

# *Rationalizing Epidemics*

Meanings and Uses of American  
Indian Mortality since 1600

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*Expecting Providence*

WHEN ENGLISH COLONISTS settled the coast of New England, they found themselves on a threatening, unknown shore. Their only solace came from faith that God had blessed their mission in America. The colonists' labors were eventually rewarded with thriving communities, but at tremendous cost. English settlement triggered devastating epidemics among the American Indians who had inhabited the forests and river valleys of America. Between 1616 and 1636, nearly 90 percent of the Massachusett, Wampanoag, and other tribes of New England died from smallpox and other diseases. The colonists, knowing little about these people, had to respond to the unprecedented tragedy of depopulation.

How could this catastrophe be understood? When colonists left Europe for America, they were guided by theological narratives that interpreted Indian mortality as the means by which God prepared the way for English settlement. These narratives, however, would prove inadequate for explaining the realities of encounter. If colonists were God's chosen people, then why did they suffer so greatly during their first winters in America? Could they ignore the suffering of American Indians, with whom they shared so many fears and vulnerabilities? Their lived experiences destabilized the simple narrative of providence. In its place arose a proliferation of disease narratives. Disease could be a product of divine punishment, or the result of freezing winters, murky

swamps, and unhealthful diets. Colonists could blame (or thank) God, themselves, or the American Indians.

Much can be learned from the ways in which colonists responded to American Indian demographic collapse. Observers of disparities in health status never respond simply or mechanically to the suffering they witness. They respond actively and thoughtfully. Explanations are generated, organized, evaluated, and utilized. The process of expectation, destabilization, and proliferation of disease narratives occurred time and time again, whenever settlers encountered new groups of American Indians. As will be seen, subsequent Indian epidemics continued to trigger diverse explanations that emphasized environment, behavior, culture, or race. In the tentative wonderings of bewildered colonists can be seen the seeds of centuries of medical theorizing.

### Expectation

On 11 November 1620, William Bradford and his fellow Separatists arrived on the gray and foreboding shores of Cape Cod. He described it as “a hideous and desolate wilderness, full of wild beasts and wild men—and what multitudes there might be of them they knew not.” But this land was not completely unknown to the colonists. Decades of English fishing, exploration, and trade had provided glimpses of the land and the “savage barbarians” that English colonists would encounter.<sup>1</sup> These reports included the hints of dire epidemics striking down the American Indians that would fuel Puritan providential narratives.

Although American mythology traces English presence in America to the settlements at Jamestown and Plymouth in 1607 and 1620, these colonies came at the end of more than a century of sporadic encounters. Europeans reached the Atlantic coasts of northeastern America in the late fifteenth century and made intermittent appearances throughout the sixteenth century. During these early visits, they met a surprising variety of American Indian groups. They described many villages along the Massachusetts coast, from Agawam, Shawmut, and Wessagusset to Monomoy, Capawack and Nantucket. These settlements belonged to the varied tribes of southern New England: the Pawtucket, Massachusett, Wampanoag (or Pokanoket), Narragansett, Pequot, Niantic, Nipmuck, Mohegan, and Montauk. The people, who spoke dialects of a common Algonquian language, named themselves the Ninnimissinuok.<sup>2</sup>

Although exact numbers are unavailable, between 70,000 and 144,000 Ninnimissinuok lived in southern New England around 1600, with 17,600 to 37,600 in eastern Massachusetts. These people had been living in New England for over 10,000 years. Adapting to changing post-glacial environments, they created sophisticated systems of subsistence by hunting, gathering, fishing, and planting. Long-distance trade brought goods from as far as the Great Lakes. Although hereditary sachems governed the tribes, their authority depended on persuasion and consensus. Powwaws (shamans) oversaw their world of rituals, totems, and guardian spirits.

Increasing population density in the fifteenth and sixteenth centuries fueled increasing sociocultural complexity and intertribal strife. European arrival added new pressures. Bristol fishermen reached New England as early as 1480, exploring intermittently and taking several dozen Micmac captives. Sailing from Carolina to Maine in 1524, Giovanni de Verrazano found the Narragansett to be “kind and gentle,” while the natives of Cape Cod were “rude and barbarous.” Ten years later, Jacques Cartier found the Micmac already familiar with European traders’ interests and expectations. Exploiting the riches of the Grand Banks fisheries, English, Basque, Portuguese, and Norman fishermen became an increasing presence over the sixteenth century, establishing drying stations from Labrador to Acadia. By 1580 between 350 and 700 ships, carrying 8,000 to 10,000 Europeans, plied the waters off Newfoundland each summer. Europeans and American Indians traded copper, jewelry, mirrors, bells, scissors, knives, axes, hooks, cloth, and beaver pelts.<sup>3</sup>

Sustained contact between Europeans and Indians in the northeast began with Samuel de Champlain’s explorations of Quebec and New England in 1604 and 1606. The French base at Port Royal, established in 1610, soon became a center of Jesuit missionary activity. The Dutch arrived in 1609, with Henry Hudson’s exploration of what he named the North (Hudson) River. By 1624 Dutch merchants had established agricultural outposts at Fort Orange (Albany), Manhattan, and the mouths of the Fresh (Connecticut) and South (Delaware) Rivers.<sup>4</sup>

English efforts evolved in parallel. Bartholomew Gosnold explored the coasts of Maine, Cape Cod, and Martha’s Vineyard in 1602, found the natives already wearing European clothes, angered the Indians, and returned to England without attempting a settlement. Martin Pring, leading a trade mission in 1603, impressed the Indians with guitar mu-

sic. But when the Indians turned hostile, he attacked with guns and fierce mastiffs, and then returned to England. In 1605 George Waymouth traded along the Maine coast and took five Indians captive, planning to train them as interpreters. Hoping to use these captives to facilitate relations with the natives, Ferdinando Gorges sent two voyages to Maine in 1606. The first was lost at sea. The other, after betrayal by the captives, bitter factionalism, and a fierce Maine winter, returned to England in 1607. Gorges tried again in 1611 and 1614, but both trips failed. John Smith explored the coast in 1614 and then attempted to establish a colony at Pemaquid in 1615. Richard Vines, an agent of Gorges, spent a winter on the Maine coast in 1616 and 1617. Thomas Dermer, another agent, led a series of voyages between 1617 and 1620, before dying after a Capawack attack.<sup>5</sup>

These early explorations encountered thriving Indian populations. Gosnold's expedition to Cape Cod met "manie Indians," who were "active, strong, healthfull, and very wittie," and, most important, eager for trade. In 1605, as Champlain sailed through the islands of Massachusetts Bay, he "observed many smokes along the shore, and many savages running up to see us." Receiving a hostile reception, he concluded that Massachusetts was too thickly settled for colonization (Figure 2). John Smith explored these same islands in 1614 and found them "planted with Gardens and Corne fields, and so well inhabited with a goodly, strong and well proportioned people." At Accomack (also Patuxet, later Plymouth), Smith fought with forty or fifty of the natives, but then befriended the survivors.<sup>6</sup>

New England, it seemed, was filled with healthy and aggressive people. The explorers feared that it would be dangerous land for colonists. This fear could only have been strengthened by knowledge of the struggles of English colonists in the south. Three attempts to settle the Outer Banks of the Carolinas failed in the 1580s. The first group ran afoul of the Roanoks, who taunted and threatened the starving colonists, forcing them to leave after a single winter. The second group was attacked within months of arrival; thirteen escaped, but were never heard from again. The third group, deposited in 1587, disappeared by 1590, leaving only three mysterious letters, "CRO," carved into the trunk of a tree.<sup>7</sup> English efforts at Jamestown had only slightly better success. Doomed by laziness and quarrels, only 38 of 108 colonists survived the first winter. During the second winter, starving colonists re-

[To view this image, refer to  
the print version of this title.]

2. Port St. Louis (Plymouth Harbor). From Samuel de Champlain, *Les Voyages du Sieur de Champlain Xaintongeois* (Paris: 1613). The map shows the Wampanoag settlements at Accomack in 1605, before the devastating epidemic. Note the many dwellings, cleared forest, and bountiful crops, suggesting active, healthy precontact populations. (By permission of the Houghton Library, Harvard University.)

sorted to cannibalism, digging up graves to eat corpses. One man even murdered and salted his own wife. Of the 6,000 colonists sent between 1607 and 1624, only 1,200 were alive in 1625, victims of starvation, disease, and depression. When Dermer visited “James Citie” in 1619, he found “generall sicknesse over the Land.” His crew barely escaped with their lives.<sup>8</sup>

News of such disasters surely discouraged would-be colonists. But the colonists also knew that the arrival of the Europeans had been dangerous for the American Indians. William Bradford had read Peter Martyr’s accounts of Spanish America. Martyr provided abundant evidence of the “Black Legend” of Spanish brutality, describing, for instance, how the Spanish hunted the Caribs and Taino with dogs and abused them so badly in mines that the terrorized natives destroyed

their crops and killed themselves and their children. He acknowledged, however, that much of the devastation came from disease. In 1518 “newe and straunge diseases . . . consumed theym lyke rotonn sheepe.” The combined impact of abuse and disease was devastating: “The number of the poore wretches is woonderfully extenuate. They were once rekened to bee above twelve hundreth thousande heades: But what they are nowe, I abhorre to rehearse.”<sup>9</sup>

Martyr described a process that happened time and time again. Whenever Europeans encountered new populations, in Hispaniola and Mexico in the 1500s, in New England and Quebec in the 1600s, and even in Alaska and the Amazon in the 1900s, they witnessed terrible mortality. Epidemics of smallpox, measles, and influenza took the highest toll. These diseases, endemic in Europe, had not been present in the Americas before European arrival. Europeans, exposed as children, developed immunity that protected them as adults. American Indians, without this immunity from prior exposure, and stressed by the chaos of European colonization, were dangerously vulnerable. They died in great numbers.<sup>10</sup>

The English first encountered this mortality among the Indians at Roanoke. Over the winter of 1585 and 1586, Ralph Lane and Thomas Hariot observed epidemics among the local tribes. The disease was “so strange, that they neither knew what it was, nor how to cure it; the like by report of the oldest men in the countrey never happened before.” This disease only struck villages that had been visited by the English: “within a few dayes after our departure from everie such towne, the people began to die very fast.” When the English did not similarly succumb, Ensenore and other local elders reasonably concluded that the English controlled disease. They asked the English to unleash the disease against their enemies. The English declined, explaining that disease was in the hands of God: “our God would not subject him selfe to anie such praiers and requestes of men.” While some English attributed these remarkable events to a recent comet or eclipse of the sun, Hariot believed that it was “the speciall woorke of God for our sakes.”<sup>11</sup>

Early experiences in New England were strikingly similar. Vines spent the winter of 1616 and 1617 with the Pemaquid near Saco on the Maine coast. As Gorges described, the local tribes “were sore afflicted with the Plague, for that the Country was in a manner left void of inhabitants.” Dermer, who sailed the coasts of Maine and Massachusetts

in the summer of 1619, witnessed the end of this epidemic: "I passed amongst the Coast where I found some antient Plantations, not long since populous now utterly void; in other places a remnant remains, but not free of sicknesse. Their disease was the Plague." Dermer had brought Squanto, a Wampanoag captured at Patuxet (Plymouth) in 1614, whom he hoped to use as an interpreter to establish peaceful relations with the Wampanoag. But on reaching Patuxet, "finding all dead," he abandoned this plan. As had happened at Roanoke, this plague left the English untouched. Although Vines and his crew had shared winter cabins with the dying Pemaquid, "(blessed be *GOD* for it) not one of them ever felt their heads to ake while they stayed there."<sup>12</sup>

By 1619, despite over ten years of effort, Gorges had failed to plant a colony on the New England coast. However, he had learned of the crucial weakness of the plague-stricken natives. The resistance met by Champlain and Smith was gone. Prospects for colonization seemed brighter. Such news may have shaped the hopes of Bradford and his fellow Separatists, who set their sights on "those vast and unpeopled countries of America, which are fruitful and fit for habitation." These reports clearly figured in the thoughts of King James I, who granted Gorges a patent for the Plymouth (Northern Virginia) Company on 3 November 1620: "within these late Yeares, there hath by God's Visitation, rained a wonderfull Plague, together with many horrible Slaughters and Murthers, committed amongst the Savages and brutish People there, heertofore inhabiting, in a Manner to the utter Destruction, Devastation and Depopulation of that whole Territorye." The message seemed clear: "We in our Judgment are persuaded and satisfied that the appointed Time is come in which Almighty God in his great Goodness and Bountie towards Us and our People hath thought fitt and determined, that those large and goodly Territoryes, deserted as it were by their naturall Inhabitants, should be possessed and enjoyed by such of our Subjects and People."<sup>13</sup>

Similar thoughts filled the minds of John Winthrop and the leaders of the Massachusetts Bay Company in 1629 as they planned the Puritan migration. Winthrop wrote his "General Observations" as an argument in support of emigration, addressing a series of specific concerns. Asked "what warrant have we to take that lande which is and hath been of long tyme possessed by other sonnes of Adam," Winthrop re-

plied that “God hathe consumed the natives with a miraculous plague, wherby a great parte of the Country is left voyde of Inhabitanes.”<sup>14</sup>

As these explorers and colonists attempted to settle the foreboding shores of America, they witnessed epidemics that devastated the American Indian populations. Their brief accounts were quickly written into narratives of divine providence. While England overflowed with populations and religious strife, the original inhabitants of New England had been consumed by war and plague, leaving the land void. None could doubt that God had prepared this land for English colonization. Bradford’s Separatists and Winthrop’s Puritans could not have asked for a clearer sign of their destiny. On 6 September 1620 Bradford and 101 others set sail “with a prosperous wind” filling the *Mayflower’s* sails. Ten years later, leading 1,000 colonists, Winthrop set sail on the *Arbella* with “faire weather” on 8 April 1630.<sup>15</sup>

## Destabilization

As soon as they arrived at Cape Cod, the Separatists set out to explore their “desolate wilderness.” Their initial forays found the area densely settled. On 15 November they saw “five or six persons with a dog coming towards them, who were savages; but they fled.” The next day they found an Indian settlement and helped themselves to “divers fair Indian baskets filled with corn.” Further searching revealed more villages with Indians who hid, leaving corn and beans for the taking. On 7 December Indians attacked Bradford’s exploring party, but retreated from the English muskets.<sup>16</sup>

However, the colonists soon began to encounter the expected signs of epidemic devastation. On 11 December the *Mayflower’s* shallop sailed into a harbor and found an abandoned village with “divers cornfields and little running brooks, a place (as they supposed) fit for situation.” They summoned the *Mayflower* from Cape Cod and, on Christmas Day, began to erect the first houses of Plymouth. Three months later they learned the source of their good fortune. In March 1621 Samoset, a Pemaquid chief who had long traded with the English in Maine, walked into Plymouth village. As he described, the site had once been Patuxet, but “about foure yeares agoe, all the Inhabitants dyed of an extraordinary plague, and there is neither man, woman, nor childe remaining . . . to hinder our possession.”<sup>17</sup>

Wherever the colonists looked, they saw more evidence of depopulation. Samoset soon returned with Squanto (the sole survivor of Patuxet), who proved a valuable interpreter. When Squanto led Edward Winslow to the village of Massasoit, the Wampanoag chief, they found many fields that had been cleared, but lay empty: “Thousands of men have lived there, which dyed in a great plague not long since.” As Bradford described, the victims “not being able to bury one another, their skulls and bones were found in many places lying still above the ground where their houses and dwelling had been, a very sad spectacle to behold.” When Winslow explored Massachusetts Bay, he did not find islands full of Indians. Instead, “most of the Ilands have beene inhabited . . . but the people are all dead, or removed.” Robert Cushman, who visited Plymouth in the summer of 1621, estimated that “the twentieth person is scarce left alive.”<sup>18</sup>

Winslow, Bradford, and Cushman witnessed the impact of a catastrophic epidemic that struck the New England coast in 1616. Although historians still debate the point, European diseases do not seem to have had a significant presence in the Northeast until after 1600. This changed quickly. The French established themselves at Port Royal in 1610. Within a year 75 percent of the nearby Micmac were dead from epidemics. An epidemic might have struck the Wampanoag in 1612 and 1613. In 1616 disease broke out in New England and raged until 1619. Although the nature of the “plague” remains unclear (smallpox? chicken pox? hepatitis?), it extended from the Penobscot River, south along the coast of Maine and Massachusetts Bay, to the eastern shore of Narragansett Bay. Thousands of Eastern Abneki, Massachusett, and Wampanoag died. Whole villages disappeared.<sup>19</sup>

The Plymouth colonists also found ongoing epidemics. In 1622 Squanto “fell sick of an Indian fever” and died within days. When Winslow led a trading mission to the Massachusett in 1623, “they found a great sickness to be amongst the Indians, not unlike the plague, if not the same.” Trading at Nemasket, they found “a great sickness arising amongst them” as well. Other settlers who arrived in the 1620s found similar desolation. Thomas Morton, who spent several years near Massachusetts Bay, described how the Indians had “died on heapes.” Survivors fled without burying the corpses, leaving them “for Crowes, Kites, and vermin to pray upon.” Skulls and bones littered the forest. For Morton, it seemed “a new found Golgatha.”<sup>20</sup> It is difficult

to imagine the impact of such desolation on the English observers, let alone on the Indian survivors.

The arrival of Winthrop and the Massachusetts Bay Company in 1630 greatly expanded the scale of encounter between the peoples of England and America. The creative potential of the interaction between these groups was almost immediately devastated by epidemic disease. The Great Migration began hesitantly in 1623, when Puritans from Dorchester established a fishing settlement on Cape Ann. They abandoned the site in 1626; thirty remained, but moved their settlement to Naumkeag. In 1628 the Massachusetts Bay Company received a charter for lands between the Charles and Merrimac Rivers. Forty settlers were sent to reinforce the small remnant at Naumkeag. Another 200 arrived in 1629 and renamed the settlement Salem. Motivated by economic recession and religious intolerance in England, one thousand colonists, led by John Winthrop, sailed for Massachusetts Bay in 1630. They quickly settled Charlestown, Boston, Newtown (Cambridge), Medford, Watertown, Roxbury, Saugus, and Dorchester. Aided by a continuing flood of immigrants—20,000 between 1630 and 1660—the settlers filled the lowlands surrounding Massachusetts Bay and spread along the river valleys and coastlines into Connecticut. Dissidents settled in Rhode Island, New Hampshire, and Nantucket.<sup>21</sup>

Winthrop and his companions had been confident, before their departure, that God had sent epidemics to clear the way for their settlement. Like their predecessors at Plymouth, they found much evidence of this recent mortality. John White marveled that the English could settle land that was already cleared, “which comes to passe by the desolatio hapning through a three yeere Plague, about twelve or sixteene yeeres past, which swept away most of the Inhabitants all along the Sea coast, and in some places utterly consumed man, woman & childe, so that there is no person left to lay claime to the soyle which they possessed.” William Wood found other places, once cleared of underbrush, now overgrown. Francis Higginson heard of sagamores (chieftains) who had as few as two Indians left in their tribes, all others having been “swept away by a great and grievous Plague.”<sup>22</sup>

The suffering of the Massachusett continued after the colonists arrived. An epidemic may have struck in 1628. John Pond described an outbreak during the winter of 1630 and 1631: “her ar but fewoe

eingines and a gret sorte of them deyeid theis winture it wase thought it wase of the plage.”<sup>23</sup> The next two years appear to have been healthy ones, but when cicadas emerged in May 1633, the Wampanoag predicted that “sickness would follow.” That summer “pestilent feavers,” likely smallpox, struck Plymouth. Although several colonists died, the epidemic among them soon died out. The American Indians, who had forecast the epidemic, did not get off so easily. Bradford described how it soon “swept away many of the Indians from all the places near adjoining.” Others told how this epidemic “swept away multitudes of them, young and old. They could not bury their dead.” This time, in contrast to the epidemic of 1616, the outbreak did not remain confined to the coast. Instead, it spread quickly throughout New England and into New York and Quebec. The epidemic, apparently the northeast Algonquin’s first experience with smallpox, became the greatest epidemic ever to strike the New England Indians. Overall mortality approached 86 percent.<sup>24</sup>

The impact of the epidemic was immediately clear to Winthrop and Bradford. Smallpox killed many of the leaders of the Massachusetts Bay tribes who had met Winthrop on his arrival. Plymouth traders at their post at Windsor on the Connecticut River watched as Indians “died most miserably.” Traders from Massachusetts Bay “could have no trade” because the epidemic had spread “as farr as any Indian plantation was knowne to the west.” Bradford left the most graphic account, describing how their skin, covered with matted sores and scabs, sloughed off, leaving them “all of a gore blood, most fearful to behold. And then being very sore, what with cold and other distempers, they die like rotten sheep.” Unable to care for each other, “some would crawl out on all fours to get a little water, and sometimes die by the way and not be able to get in again.”<sup>25</sup> As will be seen, such misery would recur time and time again.

After 1634, less serious outbreaks of various diseases continued amongst the Indians. Thomas Mayhew described a “very strange disease” among the Capawack of Martha’s Vineyard in 1643: “they did run up and down till they could run no longer, they made their faces as black as a coale, snatched up any weapon, spake great words, but did no hurt.” In later years, Mayhew and his fellow missionaries watched their converts die of “a consuming disease,” of smallpox, and of “that grievous disease of the Bloody-Flux, whereof some with great torments

in their bowels died.” In June 1647 an “Epidemicall sickness” struck Indian, English, French, and Dutch; “it tooke them like a Colde, & a high feaver with it: suche as bledd or used Coolinge dringes dyed: those who took comfortable things, for most parte recovered.” John Josselyn encountered a host of ailments during his travels among the Indians and English: bloody flux, old aches, shrunk sinews, “wind in the stomach,” overflowing courses, scalds and burns, mother fits, frozen limbs, “shortness of Wind,” ptisick, scurvy, dropsie, worms, fevers, and “*Plague of the Back*.”<sup>26</sup>

None of these outbreaks approached the devastation of 1633. Nonetheless, they all contributed to the decimation of the New England Indians over the seventeenth century. A number of contemporary observers tried to estimate the impact of these diseases. John Smith and Robert Cushman both estimated that the epidemic of 1616 to 1619 killed up to 95 percent of the coastal population. White suggested an even more severe estimate: “the Contagion hath scarce left alive one person of an hundred.” Bradford made similar estimates for the epidemic of 1633 and 1634: “of a thousand, above nine and a half hundred of them died.”<sup>27</sup> While exact numbers are not known, modern estimates suggest that populations fell from at least 70,000 in 1600 to no more than 12,000 in 1700. This is only an average: mortality for specific groups varied between 75 and 100 percent. Similar mortality rates were seen throughout the hemisphere: estimates of total mortality range from 7 to 100 million, out of a total pre-contact population of 8 to 112 million. Die-off ratios—the ratio of pre-contact to post-contact population size—varied between 2:1 and 50:1.<sup>28</sup>

The initial devastation and ongoing depopulation of the New England Indians seemed to fulfill the colonists’ expectations of providence, but God did not leave unambiguous messages for his servants. The first years of settlement brought similar devastation to the English. Like their predecessors at Roanoke and Jamestown, the Plymouth colonists faced disaster their first winter. Bradford described how “it pleased God to visit us then with death daily, and with so general a disease that the living were scarce able to bury the dead.” Two or three of the colonists died each day, victims of exposure, scurvy, or other diseases brought on by their “inaccomodate condition.” By the end of winter, “of 100 odd persons, scarce fifty remained.” Cushman lamented this “cruel mortality.” In 1623 new colonists arrived in Plymouth. Seeing

the miserable condition, they were “daunted and dismayed . . . Some wished themselves in England again; others fell a-weeping . . . In a word, all were full of sadness.” If the colonists really believed that God had blessed the English, then they had to admit that God worked in mysterious ways. Only slowly did the colony learn to provide for its own subsistence.<sup>29</sup>

Other groups fared just as poorly. In 1622 sixty men (including Thomas Morton) established a colony at Wessagusset, at the mouth of the Neponset River on Massachusetts Bay. As had happened at Jamestown, they worried more about building forts than planting corn or catching fish. Winter made them regret these decisions: “their forts would not keep out hunger . . . many were starved to death.” The suffering men died easily: “one in gathering Shell-fish was so weak, as he stuck fast in the mud, and was found dead in the place.” After colonists stole corn from the Massachusett, the Indians plotted to destroy both Wessagusset and Plymouth. Although the plot was broken by colonists from Plymouth, Wessagusset was abandoned in 1623. Gorges sent a group in 1624 to reoccupy the site at Wessagusset, but most left after the first winter. Some remained, including Samuel Maverick, who built himself a fortified house at Winnesimet (now Chelsea). In 1625 four trading partners established a trading post near Wessagusset, named Mt. Woolaston. In 1627 two of the partners left for Virginia. The third partner, Morton, staged a coup, re-established the settlement as “Ma-re Mount,” and attracted the wrath of the Separatists for his irreligious ways. The Plymouth colonists disbanded Ma-Re Mount and shipped Morton back to England in chains.<sup>30</sup>

Although larger and better funded, the Massachusetts Bay Company initially met similar misfortune. Smallpox assailed the colonists as they sailed from England. On one ship it killed fourteen, “we are wondurfule seick.” Smallpox, scurvy, and “an infectious fever” followed John Endecott’s group ashore at Salem in 1629. Consumption seized Higginson during the winter of 1629 and 1630; he died the following August. Eighty of these 200 settlers perished that winter. When Winthrop and the main Puritan migration arrived in the summer of 1630, they expected to find Endecott and Higginson well established. Instead, as described by Thomas Dudley, they found “the Colony in a sad and unexpected condition”: many had died, the survivors were sick and weak. Meanwhile, many of the new arrivals, “being sick of fevers

and the scurvy,” were too weak to unload their own provisions. Starvation and disease took hold. By December, “there died by estimation about two hundred at the least: so low hath the Lord brought us!” Dudley compared this suffering to that unleashed by Moses on Egypt: “there is not a house where there is not one dead, and in some houses many.” John Pond told how settlers at Sudbury suffered severely from scurvy and a burning fever, “all sudberey men ar ded but three and thee woomen and sume cheilldren.”<sup>31</sup>

News of this suffering reached Plymouth. Winslow and Samuel Fuller, Plymouth’s physician, found “the hand of God to be upon them and against them at Charlestown . . . not sparing the righteous but partaking with the wicked in these bodily judgments.” Winthrop saw God’s judgment in the mortality, but had faith that it would pass once their faith had been purified: “the Lord is pleased to humble us . . . but in his due tyme, will doe us good, accordinge to the measure of our Afflictions.” The health of the colonists did improve after the first winter, the result of assistance from the established colony at Plymouth, and their ability to summon substantial resources from England. For instance, when the *Lyon* arrived in February 1631, it brought a “store of Juice of Lemons”; many who suffered from scurvy “recovered speedyle.” But even after surviving the challenges of their first winters, the colonists remained vulnerable to many diseases. The great epidemic of 1633, as noted above, started at Plymouth, “many fell very sick.” Over twenty colonists died, including Fuller. Smallpox “caused them to humble themselves and seek the Lord; and towards winter it pleased the Lord the sickness ceased.”<sup>32</sup> Disease was never far from their minds.

These early years of English settlement had not fulfilled English expectations. The sorry fate of most of the early colonies produced little evidence of divine blessing. Meanwhile, the colonists saw only conflicting evidence of God’s wrath towards the Indians. The epidemic of 1616 to 1619 had laid waste to many coastal tribes, but many groups remained. Enough Wampanoag survived to become crucial suppliers of corn to Plymouth. Enough of the Massachusett survived to threaten the first colony at Wessagusset. The Narragansett “had not been at all touched with this wasting plague.” With his “great people” estimated “to be many thousands strong,” the Narragansett chief Canonicus could “breathe forth many threats against us” and harass the Plymouth colonists for several years. The survival of western tribes disrupted

plans for an English plantation along the Connecticut River in 1633: “the place was not fitt for plantation, there beinge 3: or 4000: warlike Indians.” Nantucket in 1634 remained “full of Indians.”<sup>33</sup>

Winthrop and the Massachusetts Bay Company also encountered an initial abundance of Indians. Their populations might have been thinned, but they remained “exceeding numerous about us.” The *Arbella* sighted land on 6 June 1630; it anchored off Cape Ann on 12 June. That first day, an “Indian came aboard us, & laye there all night.” The next morning, Masconomo, the Pawtucket sagamore at Agawam, visited with one of his men. Local leaders made frequent visits to Winthrop in Boston. On 23 March 1631, Chickatabot, sagamore of the Massachusetts south of Boston, presented Winthrop with a hogshhead of corn. On 26 March Winthrop hosted brothers John and James Sagamore, who led the Pawtucket of the Mystic and Saugus rivers north of Boston. On 4 April Wahginnacut, a sagamore from the Quoanehtacut (Connecticut) river, arrived. On 13 July Winthrop received Miantonomi, nephew of Canonicus. Indians were such a presence in the colonists’ lives that by 6 September John Dawe, an English servant, had been whipped “for sollicitinge an indian Sqa to incontineneye.”<sup>34</sup> Had God really intended to clear the Indians to make way for the English? Enough Indians remained to help or to hinder the colonists.

