon with Mike Schafer, *New York Central Railroad* (St. Paul, MN: Voyager Press, 2007), 14-16; and George P. Merrill, *The First One Hundred Years of American Geology* (1925, repr. New York: Hafner Publishing, 1964, 1969), 136–8.

70. Grundahl, *Major Erastus Corning*, 21; Martin, *Railroads Triumphant*, 14. See also Fox and Remini, *Decline of Aristocracy*, 306.
71. For descriptions of the locomotive, see Crump, *Brief History of the Age of Steam*, 184; and Oliver, *History of American Technology*, 184. The line and the locomotive were designed by one of the most creative engineers of the times, John Jervis, who came from a Long Island Yankee family that moved to Rome, New York, shortly after 1800. He worked on the Erie Canal, then became chief engineer for the Delaware and Hudson Canal; it was he who sent Horatio Allen to Britain to obtain designs for a locomotive. He then moved to Albany and the Hudson and Mohawk line. Jervis was later involved with many railroad projects in the West and with the development of the New York City water supply. See, for instance, Hawke, *Nuts and Bolts of the Past*, 224–5.
72. The Albany station was at "The Point," where the Western Turnpike, now US 20, met Madison Street. The toll booth for this turnpike was two blocks to the west of the station's location; it was eventually relocated to the waterfront (Kennedy, *O Albany!*, 117, who also claims that the railroad did not open until September 24). It reduced travel time from a full day on the turnpike to only three hours. It had no freight cars until 1840. Within sixty days of its opening, an Albany paper contained notices of intent to charter requiring an aggregate capital of $22 million. By 1836, 141 railroad charters had been issued, though only thirty lines were ever built; see Carter, *When Railroads Were New*, 150–6; and Klein, *Empire State*, 312.
73. An earlier railway from Schenectady to Saratoga went into operation in 1832.
74. Troy made an attempt to secure Western freight transshipment from Albany by building the Schenectady-Troy line in 1842 and running it as a municipal enterprise, but Albany, in turn, pledged $250,000 for upgrades to the Mohawk and Hudson and successfully prevented this diversion. The State of New York prevented further action of this sort in its 1846 Constitution (Goodrich, *Government Promotion*, 58–9).
75. Carter, *When Railroads Were New*, 168. Twenty-five years later, a passenger could go from New York City to Chicago in around thirty hours (Stiles, *First Tycoon*, 510).
76. Winter also affected the railroads. Since the Mohawk and Hudson was a bypass of the falls on the Mohawk River, there were no passengers when the canal was not operating.
77. These changes were not as threatening as they might seem to us today. Before the Civil War, the ability of engines to pull high tonnages was improving, but not great. Without steel rails, something not common until the 1870s, heavy weights could damage the railbeds. Finally, Western produce haulage tended to be concentrated in the fall of the year, when the canal had not yet frozen over. The railroads could haul manufactured products all year round and the sales cycle for these tended to be in the winter and spring, when the canal was inoperable; see Salsbury, *State, the Investor, and the Railroad*, 28, 277. A transplanted Vermont Yankee, Henry Wells, entered the shipping business first on the Erie Canal and then on the New York Central. He eventually partnered with William Fargo and John Butterfield to create American Express and then Wells Fargo (Koeppel, *Bond of Union*, 393).
78. At the dinner that followed the first trip on the Mohawk and Hudson, a number of toasts were given, one of which Corning must have heard, if he did not utter it: "The Buffalo Railroad — may we soon breakfast in Utica, dine in Rochester, and sup with our friends on Lake Erie!" (Adams Jr., *Railroads*, 52).

79. An engaging version of the story of the growth and consolidation of the New York Central is told in Carter, *When Railroads Were New*, 157–84.
80. The New York Central gave most of its business to the steamship line that ran between Albany and New York. As there was no rail connection to the rail lines on the east bank of the Hudson until 1866, it made sense, if the cars had to be unloaded, to give the business to the ships, whose cost and prices were lower than those of the rail lines. During the winter, the traffic was transshipped to the rail line (Stiles, *First Tycoon*, 382–3).
81. Martin, *Railroads Triumphant*, 247. Corning also provided much of the hardware, including ironwork, to these railroads. He normally took no salary for his positions, but his business with the railroads was most advantageous to him.
82. The Lake Shore Railroad and the Michigan Central were completed at about the same time, giving the New York Central access to Chicago (ibid., 17–18).
83. The canal, which still operates today, was built in 1855; within five years, a quarter of the pig iron made in America came from iron mined along the shores of Lake Superior. It also caused iron production to move from eastern to western Pennsylvania, closer to the Lake ports where the iron ore was offloaded onto rail cars (Chandler, *Railroads*, 32).
84. Corning retired from the presidency in April 1864 (Stiles, *First Tycoon*, 406). "Commodore" Cornelius Vanderbilt acquired control of the line between New York City and Albany and then took control of the New York Central (idem, chaps. 14–17; see also Burrows and Wallace, *Gotham*, 112). The first board meeting of the combined railway was in January 1870.
85. Schlereth, *Victorian America*, 22.
86. Crump, *Brief History of the Age of Steam*, 136.
87. Dee Brown, *Hear that Lonesome Whistle Blow: Railroads in the West* (New York: Touchstone, 1994), 29–32.
88. The Southern Pacific reached east from Los Angeles in 1876, the Santa Fe reached the coast in 1885, as did the Canadian Pacific at Vancouver. The Northern Pacific reached Tacoma, Washington, in 1887, and the Great Northern reached Seattle in 1893. The Canadian Pacific was the only railway to cross the continent from tidewater to tidewater: all of the American lines met somewhere in the Midwest. See Crump, *Brief History of the Age of Steam*, 202; and Gordon, *Passage to Union*, 189.
89. Crump, *Brief History of the Age of Steam*, 216.
90. Martin, *Railroads Triumphant*, 18, 326–7.
91. See William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York: W.W. Norton, 1991), 80–1.
92. Martin, *Railroads Triumphant*, 246. The system was developed in tandem with the geographically faster-growing telegraph system, which had many of the same requirements; see Lubrano, *Telegraph*, 86.
93. Chandler Jr., *Visible Hand*, 79, 94.
94. Ibid., 96–7; and Salsbury, *State, the Investor, and the Railroad*, 186–9.
95. Alfred D. Chandler, Jr., *The Railroads, the Nation's First Big Business; Sources and Readings* (New York: Harcourt, Brace & World, 1965), 98–9; for a good example of what organizational challenges were presented to a railroad of the mid-1800s, see pp.102–25. See also Mazlish, *Railroad and the Space Program*, 24–5.
96. Chandler Jr., *Visible Hand*, 101–4.

97. Martin, *Railroads Triumphant*, 273.
98. Chandler Jr., *Visible Hand*, 120. This need led to the early development of business machines.
99. Ibid., 188.
100. Gordon, *Passage to Union*, 273.
101. Cronon, *Nature's Metropolis*, 85–6.
102. Chandler Jr., *Railroads*, 97.
103. Stiles, *First Tycoon*, 403.
104. Chandler, Jr., *Railroads*, 50–1. With the exception of lines crossing the mountains in the western part of the region, little finance for the construction of New England railroads came from bonds, which were used only if there was a miscalculation in the cost of a line. Sometimes the capital subscribed in shares ended up being more than the cost of construction — a happy result (50).
105. Ibid., 44. A refusal to pay the subscriptions might lead to a lawsuit as the company tried to collect its pledges. Abraham Lincoln, as a corporate lawyer in the 1850s, had experience with these. See James W. Ely Jr., "Abraham Lincoln as a Railroad Attorney" (paper delivered at the Indiana Historical Society, 2005 Railroad Symposium: Lincoln and the Railroads), available online at http://www.indianahistory.org/our-services/books-publications/railroad-symposia-essays-1/Abe%20Lincoln%20as%20a%20Railroad%20Attorney.pdf.
106. As Goodrich (*Government Promotion*, 6–7) notes, "[t]hese programs were indeed large enough to provide in their time a leading example of 'the modern tendency to extend the activity of the state into industry'." Goodrich is quoting Guy Stevens Callender, who, in 1902, went on to ask why this should have taken place "here in America, where of all places in the world we should least expect to find it." The question is still a challenging one to all who regard nineteenth-century America as the historic stronghold of *laissez-faire* capitalism. Carter (*When Railroads Were New*, 7–11) points to three reasons for federal and State governmental action in infrastructure: the risk of extending works through unpopulated or lightly populated areas, the lack of local capital and existence of the frontier, and the newness of large-scale corporate organization and finance.
107. Gordon, *Passage to Union*, 4–5.
108. For an account of the scrip issued by Massachusetts for the Western Railraod, see Salsbury, *State, the Investor, and the Railroad*, 143.
109. Because bonds were seen as having more reliable income, as they were "first in line" to be repaid in the case of company failure, they were more welcome by distant investors. Most railroads outside the Northeast were financed by the use of bonds (Chandler, Jr., *Railroads*, 44). Sometimes, railroad company directors might become the syndicate, thereby profiting not only from the construction of the line, but also from its subsequent operation. Erastus Corning's hardware and iron foundry businesses benefited from the construction of the railroad from Albany to Buffalo, as, probably, did the Pierson iron businesses from the construction of the Erie.
110. Ibid., 44–5. The modern investment bank made its appearance as Wall Street became the national stock exchange. The Morgans, a Yankee family that settled in New York and London, became preeminent in this field.

111. In 1835, three railroads were listed on the exchange, rising to ten in 1840 and to thirty-eight by 1850. By the outbreak of the Civil War, they accounted for a third of the activity on the exchange (Gordon, *Great Game*, 76).
112. There was considerable concern over this issue by the directors of the Boston and Worcester and Western Railroads, but the lure of high (and safe) profits from textile manufacturing tended to force early private financing efforts into the Wall Street market. By 1835, banks held 20 percent of Boston and Worcester stock and another 45 percent was traded on Wall Street (Salsbury, *State, the Investor, and the Railroad*, 95–7).
113. Martin, *Railroads Triumphant*, 274.
114. Weissend, *Life and Times of Joseph Ellicott*, 16–18.
115. The Western sold State-owned land in Maine (Salsbury, *State, the Investor, and the Railroad*, 144).
116. Chandler, Jr., *Railroads*, 30. Despite their high profile in railroading history, land grants apparently assisted in the building of only 8 percent of the system (43).
117. Goodrich, *Government Promotion*, 268–9; and author's estimates. The federal contributions increased after the Civil War with the building of the transcontinental lines, but the government proportion of investment relative to that supplied privately declined in relative value. Canal investment from 1815 on tended to rely on public sources more extensively than did the railroads (Goodrich, *Government Promotion*, 268–71).
118. Martin, *Railroads Triumphant*, 195.
119. George W. Wilson, "US Intercity Passenger Transportation Policy 1930–1991, An Interpretive Essay," in Canada, Royal Commission on National Passenger Transportation Directions, *Final Report*, vol. 3 (Ottawa, 1992), 184. See also Douglas, *All Aboard*, 69.
120. Stott, "Artisans and Capitalist Development," 103–4; and Beatty, *Colossus*, 63. The ton/miles hauled by railroads grew from 10 billion in 1865 to 79 billion in 1890 (Douglas, *All Aboard*, 146)
121. Chandler, Jr., *Railroads*, 8.
122. Mazlish, *Railroad and the Space Program*, 120.
123. Quoted in Gordon, *Great Game*, 75.
124. Chandler, Jr., *Railroads*, 160–1.
125. It was only after considerable consolidation of lines into a few companies and the influence of financier J.P. Morgan in the 1890s that a pool arrangement that was not cheated upon was devised. Morgan could use his financial power to keep the temptation to cheat away (ibid., 162).
126. Ibid., 9–10, 159.
127. The first real civil engineering program began as a result of reforms made after the War of 1812, though the military academy was created in 1802.
128. Chandler, Jr., *Visible Hand*, 132; see also Clifford J. Schexnayder and Richard Mayo, *Construction Management Fundamentals* (Chicago: McGraw-Hill Professional, 2003), 5.
129. Schexnayder and Mayo, *Construction Management Fundamentals*, 9.
130. Chandler, Jr., *Visible Hand*, 77.
131. Douglas, *All Aboard*, 143–4; and Gordon, *Passage to Union*, 7, 244–5.
132. Martin, *Railroads Triumphant*, 49.

133. The width in the South was part of an attempt to cut off the "nationalizing" pattern created by the railroads. In 1861, when the Civil War started, there was thus no connection between the Northern and Southern lines from Washington, DC, west along the Ohio River (Gordon, *Passage to Union*, 5). As well, the Southern lines were plagued by varying track widths; one writer estimated that, in 1860, there were eight changes of track width between Charleston, South Carolina, and Philadelphia (Hawke, *Nuts and Bolts of the Past*, 222). US railroad gauges were not standardized until 1886 (Martin, *Railroads Triumphant*, 46; see also Gordon, *Passage to Union*, 250). In the early years of railroads, cities and towns often tried to create or keep gauge differences to force passengers to stop and spend money there. The "Erie War" of the 1850s erupted when the New York Central tried to standardize the gauge through Erie, Pennsylvania, and the townspeople kept tearing up the new track. The famous *Effie Alton* case involving Lincoln was another attempt to halt railroads from providing quick, through service (Gordon, Passage to Union, 114–5, 274).
134. Douglas, *All Aboard*, 144; see also Mazlish, *Railroad and the Space Program*, 179–80.
135. Quoted in Schlereth, *Victorian America*, 30–1. The promoter of this idea was Sir Stanford Fleming, an executive of the Canadian Pacific railroad. His summer home in Halifax, now a public park, is next to our former home. There were five zones across the continent, but a number of States and cities rejected the railroads' decision for years, causing all kinds of problems. In 1918, a federal law made railroad time federal time (Gordon, *Passage to Union*, 250).
136. Benjamin F. Taylor, 1874 (quoted in Martin, *Railroads Triumphant*, 33).
137. The *Car and Locomotive Cyclopedia of American Practices*, as it is now called, was last updated in 1997; see Gordon, *Passage to Union*, 254–5; and Builders of Wooden Railway Cars...and Some Other Stuff, "The Car-Builder's Dictionary" (2007); available online at http://www.midcontinent.org/rollingstock/builders/bibliog-bldrs.htm.
138. Carter, *When Railroads Were New*, 92.
139. Chandler, Jr., *Railroads*, 32.
140. Gordon, *Passage to Union*, 347.
141. Ibid., 300. The basic network in America was finished by 1900 (Chandler, Jr., *Railroads*, 11).
142. Federal regulation began in 1887 (Chandler, Jr., *Railroads*, 185–6). The earliest railroad commissions were begun in New England around 1840 to judge disputes between landowners and the railroads' power of eminent domain. Regulation expanded from there (Mazlish, *Railroad and the Space Program*, 174). In 1825, Ohio created a Canal Commission to regulate it canals and to collect a "canal tax" that was designed to repay the State's investment in the projected canal system (Goodrich, *Government Promotion*, 134).

Chapter 2

1. Pulliam and Van Patten, *History of Education in America*, 79.
2. Lawrence A. Cremin, ed., *The Republic and the School: Horace Mann on the Education of Free Men* (New York: Teachers College of Columbia University, 1957), 87. The quote comes from Mann's Twelfth Annual Report, 1848.
3. Quoted in Leslie Allen Buhite, "The Chautauqua Lake Camp Meeting and the Chautauqua Institution" (PhD diss., Florida State University, 2007), 194; available online at http://etd.lib.fsu.edu/theses/submitted/etd-07172007-132431/unrestricted/BuhiteLDissertation.pdf.
4. Lawrence A. Cremin, *Traditions of American Education* (New York: Basic Books, 1977), parts I–II. Much of the material on early schooling is derived from these lectures.
5. Schooling was at the base of cultural continuity. The Puritans saw education as a way of leading people to acquiesce to social norms (Ziff, *Puritanism in America*, 68)
6. In 1642, Massachusetts tried to put the obligation for education on parents, but when that did not work, the law was changed to make towns responsible. The first tax for education was levied by the Town of Dedham in 1648, but tuition fees were also levied (Pulliam and Van Patten, *History of Education in America*, 94). Because there might be more than one village in a town, it was sometimes difficult for the town's inhabitants to agree on the location of the school, which led to people not paying the school tax; see Robert L. Church, *Education in the United States: An Interpretive History* (New York: Free Press, 1976), 9.
7. Pulliam and Van Patten, *History of Education in America*, 92.
8. William Hayes, *Horace Mann's Vision of the Public Schools: Is It Still Relevant?* (Lanham, MD: Rowman and Littlefield Education, 2006), 2.
9. Ibid., 3, 8. Others mention that boys went in the winter and girls in the summer.
10. Pulliam and Van Patten, *History of Education in America*, 135.
11. In 1648, the apprentices were assured that they, too, would get book learning (Ziff, *Puritanism in America*, 164).
12. Other parts of society had a similar interest in education. In 1821, Seth Y. Wells, a former instructor at the Hudson Academy, was made superintendent of the Shaker schools. He opened them to outside inspection, and the Shakers received their appropriate share of State education funding (Andrews, *People Called Shakers*, 189).
13. In 1789, when the public school system in Boston was created, the rules for girls restricted them to "penny schools" and to the months from April to October (Hecker, *Short History of Women's Rights*, 169).
14. Pulliam and Van Patten, *History of Education in America*, 136, 147. This was five years after the female seminary was opened in Troy, New York. By the Civil War, there were three hundred high schools in America, one-third of them in Massachusetts.
15. Ziff, *Puritanism in America*, 116.
16. There were plans to build Yale as early as 1641, but protests from Massachusetts to protect Harvard postponed it. Dartmouth's founder was a Connecticut missionary among the Indians (Lee, *Yankees of Connecticut*, 155); Princeton, too, though in New Jersey, was also a Yankee creation of thirty families from New Haven, Connecticut, that settled in Newark and formed the College of New Jersey, later renamed (154).
17. Oliver (*History of American Technology*, 58) says the first press was owned by Stephen Day and the publication was called *The Freeman's Oath*. Ziff (*Puritanism in America*,

164), however, says the first press was established 1638 and that most of its output was religious books, though it also published poetry and history.

18. Joel Spring, *The American School, 1642–1985* (New York: Longman, 1986), 4–6.
19. Oliver, *History of American Technology*, 59.
20. William S. Reece, "The First Hundred Years of Printing in British North America: Printers and Collectors" (Worcester, MA: American Antiquarian Society, 1990); available online at http://www.reeseco.com/papers/first100.htm. Daniel Webster started his career as a schoolmaster, then went on to publish and personally sell copies of his spelling and grammar texts.
21. The aim of one Connecticut grammar school in 1684 was "the education of hopeful youth in the Latin tongue, and other learned languages so far as to prepare such youths for the college and public service of the country in church, and commonwealth" (Spring, *American School*, 7).
22. Two interesting and useful biographies are Mary Peabody Mann, *Life of Horace Mann*, new ed. (Boston: Lee and Shepard, 1888); and Tharp, *Until Victory*. Many of the personal details in this section come from these sources.
23. Cremin, *Traditions of American Education*, 59–60.
24. Mann had worked with Massachusetts education pioneer, James Carter, among others, to get the Board of Education established (Pulliam and Van Patten, *History of Education in America*, 141).
25. See, for instance, Church, *Education in the United States*, 61–104.
26. Cremin, *American Education*, 138.
27. Charles Hoyt and R. Clyde Ford, *John D. Pierce, Founder of the Michigan School System: A Study of Education in the Old Northwest* (Ypsilanti, MI: Scharf Tag and Box Co., 1905), chap. 8; available online at https://archive.org/stream/johndpiercefound00hoyt#page/n7/mode/2up. See also Cremin, *American Education*, 141, 161–2.
28. Mann was approached by the American Sunday School Union to designate a series of their materials for use as school texts, but he turned them down as too sectarian, leading to considerable bitterness. See Bob Pepperman Taylor, *Horace Mann's Troubling Legacy: The Education of Democratic Citizens* (Lawrence: University Press of Kansas, 2010), 48. As of 1855, of 50,890 libraries in the country, 30,000 were Sunday school libraries and 18,000 were district school libraries. These averaged at best about 200 volumes each. The remaining 4,800 libraries were larger entities, usually at universities (Cremin, *American Education*, 306).
29. Mann's journal entry for the day he accepted the position includes; "Henceforth, so long as I hold this office, I devote myself to the supremest welfare of mankind on earth . . . .I have faith in the improvability of the race" (Spring, *American School*, 84). The texts of these reports have been collected in Cremin, *Republic and the School*.
30. This is the inscription on his statue near the Massachusetts Statehouse; see Taylor, *Horace Mann's Troubling Legacy*, 9.
31. Mann, *Life of Horace Mann*, 108.
32. Pulliam and Van Patten, *History of Education in America*, 141. Mann got Dwight to offer a $10,000 "challenge grant" to fund a normal school if the State would match the amount (Tharp, *Until Victory*, 145, 174).

33. Cremin (*American Education*, 142) notes that Mann gave schooling "its essential meaning, both in educational terms and in broader political terms." Mann was a Whig at the time, and was inclined to promote industrial progress and more centralized control of institutions over the Jeffersonian Democratic preference for agriculture and local autonomy. Today, these basic stances in American politics seem to have switched partisan homes (see Taylor, *Horace Mann's Troubling Legacy*, 68). See also Church, *Education in the United States*, 55–6; and Cremin, *American Education*, 138.
34. Mann did a lot, but left a lot for others to do. In 1850, the proportion of white children in school ranged from 1 percent in California to 5 percent in the Southern States to 32 percent in Vermont (Hayes, *Horace Mann's Vision*, 29).
35. Ibid., 16.
36. He could have led a number of State-supported institutions in the West instead, but apparently chose this small, private institution because he saw higher education not as a part of the democratic citizenship struggle, but as a way of forming a wise elite (Taylor, *Horace Mann's Troubling Legacy*, 78–9).
37. Tharp, *Until Victory*, 308.
38. The school could have been started as part of a land-promotion scheme, as Mann (*Life of Horace Mann*, 517) seems to suggest. Another problem was that the female students wanted the same rights as the men in terms of their social activity, which continually upset the villagers (524).
39. Hayes, *Horace Mann's Vision*, 17.
40. Antioch's location is either in, or immediately next to, the Virginia Military District, a part of Ohio given over to that State for allocation to its Revolutionary War veterans.
41. Pulliam and Van Patten, *History of Education in America*, 143. See also Ruth M. Baylor, *Elizabeth Palmer Peabody: Kindergarten Pioneer* (Philadelphia: University of Pennsylvania Press, 1965).
42. Schlereth, *Victorian America*, 253.
43. *American Journal of Education for the Year 1826*, vol. 1 (Boston: Wait, Greene, 1826), 526; available online at http://books.google.com/books?id=sAUUAAAAIAAJ&printsec=frontcover&dq=American+Journal+of+education&source=bl&ots=HbfYzEd5p6&sig=7IU7pRz2Z_O4bKeDpCi6IIXCL9E&hl=en&ei=e1KOTdT6PPSz0QH-k6C_Cw&sa=X&oi=book_result&ct=result&resnum=9&ved=0CE0Q6AEwCA#v=onepage&q&f=false.
44. Holbrook had been a student of Professor Silliman at Yale, as had been Samuel F.B. Morse. See also "Josiah Holbrook," in *Columbia Electronic Encyclopedia*, 6th ed. (New York: Columbia University Press, 2012; available online at http://www.infoplease.com/ce6/people/A0823960.html#ixzz1HjzwfwXg.
45. The Lyceum in ancient Athens was a garden with walkways adjacent to the Temple of Apollo Lyceus, where Aristotle taught in the fourth century BC. The word was used indiscriminately to mean a social practice, a specific local association, a building constructed for the use of a Lyceum, and the program or performance; see Angela G. Ray, *The Lyceum in Public Culture in the Nineteenth Century United States* (East Lansing: Michigan State University Press, 2005), 3. In French, a *lycée* is a high school. Holbrook was aware of mechanics' institutes formed in Boston in 1795 (Oliver, *History of American Technology*, 154), in Scotland about the 1820s for similar purposes, and the

creation of a Lyceum in Gardner, Maine, in 1823 (Cremin, *American Education*, 312–15). See also James Truslow Adams, *Frontiers of American Culture: A Study of Adult Education* (New York: Scribners, 1944), 12.

46. Cremin, *American Education*, 312.
47. John E. Tapia, *Circuit Chautauqua: From Rural Education to Popular Entertainment in Early Twentieth Century America* (Jefferson, NC: McFarland and Company, 1997), 12–13.
48. It was extremely active, with 784 lectures, 105 debates, and 14 concerts in its early years (Cremin, *American Education*, 316).
49. Ray, *Lyceum in Public Culture*, 20–1.
50. Ibid., 2.
51. Ibid., 5.
52. Adams, *Frontiers of American Culture*, 36.
53. There are suggestions that others were started earlier, in 1751 or 1769, but Raikes's effort became the clear founding line.
54. In Connecticut, Sunday schools were created in 1816, just before the State changed its constitution to disestablish the Congregational church, effectively taking formal religious instruction out of its schools. The Congregational church as a whole began to advocate for Sunday schools in 1825. See Cross, *Burned-Over District*, 128.
55. Mann had opposed the inclusion of their materials in the common school texts as being too sectarian (Taylor, *Horace Mann's Troubling Legacy*, 48).
56. Buhite, "Chautauqua Lake Camp Meeting," 159.
57. Jeffrey Simpson, *Chautauqua: An American Utopia* (Chautauqua NY: Chautauqua Institution, 1999), 17. William Least Heat-Moon has an interesting story of his experiences in the area; see *River Horse*, 77–8.
58. The place was originally incorporated as the Fair Point Sunday School Assembly, then renamed the Chautauqua Lake Sunday School Assembly, then shortened to the Chautauqua Assembly, and, after the turn of the twentieth century, changed to the Chautauqua Institution (Buhite, "Chautauqua Lake Camp Meeting," 149).
59. Chautauqua Institution, "Welcome to Chautauqua: A Walking Tour Guide of the Chautauqua Institution" (n.d.), 1.
60. Schlereth, *Victorian America*, 253–4.
61. One of Vincent's correspondents suggested that the camp meeting format might be used, not as an evangelical device, but to expand the views of those already devout in their beliefs. It was an easy step to take to see one such group as those who volunteered to teach Sunday school; Buhite, "Chautauqua Lake Camp Meeting," 144; see also Andrew C. Rieser, *The Chautauqua Moment: Protestants, Progressives, and the Culture of Modern Liberalism* (New York: Columbia University Press, 2003), 100. There is some controversy over whether Miller had been one of the "incorporators" of the Chautauqua Lake Camp Meeting Association that bought and developed the site from 1871 on (Simpson, *Chautauqua*, 32). Miller, whose wife had attended a Fair Point meeting one summer, was a trustee of the Association. There is no question that the Association had been poorly managed and was in danger of going bankrupt (Buhite, "Chautauqua Lake Camp Meeting," chap. 3; and Rieser, *Chautauqua Moment*, 90–1).
62. Joseph E. Gould, *The Chautauqua Movement: An Episode in the Continuing American Revolution* (New York: State University of New York, 1961), 4.