As initial events clouded providential visions, the colonists were moved less by faith in providential destruction of the American Indians than by faith in their common humanity. They recognized that both groups shared common struggles. Colonists at Plymouth and Wessagusset starved to death, fell sick after gorging on certain foods, and suffered from frigid winter snows and seas. The Wampanoag and Massachusetts suffered from these same susceptibilities. After the colonists routed the conspiracy at Wessagusset in 1623, many terrified Massachusetts “forsook their houses, running to and fro like men distracted, living in swamps and other desert places, and so brought manifold diseases amongst themselves, whereof very many are dead.” The Plymouth colonists, moved by shared suffering, also tried to help ailing Indians. Cushman, writing in December 1621, claimed that “when any of them are in want, as often they are in the winter, when their corn is done, we supply them to our power, and have them in our houses eating and drinking, and warming themselves.” In 1623 Winslow was called to pay respects to Massasoit, who supposedly lay dying. Finding him

suffering only from constipation, Winslow cured him with “a confection of many comfortable conserves” and a broth of strawberry and sassafras. Massasoit long remained grateful to the colonists.<sup>35</sup>

Similar stories emerged during the early years of the Massachusetts Bay Colony. When smallpox struck the Massachusetts in November 1633, the English tried to help. According to Winthrop, “some of them were cured.” As the epidemic intensified in December, healthy Indians fled, leaving the English to care for the languishing victims: “It wrought much with them, that when their owne people forsooke them, yet the Englishe came dayly & ministered to them.” Winthrop singled out one family in particular, the Mavericks at Winnesimmet, who “ministerd to their necessities, & buried their dead, & took home many of their Children.” Plymouth traders at Windsor also nursed the dying Indians: “though at first they were afraid of the infection, yet seeing their woeful and sad condition and hearing their pitiful cries and lamentations, they had compassion of them, and daily fetched them wood and water and made them fires, got them victuals whilst they lived; and buried them when they died.”<sup>36</sup> Although it is unclear how often such assistance was given, the efforts do show that colonists did not simply rejoice at the providential destruction of Indian populations. Motivated by sympathy for the dying Indians, the English were “constrained to help.”<sup>37</sup>

When colonists had imagined America from the comforts of England, news of American Indian depopulation had easily been placed into narratives of providence. Indians could be dismissed as savages casually eradicated by an obliging God. Colonists’ early experiences in America challenged this simple vision. While the Wampanoag and Massachusetts had been wasted by epidemics, the colonists experienced extraordinary mortality as well. Although Bradford had expected to find “wild beasts and wild men” in America, the colonists quickly recognized the common humanity of the American Indians. Sharing vulnerabilities to famine, frostbite, and constipation, the colonists acted out of compassion to relieve Indian suffering.

## Proliferation

As the events of colonization unfolded in unexpected ways, colonists’ explanations of Indian epidemics evolved a complexity that historians have not fully appreciated. Evocations of providential decline did con-

tinue to appear despite colonists' own mortality. However, these voices were but one of many in the wilderness of New England.

Well aware of their own sufferings, the Plymouth colonists seldom attributed Indian disease to acts of God. Neither Bradford nor Winslow described the epidemic of 1616 to 1619 as an act of God. Winslow's only mention of God and disease came when God "struck Tisquantum with sickness, insomuch as he there died." For Cushman, the real miracle was that the Wampanoag had not eradicated the colonists during their first winter: "when there was not six able persons among us, and that they came daily to us by hundreds, with their sachems or kings, and might in one hour have made a dispatch of us." Others were more willing to read the will of God. Despite his own failures in the 1620s, Thomas Morton did not doubt the cause of American Indian epidemics: "the hand of God fell heavily upon them." John Smith, who had once seen the thriving populations of Massachusetts Bay, heard of their demise and believed that "God had laid this Country open for us, and slaine the most part of the inhabitants by cruell warres and a mortall disease."<sup>38</sup>

Providence made a stronger showing in the aftermath of 1633. Bradford described how "it pleased God to visit these Indians with a great sickness." Winthrop noted that "Gods hand hath so pursued them, as for 300 miles space, the greatest parte of them are swept away by the small poxe." He concluded that "God hathe hereby cleered our title to this place." After all, "if God were not pleased with our inheriting these parts, why did he drive out the natives before us? and why dothe he still make roome for us, by deminishing them as we increace?" The anonymous chronicler of Charlestown and John Cotton, the leading Puritan theologian in Massachusetts, both used the epidemic to defend the legitimacy of Puritan land claims. Without "this remarkable and terrible stroke of God," the colonists "would with much more difficulty have found room, and at far greater charge have obtained and purchased land." Thomas Gorges, who spent two frustrating years in Maine as the deputy of his cousin Ferdinando Gorges, found that "The Indians are tractable. The Lord sent his avenging Angel & swept the most part away." An anonymous 1642 tract provided a list of things for which the colonists should give thanks. God's gift of epidemics led the list: "1. In sweeping away great multitudes of the Natives by the small Pox."<sup>39</sup>

Historians have long been impressed by these providential explana-

tions of Indian epidemics. Defining the standard interpretation in 1909, Herbert Williams concluded that the English regarded the epidemics “as the method by which Providence removed the savages to make room for Englishmen.” John Heagerty commented wryly that Puritan “faith had the virtue of simplicity and directness.” According to Alden Vaughan, the disparity between Indian demise and English health “was proof positive of the Lord’s intention of making New England a haven for His true church.” Such assertions have been reiterated by historian after historian.<sup>40</sup> This common account of English responses equates providential interpretation with utter callousness. According to historians, the colonists saw the Indian mortality “as the destruction of devils.” They considered the depopulation “a blessed event.” The devastation “was a Golgotha the Puritans delighted in discovering.”<sup>41</sup>

However, historians’ focus on this one aspect of response obscures a more interesting narrative. Karen Kupperman has shown that colonists’ responses to American Indians were more complex than past analyses have allowed: “within a single brief book writers could be contemptuous and admiring, hostile and friendly, self-confident and terrified.”<sup>42</sup> The complexity of English responses to Indian disease demonstrates this particularly well. Although providential celebrations of American Indian mortality did occur, they were but one mode of explanation.

During the early years of colonization, English and Indians encountered each other with mutual curiosity. Neither side initially believed the other to be intrinsically different at a physical level. Philip Vincent, a leader of the English forces in the Pequot War, saw Indian bodies as indistinguishable from the English: “Their outsides say they are men . . . Their correspondency of disposition with us, argueth all to be of the same constitution, and the sons of Adam, and that we had the same matter, the same mould. Only art and grace have given us that perfection which yet they want, but may perhaps be as capable thereof as we.” Roger Williams agreed: “Nature knows no difference between *Europe* and *Americans* in blood, birth, bodies, &c. God having of one blood made all mankind.” Williams even wrote a poem on the subject: “Boast not proud English, of thy birth & blood, / Thy brother Indian is by birth as Good. / Of one blood God made Him, and Thee & All, / As wise, as faire, as strong, as personall.”<sup>43</sup>

Even skin color was misleading. As Morton described, Massachusetts

infants “are of complexion white as our nation, but their mothers in their infancy make a bath of Wallnut leaves, huskes of Walnuts, and such things as will staine their skinne for ever, wherein they dip and washe them to make them tawny.” Wood held a similar belief, but with a different mechanism: “Their swarthinness is the sun’s livery, for they are born fair.” Kupperman has shown that this faith in the artificial origins of Indian complexion reassured the English that the Indians were not a different race. Only later in the century would colonists begin to suspect that Indian disease reflected some sort of inherent constitutional susceptibility. Joyce Chaplin has argued that this attribution of disease to “innate weakness” was crucial to the gradual articulation of “a racial definition of humanity in America.” Racial definitions, however, did not consolidate until the nineteenth century, and even then (as will be seen) observers continued to downplay ideas of inherent difference and instead emphasize the pathogenic power of behavior and environment.<sup>44</sup>

Until the racial definition emerged, colonists believed that their bodies and Indian bodies shared the same vulnerabilities. As a result, colonists often explained Indian epidemics in the same ways that they explained their own diseases. Although some historians ignore the complexity of colonists’ medical thought, the English brought elaborate theories of disease etiology to America. Theology certainly remained central to their thoughts, but the colonists were practical people dealing with practical problems: disease and its causes could be familiar and mundane. Moreover, leading colonists, educated at Cambridge University, were well versed in Aristotelian natural philosophy. As a result of these practical and academic experiences, they entertained a wide range of natural explanations of disease.<sup>45</sup>

Colonial environments could bring health or disease. William Wood found that New England had a “medicinable climate” for English constitutions. Higginson and many others agreed: “there is hardly a more healthfull place to be found in the World that agreeth better with our English Bodyes.” The clear and dry air cured disease by “altering, digesting, and drying up the cold and crude humors of the Body.” The water kept the body “temperately soluble.” Native crops, particularly corn, kept “the body in a constant moderate loosenesse.”<sup>46</sup> This same environment, however, could also turn deadly. Wet lodgings and cold weather “so taynted” the Plymouth colonists that Bradford feared they

would “breed diseases and infection amongst us.” Colonists’ bodies, corrupted by rotten provisions during their long Atlantic voyages, were particularly vulnerable when they first arrived in New England: “the searching sharpness of that purer climate creeping in at the crannies of their crazed bodies, caused death and sickness.” Damp lodgings caused scurvy among the Massachusetts Bay colonists. As always, “The poorer sorte of people (who laye longe in tentes &c:)” suffered the most.<sup>47</sup> Similar “natural causes” produced fevers in colonists during hot weather. The heat of even Connecticut could be a threat: “All that southerly part of the seacoast having, as more propinquity to Virginia in situation, so a participation with it in its climatical diseases.”<sup>48</sup>

Other causes of disease abounded. Colonists died, or lost fingers and feet, to frostbite. Many starved. Others suffered from exhaustion: lacking horses, “many an honest Gentleman travell a foot for a long time, and some have even perished with extreame heate in their travells.” Certain foods, such as fresh mussels which the Plymouth colonists found on Cape Cod, “made use all sicke that did eat.” John Winthrop Jr. had heard that leprosy might be caused by consuming too many fish. Specific foods could also heal. Winthrop described how “Oranges and Limons,” shipped from Bermuda in 1636, brought “a great reliefe to our people.” Josselyn praised native cranberries as “excellent against the Scurvy.” Some diseases were contagious and could spread from person to person. Women were vulnerable to a unique set of problems, including unskilled midwives, excessive reading, and promiscuous suckling. Winthrop also knew that pessimism and depression could kill: “It hath been always observed heere, that such as fell into discontente & lingered after their former Conditions in Englande, fell into the skirvy, & dyed.” Writing in 1643, Bradford saw clear lessons from their experiences: “change of air, famine or unwholesome food, much drinking of water, sorrows and troubles, etc., all of them are enemies to health, causes of many diseases, consumers of natural vigour and the bodies of men, and shorteners of life.”<sup>49</sup>

Believing that Indian bodies resembled European bodies, the colonists attributed Indian diseases to the same exposure and deprivation that caused English disease. Gorges traced the epidemic that devastated the Maine coast in 1616 to unrest that followed the death of the local chief: competing groups “fell at variance among themselves, spoiled and destroyed each others people and provision, and famine

took hould of many; which was seconded by a great and generall plague." After the Plymouth colonists routed the Massachusetts conspiracy at Wessagusset, the terrified Indians abandoned their houses and corn, fled into swamps, and died in great numbers. Roger Williams argued that the Narragansett suffered from lack of "a raisin or currant or any physick, Fruit or spice, or any Comfort more than their Corne and Water." Excessive food could also be a culprit. After Winslow cured Massasoit of his nearly fatal constipation, the relieved sachem gorged himself on fatty duck and nearly died again.<sup>50</sup>

The colonists also described a series of American Indian behaviors that they considered dangerous. Winslow noted that the Wampanoag exposed themselves by visiting people who were "dangerously sick" in their homes. Williams, however, noted that such visits were not made if "it be an infectious disease." Colonists described the offensive, supposedly harmful, antics of Indian healers. Winslow criticized Massasoit's powwaws, who made "such a hellish noice, as it distempered us that were well, and therefore unlike to ease him that was sick." Mayhew accepted that the powwaws might once have been effective, but "since the Word of God hath been taught unto them in this place, the *Parwwaws* have been much foiled in their devillish tasks, and that instead of curing have rather killed many." Josselyn attributed syphilis to Indian cannibalism. Such victim blaming has always remained popular among observers of American Indian epidemics.<sup>51</sup>

Some colonists also took seriously the Indians' own explanations of the epidemics. Thomas Gorges described how the natives near Accomenticus believed in a link between a lunar eclipse and Indian mortality: there "hapned an ecllipse of the moon such as was never heer seen by English or Indians, for she was totally eclipsed for the space of 2 hours. The Indians suppose because the moon dyed (as they terme it). This will be a fatal year to them." Roger Williams described a similar belief about earthquakes. After the earthquake in June 1638, Narragansett elders told Williams that this was the fifth earthquake in eighty years, and that "they allwayes observed either Plauge or Pox or some other Epidemicall disease followed: 3, 4 or 5 yeare after the Earthquake (or Naunaumemoauke, as they speake)." The English and American Indians could participate in a mutual discourse on disease etiology, one based wholly on natural mechanisms.<sup>52</sup>

At times the colonists even admitted a sense of responsibility for

American Indian mortality, attributing it to the changes in traditional customs that followed contact with the Europeans. William Wood observed that when the Indians changed “their bare Indian commons for the plenty of England’s fuller diet, it is so contrary to their stomachs that death or a desperate sickness immediately accrues, which makes so few of them desirous to see England.” When epidemics struck converts on Martha’s Vineyard in 1643, Mayhew described how the Wampanoag “laid the cause of all their wants, sicknesses, and death, upon their departing from their old heathenish ways.” When promising Indian scholars died at Harvard College, some observers “attributed it unto the great change upon their bodies, in respect of their diet, lodging, apparel, studies; so much different from what they were inured to among their own countrymen.” Alcohol was often singled out. Williams blamed the liquor trade for the “many sudden deaths, what by *Consumptions* and *Dropsies*, the *Barbarians* have been murdered, *hundreds*, if not *thousands* in the whole Country.” Daniel Gookin blamed this “beastly sin of drunkenness” among the Indians on “the English and other Christian nations.”<sup>53</sup> Such attributions of morbidity and mortality to the process of cultural transition would become a dominant theme in the ensuing centuries of encounter.

The English were not alone in generating diverse explanations for American Indian epidemics. Spanish, French, Dutch, and Swedish colonists also observed the initial depopulation of the Atlantic coast of the Americas. All of the groups described similar processes of divine providence and natural mechanism. Consider the epidemic that struck the Indians of Guatemala in 1576 and 1577. Spanish officials initially described the disease as a contagion that had spread from Mexico. A formal investigation disagreed, citing abuses perpetrated by the local Spaniards. A second investigation, hoping to exonerate the colonists, blamed divine mechanisms: “What causes the Indians to die and to diminish in number are secret judgments of God beyond the reach of man.”<sup>54</sup>

The French experience is most useful here. While the English settled New England in the early seventeenth century, the French worked to convert and colonize Acadia and Quebec. Jesuit missionaries left a detailed and angst-ridden record of the ensuing Indian mortality. When the French arrived, they found healthy populations in Acadia (1610) and Quebec (1625). This quickly changed. By 1637 50 percent

of the Huron had died from epidemics of smallpox and ill-defined fevers. The Huron “asked why so many of them died, saying that since the coming of the French their nation was going to destruction.” The Jesuits accepted this challenge and proposed a wide range of explanations.<sup>55</sup>

Like their predecessors at Roanoke and Plymouth, the Jesuits were quick to see the hand of God behind daily events. Just as God rewarded drought-stricken converts with bountiful rains and restored health to missionaries afflicted with pestilence, God struck down blasphemers, whether French or Indian. When a Montagnais sorcerer ignored warnings that he would land himself in hell, “God did not fail to strike him; for the year had not yet expired, when his cabin took fire, I know not how, and he was dreadfully scorched, roasted and burned.”<sup>56</sup> Few examples of God’s judgment, however, involved Indian disease.

Instead, the French had many natural explanations for differential susceptibility to epidemics. Like the English, the French emphasized exposure and privation. Paul Le Jeune and Pierre Biard both attributed Indian deaths to the hardship of their “wretched” lives: “only the most robust can endure.” Le Jeune also blamed “their filthy habits.” Echoing Winslow’s opinion of Wampanoag shamans, he criticized Huron sorcerers. One such “charlatan,” trying to cure a sick child, “was beating upon and whirling around an instrument full of little stones, made exactly like a tambourine. With all this he howled immoderately. In a word, he and his companion, in order to cure this little boy of a fever, made enough noise to give one to a healthy man.” The Jesuits also recognized that many diseases could be contagious. In a smallpox outbreak in 1640, “the evil spread from house to house, from village to village, and finally became scattered throughout the country.” Hierosme Lalemant blamed the rapid spread on carelessness: “the Hurons—no matter what plague or contagion they may have—live in the midst of their sick.”<sup>57</sup>

Le Jeune admitted that such explanations did not account for the increase in mortality since French arrival: “I would have considerable trouble to assign a natural cause for their dying so much more frequently than they did in the past.” Biard had attributed worsening Micmac mortality to changed diets. Le Jeune singled out brandy and wine, “which they love with an utterly unrestrained passion.” The alcohol trade, of course, he blamed on the English.<sup>58</sup> The Indians had other

ideas. As early as 1616, the Micmac had recognized a correlation between French contact and Indian mortality. They concluded that the French poisoned them or sold them spoiled goods. When missionaries remained healthy while their subjects died, the Huron concluded that the French “had a secret understanding with the disease.” Some believed that the French spread pestilence with a “bewitched” cloak. Some claimed that they kept a “crafty demon” concealed in a musket and sent it wherever they wanted. Others accused the French of poisoning their water, of defiling pictures of their children, or of destroying them with the magical power of writing. Only when missionaries fell sick did the Huron concede that the French might not be “undying demons, and masters of maladies.”<sup>59</sup>

Although the French denied Huron allegations of deliberate infection, they increasingly admitted their own culpability as they observed the continuing epidemics. Lalemant conceded that “since our arrival in these lands, those who had been the nearest to us, had happened to be the most ruined by the diseases.” The implication was unavoidable: “no doubt we carried the trouble with us, since, wherever we set foot, either death or disease followed us . . . where we were most welcome, where we baptized most people, there it was in fact where they died the most.” Shaken by this, Lalemant sought solace in faith: “We shall see in heaven the secret, but ever adorable, judgments of God therein.”<sup>60</sup> Guilt-stricken and fearing that they were the cause of depopulation, the ever-inquisitive Jesuits set aside their curiosity.

Suspicion that the French brought death to Quebec threatened the Jesuit mission. By the 1630s, however, severe mortality (from French-acquired epidemics) left the Huron dependent on continuing French assistance: they had become trapped in a deadly relationship. The Jesuits faced a different problem. Believing that their work depended on the survival and conversion of the Huron, they could take no solace in providential depopulation. Instead, they emphasized natural mechanisms of disease, especially ideas of contagion and contaminated goods that reflected the central role played by commerce in French-Indian relations.<sup>61</sup>

Taken together, the French and English experiences demonstrate the appeal of providential interpretations across a range of European cultures and religions. However, neither group saw the epidemics simply in moral terms. As Joyce Chaplin has argued, epidemics were both

“moral *and* material events.”<sup>62</sup> The English and French understood that natural mechanisms of disease afflicted both colonists and Indians: the many hazards of the colonial environment undermined health, whereas specific behaviors increased the risk of disease. Some colonists, even in this early period, suspected that the process of encounter and ensuing cultural change created the vulnerabilities that devastated American Indians. As a result, theology had to accommodate pragmatism, which recognized disease as the proximate outcome of physical risks; sympathy, which acknowledged the shared suffering of the American Indians; and responsibility, which conceded European culpability for the mortality.

If God truly loved the English above all others, for the moment it was not clear. American Indians had suffered the tremendous mortality that the colonists had expected, but any obvious disparity in health status had been confounded by the colonists’ own suffering during their first decade in New England. No simple messages lent themselves to providential interpretation. Instead, the destabilizing processes of colonization fueled diverse explanatory narratives. Everyone—colonist and Indian—was flawed, and thus vulnerable to divine judgment. Everyone had a mortal body, subject to hostile weather, inadequate food, and lurking disease. Colonists could rejoice when God favored them by removing American Indians, but they could also empathize with Indian suffering and regret their own responsibility for the calamity. The world was a complicated and dangerous place.

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*Meanings of Depopulation*

AS THEY PLANNED their voyages of colonization, William Bradford, John Winthrop, and other English adventurers had optimistic visions of America. Although they had long been persecuted in Europe, they expected to find religious freedom and economic opportunity in America. They had faith that God blessed their mission, going so far as to send epidemics among the American Indians: by the “awful and admirable dispensation” of smallpox, “it pleased God to make room for his people of the English nation.”<sup>1</sup> The first decade of colonization challenged such providential narratives. While the colonists did witness shocking mortality among the Pemaquid, Massachusetts, and Wampanoag of coastal New England, they struggled with devastating problems of their own. Half the Plymouth colonists died in their first winter. Colonies planted throughout the 1620s failed. The colonists at Massachusetts Bay, who would eventually prevail through force of numbers, had to overcome smallpox, consumption, starvation, and depression before establishing themselves firmly on those dangerous shores.

These struggles of early colonization destabilized the clear narratives that had led the colonists to America. God did seem to strike down American Indians, but Europeans were similarly vulnerable to God’s judgments. The practical concerns of daily life also fueled a parallel series of explanations, attributing diseases of colonists and Indians

to much more tangible causes, including food, environment, behavior, and specific natural phenomena. With these understandings, the colonists struggled to overcome the diseases, holding days of prayer, acquiring lemons from Bermuda, and providing food and nursing care to afflicted Massachusett and Wampanoag. Such sympathy, however, was constrained by the realization that the colonists could often do little to overcome smallpox and other epidemics. Even as the colonists welcomed some American Indians into their moral communities, they set low expectations for their own interventions.

Despite this initial diversity of explanation and response, however, the colonists did not face insoluble confusion about the meanings of depopulation. Instead, their concept of providence provided a framework for integrating natural and theological mechanisms into a unified account of the horror of Indian demise. When the integration worked, it provided a powerful and reassuring understanding of the catastrophe that the colonists observed. This framework, however, proved imperfect. Many examples show how colonists contested the relevance of theological and natural explanations. These tensions enable an analysis of how colonists and Indians, filtering their perceptions of Indian epidemics through the needs and concerns of their local worlds, favored explanations that were the most meaningful and useful. Meaning can also be found in the way that the initial diversity of explanation was distilled over the seventeenth century. If the initial turbulence of colonization fueled instability of explanation, then the expansion of the English colonies allowed consolidation. As English populations grew while Indian populations declined, the colonists found new meaning in their initial expectations of providence. These re-emerged as the essential memory of American Indian epidemics.

### Subtleties

During the initial encounter between colonists and American Indians, providential and natural explanations often appeared side by side. This diversity challenges our modern imagination. In defiance of our desire to assign effects to a single cause, early modern writers inhabited an intellectual world in which multiple causes operated simultaneously. Any attempt to understand the meanings of their explanations must acknowledge this difference. As Karen Kupperman warns, we cannot

easily understand colonists' thoughts: "Their purposes and meanings are alien and require imaginative reconstruction."<sup>2</sup> Because of the difficulty of adopting their world view, it is only possible to make guarded progress in pursuit of meanings. This progress, however, is extremely useful.

The work of the many historians who have studied Puritan theories of providence offers a valuable starting point. Perry Miller provided the classic interpretation of the Puritan world view. He centered Puritan lives on the anguish that resulted from their inability to attain true harmony with God: "The ultimate reason of all things they called God, the dream of a possible harmony between man and his environment they named Eden, the actual fact of disharmony they denominated sin, the moment of illumination was to them divine grace, the effort to live in the strength of that illumination was faith, and the failure to abide by it was reprobation." More recent work has examined subtleties that Miller overlooked. Miller treated the first three generations of Puritans in New England as a homogenous group, their writings as "the product of a single intelligence." Historians have since emphasized the many inconsistencies and subtleties of Puritan thought. David Hall has shown that the "mental world of the colonists was far richer than we have supposed": they could "select among a range of meanings." As a result, interpreting their thoughts and contradictions, the "flows of meaning and how people acted on them," remains "more of an art than a science."<sup>3</sup>

Several aspects of Puritan thought are clear. Most Calvinists shared the belief of Thomas Beard, who wrote that "God was immediately and actively present in the world, the ultimate force behind everything that happened." As a consequence, Puritan minds did not draw our modern dichotomy between physical and spiritual. Instead, Puritans sought a seamless view of causation, in which natural and theological explanations operated in concert. God had once intervened directly, without acting through the laws of nature. Such miracles had ceased in biblical times, as soon as God completed the revelation. During the lives of the Puritans, God resorted only to special providences. Cotton Mather explained how these worked. All events had a teleology: by "the foreknowledge and decree of God, the first cause, all things come to pass immutably and infallibly." But God did not act directly: God did not make Indians vanish in a puff of smoke. Instead, providence was mani-

fested through natural processes, “according to the nature of second causes, either necessarily, freely, or contingently.”<sup>4</sup>

In this world, all events had natural and spiritual causes, simultaneously. As Perry Miller has described, God, “assuming for the moment the role of a natural agent and binding Himself by natural law,” acted “by natural instruments, by arranging the causes or influencing the agents, rather than by forcible interposition and direct compulsion.” Half of the Plymouth colonists died the first winter, clearly from exposure and disease. But as Mather explained, if such diseases had not “fetched so many of this number away to Heaven,” the whole group would have starved the following summer. When an earthquake rattled Boston in 1662, Nathaniel Morton noted that the “Efficient Cause is Supernatural, as either principally *God*, or instrumentally the *Angels*,” but the formal cause was “naturally the Wind shut up within the Pores and Bowels of the Earth.”<sup>5</sup> Although providential events might seem local and contingent, they could just as easily reflect plans laid by God at the origins of the cosmos.

Such special providences had many functions in Puritan life. Strict Calvinists believed that all events had been foreordained by God, even those that seemed to be remarkable coincidences conducted by people acting independently. God, extending grace, had already chosen whom to save. But this did not absolve Puritans of the responsibility to lead devout lives. As Charles Cohen has explained, grace was a dynamic interaction between God and humans: “Grace does not operate without human participation.” Although individual action could not bring about salvation, individuals’ choices reflected the status of their salvation. Individuals who did good works could suspect that they were good people who had been chosen. Perception of divine intent behind daily events oriented the Puritans to their status. It revealed God’s love or anger, motivating them to good works whether to demonstrate their salvation or to regain God’s love.<sup>6</sup> Providential interpretation restored aspects of agency and responsibility to a predestined world.

Providence also provided crucial reassurance in a bewildering world. Early modern life overflowed with danger, powerlessness, and death. As suggested by historian Michael Winship, faith in the purpose of events replaced anxiety with serenity, offering “consolation by assuring believers that all that befell them came from a loving, if often angry, God.” In this way providence provided an “organizing and explanatory

principle” for all aspects of Puritan lives and history. Thomas Shepard, who became the minister at Cambridge in 1636, could endure shipwreck, illness, and the death of his wife and son, confident that each had a role. For instance, when his son died, he recognized that “the Lord now showed me my weak faith, want of fear, pride, carnal content, immoderate love of creatures and of my child especially.”<sup>77</sup> Such providential reassurance was not confined to the Puritans. English Anglicans and French Catholics just as easily found solace in faith that all occurred by the will of God.

With natural mechanisms energized by divine will, the world (in theory) could be both “unpredictable and communicative.” As Winship described, it “bubbled forth a rich semiotic stew of intentions, which all could freely taste.” Pursuit of such meanings motivated Puritan natural philosophy: “they took particular comfort in moralizing over oddities which seemed to be produced by natural causes, but in which the pious investigator could perceive the finger of God.”<sup>78</sup> Snow might freeze feet; cranberries might cure scurvy; Indians might die from consuming English foods. God was behind it all: God’s will motivated the weather; God graced humans with knowledge of medical therapeutics; and God willed that the Indians should die to make way for the English mission in America. When the system functioned smoothly, there was no choice between spiritual and natural explanations of disease. Both occurred, simultaneously. The synergy of meaning and mechanism aided Puritans in their pursuit of grace. Every event, of both health and disease, became a tool in their quest for salvation.

Even when this union of theology and natural process operated seamlessly, the faith was difficult to follow. Devout colonists lived a continuous struggle to accept their many calamities with faith. Why did God keep Plymouth without a minister, striking down their recruit with a fatal fever? Why did God strike down even the most godly and dedicated colonists? Thomas Shepard might have been willing to accept providential reassurance for every misfortune, seeing his illness in 1642 as a reminder that his life was “a vapor and bubble, a vanity . . . I was sinning and provoking God in every action.”<sup>79</sup> But such feats of finding solace in misery were likely ones that few could accomplish.

Furthermore, colonists struggled to understand events in which theology and natural philosophy existed in tension. In some cases, events occurred in ways that defied Puritan understanding of the natural

world. In others, events were assigned firmly to the natural or theological domains, but not to both. These discrepancies opened space for creative interpretation.

First, English colonists could not always find natural explanations for the phenomena they observed. During his missionary efforts, John Eliot was besieged by questions from the Massachusett about the causes of winds, tides, and thunder. When asked why “the Sea water was salt, and the Land water fresh,” Eliot threw up his hands in frustration: “Tis so from the wonderfull worke of God, as why berries sweet and Cranberries sowre, there is no reason but the wonderfull worke of God that made them so.” When no natural mechanism could be found to explain the disappearance of a plague of rats from Bermuda, John Smith pronounced it a miracle, “a more mediate and secret worke of God”: “God doth sometimes effect his will without subordinate and secondary causes.”<sup>10</sup> Where natural causes could not be found, colonists’ dual-causal system collapsed simply to attribution of cause to divine will.

Second, some events defied known natural mechanisms. Having suffered so many hardships, the Plymouth colonists reasonably expected that they would live only short lives. To Bradford’s surprise and amazement, the opposite occurred: “I cannot but here take occasion not only to mention but greatly to admire the marvelous providence of God! That notwithstanding the many changes and hardships that these people went through, and the many enemies they had and difficulties they met withal, that so many of them should live to very old age!” William Hubbard struggled to explain the vagaries of fevers in Connecticut in the 1630s: sometimes mild, sometimes fatal, sometimes general, sometimes afflicting a single plantation. This variability could only mean one thing: “though there might be something in the climate, yet a Divine Hand hath overruled.” Other surprises occurred frequently, if on smaller scales. John Winthrop described the arrival of two ships in Boston in 1636: although they endured a month of “stinking water” and “very short and bad” provisions, “through the great providence of the Lord, they came all safe on shore, and most of them sound.” In 1637 smallpox struck a ship but, according to Edmund Browne, few suffered: it was “ordered by the Lord’s power, as if it had not been infectious.”<sup>11</sup> God, apparently, could guide events away from their natural course.