63. Camp meetings, by this point, had evolved from "temporary towns" for rural people into "temporary rural vacation spots for urbanites." To a degree, their success depended on access by railroad. Also, the word "vacation" was not in common use before the Civil War; see Cindy S. Aron, *Working at Play: A History of Vacations in the United States* (New York: Oxford University Press, 2001), 32–3.
64. Ibid., 6–9. The Puritan approach was that work glorified God, even though being saved or not was out of one's control. Even after this connection was lost, the notion of idle relaxation was regarded badly; Chautauqua solved this for Sunday school teachers.
65. This whole approach is best described in ibid., especially, 9, 34–42, 101–26; see also Paquet, *Wanderlust*, 199.
66. Aron, *Working at Play*, 111.
67. Townsend, a Methodist minister, had become disaffected with Methodist theology by the mid-1880s and had moved toward a more liberal interpretation. He created an Independent Congregational Church in Jamestown, New York, at the eastern end of Lake Chautauqua, and in 1886 he started another chautauqua at Lakewood, just west of Jamestown, that was based on a more liberal theology than that promoted by Vincent and the Methodists just up the lake. His chautauqua enjoyed a number of years of success, due in part to people's hunger for the combination of morality and culture, but it did not affect the influence and fortunes of the original. See, for instance, "Rev. James G. Townsend" (Clarion: Clarion University of Pennsylvania, 2008), available online at http://www.clarion.edu/618/; and Len Faulk, "Historical Significance of Rev. James G. Townsend's Lakeside School of New Theology, *New Theology Herald*, and Liberal Religious Writings" (presentation to the Chautauqua County Historical Society, June 23, 2010), available at http://www.mcclurgmuseum.org/collection/library/lecture_list/lecture_list.html.
68. The Association had purchased the land in 1866 with help from a local oil-rich family, and development money was raised from share subscriptions. A Jamestown author who had gone to the huge Round Lake, New York, camp meeting tried to interest its organizers to come to Chautauqua for their 1872 camp meeting, but was turned down. Declining attendance in 1873 and bad weather in 1874 further discouraged them (Buhite, "Chautauqua Lake Camp Meeting," chap. 3).
69. Ellis and Cash, *New York State*, 114. Simpson (*Chautauqua*, 33–4) estimates that four thousand were there, from twenty-five States, England, Scotland, Ireland, and India, to hear eight sermons, twenty-two lectures on Sunday school theory and practice and seven on Biblical history and geography. A final exam was given to two hundred people at the end of the program. Paquet (*Wanderlust*, 200), says five hundred came.
70. The Association deeded the grounds and buildings to the Chautauqua Institution in 1876.
71. Simpson, *Chautauqua*, 37
72. Ibid., 38.
73. See Huey B. Long, "Adult Education in the Oneida Community: A Pattern for the Chautauqua Assembly," *Journal of the Midwest History of Education Society* 22 (1995): 203–15.
74. Both Miller and Vincent were unhappy about the evangelical and emotional side of Methodism and tried to make the Assembly as unlike a traditional camp meeting as possible (Simpson, *Chautauqua*, 33).
75. Rieser, *Chautauqua Moment*, 37.

76. Ellis and Cash, *New York State*, 114.
77. Rieser, *Chautauqua Moment*, 45.
78. Simpson, *Chautauqua*, 17; and Tapia, *Circuit Chautauqua*, 20–2.
79. Brown, *American West*, 183.
80. Rieser, *Chautauqua Moment*, 10.
81. Wish, *Society and Thought in America*, 114.
82. Rieser, *Chautauqua Moment*, chap. 5.
83. Ibid., 191–2. Ida Tarbell, the famous journalist, was effectively the managing editor of the CLSC magazine during much of the 1880s.
84. Ibid., 180–4.
85. Ibid., 3–4. As well, Rieser notes (103) that Chautauqua tried to disassociate itself from the Lyceums and Mechanics' Institutes, but was not successful.
86. Simpson, *Chautauqua*, 51–5. Rainey later would have a falling-out with Chautauqua when he tried to move the educational elements of the university program as well as the CLSC to Chicago. The board refused, and he suffered a double defeat when faculty at the new University of Chicago resisted his attempt to set up similar programs as a part of its structure. Even so, many Chicago professors, as well as others from elsewhere, including John Dewey and Frederick Jackson Turner, took part in the Chautauqua summer programs; see, for instance, Gould, *Chautauqua Movement*, 27–60.
87. No advocate of idleness, Vincent nevertheless had to remind the visitors to "be careful not to overtax yourself. Do not go to every thing" (Paquet, *Wanderlust*, 200).
88. Quoted in Buhite, "Chautauqua Lake Camp Meeting," 161–2.
89. Simpson, *Chautauqua*, 47.
90. Clement Studebaker, the car manufacturer, followed Miller as president upon his death in 1899. After Studebaker's death in 1906, John Heyl Vincent's son, George, became president. Other prominent supporters included Henry Ford, Thomas Edison (who married Miller's daughter), Andrew Carnegie, Harvey Firestone, poet William Cullen Bryant, Charles Welch of grape juice fame, and the Massey brothers, Canadian industrialists (Vincent Massey would become governor general of Canada; Chester Massey married John Heyl Vincent's half-sister). See Kathleen Crocker and Jane Currie, *The Chautauqua Institution, 1874–1974* (Charleston, SC: Arcadia Publishing, 2001), 11, 30, 110, 123.
91. Oddly enough, one of Chautauqua's major supporters, who rescued the Institution from receivership in 1936, was John D. Rockefeller. His most famous critic, muckraker Ida Tarbell, whose father was a Pennsylvania oil producer, began her career as a reporter for the Institution's newspaper, the *Chautauquan*. See Simpson, *Chautauqua*, 34; Chernow, *Titan*, 437; and Crocker and Currie, *Chautauqua Institution*, 40. Joseph Gould (*Chautauqua Movement*, vii) sees Chautauqua as having "given discipline and direction to angry and inchoate movements of social protest of the times . . . .a response to an unspoken demand for 'something better'."
92. A Catholic chautauqua was formed in 1892, followed by a Jewish one in 1897, and an African American one in 1906, which met only once (Rieser, *Chautauqua Moment*, 124, 159).
93. Ibid., 48–57.
94. Aron, *Working at Play*, 125. Active "playing" seemed to become accepted as non-slothful.

95. From 1860 to 1900, the proportion of the American population that was urban doubled from 20 percent to 40 percent (Simpson, *Chautauqua*, 26).
96. Ibid., 18.
97. This is the title of a collection of remembrances about the circuit chautauquas by a performer; see Gay MacLaren, *Morally We Roll Along* (Boston: Little, Brown, 1938).
98. Rieser, *Chautauqua Moment*, 38.
99. Gladstone Historical Society, *Gladstone Chautauqua, 1894–1927: A Centennial Remembrance* (Gladstone, OR, 1994). Other examples can be found in Tapia, *Circuit Chautauqua*, 22–5.
100. Lakeside, located between Toledo and Cleveland on the Marblehead Peninsula, is a half-square-mile vacation community founded by the Methodists in 1873. It still has a "season" and about six hundred residents.
101. Generally speaking, if an American town has the word "Grove" in its name, it was probably the site of many camp meetings in the nineteenth century.
102. Bay View went through many of the same stages of physical and program development as did Chautauqua, though with a decade's distance. It was a camp meeting ground and a Sunday school teachers' venue and had a more general chautauqua program format; see Mary Jane Doerr, *Bay View: An American Idea* (Allegan Forest, MI: Priscilla Press, 2010).
103. Much of the circuit chautauqua story presented here is derived from Tapia, *Circuit Chautauqua*; and Robert A. McCown, "Records of the Redpath Chautauqua," *Books at Iowa* 19 (1973): 8–23.
104. Sheilagh S. Jameson, with Nola B. Ericson, *Chautauqua in Canada* (Calgary: Glenbow-Alberta Institute, 1979), 12.
105. McCown, "Records of the Redpath Chautauqua."
106. Adams, *Frontiers of American Culture*, 133. The most popular speaker on the chautauqua circuit was William Jennings Bryan.
107. Hobson, *Remembering America*, 202.
108. McCown, "Records of the Redpath Chautauqua,"
109. Ibid.
110. Simon Schama, *A History of Britain: The British Wars: 1663-1776* (Toronto: McClelland & Stewart, 2002, 458.
111. William M. Keith, *Democracy as Discussion: Civic Education and the American Forum Movement* (Lanham, MD: Lexington Books, 2007), 213.

Chapter 3

1. For instance, A.J. Langguth, *Union 1812* (New York: Simon & Schuster, 2006), 105. The exchange is also noted in Harlow Giles Unger, *The Last Founding Father: James Monroe and a Nation's Call to Greatness* (Cambridge, MA: Da Capo Press, 2009), 166.
2. Jeremy Black, *The War of 1812 in the Age of Napoleon* (Norman: University of Oklahoma Press, 2009), 139.

3. Stephen Howarth, *To Shining Sea: A History of the United States Navy, 1775–1991* (New York: Random House, 1991), 112.
4. Black, *War of 1812*, 140.
5. Max Rosenberg gives a capsule view of these Lake ports as they were in 1812; see *The Building of Perry's Fleet on Lake Erie, 1812–13* (Harrisburg: Commonwealth of Pennsylvania Historical and Museum Commission, 1997), 12–15.
6. He was more than a surveyor, having averted a war between Georgia and North Carolina and eased the Spanish out of their fortress of Natchez, supplied a workable plan for Washington from l'Enfant's vague sketches, and was the first to measure the height of Niagara Falls. Finally, he established the forty-ninth parallel between western Canada and the United States; see Catharine VanCortlandt Mathews, *Andrew Ellicott, His Life and Letters* (1908; reprint, New York: Ralph Roberts, 2001), 5–6.
7. Ibid., 62–4.
8. Warrants were permits to claim an area of land given to Revolutionary War soldiers in recognition of their service. Usually, the veterans sold them to land speculators. Much of this may be found in R. Nelson Hale, "The Pennsylvania Population Company," *Pennsylvania History* 16, no. 2 (1949): 122–130.
9. He was impeached in 1794.
10. Mead was a Connecticut Yankee who had moved first into the disputed lands of the eastern Pennsylvania Wyoming valley. Then, in the 1790s, he led a party of about a hundred settlers from the Wyoming country to present-day Meadville. See the family genealogy at http://archive.org/stream/historygenealogy00mead/historygenealogy00mead_djvu.txt.
11. For a cameo of Dobbins's life, see Theodore Johnson, "Life Saving Services of the Great Lakes," *Magazine of Western History* 4 (June 1886): 230–2; and Rosenberg, *Building of Perry's Fleet*, 21–2.
12. As chief surveyor, Rees (also spelled Reese, or Reece) was paid $15,000 for his work and used some or all of this to buy a choice tract of land southeast of Erie, near Colt's Station (Greenfield).
13. Some biographical notes on Reed can be found online at file:///Users/jamesmcniven/Desktop/yr%20revision/Erie%20ships/Carl%20M.%20Reed%20-%20Erie%20County,%20PA%20Biographies.webarchive.
14. Salt came from what is now the Syracuse area in New York, and was transshipped from Erie south to the Ohio River and north to Fort Michilimackinac. Reed would have had contacts there, having moved to Erie from a place near the saltworks. On the frontier of the late 1790s, salt became a medium of exchange See Denys W. Knoll, *Battle of Lake Erie: Building a Fleet in the Wilderness* (Washington, DC: Naval Historical Foundation, 1979), 7.
15. Pierre Berton, *The Invasion of Canada, 1812–1813* (Toronto: McClelland & Stewart, 1980), 21.
16. Langguth, *Union 1812*, 101–5.
17. The politicians seemed to all assume that it would be an easy and quick contest that could be handled without taxes or unusual expenditures, not an uncommon American assumption about war over the centuries; see Rosenberg, *Building of Perry's Fleet*, 3.
18. As early as March 1813, the federal government was virtually out of money to prosecute the war. Congress refused to implement taxation, but suggested that America begin

trading with the British again (in wartime!) and collect more tariff duties. When that scheme collapsed, it voted to allow Madison to borrow more on whatever terms he could obtain, but as most of the specie in the country was in the hands of New Englanders opposed to the war, there were no takers. Finally, John Jacob Astor and partners lent the government nearly $8.5 million at what was then an astounding 7.5 percent interest. See George C. Daughan, *1812: The Navy's War* (New York: Basic Books, 2011); see also Garry Wills, *Henry Adams and the Making of America* (Boston: Houghton Mifflin, 2005), 350.

19. As Gary Wills notes: "But Jefferson had a new concept of power, which was largely the power to ignore threats away. If the government would only deprive itself of the means of aggression, it would have no need of the instruments of defense" (*Henry Adams and the Making of America*, 143).
20. Langguth (*Union 1812*, 189) says only 6,686 were serving when war was declared. Congress had authorized an army of 35,000, but without providing the funds. Britain had 220,000 serving in Europe, plus 4,500 or so in North America. America had 17 small warships, while Britain had 700 of all sizes. By January 1813, the American forces had been raised to 19,000, though most lacked training (ibid., 237). For an estimate of British regulars, see David Fitz-Enz, *Old Ironsides: Eagle of the Sea* (Lanham, MD: Taylor Trade Publishing, 2009), 116.
21. No one but Jefferson was enamoured with these gunboats, but, as Henry Adams put it, "When he fairly mounted a hobby-horse, he rode it over all opposition, and of all hobby-horses gunboats happened at this time to be his favorite" (quoted in Wills, *Henry Adams and the Making of America*, 225).
22. Langguth, *Union 1812*, 136.
23. Henry Adams, quoted in Wills, *Henry Adams and the Making of America*, 244–5.
24. Troy Bickham, *The Weight of Vengeance: The United States, the British Empire and the War of 1812* (New York: Oxford University Press, 2012), 93.
25. Black, *War of 1812*, 138–9; see also Wesley B. Turner, *The Astonishing General: The Life and Legacy of Sir Isaac Brock* (Toronto: Dundurn Press, 2011), 18.
26. See, for instance, Wills, *Henry Adams and the Making of America*, 234.
27. Bickham, *Weight of Vengeance*, 32–5.
28. The nature of this practice had more to do with the British throwing their weight around than what impressment did for their manpower needs. Even taking the largest number the Madison government could come up with — 6,500 sailors impressed over twenty years — this came to less than 5 percent of the standing British naval force estimated at over 130,000 men (author's calculations from ibid., 31–2).
29. Wills, *Henry Adams and the Making of America*, 278.
30. The secretary of war had given Congress a detailed plan for the invasion of Upper Canada from Detroit and Niagara in December 1811. It completely ignored the notion that control of the Lakes might be needed for it to be successful. See Howarth, *To Shining Sea*, 104.
31. Berton, *Invasion of Canada, 1812–1813*, 22.
32. Wills, *Henry Adams and the Making of America*, 367.
33. See, for instance, Daughan, *1812*, 255–6.
34. The Battle of Lake Erie has been analyzed and debated since it was fought. Literary authors (James Fenimore Cooper), historians, both technical (Captain Mahan) and

popular (Berton), politicians (Theodore Roosevelt), and many others have looked at the actual battle. I do not propose to add to what they have said.

35. Wills, *Henry Adams and the Making of America*, 369.
36. The British government had made demands on the United States for an Indian buffer state centered on Michigan, for concessions on the Maine border, and for permanent dominance of the Great Lakes border. The European powers at the Vienna Conference were interested in carving up some of the lesser powers there and, in this light, could not understand British opposition to their desires. Finally, the government worried that the continuation of its property tax into peacetime would cost it its majority. When Wellington was asked if he would go to America to lead the forces there, he declined. His advice was to settle the war and leave the borders as they were. This left the Indians with nothing, but got the British government out of a number of political messes. See Bickham, *Weight of Vengeance*, chap. 8.
37. See, for instance, Turner, *Astonishing General*, 55–6.
38. Max Rosenberg gives a good picture of the travails of transportation in the area; see *Building of Perry's Fleet*, 15–20.
39. Perry discovered the weakness of Black Rock when he tried to extricate some ships from its upper harbor. It took a week to do so because of the strength of the Niagara River current there, and most of that time would have been spent in range of Fort Erie's cannon had not the fort then been in American hands; see Daughan, *1812*, 180.
40. Madison, I think, was the only president ever to have declared war twice against two completely different enemies. The Senate ratified the Treaty of Ghent, ending the War of 1812, on February 18, 1815. Two weeks later, on March 3, it approved Madison's war message against the Barbary States. Both the First and Second World Wars involved related declarations against Germany and its allies (as well as Japan in the latter case), but these antagonists were seen as related to each other, and the declarations as expansions of the same war.
41. The previous April, Hull had argued in Washington that an American presence was needed on Lakes Erie and Huron, but he was ignored (Rosenberg, *Building of Perry's Fleet*, 4. Berton notes that none of the Navy's officers wanted to go to the Lakes in any case, as the action was then on the ocean (*Invasion of Canada, 1812–1813*, 89).
42. There are at least two versions of Dobbins's adventures after the fall of Fort Michilimackinac. I have depended upon that of Rosenberg, who cites Dobbins's own journals; see *Building of Perry's Fleet*, 7–11.
43. Gerard T. Altoff, *Oliver Hazard Perry and the Battle of Lake Erie* (Put-in-Bay, OH: Perry Group, 1999), 4. Three days after his surrender, Hull's nephew, Isaac Hull, commanded the *Constitution* to victory over the British ship *Guerrière* in the North Atlantic south of Newfoundland. Fort Dearborn, at the present site of Chicago, and the most westerly American presence in the Northwest Territories, was abandoned and its fleeing inhabitants massacred by Indians the day before Hull's surrender of Detroit.
44. Brock's victory meant that efforts to find an early diplomatic solution to end the war would fail. It gave the British ideas, and the annexation of Michigan was too deep a humiliation for the Americans to bear. See Turner, *Astonishing General*, 141.
45. The Reeds were apparently on the larger ship carrying the rest of the Americans to Cleveland.

46. Harrison, bogged down in the mud along Ohio's Maumee River and facing Indian threats to his supply line, easily recognized the advantages of American control of Lake Erie (Altoff, *Oliver Hazard Perry*, 1).
47. It might have been protected from the weather, but not from nightfall. It was not until 1812 that land was purchased by the federal government to build a lighthouse at Presque Isle. The contract was given to a Massachusetts firm, but the War of 1812 intervened and the light was not operational until late 1818. See Larry Wright and Patricia Wright, *Great Lakes Lighthouses Encyclopedia* (Erin, ON: Boston Mills Press, 2006), 101.
48. Altoff, *Oliver Hazard Perry*, 6.
49. Johnson, "Life Saving Services of the Great Lakes," 234.
50. Ibid., 230–2.
51. Like Rosenberg, I could find almost nothing about Crosby; see Rosenberg, *Building of Perry's Fleet*, 23. Crosby did continue to work on the ships after the arrival of Noah Brown.
52. Elliott was blunt in his assessment to Chauncey of the task on Lake Erie: "I have examined all the situations on Lake Erie: cannot find one that will answer our purpose. Those that have shelters have not sufficient depth of water and those with water cannot be defended from the enemy and the violence of the weather" (quoted in ibid., 29).
53. Chauncey was accompanied by Henry Eckford, a renowned ship designer who knew, and probably recommended, Noah Brown. It was Eckford who suggested the reworking of the project to build capable warships (ibid., 23–5).
54. Altoff, *Oliver Hazard Perry*, 7. Brown was a Yankee who was born just over the New York state line from central Vermont. Chauncey also sent New York City sail-maker James Sackett and his crew to Erie.
55. An interesting modern account of the design and construction of the *USS Constitution* gives the main requirements and processes of shipbuilding of the time. The *Constitution,* nicknamed "Old Ironsides," was built in 1797. Although Perry's fleet never had a ship as large as Old Ironsides and his ships were built fifteen years later, the techniques had not changed much. As well, the more primitive conditions at Erie would have prohibited any more modern techniques than those of the eighteenth century. See Fitz-Enz, *Old Ironsides*, chaps 1–2.
56. He had taken one of the gunboats to Buffalo for supplies for Perry when the Battle of Lake Erie was fought, returning only to hear the sound of guns firing. He then fought for years to get recognition for his efforts.
57. Perry's father had served in the Navy during the quasi-war with France in the 1790s, and Perry's younger brother would command the "black fleet" that forced Japan to open up to the outside world in the 1850s.
58. The ships were not designed for durability, as there would likely be only one battle. They were made from green timber, and due to a scarcity of all kinds of ironwork, wooden pegs were substituted where possible. The schooners common on the Lakes were of little use, as they tended to capsize if their armament was too heavy (see Langguth, *Union 1812*, 244–5). Most of the 150 men sent ahead by Perry were diverted by Chauncey into his construction program on Lake Ontario (Rosenberg, *Building of Perry's Fleet*, 34).
59. Shortly after his March 27 arrival in Erie, Perry went to Pittsburgh and personally acquired four small cannon and some muskets for use at Erie. He then got five hundred local militia stationed there. He cites British general Procter's cautiousness for the lack of

an attack, when the hulls could have been destroyed. Instead, Proctor used his forces for a failed attack on Harrison's fort on the Maumee River. Afterwards, he appealed to the British command in Quebec City for more troops to assault Erie. See A.T. Mahan, *Sea Power in Its Relations to the War of 1812* (1903; reprint New York: Greenwood Press, 1968), 68–9.

60. Altoff, *Oliver Hazard Perry*, 13–14.
61. Altoff gives a short description of Barclay's career (ibid., 28–30).
62. Daughan, *1812*, 160.
63. Altoff, *Oliver Hazard Perry*, 16.
64. Ibid., 15–19; see also Pierre Berton, *Flames Across the Border, 1813–1814* (Toronto: McClelland & Stewart, 1981), 131–4.
65. Brown had built two large ships, some large buildings, and all the gun carriages, as well as fourteen smaller boats, in five months; Howarth, *To Shining Sea*, 111.
66. Altoff, *Oliver Hazard Perry*, 17–18. Chauncey's strategy called for victory first on Lake Ontario, followed up by the conquest of Lake Erie. Perry upset this, but in the end Chauncey never did control Lake Ontario.
67. Ibid., 20–1.
68. Howarth sees both Chauncey and Yeo as cautious organizers, unwilling to risk anything that might upset the balance of power on the Lakes. Chauncey was fortunate in having Perry, who was so impatient for glory that he took, and succeeded at, great risks (Howarth, *To Shining Sea*, 106–7).
69. A brig, the *Detroit,* was almost complete at Amherstburg, but Barclay was short of sailors to man it.
70. Perry had written to Chauncey on July 23 that they were ready, but needed more personnel (Rosenberg, *Building of Perry's Fleet*, 49).
71. Barclay had lost an arm at Trafalgar, and must have been involved in the British blockade of French and European ports, so he should have known better. Altoff lists some possible reasons for Barclay's departure, but none of them seems credible to him — or to me; see Altoff, *Oliver Hazard Perry*, 22–3.
72. Depending on whom you believe, Barclay returned on the 4th, 5th, or 6th. In any event, he later reported that the ships were then across the bar and ready for action. His imagination had got the better of him, as Perry had only a couple of lightly armed schooners. He nonetheless used these to fire off a couple of shots, and Barclay fell for the ruse. See Berton, *Flames Across the Border*, 147–51; and Mahan, *Sea Power*, 70–1. See also Altoff, *Oliver Hazard Perry*, 23–4.
73. Mahan, *Sea Power*, 94–5. See also the minutes from Barclay's court-martial in Charles Oscar Paulin, ed., *The Battle of Lake Erie: A Collection of Documents, Chiefly by Commodore Perry: including the Court-martial of Commander Barclay and the Court of Enquiry of Captain Elliott* (Cleveland: Rowfant Club, 1918), 137–54.
74. The best I can make out from today's Lake Erie sailors is that their season runs from mid-April to mid-October, otherwise the storms and shallow waters can be very dangerous. Blockading the mouth of Presque Isle Bay for ten weeks from August 1 ought to have been possible, given the difficulties of crossing the bar at its mouth.
75. Harrison's forces had success in 1813 in resisting British land attacks and one naval assault, but his militia's time was up in August and he had to appeal to Kentucky for replacements. His posture was strictly defensive until Perry's victory. See, for instance,

R. Douglas Hurt, *The Ohio Frontier: Crucible of the Old Northwest, 1720–1830* (Bloomington: Indiana University Press, 1996), 334–44.

76. These forces used about 90 *bateaux* – large, flat-bottomed rowboats — that had been built in Cleveland to ferry troops from Bass Island to the Amherstburg shore (Altoff, *Oliver Hazard Perry*, 56–7).
77. The Western frontiersmen had no interest in the regular army, preferring to fight with neighbors and friends (Langguth, *Union 1812*, 238–40). They were good at defense, at irregular warfare, where they copied the Indian tactics, and at cavalry charges, such as at Moraviantown.
78. Ibid., 157–71.
79. Altoff, *Oliver Hazard Perry*, 65–7. See also Turner, *Astonishing General*, 215.
80. As a result of the Rush-Bagot agreement of 1817, the Lakes were disarmed and in 1820, the *Niagara* and the *Lawrence*, the two major ships built at Erie, were deliberately sunk inside Presque Isle Bay. They were built of green wood during the war and were not in good shape in any case. In 1913, with the centennial of their construction, the *Niagara* was found to be seaworthy and was raised. It was, interestingly enough, owned by the descendants of Daniel Dobbins until 1911, when it was donated to the centennial commission. It was put on display at Erie and, over the years, has been rebuilt and a replica made as the wood deteriorated. The *Niagara* and the Erie Maritime museum are the major waterfront tourist attraction in Erie. The *Lawrence* was raised and shipped to Philadelphia as an attraction for the Centennial Exhibition of 1876, but was destroyed in a fire there. See Chris J. Magoc, *Erie Maritime Museum and US Brig* Niagara (Mechanicsburg, PA: Stackpole Books, 2001), 23–30.
81. In later years, ships and the border continued to play an important role. The Canadian revolts of 1837 and the informal assistance given the insurgents led the British to ignore the Rush-Bagot agreement of 1817 and to build some armed ships to patrol the Lakes. The US response in 1841 led to the construction of the *Michigan,* the first American iron-hulled steamship. It was made in Pittsburg, but assembled and berthed in Erie from 1843 until 1912. See ibid., 18–21.
82. In March 1814, the New Brunswick Legislature urged the British government to occupy eastern Maine and take measures to alter the boundary so as to improve the colony's communication with Quebec. The request was well-received in London. A concise version of the British occupation of Castine, Maine, can be found in Robert L. Dallison, *A Neighbourly War: New Brunswick and the War of 1812* (Fredericton, NB: Goose Lane Editions, 2012), 90–111.
83. Mahan, *Sea Power*, 98–101.
84. Andrew Ellicott, who had surveyed so many American national and state borders, was asked to participate in the team that would survey the forty-ninth parallel westwards from the Lake of the Woods to the Rocky Mountains.
85. Anthony Jenkins notes that "the primary lesson both sides drew (and which was slowly reinforced) was not to bother again"; see "The real legacy of 1812? It never happened again." *Globe and Mail*, August 7, 2012.
86. Dallison, *Neighbourly War*, 48–52.
87. Gary Campbell, *The Road to Canada: The Grand Communications Route from Saint John to Quebec* (Fredericton, NB: Goose Lane Editions, 2005), chaps 1, 2.

88. The march, with a few days' rest in Quebec City, took fifty-two days in one of the severest winters of the time. See W. Austin Squires, *The 104th Regiment of Foot, 1808–1817* (Fredericton, NB: Brunswick Press, 1962), 13–14, 118–36. A second group of soldiers repeated the winter march in 1814; see Campbell, *Road to Canada*, 57–61; and Dallison, *Neighbourly War*, 80–1.
89. A fictional story that illustrates this process in Nova Scotia during the Revolution is Thomas Raddall, *His Majesty's Yankees* (1942; reprint Halifax: Nimbus Publishing, 1997). See also Alan Taylor, *The Civil War of 1812: American Citizens, British Subjects, Irish Rebels, and Indian Allies* (New York: Knopf, 2010). His book is as much sociology as history, and shows how this process repeated itself during the war.
90. Berton sees the war as having helped to create a political entity out of Upper Canada, where there had once only been a rudimentary connection between villages; see Berton, *Invasion of Canada*, 28.
91. Ibid., 313; idem, *Flames Across the Border*, 428–9.
92. Berton, *Invasion of Canada*, 26.
93. Campbell, *Road to Canada*, 62. The northern boundary between Maine and New Brunswick was not settled until the Webster-Ashburton Treaty of 1842.

Chapter 4

1. Walter Sheldon Tower, *The Story of Oil* (1909, reprint New York: D. Appleton, 1920), 2.
2. Quoted in Barry Werth, *Banquet at Delmonico's* (Chicago: University of Chicago Press, 2009), 293.
3. Quoted in Allison Mitcham, ed., *The Best of Abraham Gesner* (Hantsport, NS: Lancelot Press, 1995), 110.
4. Quoted in Paul Lucier, *Scientists and Swindlers: Consulting on Coal and Oil in America, 1820–1890* (Baltimore: Johns Hopkins University Press, 2008), 251.
5. In this piece, the unmodified term "oil" is meant to identify liquid petroleum. I recognize that the so-called heavy ends of a barrel of oil contain bitumen and asphalt, but I identify these semi-solids separately when appropriate.
6. Ida Tarbell, *The History of the Standard Oil Company*, vol. 1 (New York: Macmillan, 1925), 35–6.
7. Ida Tarbell, *All in the Day's Work* (New York: Macmillan, 1939), 20, 22–3.
8. Tarbell, *History of the Standard Oil Company*, 16–17.
9. French explorers came across an oil spring near today's Cuba, New York, some distance northeast of Titusville in 1670; see Harold F. Williamson and Arnold R. Daum, *The American Petroleum Industry: The Age of Illumination, 1859–1899* (Evanston IL: Northwestern University Press, 1959), 10. When the first European settlers arrived in the Oil City area, downstream from Titusville, they found pits dug along the edges of Oil (then Black) Creek, apparently to extract oil. The local Indians claimed they did not know who had dug them. In one of the pits grew a tree, and by its rings it was established that the pit had been dug before 1550. See Tower, *Story of Oil*, 35–6.

10. "British oil" was patented in 1742 and widely sold in Britain and America. A British traveler, Fortescue Cuming, visited the Titusville area in 1808 and wrote: "The virtues of Seneca oil are similar to those of British Oil and supposed to be equally valuable in the cures of rheumatic and other pains" (Williamson and Daum, *American Petroleum Industry*, 12–13.
11. A common alternative story of the origin of this term has to do with Chinese laborers in California getting some topical liniment from home, made from a Chinese snake, but another argument claims it derives from disparagingly pronouncing "Seneca" as "Sen-ake-ah," or snake.
12. John W. Oliver*, A History of American* Technology (New York: The Ronald Press), p.33
13. See, especially, Walter Sheldon Tower, *A History of the American Whale Fishery* (Philadelphia: University of Pennsylvania Press, 1907).
14. Louis Menaud, *The Metaphysical Club: A History of Ideas in America* (New York: Farrar, Strauss and Giroux) p.165
15. Kendall Beaton, "Dr. Gesner's Kerosene; The Start of American Oil Refining," *Business History Review* 29, no. 1 (1955): 30.
16. L. Stebbins, ed., *First Century of National Existence: The United States as They Were and Are* (Hartford, CT: L. Stebbins, 1875), 145. Coke was baked coal residue, which was useful in iron and steel production.
17. Williamson and Daum, *American Petroleum Industry*, 7.
18. See Allison Mitcham, *Prophet of the Wilderness: Abraham Gesner* (Hantsport, NS: Lancelot Press, 1995).
19. In 1836, Gesner published his *Remarks on the Geology and Mineralogy of Nova Scotia*, which brought him to the attention of the British geological community. Sir Charles Lyell, a famous British geologist, paid him a visit on his way home from an American tour as a result of his study. Gesner had met Lyell in London when he was studying medicine. Lyell was to popularize the idea that geologic activity happened in the present and across time in a uniform fashion, thus taking much longer than Bishop Ussher's six thousand years since Creation. Gesner's interests and talent might have been inherited: Conrad Gesner, (1516–65), an early Swiss geologist and classifier of fossils, might have been one of Abraham's ancestors. For more information on Conrad Gesner, see Frank Dawson Adams, *The Birth and Development of the Geological Sciences* (New York: Dover Publications, 1938), 176–83.
20. Later, he also undertook a brief geological survey of the neighboring colony of Prince Edward Island.
21. Gavin Weightman, *The Industrial Revolutionaries; The Making of the Modern World, 1776–1914* (New York: Grove Press, 2007), 253–59. He covers the careers of both Gesner and "Paraffin" Young.
22. This was part of a letter to the editor of the Saint John, New Brunswick, *Weekly Chronicle* in May 1939, after Gesner had presented a series of lectures to the local Mechanics Institute; see Mitcham, *Prophet of the Wilderness*, 63.
23. Probably the best and most lucid explanation of Gesner's career is in Paul Lucier's unfortunately titled *Scientists and Swindlers*.
24. From a business perspective, the best concise portrait of Gesner and his work is Beaton, "Dr. Gesner's Kerosene."
25. Stebbins, *First Century of National Existence*, 160.
26. When my wife and I visited the roadside plaque dedicated to Gesner near the site where he was born, we had to go slowly around the highway builders who were applying a new asphalt surface to the road. It seemed an appropriate way to visit, given Gesner's career. The Atlantic Geosciences

Society did create an annual award called, fittingly, the Gesner Medal in 1993 to honor someone from that region of Canada who had made significant contributions to the geosciences. It has also created the Gesner Institute Society to protect significant geological collections.

27. Beaton, "Dr. Gesner's Kerosene," 30.
28. Abraham Gesner, *A Practical Treatise on Coal, Oil and Other Distilled Oils*, 2nd ed., revised and enlarged by George Welden Gesner (New York: Balliere Brothers, 1865).
29. Lucier, *Scientists and Swindlers*, 190.
30. Ibid., 191.
31. Tower, *Story of Oil*, 43.
32. A Dr. Hildreth had submitted an article describing some of the properties of natural gas and petroleum found in western Ohio and Kentucky to the *American Journal of Science* in 1833, but no one before Bissell and Eveleth seems to have looked at the commercial possibilities. See J.T. Henry, *The Early and Later History of Petroleum* (Philadelphia: James B. Rodgers, 1873), 21–8.
33. The report is quoted extensively in ibid., 38–54. See also, It is also reproduced in Tarbell, *History of the Standard Oil Company*, vol. 1, 265–75.
34. The choice was an odd one from the perspective of who might make a good well-digger. Drake had recently stopped working as a railroad conductor; he had previously been a night clerk on a steamboat, a farm laborer, a hotel clerk, and a dry-goods store clerk; see Ruth Sheldon Knowles, *The Greatest Gamblers: The Epic of American Oil Exploration* (New York: McGraw-Hill, 1959), 3.
35. There are many versions of the story surrounding Drake's well. As with Gesner's career, I place most credence in that of Lucier, *Scientists and Swindlers*, chap. 7. His is in turn largely based on Henry, *Early and Later History of Petroleum*, chap. 3. An easy-to-read account by one with vast knowledge of oil and its early industrial development can be found in Tarbell, *History of the Standard Oil Company*, vol. 1, chap. 1.
36. Drake, sadly, did not stick with those who were rushing to lease more property and to drill on it, opting instead to become the justice of the peace in Titusville and left to certify others' leases on riches. He was penniless a few years later, but shortly before his death, a grateful Commonwealth of Pennsylvania gave him a pension See Knowles, *Greatest Gamblers*, 8.
37. Tarbell, *History of the Standard Oil Company*, vol. 1, 18.
38. Ernest C. Miller, *John Wilkes Booth — Oilman* (New York: Exposition Press, 1947), available online at http://archive.org/stream/johnwilkesbootho00mill/johnwilkesbootho00mill_djvu.txt.
39. "Petra" and "oleum" are Latin for "rock" and "oil."; see Tower, *Story of Oil*, chap. 2.
40. Williamson and Daum, *American Petroleum Industry*, 6.
41. When petroleum was first produced in quantity in Pennsylvania, the only means of storing it for shipment was in wooden barrels. Today, the unit of measurement of petroleum continues to be the barrel, standardized for pricing purposes at forty-two gallons, although it has not been shipped in such containers since the middle of the nineteenth century.
42. An interesting account of different prominent people's approaches to geology, fossils, and human evolution in post–Civil War America is Werth, *Banquet at Delmonico's*.
43. Oliver Geike, *The Founders of Geology* (1897, reprint New York: Dover Publications, 1962), 91.
44. Smith's map seemed to tie geology and engineering together, something that appealed to those transforming the American frontier. A Frenchman, Jean-Étienne Guettard, had produced a geological map of France and part of England in 1751 that was largely ignored. It was only when coal became an important industrial fuel that attention was paid to where deposits might be located; see Geikie, Founders of Geology, 111–16. For a more extensive set of geological maps

either drawn or sponsored by Guettard (France and England, 1746; North America, 1752; Switzerland, 1752), see André Cailleux, "The Geological Map of North America (1752) of J.-E. Guettard," in *Two Hundred Years of Geology in North America*, ed. Cecil J. Schneer (Hanover NH: University Press of New England, 1979), 43–52, especially table 3. I cannot say which date is right for the France and England map.

45. It was a map of Bath and its surroundings; see Simon Winchester, *The Map that Changed the World: William Smith and the Birth of Modern Geology* (New York: HarperCollins, 2002), 125–6.
46. Ibid., 234–5.
47. It was never finished before the War of 1812 was declared; see Harold L. Burstyn and Susan B. Schee, "The Study of Ocean Currents in America before 1930," in Schneer, *Two Hundred Years of Geology*, 147.
48. Michele L. Aldrich, "American State Geological Surveys, 1820–1845," in Schneer, *Two Hundred Years of Geology*, 133–43.
49. Eaton had given up his law practice at age forty to study geology. He produced many important works on the geology of eastern New York and Massachusetts; see George P. Merrill, *The First One Hundred Years of American Geology* (1924, reprint New York: Hafner, 1964), 56–61.
50. Ibid., 94–6. Olmsted published his North Carolina survey work, but he was best known later as a mathematician and astronomer at Yale.
51. Ibid., 142–52.
52. Thomas E. Pickett, "James C. Booth and the First Delaware Geological Survey, 1837–1841," in Schneer, *Two Hundred Years of Geology*, 167–74.
53. On the first Pennsylvania geological survey, see William M. Jordan, "Geology and the Industrial-Transportation Revolution in Early to Mid Nineteenth-Century Pennsylvania," in Schneer, *Two Hundred Years of Geology*, 95–9.
54. Lesley would head a second survey in the 1870s; see Brian Frehner, *Finding Oil: The Nature of Petroleum Geology, 1859–1920* (Lincoln: University of Nebraska Press, 2011), 50–3.
55. Ibid., 25–35.
56. Ibid., 73–7.
57. Drake had been one of the first inventors, when he encased Uncle Billy's drill in a pipe to prevent water or loose sand from fouling it; see Knowles, *Greatest Gamblers*, 6.

Chapter 5

1. Tarbell, *All in the Day's Work*, 26.
2. Mary E. Tomkins, *Ida M. Tarbell* (New York: Twaine Publishers, 1974), 17.
3. Ron Chernow, *Titan: The Life of John D. Rockefeller Sr.* (New York: Random House, 1998), xxii.
4. Lynn McKeown, "The Editor: S.S. McClure," *Zephyr* (Galesburg, IL), n.d.; available online at http://www.thezephyr.com/mcclure.htm.
5. See the family genealogy at http://archive.org/stream/historygenealogy00mead/historygenealogy00mead_djvu.txt.
6. W.W. Williams, *A History of the Firelands* (Cleveland, 1879), 55–60.

7. Steve Weinberg, *Taking on the Trust: The Epic Battle of Ida Tarbell and John D. Rockefeller* (New York: Norton, 2008), 5. A number of prominent feminists were guests at the Tarbell home during Ida's high school years.
8. According to Weinberg, he had actually built a house on the property in southwest Iowa; ibid. 7.
9. Frank apparently was instrumental in getting the producers to adopt a standard forty-two-gallon barrel, which was the same size as New England whalers used; ibid., 18.
10. Kathleen Brady, *Ida Tarbell: Portrait of a Muckraker* (New York: Seaview/Putnam, 1984), 11–12.
11. Weinberg, *Taking on the Trust*, 26–7.
12. Apparently, Doc liked to cheat or play fast tricks on his children "to sharpen them up." When John asked to be relieved of his legal obligation as a minor at age sixteen, Doc agreed — and then said that, as an adult, he would have to pay room and board while living at home. He collected it.
13. Flagler later became famous for his land development, including a railroad, along the Atlantic coast of Florida.
14. A good chronology of Ida Tarbell's life may be found in Tomkins, *Ida M. Tarbell*, 11–13.
15. Brady, *Ida Tarbell*, 9.
16. See, for instance, Werth, *Banquet at Delmonicos*, chaps 1 and 2.
17. Brady, *Ida Tarbell*, 20.
18. Yes, that Alden family. His ancestor, John, was the subject of a Longfellow story called "The Courtship of Myles Standish." Standish was in love with Priscilla Mullins, but was too shy, and asked his friend John Alden to approach her about marriage. When he did, Priscilla asked him why he did not speak for himself. The Reverend Alden was descended from these two *Mayflower* colonists. See http://freepages.folklore.rootsweb.ancestry.com/~pahlow/alden1.htm.
19. To show she was impartial toward the fraternities on campus, she once simultaneously wore the pins of four boys who had each "pinned" her without knowing of the others. It caused a stir when she was seen wearing them (Brady, *Ida Tarbell*, 30).
20. Weinberg, *Taking on the Trust*, 108. He came to dinner at the Tarbells' house in 1882.
21. Ibid., 116–17.
22. Ibid., 122.
23. There is some suspicion that the cause was what would today be called "sexual harassment." She exhibited strong antipathy towards Flood for years, but would never explain herself. Ibid., 124–5.
24. Brady, *Ida Tarbell*, 46; Tomkins, *Ida M. Tarbell*, 27.
25. Weinberg, *Taking on the Trust*, p123.
26. McClure, who was the same age as Tarbell, died five years after her, at age ninety-two.
27. According to Weinberg (*Taking on the Trust*, 182–3), Tarbell satisfied herself that Lincoln's ancestry did not have Kentucky roots, even though he was born there, but could be traced back to Hingham, Massachusetts, perhaps making him Yankee-in-Chief.
28. Her biography of Mme. Roland was published by Scribner's in 1896.
29. Weinberg, *Taking on the Trust*, p210.
30. Weinberg, *Taking on the Trust*, 233.
31. Tomkins, *Ida M. Tarbell*, 106–10.
32. Ibid., 152–8; see also Weinberg, *Taking on the Trust*, 201–2.
33. The idea came from McClure, who wanted to restart his magazine. She was willing to undertake it, but only if the financing of "this prodigious enterprise" was in place. McClure, could not provide it. See Tomkins, *Ida M. Tarbell*, 124–5.

34. In 2000 Ida was elected to the National Women's Hall of Fame, and in 2002 honored with a US postage stamp bearing her picture. See Mac Nelson, *Twenty West: The Great Road across America* (Albany: State University of New York Press, 2008), 95.
35. See the description in Doris Kearns Goodwin, *The Bully Pulpit: Theodore Roosevelt, William Howard Taft, and the Golden Age of Journalism* (New York: Simon & Schuster, 2013), 161–3.
36. A brief survey of the changes in publishing and reader demand after 1890 can be found in Cecilia Tichi, *Exposés and Excess: Muckraking in America* (Philadelphia: University of Pennsylvania Press, 2004), chap. 3.
37. Ibid., 69–71.
38. See http://www.unz.org/Pub/McClures-1903jan?View=PDF.
39. Many of the serialized articles, such as Steffens's on municipal corruption and Tarbell's history of Standard Oil, were published in book form, giving McClure another outlet for his material.
40. Tomkins, *Ida M. Tarbell*, 28.
41. Tichi notes the history "has the documentary heft of a legal brief or a doctoral dissertation….Her high-impact diction is tactically sparse and seemingly innocent of narrative maneuver" (*Exposés and Excess*, 87, 90); see also Weinberg, *Taking on the Trust*, 235.

Chapter 6

1. Quoted in G.A. Rawlyk, *Yankees at Louisbourg* (Orono: University of Maine Press, 1967), xvii.
2. Quoted in R. Ernest Dupuy, *The National Guard: A Compact History* (New York: Hawthorn Books, 1971), 18. Washington's opinion did not improve over the next month. Writing to his cousin in August, he noted: "In short they are by no means such troops…as you are led to believe of them…but I need not make myself enemies among them…although it is consistent with the truth…they are exceedingly dirty and nasty people"; see Michael Stephenson, *Patriot Battles: How the War of Independence Was Fought* (New York: Harper Perennial, 2007), 8. This was, however, a Virginia aristocrat dealing with local farmers and manual workers who had more than a tinge of religious fanaticism.
3. Alan R. Millett and Peter Maslowski, *For the Common Defense: A Military History of the United States*, 2nd ed. (New York: Free Press, 1994), 136.
4. James Michener, *Kent State: What Happened and Why* (New York: Random House and Readers' Digest Association, 1971), 341.
5. Heckwelder had written 'Description of that part of the western Country comprehended in my Map, with remarks on Certain Particular Spots. (1796), which may be found in Judge Charles C. Baldwin and Alfred Mathews eds., 'Map and description of northeastern Ohio by Rev. John Heckwelder in 1796', Magazine of Western History vol 1, pp109-114 https://books.google.ca/books?id=y0RIAQAAIAAJ&pg=PA109&lpg=PA109&dq=John+Heckwelder+and+Moses+cleaveland&source=bl&ots=989CF4S4rX&sig=6jzM8unK3aYaFXrTRtCyMX0qjNk&hl=en&sa=X&ved=0ahUKEwiB4pXYgIjWAhXI1IMKHZvCDhgQ6AEIPzAD#v=onepage&q=John%20Heckwelder%20and%20Moses%20cleaveland&f=false
6. The town there was eventually named for him, but the first "a" in his name was dropped.

7. Perkins's ancestor accompanied Roger Williams, later the founder of Rhode Island, to America in 1631.
8. Perkins bought a thousand acres for its back taxes of $4.01 in 1825, and laid out a townsite of three hundred lots. Not so surprisingly, the state legislature that year opted to locate the canal two miles east of the town of Middlebury (now a part of Akron), in favor of a route right through the middle of the land owned by Perkins and Paul Williams. The early history of railroads is replete with deals of this nature. See United States, Works Progress Administration, *The Ohio Guide* (New York: Oxford University Press, 1940, 1943), 169.
9. Shortly after the shootings at Kent State, the rock group Crosby, Stills, Nash & Young released a song, "Ohio" about the incident that contained the words "Four Dead in Ohio."
10. See David D. Engdahl, "From *American Report*: Due Process Forbids Soldiers in Civil Disorders," in *The Truth about Kent State: A Challenge to the American Conscience*, ed. Peter Davies and the Board of Church and Society of the United Methodist Church (New York: Noonday Press, 1973), 212.
11. My sister and her future husband went from Central Michigan University and met at the rally.
12. One of the less-explored aspects of American culture is the extent to which aspects of Indian lifestyles have been incorporated into the wider American psyche. Different dietary items have been recognized, as have styles of fighting in forestland, but not a lot else. Maybe there is little else to notice; maybe not.
13. See John M. Carroll and Colin E. Baxter, "Introduction," in *The American Military Tradition*, ed. John M. Carroll and Colin E. Baxter (Wilmington, DE: SR Books, 1993), ix. Within two years, the Pilgrims had a 2,700-ft. defensive perimeter around their settlement; see Millett and Maslowski, *For the Common Defense*, 2.
14. John Galvin notes that settlers in both the Plymouth and Massachusetts colonies had had military experience in Europe. Like Miles Standish in Plymouth, David Patrick and John Underhill in Massachusetts were relied upon for their military experience. See John Galvin, *The Minute Men* (New York: Hawthorn Books, 1967), 17. Many consider Galvin's to be the definitive account of the Battle of Lexington and Concord in 1775.
15. Ibid., 18. For a history of the laws surrounding militias in English practice, see Engdahl, "From *American Report*," 212–16.
16. The normal age limits were sixteen and sixty; see Millett and Maslowski, *For the Common Defense*, 3.
17. Quoted in Dupuy, *National Guard*, 1. Carroll and Baxter ("Introduction," ix) note that this attitude was formed in the English civil strife of the 1500s.
18. The fear of surprise attacks led to the creation, as early as 1636, of special forces that were trained and could come together quickly to respond to alarms — thus the term "minuteman"; Galvin, *Minute Men*, 18–19, 22.
19. The first serious use of the minuteman concept came in King Phillip's War in 1673. The idea was good, but in this case the execution was poor; ibid., 25.
20. The practice had been to provide local volunteers a bounty for out-of-colony service; see Kevin Phillips, *1775: A Good Year for Revolution* (New York: Viking, 2012), 154.
21. The border created by the end of British attempts to regain its American colonies in 1781 led to a splitting of the North American historical narrative into two parts. Subsequently, American historians have played down or ignored the importance of the fall of Louisbourg in the creation of both British North America and independence sentiment in the colonies. Strategically, the defeat of Braddock, George Washington, and a force of British regulars near Fort Pitt on the Ohio River

was cancelled by the second fall of Louisbourg, which rendered void the whole of the French effort in America.

22. Today, it is an impressively reconstructed historical monument on the scale of Williamsburg in Virginia.
23. British military historian and strategist John Keegan notes that the opening of the Gulf is so wide that British forces could simply have bypassed Louisbourg and gone straight for Quebec; instead, it acted as a lure to delay and perhaps frustrate such forces, nervous about the fort's lying to their rear as they approached Quebec from the water. See John Keegan, *Fields of Battle: The Wars for North America* (New York: Alfred A. Knopf, 1996), 113.
24. In the 1700s, the large territory that extended from Quebec to New Orleans was divided for all practical purposes into two parts: New France in the east and north of the continent and Louisiana along the Mississippi River and to the west. Three forts protected these capitals: Biloxi in the south, Frontenac along the Lake Champlain route to Quebec and Montreal, and Louisbourg on Cape Breton Island, now a part of Nova Scotia, where the Gulf of St. Lawrence meets the open Atlantic. Overall, British settlement was ten times as populous as the French settlements around Quebec, St. Louis, and New Orleans, in part because the French effort was directed almost entirely at the fur trade rather than at farming. See A.J.B. Johnston, *The Summer of 1744: A Portrait of Life in 18th Century Louisbourg* (Ottawa: Environment Canada, Parks Canada, National Historic Parks and Sites Branch, 1983), 6. This led to a fluid "boundary" between the two inland from the Atlantic coast and to the use of Indians by the French as a kind of militia.
25. New Englanders attacked Port Royal in 1654 and held it until 1670. In 1690 they captured it again and once more in 1710. Its ease of capture led the French to think of establishing a fortress at Louisbourg.
26. Keegan, *Fields of Battle*, 104. The Massachusetts colonial government had called for volunteers for the expedition, but also placed a levy, or draft, on the towns in the colony in order to fill a complement of 2,300 men (Galvin, *Minute Men*, 32).
27. Governor William Shirley was a London barrister who had migrated to Massachusetts in 1731 and rose quickly in colonial politics. He was very sensitive to the political implications should the Boston fishery be left to the depredations of French privateers out of Louisbourg during the war. One of his arguments for the assault was that he estimated there were 27,000 French fishermen, including many Basques, who could be turned quickly into sailors on warships if action was not taken. Shirley's campaign to get the expedition approved by the legislators in Massachusetts is recounted in Rawlyk, *Yankees at Louisbourg*, chaps 1–4; and Fairfax Downey, *Louisbourg: Key to a Continent* (Englewood Cliffs, NJ: Prentice-Hall, 1965), chap. 7. One sarcastic wag said that the force had "a lawyer for a conniver [Shirley[, a merchant for a General [Pepperell], and farmers, fishermen and mechanics for soldiers." Benjamin Franklin, writing to his brother in Boston, said, "But some seem to think forts are as easily taken as snuff" (quoted in Downey, *Louisbourg*, 58–62). Even a Massachusetts legislative committee had its doubts: "The garrison at Louisbourg consisted of regular, experienced troops, who though unequal in number, would be more than a match in open field for all of the raw, inexperienced militia which could be sent from New England." The motion of approval for the expedition passed by one vote (Rawlyk, *Yankees at Louisbourg*, 36, 38).
28. One unit in the expedition was "the Ancient and Honorable Artillery Company of Boston," said to be the oldest military organization in America. William Pepperell, a Maine merchant, had some experience in manning an inland fort and training militia, and was by far the most experienced leader available. Because of his leadership, he became the first American-born baronet.