Third, colonists could take questions that had both theological and

natural aspects and assign them to one domain. When fleeing Massachusetts conspirators died in swamps in 1623, Ianough, their sachem, feared that “the God of the English was offended with them, and would destroy them in his anger.” Edward Winslow saw a more practical explanation: “through fear they set little or no corn, which is the staff of life, and without which they cannot long preserve health and strength.” William Bradford attributed earthquakes to God, but whether the earthquake of 1638 caused the ensuing cold summer and poor corn harvest, “I leave it to naturalists to judge.” In 1646 the “loathsome disease” of syphilis struck Boston, infecting a woman and sixteen children. Magistrates could “find no dishonesty” in the woman or her husband. They theorized that the disease began because many children had suckled her breasts. Winthrop, in a rare move, deferred judgment and concluded that “this is a question to be decided by Phisitians.” When relief came “by the good providence of God,” it took the form of a young surgeon from the West Indies “who had had experience of the right waye of the Cure of that disease.”<sup>12</sup> Even the morality-laden disease of syphilis was better left to a surgeon’s hands than to theological inquiry.

Finally, natural and providential explanations could compete in open debate. Thomas Dudley described a dispute he had with a minister, Mr. Wilson, about whether the early mortality of the Plymouth colonists arose from “natural causes” or from “Other causes God may have.” Although Dudley did “forbear to mention” God’s causes, he had no trouble listing potential natural causes: “the want of warm lodging and good diet . . . the sudden increase of heat which they endure that are landed here in summer, the salt meats at sea.” Those who landed in winter “died of the scurvy, as did our poorer sort, whose houses and bedding kept them not sufficiently warm, nor their diet sufficiently in heart.” Although he favored natural causes, Dudley, in the end, left “this matter to the further dispute of physicians and divines.” Daniel Gookin described similar debates about why so many Indian students at Harvard College died from consumption. Some “have attributed it unto the great change upon their bodies, in respect of their diet, lodging, apparel, studies; so much different from what they were inured to among their own countrymen.” Others saw the deaths as “severe dispensations of God,” either because “God was not pleased yet to make use of any of the Indians to preach the gospel,” or because Satan “did use all his stratagemes and endeavours to impede the spreading of

the christian faith.” Still others “did conclude that there was nothing more in these providences and remoras, than did usually attend and accompany all good designs, tending to the glory of God and salvation of souls.”<sup>13</sup> In these cases, the colonists did not find integrated synergy of providence and mechanism. Instead, they struggled to choose between them.

## Motivations

As these examples show, providential explanations were not simply the reflexive response of devout colonists. Instead, providence could be emphasized or de-emphasized, presumably where it suited the purposes of the colonists. Such choices, grounded in the local political or economic needs of their worlds, recurred whenever and wherever Europeans responded to American Indian epidemics. In these early colonial cases, it is possible to understand the cultural work performed by providence by examining cases in which providential explanations were most forceful. It is also possible to see how American Indians attempted to put their own understandings of the epidemics to good use.

The efforts of Massachusetts Bay Company officials to justify English settlement in New England provide the clearest demonstration of providence serving local needs. As they planned the Great Migration in 1629, Winthrop, White, and Higginson all defended their right “to take that lande which is and hath been of long tyme possessed by other sonnes of Adam.” Not only was there more than enough room for everyone, but also “God hath consumed the natives with a miraculous plague,” leaving the land void. In 1634, after witnessing the great smallpox epidemic of 1633 and 1634, Winthrop continued this justification. In letters to Simonds D’Ewes and Nathaniel Rich he argued that God, using smallpox, had “cleared our title” to New England. John Cotton, Thomas Gorges, and the chronicler of Charlestown all made similar claims.<sup>14</sup> In this context, every Massachusetts death simply strengthened English claims to New England. At a time when acquisition of land was the primary concern of the colonists’ state-building process, providential depopulation provided the primary justification. As will be seen, as the needs of the state evolved from land, to trade, to international politics, American Indian disease always played a valuable role.

As early settlers made explicit linkages between Indian mortality and

English land rights, they also used Indian epidemics as proof that God favored the English over the American Indians. For instance, they believed that God often protected them when they were exposed to dying Indians. Richard Vines and his crew wintered with the dying Pemaquid in 1616 and 1617 but “(blessed be *GOD* for it) not one of them ever felt their heads to ake.” John White and John Smith both celebrated this remarkable occurrence. When English colonists nursed Indians suffering from smallpox in 1633 and 1634, “by the marvelous goodness and providence of God, not one of the English was so much as sick.”<sup>15</sup> The English deployed these precise examples of disparity in disease vulnerability to document their privileged status.

Even as they argued that epidemics demonstrated God’s love of the colonists, they told how epidemics punished treacherous natives. One popular story told the fate of French fishermen shipwrecked on Cape Cod shortly before 1616. The Indians harassed and captured the survivors. According to Bradford, the captives were “sent from one sachem to another to make sport with, and used them worse than slaves.” One Massachusetts told Phineas Pratt that “we gave ym such meat as our dogs eate.” In these early versions, providence is only a threat. When the Indians, fascinated by the French obsession with a book (presumably the Bible), asked what the book said, the French answered: “It saith, ther will a people, lick French men, com into this Cuntry and drive you all a way.”<sup>16</sup> But as this story was told and retold, it accumulated substantial elaboration. According to John Smith, one of the French sailors learned some of the Massachusetts language and attempted to convert them. They derided him. When he said that his God would destroy the Indians, they dismissed his claims: “so long they mocked him and his God, that not long after such a sicknesse came, that of five or six hundred about the Massachusetts there remained but thirty.” Thomas Morton told a similar story. In these versions, and the many variations that followed, disease was the deserved punishment of heathen Indians.<sup>17</sup>

The colonists also deployed providential explanations of disease in their efforts to convert Indians to Christianity. Missionaries used the suffering caused by epidemics to encourage many Indians to accept God as their savior. When John Sagamore, the Massachusetts leader at Winnesimmet, suffered from smallpox he told the English that he “desired to be brought amonge the Englishe (so he was) & promised (if he

recovered) to live with the Englishe, & serve their God. he lefte one sonne, which he disposed to mr willson the paster of Boston, to be brought up by him . . . he died in a perswasion that he should goe to the English mens God." Many of his people followed his lead: "diverse of them in their sicknesse, confessed that the English mens God was a good God, & that, if they recovered they would serve him." This story long remained popular among Puritan authors.<sup>18</sup>

Thomas Mayhew, working as a missionary on Martha's Vineyard, recorded many similar tales. Would-be Capawack converts had to describe the processes by which they had come to know God. These conversion narratives contain many accounts of disease inspiring the Capawack to pay closer attention to God. Nookau, for instance, went through several cycles of illness-inspired recognition of his sinning ways before finally promising to dedicate his life to God and prayer. He quickly recovered: "God gave me health and then I thought, truly, God in Heaven is merciful; then I much grieved, that I knew so little of Gods Word." Even a two-year old toddler, dying of the bloody flux, learned to accept Christ, "in this manner it lay calling upon God and Jesus Christ untill it died."<sup>19</sup>

The colonists also told how Indians, when they converted, became recipients of the benefits of providence. In the winter of 1649 and 1650, smallpox stalked the English. John Eliot reported that his Christian Indians were spared: "The Lord had shewed them a very great testimony of his mercy this winter, in that when formerly the English had the Pox much, they also had the same; but now though it was scattered in all or most of the Townes about them, yet the Lord hath preserved them from it." A group of "profane Indians," who lived nearby, were not similarly spared, "those which were cut off, were of the worst and mischievous of them all." This blessing was noted by everyone: "which Providences, all the good Indians do take a great notice of, and doth say that the Lord hath wrought a wonder for them; and it seemeth to me that the Lord hath blest this good Providence of his to be a strong ingagement of their hearts to the Lord."<sup>20</sup> In these narratives, the authors used disease status as evidence of the blessings gained by those who accepted Christianity. Just as epidemics had been made to serve the needs of the state, they could be made to serve the needs of the Church.

The colonists deployed providential narratives to serve the needs

of their state-building and church-building enterprises: the English needed land, so God sent smallpox to clear the land; the English needed converts, so God sent smallpox to win over Indian hearts. But the English also felt anxiety about these justifications. Could they really take land that had been so long inhabited? Why did God not always protect converted Indians from disease? The English felt other anxieties as well. At times they felt motivated to intervene to help the suffering Indians, but these efforts to provide care produced few results. Bradford described how the efforts of Plymouth traders to nurse the Indians on the Connecticut River brought little benefit: "very few of them escaped, notwithstanding they did what they could for them themselves." Winthrop noted that although the English adopted Massachusetts children orphaned by smallpox, "most of them died soone after." Cotton Mather later noted that "although the English gave them all the assistances of humanity in their calamities," most of the Massachusetts died.<sup>21</sup>

This suggests another possible role for providential narratives. The colonists were surrounded by horrific mortality that they were powerless to stop. They could do little more than pray and provide nursing care. Indians for whom they cared died despite their care. Powerless to intervene, the colonists must have found solace in seeing the deaths as the will of God, as somehow fulfilling God's purposes. Faith that all things happened in accordance with the will of a loving, but often angry, God, provided comfort and serenity in this bewildering world of observed suffering.<sup>22</sup> Providence also naturalized the epidemics, making them expected and tolerable. It absolved the colonists of any responsibility and agency that they might have felt. There was little the colonists could do; perhaps it helped to believe that there was little they should do.

A potential parallel exists in modern histories of American Indian depopulation. Now, even more than the Puritans, modern historians emphasize the natural inevitability of the epidemics of encounter. As Alfred Crosby has described, the "initial appearance of these diseases is as certain to have set off deadly epidemics as dropping lighted matches into tinder is certain to cause fires." This is not simply a rhetorical flourish. Historians and scientists have long argued that American Indians, "genetically virgin peoples," were "immunologically defenseless." Such immunological determinism, embodied in the theory of vir-

gin soil epidemics, has been hugely popular, from William McNeill's *Plagues and Peoples* to Jared Diamond's Pulitzer Prize-winning *Guns, Germs, and Steel*, persisting despite considerable evidence that demonstrates the social contingency of depopulation.<sup>23</sup> Why is immunologic vulnerability singled out as the most relevant explanation, amidst a wealth of sophisticated alternatives? Perhaps it has appeal, like Puritan providentialism, because it provides meaning and reassurance to historians and their audiences. Depopulation is represented as the product of a unique historical-immunological moment: the convergence of two long-isolated populations, one familiar with disease, the other immunologically naïve. The inevitable outcome cannot be blamed on colonists or their descendants, for if they had not introduced smallpox, someone else surely would have. This argument replaces Puritan theology with modern biology. Like Puritan providentialism, genetic determinism blames the inherent inferiority of disease victims, absolving observers of responsibility for the disparity, and of responsibility to intervene.

The colonists (and their historians) were not alone in assigning meanings to epidemics to make them serve specific purposes. Far from remaining passive victims of differential mortality, the Massachusett and Wampanoag responded opportunistically to the depopulation they suffered. Massasoit, for instance, tried to use the mortality as an excuse to further his political aims. After the epidemic of 1616, Massasoit and his weakened Wampanoag tribe had been forced to swear fealty to the Narragansett, who had not been touched by the plague. The Narragansett subsequently granted some of the Wampanoag land to Roger Williams, who founded Providence. Decades later Massasoit tried to reclaim this land from the English. He "acknowledged it to be true that he had so subjected as the Narragansett Sachems affirmed," but he argued that this subjugation was invalid: "he affirmed that he was not subdued by war, which himself and his father maintained against the Narragansetts, but God, he said, subdued me by a plague, which swept away my people, and forced me to yield."<sup>24</sup> Since the land had not been taken from him rightfully, he wanted it back.

Squanto, the sole survivor of Patuxet, also tried to use the epidemics to serve his political needs. Winslow provided the earliest account of his "notable, though wicked practice." Squanto had achieved prominence as the translator between the Plymouth colonists and the

Wampanoags. He realized that the more the Wampanoag feared the colonists, the more power he would have as the mediator between the two groups. Recognizing an opportunity, he manipulated the tribe's fear of disease. As Winslow described, Squanto told the Wampanoag that the colonists had "the plague buried in our store-house; which, at our pleasure, we could send forth to what place or people we would, and destroy them therewith, though we stirred not from home." When Hobbamock, one of Massasoit's counselors, visited Plymouth, Squanto pointed to some barrels of gun powder and told Hobbamock that they contained the plague. This ruse was uncovered when Hobbamock asked the English "whether such a thing were, and whether we had such a command of it." The English denied such power, but noted that "the God of the English had it in store, and could send it as his pleasure to the destruction of his and our enemies." For this, and other misbehavior, Massasoit nearly had Squanto executed.<sup>25</sup>

Thomas Morton told this story with an interesting twist. When Hobbamock heard from Squanto that the colonists had a store of plague, he became frightened. Squanto "more to encrease his feare told the Sachem if he should give offence to the English party, they would let out the plague to destroy them all, which kept him in great awe." Hobbamock quickly recovered from his fear and recognized that the colonists' supposed control over disease could become a great tool for the Wampanoag. Like his predecessors at Roanoke, he asked the colonists to use this disease against his enemies: "being at variance with another Sachem borderinge upon his Territories, he came in solemne manner and intreated the Governour, that he would let out the plague to destroy the Sachem, and his men who were his enemies, promising that he himselfe, and all his posterity would be their everlasting freindes, so great an opinion he had of the English."<sup>26</sup> Hobbamock had realized that if the English really did control disease, then they would be powerful allies.

Squanto and Hobbamock were not alone in their belief that the English had control over disease. Many others had noted that the epidemics began around the time of English arrival and that the English often did not suffer as severely. The conclusion seemed obvious. As Roger Williams described, Canonicus, the Narragansett sachem, was extremely suspicious of the English connection to disease: "At my first coming to them, Caunounicus (*morosus aequae ac barbarus senex*) was

very sour, and accused the English and myself for sending the plague amongst them, and threatening to kill him especially.” Williams had to remind Canonicus that the English also suffered from God’s judgments to dissuade him from his suspicion: “the plague and other sicknesses were alone in the hand of the one God, who made him and us, who being displeased with the English for lying, stealing, idleness and uncleanness, (the natives’ epidemical sins,) smote many thousands of us ourselves with general and late mortalities.”<sup>27</sup>

The recurrent fears among the Wampanoag and Narragansett that the English sent disease among them suggest an interesting possibility. Did the colonists ever attempt to infect the American Indians with smallpox or other diseases? Did they ever bluff that they could do so? There is no evidence that the colonists at this time ever made such an attempt. Instead, in their writings Winslow and Williams both described telling American Indians that God, not the English, controlled disease. In the absence of threats, Indian fears of English control over disease could simply have been an obvious conclusion based on the apparent disparities in the groups’ susceptibility to disease. But it is also imaginable that desperate colonists, isolated in the hostile wilderness of New England, attempted to frighten the Massachusett and Wampanoag into submission with claims of dominion over disease. Such bluffs certainly occurred in later encounters between Europeans and American Indians. If they occurred among the early colonists of Massachusetts, then they would represent remarkable early cases of instrumentalization, if not of disease itself, then of disease theories.

## Histories

In the early years of colonization, the events of the encounter between Europeans and American Indians had destabilized English expectations of providential decline. Indian epidemics triggered a wide range of explanations. Colonists could pick among this range and emphasize the explanations that had the most meaning or value for their purposes. With the passage of time, however, the destabilization and proliferation of narratives produced by encounter slowly resolved, replaced by a resurgence of providence.

Although never as severe as in 1616 and 1633, disease continued to afflict New England Indians, steadily eroding their populations. When

Europeans had first arrived in New England in the early seventeenth century, they found a land full of Indians. By the late 1630s, they found the land increasingly vacated and empty. Edmund Browne described how, within a few years of arrival, the main threats to the colony—Indians and wolves (he also mentioned mosquitoes)—had been eliminated: “The Indians are wholly subjected, and we more secure from land enemies and annoyances by thieves than in O[ld] England. I tell you no untruth: our outward door hath stood by a quarter of a year unlocked, and men ride and travel abroad ten or twenty miles without sword or offensive staff, for both wolves and Indians are afraid of us. (The Lord be praised.) There be very few Indians.” Such devastation even occurred in places where the Indians and colonists maintained amiable relations. Cotton Mather described how in towns like New Haven, despite “kindnesses passed between them,” “nevertheless there are few of those towns but what have seen their body of Indians utterly extirpated by nothing but *mortality* wasting them.”<sup>28</sup>

As writers began compiling histories of the early years of settlement, the great epidemics became favorite topics. Most authors writing in the 1670s and 1680s drew heavily from existing accounts. Samuel Clarke simply reprinted William Wood’s descriptions, with occasional modifications. William Hubbard used Winthrop’s *History*, while Increase Mather used Bradford’s. Some, like Daniel Gookin, sought to improve on existing histories. Hoping to identify the nature of the 1616 to 1619 epidemic, he “discoursed with some old Indians, that were then youths,” who described how the disease turned victims’ skin yellow. Others simply adapted existing material into more colorful prose. Edward Johnson’s 1654 *History of New England* described how colonists entered a village stricken by smallpox in 1633 and “beheld a most sad spectacle, death having smitten them all save one poore Infant, which lay on the ground sucking the Breast of its dead Mother, seeking to draw living nourishment from her dead breast.” Cotton Mather, writing nearly fifty years later, famously described how “those pernicious creatures” had given way to “a *better growth*.”<sup>29</sup>

Natural explanations of disease did persist in these histories. Hubbard explained how the Plymouth colonists suffered “sicknesses and diseases” because of the “hard weather and many uncomfortable voyages.” The first Massachusetts Bay Company colonists, arriving in 1628, were “seized with the scurvy and other distempers” because of

the “want of wholesome diet and convenient lodgings” in the “uncultivated desert” of Cape Ann. Even Cotton Mather, the devotee of God’s providence, included natural mechanisms for the spread of smallpox among the Indians in 1633: “This distemper getting in, I know not how, among them, swept them away with a most prodigious desolation.” Mather later produced what is considered to be the first medical text written in the colonies, *The Angel of Bethesda*, in which he speculated about the role of animalculae (tiny animals) in causing smallpox.<sup>30</sup>

Providence, however, abounded. God eased the trials of the colonists by “changing the very nature of the seasons, moderating the Winters cold of late very much.” The epidemic of 1616 to 1619 “not onely made roome for his people to plant; but also tamed the hard and cruell hearts of these barbarous Indians.” The 50 percent mortality suffered by Plymouth colonists was a blessing in disguise: “if a *disease* had not more easily fetcht so many of this number away to Heaven, a *famine* would probably have destroyed them all, before their expected supplies from England were arrived.” When the Massachusetts began to quarrel about lands with Winthrop’s newly arrived colonists, “the Lord put an end to this quarrell also, by smiting the Indians with a sore Disease, even the small Pox; of the which great numbers of them died.” Similar statements appear in the writings of Nathaniel Morton, Increase Mather, William Hubbard, and even Daniel Gookin, the sympathetic superintendent of Indian affairs. Cotton Mather yearned for the days of the Puritan saints, when the hand of God swept the natives away, “We have heard with our ears, O God, our fathers have told us, what work thou didst in their days, in the times of old; how thou dravest out the heathen with thy hand, and plantedst them; how thou did’st afflict the people, and cast them out!”<sup>31</sup>

Certain stories received particular emphasis. The story of the French shipwreck, with disease striking down the abusive Indian captors, was retold many times. Many historians praised the colonists who nursed the Massachusetts in 1633 and 1634. While Edward Johnson praised colonists for tending to both the bodies and souls of the dying Indians, Cotton Mather believed that these efforts were futile: “although the English gave them all the assistances of humanity in their calamities, yet there was, it may be, not *one* in *ten* among them left alive.” The story of John Sagamore’s smallpox-inspired conversion was also popular. Cotton Mather told how the “great plague” struck down “one

of the Princes in the Massachusetts-Bay, who yet seemed hopefully *christianized*.” Hubbard added substantial embellishment, noting that John had long wanted to convert but, “kept down by fear of the scoffs of the Indians,” delayed until it was too late. Cotton Mather also told of the successful prayers of Christian Indians, as well as the limits of these prayers against disease.<sup>32</sup>

Providence dominated these narratives with a thoroughness not seen since before the colonists left England. Several developments help explain the increased prevalence of providence. First, the re-emergence of providence reflected a hardening of English attitudes towards American Indians, traces of which can be seen quite early. For instance, in the 1622 edition of his *New England Trials*, John Smith made his oft-cited comment: “God had laid this Country open for us, and slaine the most part of the inhabitants by cruell warres and a mortall disease.” Neither of the prior versions of this document—a 1618 letter to Francis Bacon, and the 1620 edition of *New England’s Trials*—mentioned either epidemics or divine vengeance.<sup>33</sup> What might have changed Smith’s attitudes? Between the 1620 and 1622 editions, Powhatan and his forces had attacked the English settlements in Virginia. Perhaps Smith, outraged by this betrayal of the English by Indians he had once known, became more willing to see the death of the New England Indians as evidence of divine punishment.

Bradford’s attitudes demonstrate a similar shift over time. His descriptions of the epidemic of 1616 to 1619 contained no providential interpretation. God, however, did appear in the epidemic of 1633 and 1634. What had changed? In the initial years of the colony, Bradford and the Plymouth colonists knew that their fate was tied to that of Massasoit and the Wampanoag. Whether motivated by sympathy or political interest, both groups assisted the other. Over time, however, the colonists became less dependent on the Wampanoag. With the arrival of the Massachusetts Bay colonists, the Plymouth colonists refocused their attention on the other English colonists, away from American Indians. Perhaps an emotional wall had developed by 1634 that left the Indians outside the moral community of the colonists. Such a wall was certainly in place by the Pequot War of 1637, when Bradford praised God for giving the English victory over several hundred Pequot women and children at Mystick: “It was a fearful sight to see them thus frying in the fire and the streams of blood quenching the

same, and horrible was the stink and scent thereof; but the victory seemed a sweet sacrifice, and they have the praise thereof to God, who had wrought so wonderfully for them, thus to enclose their enemies in their hands and give them so speedy a victory over so proud and insulting an enemy.” The war, born of perceptions of Indians as savages and exacerbated by misinterpretation of Pequot actions, brought new savagery into relations between English and Indians.<sup>34</sup>

Second, the emphasis on providence in narratives of American Indian epidemics was part of a broader discourse that emphasized providence in all parts of Puritan lives. As the seventeenth century wore on, concern over the increasingly secular culture of Massachusetts and the decline of religious spirit became a dominant preoccupation of Puritan theologians. With each passing generation, the colonists seemed to stray further and further away from the ideals of the colony’s founding fathers.<sup>35</sup> Continued emphasis on the providential aspects of Massachusetts history reminded wayward colonists of the power and glory of God.

In this discourse, Indian epidemics demonstrated the scope of God’s wrath. They were used, in conjunction with stories of how God struck down the English, to frighten straying Puritans back into the fold. Puritan historians told story after story of colonists suffering God’s judgment. In 1666, “the Lord threatened the Country with that infectious and contagious Disease of the *Small Pox*, which began at *Boston*, whereof some few died: but through his great mercy it is stayed, and none of late have died thereof.” In his history of King Philip’s War, Increase Mather described how God struck down the Indians with war and disease. But at times, particularly in the early part of the war, God also turned against the English: “*the Sword of the Lord* hath been drawn against this Land, in respect of Epidemical Diseases, which sin hath brought upon us; Sore and (doubtless) *Malignant Colds* prevailing every where.” John Winthrop Jr., governor of Connecticut, died. Coffins passed each other on the streets of Boston. The message from God was clear: “if the Sword will not reform us, he hath other Judgments in store.” By the end of the century, the English had suffered from many “Afflictive Providences”: Indian wars, droughts, blights, fevers, small-pox, and the great fire. Joshua Scottow concluded that whereas once God “vomited out these Natives, to make room for us,” the Lord “now hath vomited us out, to make room for them.”<sup>36</sup> These narratives

warned that God controlled disease among both Indians and English alike; health and safety could only be found through God.

Third, the signal of providence emerged more clearly to colonists over the course of the century as they increasingly recognized the disparate population trajectories of the two populations. As described in the previous chapter, John Smith, Robert Cushman, John White, and William Bradford had estimated that the epidemics of 1616 and 1633 claimed the lives of 95 percent of the Indians. During the second half of the century, historians made similar estimates. John Josselyn guessed that because of plague, and then smallpox, the three “*Sagamorships* of the *Mattachuset* . . . were brought from 30000 to 300.” Gookin described how the Pawtucket, the Pequot, the Narragansett, and the Massachusett declined by 80 to 90 percent. Hubbard thought that the epidemics decimated the Indians, “not one in ten of the Indians in those parts surviving.” Cotton Mather asserted that the “prodigious pestilence . . . carried away not a *tenth*, but *nine parts of ten*, (yea, ’tis said, *nineteen* of *twenty*) among them.”<sup>37</sup> These estimates are clearly problematic, limited by inadequate informants and inability to differentiate between losses from epidemics, warfare, and migration.<sup>38</sup> But the accuracy of the estimates is less important here than the perception of decline.

Such estimates, which fit well into original narratives of Indians passing away to make room for the English, simultaneously evoked triumph and dismay from the colonists. The decline in Indian populations was made particularly striking by the opposite trajectory of the colonists’ population, which experienced remarkable growth from 1640 into the eighteenth century. Edward Johnson described this well. While “such fearfull Desolations, and wonderfull Alterations” reduced the Massachusett from 30,000 to 300, the Puritans, “this poore Church of Christ,” grew from seven to 7,750 souls. Mr. Moor, an English missionary in New York in 1705, also contrasted the decline of Indians with the growth of colonial populations: “the English here are a very thriving growing people, and ye Indians quite otherwise, they wast away & have done ever since our first arrival amongst them (as they themselves say) like Snow agt. ye Sun.”<sup>39</sup> The contrasting fates of the populations allowed the ultimate message of the epidemics to coalesce around providential depopulation of American Indians.

Placing the population trajectories side by side, these authors per-

ceived a natural, inevitable process. This doubly misrepresented what had happened. New England Indians died from epidemics and warfare initiated by English settlement. English populations grew from both “natural” reproduction and from continuing immigration. Both trajectories, unlike the melting of “Snow agt. ye sun,” reflected social processes, not natural processes. It is easy to imagine the value of this naturalization to the colonists. Historian Joyce Chaplin has argued that English support of “an environmental view of disease,” of natural processes of decline, “seems—sometimes—to have been both a denial of the demographic disaster taking place in the native populations and a strategic avoidance of the hypothesis of infectious transmission.”<sup>40</sup> The rhetorical naturalization of depopulation absolved colonists of responsibility for what had happened.

One source of tension had begun to disrupt this reassuring world of providential decline. Over the century, colonists slowly but increasingly began feeling responsibility for American Indian demise. They feared that their arrival had changed the lives of the Massachusett, Wampanoag, and other groups in ways that increased their mortality. The Jesuits had quickly recognized that smallpox followed closely on their heels in Quebec. Realization came more slowly, or at least less openly, among the English. As discussed in the previous chapter, William Wood traced Indian epidemics to their changed diets, Roger Williams singled out alcohol, and Thomas Mayhew blamed the Capawacks’ departure from “their old heathenish ways.”<sup>41</sup> Daniel Gookin, superintendent of the Indians for the colony of Massachusetts, made the most substantial efforts to document and describe Indian decline. At times he made providential claims about Indian mortality, celebrated the destruction of the “insolent” Pequots, and suspected that “awful providences of God” had led to consumption and other diseases that killed Indian students at Harvard College. However, he and others did wonder whether those deaths could actually be attributed to their adoption of English food, clothing, and housing. But after suggesting that the English might have responsibility for the mortality, Gookin stepped back: “The truth is, this disease is frequent among the Indians; and sundry died of it, that live not with the English.”<sup>42</sup> The English, he concluded, could not be held responsible.

Fear that the Indians might suffer as a consequence of English attempts to civilize them created a dilemma for the colonists. Indians

could be segregated from the English and allowed to live separately, or they could be integrated into the new English society, but only after they had adopted the beliefs and practices of English culture. The English clearly believed that the best prospects for the Indians lay in adopting the presumed superior beliefs and practices of English life. The process of civilization, however, brought certain risks. Indian bodies would have to adapt to new foods and behaviors. During the instability of transition, disease could strike. English influences, instead of civilizing the Indians, could actually corrupt and sicken them. How could the colonists conduct a process that they knew threatened the people whom they hoped to save? This anxiety would remain an integral aspect of Indian policy for centuries.

Although this anxiety threatened to upset the New England colonies, it resolved as the Indians disappeared. New England Indians managed to maintain a significant presence in colonial life as late as the 1670s. Although both groups “retained their distinct cultural identities,” historian James Drake has shown how they were bound together by “their shared social space and economy, as well as by their overlapping legal and political systems.” The brutality of King Philip’s War, which raged from 1675 to 1677, did irreparable harm to this society. The conflict was not simply one of English against Indians: Indians fought on both sides of the conflict. Colonists, however, quickly lost sight of this and began to see all Indians as enemies. Even Roger Williams, long a sympathizer with his Narragansett neighbors, enlisted in the army during the war and sold captured Indians into slavery.<sup>43</sup> As annihilation replaced assimilation as the goal of colonial policy, colonists escaped from the civilizing dilemma by abandoning what few hopes they had once held for integrating American Indians.

By the end of the war, the relations between English and Indians had been radically transformed. War and displacement reduced Indian populations by nearly 70 percent. Meanwhile, between 1670 and 1680, the colonists’ population grew from 52,000 to 68,000. Whereas Indians had formed 25 percent of the colony’s population in 1670, by 1680 they contributed only 10 percent. Drake believes that wartime racial hostility, in conjunction with these population trajectories, opened a gulf between the two groups. Such “racial ostracization” sowed the seeds of “a new frontier mentality.” Jill Lepore has made a similar argument. English victory created stark boundaries between English and Indian land, people, and culture. Whereas Plymouth colonists once feasted with

Massasoit, they mounted the severed head of his son—Metacom (King Philip)—on a stake at the gates of Plymouth.<sup>44</sup>

Meanwhile, other concerns commanded colonists' attention. Colonial political leaders struggled against the machinations of James II, who dissolved charter of the Massachusetts Bay Company in 1684 and placed the colony under the control of New York governor Edmund Andros in 1686.<sup>45</sup> Religious leaders battled the declining religious spirit of second and third generations of settlers. As colonists grappled with their own internal problems, Indian policy, whether regarding land disputes or conversion efforts, became a less pressing concern.

The era in which colonists and Indians shared their struggle for existence had passed. As colonists thrived, Indians died. War, marginalization, and population decline estranged the Indians from the English. Whereas colonists had once responded to Indian epidemics with empathy, religious and political opportunism, or even nascent feelings of responsibility, indifference to Indian decline became increasingly common in the late seventeenth century. The contrasting fortunes of the two groups suggested that the colonists' ambitions for civilizing the Indians had been naïve. Ambivalence about Indians' role in the colonists' new state gave way to realization that there might be no need to include the Indians in the state.

Just as the initial instability of colonization had fueled a proliferation of disease narratives, the growing stability of English colonial populations allowed a consolidation of narratives. As the initial diversity of explanations was distilled into a memory of providence, the basic fatalism of Puritan minds readily accepted the inevitable demise of Indian populations. Increasingly lost in a wilderness of providential narratives, New England Indians seemed doomed to exist only in Puritans' histories.

Even this powerful vision, however, would trigger opposing narratives. As Indian epidemics continued into the eighteenth century, missionaries, traders, and soldiers recognized specific behaviors and social conditions that left Indians susceptible to smallpox and other diseases. A dawning sense of the contingency of disease fueled a new discourse about Indian epidemics, one that assigned humans both increasing responsibility for causing disease, and increasing capacity for managing disease. Colonists and settlers would find new ways to deploy disease to serve the interests of their expanding state.

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*Frontiers of Smallpox*

DURING THE EARLY encounters of colonization, colonists and American Indians had been impressed by how much more the Indians suffered from epidemics. Indians frequently concluded that the colonists must have had control over disease. Ensenore, Squanto, Canonicus, and many angry Huron accused English and French colonists of sending smallpox and other epidemics into their midst. They believed that the Europeans had a “secret understanding” with disease that let them store it in barrels, load it into guns, and shoot it throughout their villages. Colonists, such as Roger Williams, always pleaded their innocence, arguing that “the plague and other sicknesses were alone in the hand of the one God.”<sup>1</sup> Perhaps out of honesty, or perhaps out of faith that such affairs truly were in the hands of God, they denied that they had any such power over disease.

The colonists’ relationship with disease, and its control, soon changed. As smallpox followed traders, soldiers, and settlers across the Appalachian frontier into the interior valleys of North America, Europeans and Americans continued to witness devastating epidemics among American Indian populations. But during these encounters, colonists took more responsibility over disease. When the Delaware and Shawnee besieged the British garrison at Fort Pitt in 1763, a local trader, William Trent, gave their chiefs blankets exposed to smallpox, hoping to spread the disease among the Indians. When the Blackfeet

and Assiniboine surrounded American Fur Company traders at Fort Union in 1837, Charles Larpenteur and other company officials tried to prevent the spread of smallpox with quarantine and inoculation. No longer leaving smallpox to the hand of God, people attempted to assert control over the dread disease.

How can these new responses be understood? The colonists' ideas about disease had begun to change. Although providence still played a role in explaining disease, humans seemed increasingly responsible for its patterns of distribution. Explorers, traders, missionaries, and soldiers attributed Indian epidemics to specific behaviors, or to ways in which Indians interacted with their environments. These ideas inspired attempts to control the spread of smallpox. Missionaries preached that health could be found through conversion and adoption of civilized (European) culture. Traders offered or withheld trade. Everyone marveled at the potential offered by the emerging technologies of inoculation and vaccination. The ways in which these people responded to smallpox, and eventually deployed it, also reveal their startling ambivalence towards American Indians. Just as Indians could be enemies, converts, or customers, smallpox could be used to encourage cultural change, infect enemies, or protect economic assets. As differential mortality seemed to foretell the outcome of encounter, smallpox became a dangerous and unpredictable tool of the imperialist state, serving the needs of religion, commerce, or war whenever Indians threatened the prosperity and security of expanding American society.

## Frontiers

The episodes at Fort Pitt in 1763 and Fort Union in 1837 provide two defining moments in the history of smallpox on the western frontier. William Trent and Charles Larpenteur witnessed the spread of smallpox into the Ohio and Missouri river valleys. Though separated by over seventy years, they faced similar situations. As smallpox raged inside their forts, they stood on the walls and looked out onto groups of angry and frustrated American Indians. They had to decide what to do about these Indians, and about smallpox. But aside from these parallels of circumstance, did they truly have much in common? Had their worlds changed so much between 1763 and 1837 that meaningful connections cannot be made? These questions, discussed in this chapter,

must be answered before the episodes at Forts Pitt and Union, discussed in the next chapter, can be understood. The answers depend on an understanding of the frontier.

The nature, even the existence, of the American frontier has been one of the most contested questions of American historiography. Frederick Jackson Turner first defined the frontier in 1893 as the place (actually, a place constantly moving westward, more of a process than a geographical location) in which European civilization encountered North American savagery and produced a uniquely new American culture. Subsequent historians have argued that the frontier was irrelevant compared to the economic and industrial development of the east, or that Turner's hypothesis was ethnocentric and simplistic. Recent historians have focused on more nuanced, local models of cultural interactions, typified by Richard White's "middle ground."<sup>2</sup> It is possible to accept these critiques and still see the concept of the frontier as relevant in certain cases. Although the broad political and economic contexts in which Trent and Larpenteur operated were radically different, the stakes and exigencies of their local worlds were surprising similar.

In 1763 British colonists inhabited a narrow strip of land, pinned between the Appalachian mountains to the west and the Atlantic Ocean to the east. They had won rights to the vast interior from the French at the conclusion of the Seven Years War. But according to the Treaty of Easton of 1758 and the Royal Proclamation of 1763, English colonists were bound to stay east of the crest of the mountains, leaving the interior to the American Indians. By 1837 this line of demarcation had been long since abandoned. Even before the Revolutionary War, British colonists had poured across the mountains into the Ohio Valley. Half a century later, after the Louisiana Purchase and explorations of Meriwether Lewis and William Clark, American settlers had spread across the interior, with towns springing up along the Mississippi River and tentative explorations reaching west across the high plains toward the Rocky Mountains.<sup>3</sup>

The nature of American medical institutions had undergone similar transformations. In 1763 medical facilities in the colonies remained limited, with neither hospitals nor medical schools. The first hospital, in Philadelphia, opened in 1765. By 1837 medical institutions had proliferated, even into the new states of the Mississippi Valley. The government had also slowly begun to take a more active role in public

health. Where once government institutions had only acted during times of epidemics, the federal government had now begun sponsoring efforts to prevent disease by subsidizing vaccination, even funding campaigns to vaccinate the eastern Indians.<sup>4</sup>

The transformations are demonstrated in the travels of German aristocrat Alexander Philip Maximilian, Prince of Wied-Neuwied. Maximilian arrived in Boston on 4 July 1832. Like John Smith two centuries before, he described the harbor islands “covered with corn, or beautifully green as in England.” Numerous villages adorned the bays and inlets. But now there was a lighthouse and telegraph, and where Smith had found abundant Indians, Maximilian found none: “The stranger in Boston looks in vain for the original American race of Indians.” By September Maximilian had reached Pittsburgh. The site of the once isolated and primitive Fort Pitt was thriving, “an old, large, but by no means handsome town.” Its 12,000 inhabitants had developed coal mines, manufacturing, and trade. When he reached St. Louis the following spring, he was entertained by General William Clark (of Lewis and Clark fame), superintendent of Indian affairs. When he finally encountered American Indians, on the Missouri River in April 1833, they were Delawares and Shawnees, long since displaced from the east, whose parents or grandparents might have fought at Fort Pitt in 1763.<sup>5</sup>

Despite the many differences between William Trent’s Fort Pitt and Charles Larpenteur’s Fort Union, the two traders would have found much in common in each other’s lives. Both lived in outposts “remote in the western wilderness.” Fort Pitt sat 200 miles of mountains and wilderness west of Carlisle and the frontier of English settlements. A 1760 census found only 149 people, but by 1763 the garrison had expanded. Under the command of Swiss mercenary Simeon Ecuyer, it held 330 soldiers, traders, and backwoodsmen. This “farthest outpost of Anglo-Saxon civilization in the Ohio Valley” had a sawmill, a tanning yard, a coal mine; fields of corn, turnips, hay, and other vegetables; and herds of cattle and livestock. Life could be hard. On 7 and 8 March 1763, a flood destroyed many of the fortifications. Ecuyer ordered the residents to repair the walls and gardens, without much success: “Our people complain a great deal since this last order. They do not understand why they should work without pay, and what they do they do with an ill grace.” He had no love for the residents, “everyone

here (except the garrison) is the scum of nature.” Despite such hardships, the garrison did have something of a social life. As Ecuyer noted in a letter to his commander, Henry Bouquet, “P:S: I forgot, Sir, to tell you that we have a club every Monday and a ball every Saturday evening, made up of the prettiest ladies of the garrison. We regale them with punch, and if it is not strong enough, the whiskey is at their disposal. You may be sure that we shall not be completely cheated.”<sup>6</sup>

Fort Union and the other posts of the American Fur Company (by 1837 renamed Pratte, Chouteau, and Company) existed in similar isolation. St. Louis, founded by the French in 1763, was first reached by steamboat in 1817. Steamboats entered the Missouri River two years later. By the early 1830s, the company had a string of forts on the Missouri River. Fort Clark sat nearly 1,800 miles up the Missouri River from St. Louis. Forts Union and McKenzie were further yet (Figure 1). Fort Clark was quite simple, with square wooden walls, blockhouses at two corners, and low, one-story buildings. Life could be miserable, particularly in the long winters (Figure 3). Francis Chardon, who directed the fort from 1834 to 1843, captured this in his journal in January 1836: “One Single word *lonesome*—would suffice to express our feelings any day through the Year—We might add—discontented—but this would include the fate of all Mankind . . . [life] is like a dreary expansive waste—without one green verdant spot on which Memory loves to linger.” Rats were a constant problem. Life, however, could occasionally be festive. At the Christmas feast of 1834, Mandan warriors, company traders, their Indian wives, and their mixed-blood children shared meat pies, pheasants, and coffee, a sight which “would of astonished any, but those who are accustomed to such sights.” Fort Union, the center of activity of the company, “the principal and handsomest trading-post on the Missouri River,” was more hospitable. Its gated walls housed roughly 100 employees, their Indian wives and children, and Indian trappers. Its residents enjoyed white bread, fresh milk, butter, cheese, fruit, corn, game, beef, fowl, vintage wines, and fine brandies. They entertained themselves with hunts, horse races, lacrosse games, cockfights, formal parties, and “Indian and halfbreed girls on call.”<sup>7</sup>

These outposts of the British Army and the American Fur Company existed in a world of Indians. Like the American Indians encountered by Bradford and Winthrop, their lives had already been trans-

[To view this image, refer to the print version of this title.]

3. *Mib-Tutta-Hang-Kusch, Mandan Village* by Karl Bodmer, 1833–1834. This watercolor shows Mandan villagers hunting and collecting firewood in winter. Fort Clark and the Mandan village are visible on the distant bluff overlooking the frozen river. The group was nearly eradicated by smallpox only four years later. (By permission of the Joslyn Art Museum, Omaha, Nebraska. JAM.1986.49.382.)

formed by decades of interaction with Europeans. The Delaware and Shawnee who fought at Fort Pitt were immigrants to the forks of the Ohio River. Native to the Delaware valley of eastern Pennsylvania, the Delaware had been pushed westward by European immigrants. Beginning in 1702 they had moved into the Susquehanna and Ohio Valleys. The Shawnee faced similar pressure, migrating west from the Delaware valley and north from the Cumberland valley in the 1720s. By the 1740s, Delaware and Shawnee were establishing themselves in the upper Ohio valley. They had to negotiate with both the Six Nations, similarly being pushed westward across New York, and with the Miami and other native tribes of the Ohio valley. All of these groups had to contend with the determined efforts of Moravian missionaries who worked to convert and civilize them. Richard White has described the turbu-

lence and violence of this fragile “middle ground,” where the French, the British, and the American Indians all struggled to survive through “a process of creative, and often expedient, misunderstandings.”<sup>8</sup>

The tribes of the Missouri Valley had suffered similar disruptions. The Mandans (“or See-pohs-kah-nu-mah-kah-kee, ‘people of the pheasants,’ as they call themselves”) were well known by 1837. They had hosted Meriwether Lewis and William Clark in the winter of 1804 and 1805, painter George Catlin in 1832, and Maximilian with his Swiss artist, Charles Bodmer, in 1833 and 1834. Decades of war with the Dakota and other Sioux, displaced from Minnesota by eastern tribes, had forced the Mandan to migrate and consolidate. Disease had further reduced their population, from as high as 15,000 in the eighteenth century, to 3,600 in 1780 and 1,600 before 1837. An agricultural tribe, they lived in two “beautifully situated” villages. The many travelers who visited the Mandan left starkly contrasting visions of the romance or misery of their lives.<sup>9</sup>

The Blackfeet had a history of less peaceful relations with Europeans. They gained access to guns and horses early in the eighteenth century and quickly became the dominant military force on the northwest plains. They first met French traders around 1750. The British Hudson Bay Company established a trading post in 1780; smallpox followed in 1781. In 1806 Blackfeet hunters attacked Lewis as he returned from the Pacific Ocean. In 1811 they destroyed a post built by the Missouri Fur Company. During the 1820s they blocked the efforts of other fur traders to initiate trade. Only in 1830 did Kenneth McKenzie successfully establish relations with the Blackfeet; David Mitchell founded Fort McKenzie two years later. When Maximilian visited them in 1833, they remained a powerful tribe, recently pacified, but still a substantial threat. The other tribes who traded with the company—Arikara, Minatarees, Sioux, and many others—fell between the extremes of the peaceful Mandan and threatening Blackfeet.<sup>10</sup>

The presence of these tribes, from the Delaware to the Blackfeet, forced the British, French, and Americans into a series of ambivalent relationships. All of these American Indian groups remained powerful. In contrast, the soldiers and traders on the frontiers of the Ohio and Missouri rivers were stationed in small outposts. They lived beyond the periphery of European settlement, with little access to the vast resources of their towns and cities. Regardless of their feelings about the

Shawnee or Mandan, the soldiers and traders depended on them for safety, for trade, even for companionship. They saw the Indians as allies who deserved protection, but the whites were often unwilling to enforce the protection they granted. They might interact kindly while at peace, but it took little to trigger ferocity in war. With the Removal Act of 1830, the government began a campaign to move the Indians beyond the Mississippi in order to save them, even if that meant destroying their lives.<sup>11</sup>

The Ohio and Missouri river frontiers had one more thing in common: smallpox was everywhere. Decade after decade, it devastated American Indians as the sites of their encounters with the Europeans moved westward. After the great epidemic of 1633 and 1634, it struck again and again, first in New England and then in the southern and western colonies, in 1638–1640, 1662–1663, 1669–1670, 1688–1691, 1696, 1702, 1716–1717, 1721, 1730, 1738, 1746–1747, 1755–1760, and 1764–1765. It had reached the far northwestern plains by the 1780s, striking the Arikaras and Blackfeet. An epidemic began in the central United States and spread by 1802 along the Missouri Valley into the Pacific Northwest. The Omaha were devastated, as were the Ponca, Oto, Iowa, Arikara, Gros Ventres, Mandan, Crow, and Sioux. Some tribes lost as much as 80 percent of their populations. Smallpox struck the Great Lakes and northern plains in 1810 and 1811. In 1815 and 1816 it spread along the Red River and Rio Grande. In 1819 and 1820 it followed the White River into South Dakota.<sup>12</sup>

Just as Winthrop and Bradford described the horrors of smallpox in New England in 1634, many European observers witnessed the devastation in the eighteenth and nineteenth centuries. In the summer and fall of 1831, smallpox ravaged the Pawnee tribes. John Dougherty, the United States Indian agent at Cantonment Leavenworth, wrote that “their misery defies all description.” No one younger than “thirty-three years of age escaped the monstrous disease.” Half died. The horror of the epidemic challenges the imagination of a modern reader: “They were dying so fast, and taken down at once in such large numbers, that they had ceased to bury their dead, whose bodies were to be seen, in every direction, laying about in the river, lodged on the sand bars, in the hog weeds around their villages, and in their corn caches; others again were dragged off by the hungry dogs into the prairie, where they were torn to pieces by the more hungry wolves and buz-

zards. Their misery was so great and so general, that they seemed to be unconscious of it, and to look upon the dead and dying as they would on so many dead horses." Catlin described how this epidemic also decimated the Omahas, Otos, Missouri, Sioux, Osage, Konzas, and Puncahs. Maximilian met scarred survivors, Omaha, Oto, and Iowas, "much marked with the small pox."<sup>13</sup>

Only five years later, smallpox struck again. From 1836 to 1840, reaching its height in 1837 and 1838, the epidemic again spread through the Missouri Valley. Some historians consider this "perhaps the most severe episode of any disease among North American Indians, although it may very well only be the best documented." Over 15,000 Indians died along the Missouri River: 6,000 to 8,000 Blackfeet, Piegans, and Bloods; 2,000 Pawnee; several thousand Mandan; over 2,000 Arikara and Minetaree; 1,000 Crow; and 4,000 Assiniboine. Chardon, who witnessed this epidemic among the Mandan, later told Audubon that "the small-pox had never been known in the civilized world, as it had been among the poor Mandans and other Indians. Only *twenty-seven* Mandans were left to tell the tale." By 1850 the cumulative impact was clear. Henry Schoolcraft, who compiled an encyclopedia about the American Indians, believed that "No disease which has been introduced among the tribes, has exercised so fatal an influence upon them as the small-pox."<sup>14</sup> The remarkable susceptibility of American Indians to smallpox continued to shock observers well into the nineteenth century.

## Exhortation

Seeing similar depopulation, seventeenth- and eighteenth-century Puritan historians, such as Edward Johnson, William Hubbard, and Cotton Mather, reassured themselves that the devastation was directed by the hand of God. Mr. Moor, an English missionary in New York in 1705, responded similarly. He described how the Indians had wasted away since English arrival, "like Snow agt. ye Sun." He had little doubt about the cause: "God's providence in this matter seems very wonderful." The decline of American Indian populations was particularly striking in contrast to the tremendous growth of the colonists' population. In 1764 Thomas Hutchinson went so far as to abandon his usual skepticism about Puritan mythology: "Our ancestors supposed an im-

mediate interposition of providence in the great mortality among the Indians to make room for the settlement of the English. I am not inclined to credulity, but should not we go into the contrary extreme if we were to take no notice of the extinction of this people in all parts of the continent . . . They waste, they moulder away, and as Charlevoix says of the Indians of Canada, they disappear.”<sup>15</sup>

Change, however, was in the air. After commenting about the likely role of providence, Moor wondered about the possible contribution of “their drinking Rum, with some new Distempers we have brought amongst them.” A slow shift toward emphasizing behavioral and natural explanations of differential mortality reflected a general change in understandings of the natural world. Over the long span in which smallpox dominated American Indian mortality, the natural world and its diseases became gradually demystified for colonists and settlers. Consider two contrasting accounts of Indian rain dances. In 1623 Edward Winslow and the other Plymouth colonists prayed for rain and, when it came, bragged that the “soft, sweet, and moderate showers” brought by their prayers were better than the “storms and tempests” brought by Wampanoag conjuration. By 1832 Catlin observed Mandan rain dances and saw their “*bocus pocus* and *conjuration*” as a scam that would eventually succeed, ensuring the fame and fortune of whichever lucky medicine men happened to begin the ceremony at the right time: “when the Mandans undertake to make it rain, *they never fail to succeed*, for their ceremonies never stop until the rain begins to fall.”<sup>16</sup>

Narratives of disease underwent similar transformation. Cholera, which spread into the Missouri Valley in 1833 and 1851, demonstrated this well. When Maximilian reached Fort Clark in 1833, he feared that cholera, “having prevailed on the lower Missouri,” might reach the fort. Fortunately, these fears “proved to be groundless.” Catlin believed that the spread of cholera had been halted by the Indians’ low salt and “simple meat diet.” While steaming down the Missouri the following spring, Maximilian’s boat encountered another steamboat with passengers suffering from cholera. When his boat was forced to take on several of the passengers, he again feared contagion: “It was by no means pleasant to us to be obliged to receive passengers from this boat.” When cholera broke out “with great virulence” on the steamer *Yellowstone*, local Missouri residents demanded that the boat leave the state. In 1851 cholera struck another steamer, only to recede when the boat

reached “the purer air of the prairie country of the upper river.” The recovery did not last: “the crew and voyageurs drank freely of a miserable article of whiskey, which resulted in a return of the epidemic.” One person died. In response, “the boat was thoroughly fumigated and no further cases occurred.”<sup>17</sup> These outbreaks demonstrate several styles of explanation, including contagion, diet, environment, and behavior. Specific acts put people at risk, while other acts could alleviate the disease.

As with the early colonists, environment and weather received considerable attention. James Kenny, a Quaker trader at Fort Pitt, traced ague to “getting my feet wet in ye Dew,” “Epidemick Cold & fever” to the “Air got midling Cool,” and a “fever” to a fishing trip. Chardon described how hot days in St. Louis could be “a real *fever* and *Ague* breeder.” In 1834 Colonel Dodge led a military expedition to pacify the Comanche. His “army of men from the North,” sent into “this Southern and warm climate, in the hottest months of the year,” suffered greatly. Half of the group, including officers and horses, suffered “a slow and distressing bilious fever,” which they attributed to a “fatal miasma which we conceived was hovering about the mouth of the False Washita.” They also suffered from “poisonous and indigestible water.” One third died within four months; Catlin believed another third would likely die. To these lists of colds, fevers, and rheumatisms, historian Bernard De Voto added “dreads and melancholies specific to the tenderfoot in the plains and mountains, a true neurosis, usually mild but sometimes severe.”<sup>18</sup>

These same patterns of explanation appeared in the responses to smallpox and other diseases among American Indians. Many missionaries and traders, who lived and traveled with Indians, concluded that the harsh conditions of their lives put them at risk of disease. David Zeisberger, a Moravian missionary among the Iroquois in New York, believed that “Indians are not less, rather more, subject to disease than Europeans, their rough manner of life and the hardships of travel and the chase being contributing causes.” They waded across rivers, regardless of snow or ice; they chased deer from morning until night, never stopping to eat. John Heckewelder, who continued Zeisberger’s work, also emphasized the relationship of their diseases to the hardship of Delaware lives: “The disorders to which the Indians are most commonly subjected are pulmonary consumptions, fluxes, fevers and

severe rheumatisms, all proceeding probably from the kind of life they lead, the hardships they undergo." He traced "intermitting and bilious fevers" to their towns, "situated near marshy grounds or ponds of stagnant water." Catlin, who had observed that smallpox was "far more fatal amongst the native than in civilized population," did not think the Indians suffered "some extraordinary constitutional susceptibility" to the disease. Instead, their suffering resulted from "the exposed lives they live, leading more directly to fatal consequences." Edwin James, a physician who accompanied the Yellowstone Expedition to Colorado in 1819 and 1820, believed that the storms and drastic temperature changes seen on the high plains and Rocky Mountains were a particular problem. Maximilian traced Mandan winter catarrh to "the frequent and sudden changes of temperature." This was exacerbated by their indifference to the freezing environment: "Rheumatism, coughs, and the like, are frequent, because they go half naked in the severest cold, and plunge into ice water."<sup>19</sup>

Diet could also be a major problem. Hutchinson suspected that the smallpox epidemic of 1633 might have been exacerbated by Massachusetts diets, which furnished "greater quantities of morbifick matter." He had been told that a devastating smallpox epidemic on Nantucket in 1763, which killed 235 of the 320 Indians on the island, was caused by lack of corn and consumption of unripe pumpkins and squash. Zeisberger believed that the Iroquois' lack of "abundance and variety of nourishing food" made their bodies weak. They also suffered from diarrhea because "they know nothing of dieting and continue to eat whatever they wish." Heckewelder believed that Delaware disease was exacerbated by "the nature of the food that they take." For instance, their autumn fevers coincided with "the season of the wild plum, a fruit that the Indians are particularly fond of." Their diet caused worms in children, made them unable to endure manual labor, and gave them inordinate fondness for alcohol. Catlin wondered whether the "unexampled fatality" of smallpox could be traced to Indians "living entirely on animal food," but he left this "for sounder judgments than mine to decide."<sup>20</sup>

Such explanations simultaneously attributed disease to the conditions of Indian lives and to the choices Indians made about how to behave in those conditions. Other explanations focused solely on behavior, fueling a debate about etiology that placed blame for the diseases

on their victims. Many observers discussed the harm of Indian healing practices. Chardon stated this most clearly: "A young Woman died at the Village last Night—or more properly speaking, was Killed by the *Doctors*." Although surveyor John Lawson, Heckewelder, Texas settler David Burnet, Catlin, and trader Josiah Gregg all acknowledged that Indian healers had great skill with herbal remedies and simple external wounds, Zeisberger saw many patients who were overdosed: healers "make mistakes, namely, in not properly measuring doses and often needlessly torturing patients." Meanwhile, the magical and religious aspects of American Indian healing received universal condemnation. Lawson mocked the "Grimaces, antick postures, which are not to be matched in Bedlam." Burnet believed that the "hideous noises" produced in their rituals, "the object of which is to *scare away* the disease," was "better calculated to affright than to soothe." Catlin described how, in the rare cases when the patient "unaccountably recovers" after such "frightful rattles" and "songs of incantation," the healer would proclaim success. But should the patient die, the healer would argue that "it was the will of the Great Spirit that his patient should die."<sup>21</sup>

The therapeutic use of sweat baths and plunges in cold water received particularly extensive discussion. Zeisberger, Maximilian, and Catlin all believed that such baths "were, unquestionably, a great means of health." Catlin, for instance, described use of baths for fevers, "without the fatal consequences which we would naturally predict." According to one Indian informant, sweat baths opened the pores to let bad fluids out; a quick jump in cold water then closed the pores so that no nutritive juices escaped. However, many observers believed that sweat baths were remarkably dangerous in cases of smallpox. Lawson and James Adair blamed many smallpox deaths on this practice: jumping into water, "shutting up the Pores, hinders a kindly Evacuation of the pestilential Matter, and drives it back, by which Means Death most commonly ensues." Zeisberger, who generally praised sweat baths, cited Dr. McClure who believed that "the treatment was quite fatal" for smallpox. Catlin described how victims of smallpox "ignorantly and imprudently plunge into the coldest water, whilst in the highest state of fever, and often die before they have the power to get out." David Burnet, Josiah Gregg, Francis Chardon, and Father P. J. De Smet all agreed that sweat baths and cold plunges were "invariably fatal" for smallpox. Many historians, following these leads, have

continued to argue that this behavior contributed to the severe mortality.<sup>22</sup>

Another genre of victim blaming appears in cases of smallpox transmitted when Indians scalped and plundered Europeans or other Indians. The most infamous case occurred after the French siege of Fort William Henry in upstate New York in 1757. The English, outnumbered and afflicted with smallpox, had surrendered. The French granted generous honors of war and allowed them to retreat. But the Indians, promised scalps and plunder by their French allies, attacked the retreating English. As described by the French general, the Indians soon paid the price: they caught the contagion and “died of the smallpox on their way home.” This story, and its sense of retributive justice, has been repeated by many historians. A similar case occurred on the northwestern plains in 1781 when a Piegan band encountered a camp of their Shoshoni enemies. Piegan scouts found the camp silent. Though they feared a trap, they attacked. No one resisted: all were dead or dying, victims of smallpox. Piegans looted the Shoshoni camp. Two days later, they too succumbed to smallpox.<sup>23</sup>

These behavioral and environmental explanations of susceptibility to disease did not mean that disease had become secularized. Disease had not been removed from the domain of theology and placed into the natural world. Instead, these naturalized, behavioral accounts of disease continued to serve the moral purposes of missionaries and other observers. They simply worked in different ways: disease, no longer a sign of providence, became a tool of moral exhortation.

Zeisberger focused on sex and alcohol. He described how “Venereal diseases have during the last years spread more and more, due, doubtless, to their disorderly life.” Increasing use of alcohol, “through which unquestionably many evils have crept in,” only made matters worse. Heckewelder believed that “the introduction of ardent spirits among them” led to “vices which have brought on disorders which they say were unknown before”: the “shameful complaint.” Alcohol, and the “vicious and dissolute life” it brought, caused not only syphilis, but also low fertility and consumption. Such concerns were not limited to missionaries. Elbert Herring, commissioner of Indian affairs in 1833, believed that alcohol “tends inevitably to the degradation, misery, and extinction of the aboriginal race.” Edwin James described how the Omahas suffered from a pain in the chest, a consequence of their exces-

sive indulgence in tobacco. Maximilian found that “Gonorrhoea is very common” among the Mandan.<sup>24</sup>

These theories had a clear consequence: if vice brought disease, morality would bring health. Heckewelder believed that health could be obtained by working hard and avoiding “the vices of the white people.”<sup>25</sup> By describing the sinful roots of disease, these writers encouraged the Indians with whom they worked, as well as their white audiences, to reform their behavior to maintain their health.