29. Their anger was hardly mollified by the religious aspect of the expedition. The Reverend George Whitefield, a leader of the Great Awakening, was in Massachusetts at the time, and gave his enthusiastic blessing. Benjamin Franklin, ever the wit, "wrote to a correspondent in Massachusetts that '[i]ndeed, in attacking strong towns, I should have more dependence on *works* than on *faith*'" (Downey, *Louisbourg*, 200). He was alluding to the theological controversy over salvation going on at the time. The expedition's senior chaplain was the Reverend Samuel Moody of York, Maine, a "hellfire and damnation" preacher who took an axe along to destroy the heathen Catholic idols in the French church at Louisbourg. He accomplished his mission.
30. "Deep distrust of the mother country was bred in New England and the other colonies...[and] profound disillusionment over the restoration of 1748 never vanished from American minds" (ibid., 137; see also Galvin, *Minute Men*, 38).
31. The New England colonies could not print money on their own account, but Massachusetts and New Hampshire got around this by, in effect, issuing IOUs to shipowners and merchants. Massachusetts, in particular, had a bare public treasury in 1745 (Downey, *Louisbourg*, 58; Rawlyk, *Yankees at Louisbourg*, 26).
32. Downey, *Louisbourg*, 113.
33. This time, North America was the locus of major fighting by British regulars, where heretofore armed forces up and down the continent had been militias led by British officers in sideshows to battles elsewhere in the world. Having the Americans cover the expense of this war was a cause of the War of Independence.
34. A number of streets in Halifax are named after Yankee commanders, such as William Pepperell of Kittery, Massachusetts (now Maine), and politicians, such as William Shirley, then governor of Massachusetts.
35. David H. Overy and Kevin M. Gannon call them "eighteenth century commandos"; see "Colonial Wars and the American Revolution," in Carroll and Baxter, *American Military Tradition*, 4.
36. Apparently, the first official use of the term was by General James Wolfe during the British expedition against Quebec, in mentioning the Yankee soldiers who accompanied it. A few years later, the British soldiers sent out to seize American arms thought to be located in Concord and Lexington, Massachusetts, sang the tune "Yankee Doodle Dandy" to mock the country bumpkins they found there. The song had been in derogatory use by British troops at least since the 1745 assault on Louisbourg. See Connecticut State Library, "Yankee Doodle, the State Song of the State of Connecticut" (Hartford, 2004), available online at http://www.cslib.org/yankeedoodle.htm. See also Linda S. Watts, *The Encyclopedia of American Folklore* (New York: Facts on File, 2007), 425–6.
37. Even though the rifle was more accurate and had a longer range, the musket was the preferred weapon, primarily because the longer loading time for early rifles made their users more vulnerable to attack by soldiers with bayonets on muskets or Indians with tomahawks. Until interchangeable parts were developed, including prepared cartridges, the musket was a sniper's weapon. See Stephenson, *Patriot Battles*, 130–5.
38. See Carroll and Baxter, "Introduction," x–xi. It helped that the British Army had not fought a battle since 1759, sixteen years before Lexington and Concord, and that its permanent establishment had shrunk from 230,000 to 48,500. Most of the veterans were probably mustered out in the 1760s. Arguably, the proportion of veterans of the French and Indian War was higher in the Yankee militia in Massachusetts than in the British force because there was no age limit on militia volunteers. See Stephenson, *Patriot Battles*, 44.
39. Dupuy, *National Guard*, 20.

40. Phillips, *1775*, 150–5.
41. Galvin, *Minute Men*, 255–6. Robert A. Gross also notes that the militia around Concord had been training regularly in drills and tactics before the battles in 1775 and that weapons and supplies were being accumulated; see *The Minutemen and Their World* (New York: Hill and Wang, 1976), chaps 2–4.
42. Because the Massachusetts militia had been preparing for a fight for a considerable period before Concord and Lexington, they were the exception, not the rule. Washington might have recognized this, but the myth of the minuteman as capable as a regular soldier persisted, even in later fiascos (Millett and Maslowski, *For the Common Defense*, 57–60; see also Galvin, *Minute Men*, chaps 6–10).
43. John Shy, *A People Numerous and Armed* (Ann Arbor: University of Michigan Press, 1990), 187. They could also be used to quell riots and protect property.
44. There was a clear distinction between the militia, whose backgrounds came from all walks of life, as befitted a system of universal eligibility, and the Army, which was made up largely of men who were poor, new immigrants, or down on their luck. Part of the appeal of militias to the Jeffersonian Democrats lay in their basic equality. See Gary B. Nash, *The Unknown American Revolution: The Unruly Birth of Democracy and the Struggle to Create America* (New York: Viking, 2005), 216–23. Many other authors have similar comments about this difference.
45. Around Concord, the legendary heart of the Revolution, most had lost their fire for battle early on and their places were taken by imprisoned debtors, free blacks, and the "strolling [homeless] poor" (ibid., 217–19).
46. Stewart H. Holbrook notes that many women assisted the army directly, but claims that Deborah Sampson, of Middleboro, Massachusetts, was, at age twenty-two, the first woman to pass recruiters successfully as a male. After being found out and ejected from the Army on her first try, she went seventy-five miles to Worcester and tried again. Sampson served from May 1782 and was wounded in a skirmish. Her sex was discovered when she was hospitalized in the summer of 1783 with the "fever," and in November she was honorably discharged. She then married, had three children, and later lectured on her experiences all over the country. See Stewart H. Holbrook, *Lost Men of American History* (New York: Macmillan, 1946), 55–62.
47. See Overy, "Colonial Wars and the American Revolution," 12.
48. Millett and Maslowski, *For the Common Defense*, 91–2. The standing army of the new country after this congressional action consisted of a few officers and eighty men. A day later, Congress asked four of the states to raise a contingent of seven hundred militiamen for one year. The next year, Congress decided to raise its own small force for a three-year term. Shay's Rebellion in western Massachusetts in 1786 proved Congress to be an inept instrument for stability and led to the Constitutional Convention.
49. This was ideological, not empirical. He knew better. After Benedict Arnold's 1781 raid on Richmond, burning the capital city, Baron von Steuben was sent south by Washington to bolster the resistance of the Virginia militia. "Von Steuben thought he could pull together five thousand militiamen, and this was not an unrealistic number given Virginia's white population of 280,000….At one county courthouse where a militia call was supposed to have produced five hundred men, he was shocked to five men awaiting him, three of whom quickly deserted" (Nash, *Unknown American Revolution*, 343).
50. One-third of the members of the Constitutional Convention of 1787 were veterans, and they had strong ideas about the need for an army. When Elbridge Gerry proposed that the regular Army be limited to three thousand troops, Washington retorted that there should be a provision that "no

foreign enemy should [be allowed to] invade the United States at any time with more than 3,000 troops"; see Gordon S. Wood, *Empire of Liberty: A History of the Early Republic, 1789–1815* (New York: Oxford University Press, 2009), 111.

51. See Hurt, *Ohio Frontier*, 105–20. "One contemporary advised that the levies [of Governor Arthur St. Clair] were "men purchased from prisons, wheelbarrows and brothels for two dollars a month" (111).
52. John M.Carroll and Colin F.Baxter, *The American Military Tradition: From Colonial Times to the Present,* 2 ed. Lanham MD: Powman and Littlefield, 2006 p.23.
53. Hurt (*Ohio Frontier*, chap. 5) gives a good encapsulated account of General Wayne's careful preparation and advance north along what is now the Ohio-Indiana border to encounter the Indians at Fallen Timbers in what he notes was little more than a skirmish. The realization that the British were not prepared actively to help the tribes was probably more important than their rout by Wayne.
54. I would hazard a guess that the veterans' organization, the American Legion, created after the First World War, was named after this earlier Legion.
55. Millett and Maslowski, *For the Common Defense*, 91–101.
56. He clung to "'a national conceit of born courage in combat with a sudden acclaim for a superior form of military discipline, easily acquired' — that of a valorous and virtuous citizen soldiery" (Phillips, *1775*, 3).
57. By the war, 176 fifty-foot, one-gun vessels had been produced. See J. David Valaik, "The Wars of 1812 and 1846: The Leadership Factor," in Carroll and Baxter, *American Military Tradition*, 39.
58. They had been under attack by British and Indian forces who were supplied by water from across Lake Erie, and their limited-term militia enlistments were about to expire.
59. After the end of the War of 1812, Congress authorized a standing army of twelve thousand, larger in size than anything it had authorized before; Millett and Maslowski, *For the Common Defense*, 126.
60. West Point had been created in 1802 as an outgrowth of the Corps of Engineers. Its focus until after the War of 1812 was on engineering. In the 1820s, European-style military doctrine and history was added to produce general army officers, but even at the dawn of the Civil War, the prevailing opinion about the Military Academy was that its mission was to produce engineers for large construction projects, not military leaders. See Edward Hagerman, *The American Civil War and the Origins of Modern Warfare* (Bloomington: University of Indiana Press, 1988), 32.
61. In Concord, Massachusetts, in the 1830s, students were given a day off in May when the public could watch their training and again when the state held its annual Day of Muster. That would seem to be the extent of their readiness. See Michael Sims, *The Adventures of Henry Thoreau: A Young Man's Unlikely Path to Walden Pond* (New York: Bloomsbury, 2015), 52–3.
62. Valaik, "Wars of 1812 and 1846," 40.
63. "American defense policy has traditionally been built upon pluralistic military institutions, most notably a mixed force of professionals and citizen-soldiers"; Millett and Maslowski, *For the Common Defense*, xii.
64. In the Mexican War, General Winfield Scott was especially adept at this integration; see Valaik, "Wars of 1812 and 1846," 54.
65. The most comprehensive study of Alexander Doniphan's life and his famous "ride" is Joseph C. Dawson III, *Doniphan's Epic March: The 1st Missouri Volunteers in the Mexican War* (Lawrence: University Press of Kansas, 1999).

66. See Adam Goodheart, *1861: The Civil War Awakening* (New York: Vintage, 2012). See also Doug Damman, "Elmer Ellsworth and His Zouaves," *HistoryNet*, 2010, available online at http://www.historynet.com/elmer-ellsworth-and-his-zouaves.htm; and Robert McNamara, "Col. Elmer Ellsworth, Early Civil War Martyr," *ThoughtCo*, March 3, 2017, available online at http://history1800s.about.com/od/civilwar/ss/Death-of-Elmer-Ellsworth.htm.
67. Even in Revolutionary times, militia musters were occasions for parties and other diversions; see Gross, *Minutemen and Their World*, 98–9.
68. The "Wide-Awakes" were paramilitaries associated with the Republican Party. The "Ever-Readies" were Democrats, supporters of Stephen Douglas. Interestingly, the Constitutional Union Party's group called themselves the "Minute Men." See Michael E. McGerr, *The Decline of Popular Politics: The American North, 1865–1928* (New York: Oxford University Press, 1986), 24–5.
69. The truth is a bit more awkward. Twenty-four days earlier, on May 10, 1861, a German immigrant in St. Louis, Constantin Blandewski, was inducted into the federal forces and made an officer. He was killed in the fighting that followed the capture of the "Minute Men" Confederate militia who were planning to take the St. Louis Armory and the federal subtreasury building, thus getting arms and money for their cause. Blandewski was the master at arms of the local *Turnverein*, or German gymnastics club, and a leader of the German militia. See William L. Burton, *Melting Pot Soldiers: The Union's Ethnic Regiments* (New York: Fordham University Press, 1998), 39–41. Clearly, given the declining, but still strong anti-immigrant feeling in the country, a high-profile Yankee martyr was preferable to some German immigrant.
70. See, for instance, Hagerman, *American Civil War*, 31–5.
71. In 1863, Congress passed the *Conscription Act*, which was developed in a fashion consistent with the universal obligation concept that underlay the traditional militia requirement. The "draft" was designed to spur volunteers, not to raise manpower directly, since a draft would be used only if a district fell short of its quota of volunteers. It did, however, have a critical change, in that it ignored the states and dealt with Americans, including non-citizen residents, directly. See Millett and Maslowski, *For the Common Defense*, 207–8.
72. Robert L. Dallison, *Turning Back the Fenians: New Brunswick's Last Colonial Campaign* (Fredericton, NB: Goose Lane Editions, 2006).There were unsuccessful raids into what are now Quebec, Ontario and Manitoba until 1871, causing an uproar, but casualties were small in number on both sides of the conflicts. http://www.thecanadianencyclopedia.ca/en/article/fenian-raids/#h3_jump_2
73. Joseph A. Stout Jr., "The United Sates and Native Americans," in Carroll and Baxter, *American Military Tradition*, 97–115; see also Robert M. Utley, *Frontier Regulars: The United States Army and the Indian, 1866–1890* (New York: Macmillan, 1973).
74. Millett and Maslowski, *For the Common Defense*, 263.
75. By the 1890s, an estimated one hundred thousand National Guardsmen had attended summer camps.
76. The federal subsidy to the states for the militia was doubled to $400,000 in 1887, seventy-nine years after the practice began; Millett and Maslowski, *For the Common Defense*, 264.
77. Ibid.
78. Ibid., 289–91.
79. See John Whiteclay Chambers, "Militia and National Guard," in *The Oxford Companion to American Military History*, ed. John Whiteclay Chambers (New York: Oxford University Press, 2000).

80. Millett and Maslowski, *For the Common Defense*, 329.
81. The *National Defense Act of 1916* required National Guardsmen to take a dual federal and state oath, thus allowing them to be sent to foreign countries; ibid., 341.
82. Operations Order Number 1, Annex C, from Headquarters, Arkansas National Guard, October 28, 1975.

Chapter 7

1. Fred Kaplan, *John Quincy Adams: American Visionary* (New York: Harper, 2014), 484.
2. Bertram Wyatt-Brown, *Lewis Tappan and the Evangelical War against Slavery* (Cleveland: Case Western University Press, 1969), 272.
3. Quoted in Sims, *Adventures of Henry Thoreau*, 91.
4. Quoted in David S. Reynolds, *Walt Whitman's America: A Cultural Biography* (New York: Vintage Books, 1996), 382. Whitman was not present at John Brown's execution; his "I" seems to have been a poetic representation of the spirit of America.
5. Gilbert Hobbs Barnes, *The Anti-Slavery Impulse: 1830–1844* (New York: Harbinger Books, 1933; reprinted 1964), 74–5. Owen Brown, John Brown's father, was an early trustee of Oberlin, despite being a tanner in Hudson. Western Reserve College had been sponsored by the Presbyterians, while Oberlin was a Congregational project.
6. Hurt, *Ohio Frontier*, 202–4.
7. James Caccamo, "A Capsule History of Hudson" (Hudson, OH: Hudson Library and Historical Society, n.d.). https://www.hudsonlibrary.org/historical-society/local-history/hudson-history/
8. An interesting account of this settlement is D. Griffiths Jr., *Two Years' Residence in the New Settlements in Ohio, North America, with Directions to Emigrants* (1835; repr. Ann Arbor, MI: University Microfilms, 1966). Griffiths was a minister who went from Britain to America in 1832, traveling by the Erie Canal and lake steamer to Cleveland.
9. United States, Works Progress Administration, *The Ohio Guide* (New York: Oxford University Press, 1940, 1943), 15–16.
10. In 1882, industrialist Amasa Stone induced the college to move to a campus on the east side of Cleveland, where it was joined in 1885 by the new Case School of Applied Science. In 1967, these two institutions merged to form Case Western Reserve University.
11. I use the term "pivotal" carefully. Brown, to me, was the central point around which the politics of the United States shifted, resulting in the Civil War and the huge changes in American society that accompanied it. The central point does not change, but the rest of the system does. As W.E.B. DuBois put it in his biography of Brown, "[the] very processes by which Virginia used John Brown to 'fire the Southern heart' were used by John Brown to fire the Northern conscience"; see W.E.B. DuBois, *John Brown* (New York: Modern Library, [1909], 2001), 213.
12. See Volume 1, chapter 15, of *The Yankee Road.*
13. It should be remembered that, before 1800, the North African states practiced regular abduction or capture of Europeans for enslavement, though ransoms were also considered valid. Estimates of the number of Europeans, including Americans, enslaved by Africans range between 1 million and 1.25 million people from the 1500s until 1815, when Americans and others destroyed the power of

the Barbary Coast. See Frederic C. Leiner, *The End of Barbary Terror: America's 1815 War against the Pirates of North Africa* (New York: Oxford University Press, 2006).

14. In general, the climate in North America proved to be healthier than that in the Caribbean and Central and South America. America received "no more than 6 per cent of the Africans imported into the New World," but "by 1825,…the slave population of the United States represented fully 36 per cent of all the slaves in the Western Hemisphere"; see David Brion Davis, *The Problem of Slavery in the Age of Revolution, 1770–1823* (Ithaca, NY: Cornell University Press, 1975), 55–60.
15. After the end of slavery in the British Empire in 1833, the practice of indentured servitude persisted, leading to the growth of Indian populations in Fiji and Trinidad, for instance.
16. The Puritans, at the end of two Indian wars in the 1630s and 1670s, sold their captives into slavery in Bermuda. See Sarah Vowell, *The Wordy Shipmates* (New York: Riverhead Books, 2008), 196, 243. In 1795, populous New York had more slaves than did Georgia, though this radically changed in the decades thereafter.
17. In 1860, the South produced two-thirds of all the commercially grown cotton in the world; see Bruce Levine, *The Fall of the House of Dixie: The Civil War and the Social Revolution that Transformed the South* (New York: Random House, 2013), 3.
18. "As early as 1641, colonial Massachusetts recognized slavery as a legal institution, announcing in its Body of Liberties that '[t]here shall never be any bond slaverie…unless it be lawful Captives taken in just warres, and such strangers as willingly sell themselves or are sold to us.' Twenty years later, just two generations after the arrival of the first Africans in colonial America, the first statute recognizing African slavery was passed in Virginia." See "Slavery," *The Free Dictionary* (n.d.), available online at http://legal-dictionary.thefreedictionary.com/Chattel+slavery.
19. It was the first jurisdiction in the New World to do so; see David Brion Davis, "Should You Have Been an Abolitionist?" *New York Review of Books*, June 21, 2012, 56.
20. A figure that John Quincy Adams took pride in relating; see Kaplan, *John Quincy Adams*, 483.
21. Many black communities in Nova Scotia and New Brunswick can trace their forbears to people who fled or were taken from the colonies in revolt and transplanted to the loyal ones.
22. An interesting study of urban free blacks in this period is James Oliver Horton and Lois E. Horton, *Black Bostonians: Family Life and Community Struggle in the Antebellum North* (New York: Holmes and Meier, 1979). A later study of the same people, time, and place, but more thorough in its detailed, historical research, is George A. Levesque, *Black Boston: African Life and Culture in Urban America, 1750–1860* (New York: Garland, 1994).
23. An interesting older survey of ideas about race and racism is Thomas F. Gossett, *Race: The History of an Idea in America* (Dallas: Southern Methodist University Press, 1963).
24. It is estimated that only 6 percent of the total black population in the South in 1860 was freed slaves, most in the countryside of the Upper South; see Levine, *Fall of the House of Dixie*, 7, 23.
25. When Mormon leader Joseph Smith announced his candidacy for president in 1844, the Mormon militia in Illinois was reckoned in itself to be a large fraction of the size of the US Army of the time.
26. See, for instance, Levine, *Fall of the House of Dixie*, 33.
27. Congress had passed the first *Fugitive Slave Act* in 1793.
28. Most of the biographical details presented here come from Henry Mayer, *All on Fire: William Lloyd Garrison and the Abolition of Slavery* (New York: St. Martin's Press, 1998). I am also indebted to my friend Emery Fanjoy, a genealogist and native of New Brunswick, for information on the Yankee origins of the Garrison family, which settled on the St. John River more than a decade before the Revolution.

29. Frances's death notice in 1823 said she was the "relict," or widow, of Abijah.
30. James died in the early 1840s from alcoholism, dependent then on William's charity.
31. There are a number of memorials and biographical pieces on Benjamin Lundy, whose Quaker family had migrated up the Delaware River tributaries into northern New Jersey. See https://archive.org/search.php?query=subject%3A%22Lundy%2C+Benjamin%2C+1789-1839%22
32. Mayer (*All on Fire*, 67), considers Garrison's 1828 address to the American Colonization Society as "the most forthright and extensive statement of American egalitarian principle written between the Declaration of Independence and the Gettysburg Address." Most of Garrison's audience that day would not have agreed with this opinion.
33. Adapted from William Lloyd Garrison, "Address to the American Colonization Society, July 4, 1829," available online at http://teachingamericanhistory.org/library/document/address-to-the-colonization-society/.
34. Subscriptions by blacks were the financial mainstay of *The Liberator* over the first six months of its existence. Keeping the paper afloat was a continuing challenge. Often Garrison had to rely on donations from sympathetic wealthy supporters to get it out of debt.
35. See, for instance, James Oakes, *The Radical and the Republican: Frederick Douglass, Abraham Lincoln, and the Triumph of Anti-slavery Politics* (New York: W.W. Norton, 2007).
36. Much of this biographical material is adapted from Dorothy Sterling, *Ahead of Her Time: Abby Kelley and the Politics of Anti-slavery* (New York: W.W. Norton, 1991).
37. Wing saw himself as Irish, though he probably was descended from Protestant Irish, either Scots-Irish who settled in New Hampshire or English Protestants elsewhere in Ireland who had accepted the teachings of Quakers there and migrated to Cape Cod.
38. Goodheart, *1861*, 123.
39. Ibid., 119.
40. Foster was the "printer" of the first issue of *The Liberator*.
41. Sterling, *Ahead of Her Time*, 237.
42. Ibid., 315.
43. Their mother was said to be a niece of Benjamin Franklin.
44. Their eldest brother, Benjamin, graduated from Harvard, then studied art under the famous painter Gilbert Stuart, but then took up studying law. He was the only one of the Tappan brothers to go to Harvard; apparently his poor example in terms of religiosity prompted his parents to discourage his younger brothers from this path. Benjamin moved west in 1799 to practice in Ohio's Western Reserve, and founded the town of Ravenna, Ohio, about ten miles from Hudson. He later became a US senator from the state. See Wyatt-Brown, *Lewis Tappan*, 13.
45. A good part of their business there consisted of selling blankets to Indians.
46. Frances Antill came from a prominent New York family that had migrated to Montreal. Her mother had been a Catholic.
47. Lewis was lucky to have secured his inventory, and took it across the border, where he made a handsome profit on the sale. Arthur was not so lucky, and spent much of the next few years trying to get compensation for his inventory. Lewis helped Arthur get on his feet in New York City, a favor Arthur returned ten years later when Lewis left Boston with little to show for ten years' work. See Wyatt-Brown, *Lewis Tappan*, 18.
48. Arthur once put up a challenge grant of $13,000 with the American Sunday School Union as a way of raising $100,000 to put a Sunday school in every town in the Old Northwest (ibid., 50).

49. Increasingly, Lewis ran the store's day-to-day operations while Arthur divided his time between a home in New Haven, Connecticut, and his charitable work in New York City. By 1832, Arthur was an officer in ten different groups (ibid., 50–2).
50. Ibid., 60.
51. "Just about everyone on the planet wears at least one article of clothing made from cotton at some point during the day; inevitably, by-products of the plant show up as well in something that person is doing, whether eating ice cream, changing diapers, filtering coffee, chewing gum, handling paper money, polishing fingernails, or reading a book"; Stephen Yafa, *Big Cotton* (New York: Viking, 2005), 2.
52. Lewis Tappan, *The Life of Arthur Tappan* (New York: Hurd & Houghton, 1870), 165.
53. Beecher brought his family, including his son, Henry Ward Beecher, later "the most famous man in America," and Harriet Elizabeth Beecher, later the author of the best-selling anti-slavery novel, *Uncle Tom's Cabin*. See Debby Applegate, *The Most Famous Man in America: The Biography of Henry Ward Beecher* (New York: Three Leaves Press, 2006); and Joan D. Hedrick, *Harriet Beecher Stowe: A Life* (New York: Oxford University Press, 1994).
54. The story of the Lane controversy, the attempts to get Congress to accept anti-slavery petitions, and the "conservative" side of the abolitionist split in 1840 are all documented in Barnes, *Anti-Slavery Impulse*.
55. Tappan, *Life of Arthur Tappan*, 225–42.
56. Wyatt-Brown, *Lewis Tappan*, 68.
57. The context of the Tappans' financial problems is presented in Jessica M. Lepler, *The Many Panics of 1837: People, Politics, and the Creation of a Transatlantic Financial Crisis* (New York: Cambridge University Press, 2013), esp. chap. 5.
58. A good modern account is Marcus Rediker, *The* Amistad *Rebellion: An Atlantic Odyssey of Slavery and Freedom* (New York: Viking, 2012).
59. The life of John Brown has been told in numerous biographies, both positive and negative. The latest, and the one I have used as the basis for this brief account, is David S. Reynolds, *John Brown, Abolitionist: The Man Who Killed Slavery, Sparked the Civil War, and Seeded Civil Rights* (New York: Alfred A. Knopf, 2005). A powerful novelistic treatment is Russell Banks, *Cloudsplitter* (New York: Harper Collins, 1998).
60. Like Sam Wilson of Troy, New York, a.k.a. "Uncle Sam," Brown's father had been a supplier of beef to the Army in the War of 1812. See Len Gougeon and Joel Myerson, eds., *Emerson's Anti-slavery Writings* (New Haven, CT: Yale University Press, 1995), 117.
61. His father was also prolific, having thirteen children by three wives.
62. Reynolds, *John Brown, Abolitionist*, 77.
63. Others, including at least two women, Harriet Tubman, an escaped slave, and Laura Haviland, from Michigan, made earlier forays into the South and brought back slaves to the North. For the latter, see Sterling, *Ahead of Her Time*, 288. Brown's raid was more high profile and used armed force.
64. Merrill D. Peterson, *John Brown: The Legend Revisited* (Charlottesville: University of Virginia Press, 2002), 9.
65. Although Brown could have been tried for treason against the United States, Virginian panic and federal passivity led to this impossible charge.
66. Interestingly, the Library of Congress has, as one of its earliest anti-slavery documents, a copy of a sermon, "The Injustice and Impolicy of the Slave Trade and of the Slavery of the Africans," by

Jonathan Edwards Jr., published in 1791. See http://www.loc.gov/exhibits/african/afam005.html#obj0.

67. Gougeon and Myerson, *Emerson's Anti-slavery Writings*, 117–24.
68. Peterson, *John Brown*, 19, 38–9.
69. The original words of "John Brown's body…" were anonymous and set to an old folk tune by Boston militiamen in early 1860 as their marching tune. One of their members, a Scots-Irishman named John Brown, was among the earliest casualties in the war. In November 1861, Julia Ward Howe, who once had met and entertained the "martyred" Brown in her home, wrote new words to the tune. See ibid., 33–5.
70. Levine, *Fall of the House of Dixie*, 81, 97–8, 113–15.
71. Douglas A. Blackmon, *Slavery by Another Name: The Re-enslavement of Black Americans from the Civil War to World War II* (New York: Anchor Books, 2008).