Two aspects of such moralizing must be noted. First, American Indians did not always accept these claims. Cherokee medicine men did blame a 1739 outbreak of smallpox on the sins of their people, notably adultery, and an old Shawnee man blamed the 1762 “Epidemical disorder” on an excess of pride: “he sd its Sent from God upon them for they are very Proud.” But they rejected other similar explanations. In 1717 Governor Hunter of New York tried to explain that the Iroquois, like Christians, should see epidemics as “punishments for our misdeeds and sin, such as breaking of covenants & promises, murders and robbery, and the like.” Dekanissore, the Iroquois leader, did not agree. The Iroquois were “apprehensive that ye great mortality which we had among our people last fall, of the Small Pox, has been sent us from Canistoge, Virginy, or Maryland.” They planned “to send some of our people thither to discover if possible who has been the occasion of sending that contagion among us & to see to dissuade them from such pernicious practices for the future.” In the early 1840s, Catlin witnessed a debate in London between an English minister and a visiting Ioway delegation. The minister demanded that the Ioway acknowledge smallpox as divine punishment. The warchief had a quick reply: “If the Great Spirit sent the small pox into our country to destroy us, we believe it was to punish us for listening to the false promises of white men. It is white man’s disease, and no doubt it was sent amongst white people to punish *them* for their sins.”<sup>26</sup>

Second, even as these writers blamed epidemics on American Indian behaviors, they acknowledged that Europeans were the ultimate cause of the suffering. Indians always seemed healthy before contact with Europeans. Heckewelder noted that as recently as the middle of the eighteenth century, “the Indians were yet a hardy and healthy people, and many very aged men and women were seen among them, some of whom thought they had lived about one hundred years.” Edwin James

found that the diseases of the Indians near the Rocky Mountains were “far less extensive and appalling” than those of whites, with whom they had had little contact. Burnet and Maximilian described the remarkable constitutions of the Comanche and Blackfeet. Catlin believed that the Indians, in their original state, “undoubtedly are a longer lived and healthier race, and capable of enduring far more bodily privation and pain, than civilized people can.” He suspected that this fortitude was the product of their native life style, not an inherent difference in their constitutions.<sup>27</sup>

The contrast between pre-contact health and post-contact disease led many observers to a seemingly inescapable conclusion. Zeisberger believed that the Delaware “caught the contagion” of smallpox from Europeans. They had also learned “much evil” from whites, especially from traders who taught them “the habit of drinking to excess.” Heckewelder agreed that “Our vices have destroyed more than our swords.” He described “a melancholy feeling, arising from the comparison which forces itself upon my mind of what the Indians were before the Europeans came into this country, and what they have become since, by a participation in our vices.” The traveler Timothy Flint wrote in 1820 that “it must be admitted, that this depopulation has been accelerated, if not entirely produced, by Europeans.” Catlin believed that 12 million Indians had died over 250 years, the consequence of European arrival: “White men—whiskey—tomahawks—scalping knives—guns, powder and ball—small-pox—debauchery—extermination.” He feared that this record of destruction, “an unrequited account of sin and injustice that sooner or later will call for *national retribution*,” would haunt all Americans on Judgment Day.<sup>28</sup>

The examples demonstrate how beliefs about smallpox and differential mortality served a wide range of moralizing agendas. By emphasizing behavioral etiologies, writers placed responsibility on the American Indians as the proximate cause of their own illnesses. If Indians abandoned sinful behaviors, they would be healthier. Many of these same writers noted that American Indians had been healthy in their original state; they had lost this health to the corrupting influences of the worst aspects of white society. By emphasizing this narrative of corruption, writers placed responsibility on whites as the ultimate cause of Indian illnesses. White populations, therefore, had an obligation to live more sober and temperate lives. Finally, by placing white society at the root

of Indian disease, the writers also attempted to create an obligation for the colonial and federal government to intervene.

Belief that disease could be predictable and preventable, and suspicion that whites were often the source of American Indian epidemics, made smallpox a central issue in the diplomatic dialogue between Indians, settlers, and government officials. Initial interventions were quite limited. When Dekanissore, the Iroquois speaker, argued that smallpox had been sent to the Iroquois in 1707 from “Canistoge, Virginy, or Maryland,” Governor Hunter of New York offered only sympathy: “I am very sorry for the loss that has happened by the Small Pox to the brethren, or any of your friends and allies.” In September 1733, with smallpox among the Iroquois and English in New York, both sides exchanged condolences and gifts. Governor William Cosby empathized with the Iroquois: “Brethren, I understand with concern that you have had a great mortality among you by the small pox, and lost many of your people and hear that you are greatly grieved, therefore I wipe off the Tears from your eyes open your understandings, wash off your blood and condole the death of all people who have lost, that we may behold one another with joy. *Gave three strings of Wampum and a Belt.*” Three days later the Iroquois returned the favor: “We do in like manner condole the deaths of all your people who died since our last conference, you have also had a decrease among you . . . *Gave a string of Wampum.*”<sup>29</sup>

Such exchanges were not limited to the English. When Gaichoton, orator and chief of the Seneca, complained about the impact of smallpox, Pierre Rigaud de Vaudreuil, governor and lieutenant general in New France, expressed his sympathies. When Indian warriors caught smallpox after sacking the English captives at Fort William, French General Montcalm complained that “This is a real loss to us, and will cost the King considerable in consequence of the expenses it will occasion at the posts to treat them, cover the dead and console the widows.”<sup>30</sup>

These smallpox condolences often reflected multiple interests. In July 1733 Governor Jonathan Belcher of Massachusetts wrote to the Penobscot that “I have great pleasure at the news of your health & welfare.” While Belcher might have been genuinely empathetic, he was certainly thankful because these Penobscot served as an essential buffer, protecting English settlements against other tribes who, fleeing smallpox in Canada, raided the English frontier. In 1747 the French

governor of Canada sent a messenger to the Onondaga “in order to condole the death of all those who dyed last fall & winter of the Small Pox &c.” The English doubted this motive. William Johnson told New York’s Governor Clinton that the French ambassador hoped to find out why the Onondaga had transferred allegiance to the English. Despite the French gift of an enormous belt of wampum, the Five Nations remained loyal to the English. French diplomats went so far as to circulate rumors among the Cherokee that English conjurers had sent smallpox among them.<sup>31</sup>

Concern with smallpox also shaped the timing and outcome of conferences between Europeans and Indians. Endemic smallpox in the Carolinas made the Cherokee and Creek reluctant to attend meetings in Charles Town. The Provincial Council of Pennsylvania frequently modified conference plans to minimize Delaware exposure to smallpox. In 1756 smallpox in Bethlehem forced the relocation of the council fire to Springitsberry, where the Indians “might Escape the Infection & be well Entertained.” A conference in Philadelphia in April 1757 ended prematurely when Indian representatives caught smallpox and had to return home; when the governor learned of smallpox among the delegation from the Six Nations, he agreed to bring the negotiations to a rapid close. Smallpox also shaped military relations between the two groups. As historian D. Peter MacLeod has shown, recurrent smallpox epidemics during the 1750s hindered French efforts to recruit Indian warriors. Hutchinson, watching from the other side of the conflict, happily reported that the epidemic-induced weakness of the Indians led them to seek peace with the English.<sup>32</sup>

Interest in protecting Indians from white sins and contagions continued into the early nineteenth century. Indian sympathizers came to believe that the best way to protect American Indians from further degradation would be to set aside lands as a preserve for them. Commissioner Herring described how the Indians “seemed to be fast sinking in the overwhelming wave of white population.” Fearing this, and motivated by both “national sympathy” and a sense of “incalculable debt,” the federal government instituted Indian relocation, a policy “for their protection and perpetuation.” The government hoped that by moving Indians west, relocation would protect them from whites and the “multitudinous evils, under the operation of which they were rapidly dwindling in numbers and deteriorating in morals.”<sup>33</sup>

Although Indian relocation, which will be discussed in later chapters,

had many economic and political motivations, it did also reflect this desire to quarantine the Indians from white society. The federal government hoped to move the Indians to lands where they would be insulated from the fatal influences of civilization. The new explanations of smallpox that had evolved on the frontiers of the late eighteenth and early nineteenth century had found yet another way to serve the evolving needs of federal Indian policy.

## Technologies

Changing smallpox remedies, however, had already begun to take federal responses to Indian epidemics in a different direction. In December 1801 an enthusiastic President Thomas Jefferson told Chief Little Turtle and other members of a Miami delegation that “the Great Spirit has made a gift to the white men in showing them how to preserve themselves from the smallpox”: vaccination. After vaccinating members of the delegation, he gave them vaccine matter with instructions to use it among their people. This, he explained, “would finally extirpate that disease from the earth.”<sup>34</sup> Vaccination (with cowpox), and the earlier techniques of inoculation (with smallpox), created an opportunity to mitigate smallpox, a dominant contributor to the disparity in health status between Indians and whites. Initially, however, these technologies did neither. Instead, they served as precedents for the uses of smallpox on the battlefields and at trading houses on the Ohio and Missouri Rivers.

The story of inoculation has been told by many historians. The technique appeared in India, sometime in the early Christian era; it then spread through Asia and Africa. The procedure, in its most basic form, was simple. Pus or a scab taken from a person suffering from smallpox was rubbed on the skin of a healthy person. Sometimes the recipient’s skin was cut or abraded to allow for a deeper exposure to the contagion. The recipient would then develop a case of smallpox, hopefully one more localized, less severe, and less scarring than a natural case. Once the induced case had resolved, the patient would be forever immune to natural smallpox. There was, however, a significant problem: inoculation left its recipients contagious for several weeks, capable of spreading smallpox to people they encountered. Inoculation was thus a delicate gamble of risk and benefit.<sup>35</sup>

Reports of inoculation had appeared in Europe by 1670. It had been discussed at the Royal Society of London by 1700. In 1714 an enthusiastic description of the technique appeared in the *Philosophical Transactions* of the Royal Society. Cotton Mather, who read this report, had also heard about the technique from Onesimus, his African slave. Inoculation was first used in England in April 1721. After testing it on six prison inmates in August, two royal princesses were inoculated in April 1722.<sup>36</sup> Meanwhile, Mather had initiated the first use of inoculation in the American colonies, in Boston in July 1721. Mather, the great expounder of Puritan providence, believed that God wanted humans to take such control over disease.

As the ensuing chaos in Boston showed, inoculation became extremely controversial in the colonies. When smallpox appeared in Boston, Mather encouraged local physicians to inoculate. None responded. When he convinced surgeon Zabdiel Boylston to inoculate, the town exploded in controversy. Some townfolk feared that the practice would disseminate smallpox. Others challenged the morality of intervening against smallpox, God's chosen judgment. Selectmen banned the procedure. Physicians and mobs denounced Mather and Boylston. One enraged citizen lobbed a grenade into Mather's living room. The attached note read: "COTTON MATHER, You Dog, Dam you: I'll inoculate you with this, with a Pox to you." By the spring of 1722, half of all Bostonians (5,889 out of roughly 11,000 or 12,000) had suffered from smallpox; 844 had died. Meanwhile, Mather and Boylston had inoculated 242 patients, with only 6 deaths.<sup>37</sup>

Such data, however, did not settle a debate born of deep fears of a terrible disease. In 1722 the Massachusetts House of Representatives passed a bill banning inoculation. Virginia made inoculation a criminal offense. In other areas, particularly in Philadelphia, it became increasingly popular in the second half of the century. The procedure was welcomed more enthusiastically in England: in 1755 the College of Physicians in London endorsed the practice; the British army used it widely. Performed carefully, inoculation had a death rate as low as 1/1,000.<sup>38</sup>

The new technology of inoculation raised a host of complicated problems. It gave colonists the ability to collect, store, and cause smallpox. Some devout colonists remained concerned about meddling with God's province. Most saw the debate in more practical terms. Did

inoculation really grant lifelong protection against smallpox? Did the potential benefit justify the known risks of the procedure? It was not simply a matter for individuals to decide. Every act of inoculation put others at risk of contagion, creating a complicated calculus of risk and benefit. Recognizing the potential threat to public health, professional societies and governments struggled to regulate the practice. This was well demonstrated in George Washington's decision to inoculate the Continental Army. Military leaders had witnessed the havoc wrought by smallpox in Boston in 1775 and Quebec in 1776, and suspected that British troops deliberately spread smallpox among American troops. Needing to protect his soldiers, Washington decided to inoculate them in February 1777. The procedure was conducted with few deaths among the soldiers. The citizens of Morristown, New Jersey, however, paid a price: sixty-eight members of a Presbyterian church used as an inoculation hospital died.<sup>39</sup>

The controversy swirling around inoculation limited its application among American Indians. Many colonists felt responsible for the severe mortality Indians suffered from smallpox. Inoculation gave them the capacity to take prophylactic action. Yet this combination of capacity and responsibility did not lead to intervention. Little evidence suggests that the English ever tried to inoculate Indians in North America during the eighteenth century. Historians have not criticized them for this, since inoculation remained such a controversial procedure among the colonists. Spanish colonists, however, made a different calculus of inoculation. A Carmelite missionary along the Amazon river in western Brazil inoculated his parishioners during an epidemic in 1728. Inoculation was practiced widely among the Indian and European populations of Spanish America from the 1760s into the 1800s.<sup>40</sup> This discrepancy suggests that more nuanced assessments of English colonists' decisions are needed. Decisions did not simply reflect beliefs about the safety and efficacy of inoculation. They also reflected ambivalence about the role of American Indians in English and American society.

The calculus changed with the appearance of vaccination. The striking protection milkmaids had against smallpox had long been part of the folklore of the English countryside. Edward Jenner, recognizing this potential, transformed folk knowledge into medical practice. He guessed that deliberate infection with cowpox would grant protection against smallpox. Since cowpox caused only a minor illness in humans,

this technique, which he called vaccination, provided the same benefit as inoculation with less risk to its recipients. Furthermore, since vaccination used cowpox and not smallpox, it did not share inoculation's risk of spreading smallpox. By 1796, through a series of experimental infections with cowpox followed by challenge with smallpox, he had demonstrated the value of vaccination. The technique spread to continental Europe in 1799. By 1800 Jenner had performed over 6,000 vaccinations.<sup>41</sup>

News of vaccination reached the United States no later than 1799, when Boston physician Benjamin Waterhouse read a copy of Jenner's paper. He vaccinated his son and several servants as soon as he obtained samples of cowpox in July 1800. Thomas Jefferson was similarly enthusiastic: he personally vaccinated his family, relatives, and friends. He also sponsored Waterhouse's efforts and disseminated vaccine material to anyone interested. After vaccination was demonstrated in Philadelphia in April 1802, it was endorsed by a group of fifty physicians, including Benjamin Rush, who had observed the 15 percent mortality from smallpox among the Continental Army. Although these observers recognized vaccination as a tremendous improvement over inoculation, it remained controversial. It could also be difficult to implement: Waterhouse and other advocates of vaccination long struggled to ensure a steady supply of active vaccine.<sup>42</sup>

Despite such obstacles, vaccination gradually won acceptance. In May 1812 the United States Army began vaccinating recruits; by 1818 all soldiers not already vaccinated were vaccinated immediately. In February 1813 Congress passed a law to encourage vaccination: the president was given the authority "to appoint an agent to preserve the genuine vaccine matter." Mail privileges were also bestowed: "all letters or packages, not exceeding half an ounce in weight, containing vaccine matter, or relating to the subject of vaccination, and that alone, shall be carried by the United States' mail free of any postage." Further evidence of the enthusiasm over vaccination can be seen in one popular textbook, Robert Thomas's 1822 *Treatise on Domestic Medicine*. Thomas described how smallpox, "a painful, loathsome, and fatal disease" killed one out of every six people. Inoculation could protect individuals, but it put communities at risk. Vaccination, however, could protect 999 of 1,000 people, without any danger.<sup>43</sup>

Vaccination, accepted more enthusiastically than inoculation, was

brought to American Indians. President Jefferson led the way, vaccinating Chief Little Turtle's delegation in December 1801. In 1803, as he planned the expedition of Lewis and Clark, he saw another opportunity for vaccination. Jefferson gave the explorers detailed written instructions, including the request that they carry "some matter of the kinex, inform those of them with whom you may be of its efficacy as a preservative from the small-pox; and instruct & encourage them in the use of it." He also provided Lewis with a supply of vaccine.<sup>44</sup>

Others were not far behind. In 1803 King Charles IV of Spain sent the *Expedicion de la Vacuna* (also known as the Balmis-Salvany Expedition) to bring vaccination to every port in Spanish America. By 1806 the expedition reported that it had vaccinated 100,000 Europeans and Indians from South America to New Mexico. In 1803 British officials in Canada sought vaccination for the Abneki. In 1807 Edward Jenner sent a copy of his book on vaccination to the Five Nations. At their council in November 1807, representatives of the Five Nations sent their thanks, and a string of wampum, to Jenner: "We shall not fail to teach our children to speak the name of Jenner and to thank the Great Spirit for the bestowing upon him so much wisdom and so much benevolence . . . we beseech the Great Spirit to take care of you in this world, and in the land of spirits."<sup>45</sup>

Even the best intentioned plans could be tricky to execute, especially amid the difficult conditions of frontier life. Lewis, for instance, quickly realized that his supply of vaccine was inactive. In October 1803 he wrote to Jefferson from Cincinnati: "I would thank you to forward me some of the Vaxcine matter, as I have reason to believe from several experiments made with what I have, that it has lost it's virtue." Lewis never received a new supply. He made no subsequent mention of vaccination in his journals.<sup>46</sup>

The traders of the American Fur Company fared little better in 1837. When officials at Fort Union decided to inoculate the Assiniboine and Blackfeet at Fort Union, they turned to "Mr. Thomas' medical book." They found bewildering and complicated recommendations for the management of smallpox. Fever required a special diet: "panado, gruel, arrow-root moistened with milk, plain bread pudding, salep, tapioca, calf's feet jellies, roasted apples, chicken, or light veal broth; and where the fever is on decline, and is accompanied by considerable debility, beef tea." Specific beverages were needed, including

“water, lemonade, thin gruel, barley-water gently acidulated with orange or lemon juice, common tea, or that made from balm or mint.” Other symptoms (nausea, headache, sore throat, cough, irritability, delirium, livid spots, pustules) required medicinal resources ranging from lemonade and roses, to Peruvian bark, opium, laxatives, purgatives, leeches, and effervescing saline. Special measures had to be taken to prevent the spread of the contagion, including fumigation with nitric acid, muriatic acid, and sulfuric acid. Meanwhile, medicine cabinets were quite limited, at least at Fort Clark. When Maximilian visited in 1833 and 1834, he “examined all the medical stock of the fort” and found only “a handful of elder flowers, and rather more of American camomile,” and “some common remedies.”<sup>47</sup>

Vaccination was no less complicated. Fluid was supposed to be collected from a pustule of a person with cowpox on that person’s ninth day of illness, and only when the fluid was transparent. The material needed to be used before it dried out. As recipients recovered from vaccination, they had to be treated with purgatives such as mercury, jalap, and rhubarb. Since company officials lacked vaccine material, they turned to inoculation. Thomas had promising things to say about the technique: it “is a fact, fully and long established,” that inoculation was safer than natural smallpox and “highly beneficial to *individuals*.” Imagine their dismay when, turning the next page, they found that Thomas disavowed inoculation: “Disapproving, as I do, of keeping up the smallpox by inoculation, I shall refrain from laying down any rules for its performance, and do strongly recommend vaccine inoculation in its stead.”<sup>48</sup>

Decades of changing ideas about smallpox had left the fur traders in a difficult position. Puritans’ notions of providence acting through natural mechanisms had given way to theories of disease that emphasized misbehavior (alcohol, venery, wading across icy streams, sweat baths) as the proximate causes of smallpox and disparities in health and mortality. American Indians, introduced to such misbehavior by their contact with European settlers, suffered excruciating epidemics. Understood in this way, the disparity in health status demanded intervention. Motivated by humanitarian concern, and feeling more than a little responsible for what had happened, missionaries, explorers, traders, and government officials all sought ways to alleviate Indian suffering. Missionaries placed smallpox in a moral framework in which health

could be obtained through temperance and moderation. Government officials shaped their diplomatic discourse around smallpox, providing presents and condolences to preserve the loyalty of their afflicted allies.

Into this world came the new technologies of inoculation and vaccination, specific measures that could be deployed to prevent smallpox. These techniques, with the power to transform the relationships between humans and smallpox, brought new responsibility. Inoculation required a difficult calculus of benefit and risk. Vaccination required a safe supply of the vaccine and a sophisticated regimen of supportive medical care. Both proved to be imperfect technologies in the many situations where ideal conditions did not exist. These imperfections had powerful consequences for American Indians. Although inoculation and vaccination had the potential to reduce the susceptibility of American Indians to their greatest scourge, the precarious mix of economic and political interests of colonial and federal Indian policy generated different outcomes. Just as differentials existed in the prevalence of smallpox, differentials quickly appeared in the utilization of smallpox technologies. This elusive promise of control would appear clearly in the uses of smallpox at Fort Pitt and Fort Union.

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*Using Smallpox*

BY THE SECOND HALF of the eighteenth century, the relationship of humans to smallpox had changed fundamentally. Diseases were increasingly seen as the result of specific behaviors, from exposure to dangerous environments to indulgence in sinful pursuits. Many colonists assumed that the high mortality of American Indians reflected their many forms of misbehavior. These damaging ways of living, however, were recognized as the consequence of contact between the white and Indian populations. Just as colonists had new understandings of why smallpox occurred, they had new abilities to contain its afflictions. If colonists in Boston had watched helplessly as smallpox struck during the seventeenth century and fought bitterly over the appearance of inoculation in the 1720s, they had reached an uneasy *détente* by the 1760s. Thomas Hutchinson praised inoculation, “to which many thousands owe the preservation of their lives.”<sup>1</sup> Those many thousands, however, were only the white inhabitants of the English colonies. The potential benefits of inoculation had not yet been brought to the Indians who lived within and beyond English settlements.

These tensions appeared dramatically on the western frontiers. In 1763 the traders and officers at Fort Pitt struggled to turn smallpox to their advantage by disseminating it among Delaware and Shawnee forces. In 1837, officials of the American Fur Company inoculated Blackfeet and Assiniboine traders to minimize the spread of the epi-

demic. It is tempting to single out these episodes as crucial steps towards biological warfare or the eradication of smallpox. But even the seemingly most emblematic stories contain a complex mix of interests and motivations. The local needs of frontier life turned smallpox, and its control, into a calamity or ally in war, an obstacle or asset in trade.

If new understandings and technologies of smallpox created a space in which the disease became an instrument of war and trade, it remained a potential space. Smallpox never yielded easily to human designs, especially when those designs were compromised by ambivalence about whether Indians were friend, foe, or opportunity. These ambiguities played out at Fort Pitt and Fort Union, and in the efforts to vaccinate American Indians in the early nineteenth century. Even as the government tried and failed to incorporate American Indians into the social and political domain of the United States, its vaccination campaigns faced challenges of motivation and implementation. In the eighteenth and nineteenth centuries smallpox swept unchecked, arguably accelerated, into the interior river valleys of North America.

## War

When William Trent and Sir Jeffrey Amherst each decided to spread smallpox among American Indians, they ensured their infamy as pioneers of biological warfare. Their efforts, however, have frequently been misunderstood. The episode must not be seen as an isolated act of unusual brutality. Instead, the commerce in smallpox at Fort Pitt was simply another way that the disease was put into the service of trade and empire.

The basic narratives of deliberate infection at Fort Pitt are quite clear. In the bitter conflicts of the Seven Years War, France and Britain battled for control of global empires in Europe, India, the Caribbean, and North America (where the conflict has been known as the French and Indian War). By the time that Britain emerged victorious, Amherst, commander in chief of British forces in North America, had added the vast lands of Canada to the empire. Only the Indian tribes, formerly allied to the French, continued the fight. In the spring of 1763 they attacked British garrisons along the Great Lakes and the Ohio River valley (Figure 1). Fort Pitt faced a siege by Delaware and Shawnee warriors. On 23 June 1763 Colonel Henry Bouquet,

Amherst's field commander on the New York and Pennsylvania frontier, told Amherst about a setback at Fort Pitt: "unluckily the Small Pox has broke out in the garrison." Captain Simeon Ecuyer, in charge of the garrison, "has built an Hospital under the Draw Bridge to prevent the Spreading of that distemper."<sup>2</sup>

Over the next week Amherst and Bouquet developed plans to deal with "the infernal treachery of the vilest Brutes." Bouquet awaited reinforcements that would allow him to "extirpate that Vermine from a Country they have forfeited, and with it all claim to the rights of humanity." Amherst ordered Bouquet to show no mercy: "I Wish to Hear of *no Prisoners*, should any of the Villains be met with in Arms." On 3 July Bouquet reported that the Indians had captured the British posts at Presque Isle, Le Bouef, and Venango. This loss gave Amherst "great Concern." In a letter to Bouquet on 7 July he added his infamous post-script: "Could it not be contrived to Send the *Small Pox* among those Disaffected Tribes of Indians? We must, on this occasion, Use Every Strategem in our power to Reduce them." On 13 July Bouquet responded enthusiastically: "I will try to inoculate the \_\_\_\_ with Some Blankets that may fall into their Hands, and take Care not to get the disease myself." On 16 July Amherst confirmed their intent: "You will Do well to try to Inoculate the *Indians*, by means of Blankets, as well as to Try Every other Method, that can Serve to Extirpate this Execrable Race."<sup>3</sup>

These letters show a shared desire to infect the Delaware with smallpox-infected blankets. But there is no evidence that either Bouquet or Amherst ever attempted to do so. Nor is there evidence that Bouquet passed this order to his subordinates. Neither Bouquet nor Amherst ever mentioned the idea again. As historian Bernhard Knollenberg concluded regarding Bouquet and Amherst, "execution of the intent is not supported even by circumstantial evidence."<sup>4</sup>

Had Bouquet sent Amherst's suggestion to Fort Pitt, it would have come too late: the attempt at deliberate infection had already been made. Ecuyer noted that smallpox broke out on 16 June: "We are so crowded in the fort that I fear disease, for in spite of all my care I cannot keep the place as clean as I should like; moreover, the smallpox is among us." On 22 June the Delaware and Shawnee made a fierce attack; Ecuyer dispersed them with his howitzer and cannon. On the morning of 24 June two Delaware chiefs, Turtle's Heart and

[To view this image, refer to  
the print version of this title.]

Maumaultee, demanded the surrender of the British garrison. Both sides claimed that they had reinforcements en route, that resistance was futile, and that they would never back down. Both sides also offered promises of friendship. Ready to depart, the Delaware demanded “a little Provisions and Liquor, to carry us Home.” Ecuyer complied: “The above Provisions was granted to them & they set off Home about 2 oClock that Night.” Trent, who ran the local trading post, described a different gift for the departing chiefs: “Out of our regard to them we gave them two Blankets and an Handkerchief out of the Small Pox Hospital. I hope it will have the desired effect.”<sup>5</sup>

It is unclear who joined Trent in this act. Neither Alexander McKee, the Indian agent at Fort Pitt, nor Ecuyer mentioned Trent’s gift. The act, however, was later endorsed by Ecuyer and the British high command. Trent billed the British government for expenses during the siege in June (Figure 4). The total, £85 1s 3p, included £2 13s 6p for “Sundries got to Replace in kind those which were taken from people in the Hospital to Convey the Smallpox to the Indians,” specifically two blankets, one silk handkerchief, and one linen handkerchief. Ecuyer certified the bill on 13 August 1763: “the above Articles amounting to Eighty five Pounds One Shilling & three pence Pennsylvia: Currcy: were had for the uses above mentioned.” On 24 May 1764 L. S. Ourry, quartermaster general, refused to pay for candles, and deducted £27 for transport costs, but approved the other charges. General Thomas Gage, who replaced Amherst as commander in chief, approved the modified bill on 13 August 1764.<sup>6</sup>

The Bouquet-Amherst exchange has been a fixture of the historical record since its discovery by Francis Parkman in 1870. The role of Trent and Ecuyer did not emerge until later. The episode has received tremendous attention as “history’s first documentable case of biological warfare.”<sup>7</sup> Identifying Amherst’s intent and Trent’s act as bi-

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4. The Crown to Levy, Trent & Company for sundries had by order of Capt. Simeon Ecuyer, Commandant, June–August 1763. Trent billed the British Army £2 13s 6p for “Sundries got to Replace in kind those which were taken from people in the Hospital to Convey the Smallpox to the Indians.” Ecuyer accepted the charges: “I do hereby Certify that the above Articles . . . were had for the uses above mentioned.” This bill confirms both the intent of Trent’s gift and the approval of the British command. (Bouquet Papers, ADD.21654 f168. By permission of the British Library.)

ological warfare, a term with very specific meanings in the twentieth century, confuses what the episode reveals about the relationship between the English, Indians, and smallpox in the eighteenth century. Was smallpox a special form of weapon, reserved for special circumstances of military desperation or ethnic hatred? Did the use of smallpox arise from belief that Indians were peculiarly vulnerable to its ravages? These questions can only be understood within the specific contexts of the attempt.

When Trent deployed smallpox to defend Fort Pitt, he sought to protect a fort that, although it had existed for only ten years, had become a cornerstone of empire. As late as 1740, the Mississippi Valley remained a land of American Indians, with fewer than 1,000 French soldiers and fur traders maintaining French claims to half a continent. English traders entered the Ohio valley in the 1740s. To defend French claims, the Marquis Duquesne, the governor-general of New France, built forts from Lake Erie to the Mississippi River in 1752. The Virginia government sent Major George Washington to demand that the French withdraw. Rebuffed, he selected the forks of the Ohio River as a promising site for a British fort. Trent, then a captain in the Virginia militia, began construction in 1754. Three months later, in the first overt act of the Seven Years War, the French seized the fort, fortified it, and renamed it Fort Duquesne. British forces tried, and failed, to retake the fort in 1754 and 1755. As hostilities spread throughout the Americas and beyond, France declared war in 1756. British forces turned the tide in America in 1758, when they captured Fort Frontenac and cut French supply lines between Montreal and Fort Duquesne. Promising to respect Delaware, Shawnee, and Iroquois land claims in the Treaty of Easton, the British convinced them to abandon the French. The French had to destroy the fort and retreat. General John Forbes and Lieutenant Colonel Henry Bouquet took possession of Fort Duquesne in November 1758 and renamed it Pittsburgh. By 1760 General Jeffrey Amherst had forced the surrender of all French forces in Canada.<sup>8</sup>

Peace on the frontier did not last. The French had maintained Indian loyalty with a generous policy of assistance and gifts. The Indians, recovering from years of damaging warfare, assumed that the English would continue this policy. The Ottawa, for instance, demanded that the English at Detroit provide “a smith to mend our Guns and

Hatchets, and a Doctor to attend our People when Sick.” Since Amherst no longer needed Indian support against the French, he rejected such requests. When warriors demanded gifts at Fort Pitt in April and December 1762, Bouquet could not comply. Discontent grew as the British strengthened garrisons and allowed settlers to flood into the Ohio valley. The garrison at Fort Pitt began hearing rumors that the Delaware and other tribes planned to attack. Inflamed by Pontiac, a Delaware prophet who called for a renunciation of European presence and products, tribes from Michigan to New York rose up against the English. The Ottawa attacked Detroit on 9 May 1763. The Delaware and Mingo attacked Fort Pitt on 28 May. By late June, the British forts and garrisons at Michilimackinac, Venango, LeBoeuf, Presque Isle, Sandusky, and La Baie had been destroyed. English settlements had been burned. Detroit remained besieged by the Ottawa, Fort Niagara by the Seneca, and Fort Pitt by the Delaware and Shawnee.<sup>9</sup>

This attack caught the British off guard. Postwar troop reductions had left Amherst with only one battalion, Bouquet’s Royal Americans, overextended in thirteen forts between New York and Michigan. Amherst initially thought that he could “Chastize” any tribe. But as fort after fort fell, he became enraged and dreamed of an English world free of those “Inhuman villains”: “I Wish there was not an Indian Settlement with a Thousand Miles of our Country; for they are only fit to Live with the Inhabitants of the Woods, being more nearly Allied to the *Brute* than the *Human* Creation.” Although Henry Bouquet had developed sympathy towards the Indians during the uneasy peace at Fort Pitt from 1758 to 1763, and had encouraged Amherst to adopt a more lenient gift policy before the war, he came to share Amherst’s vision. Angered by the events of June, he too hoped “to extirpate that Vermine from a Country they have forfeited, and with it all claim to the rights of humanity.”<sup>10</sup>

In such a context, it is not difficult to understand the motivation of Amherst and Bouquet. The Indian attacks had undermined their conquest of Canada. Even though Bouquet knew that the British presence violated the Treaty of Easton, he and Amherst felt that they had been attacked without justification. Defeated at six forts, they had to use all possible means to defend their remaining positions. But is it surprising that they turned to smallpox? Not at all.

Historians have written vividly about the brutality of colonial warfare. Wars “were waged with a macabre intensity not seen in Europe for generations.” The English “did not curtail cruelty or carnage but rather sought to maximize them.” Brutality was especially marked towards Indians. Warfare “took on a tone of barbarism perhaps not witnessed in the Western world since antiquity.” Indians, who had traditionally practiced limited warfare, learned from the European example and responded in kind. Villages and corn fields were burned; women were raped; victims were scalped; terror was the goal.<sup>11</sup>

Such brutality was perpetrated at Fort Pitt. When the Delaware attacked on 29 May, they scalped two of their victims. Ecuyer, creative in the fort’s defense, set beaver traps to trap Indians. When he described the traps to Bouquet, he added “I would be happy to send you one, with a savage’s leg in it, but they haven’t given me that satisfaction.” On 11 July a member of the Pennsylvania Assembly suggested that Bouquet hunt the Indians with trained war dogs. He recommended this plan to Amherst: “As it is pity to expose good men against them I wish we would make use of the Spanish Method to hunt them with English Dogs.”<sup>12</sup> Such dogs, however, were not available. With these precedents, use of smallpox seems less shocking. It could cause a horrible death, but so did being scalped or devoured by dogs. It would strike civilian populations, but that was a goal of warfare. The one unique aspect of smallpox (and it is unclear whether Trent or Amherst understood this) was that this weapon, once introduced, could propagate itself.

Soldiers were certainly very familiar with smallpox, which had long been as much a part of war as marching and muskets, determining the success or failure of many campaigns. Some historians have suspected that there was “a backwoods tradition of this sort of germ warfare.” Accusations certainly existed, from Ensenore, Squanto, and Canonicus, to Dekanissore in 1717, and to French accusations that the English infected the Cherokee in 1738 and the Micmac in 1744. Historian Elizabeth Fenn has documented many accusations of deliberate infection during the Seven Years War: the Potawatomi accused the British, while the Ottawa and the British accused the French.<sup>13</sup> The garrison at Fort Pitt knew smallpox well. Most must have known of the precedent of inoculation, with its demonstration that smallpox could be collected and

transmitted. Some might have heard rumors of attempts at deliberate infection. Desperate for a way to raise the siege, two sets of British defenders independently found smallpox to be an obvious choice. When Trent billed the army for the costs of the attack, three levels of the British command signed off without complaint. And although they did not mention Trent's gift, Bouquet and Amherst praised Ecuyer for taking "all the Precautions which art and Judgment could Suggest for the Preservation of this Post."<sup>14</sup>

Although deliberate infection might have been a natural outgrowth of the events at Fort Pitt, there are two surprising aspects of this episode. First, the attack could not have arisen from belief in some unique American Indian vulnerability. In the seventeenth century, accusations of deliberate infection had arisen from Indian observations that they suffered while Europeans remained unscathed. But this was not the case at Fort Pitt. The attempt was possibly inspired, and certainly made possible, by the outbreak of smallpox among the British garrison. Bouquet feared that handling smallpox would put himself at risk, telling Amherst that he would "take Care not to get the disease myself." This sense of mutual vulnerability occurred repeatedly on the western frontier. Amherst and Trent did not see smallpox as a magic bullet that would only kill Indians. Instead, faced with smallpox among their own forces, they tried to share it with their enemies.<sup>15</sup>

Second, the attempt at deliberate infection did not depend on racial hatred between Indians and Europeans. Cultural and religious gulfs certainly exacerbated the savagery of frontier warfare. Higginbotham has suggested a gradient of savagery, with British forces being cruelest to Indians, less cruel to the French and Spaniards, and least cruel to the Americans during the Revolutionary War. Some have even argued that attacks with smallpox could have happened only in the context of Indian-European conflict. Elizabeth Fenn has shown that this is not true. During the Seven Years War, the British believed that the French had tried to send smallpox to Halifax. During the Revolutionary War, American officers believed that the British attacked them with smallpox at Boston, Quebec, Virginia, New Hampshire, and Yorktown. One British officer even published a military manual that advocated shooting American rebels with smallpox-dipped arrows.<sup>16</sup> It is certainly possible that while these ideas circulated in the contexts of British-

American warfare, the act was only executed in cases of British-Indian warfare. But it is equally possible that many attempts were made in a variety of contexts without surviving in the historical record.

While the attitudes of Amherst and Bouquet seem clear, William Trent presents a more complicated problem. Trent had the longest experience on the Pennsylvania frontier, having entered the Indian trade in 1750, served as an agent of Virginia in 1752, begun construction on Fort Pitt in 1754, assisted in the negotiations at Easton in 1758, participated in the capture of Fort Duquesne, re-entered the Indian trade, and remained active in Indian diplomacy. Since Trent left little record of his attitude towards the Indians, it remains unclear whether he saw them as friends or as people to be seduced with alcohol and trapped into debt. The siege, however, elicited a clear response. Eighteen traders and eighty-eight servants were killed or taken captive in June; traders' losses totaled more than £45,000. Trent did not watch passively. He organized the civilians into a militia company, helped Ecuyer set beaver traps, and attempted to infect Turtle's Heart and Maumaultee with smallpox. Was he angered by the betrayal of his former customers? Was this simply more hostility towards people he had long sought to exploit? Did he hope that smallpox, by hastening the end of hostilities, would allow him to re-open trade more quickly? Whatever his motivation, he acted like a practical merchant and billed the military for his expenses.<sup>17</sup>

One last ambiguity is the impact of Trent's gift. Bouquet arrived with reinforcements on 10 August and broke the siege. Did smallpox contribute? Three witnesses in 1764 and 1765 reported smallpox among the Delaware and Shawnee. Most historians interpret these reports as evidence of the success of Trent's attempt. However, the existence of smallpox could also indicate that the disease had already become endemic, or that it reached the Delaware and Shawnee through multiple routes. The most direct evidence suggests that Trent's blankets had no impact. One month after the gift, Turtle's Heart and Maumaultee returned to negotiate at Fort Pitt. They made no mention of smallpox among their people. Two days later the Delaware and Shawnee began a fierce attack that lasted for five days and five nights. Trent's gift neither weakened the tribes nor triggered accusations of deliberate infection.<sup>18</sup>

Gone were the days when Thomas Hariot could deny English control over smallpox, arguing that "our God would not subiect him selfe

to anie such praiers and requestes of men.”<sup>19</sup> By 1763 the English had taken some responsibility for smallpox and its distribution. The disease could be stored, packaged, transported, and inflicted. It could be sent to an enemy with an expectation of successful infection. The gift of blankets, existing within the frameworks of trade and diplomacy that tied British and Indians together, subverted these relationships in an effort to keep them apart. Yet as shocking as the attempt might seem, it elicited no alarm from its witnesses. Smallpox remained routine enough on the frontier to be unsurprising when used as an act of war. It did, however, remain elusive enough to defy attempts at control.

## Trade

Officials of the American Fur Company put smallpox to very different uses in 1837. The epidemic began innocuously. The *St. Peter's*, the steamboat of the American Fur Company, left St. Louis on its annual trip up the Missouri River on 17 April. A passenger suffering from a fever boarded just south of Fort Leavenworth. By the time the steamer reached Council Bluffs, the fever had evolved into smallpox and spread to several other passengers. Three Arikara women boarded the *St. Peter's* at Council Bluffs. These women were infected by the time the steamer reached the Sioux agency at Fort Pierre on June 5. Officials and trade goods, dispersed at Fort Pierre, spread the disease to the Yankton and Santee Sioux. Jacob Halsey, en route to his new position as director at Fort Union, boarded the *St. Peter's* around 6 June. By June 17, as the steamer approached Fort Clark, the outbreak of smallpox appeared to have wound down. Nothing seemed amiss when the steamer reached Fort Clark on 19 June. The merchandise was unloaded, “all hands a Frolicking.” The three Arikara women disembarked to join their tribe camped nearby. The *St. Peter's* left the next day.<sup>20</sup>

When the *St. Peter's* reached Fort Union on 25 June, “the mirth usual on such occasions was not of long duration”: Halsey had caught smallpox. Although he had been vaccinated previously and now suffered only a minor case, the damage had been done. Trade had brought smallpox far up the Missouri Valley, and the results were devastating. The “detestable pest” broke out at Fort Union within days of Halsey and the arrival of the *St. Peter's*. Several workers died and

twenty-seven others were soon sick. Smallpox soon spread to the Indians surrounding the fort. Halsey suspected that “the air was infected with it for a half mile without the pickets.” Others argued that an Indian had stolen an infected blanket. The epidemic eventually receded from Fort Union, but among the Blackfeet and Assiniboine it was “raging with the greatest destruction imaginable at least 10 out of 12 die with it.”<sup>21</sup>

Smallpox did not appear near Fort Clark until mid-July. On 14 July, in the midst of a heat wave, a “young Mandan died to day of the Small Pox—several others had caught it.” On 17 July a thunderstorm broke the heat wave, but smallpox continued: “An other case of the small pox broke out to day at the Village.” It spread throughout Mandan villages, and then to the nearby Arikara (Rees). Four Bears, the Mandan chief, caught smallpox, allegedly condemned the treachery of the traders, and died on 30 July. The tribes began fatalistic dances: “they expect to all die of the small pox—and as long as they are alive, they will take it out in dancing.” By late August more than 50 Mandan men had died, and uncounted women and children. Smallpox appeared within Fort Clark on 13 August, devastating traders’ Indian wives and children. Chardon caught the disease, but cured himself with whiskey and nutmeg. His own son died on 22 September. By the end of September, “it has destroyed the seven eights of the Mandans and one half of the Rees Nations.” It continued to spread throughout the winter.<sup>22</sup>

A similar story played out at Fort McKenzie. Andrew Culbertson had sent a keelboat to collect trade goods from the *St. Peter’s* at Fort Union. Smallpox appeared on the return trip and reached Fort McKenzie in late July. Two traders soon died. The Blackfeet, “undeterred by the spectacle, still insisted upon the opening of trade as usual.” They dispersed after five days of trade. Smallpox soon erupted within the fort: “Scarcely one of its eighty-five or ninety occupants escaped an attack of greater or less severity.” Indian women at the fort were especially hard hit. The disease soon emerged among the nearby Blackfeet.<sup>23</sup>

The epidemic left scenes of gruesome desolation at each fort. Victims died remarkably fast: “The patient, when first seized, complains of dreadful pains in the head and back, and in a few hours he is dead: the body immediately turns black, and swells to thrice its natural size.” The few who remained healthy were unable to bury the dead. As corpses

were dumped over bluffs or thrown into the river, rotting bodies created “a stench beyond description.” Many Indians “gave themselves up in despair” and took their own lives. Some identified the traders as the source of their suffering and became hostile. The Mandan and Gros Ventres threatened to kill Chardon. Arikara warriors attacked a company boat sailing from Fort Union to St. Louis in the spring of 1838. Although the Blackfeet were angry, Forts Union and McKenzie faced fewer threats.<sup>24</sup>

By the time the epidemic died down in 1838, it had laid waste the upper Missouri Valley. As an anonymous witness described, the “destroying angel has visited the unfortunate sons of the wilderness with terror never before known, and has converted the extensive hunting grounds, as well as the peaceful settlements of those tribes, into desolate and boundless cemeteries.” Abandoned villages covered the plains, “no sounds but the croaking of the raven and the howling of the wolf interrupt the fearful silence.” Estimates of overall mortality ranged between 10,000 and 250,000. Between 7,000 and 8,000 Blackfeet died. The Mandan fell from 1,600 to 30.<sup>25</sup>

Many whites believed that the Plains Indians had met their doom: “It seems to be irrevocably written in the book of fate, that the race of red men shall be wholly extirpated in the land in which they ruled the undisputed masters, till the rapacity of the Whites brought to their shores the murderous fire-arms, the enervating ardent spirits, and the all-destructive pestilence of the small-pox.” The epidemic transformed the political situation of the region. Before 1837 Americans had feared war with the Blackfeet, “the bravest and most crafty of all the Indians, dangerous and implacable to their enemies.” Smallpox destroyed this threat: “Every thought of war was dispelled, and the few that are left are as humble as famished dogs.” The government’s “vast preparations for the protection of the western frontier are superfluous: another arm has undertaken the defence of the white inhabitants of the frontier; and the funeral torch, that lights the red man to his dreary grave, has become the auspicious star of the advancing settler, and of the roving trade of the white race.”<sup>26</sup> Smallpox, once again, had facilitated white settlement.

Was this devastation inevitable? Most historians have assumed that it was. However, it is possible that the remarkable mortality reflected contingent circumstances. The Mandan, prevented from hunting

by hostile tribes, experienced a near-famine that left them vulnerable. Historian Clyde Dollar has argued that a combination of cold, rainy weather and smoke from prairie fires, along with poor sanitation and overcrowding, created a “high contagion probability.” Contingent factors also protected other tribes. The Gros Ventres, likely inoculated by previous exposure to smallpox, lost only 200 people. The Crows “did not take it at all, carefully keeping themselves during its progress beyond reach of infection.”<sup>27</sup>

The federal government had different explanations. An 1838 inquiry, reflecting the belief that humans could be responsible for the distribution of their diseases, focused on human factors. The commissioner of Indian affairs concluded that the Indians “general want of medical advice and neglect of precautionary measures, added to their irregular and exposed modes of living, made them certain victims of the scourge.”<sup>28</sup> Could more appropriate responses have prevented the epidemic? Was such control over smallpox possible? The acts of the traders provide a host of suggestive answers.

Once they recognized the presence of smallpox on the *St. Peter's*, the traders attempted to prevent an epidemic. First, the traders tried to quarantine each of the forts. Chardon begged the Gros Ventres to stay away from Fort Clark and sent them ten pounds of tobacco as compensation. When smallpox appeared inside Fort Union, officials locked the gates to prevent anyone from fleeing and spreading the contagion. Halsey sent a messenger to the Assiniboine to warn them not to approach the fort; when they arrived, traders attempted to scare them off by showing them a sick child “whose face was still one solid scab.” When smallpox appeared on the keelboat en route to Fort McKenzie, its captain stopped the boat and sent a warning upriver. Culbertson “immediately decided to leave the boat there till the disease abated and cold weather set it.” However, “five hundred lodges” of Blackfeet, awaiting the trade goods at the fort, ignored warnings that they risked an epidemic and demanded that the keelboat be brought to the fort. Although the disease broke out almost immediately, the Blackfeet, “undeterred by the spectacle, still insisted upon the opening of trade as usual.”<sup>29</sup>

Second, even as they tried to contain the epidemic, the traders worked to treat its victims. Although Chardon spent most of his days simply observing the devastation of the Mandan, he did try to cure

some with Epsom salts, or with a decoction of “Magnisia, peppermint, sugar lead, all Mixed together in a phial, filled with Indian grog.” At Fort Union, officials organized a hospital, but to little avail: soon “the whole stock of medicines was exhausted.” Vaccination could have been a decisive response. Officials at Fort Union did consider vaccinating people within the fort, especially the Indian wives of the traders, but they had no vaccine matter. In its absence, they “decided to inoculate with the smallpox itself.” Guided by Thomas’s *Domestic Medicine*, they inoculated “30 Indian squaws and a few white men.” According to Larpenteur, these efforts were fruitless: inoculation “proved fatal to most of our patients.” Culbertson, at Fort McKenzie, also resorted to inoculation. Although “the precaution came too late to have its usual efficacy,” it “greatly lessened the mortality in the fort.”<sup>30</sup>

If these accounts are reliable, they document considerable effort to contain smallpox. Such efforts were not limited to the traders. Many Arikara sought relief through dreams and sacrifices. One inadvertently cured himself by rolling in hot ashes. The Gros Ventres tried to protect themselves by quarantine, refusing Mandan and Arikara visitors. One Mandan father even saved his son with improvised inoculation: “An Indian Vaccinated his child, by cutting two small pieces of flesh out of his arms, and two on the belly—and then takeing a Scab from one, that was getting well of the disease, and rubbing it on the wounded part, three days after, it took effect, and the child is perfectly well.”<sup>31</sup>

The actions of the traders have long been scrutinized by historians. Most assessments have ranged from “careless” to “criminally negligent.” One argued that the traders “deliberately sacrificed” the Indians. Another concluded that the 1837 epidemic “appears particularly horrible because such high mortality was preventable.” Many historians have sympathized with the traders: “the hapless actors in this tragedy acted out their parts as dictated by chance and their own human frailties of limited understanding of invisible forces.” Lacking vaccine, the traders “were left with few alternatives.” That they made any efforts at all suggests that they accepted “responsibility for the welfare of the Indians even in the midst of disaster.”<sup>32</sup>

This focus on the traders’ responses to the epidemic overlooks the responsibility of the traders, and possibly the Indians, for the epidemic itself, especially their willingness to risk lives to preserve trade. Like their French, English, and Dutch predecessors in New France, New

England, and New York, fur traders were drawn into the upper Missouri Valley by “a mercenary motive—the commercial value of the harmless and inoffensive beaver.” Established by French traders in the eighteenth century, the Missouri trade evolved through wars and epidemics. By the time steamboats reached the Missouri River in 1819, the trade had become fiercely competitive, with bankruptcies, mergers, and acquisitions. In 1837 Pratte, Chouteau, and Company, a descendant of John Jacob Astor’s American Fur Company, controlled the river from Fort Pierre to Fort McKenzie. The federal government granted these traders considerable autonomy. Although it had enacted prohibitions against selling alcohol to American Indians, it placed a member of the American Fur Company in charge of the Missouri subagency: the “great farce had begun.”<sup>33</sup>

The relationships between traders and American Indians relied on economic opportunism and co-dependency. The Indians had access to resources (beaver skins and buffalo fur), which traders could buy from them and then sell at a profit on American and European markets. In exchange the Indians received textiles, alcohol, tobacco, and firearms. These interactions created many auxiliary economic relationships. The traders depended on Indian hunters and farmers for meat and corn. Traders, scientists, and explorers hired Indians as guides in the wilderness. Artists used them as subjects for portraits. However, this was no multicultural utopia: both sides contested the terms of the trade. The relationship also contained marked asymmetries, especially the differential mortality that had shocked settlers for centuries. Appearing in this world, smallpox threatened everyone and created new meanings and opportunities.

Given their dependence on the American Indians, it is remarkable that the traders allowed smallpox to reach the trading posts. Catlin, in New York City at the time of the epidemic, assumed that smallpox must have been recognized too late: “for if they had known it to be such, I cannot conceive of such imprudence, as regarded their own interest in the country, as well as the fate of these poor people, by allowing their boat to advance into the country under such circumstances.” But smallpox had been recognized before the *St. Peter’s* reached Fort Pierre. Culbertson accused Captain Bernard Pratte of “a reckless disregard of consequences” for continuing upstream.<sup>34</sup> But many other traders followed Pratte’s example.

The traders faced a difficult situation. Conditions on the upper Missouri allowed only a single steamboat roundtrip each summer. Had Pratte turned back, the posts would have been left without supplies for an entire year. The traders accepted the risk of an epidemic and took steps to prevent it with self-quarantine, treatment, and inoculation. However, they repeatedly acquiesced to (alleged) Indian demands that the trade continue. This was reciprocal risk: American Indians were put at risk because of the trade, while the company was at risk because of its dependence on trade. Inoculation served all interests, humanitarian and opportunistic.

Officials, tragically, did not bring their efforts to fruition. Thousands died. Were the traders constrained by Indian threats? Did they make only halfhearted efforts because of their ambivalence towards the Indians? Or were their interventions incapable of halting the airborne contagion of smallpox? Some surely acted impulsively, without reasoned plans, responding to the horror of the moment.

If it is difficult to assign meanings to actions taken during the heat of the epidemic, it becomes easier to see meaning in actions taken in its aftermath. First, the traders blamed the outbreak on the Indians, claiming that smallpox appeared when Indians stole blankets from dying traders. Second, as the dust settled, they turned the epidemic itself into an economic opportunity. Maximilian, for instance, who had wintered with the Mandan before the epidemic, realized that the mortality made his observations “especially valuable.” As his English translator and his editor explained, the “almost total extinction of these tribes greatly enhances the value and importance” of his writings.<sup>35</sup> These men might have been advertising the ethnographic value of the observations, but commercial value could not have been far from their minds.

The starkest opportunism came from the traders. During the epidemic, company officials complained that, with Indians sick and dying, buffalo survived unhunted. Chardon noted that “The whole country north and south is one solid mass of Buffaloes, and sorry to say, no Indians to kill them.” Halsey described how fur production would suffer: “The loss to the company by the introduction of this malady will be immense in fact incalculable as our most profitable Indians have died.” David Mitchell worried that profits “will be a mere drop in the ocean.” The traders, however, were quick to find a silver lining. Mitchell suspected that financial problems in the eastern cities the previous year

had hurt the company's fur sales, leaving it with residual inventory. If news of the epidemic and impending fur shortage reached the fur markets, prices would skyrocket: this "will no doubt have a tendency to enhance the value of Robes that are now at market."<sup>36</sup>

Events did not turn out as expected. Hunters provided abundant furs in 1837 and 1838. Larpenteur suspected that the Indians, expecting to die, sold their own robes to have money for "a frolic till the end came." Culbertson thought that the survivors might have sold "robes belonging to the victims of the small-pox that would under other circumstance have been retained for use." What happened next is most remarkable. Suspecting that many of the furs came from victims of smallpox, and familiar with the idea that contaminated blankets could transmit smallpox, the traders shipped thousands of these robes east. As Culbertson later confessed, "they were purchased and shipped down the river with an utter neglect of any precaution to prevent the retransmission of the disease back to its starting point." As had happened at Fort Pitt, this commerce in smallpox had no apparent impact: "It is surprising that the introduction into the eastern markets of so many thousand of small-pox infected robes was not followed by a general prevalence of the epidemic throughout the United States." Baffled by this observation, Culbertson, like so many before him, turned to providence: "Certainly the ways of Providence are mysterious and past finding out. A single infected blanket stolen by an Indian results in the annihilation of whole tribes, strewing the plains with tens of thousands of victims; while the wholesale introduction into the States of thousand[s] of robes taken from the decomposing bodies of these victims is not followed by any appreciable injurious consequences."<sup>37</sup>

The facility with which the traders responded to the epidemic, their ability to transform the epidemic into economic opportunity, suggests that the devastation surprised no one. As their attempts at self-quarantine showed, they had no doubt that they could, and did, introduce the disease. This conflict penetrated all aspects of the fur trade: traders came to the Indians for furs, knowing that their presence threatened both Indians and their supplies of furs. When smallpox appeared, it laid bare the dangers and asymmetries in the relationships of whites and Indians. Perhaps traders believed that their understanding of smallpox and their nascent ability to control it with vaccination could mitigate the risk. Their hubris claimed thousands their lives.

## Vaccination

The absence of vaccination during the 1837 epidemic is both puzzling and revealing. Back east, the epidemic had been contained by “a general vaccination of persons of all ages.” The tribes of the Missouri Valley had heard that such a remedy existed and accused the traders of withholding it. The traders, however, had no vaccine to withhold. It was not until November, five months into the epidemic, that Halsey wrote to company officials in St. Louis asking for vaccine: “Pray send some Vaccine matter had Mr. Mitchell brought some thousands of lives might have been saved.”<sup>38</sup>

The company did eventually act. By June 1838 David Mitchell was vaccinating the Gros Ventres at Fort Union. The federal government responded as well. According to the commissioner of Indian affairs, “every exertion was used to vaccinate as generally as possible.” A physician, sent on this “benevolent errand” vaccinated “about 3,000 persons.” Canadian officials had better luck. Before the outbreak, the directors of the Hudson’s Bay Company had stocked their trading posts with vaccine. When fleeing Assiniboine and Blackfeet brought smallpox into central Canada in September 1837, company agents quickly vaccinated nearby tribes, saving many from death.<sup>39</sup>

If these stories are reliable, then the crucial difference between the American and Canadian epidemics was the decision by Canadian officials to provide trading posts with vaccine. Why had Americans not taken this precaution? As discussed earlier, vaccination of the Indians had gotten off to a promising start. Thomas Jefferson vaccinated a visiting Miami delegation in 1801 and instructed Lewis and Clark in 1803 to carry vaccination across the continent to the Pacific Ocean. Lewis, however, had to abandon this quest even before he crossed the Mississippi River. His failure was the harbinger of many more to come. Although vaccination had won acceptance in official circles in the United States by 1815, sustained efforts to vaccinate American Indians did not come quickly.

Vaccination was certainly hampered by the limited role of the federal government. The early republic had few institutions devoted to American Indians. In 1789 President Washington established an ad hoc Indian Section in the War Department. In 1790 Congress began requiring licenses for the Indian trade; it appointed a superintendent

of Indian affairs in 1806 to supervise this regulation. The first specific Indian appropriation came in 1819 when Congress allocated \$10,000 for teaching Indians “the habits and arts of civilization.” During the Monroe Administration, Secretary of War John Calhoun appointed Thomas McKenney head of a new Indian Bureau. The office, including McKenney, two clerks, and a messenger, opened in 1824. Ten years later, on 30 June 1834, Congress officially established the Office of Indian Affairs (also known as the Indian Bureau). It faced many obstacles: inconsistent treaties, ill-defined authority over field personnel, and lack of uniform accounting procedures. Congress transferred the Indian Bureau to the newly created Interior Department in 1849.<sup>40</sup>

These institutions initially showed little concern for Indian health. In 1802 the army instructed its physicians to curb smallpox and other diseases among American Indians near the army posts. Whether the doctors were acting to protect soldiers or aid Indians, the Indians at least received some care from physicians. Health and sanitation did receive attention during Indian removals, but not enough to prevent tremendous mortality. A new era began in 1832 when a treaty with the Winnebago included a promise to provide medical care. Similar treaties followed. The Interior Department demonstrated increasing concern for Indian health, but again emphasized protecting agents and their families.

During this period, the push for vaccination largely came from private sources. In 1818 W. A. Trimble, who had traveled among the Comanche, encouraged Calhoun to implement vaccination, “a course dictated by humanity.” The Reverend J. Morse made a similar recommendation in 1821. In 1819 the government sponsored the Yellowstone Project, an effort to explore and fortify the Missouri River. Although Calhoun’s instructions made no specific mention of vaccination, he did refer expedition leader Stephen Long to Jefferson’s instructions to Lewis and Clark, which had recommended it. In 1820 the team received “a box containing a quantity of vaccine virus, transmitted to the exploring party, for the purpose of introducing vaccination among the Indians.” The box, however, was not sent by the government. Instead, it came from Sylvanus Fansher, a Connecticut man who tried to make a living by promoting vaccination. The team physician, Edwin James, soon realized that the effort had proved fruitless: the keel-boat containing the vaccine had sunk en route and “the

box and its contents, although saved from the wreck, was thoroughly drenched, and the virus completely ruined." When the team later encountered a party of Pawnees, they could only educate them about the procedure.<sup>41</sup>

British and Spanish authorities had more success. Canadian Indians were vaccinated during an outbreak in 1823. During an epidemic on the California coast in 1828, Governor Encheandia coerced James Pattie, an imprisoned American trader, to vaccinate the Spanish missions. Pattie traveled from San Diego to San Francisco, vaccinating, by his count, 23,500 Spaniards, Indians, and Russians. Although a more plausible estimate is between 3,000 and 6,000, this was an impressive accomplishment.<sup>42</sup>

The epidemic of 1831 and 1832 finally spurred the United States government into action. Smallpox appeared among Pawnee and other midwestern tribes in 1831. As described by John Dougherty, the United States Indian agent at Leavenworth, "their misery defies all description." Such reports shocked government officials. In March 1832 Congress asked Lewis Cass, the secretary of war, to provide information about "the spread and ravages of the small pox among any of the Indian tribes." Cass sent vivid descriptions and forwarded letters from agents and missionaries calling for vaccination to "prevent the desolating ravages of this dreadful disorder." On 5 May 1832 Congress passed an act that called for vaccination of the Indians: the secretary of war would provide vaccine matter, physicians would be sent "to the remote Indians," and agents would convene their tribes and "use all proper means to persuade the Indian population to submit to vaccination." The whole plan would cost only \$12,000. Within a week, Cass sent vaccine and instructions to the agents, encouraging them to persevere. He also assigned a value to this lifesaving procedure, \$0.06 for each Indian: vaccination of 100 Indians was "considered equal to a day's service, and for which the surgeon will be entitled to a compensation of six dollars."<sup>43</sup>

By November the plan was underway. Despite delays and occasionally inactive vaccine, Dougherty had hired two physicians who vaccinated over 2,000 Omaha, Otoe, Iowa, and Sioux at Council Bluffs. Elbert Herring, commissioner of Indian affairs, reported that most Indians accepted the procedure: "It is gratifying to know that the Indians have every where, with one exception, received the persons se-

lected to perform this duty, with gratitude of the Government.” The main problem had been inactive vaccines. During the first year, \$8,192.50 was spent, and 10,206 Sioux, Potawatamies, Miamies, Illinois, Winnebagoes, Menomonees, Sacs, Foxes, Choctaws, Osages, Shawnees, Kickapoos, Cherokees, Chippewas, Ottawas, Creeks, Ohio, and Seminoles were vaccinated (at an actual cost of about \$0.80 each). Herring expected that all remaining Indians would be vaccinated in the next season, without needing to spend the full \$12,000. By 1834 \$9,439.40 had been spent; subsequent reports made no further mention of the act. In 1836 a treaty with the Ottawa and Chippewa included an annual budget of \$300 for vaccination.<sup>44</sup>

The next year smallpox struck many tribes, including those of the upper Missouri Valley. Five years of vaccination efforts had not had the impact that Cass and Herring had thought: thousands of American Indians died. As described earlier, the epidemic did re-inspire vaccination, which began in the spring of 1838. In the fall Crawford sought an appropriation of \$5,000. Sylvanus Fansher (who did not specifically mention the epidemic) petitioned Congress to establish a permanent vaccine institution for the army, navy, and Indian Department. According to missionary Isaac McCoy, these efforts had little impact: “as it had happened in cases of vaccination which immediately followed the passage of the law for that object in 1832, the effect was too feeble and unsystematic.”<sup>45</sup>

Many historians have condemned the failure of the 1832 campaign. At a rate of \$0.06 per person, the government program could have protected nearly 200,000 American Indians. But this effort had not reached the upper Missouri Valley. Many observers blamed Indian hostility to vaccination. Maximilian met Puncachs who “had manifested distrust” and refused vaccination. Catlin believed that the government succeeded only with tribes that had already experienced the disease: “amongst those tribes in their wild state, and where they have not suffered with the disease, very little success has been met with in the attempt to protect them, on account of their superstitions, which have generally resisted all attempts to introduce vaccination.” Historians have often accepted these explanations.<sup>46</sup>

Such resistance, however, was not insurmountable. Dougherty and Herring both described Indians accepting the procedure. Maximilian noted that Major Bean had vaccinated 2,600 Indians despite resistance.