Chapter 8

1. Chernow, *Titan*, 257
2. Inglis interview in ibid., xx.
3. Quoted in ibid., xiii.
4. Much of the information on early Cleveland comes from Carol Poh Miller and Robert A. Wheeler, *Cleveland: A Concise History, 1796–1996*, 2nd ed. (Bloomington: Indiana University Press, 1997), chaps 1–7.
5. Chernow, *Titan*, 45.
6. Chernow (ibid., 46), points to the importance of accounting to the success of business enterprises through the ages.
7. When John D. was six years old, the Baptist Church split in two over slavery, with the northern Baptists insisting that a slaveholder could not be a minister because slave ownership meant a hierarchy among people, and opposition to hierarchy was a basic principle of the church (ibid., 20).
8. Ibid., 54.
9. Today, Rockefeller Avenue runs near the refinery site.
10. According to one estimate, a small, simple refinery could be built for about $13 per barrel for the first production run, which meant the capital cost could be covered by the sale of that first run. Later, as the size of refineries grew, refining capital costs grew, but the per barrel selling price declined. Within these changing parameters, the profit margins remained high. See, for instance, Charles R. Morris, *The Tycoons: How Andrew Carnegie, John D. Rockefeller, Jay Gould, and J.P. Morgan Invented the American Supereconomy* (New York: Holt, 2005), 80–1.
11. Chernow, *Titan*, 80.
12. He knew a good thing when he saw it. The consumption of kerosene during the Civil War was such that the federal tax on it raised $12 million, not an inconsequential sum in that time. By 1869, it had become the country's second-most-valuable export after cotton; see John W. Oliver, *A History of American Technology* (New York: Ronald Press, 1956), 331.

13. In 1866, William was sent to New York City to inaugurate the firm Rockefeller and Co. and to look for export opportunities as well as new sources of financing for his brother's dreams; see Chernow, *Titan*, 102.
14. See, for instance, Walter Havighurst, *Ohio: A Bicentennial History* (New York: W.W. Norton, 1976), 109–10.
15. As Stephen Harkness was a director on a variety of company boards, he had access to much more money than did Rockefeller, and was not afraid to help him. By the early 1880s, Standard Oil had become self-financing and this allowed the company to act independently of the bankers and other financiers. See Chernow, *Titan*, 336.
16. Becoming the biggest was no great stretch in the days when all of its competitors were very small. In 1870, Standard Oil controlled about 10 percent of the country's total refinery output; its share grew later to 80 percent of a larger industry. See John Steele Gordon, *An Empire of Wealth: The Epic History of American Economic Power* (New York: HarperCollins, 2004), 255.
17. It also helped that, unlike his rivals in Pennsylvania, he could ship product by water to New York City. A good rule of thumb is that it cost half as much per ton to ship by water than by land.
18. The use of "Standard" was an indicator of the company's commitment to a quality product. It was estimated that, even in the mid-1870s, shoddy kerosene accounted for five to six thousand deaths annually; Daniel Yergin, *The Prize: The Epic Quest for Oil, Money, and Power* (New York: Simon & Schuster, 1992), 50.
19. A "shell" corporation was just that: under free incorporation rules, investors might create a corporation that had a general purpose and perhaps minimal capitalization — say, $1 — with no employees or business operations; at a later time, it might be "filled" with money and activity.
20. Tarbell, *History of the Standard Oil Company*, 67–8.
21. Flagler was the transportation expert, Rockefeller was the corporate management expert, and Andrews the refiner; Yergin, *Prize*, 38–9.
22. Alfred D. Chandler Jr., *The Visible Hand: The Managerial Revolution in American Business* (Cambridge, MA: Harvard University Press, 1977), 321. By 1874, he managed to buy out the biggest refiners there (Chernow, *Titan*, 162–3).
23. A cartel is an association of businesses formed to control prices by restricting and allocating production of a good in an industry. The problem with a cartel is that the various members retain their autonomy and, in this condition, it pays individual members to cheat on their ostensible partners. The solution lies in a single "owner" of production, a solution favored by John D., or in punitive action taken by other members of the cartel against the offender, a murderous solution preferred by, for instance, Latin American drug cartels.
24. Albro Martin, *Railroads Triumphant: The Growth, Rejection, and Rebirth of a Vital American Force* (New York: Oxford University Press, 1992). 343.
25. Upstream in this case refers to the petroleum producers who supplied refiners with raw product, while downstream refers to the distributors and users of the refined product.
26. Tarbell, *History of the Standard Oil Company*, 128.
27. Chernow, *Titan*, xx.
28. Martin, *Railroads Triumphant*, 330.
29. Chandler prefers to see Standard Oil even at this late date as an alliance or association of companies, while recognizing that its original shareholders held four-sevenths of the shares of all of the allied companies (*Visible Hand*, 321–3). I see this not as an alliance, but as a group of subsidiary companies that masked the original Standard Oil group's control.

30. Dodd was a lawyer in Franklin, the largest permanent town in the Pennsylvania oil region. His family had migrated to the area in the 1820s from the Yankee part of New Jersey, which in turn was settled from Connecticut and Long Island. Dodd was three years older than Rockefeller, and started his legal practice in Franklin in 1859, just as the oil boom began. Ralph W. Hidy and Muriel E. Hidy (*Pioneering in Big Business, 1882–1911* [New York: Harper, 1955], 31) note that "he soon became expert in the legal technicalities of the oil business." In 1879, he became Standard Oil's legal solicitor in New York. A one-time elder of the Presbyterian Church, he was concerned with moral as well as legal issues in the corporation, and advised officers and directors on both. When criticized for his defection to the monopoly, Dodd noted: "Well, as the ministers say when they get a call to a higher salary, it seems to be the Lord's will." Rockefeller was careful to keep Dodd unaware of a lot of the less-savory actions taken by company officials; Chernow, *Titan*, 225–6.
31. These certificates in turn could be bought and sold much like shares of stock; Martin, *Railroads Triumphant*, 152.
32. Hidy and Hidy, *Pioneering*, 48.
33. Alfred D. Chandler Jr., *Strategy and Structure: Chapters in the History of the American Industrial Enterprise* (Cambridge, MA: MIT Press, 1962), 164–70.
34. This organizational innovation spread across all the resource and manufacturing industries; see Chandler, *Visible Hand*, 240–50.
35. Chernow, *Titan*, 284–8.
36. Frasch was a German immigrant; at the time, Germany's chemical industry was the world leader.
37. His process was first devised to recover sulfur from underground, but in its adaptation to petroleum sulfur was seen as secondary to recovering the by-product, "clean" oil.
38. Chernow (*Titan*, 283–4) notes this, but Louis Galambos and Joseph Pratt (*The Rise of the Corporate Commonwealth: US Business and Public Policy in the Twentieth Century* [New York: Basic Books, 1988], (35, 81) claim the Frasch lab was dismantled once the Lima oil problem was solved, and no new labs were built.
39. See Martin, *Railroads Triumphant*, 342, 602.
40. This process was used at Whiting, Indiana, in 1913, and came in time to fuel the high-compression engines developed in the 1920s; see Oliver, *History of American Technology*, 604.
41. Chernow, *Titan*, 288–9. The competing technologies were steam and electric.
42. A lengthy discussion of the creation and existence of various monopolies can be found in Charles R. Geisst, *Monopolies in America: Empire Builders and their Enemies, From Jay Gould to Bill Gates* (New York: Oxford University Press, 2000).
43. For a succinct story of the evolution of antitrust policy, see Thomas K. McCraw, *Prophets of Regulation* (Cambridge, MA: Belknap Press, 1984), chap. 2.
44. Flint, by any account, was quite a character. He created trusts in rubber, chewing gum, woolen products, and business machines (IBM). He also sold the first Wright brothers' airplanes outside the United States, ran guns into Central America, and wrote and edited a couple of books. See Charles Ranlett Flint, *Memories of an Active Life: Men, Ships, and Sealing Wax* (New York: G.P. Putnam & Sons, 1923); and Charles Ranlett Flint et al., *The Trust, Its Book: Being a Presentation of the Several Aspects of the Latest Form of Industrial Revolution* (New York: Doubleday and Page, 1902).
45. Hidy and Hidy, *Pioneering*, 207.
46. Ibid., 208.
47. Ibid., 209–10.

48. Ibid., 216.
49. A capsule history of the fight to regulate railroad activity can be found in Lawrence M. Friedman, *A History of American Law*, 3rd ed. (New York: Simon & Schuster, 2005), 333–40.
50. Fink is alternatively portrayed as a statistical genius or a rabid monopolizer, depending on whom one consults. One reasonable commentator is McCraw, *Prophets of Regulation*, 47–50.
51. Standard Oil did not comment much on the formation of the Commission, as by that time it depended little on the railroads to ship oil; most moved in Standard Oil's own pipelines, which did not come within the Commission's mandate. S.C.T. Dodd, the company's solicitor, even advised internally against trying to get rebates. A useful tool for growth in a competitive environment, by 1887 the company really had no need of them; see Hidy and Hidy, *Pioneering*, 215.
52. See, for instance, Galambos and Pratt, *Rise of the Corporate Commonwealth*, 45–53.
53. Chernow, *Titan*, 537–54. As a result of the Spindletop gusher in East Texas in 1901, however, new competitors were already developing around it.
54. One commentator noted the bill was too comprehensive, and lawyers picked it apart in the details; see Edmund Morris, *Theodore Rex* (New York: Random House, 2001), 28–9.
55. Weinberg, *Taking on the Trust* , 201.
56. Ibid., 202.
57. Chandler, *Visible Hand*, 319. Later, Delaware, in a bid to gain corporate revenues, enacted a more attractive law, and many companies moved their head offices, often only a symbolic, small part of the corporate structure, to that state.
58. Hidy and Hidy, *Pioneering*, 232. A holding company is a corporate vehicle whose only function is to "hold" the shares of other companies so that they may be operated as a single unit.
59. Martin, *Railroads Triumphant*, 151–2.
60. Chandler (*Visible Hand*, 320–6) adds the idea that continuous-process and large-batch industries require control over sizable markets to succeed.
61. "Legal" monopolies are also created by legislation. For example, in many states the sale of liquor is restricted to a government monopoly that acts to enforce the state's liquor taxation policy.
62. Gordon, *Empire of Wealth*, 256.
63. The *June*, which transported oil to Liverpool from New York, was an iron ship; Oliver, *History of American Technology*, 339.
64. As in Pennsylvania, the presence of oil and gas around Baku had been known for a long time, but only in 1873 did the Nobel family, Swedish immigrants to Russia, recognize its commercial importance; see Gavin Wightman, *The Industrial Revolutionaries: The Making of the Modern World, 1776–1914* (New York: Grove Press, 2007), 264–8.
65. The best survey of the global oil industry up to the last decade of the twentieth century is Yergin, *Prize*.
66. Hidy and Hidy, *Pioneering*, 148–50.
67. Ibid., 153.
68. Chandler, (1962) pp.167-8.
69. For a commentary on this writing, see Weinberg, *Taking on the Trust*, 230–9.
70. Chernow, *Titan*, xxii.
71. Ibid., 335.

Chapter 9

1. Matthew Josephson, *Edison: A Biography* (New York: History Book Club, 1959), 1011.
2. Francis Jehl, *Menlo Park Reminiscences* (Dearborn, MI: Edison Institute, 1936), 11.
3. Mark Twain, *A Connecticut Yankee in King Arthur's Court* (New York: Harper & Brothers, 1889), 64; see also Ernest Freeburg, *The Age of Edison: Electric Light and the Invention of Modern America* (New York: Penguin, 2013), 4.
4. Josephson, *Edison*, 244, quoting from Sarah Bernhardt's memoirs.
5. Ibid., 1.
6. United States, Works Progress Administration, *Ohio Guide*, 475–6.
7. Suzanne Winkler, *The Smithsonian Guide to Historic America: The Great Lakes States* (New York: Stewart, Tabori and Chang, 1989), 68.
8. The name was originally spelled "Edeson" and pronounced as "Aydeson."
9. The basic story in these pages is covered in Frank Lewis Dyer, Thomas Commerford Martin, and William Henry Meadowcroft, *Edison: His Life and Inventions* (New York: Harper & Brothers, 1929); Josephson, *Edison*; and Neil Baldwin, *Edison: Inventing the Century* (New York: Hyperion, 1995), chaps 1–5.
10. There is some controversy over Edison's lineage. Edison claimed his ancestor/namesake was a Revolutionary official who had signed the banknotes of the country, or colony, in New York City in 1778, yet that was when the city was under British occupation. An early scholarly biography by Dyer, Martin, and Meadowcroft (*Edison*, 9–10) follows this claim, but notes that the early records are obscure. There is even some suggestion that more Edisons than a widow with a child were in the former Dutch colony in 1730. I have followed Josephson, whose account seems more likely.
11. In 1759, when the British took control of what is now the Canadian province of Quebec, it was the centerpiece of their holdings and called "Canada." The unsettled land to the southwest of Montreal became known as Upper Canada because it was up the St. Lawrence River from Montreal; conversely, Quebec in the late eighteenth and early nineteenth centuries was Lower Canada, meaning downriver from Upper Canada. Maritimers, in the provinces along the Atlantic Coast, still commonly refer to Ontario as Upper Canada. So, from Toronto, one goes "down" to Halifax, while from Halifax, one goes "up" to Toronto. The term "Downeast" Maine has some of the same directional connotation for Americans.
12. Dyer, Martin, and Meadowcroft (*Edison*,11) say she was the daughter of a Baptist minister. Since one of the main turnpikes west through New York to Buffalo passed through Chenango County, it would not be surprising that Nancy Elliott, a daughter of a Yankee migrant from New Hampshire, would end up in Upper Canada; such people made up the majority of the inhabitants of the Niagara Peninsula before the War of 1812.
13. The rebellion in Lower Canada was actively, though covertly, supported by Vermonters living near the border.
14. Josephson, *Edison*, 2. Dyer, Martin, and Meadowcroft (*Edison*, 11–12) note that Samuel Jr.'s 182-mile flight to safety resulted in a romantic story that erased the Loyalist tinge from the family name. Josephson says Samuel Jr. was in Milan in 1839, but Dyer, Martin, and Meadowcroft say he wandered from town to town for five years before settling in Milan in 1842.
15. Josephson, *Edison*, 6.
16. Ibid., 14.
17. Baldwin, *Edison*, 21.
18. An attempt to flesh out Edison's personality and character is Robert Conot, *A Streak of Luck* (New York: DaCapo Press, 1979); see chap. 1 for his early life.

19. Dyer, Martin, and Meadowcroft, *Edison*, 101. Faraday had died in 1867, the year before Edison bought the books. For a short biography of Faraday, see Alan W. Hirshfield, *The Electric Life of Michael Faraday* (New York: Walker, 2006).
20. See Friedman, *History of American Law*, 186–8.
21. A number of people have called the explosion of new technology during the period from 1870 to 1914 by this phrase. See, for instance, Andre Millard, *Edison and the Business of Innovation* (Baltimore: Johns Hopkins University Press, 1990), 1.
22. Dyer, Martin, and Meadowcroft, *Edison*, 115.
23. Ibid., 600. Many inventions have been associated with their "inventors" because these were the first people to patent them. Others may have followed by days or months, only to be forgotten. Perhaps the most famous case of a "social" invention is that of the telephone, where Bell applied for the patent perhaps hours, or a day before Chicago inventor Elisha Gray. See also Freeburg, *Age of Edison*, 36–41.
24. Millard (*Edison and the Business of Innovation*, 3) notes that the importance of the Pearl Street plant was that it proved the technological feasibility of the widespread distribution of electricity, not just for lighting.
25. Ibid., 1, 4.
26. Ibid., 45–8.
27. He did, however, promote the use of "hello!" to answer the telephone; Jehl, *Menlo Park Reminiscences*, 133.
28. According to Edison, "Wallace was one of the earliest pioneers in electrical matters in the country. He has done a great deal of good work, for which others have received all the credit"; quoted in Dyer, Martin, and Meadowcroft, *Edison*, 248.
29. Brush was born in what is now the northeast part of Cleveland in 1849, some twelve years after the family moved from eastern Long Island to the Western Reserve. He went to Cleveland High School and the University of Michigan, unlike Edison, who was largely self-taught. Like Edison, he was fascinated by the world around him and was a voracious reader at an early age. In high school, Brush stayed at a nearby boarding house where Rockefeller had stayed a decade or so before. See Jeffrey La Favre, "Ancestors of Charles F. Brush and His Early Years" (1998), available online at http://www.lafavre.us/brush/earlyyrs.htm; see also Freeburg, *Age of Edison*, 10–30, 47–70.
30. Scientists of the day were convinced that Edison's ideas "were unworthy of the attention of practical or scientific men" (Josephson, *Edison*, 196).
31. After the debacle of their rejection of a rights purchase in the Bell system, the Western Union board was keen to get on onside this time.
32. The Edison Electric Light Company was created on October 15, 1878. Two arc lighting companies were incorporated somewhat earlier to manufacture their products, but it was presumably after the product development was done. See Jehl, *Menlo Park Reminiscences*, 219.
33. One of Edison's later ideas that did not pan out was the development of a florescent light based on x-rays. He began testing a florescent bulb shortly after Roentgen announced his discovery of x-rays in1895. It worked, but his assistant soon began to lose his hair and develop skin lesions. Edison decided this would not be a healthy source of good lighting, and abandoned the project. See Dyer, Martin, and Meadowcroft, *Edison*, 581.
34. Because it featured two upright tubular magnets, Edison's engineers called it "the long-legged Mary Ann."
35. Josephson, *Edison*, 224.

36. For a detailed description of this demonstration, see Jehl, *Menlo Park Reminiscences*, chapters 52–3.
37. Prior to this, Edison found that his backers would not finance a subsidiary to produce the dynamo, so he created the Edison Machine Works Company on his own.
38. Josephson, *Edison*, 247.
39. See, for instance, Jill Jonnes, *Empires of Light: Edison, Tesla, Westinghouse, and the Race to Electrify the World* (New York: Random House, 2003), 5–11.
40. See, for instance, Mark Essig, *Edison and the Electric Chair: A Story of Light and Death* (New York: Walker, 2003), chap. 9.
41. Jonnes, *Empires of Light*, ch.5
42. A useful biography is Margaret Cheney, *Tesla: Man Out of Time* (New York: Dorset Press, 1981).
43. He quit Edison's team after a year, claiming Edison had promised him a huge $50,000 bonus for some important work, but had reneged. Edison said Tesla was angry because he wanted to sell his AC patents for $50,000 and Edison had not been interested. If Edison was telling the truth, then he made a monumental blunder.
44. Millard, *Edison and the Business of Innovation*, 51.
45. Perhaps the most important of his inventions at the time was the AC electric motor; Essig, *Edison and the Electric Chair*, 134–5.
46. Millard, *Edison and the Business of Innovation*, 102.
47. This is the focus of much of Essig, *Edison and the Electric Chair*.
48. See ibid., chap. 22.
49. In the early 1920s, the GE lab had 300 scientists and engineers, Western Electric 413, and the Edison labs around 200; Millard, *Edison and the Business of Innovation*, 296.
50. See "Edison's Revenge," *Economist*, October 19, 2013, 55–6.
51. http://www.bloomberg.com/news/articles/2016-01-27/new-look-ge-has-little-room-for-consumers-or-a-guy-named-edison
52. It did not take long, all of two months, for an entrepreneur in California to be arrested under the local "Comstock" laws for showing an "indecent" film.
53. Edison was aware of and encouraged the Eastman company to produce a film that could be used to create the illusion of motion (movies) as early as 1889, while the basic Kodak photography process was still in its infancy; see Dyer, Martin, and Meadowcroft, *Edison*, 539–40.
54. See, for instance, "Edison's Revenge," *Economist*.
55. "Toward the latter part of 1875…I invented a device for multiplying copies of letters, which I sold to Mr. A.B. Dick, of Chicago and in the years since, it has been universally introduced…called the 'mimeograph'"; quoted in Dyer, Martin, and Meadowcroft, *Edison*, 168–9. For me, typing and correcting mimeograph stencils brings back horrible, if nostalgic, memories from forty years ago.
56. An interesting, heavily illustrated biography of Tesla is David J. Kent, *Tesla: The Wizard of Electricity* (New York: Fall River Press, 2013).

Chapter 10

1. Quoted in Cindy S. Aron, *Working at Play: A History of Vacations in the United States* (New York: Oxford University Press, 1999), 15.
2. Quoted, disapprovingly, in T.D. Allman, *Finding Florida: The True History of the Sunshine State* (New York: Grove Press, 2013), 313. Beecher was the youngest brother of author Harriet Beecher Stowe. He moved to Florida after the Civil War. He did not anticipate that the descendants of the millions of immigrants coming to the cities of the North in the post–Civil War period would do more to fill up Florida .
3. Orvar Lofgren, *On Holiday: A History of Vacationing* (Berkeley: University of California Press, 1999), 102–3.
4. A saying popular in eastern US real estate circles, as well as a title for a 1940s movie and subsequent play, and as a kind of slogan in the popularization of the "Colonial Revivals" centered on the Centennial Exhibition in Philadelphia in 1876. Washington spent almost eight years in the field fighting in the Revolution, and traveled from New Hampshire to Georgia on a kind of "farewell tour" of the country after he assumed the presidency, so he must have slept in a lot of different places. A fascinating look at the swings of fortune of the "Washington cult" is Karal Ann Marling, *George Washington Slept Here: Colonial Revivals and American Culture* (Cambridge, MA: Harvard University Press, 1988).
5. Historical Marker Project, "The Maumee and Western Reserve Road / Turnpike Milestones" (2014–15), available online at http://www.historicalmarkerproject.com/markers/HMEHJ_the-maumee-and-western-reserve-road-turnpike-milestones_Perrysburg-OH.html.
6. Griffiths Jr., *Two Years in the New Settlements*.
7. The WPA Guide for Ohio is more circumspect, allowing only that the line's builder simply named it after himself; see United States, Works Progress Administration, *Ohio Guide*, 364.
8. The basis for much of the story about Flagler comes from Sidney Walter Martin, *Henry Flagler: Visionary of the Gilded Age* (Lake Buena Vista, FL: Tailored Tours Publications, 1998).
9. Other enterprising Flaglers also pop up in American entrepreneurship. John and Harvey Flagler started a small metalworking plant in East Boston in 1868 to make tubes for boilers. They then moved their business to Pittsburgh as the iron and steel business grew there. At first, they made most tubing and pipes of wrought iron, but after 1887 the Flaglers concentrated on steel fabrication. Their National Tube Works Co. became the largest part of a consolidated National Tube Co. in 1899, which, in turn, became part of US Steel in 1901. See Douglas A. Fisher, *Steel Serves the Nation: The Fifty-Year Story of United States Steel, 1901–1951* (New York: United States Steel, 1951), 172.
10. Les Standiford, *Last Train to Paradise: Henry Flagler and the Spectacular Rise and Fall of the Railroad that Crossed the Ocean* (New York: Broadway Books, 2002), 37.
11. Ibid., 39–41.
12. An interesting document that shows the early development of northeastern Florida is a guidebook issued by a regional railroad for the 1878–79 season promoting the area for "the tourist, invalid, and immigrant." See Savannah, Florida and Westward Railway Company, *Guide to Southern Georgia and Florida* [etc.], 5th ed. (Savannah, GA: Morning News Steam Printing House, 1879), available online at
13. https://openlibrary.org/books/OL6952927M/Guide_to_southern_Georgia_and_Florida. The word "vacation" seems to have entered the vocabulary around the 1850s.
14. Standiford, *Last Train to Paradise*, 41–4.

15. An early railroad from Tallahassee, the Florida capital, to the Gulf Coast at St. Marks had been built in 1834, about three years after the first railroads had been built in Charleston, South Carolina, Baltimore and Albany.
16. By the time Flagler arrived in Florida, virtually every mile of track in the state dated from before the Civil War, which had started twenty-two years earlier.
17. According to A.K. Sandoval-Strausz, *Hotel, An American History* (New Haven, CT: Yale University Press, 2007), 6, "The word *hotel* seems to have first entered the English language in the 1760s as a borrowing of the French term hotel, which referred not to a travel accommodation but rather to the residence of a nobleman, a town hall or any other large, official building. In England, the term signified a guest house of particularly high quality."
18. Flagler's decades-long project has been described as "the most elaborate example of hotel-driven settlement. Martin, 117.
19. Allman (*Finding Florida*, 317–18) notes that Ponce De Leon never landed in Florida looking for a fountain of youth, but the name was used as part of the myth-making that served tourism's interests. He's not impressed by that, but today such myths are endemic all over America.
20. Standiford, *Last Train to Paradise*, 46–7.
21. The hotel was favorably compared to the Palmer House in Chicago and the Palace in San Francisco; ibid., 48.
22. Much of the following paragraphs are based on Allman, *Finding Florida*, and Standiford, *Last Train to Paradise*.
23. Allman implies that Flagler dissipated his fortune in the Florida sands, but upon closer inspection it would seem that the value of his Standard Oil holdings increased faster than Flagler spent their proceeds. The focus of Standiford's book is on the building of the Overseas Railroad, completed in 1912, a year before Flagler died, and its destruction in the September 2, 1935, hurricane, said to be one of the most powerful to strike the United States.
24. Standiford claims Flagler also visited Cuba many times.p.71
25. Adams Express is now a closed-end equity investment fund, and has had no connection with the express business since the First World War.
26. A slave once had himself boxed and sent by Adams Express north to freedom.
27. Perhaps the best economic incentive came from the export of phosphate, used in fertilizer, via Plant's railroad and port; Allman, *Finding Florida*, 324–5.
28. Tampa, like St. Augustine, adopted a myth as a civic expression; in this case it was José Gaspar, a pirate who never existed. Many people have spent lots of time searching for Gaspar's buried treasure in the beaches and islands of the Gulf Coast. See ibid., 318–19.
29. He probably went there at the behest of William Brickell, who was also from Cleveland and had settled on the south side of the Miami River in 1871. Julia Tuttle later owned land on the north side of the river across from Brickell.
30. Standiford (*Last Train to Paradise*, 66) claims she bought 640 acres from the Biscayne Bay Company and that she turned over 420 acres to Flagler as an inducement to come to what was then Fort Dallas. Flagler had the town renamed.
31. It is part of the legend that Julia sent him some fresh flowers from the Miami area to remind him of her initial approach a year earlier.
32. The soldiers arrived in April 1898, and the war was over in August; Standiford, *Last Train to Paradise*, 68.
33. Maxine Feifer, *Tourism in History: From Imperial Rome to the Present* (New York: Stein and Day, 1985), 2. A more complex history of the terms "tour" and "tourist" is given in Marguerite S.