Other factors must have limited the impact of the program. As noted above, cases of vaccine failure were common, with Halsey, Culbertson, and many others catching smallpox despite previous vaccinations. The United States Army long struggled with this problem. Although the army had begun vaccinating all new recruits in 1812, smallpox remained a serious problem during the Civil War, especially among black soldiers whose case rates were more than six times those of white soldiers.<sup>47</sup> Even when the government had good intentions, strong motivations, and adequate resources, vaccination could fail to control smallpox.

It is far from clear that the government had such good intentions and strong motivations toward American Indians. Throughout the early nineteenth century, the federal government struggled to define the role of Indians in the United States. Many officials and missionaries believed that the Indians could only be saved if their savagery were converted to civilization. They knew this was no easy task: "Every day's observation shews that the near association of the white and red man is destructive to the latter." The government also had little patience for these efforts. The 1819 appropriation for civilizing the Indians was given only a decade to work before the government adopted a new solution: relocation. By moving Indians away from the influence of white society, relocation, it was hoped, would allow the civilizing process to proceed more gradually. Led by President Andrew Jackson, the government removed the Choctaw, Cherokee, and other southern tribes across the Mississippi River. Many historians have rejected this rhetoric of civilization as a justification of land theft and westward expansion.<sup>48</sup> Regardless of motivation, Indian relocation was one of the greatest disruptions ever perpetrated by the federal government on American Indians. It also provided the context for the vaccination campaigns of the 1830s. Perhaps vaccination helped assuage the guilt of an expansionist and destructive United States.

In this setting, vaccination could never have been a simple act of medical philanthropy. Ambivalence took a particularly high toll on the upper Missouri. Federal policy in the 1830s focused on Indians east of the Mississippi. The 1836 annual report of the commissioner of Indian affairs classified these tribes as planning to relocate, already relocated, or not relocating. These were the tribes that had received vaccination in 1832. The western tribes, including those of the upper Missouri,

were classified as “Indigenous Tribes within Striking Distance of the Western Frontier.” Between 1815 and 1831, these tribes had killed or injured 230 Americans and destroyed nearly \$150,000 of property. Historian David Ferch has suggested that these “losses may have left the Secretary fearful of sending men too far up the Missouri or indifferent to the fate of these northern plains hostiles.”<sup>49</sup>

The government thus differentiated two sorts of Indians: those within the reach of the federal government, who were to be moved beyond the Mississippi, and those who threatened the government. Only the former received vaccination. When Cass planned the 1832 campaign, he noted that “no effort would be made . . . under any circumstances . . . to send a Surgeon higher up the Missouri than the Mandans, and I think not higher than the Aricaras.”<sup>50</sup> The fate of the Mandan suggests that vaccination, and the moral community of the federal government, had not even reached them.

This pattern of neglect is consistent with government policy that left the upper Missouri tribes in the hands of the American Fur Company. The distance, geographic and conceptual, between the government and those tribes was so great that news of the 1837 epidemic, which was in full swing by July, had not reached the commissioner of Indian affairs by the following December. The tribes were even beyond the reach of company officials in St. Louis: Halsey asked for vaccine in November 1837, but received none until June. Similar failures to contain outbreaks among remote tribes occurred repeatedly in the nineteenth century.<sup>51</sup> Too much prairie, too many miles of river, and too many cultural barriers stood between officials and their responsibility to intervene.

Much had changed from the time when Daniel Gookin had worried about the deaths of Indian students at Harvard College. Whereas Gookin debated the role of diet, housing, and providence, Cass and Herring emphasized environment and behavior. Whereas Gookin worked on his own as superintendent of the Indians, Cass and Herring oversaw a small but growing Indian Office, with congressional funding and treaty obligations to safeguard the health of American Indians. But much remained the same. Soldiers, traders, and government agents continued to witness dramatic disparities in mortality. The meanings of smallpox remained as complex as the relationships that bound American Indians to the expanding nation. Everyone recognized, or at least

suspected, that the epidemics arose from the encounter between settlers and Indians. As force of numbers and economic resources increasingly gave white Americans the upper hand, disparities in disease reflected disparities in wealth and power.

The most significant development between Gookin and his nineteenth century successors remained elusive: control over smallpox. Inoculation and vaccination offered the promise that smallpox could be controlled by human action. These technologies might have lessened the disparities in smallpox mortality. Instead, they found other uses. Smallpox, through blankets, was given to the Delaware and Shawnee to induce an epidemic. Smallpox, through inoculation, was given to the Blackfeet and Assiniboine to protect traders' interests in the upper Missouri Valley. Smallpox, through vaccination, was given to eastern tribes with the expectation that they would be removed beyond white society. The disease resisted this control: imperfect technology and imperfect motivation undermined the desired outcomes. Smallpox cast in stark relief the many inconsistencies in American attitudes toward American Indians. Western tribes were enough a part of the growing nation to be exposed to its diseases, yet not enough a part of it to be within reach—physical and moral—of its medicine.

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*Race to Extinction*

SMALLPOX HAD BEEN the scourge of American Indians ever since the arrival of Europeans in the Americas. William Bradford and Edward Winslow watched helplessly as the Massachusett succumbed in 1633. Jacob Halsey and Alexander Culbertson tried unsuccessfully to contain smallpox in 1837 by inoculating Assiniboine and Blackfeet. Five years after Congress had passed a bill calling for the vaccination of American Indians, somewhere between 10,000 and 150,000 died from smallpox. With limited motivation and limited resources, government officials and private activists had consistently failed to contain the devastation of smallpox. This would all change.

By the 1880s government officials had begun to respond quickly, possibly effectively, to outbreaks of smallpox among American Indians, containing epidemics with quarantine, fumigation, and vaccination. This new enthusiasm for Indian health, however, had its limits: it did not extend to tuberculosis, which had begun to replace smallpox as the dominant cause of American Indian morbidity and mortality. Tuberculosis emerged during the nineteenth century as the government, motivated by desire for Indian lands and by dreams of incorporating Indians into American society, moved American Indians onto reservations. This transition did not go smoothly, especially for the Sioux. As they endured the transition from nomadic hunters to settled farmers, they faced a devastating epidemic of tuberculosis. By the 1890s rates of

tuberculosis among the rural Sioux exceeded those among the darkest slums of eastern cities.

Although tuberculosis had replaced smallpox, the old disparities in health status survived: American Indians continued to suffer more severely than whites despite the change in the dominant disease. Physicians, soldiers, and government officials sought explanations for both the new disease and the persistent disparities in morbidity and mortality. They re-evaluated long-familiar theories of behavior and environment in light of new ideas about heredity and bacteriology. Most significantly, they assessed the meaning of the outbreak of tuberculosis. They found that tuberculosis reflected past interactions between Americans and American Indians and foretold possible futures of each group. While some saw the epidemic of tuberculosis as the transient agony of a race undergoing the passage to civilization, others saw it as the last step on the American Indians' road to extinction. This debate determined the direction of Indian policy.

## Changes

The apparent mastery of government officials over Indian smallpox did not come easily. Physicians and government officials in the United States had quickly recognized the promise of vaccination for American Indians. Within five years of Edward Jenner's description of vaccination, Thomas Jefferson had vaccinated Chief Little Turtle and sent vaccination across North America with Meriwether Lewis and William Clark. Philanthropists and missionaries advocated widespread Indian vaccination. In 1832 Congress appropriated \$12,000 for such programs. This effort, however, did little to avert the disastrous epidemic of 1837 in the Missouri Valley. Imperfect technology, complicated logistics, Indian skepticism, and limited motivation all undermined these efforts.

Such epidemics of smallpox and other infections had appeared among the Plains Indians even when the tribes had lived beyond the American frontier. The Lakota Sioux, for instance, whose records contain only a sparse history of the tribe, described measles in 1782, 1801, 1818, and 1845, and smallpox in 1837 (possibly) and 1850. The reservation system that emerged after the Civil War only made matters worse.<sup>1</sup> Epidemics of acute infectious diseases, especially smallpox, measles, whooping cough, and diphtheria, were common. The Indian Service,

which had been unable to contain the epidemic of 1837, gradually gained familiarity with such outbreaks and developed mechanisms for managing them.

Consider several examples. Smallpox, measles, chicken pox, and a mysterious fever struck the Chippewa on their reservation in northern Minnesota in the winter of 1883. James Walker, the agency physician, knew how to respond. Although he “had to threaten with a gun to get my orders carried out,” he quarantined affected cabins and vaccinated all of the nearby Chippewa. As temperatures reached 52° below zero, exhaustion clouded his thoughts: “going thru the forest on my snowshoes from one tepee to another, I could see skeletons dodging among the pine trees.” But his efforts brought success: the epidemic did not spread beyond this initial outbreak. Praised by the commissioner of Indian affairs for preventing a larger epidemic, he was eventually decorated for his heroism by President Theodore Roosevelt.<sup>2</sup>

Similar stories and claims of success appeared repeatedly. When measles struck the Sioux reservations in 1888, agency physicians believed that isolation and quarantine saved countless lives. Fred Treon was “proud to say that out of one hundred and thirty cases treated in the schools not one proved fatal.” He claimed similar success against influenza and whooping cough in 1890, and against measles in 1893. Quarantine in 1896 protected the Sioux on the Rosebud Reservation from measles that had appeared among neighboring white towns. Indian Agent John Harding used “strict quarantine” and “excellent care” against measles and whooping cough at the Yankton Reservation in 1899. Prophylactic vaccination and quarantine minimized the spread of smallpox from white settlers to the reservations at Rosebud and Sisseton. Smallpox reappeared in 1901 after a white settler near the Cheyenne River Reservation supposedly “gave his infected clothing to an Indian boy.” Quarantine, vaccination, and fumigation minimized its spread. Although smallpox killed six Oglala at the Pine Ridge Reservation, James Walker quarantined infected camps, limiting the outbreak to only three additional cases. When cases of smallpox appeared in November 1902, physician Z. T. Daniel reported that “the Department liberally responded to our request in all particulars, furnishing whatever was required, physician, disinfectants, medicine, etc.” He used formaldehyde gas, vaporized sulfur, and carbolic acid to fumigate houses. The police provided a “prompt and effectual quarantine.” In

addition, “vaccination was freely done, which mitigated the ravages of the disease, and the Red Man no longer doubts its advantages.”<sup>3</sup>

These responses were, of course, imperfect. Measles spread at the Crow Creek Reservation in 1899 “in spite of stringent efforts to prevent it.” A batch of vaccine used at Yankton in 1900 was “almost entirely inert, and did very little good.” But severe mortality from smallpox was rare in the late nineteenth century. Outbreaks of measles and smallpox generally claimed few lives. Smallpox never again seriously threatened American Indians.<sup>4</sup> Agency physicians frequently claimed credit for this success, and agents and Indians apparently accepted their claims.

It is difficult to assess the physicians’ claims of efficacy. They might have overlooked outbreaks and deaths. Declining mortality might have reflected efficacious intervention, less virulent strains of smallpox, or increasing acquired immunity among American Indians. Whatever the cause of declining mortality, the rapid and consistent responses to epidemics marked a dramatic change from the situation in 1837. Indians on reservations lived under the surveillance of government physicians and officials. Railroads overcame the geographic distance that had hindered intervention in 1837. Outbreaks triggered routine and powerful mechanisms of quarantine and vaccination. Such responses protected the reservations even as nearby whites died. Daniel believed that the Sioux owed a tremendous debt to the federal government: “this community ought to feel profoundly grateful to the authorities for their aid and interest in preventing the spread of such a terrible scourge as smallpox.”<sup>5</sup> A polished system of medical surveillance and intervention had been created. Or so it seemed.

The decline of smallpox and measles, for which agents and agency physicians took credit, occurred in parallel with the rise of tuberculosis. By 1891 Daniel realized that tubercular diseases, especially consumption and scrofula, had become “the great destroyers of the Sioux.”<sup>6</sup> Even as the federal government claimed success against smallpox, a new challenge had appeared. The problem began with the transition to reservations.

In our popular imagination the Sioux represent Indians incarnate: mounted warriors, bedecked with feathered war bonnets, hunting buffalo on the prairies of the Great Plains. This image actually reflects changes triggered by European colonization. When they first encoun-

tered Europeans around 1640, the Sioux were a woodland tribe, living in small bands along the headwaters of the Mississippi River. As colonists forced eastern tribes west across the Great Lakes, these tribes displaced the Sioux onto the prairies. The Lakota, the largest division of the Sioux, left Minnesota around 1700, crossed the Missouri River in 1750, and reached the Black Hills by 1775. In the 1830s they traded with the American Fur Company for whiskey and other goods. Whether protected by nomadic dispersion or by partial vaccination in 1832, they suffered less than other plains tribes in the smallpox epidemic of 1837. The Lakota exploited the ensuing chaos to expand their territory and population. With access to guns and horses, the Sioux dominated the high plains from 1830 to 1877. They had adapted remarkably well to this early phase of European colonization.<sup>7</sup>

They soon faced new challenges. By the 1820s the federal government had abandoned hopes of acculturating the eastern tribes and incorporating them into white society. This failure, and desire to seize the valuable lands of the Cherokee and other tribes, fueled Andrew Jackson's policy of Indian Removal: all tribes east of the Mississippi River would be moved to reservations west of the river, forever beyond the reach of white society. Advocates argued that removal would allow the Indians to become civilized in peace, sheltered from the aggressive aspects of white culture. Most historians see such claims as superficial justifications for land theft. Whatever its motivation, the policy generated countless tragedies. During the 1838 Trail of Tears, between one eighth and one half of the Cherokee died. Government officials, oblivious to such tragedies, reported in 1848 that removal had been completed successfully. Relocation, once accomplished, was soon undermined. In 1834 Congress had passed legislation that set aside all land west of the Mississippi, excluding Arkansas and Missouri, as Indian territory. But this line, like the Proclamation Line of 1763, never held. Indians stood between the settled lands of the east and the promised lands of California and the west. Settlers and miners poured into Iowa, Texas, and Minnesota. They moved the line west to the 95th meridian, and then west beyond that. Settlers took Indian lands and carved caravan routes and railroads across Indian territories.<sup>8</sup>

With the spread of Euro-American settlement throughout the west, the Sioux and other tribes who had once lived beyond the frontier of federal concern became the focus of Indian policy. In 1849 responsibil-

ity for Indian affairs was transferred from the War Department to the newly created Department of the Interior and its Bureau of Indian Affairs (BIA). Initial diplomatic efforts were optimistic. David Mitchell, former fur trader, now superintendent of Indian affairs at St. Louis, negotiated the Treaty of Fort Laramie in 1851. The Indians agreed to cease hostilities among themselves. Their lands were reduced and defined; the Lakota, for instance, received lands north of the Platte River and west of the Missouri River. The United States received the right to establish roads and military posts throughout the west. Indian leaders promised not to attack travelers, freight, and mail stages. In exchange, the Indians received gifts, annuities, and promises of protection against white depredations.

Peace, however, did not last. Gold strikes drew settlers into the western mountains. By 1864 Colorado, Nevada, Arizona, Idaho, and Montana had been established as territories or states. The Civil War exacerbated tensions. Distracted by war in the east, Abraham Lincoln did not enforce federal policies in the west. Wars were fought with the Sioux in Minnesota and Dakota, with the Cheyenne, Arapahoe, Kiowa, and Comanche in Kansas and eastern Colorado, and with the Apache and Navajo in Arizona and New Mexico. The Santee Sioux, on a reservation in Minnesota, had struggled with whites about hunting, trade, and annuities throughout the 1850s. When the U.S. Army withdrew from western posts, the Santee attacked, killing hundreds of settlers in 1862. With settlers demanding “exterminate or banish,” the army crushed this uprising and shipped the Santee to the Crow Creek Reservation in the Dakota territory. Barren soil, scarce game, and alkaline water claimed the lives of one-quarter of the Santee during their first winter there. Some fled into Nebraska, only to be defeated by the Army and placed onto reservations at Sisseton and Devil’s Lake.<sup>9</sup>

The Plains Sioux fared little better. In 1864 they joined Cheyenne and Arapaho raids against miners who invaded Indian lands in Colorado. After the army massacred Indian civilians at Sand Creek, public outrage forced a truce in 1865. But when the government tried in 1866 to extend roads across Sioux lands toward the gold fields of Montana, the largest group, the Oglala attacked again. A series of Sioux victories led by Red Cloud forced the government’s peace commission to negotiate a second Treaty of Fort Laramie in 1868. The government abandoned its plans for the road; in exchange, the Lakota accepted lands

west of the Missouri River in the Dakotas as the Great Sioux Reservation. Exhausted by the wars of the 1860s, the government sought a new Indian policy. Motivated by eastern missionary groups, President Ulysses S. Grant adopted a new “peace policy” that gave missionary groups substantial authority on the reservations. Despite such optimistic visions, warfare with the Sioux lasted into the 1870s.

The transition to reservation life did not go smoothly. The Sioux had to abandon hunting and adopt farming and ranching. Assistance promised by the government failed to materialize or was consumed by fraud and corruption. Tensions exploded in 1874 when an army reconnaissance mission led by General George Custer confirmed rumors of gold in the Black Hills: 10,000 miners and railroad surveyors violated the Treaty of Fort Laramie and swarmed onto Sioux lands. Failed negotiations led to war and the destruction of Custer’s 7th Cavalry at the Battle of Little Bighorn on 24 June 1876. This defeat shocked the United States on the eve of its centennial. By autumn, however, the Sioux were low on rations and had lost interest in war. They surrendered their guns, their horses, and the Black Hills.

By 1876 nearly all American Indians had been subdued and confined on reservations. They faced a new world, as islands in a sea of white settlements. The Lakota were dispersed across several reservations in what would become South Dakota: the Oglala at Pine Ridge, the Brule at Rosebud, and other groups at Lower Brulé, Crow Creek, Cheyenne River, and Standing Rock. Despite government assurances, peace and prosperity did not follow. The 1878 Sioux Commission found them struggling on forsaken land: “no equal extent of territory east of the Rocky Mountains could be laid off so deficient in natural resources.” The Sioux worked hard to cultivate this land, using “their hands for shovels and hoes.” Crops, however, succumbed to hordes of grasshoppers and potato bugs. Horses and cattle perished during heavy winter snows. Indian agents claimed that the Sioux, unable to gather enough wood to cook or keep themselves warm, “fully appreciated the goodness of the government in providing for them” (Figure 5).<sup>10</sup>

Government officials remained optimistic. Commissioner E. A. Hayt praised the Oglala for taking “a long stride in the right direction toward complete civilization and eventual self-support.” In 1887 Commissioner J. D. C. Atkins praised progress with farming, ranching, education, and culture, something “gratifying to every American pa-

triot and to the humanitarian of any clime or country.” However, by 1890 Commissioner T. J. Morgan believed that the whole reservation system had become “vicious,” a world of fear, pauperism, fraud, and extortion. Tensions inevitably re-emerged. Indian agents complained that the Sioux, with no incentive to provide for themselves, exploited government aid. The government, meanwhile, bowed to pressure from railroads and settlers and acted unilaterally in 1889 to divide and reduce the Great Sioux Reservation. Motivated by a Paiute prophet who promised the return of Indian lands, dissatisfied Sioux at Pine Ridge joined the ceremonies of the Ghost Dance in October 1890. The new agent, named “Young-Man-Afraid-of-Indians” by defiant Sioux, called in the army. Many Oglala fled Pine Ridge and joined Sitting Bull in the Badlands. The army killed Sitting Bull when he was arrested in December. His followers surrendered, but were stopped at Wounded Knee by the 7th Cavalry. In the ensuing confusion, the army opened fire. Roughly 150 of the 340 men, women, and children, and 26 soldiers, were killed. Congress struggled long and hard to restore order and appease the Sioux.<sup>11</sup>

Peace brought the familiar mix of optimism and failure. In 1891 Commissioner Morgan expected that the “Indian problem” would be solved by 1900. The government implemented civil service reform and tried to replace ration allotments with wage labor. But the reservations remained bleak. In 1893 Charles Penney, the agent at Pine Ridge, despaired: “There is little to note in the way of improvement among the Indians. They are still the same shiftless, improvident people, and, withal, careless and happy, patient under hardship, and with a faithful trust in the future that is exasperating.” Droughts destroyed crops. Alcohol increasingly ruined lives. Attempts at land reform simply allowed individuals to sell their lands to white settlers, further reducing tribal lands.<sup>12</sup>

Between 1850 and 1900 the Sioux experienced breathtaking change. The proud masters of the plains had been reduced by the army and federal policy to impoverished farmers and ranchers. This shattered group depended on the Bureau of Indian Affairs (BIA), whose apparatus existed to accomplish cultural alchemy: transform red hunters into white farmers. Always optimistic, the BIA believed that the Sioux could be integrated as equal members of white society. However, it attempted this transformation without realizing the magnitude of its task, and without

[To view this image, refer to the print version of this title.]

5. Government agent distributing food rations to the Sioux. The photograph shows a large group, in native dress, sitting in a circle around government agents with sacks of food. Note the primitive conditions on the reservation, with a mix of traditional tepees and new log and sod buildings. (By permission of the National Anthropological Archives, Smithsonian Institution, 56,630.)

the necessary resources or wisdom. As a result, the transition left the Sioux with the worst of both worlds. They lost their rich lives as buffalo hunters and found only poor lives as farmers. This change had an immediate impact on their patterns of disease. The transition state, the product of failed alchemy, left them vulnerable to the ravages of tuberculosis.

Tuberculosis had likely been present among American Indians for centuries. Paleopathologists have found evidence of tuberculosis in a Peruvian mummy from A.D. 700. Analysis of skeletal remains suggests the presence of pre-Columbian tuberculosis in New York, Tennessee,

[To view this image, refer to  
the print version of this title.]

and the Missouri Valley. Some archeologists even interpret Kokopelli, the ubiquitous southwestern image of a hunchbacked flautist, as evidence of spinal tuberculosis. Early colonists, such as Paul Le Jeune and Roger Williams, described consumption among the natives of New France and New England. Caleb, for instance, a promising Capawack scholar, “died of consumption” after graduating from Harvard College in 1654. Despite its presence, tuberculosis was rare before the nineteenth century.<sup>13</sup> Tuberculosis began to increase mid-century. Thomas Williamson reported consumption among the Sioux and Chippewa at Lac qui Parle in Minnesota in 1846. Washington Matthews was “astonished” by its prevalence among the tribes of the Missouri and Yellowstone valleys. But such reports were inconsistent. Matthews found little tuberculosis among the Sioux in the Dakotas in 1865: “scrofula was not then observed among them, and consumption was but little

known.” Other observers compiled long lists of the predominant diseases among the plains tribes. These included smallpox, measles, dysentery, venereal disease, cholera, conjunctivitis, bronchitis, rheumatism, malaria, and drunkenness, but not consumption.<sup>14</sup> Within twenty years this had changed.

The link between tuberculosis and living conditions has long been recognized by epidemiologists and historians. René Dubos and Jean Dubos described tuberculosis as a “social disease.” Paul Farmer has shown how tuberculosis and other diseases of poverty are “biological reflections of social fault lines.”<sup>15</sup> It is not surprising that tuberculosis exploded on the Sioux reservations after 1876. Of the 152 annual reports from agents and physicians at the nine Sioux reservations that mention health conditions between 1877 and 1906, nearly 75 percent (113 of 152) cite tuberculosis (including consumption and scrofula) as the leading cause of mortality. Dr. Weirick reported in 1878 that “consumption and scrofula are the prevailing diseases” at Cheyenne River. By 1890, consumption and scrofula, unknown among the Sioux at Yankton “in their wild state,” had “obtained a permanent hold on them and cause more deaths than all other diseases combined.” It gave “a depressed, almost gloomy feeling to the people.” Treon struggled to stop “this grim monster” at Crow Creek. Daniel believed that “it is practically the only disease that causes their large death rate and in its absence they would multiply and overrun the country.” By 1903 he had developed a morbid fascination for the disease: “Its forms are multitudinous to almost infinity.” Walker, alone in his optimism, wrote from Pine Ridge in 1906 that the “relative great death rate” caused by tuberculosis and “improper care of their infants” could both “be prevented by proper medical supervision.”<sup>16</sup>

Many sources document the burden of tuberculosis among the Sioux. Agency physicians made monthly reports of cases treated and causes of death. Agents compiled this data and filed annual reports to the commissioner of Indian affairs. Tuberculosis dominated report after report: “this scourge of the Indians” caused 12 of 33 deaths at Devil’s Lake in 1891, 26 of 47 at Crow Creek in 1893, 68 of 130 at Pine Ridge in 1901, and an average of 56 percent of the deaths at Yankton between 1901 and 1906. Standing Rock suffered the heaviest burden, with an average of 282 cases per year between 1879 and 1900, an inci-

dence of roughly 70/1,000. Pine Ridge had a lighter burden, roughly 17/1,000 (Figure 6). Data on the overwhelming burden of Sioux tuberculosis also appeared in the *Annual Report of the Surgeon-General of the Army* and published reports by Treon, Joseph Graham, and Walker.<sup>17</sup>

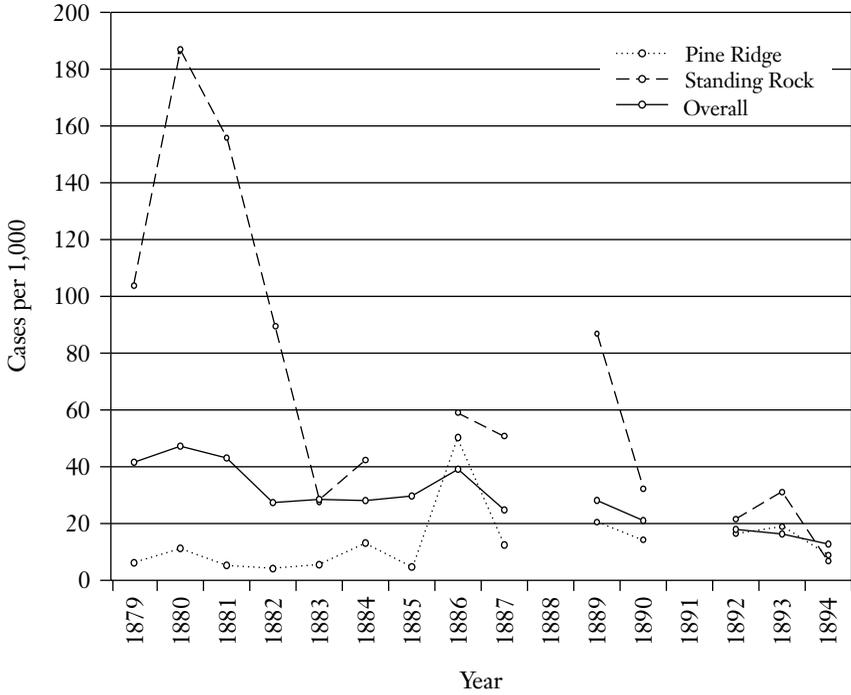
This information allowed observers to compare tuberculosis rates between American Indians and other groups to highlight great disparities in health status. The surgeon general reported that the consumption hospitalization rate for American Indian soldiers was 35.62/1,000, compared to 4.34 overall, 3.27 for whites, and 4.42 for blacks. The “death rate from this cause alone among the Indians, 8.94, was greater than the death rate, 6.44, from all causes in the Army as a whole.” Physician T. M. Bridges noted in 1895 that deaths from consumption among the Sioux “exceed in nearly every instance the death rate per 1,000 from all causes in more than 200 of our largest cities.” O. M. Chapman found that the Sioux mortality rate at Yankton in 1903 and 1904 was “fully four or five times what it would be among an equal number of whites.” In 1911 Joseph Murphy, the new medical director of the Indian Medical Service, reported that tuberculosis mortality was three times higher among Indians than among whites.<sup>18</sup>

None of the data were perfect. The single physician at Pine Ridge could not possibly collect comprehensive health data on the 6,000 Oglala there. Indians did not seek care for every illness. Even the seemingly simple task of collecting data on births and deaths was impossible: the allotment of rations motivated the Sioux to exaggerate births and conceal deaths. Agents complained that the Oglala raced from village to village on census days, swapping babies, “for the express purpose of defeating the census.” A simultaneous count of all Sioux at Pine Ridge at 7:00 A.M. on 30 June 1886, conducted with police assistance, reduced their official population from 7,649 to 4,873, saving \$50,000 “of beef alone” each year. Disease data were even less reliable. Some physicians underreported illness rates, either out of indifference to Indian suffering or out of a desire to make their ministrations appear more successful.<sup>19</sup> Others might have overreported morbidity to obtain more resources from the BIA. Such inaccuracy makes it difficult to interpret the four-fold disparity in tuberculosis rates at Standing Rock and Pine Ridge.