Shaffer, *See America First: Tourism and National Identity, 1880–1940* (Washington, DC: Smithsonian Institution Press, 2001), 11.

34. Stephen L.J. Smith, "The Measurement of Global Tourism: Old Debates, New Consensus, and Continuing Challenges," in *A Companion to Tourism*, ed. Alan A. Lew, C. Michael Hall, and Allan M. Williams (Oxford, UK: Blackwell, 2004), 25.
35. Ibid., 25-26. Smith notes many other references to "tourist" in the 1780–1820 period, when it finally became part of everyday language.
36. Ibid., 26.
37. Ibid., 25–35. See also Keith G. Debbage and Dmitri Ioannides, "The Cultural Turn? Toward a More Critical Economic Geography of Tourism," in Lew, Hall, and Williams, *Companion to Tourism*, 99–101. (99-109)
38. The next paragraphs are based on stories of different types of tourists in Feifer, *Tourism in History*.
39. Smith, "Measurement of Global Tourism," 26.
40. The Reformation led to the forbidding of trips to "holy wells," but then trips to health-giving waters and spas, a purely secular pursuit, became popular; see John Sterngass, *First Resorts: Pursuing Pleasure at Saratoga Springs, Newport, and Coney Island* (Baltimore: Johns Hopkins University Press, 2001), 7.
41. Shaffer, *See America First*.
42. See Feifer, *Tourism in History*, chaps 4–5.
43. Christopher Klein, "Tracing Washington's steps," *Boston Globe*, November 8, 2014.
44. Thomas Furnham, "Washington's Southern Tour," *NCpedia*, 2006, available online at http://ncpedia.org/washingtons-southern-tour.
45. Klein, "Tracing Washington's steps."
46. See, for instance, Sandoval-Strausz, *Hotel*, 11–12.
47. T.H. Breen notes that Washington's diary comments read more like a travel guide of where to stay; see *George Washington's Journey* (New York: Simon & Schuster, 2016), 76–7. On the state of the roads, see 77–9.
48. America could not boast of the cultural attractions that Europe could offer, but in the 1820s there was a Romantic cultural upsurge that encompassed painters, such as the artists of the Hudson River School, and writers such as James Fennimore Cooper and Washington Irving, which might be seen as an alternative to French and Italian urban culture. See Shaffer, *See America First*, 13.
49. There was a hotel at the Falls before 1827, shortly after the completion of the Erie Canal; see Dona Brown, *Inventing New England: Regional Tourism in the Nineteenth Century* (Washington, DC: Smithsonian Institution Press, 1995), 15.
50. There were discoveries and some exploitation of other springs before Saratoga and Ballston, notably in Stafford Springs in Connecticut, Bristol in Pennsylvania, and Berkeley Springs in Virginia. Europeans had been frequenting mineral springs as a health cure for at least a century before this. See Aron, *Working at Play*, 17–20.
51. See Saratoga Springs, Heritage Area Visitor Center, "History of Saratoga" (Saratoga Springs, NY, 2017), available online at http://www.saratogaspringsvisitorcenter.com/about-saratoga-springs/history-of-saratoga.
52. Much of the early history of the area can be found in Nathaniel Bartlett Sylvester, *History of Saratoga County, New York* (Philadelphia: Everts and Ensign, 1878), available online at https://books.google.ca/books?id=j8spAQAAMAAJ&pg=PA506&lpg=PA506&dq=history+of+Saratoga+NY+as+a+spa&source=bl&ots=ev2Do5vyer&sig=hHw3-

0HDsGzH4vqqUW20_kmiZ4E&hl=en&sa=X&ved=0ahUKEwjG7ITCjrLJAhUCXR4KHUvRAC84ChDoAQglMAA#v=onepage&q=history%20of%20Saratoga%20NY%20as%20a%20spa&f=false. Another good survey of the early history is E.L. Allen, *An Analysis of the Principal Mineral Fountains at Saratoga Springs* (New York: Evans and Tousey, 1858), chaps 1–2, available online at https://books.google.ca/books?id=Fo08AAAAcAAJ&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false. A third history is William M. Stone, *Reminiscences of Saratoga and Ballston* (New York: R. Worthington, 1880), esp. chaps 6, 17, and 31, available online at http://www.saratoganygenweb.com/images/rFront.html.

53. Given the medical propensity of the time to blame many illnesses on "miasmas," the medicinal properties of mineral springs represented a reasonable way to get a "cure" for what ailed you; see Sterngass, *First Resorts*, 8–9.
54. Saratoga Springs, Heritage Area Visitor Center, "History of Saratoga"; see also Sylvester, *History of Saratoga County, New York.*
55. See Eben Putnam, *A History of the Putnam Family in England and America* (Salem, MA: Salem Press, 1891), 281–2.
56. Brown, *Inventing New England*, 27.
57. Sterngass (*First Resorts*, 1) suggests there were a thousand visitors at the beginning of the nineteenth century, rising to a hundred thousand at the century's end. He also notes (9) that Putnam started a second hotel in 1811, followed by three others, bigger and better, over the next decade.
58. Ibid., 11–12.
59. The Harper brothers apparently knew Davison in New York City; they went on to publish books as well as *Harper's Magazine*.
60. Brown, *Inventing New England*, 28.
61. In June 1833, Erastus Corning was elected director and vice-president of the Mohawk and Hudson and in August he became director and president of the Utica and Schenectady line; see Irene D. Neu, *Erastus Corning: Merchant and Financier, 1794–1872* (Ithaca, NY: Cornell University Press, 1960), 30.
62. A rough estimate of a non-farm wage in the 1820–32 period is $1 per day, so the trip to Saratoga Springs would cost somewhat more than a week's wages for a New York City worker, less for a storekeeper or medical doctor. Today, a flight from New York City to Orlando might cost $200, about an average day's wage. All in, the flight might take about a third the time needed for our Saratoga-bound traveler to reach his destination.
63. Aron notes in her Introduction that her book "charts the democratization of vacationing"; see *Working at Play*, 4.
64. Brown, *Inventing New England*, 37.
65. Ibid.
66. Quoted in Aron, *Working at Play*, 26.
67. Brown, *Inventing New England*, 35–6.
68. Quoted in Aron, *Working at Play*, 30.
69. Michael Berkowitz, "A 'New Deal' for Leisure: Making Mass Tourism during the Great Depression," in *Being Elsewhere: Tourism, Consumer Culture, and Identity in Modern Europe and North America*, ed. Shelley Baranowski and Ellen Furlough (Ann Arbor: University of Michigan Press, 2001), 187–93.
70. The proportion today is around 45 percent.

71. Mike Crang, "Cultural Geographies of Tourism," in Lew, Hall, and Williams, *Companion to Tourism*, 74–5.

Chapter 11

1. J.S. Holliday, "Foreword," in Phillip L. Fradkin, *Stagecoach: Wells Fargo and the American West* (New York: Free Press, 2002), ix. Holliday also notes that "these men entrusted Wells Fargo to deliver money — bills of exchange — to their families in the eastern states, money gained from who-knew-what enterprise" (x).
2. Quoted in Roscoe P. Conkling and Margaret B. Conkling, *The Butterfield Overland Mail, 1857–1869* (Glendale, CA: Arthur H. Clark, 1947), Vol.1., 7. Conkling apparently was no relation to his namesake, a famous politician in the Civil War era.
3. Quoted in "John Willys Facts," *Your Dictionary* (2010), available online at http://biography.yourdictionary.com/john-willys.
4. John Carroll, *Classic Jeeps: The Jeep from World War II to the Present Day* (Osceola, WI: MBI Publishing, 2000), 15.
5. Paul Ingrassia, *Engines of Change: The History of the American Dream in Fifteen Cars* (New York: Simon & Schuster, 2012), 268.
6. George Cantor, *Old Roads of the Midwest* (Ann Arbor: University of Michigan Press, 1997), 30.
7. Rick Martin, "Lewis Downing," *Find a Grave*, July 13, 2013, available online at http://www.findagrave.com/cgi-bin/fg.cgi?page=gr&GRid=113733751.
8. Janice Brown, "New Hampshire's Famous Concord Coach and the Abbot-Downing Company," *Cow Hampshire: New Hampshire's History Blog*, June 10, 2008, available online at http://www.cowhampshireblog.com/2008/06/10/new-hampshires-famous-concord-coach/.
9. "The Concord Coach," *Concord Historical Society* (2017), available online at http://www.concordhistoricalsociety.org/the-concord-coach/. See also Fradkin (*Stagecoach*, 44–7), who calls them "the Rolls-Royces of Stagecoaches." Given the rough roads of the 1800s and the isolated repair facilities, they had to be. A Concord coach in the Wells Fargo museum in Phoenix could sit (tightly) three across facing forward and back, with a cushioned bench in the middle. All told, the maximum number of passengers who could be crowded aboard, inside and outside, was eighteen; how they all stayed on is a mystery to me.
10. Fradkin, *Stagecoach*, 44.
11. Brown, "New Hampshire's Famous Concord Coach."
12. Wells Fargo generally paid $1,200 for a coach, plus delivery.
13. Fradkin, *Stagecoach*, 81 The company disposed of them at a serious loss a year or so later as it miscalculated the effect of the newly completed railroad to California on its transcontinental business.
14. The company, under new ownership, tried to build truck bodies, but went out of business in 1927. Its assets were bought up by the Wells Fargo Bank, which has used the stagecoach design as a trademark ever since (see ibid., 47). To keep control of the iconic logo, the Abbot-Downing Company was transformed into a financial services company; it exists today as an ultra-high-wealth management subsidiary owned by Wells Fargo.

15. Frank R. Root and William Elsey Connelley, *The Overland Stage to California: Personal Reminiscences and Authentic History of the Great Overland Stage Line and Pony Express from the Missouri River to the Pacific Ocean* (Topeka, KS: Crane & Co., 1901), 1–7; most of the story in the following paragraphs is derived from this account.
16. Ibid., 1.
17. The attempt to develop a mail route by sea predated the acquisition of California: a project to provide mail service to settlers in Oregon was proposed to Congress in 1846 (Conkling and Conkling, *Butterfield Overland Mail*, 57).
18. These are collected in J.S. Holliday, *The World Rushed In: The California Gold Rush Experience* (New York: Simon & Schuster, 1981); see also Paula Mitchell Marks, *Precious Dust: The True Saga of the Western Gold Rushes* (New York: HarperCollins, 1995), chaps 2–4.
19. This number did not include those who went by sea. The 1850 census showed that, of 93,000 residents, 86,000 were male and only 7,000 were female; see Stephen E. Ambrose, *Nothing Like It in the World: The Men Who Built the Transcontinental Railroad, 1863-69* (New York: Simon & Schuster, 2000), 53–4.
20. In 1854, James Gadsden, a Southern railroad businessman and then-ambassador to Mexico, pressured the Mexican government to sell a piece of the New Mexico and Arizona desert to the United States. The Gadsden Purchase was desired, as the post–Mexican War border made the Gila River the boundary, and its headwaters and part of its route lay in a tangled mountainous area, making it impossible to construct a railroad along its northern bank.
21. Butterfield never used his name to identify the Overland Mail Company, but authors and mythmakers have enshrined the "Butterfield Stage Lines" in Western history, ignoring this detail and propelling the Butterfield stage past its brief, three-year existence, which ended in 1861, into future decades, giving John Butterfield a kind of immortality.
22. Preparations took eight months. Fifteen hundred horses and mules and a hundred coaches and wagons were used. Corrals and station houses also had to be built and men employed. See Waterman L. Ormsby, *The Butterfield Overland Mail* (1858, reprinted San Marino, CA: Huntington Library, 1942, 7th printing, 1972), 95–6.
23. Butterfield personally designed the Celerity wagon, one hundred of which were built in Albany and Troy, New York. Concord stagecoaches were used in Missouri and Arkansas, where roads and bridges generally existed, but the Celerity wagons were used west of Fort Smith because the difficult conditions, such as sandy fords and rough trails, could not accommodate the heavier, and more comfortable Concord Coach, which were used on only about a third of the total trip. A good source on the difference between these coaches and wagons is Gerald T. Ahnert, "Butterfield Overland Mail Company Stagecoaches and Stage (Celerity) Wagons Used on the Southern Trail, 1858–1861" (Syracuse, NY, 2013), available online at http://www.parks.ca.gov/pages/22491/files/butterfield_overland_mail_company_stagecoaches_and_stage_wagons_used_on_southern_trail_1858-1861_gerald_ahnert.pdf. See also Conkling and Conkling, *Butterfield Overland Mail*, 131–5.
24. Marshall Trimble, *Arizona: A Cavalcade of History* (Tucson, AZ: Treasure Chest Publications, 1989), 98.
25. It was a six-year contract at $600,000 per year; Ormsby, *Butterfield Overland Mail*, xi.
26. Trimble, *Arizona*, 98, 100.
27. The fare was raised shortly after the beginning of service to $200, but then reduced to the final fare of $150; Ormsby, *Butterfield Overland Mail*, xiv.
28. Two San Francisco reporters went east; ibid., xiii.

29. Root and Connelley, *Overland Stage to California*, 13.
30. Waterman L. Ormsby was the reporter sent westward from St. Louis on the first run. Eight articles of his were published by the *New York Herald* between September 26 and November 19, 1858. Ormsby, twenty-three years old, returned by the Panama route.
31. Ormsby (*Butterfield Overland Mail*, 80) commented: 'In Messilla [*sic*] city…a few speculating Yankees live here and are making fortunes rapidly by their enterprise in keeping stores. They get what prices they please."
32. A present-day attempt to identify the exact route the Overland Mail wagons took through Arizona is the subject of Gerald T. Anhert, *The Butterfield Trail and Overland Mail Company in Arizona, 1858–1861* (Canastota, NY: Canastota Publishing, 2011).
33. The Salton Sea was created by the Colorado River, which flooded, broke through its banks, and inundated a large area between 1905 and 1907; see http://saltonseamuseum.org/salton_sea_history.html.
34. In one rough desert patch of road, Ormsby (*Butterfield Overland Mail*, 110) heard the driver proclaim, "If God ever pronounced this part of the earth [when He created it] good, it was more than man ever did."
35. One of the most celebrated of the stagecoach drivers in the West of the 1850s and '60s was Charlotte "Charley" Parkhurst. Charlotte was born in Lebanon, New Hampshire, in 1812 and was abandoned by her parents when a child. Escaping from an orphanage in boys' clothes, Charley got a job as a stable hand. She moved to California during the gold rush and drove a stagecoach for two decades. Charley also bought a farm and worked with horses, occasionally finding work as a lumberjack in the winter. "He" was also known as "One-eye Charley" and "Cockeyed Charley." Charley is said to have been the first woman of record to voted for president, in 1868. When Charley died in 1880, from either cancer or rheumatism, it was discovered that "he" was really Charlotte. She is buried in Watsonville, California. See "Charley Parkhurst," *Find a Grave*, November 4, 1998, available online at http://www.findagrave.com/cgi-bin/fg.cgi?page=gr&GRid=3818. See also see Fradkin, *Stagecoach*, 59–61.
36. See, for instance, J.V. Frederick, *Ben Holladay: The Stagecoach King* (Lincoln: University of Nebraska Press, 1989).
37. The Post Office was probably the one part of the federal government with which most Americans of the time had some contact. On the frontier, the federal land office might be another, but little else out of Washington affected daily lives — no income tax, almost no national roads, no national parks, and so on. As such, postmaster appointments and carrier contracts were rife with patronage and delivery problems.
38. Wells had two partners who were his financial backers, George Pomeroy and Crawford Livingston, both prominent in upstate New York business affairs.
39. The 1840s was a time of crisis in the Post Office, not just because of competition from businessmen like Wells. Reforms led to lower postage rates and the introduction of the postage stamp, a British invention. See Winifred Gallagher, *How the Post Office Created America* (New York: Penguin, 2016), chap. 5.
40. Fargo had been involved in the Auburn and Syracuse Railroad, which was rolled into Corning's New York Central about that time.
41. His father came from Massachusetts, where he claimed that fifty-eight members of his extended family had fought in the Revolution. See also Conkling and Conkling, *Butterfield Overland Mail*, 27.

42. As soon as he married Malinda Baker, he set her up running a boardinghouse to supplement his stage business; ibid., 30.
43. Fradkin, *Stagecoach*, 2–3.
44. Ibid., 2. Not surprisingly, in addition to the mail, the Overland Mail Company's coaches and wagons carried Wells Fargo pouches and bags.
45. As Henry Wells noted about Butterfield's character: "All of the profanity that one head could hold, or one tongue utter, was used to express his friendship toward me and Fargo"; quoted in ibid., 7.
46. According to Conkling and Conkling (*Butterfield Overland Mail*, 39), he had a physical breakdown in 1860, requiring 2 years for him to recover. He returned to his home in Utica NY, where he became the Mayor in 1865 (He had been mayor in the 1850s as well.) and died in 1869.
47. California law at the time prohibited banking, but provided nothing in the way of enforcement (Fradkin, *Stagecoach*, 5–6). One of the early bankers was a retired Army officer, William T. Sherman, who eventually returned to the Army during the Civil War and, as we know, gained great fame.
48. The driver was accompanied by a guard armed with a shotgun. To this day, "riding shotgun" is American slang for sitting in an auto alongside and to the right of the driver. On a visit to a Wells Fargo Museum in Phoenix, I saw an example of the wood-and-iron strongboxes built by J.Y. Ayer, a Maine man, in San Francisco for the express business. They held up to 150 pounds of gold or silver.
49. Fradkin, *Stagecoach*, 71–5.
50. Wells retired in 1868, leaving the management to Fargo. Fargo, North Dakota, is named after him. In order to squeeze Wells Fargo, the Pacific Express Company was but a dummy corporation set up by the Big Four. This was not atypical of railroad business practices in 1870. See ibid., 85–6, 158–61.
51. Today the Rose-Hulman Institute of Technology is one of the best engineering schools in the country.
52. Much of the following detail on Cox comes from Jim Donnelly, "Claude E. Cox," *Hemmings*, November 2008, available online at http://www.hemmings.com/magazine/hcc/2008/11/Claude-E--Cox/1718400.html; and Royal Feltner, *History of Early American Auto Industry, 1891–1929* (Amesbury, MA, n.d.), chap. 12, available online at http://www.earlyamericanautomobiles.com/americanautomobiles12.htm. See also Mike McCormick, *Terre Haute: Queen City of the Wabash* (Mount Pleasant, SC: Arcadia Publishing, 2005), 107.
53. For a fascinating copy of the Standard Wheel sales brochure for the 1904 Overland, see "Standard Wheel Company, Manufacturer of the Overland Runabout: The Original 'There and Back," Indiana State Library, Digital Collections, available online at http://cdm16066.contentdm.oclc.org/cdm/ref/collection/p16066coll6/id/637.
54. Standard Wheel eventually closed its doors in 1923; see "Historical perspectives: Standard Wheel Co. shuts down manufacturing facilities in 1923," Wabash Valley Visions and Voices Digital Memory Project, available online at http://visions.indstate.edu:8888/cdm/ref/collection/vcpl/id/10385.
55. In 1896, Pope got into the business of manufacturing electric cars, then moved into "steamers" and finally, in 1903, into gasoline-powered vehicles. He bought a failing company in Toledo and renamed his car the Pope-Toledo. It was very popular for a while, but Pope was hit by the Crash of 1907 and went bankrupt.

56. The Willys biography exists in a number of slightly different variations, but a good version is "John Willys Facts."
57. Keith Sward, *The Legend of Henry Ford* (New York: Atheneum, 1975), 6.
58. "John Willys Facts."
59. John Simkin, "Horses and Mules," *Spartacus Educational*, September 1997, available online at http://spartacus-educational.com/FWWhorses.htm.
60. William Scheck, "World War I: American Expeditionary Forces Get Motorized Transport," *Military History* (June 1997), available online at http://www.historynet.com/world-war-i-american-expeditionary-forces-get-motorized-transportation.htm.
61. For the general story, see, for example, Robert C. Ackerson, *Jeep: The 50-Year History* (Newbury Park, CA: Haynes, 1988). Independent consulting engineer Karl Probst is said to have designed the basic vehicle for American Bantam in just five days; Ingrassia, *Engines of Change*, 269.
62. As John Carroll (*Classic Jeeps*, 16) notes, "[i]t might be true that Karl Probst, who worked for Bantam, devised…the Jeep, and it might be equally true that Ford's capacity…ensured massive and standardized production, but history records that it was Willys who made the 'Jeep'."
63. Carroll (ibid., 25) quotes a 1941 *Popular Science* article by David Stern: "The 'bantams,' also known to the soldiers as 'beetle bugs,' jeeps and by other similar names, are stocky little vehicles only recently adopted for army use." "Eugene the Jeep" was the name of an animal with magical capabilities in the popular Popeye comic strip of the late 1930s. Although attractive to the public, army slang at the time used the word to mean foolish, awkward, or silly.
64. The 1943 Rifkind Report, copies of which are still bought by jeep enthusiasts, noted that the General Purpose vehicle project was the "most spectacular accomplishment" of wartime procurement (Ingrassia, *Engines of Change*, 287). My own feeling, however, is that the Manhattan Project, which was unknown to either civilian or military bodies until near the end of the war in 1945, was more spectacular.
65. The Jeep name was trademarked by Willys-Overland in 1941. By the end of the war, the Jeep was second only to the Model T in name brand recognition; see Ackerson, *Jeep*, 24.
66. Jeep was later controlled by American Motors, then Renault, Chrysler, Daimler, Cerberus Capital Management, and finally Fiat.

Chapter 12

1. Detroit *News-Tribune*, February 4, 1900.
2. Quoted in Steven Watts, *The People's Tycoon: Henry Ford and the American Century* (New York: Vintage, 2005), 269. This was a comment on Ford's halting testimony in a suit against the *Chicago Tribune.*
3. Henry Ford, speaking to a *Fortune* interviewer, 1933, quoted in Roger Burlingame, *Henry Ford: A Great Life in Brief* (New York: Alfred A. Knopf, 1955), 130.
4. For instance, Ford is often credited with the invention of the assembly line, but a careful study of its inception shows that it evolved in fits and starts, coming from production pressure on the shop floor. Ford can be credited with approving the innovation, but to have "invented" it would have

required him to have been familiar with a lot of technical literature of the time. He wasn't, but he knew a good thing when he saw it.

5. The largest group of Protestant Irish who came to America were Presbyterians from Ulster and were a mix of Scots and Irish. A smaller group, the Anglo-Irish, were descended from English soldiers who went to Ireland at the behest of Queen Elizabeth I and stayed on to intermarry with the Irish, while retaining their Anglican religious allegiance. The Anglo-Irish Fords came from the area around the southern port of Cork, and left for America when evicted from their meager household. Once in Michigan, they naturally gravitated toward the Anglican, or Episcopalian, church.
6. Her real last name was Litogot. In later years, Henry spent a lot of money trying to trace the provenance of her family name, with little success. He finally had to be satisfied by the suspicion that she was of Flemish or Dutch ancestry. An alternative explanation is that her family was Pennsylvania "Dutch" — a corruption of *Deutsch*, the German word for themselves.
7. It appears that Henry was more attached to his mother than to his father, which might explain why he cast his father in his remembrances as a kind of opposition figure; see Watts, *People's Tycoon*, 8–9.
8. Burlingame, *Henry Ford*, 19.
9. This ancestor of today's truck was a steam engine mounted on the front of a long platform and supported by four large wheels. Dating to the first half of the nineteenth century, it was used for haulage as well as for pulling large stumps out of the ground and other heavy agricultural tasks.
10. Watts, *People's Tycoon*, 23.
11. Ibid., 23–6. Sorting through all the myths, legends, and history related to Ford is a problem; in later years, Ford liked to dramatize his life.
12. Ibid., 29. The Otto-cycle engine was devised in 1876 by Nikolaus Otto, a German mechanic. Its principles underlie the standard gasoline engine used in automobiles.
13. The primary device that inspired the automobile as a consumer item was the "safety" bicycle. It had a certain mechanical complexity, required interchangeable parts in order to be built affordably, and the transition to motor power (motorcycle) with the internal combustion engine was obvious. Bicycles were very popular in the immediate pre-automobile times. See Rudi Volti, *Cars and Culture: The Life Story of a Technology* (Baltimore: Johns Hopkins University Press, 2004), 2.
14. Ford had built a workable engine around Christmas 1893, but he continued to refine it for the next two years. He was not the first to drive a "horseless carriage" around town; three months earlier, Charles B. King had driven his motorized wagon in the streets of Detroit, but King, who had diverse interests, such as pneumatic drills and marine engines, never figured as one of the pioneers of the industry. See George S. May, *A Most Unique Machine: The Michigan Origins of the American Automobile Industry* (Grand Rapids, MI: Eerdmans, 1975), 15–39.
15. Between 1900 and 1910, Edison did try to develop a powerful battery for automobiles. He came out with one model in 1904, but it proved too weak and he stopped production. By 1910, he thought he had overcome its problems, but by then the market for gasoline engines was developed and sales were relegated to delivery vehicles and the like. See Thomas E. Bonsall, *More than They Promised: The Studebaker Story* (Stanford, CA: Stanford University Press, 2000), 48–53.
16. Even though the company was capitalized at $15,000, Ford ran up bills totaling $86,000 getting the new model built. Perfectionism took both time and money — things that new companies lacked then as now.
17. Auto racing was quite popular and naturally lent itself, as it still does today, to those who wanted profile for marketing their vehicles; see Volti, *Cars and Culture*, 13–14.

18. Alexander Winton was a Scotsman who emigrated to Cleveland and became one of the earliest entrepreneurs in America to manufacture a number of automobiles. One of his 1903 cars was the first to be driven across the country from San Francisco to New York City. See Thomas A. Saal and Bernard F. Golias, *Famous but Forgotten: The Story of Alexander Winton, Pioneer Industrialist* (Cleveland: Golias Publications, 1997).
19. Ford learned at least one valuable lesson from Leland: the importance of machining automobile parts so they were interchangeable — key to the concept of the assembly line.
20. A long major boulevard in Tucson, Arizona, is called Speedway, from a time when it was a horse-racing track and then adapted for automobiles when Barney Oldfield took on all comers in a race along it and into the desert in the early 1900s.
21. The racer Oldfield drove was named "999," a designation Ford apparently appropriated from a sight he had seen at the 1893 Chicago World's Fair: the New York Central's new high-speed locomotive; see May, *Most Unique Machine*, 19. Ford also saw his first "Otto-cycle" internal combustion engine there; see Robert W. Rydell, "World's Columbian Exposition," *Encyclopedia of Chicago* (Chicago: Chicago Historical Society, 2005), available online at http://www.encyclopedia.chicagohistory.org/pages/1386.html.
22. Burlingame, *Henry Ford*, 40; an Olds runabout at the time sold for $650.
23. Watts, *People's Tycoon*, 82.
24. Peter Collier and David Horowitz, The Fords: An American Epic, (New York: Summit Books, 1987), 49.
25. It sold for about a third of the price of most other vehicles in the market.
26. It was a handy vehicle. Though discouraged by the company, accessories were made available that adapted the Model T to be used to plow a garden, saw wood, or power a washing machine; see Volti, *Cars and Culture*, 28.
27. Manny Howard, "The Pickup: A Love Story," *New York Times Magazine*, September 28, 2003, 62.
28. Lindsay Brooke, "Mr. Ford's T: Mobility with versatility," *New York Times*, July 20, 2008.
29. Auto sales went from 4,192 units in 1900 to 63,500 in 1908 to 3.6 million in 1923; Volti, *Cars and Culture*, 18, 22.
30. Burlingame, *Henry Ford*, 73.
31. Collier and Horowitz, 59.
32. Taylor's fame predated the use of his ideas by Ford management by almost a decade, but his most influential book, *The Principles of Scientific Management*, was published in 1911, just as the engineers were experimenting with the assembly line.
33. Watts, *People's Tycoon*, 142–7.
34. Merle Fainsod, *Smolensk under Soviet Rule* (Cambridge, MA: Harvard University Press, 1958).
35. See Watts, *People's Tycoon*, chaps 10–11.
36. Ibid., 178.
37. James Couzens, one of Ford's closest associates, insisted that high wages were essential to the survival of business (ibid., 188).
38. Douglas Coupland, *Microserfs* (New York: HarperCollins, 1995).
39. Watts, *People's Tycoon*, 276; no one else could match this price.
40. By the late teens, Ford was producing the Model T with different configurations and accessories.
41. Some prices for parts doubled after the war began in 1914; see Allan Nevins and Frank Ernest Hill, *Ford: Expansion and Challenge, 1915–1933* (New York: Charles Scribner's Sons, 1957), 201.

42. William F. Nowlin, *The Bark-Covered House, or, Back in the Woods Again* (1876, reprinted Ann Arbor. MI: University Microfilms, 1966). Nowlin's father had purchased land a mile or so south of Dearbornville.
43. The natural circumference of growth around Detroit is cut almost in half by the Detroit River and the Canadian border, so that city growth was concentrated to the north and west.
44. Nevins and Hill, *Ford*, 200.
45. Most of this section on The Rouge is based on ibid., chap. 8.
46. Watts, *People's Tycoon*, 281.
47. Apparently, as early as 1910 Ford management discovered that the parts-makers of the day could not keep up with either the quantity or quality the company demanded, so Ford increasingly had to make its own parts (Burlingame, *Henry Ford*, 77).
48. The term "floorboard" comes from when the floor of an automobile such as the Model T was made from wood.
49. I had some experience in the construction of coke ovens and steelworks when, in the Nova Scotia government in the 1980s, I was involved in the last blast furnace ever built, a futile effort to forestall the end of steel-making on Cape Breton Island.
50. Thomas P. Hughes, *American Genesis: A Century of Invention and Technological Enthusiasm, 1870–1970* (Chicago: University of Chicago Press, 1989), 264.
51. Ibid., 275.

Chapter 13

1. Quoted in May, *Most Unique Machine*, 177–8.
2. Quoted in Lawrence R. Gustin, *Billy Durant: The Creator of General Motors* (Grand Rapids, MI: Wm. Eerdmans, 1973), 72.
3. Quoted in *Forbes Quotes: Thought on the Business of Life*, available online at http://www.forbes.com/quotes/331/.
4. This trail led from the Green Bay area in Wisconsin around Lake Michigan to Detroit in the 1700s. Fr. Gabriel Richard, the founder of the University of Michigan and a territorial legislator in the 1820s, prevailed upon the territorial government to allocate funds to restore the trail inside Michigan. See Writers' Program of the Work Projects Administration (WPA), Michigan: A Guide to the Wolverine State (New York Oxford University Press, 1941) 387; see also Jon Milan, *Old Chicago Road: US 12 from Detroit to Chicago* (Charleston, SC: Arcadia Publishing, 2011).
5. WPA, 395.
6. All his life, he preferred to be called Billy, rather than Mr. Durant or William.
7. When Crapo arrived in Flint from New Bedford in 1856, he had already purchased twelve thousand acres of good timber; see Alice Lethbridge, *Through the Years in Genesee: An Illustrated History* (Northside, CA: Windsor Publishing, 1985), 50.
8. Ibid., 9–10.
9. Lawrence R. Gustin, ed., *Picture History of Flint: The Flint Journal Centennial, 1876–1976* (Grand Rapids, MI: William B. Eerdmans, 1976), 13.
10. Lethbridge, *Through the Years in Genesee*, 13–44.

11. Durant was no stranger to the bank manager, having knocked on Robert Whaley's door at home that evening, only to be told to see him at the bank in the morning. Whaley loaned him the money, and went on to finance much of Durant's subsequent career. See Lania Rocha, "Recalling an Era When Flint Made the World Go Round," *Swartz Creek View*, February 25, 2010, available online at http://swartzcreekview.mihomepaper.com/news/2015-02-19/News/Recalling_an_era_when_Flint_made_the_world_go_roun.html; see also Burton W. Folsom, Jr, *Empire Builders: How Michigan Entrepreneurs Helped Make America Great* (Traverse City, MI: Rhodes & Easton, 1998), 38–9.
12. There is a photo of 1900 model Durant-Dort buggies under a fair tent displayed in the same fashion used a century later to display automobiles at auto shows in Michael W.R. Davis, *General Motors: A Photographic History* (Charleston, SC: Arcadia Publishing, 1999), 9.
13. "Dort was also an accomplished cellist and played in the Flint Symphony Orchestra. His home reflected his interest in music because it had the first Flint residential pipe organ installed," Len Thomas, "East Kearsley: A Street of Dreams" (slide show and presentation, Flint, MI,2016. A bypass around Flint to the east is called Dort Highway, though its original purpose has been assumed by I-475, which cuts the city in two from north to south.
14. Gustin, *Picture History of Flint*, 79.
15. People moved both ways along the railroad. At one point, young Thomas Edison's career as a telegraph operator from Port Huron took him up the Grand Trunk line to a job in Ontario.
16. Their plant was designated in 1975 as a national historic site; see Gustin, *Picture History of Flint*, 91.
17. George Selden was a Yankee attorney who lived in Rochester, New York, and applied for a patent on an automobile powered by a gasoline engine in 1879, years before a practical car was developed. He cleverly kept applying for revisions to his application until the late 1890s, when such cars were coming into vogue. Then he activated the issuing process and began to sue auto-makers who did not pay him for the rights to his idea. He was, perhaps, the ultimate "patent troll." See, for instance, William Greenleaf, *Monopoly on Wheels: Henry Ford and the Selden Automobile Patent* (1960; reprinted Detroit: Wayne State University Press, 2011).
18. The company produced its last buggies in 1917; Gustin, *Picture History of Flint*, 180.
19. By the end of 1904, Durant had sold almost 1,200 vehicles before the new Buick Company had produced one; ibid., 71.
20. See, for instance, George S. May, *R.E. Olds: Auto Industry Pioneer* (Grand Rapids, MI: Eerdmans, 1977), esp. chap. 7.
21. R.E. Olds, in Lansing, Michigan, had been the first to use a kind of assembly line to mass-produce cars. He created the REO firm after being forced out of his own firm by unhappy investors. The first firm made the Oldsmobile, which became part of GM. Likewise, Henry Ford was forced out of the Ford Motor Company, created the Detroit Automobile Company, and then managed to reacquire his own name, renaming his second company the Ford Motor Company. See Davis, *General Motors*, 13–16.
22. When Durant proposed this structure, Benjamin Briscoe, whose company made the Maxwell auto, commented: "Durant is for States' Rights. I am for a Union"; see Gustin, *Picture History of Flint*, 99.
23. In 1908, Henry Leland was president of Cadillac. When he decided to join GM, he brought more than just a reliable, luxury car. He was determined that the interchangeability of parts was of paramount importance in mass production, and insisted on being able to build cars in quantity and cheaply, if the parts were rigidly standardized. This became a central difference between American

and European autos, and the respective success of their industries in the decades to come. See Davis, *General Motors*, 9; see also Alfred P. Sloan Jr, *My Years with General Motors* (New York: Doubleday, 1963), 20–1.

24. The change required retiring the open-cab Oakland in favor of the enclosed-cab Pontiac, as well as changing the name of the subsidiary; Davis, *General Motors*, 38.
25. The rank, by order of cost and associated prestige, was Cadillac, Buick, Oldsmobile, Pontiac, and Chevrolet. My father drove Oldsmobiles from 1940 until around 1990. He would trade in his car about every two years.
26. Sloan, *My Years with General Motors*, 7–8. To run GM, the bankers then employed Charles Nash, later to begin his own Nash Motors, and Walter Chrysler, later to begin Chrysler Corporation (8–9).
27. Durant had purchased a number of truck companies in his years at GM, and the company created the GMC logo in 1911 to identify them; Davis, *General Motors*, 20.
28. Sloan, *My Years with General Motors*, 249. Charles F. Kettering began his automotive research work in Dayton, Ohio, about the same time. "Boss" Kettering would come to GM later, and lead its technological development.
29. As a personal aside, I grew up living on Dupont St. in Flint, and spent five summers working in a variety of jobs in GM plants, from assembly lines to engineering labs to being a porcelain "powder monkey" at AC Spark Plug.
30. By this time, Ford was outselling GM by almost ten to one, though not in profitability.
31. Gustin, *Picture History of Flint*, 255.
32. Ibid., 251–2.
33. Sloan provides a bit of an autobiography in *My Years with General Motors*, 17–24.
34. Ibid., 22–3.
35. Gustin, *Picture History of Flint*, 182.
36. Quoted in William Pelfrey, *Billy, Alfred, and General Motors: The Story of Two Unique Men, a Legendary Company, and a Remarkable Time in American History* (New York: AMACOM, 2006), 13.
37. Ibid., 14.
38. A more complex and sophisticated approach to this material is found in Chandler, *Visible Hand*.
39. Ibid., 450.
40. He also married into the du Pont clan.
41. Sloan, *My Years with General Motors*, chap. 23. Pelfrey (*Billy, Alfred, and General Motors*, 20) notes that Sloan had this idea as early as 1919.
42. Peter F. Drucker, *Classic Drucker: Essential Wisdom of Peter Drucker from the Pages of* Harvard Business Review (Cambridge, MA: Harvard Business Press, 2006), 25.
43. Ibid., 27.
44. The sit-down strikes grew to ten plants in a number of cities. After the GM strikes were settled, similar ones broke out in plants owned by other companies. See Byron Olsen and Joseph Cabadas, *The American Auto Factory* (St. Paul, MN: MBI Publishing, 2002), chap. 6.
45. Sloan, *My Years with General Motors*, chap. 17. See also James R. Beringer, *The Control Revolution: Technological and Economic Origins of the Information Society* (Cambridge, MA: Harvard University Press, 1986), 331.
46. Jan B. Young, *Tales of Studebaker: The Early Years* (Online: Lulu.com, 2011), 64. The "Morris Plan" was devised by Arthur J. Morris of Norfolk, Virginia, who created Fidelity Savings and Trust in 1910, which made consumer loans on the basis of personal references and the purchase by

the borrowers of weekly Installment Certificates that could be presented as proof of payment for the product.

47. Beringer, *Control Revolution*, 331.
48. Drucker, born in Vienna in 1909, left his native Austria for Germany in the 1920s, and left Germany in 1933, when Hitler took control of the country. His parents, though Christian, were of Jewish extraction, which was not acceptable to the Nazis. Drucker worked in Britain until 1937, when he and his wife moved to New York City. In the late 1980s, I had the opportunity of attending a two-day session with Professor Drucker atop the World Trade Center, and found him charming and alert and full of new ideas.
49. See Peter F. Drucker, *Concept of the Corporation* (1946; reprinted, with new preface and epilogue, New York: John Day, 1972).
50. Their expectations about what Drucker would say about GM were high. Just the training and retraining effort made by GM was enormous, involving 750,000 persons, a quarter of whom were women. That he focused on something different was a bitter pill, one expects.
51. The only real area where change has not come is in the standardization of whether the car should be set up for driving on the right side or the left side of the road. In terms of global population, about half of the people on the globe drive on the right and half on the left.
52. Davis, *General Motors*, 37.

Chapter 14

1. Quoted in J. Laurence Laughlin, *The History of Bimetallism in the United States*, 4th ed. (New York: D. Appleton, 1901), 11n3.
2. Quoted in Ambrose, *Nothing Like It in the World*, 93–4.
3. Quoted in Mary Turner Carriel, *The Life of Jonathan Baldwin Turner* (1911), 79, available online at http://www.archive.org/details/cu31924030583300. Carriel's biography of her father is an interesting story of the exertions and dangers of frontier Illinois life in the 1830s and on.
4. For the early history of Jackson and Jackson County, see *History of Jackson County, Michigan* (Chicago: Inter-State Publishing, 1881), 173–81, available online at https://archive.org/stream/historyofjackson00chic#page/n7/mode/2up; see also United States, Works Progress Administration, *Michigan: A Guide to the Wolverine State* (New York: Oxford University Press, 1941), 504–7.
5. A "Whig" in early eighteenth-century Britain was someone who supported the merchant and manufacturing interests over those of the landed gentry. In early nineteenth-century America, Whigs supported the interests of Northern manufacturers through tariffs, federal aid for infrastructure improvements, and encouragement of business development.
6. Interestingly, there seemed to be no prohibition on new immigrants voting, but the threatened elites of the time began to search for ways to inhibit the immigrant vote, especially in the cities. This is like immigration and racial concerns behind attempts today to prevent undocumented people from acquiring citizenship (and voting), as well as to raise the requirements for acceptable identification for voting. In short, this has been a perennial, though not unchallenged, aspect of American voting practice.

7. See, for instance, "Historical Insights: German Immigration in 1848," *Ancestry* (n.d.), available online at http://www.ancestry.com/historicalinsights/german-immigration-1848.
8. About a quarter of the party's membership would come from disaffected Northern Democrats. As one defecting Ohio Democrat said in 1854, "We have submitted to slavery long enough and must not stand for it any longer…..I am done catching negroes for the South"; see Eric Foner, *Free Soil, Free Labor, Free Men: The Ideology of the Republican Party before the Civil War* (New York: Oxford University Press, 1995), 157.
9. See A.F. Gilman, "The Origin of the Republican Party" (1914), available online at http://content.wisconsinhistory.org/cdm/ref/collection/tp/id/46363. Greeley's *New York Tribune* commented on the new party as early as March; Foner, *Free Soil*, 126–7n61.
10. David S. Heidler and Jeanne T. Heidler, *Henry Clay: The Essential American* (New York: Random House, 2010), 344.
11. In 1835, there were 584 banks in the country; see Howard Bodenhorn, *A History of Banking in Antebellum America* (New York: Cambridge University Press, 2000), 10.
12. For a more extensive and modern look at the Union and Confederate public financial systems, see Richard Franklin Bensel, *Yankee Leviathan: The Origins of Central State Authority in America, 1859–1877* (New York: Cambridge University Press, 1990), 167–81, and chap. 4.
13. See Gordon, *Empire of Wealth*, 190–5; Cooke was born in Sandusky, Ohio, of parents from New York and New England.
14. Henry Varnum Poor, *Money and Its Laws, Embracing a History of Monetary Theories and a History of the Currency of the United States* (New York: H.V. and H.W. Poor, 1877), 556–84. This might be true, but the overriding concern at the time was to make sure the government had mobilized the economy for war under its control, and it was unlikely to let private financiers dictate how fiercely or how long the Union's attempts to reunite the country might be acceptable. This was a break from the traditional practice of having private bankers underwrite long wars. See Ron Chernow, *The House of Morgan: An American Banking Dynasty and the Rise of Modern Finance* (New York: Atlantic Monthly Press, 1990), 23–7.
15. Friedman, *History of American Law*, 331.
16. See United States, Department of the Treasury, Bureau of Engraving and Printing, "U.S. Currency" (Washington, DC, n.d.), available online at http://www.moneyfactory.gov/uscurrency.html.
17. Foner, *Free Soil*, 17–19, 32–3.
18. Ibid., 230–1.
19. Most of today's citizenship rules and voting rules were implemented after World War I, in a nativist reaction to war refuges arriving in America.
20. Foner, *Free Soil*, 235.
21. Quoted in ibid., 27.
22. The question of whether chattel slavery was better, equivalent to, or worse than "wage slavery" has been debated since at least the French Revolution. The Transcendentalist, Orestes Bronson, wrote about it in the 1830s, as did abolitionists and slaveholders in the 1850s and Marxists in the nineteenth and twentieth centuries. In our own time, academic gadfly Noam Chomsky has also considered the similarities.
23. Slave owners were a minority of the white population in the South.
24. Foner, *Free Soil*, 234–5.
25. As witnessed by the popularity of the novel *Uncle Tom's Cabin* and imitators.

26. James T. DuBois and Gertrude S. Mathews, *Galusha A. Grow: Father of the Homestead Law* (Boston: Houghton Mifflin, 1917), available online at https://archive.org/details/galushaagrowfath00dubo.
27. A *Southern Homestead Act of 1866* provided for the confiscation of land owned by plantation owners who had been active for the Confederacy and its distribution to freed slaves.
28. Ironically, much of this route was used by thousands of pioneers moving to the Oregon country in the same period, as well as by the US Army expedition sent to put down what seemed like a Mormon rebellion in 1857.
29. The following brief biographies are based, in the first instance, upon material in Ambrose, *Nothing Like It in the World*, chaps 1–6.
30. See, for instance, Carl I. Wheat, "A Sketch of the Life of Theodore Judah," *California Historical Society Quarterly* 4, no. 3 (1925): 219–71.
31. His successor, Samuel Montague, came from Keene, New Hampshire.
32. Actually, there was no true transcontinental railroad, as passengers going east had to leave the Union Pacific at Omaha for another train going to Chicago, where they had to switch again to, say, the New York Central to finish in New York City. The first true transcontinental was a couple of decades away, when the Canadian Pacific completed its line from Vancouver on the Pacific to Saint John, New Brunswick, on the Atlantic.
33. The device Durant and his associate, Charles Francis Train, used was to purchase a Pennsylvania general-purpose shell corporation, then rename it obscurely as Crédit Mobilier; see Ambrose, *Nothing Like It in the World*, 92–4. This is exactly the same ploy John D. Rockefeller and others used in 1870 to create the scandalous South Improvement Corporation. Clearly, Rockefeller was inspired by the railroad men involved with him to try to monopolize the oil/kerosene industry.
34. For a biography of Casement, see G. Frederick Wright, *Representative Citizens of Ohio* (Cleveland: Memorial Publishing, 1917), available online at http://www.genealogybug.net/oh_biographies/1917index.shtml.
35. Ambrose, *Nothing Like It in the World*, 375–7.
36. See Epsilon Sigma Phi, "Land Grant Universities," available online at https://espnational.org/en/about-us/the-land-grant-universities.
37. A good history/survey of the land-grant schools is Association of Public Land-Grant Universities, *The Land-Grant Tradition* (Washington, DC: APLU, 2012), available online at http://www.aplu.org/library/the-land-grant-tradition/file.
38. See Cornell University, "Land Grant: Advancing Cornell as New York State's Land Grant University" (Ithaca, NY: Cornell University, n.d.), available online at https://landgrant.cornell.edu.
39. There are some 3 *trillion dollars* in US currency in use worldwide.
40. A century after Turner's famous dictum, it appeared that a number of counties in the West had reverted to "frontier" status due to rural depopulation.

Chapter 15

1. Quoted from Twain's *A Tramp Abroad*, in Andrew Beahrs, *Twain's Feast: Searching for America's Lost Foods* (New York: Penguin, 2010), 2.

2. Quoted in James C. Whorton, *Crusaders for Fitness: The History of American Health Reformers* (Princeton, NJ: Princeton University Press, 1982), 91.
3. Horace B. Powell, *The Original Has This Signature — W.K. Kellogg: The Story of a Pioneer in Industry and Philanthropy* (Englewood Cliffs, NJ: Prentice-Hall, 1956), 135. The winker was supposed to get a free sample of corn flakes from her grocer in return.
4. Roland Marchand, *Advertising and the American Dream: Making Way for Modernity, 1920–1940* (Berkeley: University of California Press, 1985), 225.
5. Powell, *Original Has This Signature*, 55, quoting a former secretary to John Harvey Kellogg.
6. Carol E. Mull, *The Underground Railroad in Michigan* (Jefferson, NC: McFarland, 2010), 18.
7. United States, Works Progress Administration, *Michigan*, 67.
8. Ibid., 193.
9. See, for instance, Daniel Walker Howe, *What Hath God Wrought: The Transformation of America, 1815–1848* (New York: Oxford University Press, 2007), 469–72; see also David S. Reynolds, *Waking Giant: America in the Age of Jackson* (New York: HarperCollins, 2008), 230. Another cholera epidemic hit the United States in 1849. Until the cholera epidemic of the1830s, few connected a filthy environment to illness; see Richard W. Schwarz, *John Harvey Kellogg, M.D.* (Nashville, TN: Southern Publishing Association, 1970), 18–20.
10. Generally, about one person in a hundred was affected, but the rate was much higher in institutions such as convents and prisons, where people were crowded together indoors. See, example, Thomas Dormandy, *The White Death: A History of Tuberculosis* (New York: New York University Press, 2000).
11. Perhaps the most stupid use of this technique came in the Civil War, when physicians would work hard to "bleed" a wounded soldier from the arm while the soldier was dying from a gunshot that had severed an artery in his leg.
12. He was born in 1794, the seventeenth child of a father in his seventies; Whorton, *Crusaders for Fitness*, 38.
13. He invented the graham cracker in Bound Brook, New Jersey, in 1829.
14. Whorton (*Crusaders for Fitness*, 38–49) covers the basics of Graham's ideas. In 1833, Mormon leader Joseph Smith also advocated a healthy diet, but stopped short of complete vegetarianism, suggesting only that meat should be consumed sparingly.
15. International Vegetarian Union, "USA: 19th Century — Sylvester Graham (1795–1851)," n.d., available online at http://www.ivu.org/history/usa19/graham.html.
16. Thomas Chandler Haliburton, *The Clockmaker, or The Sayings and Doings of Samuel Slick of Slickville* (1836, reprinted Toronto: McClelland & Stewart, 1958), 80–2.
17. Whorton, *Crusaders for Fitness*, 47.
18. See Sterling, *Ahead of Her Time*, 29–32.
19. Whorton, *Crusaders for Fitness*, 55.
20. Nanami Suzuki, "Popular Health Movements and Diet Reform in Nineteenth-Century America," *Japanese Journal of American Studies* 21 (2010): 124.
21. Whorton, *Crusaders for Fitness*, 276–7.
22. When it was noted in the late 1890s that a decline in women's mortality from TB coincided with the rise in popularity of bicycling, many jumped to the conclusion that correlation is causation.
23. Amherst College Archives and Special Collections, Edward and Mary Judson Hitchcock Family Papers, Biographical Note," Five Colleges Archives & Manuscript Collections, available online at https://asteria.fivecolleges.edu/findaids/amherst/ma2_bioghist.html. See also Schwarz, *John Harvey Kellogg, M.D.*, 20–1.

24. Suzuki, "Popular Health Movements," 115.
25. Bathing in, or drinking, mineral water at spas has been popular throughout human history, but the water cure claims and methods were a first attempt to put some scientific underpinnings to the health-giving properties of mineral water. See, for instance, John Sterngass, *First Resorts: Pursuing Pleasure at Saratoga Springs, Newport, and Coney Island* (Baltimore: Johns Hopkins University Press, 2001), p.8
26. Suzuki, "Popular Health Movements," 122–3.
27. Shew helped form, and was also the vice-president of, the American Vegetarian Society under Alcott in 1850.
28. The history of the printings is available at the Hathi Trust Digital Library, at https://catalog.hathitrust.org/Record/009736960. Most commentators incorrectly refer to the 1844 edition as the third.
29. Whorton, *Crusaders for Fitness*, 137. The story in the following paragraphs is largely based on Jean L. Isenstadt, *Shameless: The Visionary Life of Mary Gove Nichols* (Baltimore: Johns Hopkins University Press, 2002).
30. See Schwarz, *John Harvey Kellogg, M.D.*, 22–3.
31. Ibid., 24.
32. Much of the Kellogg family story is based upon ibid., chaps 1–2; and Powell, *Original Has This Signature*, chap. 1. There had been Kelloggs in Hadley for six generations.
33. Kellogg was not much of a businessman, turning down an opportunity to buy farmland where the business center of Flint would later be located and, in 1837, suffering from an ill-advised investment in a local "wildcat" bank that quickly collapsed in the Crash of that year. The trade of farms netted him some money, which went straight toward his debts.
34. He eventually had a total of fifteen brothers, sisters, step-brothers, and step-sisters. His mother was John Preston's second wife, the first having died of TB.
35. There was a reason behind this switch. In 1849, the Kelloggs lost their two-year-old daughter to a misdiagnosed illness. This bitter experience led them to look for more competent medical and nutritional ideas. In the early 1850s, a number of the children contracted measles, but the home use of hydrotherapy techniques brought them all through without incident.
36. John Preston Kellogg had advanced the church $1,200 to move the printing press and related equipment from Rochester to Battle Creek; Schwarz, *John Harvey Kellogg, M.D.*, 13.
37. The designation of Saturday as the Sabbath got the Adventists in trouble with other Christians who were pressing for Blue Laws requiring businesses to close on Sunday.
38. Preacher and physician Larkin Coles was a Millerite popular among the Adventists. Before his death in 1856, he advocated a vegetarian diet, claiming meat encouraged the animal instincts in humans, and warned there was a connection between tobacco use and cancers. See Kathryn L. MacKay, "Antebellum Health Reformers" (Ogden, UT: Weber State University, n.d.), available online at http://faculty.weber.edu/kmackay/antebellum_health_reformers.htm.
39. James White was a direct descendant of Peregrine White, the first child born in the Pilgrims' colony at Plymouth, Massachusetts; United States, Works Progress Administration, *Michigan*, 193.
40. See Brian C. Wilson, *Dr. John Harvey Kellogg and the Science of "Biologic Living"* (Bloomington: University of Indiana Press, 2014), 26–33. Ellen White's writings came to reflect the ideas of all the reformers mentioned above. Dr. Trall came to Battle Creek in 1865 to lecture on water cures, and in 1866 began publication of the journal, *The Health Reformer*; Schwarz, *John Harvey Kellogg, M.D.*, 24–5.