Diagnostic ambiguity further complicates the data. Physicians,

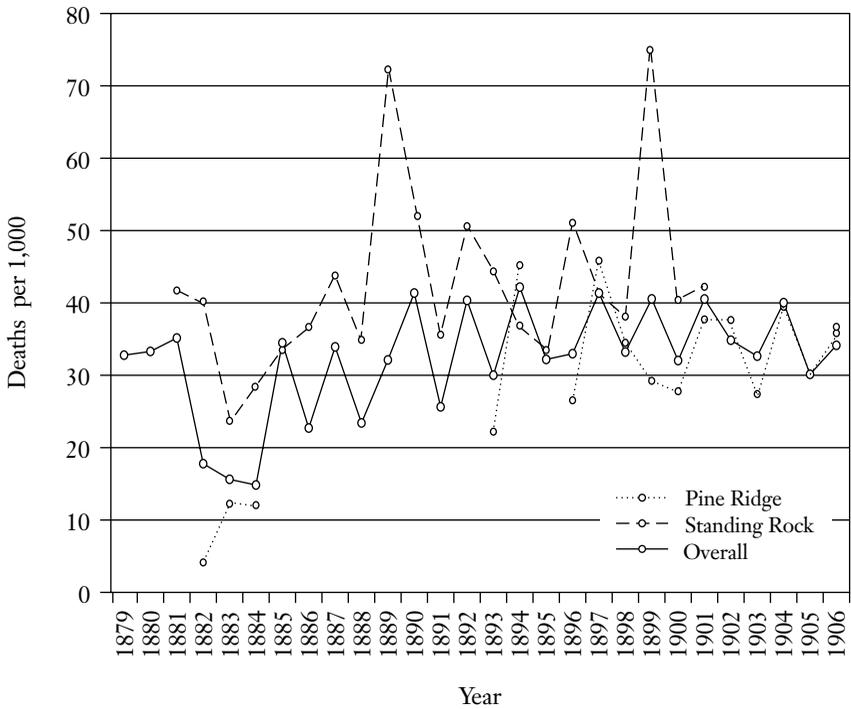
A.

Incidence of tuberculosis, 1879–1894



B.

Mortality rate, 1879–1906



for instance, did not reliably distinguish between pneumonia and consumption. Furthermore, diagnoses underwent major changes between 1877 and 1906. With the discoveries of Jean-Antonie Villemin, who demonstrated the transmission of tuberculosis between rabbits in 1865, and Robert Koch, who isolated the tubercle bacillus in 1882, consumption and scrofula were reconfigured from constitutional diseases (along with cancer, anemia, and rheumatism) into infectious diseases: pulmonary and lymphatic tuberculosis. This change occurred slowly on the Sioux reservations. The diagnosis of “consumption” remained common through 1894, and continued to appear as late as 1906. The term “tuberculosis” appeared occasionally in the 1890s, but did not dominate reporting until 1897. Use of these diagnoses was, to some extent, constrained by the official nomenclature of the BIA. New reporting forms, issued in 1892, codified the change from constitutional to infectious disease.<sup>20</sup> With such changing theories, it is impossible to know how well a diagnosis of consumption in 1880 corresponds to a diagnosis of pulmonary tuberculosis in 1900.

Despite such limitations, the data do have tremendous value. Although they may not accurately reflect the burden of disease that modern doctors would recognize as tuberculosis, they do show that agents and agency physicians recognized severe morbidity and mortality on the Sioux reservations. They believed that tuberculosis, in its varied incarnations, dominated. They knew that the burden of tuberculosis had appeared quickly over twenty years. This knowledge fueled an extraordinarily varied discourse on the nature and causes of Sioux tuberculosis.

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6. Incidence of tuberculosis and total Mortality on the Sioux reservations, compiled from the *Annual Report of the Commissioner of Indian Affairs*. Each graph shows data from two representative reservations (Pine Ridge, Standing Rock), as well as overall data from all nine Sioux reservations (Cheyenne River, Crow Creek, Devil’s Lake, Lower Brulé, Pine Ridge, Rosebud, Sisseton, Standing Rock, and Yankton). The top graph shows that the reported incidence of tuberculosis varied widely between reservations, and that the overall incidence declined slowly over this fifteen-year span. The bottom graph shows that total mortality remained more or less constant, with tuberculosis responsible for roughly half of all deaths. Agents inconsistently reported population size, total deaths, and cases of diseases, leaving many gaps in the data.

## Explanations

Prior to the creation of the reservation system, few Europeans and even fewer physicians had ever had extended contact with American Indians and their diseases. As discussed in the previous chapters, many accounts of Indian epidemics exist, but usually as incidental accounts in journals, natural histories, travel narratives, and missionary reports. These records are dwarfed by the vast outpouring of medical writing that followed the assignment of physicians to the Indian Agencies in the 1870s. In letters, monthly reports, annual reports, and publications, physicians, agents, and commissioners offered their explanations of why the Sioux had such a high burden of tuberculosis. At first pass their explanations seem remarkably similar to those of their seventeenth- and eighteenth-century predecessors. New emphasis, however, came to be placed on heredity. As tuberculosis threatened to push the Sioux to extinction, these etiological debates would have crucial implications for Indian policy.

Physicians had long wondered about the ways in which contagion and constitutional susceptibility interacted to produce disease. Villemin had shown that tuberculosis was a transmissible disease, and Koch had identified the causative agent. But neither discovery explained why tuberculosis affected only certain sorts of people, why many were exposed, but only a few fell sick. As Treon complained in 1889, “True, Koch has proven pretty conclusively that phthisis is a germ disease and is due to certain bacilli, but beyond that his microscope has failed to enlighten us with any degree of satisfaction.”<sup>21</sup> The Sioux had many theories of their own. Sioux medicine men believed that disease occurred when a variety of creatures entered a person’s body. Scrofula, with its characteristic swellings under the skin, was attributed to mice, moles, or gophers. Consumption was traced to worms that entered people’s lungs and consumed their fat. Why did some get sick while others stayed healthy? Sickness followed a spiritual transgression or an act by an angry and arbitrary spirit.<sup>22</sup>

Physicians had different explanations of differential susceptibility. As late as 1920, the emphasis remained on old theories of predisposition. As George Bushnell, who had studied tuberculosis among the Sioux, explained “Of all those exposed to the infectious agent only those will fall sick whose resistance is low.” What contributed to predisposition?

The interaction of a person's body and its environment created the diathesis, a susceptibility to disease that could be inherited or acquired by careless living.<sup>23</sup>

Observers recognized many conditions of Sioux life that decreased their resistance to tuberculosis. When buffalo were abundant, the Sioux had been "generally fine and healthy." But as buffalo became scarce, their health deteriorated: "This suffering from lack of sufficient food is another cause of phthisis." A. B. Holder blamed the government: "Rations furnished by the Government to Indian tribes are in most cases entirely insufficient to maintain health." Some physicians traced endemic consumption and scrofula to their "damp, unhealthy tepees" which typically housed "four or five persons and a similar number of canines." Most, however, believed that their adoption of western style housing was a turn for the worse. In tepees, at least, "they necessarily breathed plenty of fresh air." Log cabins, in contrast, were "poorly ventilated." With "noxious impurities thus constantly taken into the lungs," the Sioux fell victim to consumption. Furthermore, as Charles Penney complained about Pine Ridge, many reservations had been settled "absolutely without any attention to the laws of health. The whole ground is honeycombed with privy vaults and cesspools, abandoned and in use, and the earth is reeking with filth, covered and out of sight, but none the less certain to do its deadly work as soon as the wells shall be contaminated. A pestilence is sure to follow." The severe climate of the Dakotas did not help. In the winter of 1903 and 1904, snow stayed on the ground from September until May: "it is doubtless from this cause that the deaths exceed the births." The following winter was also severe. Many "contracted severe colds, and with their tubercular trouble caused their death."<sup>24</sup>

As had happened in Massachusetts, Pennsylvania, and the Missouri Valley, agents and agency physicians did not simply identify American Indians as victims of unfavorable environments, housing, and food. Instead, they emphasized the synergy of bad environment and bad behavior. Treon invited his readers to "push aside the curtain and peer into the 'tepi.'" They would find "filth," "a disagreeable odor," and "little or no ventilation." Throughout "the room hangs plenty of green beef, upon which the flies may light and deposit their quota of living germs to be taken into the stomach of these people." These houses were "the habitation of every imaginable vermin." Treon also described Sioux

“lousing’ one another and eating the vermin.” C. H. Kermott similarly believed that food, poorly prepared, became “a vehicle whereby many a parasitical and disease germ is carried into the system.” Air in crowded houses was “polluted by the expectoration of tuberculous patients.” Consumptive sputa and scrofulous pus turned Sioux homes into “veritable culture soils and hot-beds.” Physicians encouraged ventilation, but complained that “It is almost impossible to secure these Indians’ efficient cooperation in measures to prevent the spread of this disease.”<sup>25</sup>

In addition to describing this baseline of unhealthful behavior in daily life, observers of the Sioux highlighted specific behaviors that left them susceptible to disease. Many condemned tobacco. Treon saw shared pipes as a vector for tuberculosis: “If it is true that the disease is sometimes communicated by kissing, is it not reasonable to suppose that the Indian habit of smoking the pipe and passing it from man to man until a dozen or more have had the end of the same pipe-stem in their mouth furnishes a common carrier for the bacilli of the disease?” Those who exchanged pipes for the new vice of cigarettes were not better off. As Daniel explained in 1903, cigarettes are “well known to be the most deadly form in which tobacco can be used, and in a people whose lungs are distinctly tubercular it is superlatively contraindicated.” Sweat baths, especially when followed by a plunge in snow or cold water, had long been seen as a contributing factor to smallpox mortality. Fordyce Grinnell and Holder both believed that they were similarly dangerous for tuberculosis: “Its influence on the production of pulmonary diseases is only equaled by its influence in bringing them rapidly to a fatal conclusion.” Dances were singled out as “disease breeders and hotbeds of other vices and indiscretions that sooner or later demand the attention of the physician.” Many cases of consumption were “the result of this most pernicious practice.”<sup>26</sup>

A common theory tied many of the specific causes together. Exposure to cold, wet winters had long been recognized as a cause of tuberculosis, pneumonia, whooping cough, and lung fever: “unnecessary exposure of the body to the cold and dampness of winter and spring are all productive of many fatal terminations.” But cold, on its own, was less dangerous than an abrupt transition from heat to cold, or from dry to wet. Treon and James G. Wright both believed that the transition from overheated winter lodges to subzero temperatures outside bred lung diseases in children and adults. Such exposure did not help

“overcome the tendency to consumption and other hereditary diseases among this people.” Fear of such transitions motivated physicians’ concern with both sweat baths and dancing. J. A. Stephan remarked that even in winter they would be “nearly in a nude state when dancing.” When they stop, “they cool off suddenly, which produces lung fever and consumption.”<sup>27</sup>

Observers also blamed Sioux attitudes. Richard Dodge criticized them for slipping into hopelessness, especially when sick: “Indians have plenty of courage and extraordinary endurance, but little of that rather indefinable quality called ‘pluck.’” Matthews believed that such a “depressed mental condition is a potent auxiliary to consumption.” According to Daniel, the ration system “begets idleness both of mind and body, and inertia is a fruitful source of disease.” Such idleness was seen by others as “stupid indifference to the laws of health.” Agent James McLaughlin condemned Sioux “disregard,” or “ignorance, of the necessity of proper precautions and care.” Others traced mortality “not so much to race characteristics as to nonconformity to health laws.” Anthropologist Ales Hrdlicka, who saw similar conditions and tuberculosis among many tribes, concluded that “ignorance among Indians, as elsewhere, must be regarded as the most potent pathogenic agency.” Chapman summarized such sentiments most clearly: “In almost every feature of their existence where sanitary matters are involved they are aggressive violators and consequently losers at every point of contact. The excessive mortality is but the sum total of all these influences combined—is the measure of their transgressions.”<sup>28</sup>

These attempts to place responsibility for tuberculosis on the Sioux resemble earlier behavioral explanations of smallpox. But they existed in parallel with a new style of explanation, one that blamed tuberculosis on Sioux bodies. As historians have shown, heredity became one of the dominant explanations of disease in mid- to late-nineteenth-century Europe and the United States, even as the rise of tuberculosis in urban slums made the social roots of disease plainly visible. Not even the rise of germ theory slowed the rise of hereditarian thought.<sup>29</sup> As noted above, germ theory did not explain why some fell sick while others did not. Heredity provided a convenient answer.

Hereditary transmission of tuberculosis could occur through several mechanisms. Koch believed that parents passed a “disposition” for tuberculosis to their children. Graham believed that the bacillus could

possibly be transmitted through semen, or across the uterine wall. If not transmitted before birth, it was transmitted soon after birth by nursing. These mechanisms made certain that tuberculosis would appear in children of tuberculous parents, “under the law that ‘like produces like.’” Such theories were part of an extended debate about scientific racism. As historians have shown, racial theories of tuberculosis susceptibility were used to explain the gradient of susceptibility, from most resistant (Jews and other Europeans) to least resistant (Africans and American Indians).<sup>30</sup>

Agents and agency physicians made many claims about the hereditary origin of Sioux tuberculosis. J. F. Kinney identified consumption as the “result usually of hereditary scrofula.” William McKusick and Daniel blamed inbreeding: “We all know the ill effects of breeding in too much of cattle, hogs, sheep, horses, chickens, dogs, etc. As a physiologist I believe the same rule holds good with the human race and is fully demonstrated in the Indian tribes of North America.” Walker, analyzing twenty years of data at Pine Ridge, concluded that the “greater physical weakness of the Indian is inherent in his being.” Even Charles Eastman, a Sioux and a trained physician, acknowledged that “the Indian had not become in any sense immune to disease.” Because of the higher susceptibility of full-blooded Brule at Rosebud, Charles McChesney believed “it is only reasonable that an extra effort be made in their behalf or confess our policy of extermination.” Daniel believed that American Indians could only be saved by interbreeding with other groups: they “will continue to die everywhere they go, of tuberculosis, until the race is so thoroughly crossed by ‘foreign blood’ that it will stamp out the tubercle bacillus, and when that is done the Indian race in its original purity will be no more.”<sup>31</sup>

Despite such adamant claims, there was no clear consensus about the role of heredity. F. O. Getchell attributed the high burden of pulmonary disease “not to a weaker organization than the whites have, but to the fact that during the last generation they have changed their mode of living to an extent hitherto unknown to any class of people.” Walker, who in 1900 made his own claims about inherent weakness, reversed his position by 1906: “There is no inherent peculiarity of the Indian which renders him more liable to infection with tuberculosis than is a white man under like circumstances.” For Bushnell, who observed some of the first outbreaks of tuberculosis among the Sioux in

1881, susceptibility did not depend on racial background: “it is not a question of racial susceptibility or immunity,” but a question of the history and level of “tubercularization” of individual groups. Walker and agent W. H. Clapp traced the better health of mixed-blood Indians not to their ancestry, but to their greater enthusiasm at “adopting the ways of civilization.”<sup>32</sup>

It is possible, in a limited way, to quantify the contested role of heredity in accounting for the disparities in tuberculosis mortality. On the 152 annual reports that mentioned health concerns, 113 cited tuberculosis as the leading cause of mortality. Of these, 15 discussed the question of heredity (6 of these by Z. T. Daniel alone): 8 described tuberculosis as a hereditary disease, 5 blamed intermarriage, 1 advocated an infusion of fresh blood, and 1 denied the relevance of heredity. Meanwhile, these reports included 125 statements about the role of environment and behavior.<sup>33</sup> If asked why the Sioux suffered from so much tuberculosis, agents and agency physicians were far more likely to cite living conditions than racial susceptibility. These explanations, of course, were not mutually exclusive. Many agents and doctors expressed concern that all of these factors, working synergistically to create an epidemic of tuberculosis, drove the Sioux, and all American Indians, towards extinction. As noted by one agency physician in 1879, tuberculosis “is slowly but surely solving the Indian problem.”<sup>34</sup>

## Extinction

The specter of extinction was of vital importance. The proximate causes of Sioux tuberculosis were clear to anyone who looked: poor housing, poor food, harsh climate, poor hygiene, and suboptimal health behaviors. Such causes paralleled earlier discussions of disease outbreaks among American Indians. The debates in the late nineteenth century were distinguished by their concern with ultimate causes and ultimate outcomes. Was tuberculosis the inevitable product of hereditary inferiority, simply the final step on the Indian’s road to extinction? Or was it a contingent product of the difficult transition from nomadic to settled life? Choice between these two narratives determined the course of Indian policy.

Concern with Indian extinction did not begin with tuberculosis. From Thomas Morton to Thomas Hutchinson, seventeenth- and eighteenth-

century writers expressed amazement at Indian population decline. This continued into the nineteenth century. In their 1854 *Types of Mankind*, Josiah Nott and George Gliddon articulated an influential theory of racial difference. They believed that American Indians, inherently inferior to the Europeans, had been living in America on borrowed time. The arrival of the Europeans pushed them towards their destiny: "It is as clear as the sun at noon-day, that in a few generations more the last of these Red men will be numbered with the dead." Indian extinction seemed even closer at hand after the conflicts of the Civil War. A congressional investigation of Indian depopulation, chaired by Senator James Doolittle, issued its report in 1867. It identified many causes of decline: disease, intemperance, war, loss of land, and "the irrepressible conflict between a superior and an inferior race." In his testimony to the Doolittle Commission, General James Carleton invoked old, providential themes: "The causes which the Almighty originates, when in their appointed time He wills that one race of men—as in races of lower animals—shall disappear off the face of the earth and given place to another race . . . has reasons too deep to be fathomed by us. The races of the mammoths and the mastodons, and the great sloths, came and passed away: the red man of America is passing away!"<sup>35</sup>

Many observers shared this expectation of inevitable Indian decline. Fur trader Henry Boller believed that the spread of Atlantic and Pacific settlements towards the interior would inevitably crush the Indians: "As the affiliation of the two races is impossible, the extinction of the Indian is a question of time." V. T. McGillycuddy, the agent at Pine Ridge in 1885, believed that although the Reservation system had temporarily halted the decline of Sioux populations, "the rapid development of latent scrofulous and tubercular diseases, &c., will eventual 'evolute' 'Poor Lo' to a higher sphere in the happy hunting grounds, and, in obedience to the law of the survival of the fittest, the Sioux Nation as a people will be forced to the wall." Daniel believed that the "Indian is fading, he is disappearing; one by one they are passing over the divide by the tubercular route." Treon expected that the Sioux would be extinct within a century: "the great Indian problem will have been solved."<sup>36</sup>

These expectations of American Indian extinction buttressed parallel discussions about the fate of African Americans after emancipation. Nott, Gliddon, and many others had long believed that blacks were in-

ferior to whites. They expected that emancipation would initiate a period of racial competition that would lead inevitably to the decline of African Americans. As the Reverend J. M. Sturtevant wrote in 1863, "Like his brother the Indian of the forest, he must melt away and disappear forever from the midst of us." Census data from 1870, 1880, and 1890 supported these suspicions, showing that African-American populations were growing more slowly than whites. By 1900 Walter F. Wilcox, chief statistician of the Census Bureau, concluded that blacks "will follow the fate of the Indians, that the great majority will disappear." As historians have shown, these theories "constituted a convenient rationale for new and more overtly oppressive racial policies." If black disappearance was inevitable, then whites had little need to civilize and improve them: "The new prognosis pointed rather to the need to segregate or quarantine a race liable to be a source of contamination and social danger to the white community, as it sank ever deeper into the slough of disease, vice, and criminality."<sup>37</sup>

Belief in the inferiority and eventual extinction of both blacks and Indians had potentially devastating implications for federal policy. If the government had fully accepted a future without Indians, then it would have felt little obligation to support those Indians who remained. The reservation system would have been transformed from a program of civilization to a place for palliative care.<sup>38</sup> Historians have long debated the impact of scientific racism on nineteenth-century Indian policy. Some argue that most Americans accepted the inevitable subordination and extinction of the Indians. Others believe that evangelical sentiments maintained faith that the Indians could be saved by bringing them to civilization. Among physicians of the Indian Service, there was a wide range of fiercely contested opinion. After all, the survival of a race seemed at stake.

Opposition to the narrative of extinction appeared quickly. In 1877 S. N. Clark submitted a report to the commissioner of Indian affairs about the state of Indian populations. His extensive review of government records suggested that Indian populations had been stable, at around 300,000, throughout the nineteenth century. His conclusion was clear: "the usual theory that the Indian population is destined to decline and finally disappear, as a result of contact with white civilization, must be greatly modified, probably abandoned altogether." He hoped that with his report "the necessity of their civilization will be at

once recognized, and all efforts in that direction will be treated as their importance demands." Many others agreed. J. H. Hammond, superintendent of the Dakotas in 1877, rejected the inevitability of the "final extinction of the whole Indian race." Matthews believed that "the old notion of the red race being a dying race is incorrect. Ethnologically, it is a disappearing race; biologically, it is a living and increasing race." Grinnell, convinced that populations had stabilized, encouraged the government to focus on "amicable relations," and not extinction. W. A. Jones, commissioner of Indian affairs in 1900, was optimistic: "It is evident that with the humane treatment of this Government, and contrary to the predictions of many, the Indian is not dying out, is not becoming extinct." In Jones's vision, the Indian race would eventually disappear, not by dying but by "its absorption into the body politic of this country."<sup>39</sup>

The proponents of inevitable extinction had a simpler case. Everyone agreed that catastrophic population decline had occurred since European arrival in the Americas. Everyone agreed that the Sioux suffered rates of tuberculosis far in excess of those of the general population. Extinction seemed the logical outcome. Opponents of the extinction theory had to accept these two premises and turn them to a different conclusion: tuberculosis was not proof of inevitable decline, but a symptom of contingent transitions. Just as transitions from hot to cold and dry to wet could cause tuberculosis, the cultural transition from savage to civilized had pathogenic power.

These narratives had a clear beginning. The Sioux were healthy in their native state because "they were well fed, well clothed, and well housed in a climate almost unsurpassed, and always had that freedom of mind and thought unhampered by the bonds of civilization, roving wild and free in their happy hunting grounds, the undisputed possessors of the land." Reservations ended this health. Indians were "reduced to the condition of paupers, without food, shelter, clothing, or any of those necessities of life which came from the buffalo; and without friends, except the harpies, who, under the guise of friendship, feed upon them."<sup>40</sup> These conditions created tuberculosis.

Since different Sioux groups made the transition at different times, the contrast between native health and transition disease could be clearly seen. In 1881 Bushnell cared for Sioux prisoners of war brought to live among Sioux already settled on a reservation. He observed

“scrofulous youths from the Agency, their fleshless limbs fully clad, looking on wistfully at the dances of the warriors in the summer twilight . . . revealing in many instances a magnificent physique and a boundless vitality, which contrasted cruelly with the listless aspect of some of their spectators.” Matthews contrasted the high rates of consumption among the Santee Sioux, long settled in Nebraska, and the Oglala Sioux, only recently settled at Pine Ridge. While 621 died at the Santee Agency in 1875, only 96 died at Pine Ridge. The conclusion seemed clear: “consumption increases among Indians under the influence of civilization—*i.e.*, under a compulsory endeavor to accustom themselves to the food and the habits of an alien and more advanced race.” McLaughlin, Treon, McKusick, Getchell, and Eastman all described the pathogenic role of cultural transition. As L. M. Hardin described, tuberculosis “seems to make its greatest ravages on the present generation, whose civilization seems too rapid. The transition from a stage of savagery to that of prospective citizenship within one generation furnishes a good field of operation for the tubercle bacillus.”<sup>41</sup>

Specific aspects of cultural transition were singled out as dangerous. One theme was contamination. General Sprague told the Doolittle Commission that as “soon as Indians adopt the habits of white men they begin to decrease, aggravated by imbibing all the vices and none of their virtues.” Grinnell believed that insidious venereal diseases “*have destroyed more lives than the sword.*” Even Commissioner Jones confessed in 1904 that “Civilization is not an unmixed blessing. It carries with it grave responsibilities and some undesirable tendencies. The Indian, while being fitted for citizenship, is absorbing vices as well as virtues, and weakness as well as strength.”<sup>42</sup> To benefit from the blessings of civilization, the Sioux would have to learn to manage its curses.

Another theme was maladaptation. Old habits of living, suited for their former nomadic lives, caused new problems when the Sioux adopted a settled existence. Nat McKitterick noted that when the Sioux lived in tepees, “the laws of sanitation were easily lived up to; when the surroundings became uncomfortably dirty, the tepee was moved to some clean spot.” Such informal mechanisms of sanitation were ill-suited to settled agricultural life. McKitterick continued: “since the advent of the log-house among them, things have changed; it is not practicable to move the house, and not being the most thrifty and industrious people in the world, the filth remains about the house.” Bushnell

believed that this accumulation of filth around the newly sedentary Sioux led to “a wide dissemination of tuberculosis.”<sup>43</sup> Many practices, tolerable in their old lives, became dangerous in their new lives.

A third theme was mismanagement. Some proponents believed that civilization was, and could only be, inherently good. Trouble only occurred when civilization was improperly executed. Holder believed that had the Sioux been provided with good houses, good food, good clothing, and good education in hygiene, “*his condition would at once and permanently be greatly improved as to health and longevity.*” This had not happened. The government had mismanaged the civilizing process. The resulting “evils of imperfect civilization and misapplied efforts at civilization” did their damage.<sup>44</sup> Reservation conditions, a mockery of civilized life, created disease.

Indian schools, one of the core tools of the civilizing process, provided an emblematic dilemma. Many Sioux children were taken away from the reservations and sent to boarding schools, particularly to Captain R. H. Pratt’s school at Carlisle, Pennsylvania. Agents and other government officials believed that the “instrumentalities of the school” were essential to a rapid civilizing process. But it quickly became clear that students at these schools suffered a tremendous burden of tuberculosis. Out of a student population of around 700 students, tuberculosis caused all 8 deaths in 1885, 9 of 11 in 1886, all 7 in 1887, 14 of 18 in 1889, and 5 of 6 in 1906. Many students returned to the reservations “suffering from consumption in its most advanced stage.” Some officials believed that basic sanitary precautions, such as barring infected employees from the schools, could make the schools safe. Bridges was skeptical: “I infinitely prefer a good, strong, healthy, uneducated live Indian rather than the most highly educated dead Indian imaginable.” Walker struggled to assess the value of schools, frequently changing his mind about their hazards. Pratt, perhaps defensive about the prevalence of tuberculosis at Carlisle, made the most interesting argument. Any claim that “consumption increases among the Indians under the influence of civilization” necessarily failed, because health data only existed on Indians already undergoing the civilizing process. In his version of an uncertainty principle, Indians could only be measured once they had been partially civilized, changing what was being measured.<sup>45</sup>

Even as they watched civilization undermine Sioux health, many agents and physicians maintained faith that the outcome would justify

the costs. Graham saw civilization as the only salvation for the Sioux: it should “for their own good be forced upon them.” Others were reassured that the Sioux always seemed on the verge of recovery. S. R. Riggs, a missionary among the Sioux in the 1870s, believed that “some families, we think, are beginning to recuperate.” Grinnell reported that the preconditions for recovery (such as protection from vices, provision of medical care, incentives for industry) “are now realized in numerous tribes.” J. M. Woodburn believed in 1889 that the “Sioux seemingly are on a fair road to become a healthy race, as compared with their condition eight or ten years ago. The young are extremely healthy, and civilized living and treatment do much for their general hygienic condition.” Births equaled deaths for the first time at Crow Creek in 1893 and at Standing Rock in 1894, “a hopeful sign that the most trying part of their transition period has passed and that they are beginning to observe some of the more important laws of health.” Sanitary conditions continued to improve at Standing Rock in 1901, “partly through the efficient work of the Government and partly through the willingness of Indians to profit by instruction.” By 1915, Sioux populations were rebounding: “the race has reached and passed the lowest point of its decline, and is beginning slowly but surely to recuperate.” They had survived the cultural transition.<sup>46</sup>

The transition narrative, as counterpoint to the extinction narrative, had clear meanings for federal policy. Riggs stated it clearly to Commissioner John Eaton in 1877: “We have no right to assume that they are a race given over to God to destruction, and we have less right to doom them ourselves.” Instead, the government had deep obligations to American Indians. Contact between the United States and the Sioux had triggered the process of cultural transition. The adverse aspects of the early stages of transition had fueled epidemics of tuberculosis, creating dramatic disparities in health status. As a result, the government had the responsibility to guide American Indians through transition until their final integration into the general population. This was not a responsibility to be taken lightly. Getchell realized that of 1,132 recipients of land allotments at Devil’s Lake in 1892, one third were dead by 1903: “This condition of things is not as it should be, and I shudder to think that perhaps the great Indian civilizing scheme, of which I am a part, is more responsible for the condition than appears on the surface to the casual observer.”<sup>47</sup>

Until conditions of life supported healthy populations, the govern-

ment was obligated to provide medical care. Smallpox and other acute infections had been contained despite terrible conditions on the reservations. Tuberculosis proved a more difficult challenge. Agents and physicians had no trouble accounting for its emergence in the early reservation period: disparities in tuberculosis mortality between whites and Indians reflected existing economic, hygienic, behavioral, and racial fault lines. Assessing the contribution of each factor, however, proved to be a complicated challenge, and assignment of etiological significance had powerful implications for the future of Indian policy and Indian populations. Officials agreed that the transition to reservation life had ultimately triggered the emergence of tuberculosis, but they disagreed about whether this transition could be survived. As the fate of American Indians hung in the balance, the government had to care for those who suffered the consequences of its policies. This daunting task fell to the agency physicians.