41. Today, the church claims over eighteen million members, primarily located in North America, Britain, Australia, and New Zealand.
42. White was prone to "visions" wherein she was told by God at times to take certain actions, one of which was to adopt a vegetarian diet and another was to develop a medical institution.
43. Kellogg broke with Trall over his wanting to teach organic chemistry. Trall insisted there was a "vital force" in people and that organic chemistry was a fiction; Schwarz, *John Harvey Kellogg, M.D.*, 28–9.
44. Powell, *Original Has This Signature*, 52–3.
45. Schwarz, *John Harvey Kellogg, M.D.*, 37.
46. Kellogg and some associates came up with this variation on "sanat*o*rium," used in Britain to signify a recovery home for wounded and ill soldiers.
47. In 1876, there were twelve patients; by 1878, facilities were expanded to house two hundred. By the late 1890s, "the San" was caring for five hundred patients annually; the chapel alone could accommodate a thousand people. See Powell, *Original Has This Signature*, 54, 65.
48. Schwarz, *John Harvey Kellogg, M.D.*, 113–5.
49. Powell, *Original Has This Signature*, 75.
50. T. Coraghessan Boyle's novel, *The Road to Wellville*, satirizes the institution and Kellogg at the height of their fame, and provides a humorous insight into the mad rush of entrepreneurs to get into the breakfast cereal phenomenon. Even the book's title is a takeoff on Kellogg's sermons/lectures on "the road to wellness."
51. Schwarz, *John Harvey Kellogg, M.D.*, 74–6.
52. As the years progressed, John managed to turn the sanitarium into an "undenominational" hospital, moving away from and finally breaking with the Seventh-day Adventists over control issues (ibid., 68–9).
53. For a detailed and anecdotal biography of W.K. Kellogg, see Powell, *Original Has This Signature*.
54. See "Ferdinand Schumacher," Ohio History Connection, Ohio History Central, available online at http://www.ohiohistorycentral.org/w/Schumacher,_Ferdinand?rec=333.
55. There were other food/nutrition experiments about the same time. Most notable was the New England Kitchen, devised by Ellen Swallow Richards and popularized across the country. Richards was the first woman admitted to the Massachusetts Institute of Technology, and her work on various aspects of food chemistry led to the spread of the Kitchen innovation centers and helped form the basis of the "home economics" movement, all designed to expand healthy living ideas beyond the upper classes' exposure to Kellogg's Sanitarium.
56. United States, Works Progress Administration, *Michigan*, 194. My mother-in-law decided in the 1950s that the coffee she and her Finnish relatives consumed in quantity was not healthy, so the family began drinking Postum instead. My wife, then a teenager, was not impressed with the change.
57. The *New York Times* reported on April 29, 2016, the discovery of a series of 1858 newspaper articles by Walt Whitman in which he promotes a "manly," meat-centered diet more in tune with existing mores; today, the equivalent is the "paleo" diet.
58. John continued to devise food and other products after his break with Will; see Schwarz, *John Harvey Kellogg, M.D.*, chap. 11.
59. Dr. Kellogg opposed the drinking of milk until pasteurization changed his mind. He then began to put milk on breakfast cereal to make it easier to eat. He continued to disagree with Will over adding sugar.

60. Crushed peanut paste was known to the Aztecs. A Canadian also developed a peanut paste in 1884, but the peanut butter we put on our graham crackers emerged from the Kelloggs' experiments. See "The History of Peanut Butter," *Huffington Post*, August 31, 2012; available online at http://www.huffingtonpost.com/2012/01/22/peanut-butter-history_n_1222585.html.
61. We have visited the Jell-O Museum in Leroy, between Rochester and Buffalo — fun and interesting exhibits.
62. Powell, *Original Has This Signature*, 88–96.
63. There was some disagreement over whether to continue in Battle Creek. Niles, Michigan, offered a financial package, while Ellen White wanted a move to Maryland and other offers came from other cities around the country. On the other hand, Post threatened to build a competitor institution in Battle Creek if "the San" were moved. Moreover, other property owned by "the San" probably would have dropped in value in the event of a move. See Schwarz, *John Harvey Kellogg, M.D.*, 70–1.
64. Some forty-two companies were formed to produce breakfast food before the boom ended; Powell, *Original Has This Signature*, 99–103.
65. In the 1920, another cereal producer, General Mills, came along as a result of the merger of twenty-seven Midwest mills.
66. Shredded Wheat was developed by Denver resident Henry Perky in 1893. Even though his patients claimed it was like munching straw, Kellogg was interested in it as a replacement for dry granola, which was cracking the teeth of older patients. The brothers improved on Perky's product, but were unable to buy him out; Schwarz, *John Harvey Kellogg, M.D.*, 116–18.
67. The presence of cereal manufacturers in Battle Creek was responsible for a jump in grain production that soon reached 40 percent of the state's agricultural production, passing vegetables and orchards; United States, Works Progress Administration, *Michigan*, 6–7.
68. John was still keeping twelve-to-fifteen-hour workdays into his eighties; Schwarz, *John Harvey Kellogg, M.D.*, 131.
69. One of the beneficiaries was the Kellogg Health Library at Dalhousie University, Halifax, on whose faculty I spent twenty years.
70. The Sanitarium Health and Wellbeing Company in Australia imported a baker from "the San" and went on to develop a wheat biscuit breakfast product called Weet-Bix, eventually marketed in North America as Weet-A-Bix.
71. See, for instance, Arthur L. White, "Ellen G. White®: A Brief Biography" (Silver Spring, MD: Ellen G. White Estate, August 2000), available online at http://www.whiteestate.org/about/egwbio.asp.

Chapter 16

1. Letter to the *San Francisco Daily Alta*, August 1, 1869, quoted in Simine Short, *Locomotive to Aeromotive: Octave Chanute and the Transportation Revolution* (Urbana: University of Illinois Press, 2011), 11.
2. Quoted in ibid., 185.

3. Quoted in ibid., 264; Bell and Chanute were at a dinner sponsored by Samuel Langley.
4. Quoted in Jim Rasenberger, *America 1908: The Dawn of Flight, the Race to the Pole, the Invention of the Model T, and the Making of a Modern Nation* (New York: Scribner, 2007), 137. Newton was a reporter for the *New York Herald*.
5. Quoted in National Heritage Aviation Area, "The Wright Company Factory" (2015), available online at https://www.aviationheritagearea.org/wright-company-factory-site.
6. For a good description of the dunes area as it was in the late 1930s, see United States, Works Projects Administration (WPA), *Indiana: A Guide to the Hoosier State* (New York: Oxford University Press, 1941), 297–8.
7. "During part of the year, immense swamps between Lake Michigan and the Grand Calumet River and between that river and the Little Calumet River became seas, dammed by fallen timber and matted leaves. On the shore of Lake Michigan, sand hills, some 200 feet high with bases of 3-400 feet offered no attraction to the pioneer home-seeker. Quaking bogs and tamarack swamps…made other areas impenetrable to the inexperienced settlers"; United States, WPA, *The Calumet Region: A Historical Guide* (East Chicago IN: Garman Printing, 1939), 3–5, 19.
8. Charles H. Smith, "Cowles, Henry Chandler (United States 1869–1939" (Bowling Green, KY: Western Kentucky University, 2005), available online at http://people.wku.edu/charles.smith/chronob/COWL1869.htm.
9. "Henry Chandler Cowles, Ecologist, Educator, and Conservationist," *National Geographic*, n.d., available online at http://nationalgeographic.org/news/henry-chandler-cowles/.
10. University of Chicago Centennial Catalogues, "The University of Chicago Faculty: A Centennial View — Henry C. Cowles, Botany" (Chicago, n.d.), available online at https://www.lib.uchicago.edu/projects/centcat/fac/facch14_01.html.
11. The membership consisted of scientists and students, for the most part.
12. The story is told in George S. Cottman, *Indiana Dunes State Park: A History and Description* (Indianapolis: Department of Conservation, 1930), 36–40, available online at http://www.inportercounty.org/Data/Misc/IndianaDunesStatePark-History-1930.pdf.
13. Knotts was a character. A lawyer and politician in Hammond, he was contacted by US Steel and quietly bought up the land for their proposed mill on the shore of Lake Michigan. In 1906, US Steel made him manager of the Gary Land Corporation, selling lots to new workers. In 1923, he left Gary and headed to Florida, where he founded a community called Yankeetown. See Margaret Crawford, *Building the Workingman's Paradise: The Design of American Company Towns* (New York: Verso, 1995), 3–4. For a character reminiscence, see A. Frank Knotts, "Memories of Yankeetown: Uncle A.F. and the Early Residents of Yankeetown" (April 2007), available online at http://yankeetown.com/knotts/four.html.
14. United States, WPA, *Calumet Region*, 135–7.
15. See United States, Department of the Interior, National Parks Service, "Indiana Dunes: History & Culture" (2015), available online at https://www.nps.gov/indu/learn/historyculture/index.htm.
16. There are two credibility problems with this myth: first, relative to body weight, people do not have the muscle mass in their upper arms and shoulders to match birds; second, the air gets colder, not warmer, the higher one goes, which the first person to climb a mountain discovered.
17. Richard Dee describes a number of attempts to develop means of flying, including manned kites used by the Chinese for observation; see *The Man Who Discovered Flight: George Cayley and the First Airplane* (Toronto: McClelland & Stewart, 2007), chap. 3.

18. For a short summary of Lilienthal's work, see E. Charles Vivian, *A History of Aeronautics* (1920), chap. 8, Project Gutenberg e-book, updated 2013, available online at http://www.gutenberg.org/files/874/874-h/874-h.htm.
19. For a good, short biography of Langley, see Tom D. Crouch, "Langley, Samuel Pierpoint," *American National Biography Online*, February 2000, available online at http://www.anb.org/articles/13/13-00946.html. Because Langley's and the Wright brothers' work on discovering how to fly overlapped closely in time, though not in technique, there is considerable information about him in many of the histories of the latter. Langley's career is covered in the opening chapter of James Tobin, *To Conquer the Air: The Wright Brothers and the Great Race for Flight* (New York: Free Press, 2003).
20. Observation balloons, tethered to the ground, had been used in the Civil War. The potential of the airplane to maneuver for better observation was not lost on the world's militaries.
21. Langley seems to me to have been out of his element, as he spent much of his money and time on a rotary engine, in which the cylinders spin around a central axis. The insurmountable problem was that the spinning forced the lubricating fluid to flow to the ends of the cylinders, with the resulting friction in the engine burning it out.
22. Most of this section is based on Short's well-researched biography of Chanute, *Locomotive to Aeromotive*. There are a number of "potted" biographies of him online, but they are plagued with obvious inconsistencies and errors.
23. Jervis was a Yankee engineer who built a number of America's early railroads. He is best known for his design and construction of the Croton Reservoir and Aqueduct to supply New York City with water. See, for example, Frances C. Robb, "John Bloomfield Jervis," *Encyclopædia Britannica* (1998), available online at https://www.britannica.com/biography/John-Bloomfield-Jervis.
24. One of his assignments consisted of building a "cutoff" from Joliet, Illinois, southwest of Chicago, to the Michigan Central line at Lake Station, close to the Indiana dunes area.
25. Chanute was lucky. In the 1840s, mostly a period of economic depression, only six thousand miles of track were laid, mostly in the East; during the 1850s, twenty-one thousand miles were laid, mostly in the West. See Thomas Cochran and William Miller, *The Age of Enterprise: A Social History of Industrial America*, rev. ed. (New York: Harper & Row, 1961), 55.
26. See Brian McGuinty, *Lincoln's Greatest Case: The River, the Bridge, and the Making of America* (New York: Liveright, 2015).
27. Chanute and an assistant authored a book, *The Kansas City Bridge*, which gained him international recognition, as he had pioneered the digging of caissons below the river to bedrock, predating by a few years Johann Roebling's use of the same technique to build the Brooklyn Bridge.
28. The Erie had been designed from its inception in the early 1830s as using six-foot-wide tracks, in contrast to the majority of other lines, which used the classic width of Roman roads — 4 feet 8½ inches — the standard width still in use by most of the world's railroads today. See Short, *Locomotive to Aeromotive*, 102.
29. A tornado destroyed the bridge in 2013; see "Kinzua Bridge: Once the World's Longest Railroad Bridge, Destroyed by Tornado," *Kuriositas*, July 20, 2013, available online at http://www.kuriositas.com/2013/07/kinzua-bridge-once-worlds-longest.html.
30. Quoted in Short, *Locomotive to Aeromotive*, 182.
31. See "Silas Brooks," Connecticut Lighter than Air Society, available online at http://www.lighterthanair.org/ellis/silas_brooks.htm.

32. Quoted in Short, *Locomotive to Aeromotive*, 120.
33. Lift derives from the observation that the air pressure on a curved upper surface of a moving wing is less than on the lower surface, thus lifting the wing up.
34. These were: 1) Resistance and supporting power of air; 2) The character and energy requirements of a motor; 3) The method of propulsion; 4) The form of the flying apparatus; 5) The size of the sustaining surfaces; 6) The materials and textures making up the apparatus; 7) Maintaining equilibrium; 8) Guidance in direction; 9) Starting up in all conditions; 10) Landing safely anywhere.
35. Mark Bernstein, *Grand Eccentrics: Turning the Century — Dayton and the Inventing of America* (Wilmington, OH: Orange Frazer Press, 1996), 37. This suggests that their active interest in flight began later.
36. Peter L. Jakab, *Visions of a Flying Machine: The Wright Brothers and the Process of Invention* (Shrewsbury, UK: Airlife, 1990), 25.
37. United States, WPA, *Calumet Region*, 138.
38. Through this period, the brothers were occupied in expanding their bicycle shop, the source of their income, and coping with the aftermath of a serious flood in Dayton. See David McCullough, *The Wright Brothers* (New York: Simon & Schuster, 2013), 22–32.
39. Some 435 letters were exchanged between them; see Tom D. Crouch, *The Bishop's Boys: A Life of Wilbur and Orville Wright* (New York: Norton, 1989), 201.
40. For a detailed biography of the brothers, see ibid.
41. Jakab, *Visions of a Flying Machine*, 1. Jakab shows most clearly why and how the Wright brothers tackled and overcame the multitude of challenges.
42. The oft-told tale is that Wilbur got the inspiration for warping the wingtips as a means of control from idly twisting a bicycle inner-tube box while talking to a customer. Perhaps, but it might be that twisting the box resurrected something he read earlier, as two British patents were issued for this idea in the late 1890s; ibid., 52.
43. Larry E. Tise, *Conquering the Sky: The Secret flights of the Wright Brothers at Kitty Hawk* (New York: Palgrave Macmillan, 2009), 37.
44. See Wright Brothers Aeroplane Company, "1903 Wright Engine," available online at http://www.wright-brothers.org/Information_Desk/Just_the_Facts/Engines_&_Props/1903_Engine.htm.
45. Bernstein, *Grand Eccentrics*, 3, 63.
46. I remember having one of these pull-types when I was a kid.
47. Quoted in Jakab, *Visions of a Flying Machine*, 7.
48. Bernstein, *Grand Eccentrics*, 66–7.
49. Jakab (*Visions of a Flying Machine*, 15) claims the majority of the critical elements of their plane were invented by them, implying that, without resorting to theft, competitors would have trouble "working around" the Wrights' patents.
50. Chanute suggested this in October 1902; in March 1903, months before the successful powered flight, they submitted a patent application, not for the glider, but for the plane itself; see Tise, *Conquering the Sky*, 38–9.
51. Tobin, *To Conquer the Air*, 360.
52. When he read of the Wrights' success at Kitty Hawk, Godfrey Lowell Cabot, a member of a prominent Boston family, wrote them twice to inquire whether there might be commercial possibilities, such as a package express, in air flight; see Hughes, *American Genesis*, 102.

53. Wright Brothers Aeroplane Company, "Charles Flint Remembers," available online at http://www.wright-brothers.org/History_Wing/Aviations_Attic/Charles_Flint/Charles_Flint.htm.
54. McCullough, *Wright Brothers*, 217. In September 1910, Blanche Stuart Scott became the first American woman to fly solo, while later that month, Bessica Raiche became the first woman to have a solo flight accredited by the Aeronautical Society of America. She flew a homemade Wright-style plane. The first American woman to obtain a pilot's license was Michigan's Harriet Quimby, a theater critic in Manhattan, on August 1, 1911. In April 1912, she became the first woman to fly across the English Channel. Sadly, she was and a passenger were killed a few months later off Boston when her plane stalled and dove into the sea. See "Harriet Quimby," Famous Scientists: The Art of Genius, available online at http://www.famousscientists.org/harriet-quimby/.
55. To protect their design, Orville had the wreckage cut up; Tise, *Conquering the Sky*, 121.
56. Harold Evans, *They Made America: From the Steam Engine to the Search Engine, Two Centuries of Innovators* (New York: Little, Brown, 2004), 260.
57. Bernstein, *Grand Eccentrics*, 124.
58. The next year, Orville became the figurehead "incorporator" of the Dayton-Wright Company, whose main asset was the automotive genius Charles Kettering. They were going to build planes to promote aeronautics as a sport, but soon were caught up in government wartime aircraft production needs. In 1919, General Motors bought the Dayton-Wright Company, but used the plants for automobile parts production. See National Heritage Aviation Area, "Wright Company Factory."

Chapter 17

1. Ida M. Tarbell, *The Life of Elbert H. Gary: A Story of Steel* (New York: D. Appleton-Century, 1925), 53.
2. J.P. Morgan's testimony to the Pujo Committee in 1912, quoted in Jack Beatty, *Colossus: How the Corporation Changed America* (New York: Broadway Books, 2001), 165–6.
3. Tarbell, *Life of Elbert H. Gary*, 126.
4. Apollo Iron and Steel Co. treasurer Wallace Bache to Frederick Law Olmstead, 1895, quoted in Sara McGuire, *Vandergrift: Then and Now* (Charleston, SC: Arcadia Publishing, 2009), Introduction.
5. Much of the detail about the Gary family and Elbert H. Gary is taken from Tarbell, *Life of Elbert H. Gary*.
6. Keep in mind that, twenty years earlier, in the War of 1812, the garrison and local settlers around Chicago agreed to give up the fort there in return for their safety. As soon as they were on their way, the Indians massacred them. Memories die hard.
7. Gary's widowed mother and her brother, the Reverend Charles Wesley, also moved west. Other migrants in the 1830s moved as organized congregations. The Reverend George Washington Gale was a mentor to the Reverend Charles Finney when that preacher began his successful revivals. In the mid-1830s, Gale and a large group of his congregation moved west to the Illinois military tract, reserved by Congress for War of 1812 volunteers. The parties traveled by the Erie Canal and Lake

Erie to Detroit, then took the Sauk Trail, now the Territorial Road, to Lake Michigan and on to the southwest, where they bought over ten thousand acres, reserving land for the town of Galesburg and for a college to be located there. The land was bare of trees and rocks and had deep soil. See Earnest Elmo Calkins, *They Broke the Prairie* (Urbana: University of Illinois Press, 1937), chaps 1–2.

8. One of her ancestors was part of General Lafayette's contingent in the Revolution.
9. Other towns near Aurora, just west of Wheaton, are Geneva and Batavia, which points to the western New York origin of the settlers in that area.
10. Walter Prescott Webb, in his, *The Great Plains* (New York: Grosset and Dunlap, 1931) gives over almost the entirety of his chapter VII to the problem of fencing, something that could add more to the cost of a homestead than land, buildings, and the like.
11. In the SoHo district of New York City are many historic iron buildings dating from around the 1850s. By the 1880s, steel began to replace iron in large buildings, first in Chicago and then in New York.
12. Most historians seem to credit Pittsburgh entrepreneur William Kelly with the invention of a practical steel-making process in 1847, seven years before Bessemer, but his poor business practices and Bessemer's ability to promote his process led to Kelly's being forgotten. See Fisher, *Steel Serves the Nation*, 14.
13. The Bessemer process was replaced later with the "open hearth" furnace, which in turn was replaced in the late twentieth century by the "electric arc" furnace. In my time with the Nova Scotia government, I had the dubious distinction of supervising the construction of the last open hearth furnace ever built in the world, as the politicians vainly tried to protect the jobs that went with the old technology. When finished, it predictably functioned for only a year because the cost of steel-making was prohibitive.
14. Iron rails had a life expectancy of two years, steel rails eighteen years; Fisher, *Steel Serves the Nation*, 14.
15. Ibid., 160.
16. Ichabod Washburn, the founder of the Worcester Works of Washburn and Moen, invented a way to make piano wire, developed hoops for hoop skirts, and made many other improvements in wire manufacture. He died in 1869, and it was left to his son to develop the barbed wire industry. The Worcester Works became part of US Steel in 1901. See Fisher, *Steel Serves the Nation*, 166.
17. During the Civil War, Texas was cut off from the rest of the Confederacy once Union forces had taken control of the Mississippi River. This meant the herds of Texas cattle had nowhere to go to market, and their numbers multiplied. Not until railroads penetrated Kansas in the 1870s could the Chisholm Trail and other cattle trails north to the railroads be blazed and fencing could begin to take over from the open range.
18. Barbed wire production increased from 5 tons in 1874 to 40,250 tons in 1880 to 241,000 tons in 1950, equivalent to 502,000 miles of wire; Fisher, *Steel Serves the Nation*, 160.
19. The "million" was an exaggeration. In England in 1900, Gates wagered $70,000 on a horse and won $600,000. His friends then started calling him "Bet-A-Million," which he claimed to resent, but never corrected anyone.
20. See Kansas Barbed Wire Museum, "The Early Years: A Brief History of Barbed Wire" (La Crosse, KS, 2015), available online at http://www.rushcounty.org/barbedwiremuseum/BWhistory.html.
21. Short, *Automotive to Aeromotive*, 71.
22. Tarbell, *Life of Elbert H. Gary*, 76–7.

23. The Eureka Iron Company was established in 1856 on two thousand acres, including waterfront, sold by the Biddle family, whose house became a hotel for arriving workers. It was the first company to use the Bessemer process for making steel products, including rails, and local charcoal was used to heat iron ore brought from mines near Lake Superior. Ward built a fleet of twelve steamships to carry his ore and manufactured products around the Lakes. See Rockne P. Smith, *Our "Downriver" River: Nautical History and Tales of the Lower Detroit River* (Gibraltar, MI: Rockne P. Smith, 1997), 13–16.
24. See "North Chicago Rolling Mill Co.," *Encyclopedia of Chicago* (2005), available online at http://www.encyclopedia.chicagohistory.org/pages/2793.html.
25. See Willis F. Dunbar and George S. May, *Michigan: A History of the Wolverine State*, 3rd ed. (Grand Rapids. MI: William B. Eerdmans, 1995), 410–12.
26. Tarbell, *Life of Elbert H. Gary*, 89.
27. Leroy Barnett, "Making America's First Steel in Wyandotte," *Michigan History* (July-August 2004): 28–35.
28. "North Chicago Rolling Mill Co.," *Encyclopedia of Chicago*.
29. Most of this section is derived from Chernow, *House of Morgan*, xi–95.
30. Ibid., 83.
31. Tarbell, *Life of Elbert H. Gary*, 91.
32. The story from Carnegie's viewpoint was tangled up in his tempestuous relations with his partner and rival H.C. Frick, who years before had brought his coking company into the Carnegie orbit. See David Nasaw, *Andrew Carnegie* (New York: Penguin, 2006), chaps 30–1.
33. Carnegie was referring to a financial coup made by Morgan some years earlier at the expense of the London Rothschilds.
34. Chernow, *House of Morgan*, 84.
35. https://www.ussteel.com/uss/portal/home/aboutus/history
36. Chernow, *House of Morgan*, 106.
37. Fisher, *Steel Serves the Nation*, 22.
38. Schwab eventually found his way to Bethlehem Steel, which he built into the second-largest steel producer in the country.
39. Fisher, *Steel Serves the Nation*, 21.
40. For a good survey of this process from the point of view of the designers and city planners, see Crawford, *Building the Workingman's Paradise*.
41. For the conceptual connection between Pullman and Gary, see ibid., 43–5.
42. Much of the Pullman narrative is based on Almont Lindsey, *The Pullman Strike: The Story of a Great Experiment and of a Great Labor Upheaval* (Chicago: University of Chicago Press, 1942). For useful additional insight, see Pullman's biography in *Album of Genealogy and Biography, Cook County, Illinois* (Chicago: La Salle Book Company, 1899), 231–3, available online at https://archive.org/stream/albumofgenealogy1899lasa#page/n5/mode/2up.
43. He came to Albion in 1848, four years after his contemporary, Henry Flagler, the Rockefeller associate, left Medina, the next town west on the Erie Canal, for Ohio.
44. The moral issue was real with him. Two of his brothers were Congregational/Unitarian ministers, and he had a church built to honor his late parents in Albion, New York.
45. See Anne E. Mosher, *Capital's Utopia: Vandergrift, Pennsylvania, 1855–1916* (Baltimore: Johns Hopkins University Press, 2004); and McGuire, *Vandergrift*.
46. Crawford, *Building the Workingman's Paradise*, 52.

47. Borough of Vandergrift, "History" (n.d.), available online at http://www.vandergriftborough.com/history.html.
48. McMurtry had a famous German arborculturalist, Count van Aubery, come to Vandergrift to direct the planting of trees and flower beds, which are still maintained by the town's garden club.
49. Fisher, *Steel Serves the Nation*, 39. A.F. Knotts was a local lawyer who acted as US Steel's agent.
50. It would include twelve blast furnaces and forty-seven steel furnaces, as well as a large breakwater and a lighthouse. See "Gary: History," City-Data.Com, available online at http://www.city-data.com/us-cities/The-Midwest/Gary-History.html.
51. A separate subsidiary was set up to provide heat, light, and water; see James B. Lane, *"City of the Century": A History of Gary, Indiana* (Bloomington: Indiana University Press, 1978), 31.
52. Buffington seems to have outdone Judge Gary in the naming business. His name was attached to a Gary neighborhood, a harbor on Lake Michigan, a Laker freighter, some coking facilities in Pennsylvania, and other fixtures and locations. He was appointed by Gary to replace "Bet-a-Million" Gates at Illinois Steel at the end of 1898, and retired from that post in the early 1930s.
53. Lane, *"City of the Century"*, 30.
54. See S. Paul O'Hara, "The End of Utopia: Imagining the Rise and Fall of Gary, Indiana" (PhD. diss., Indiana University, 2007), 83–9.
55. Lyrics by Meredith Willson; see MetroLyrics, "Gary, Indiana," available online at http://www.metrolyrics.com/gary-indiana-lyrics-music-man.html.