

# Conquistador y Pestilencia: The First New World Pandemic and the Fall of the Great Indian Empires

ALFRED W. CROSBY\*

THE MOST SENSATIONAL military conquests in all history are probably those of the Spanish conquistadores over the Aztec and Incan empires. Cortés and Pizarro toppled the highest civilizations of the New World in a few months each. A few hundred Spaniards defeated populations containing thousands of dedicated warriors, armed with a wide assembly of weapons from the stone and early metal ages. Societies which had created huge empires through generations of fierce fighting collapsed at the touch of the Castilian.

After four hundred years the Spanish feat still seems incredible. Many explanations suggest themselves: the advantage of steel over stone, of cannon and firearms over bows and arrows and slings; the terrorizing effect of horses on foot-soldiers who had never seen such beasts before; the lack of unity in the Aztec and Incan empires; the prophecies in Indian mythology about the arrival of white gods. All of these factors combined to deal to the Indian a shock such as only H. G. Wells' *War of the Worlds* can suggest to us. Each factor was undoubtedly worth many hundreds of soldiers to Cortés and Pizarro.

For all of that, one might have expected the highly organized, militaristic societies of Mexico and the Andean highlands to survive at least the initial contact with European societies. Thousands of Indian warriors, even if confused and frightened and wielding only obsidian-studded war clubs, should have been able to repel at least the first few hundred Spaniards to arrive.

The Spaniard had a formidable ally to which neither he nor the historian has given sufficient credit—disease. The arrival of Columbus in the New World brought about one of the greatest population disasters in history. After the Spanish conquest an Indian of Yucatán wrote of his people in the happier days before the advent of the Spaniard:<sup>1</sup>

\* The author is assistant professor of history at Washington State University.

<sup>1</sup> *The Book of Chilam Balam of Chumayel* (Washington, 1933), 83.

There was then no sickness; they had no aching bones; they had then no high fever; they had then no smallpox; they had then no burning chest; they had then no abdominal pain; they had then no consumption; they had then no headache. At that time the course of humanity was orderly. The foreigners made it otherwise when they arrived here.

It would be easy to attribute this lamentation to the nostalgia that the conquered always feel for the time before the conqueror appeared, but the statement is probably in part true. During the millennia before the European brought together the compass and the three-masted vessel to revolutionize world history, men at sea moved slowly, seldom over long distances, and across the great oceans hardly at all. Men lived at least in the same continents where their greatgrandfathers had lived and rarely caused violent and rapid changes in the delicate balance between themselves and their environments. Diseases tended to be endemic rather than epidemic. It is true that man did not achieve perfect accommodation with his microscopic parasites. Mutation, ecological changes, and migration could bring the likes of the Black Death to Europe, and few men lived three-score and ten without knowing epidemic disease. Yet ecological stability did tend to create a crude kind of mutual toleration between human host and parasite. Most Europeans, for instance, survived measles and tuberculosis, and most West Africans survived yellow fever and malaria.

Migration of man and his maladies is the chief cause of epidemics. And when migration takes place, those creatures who have been longest in isolation suffer most, for their genetic material has been least tempered by the variety of world diseases.<sup>2</sup> Among the major subdivisions of the species *homo sapiens* the American Indian probably had the dangerous privilege of longest isolation from the rest of mankind. The Indians appear to have lived, died, and bred without extra-American contacts for generation after generation, developing unique cultures and working out tolerances for a limited, native American selection of pathological micro-life.<sup>3</sup> Medical historians

<sup>2</sup> S. P. Bedson *et al.*, *Virus and Rickettsial Diseases* (Baltimore, 1950), 50-51; Geddes Smith, *Plague on Us* (New York, 1941), 115-118.

<sup>3</sup> Solid scientific proof exists of this isolation. The physical anthropologist notes an amazingly high degree of physical uniformity among the Indians of the Americas, especially in blood type. Only in the Americas, and in no other large area, is there such a low percentage of aborigines with B-type blood or such a high percentage—very often one hundred percent—of O-type. The maps of blood type distribution among Indians suggest that they are the product of New World endogamy. Blood type distribution maps of the Old World are, in contrast, highly complex in almost all parts of the three continents. These maps confirm what we know to be true historically: that migration and constant mixing of genetic materials have characterized Old World history. There has also been a constant exchange of diseases and of genetically derived immunities. In the

guess that few of the first rank killers among the diseases are native to the Americas. (A possible exception is syphilis. It may be true, as Gonzalo Fernández Oviedo maintained four hundred years ago, that syphilis should not be called *mal francés* or *mal de Nápoles*, but *mal de las Indias*.)<sup>4</sup>

When the isolation of the Americas was broken, and Columbus brought the two halves of this planet together, the American Indian met for the first time his most hideous enemy—not the white man or his black servant, but the invisible killers which these men brought in their blood and breath. The fatal diseases of the Old World killed more effectively in the New, and comparatively benign diseases of the Old World turned killers in the New. There is little exaggeration in the statement of a German missionary in 1699 that “the Indians die so easily that the bare look and smell of a Spaniard causes them to give up the ghost.” The process is still going on in the twentieth century, as the last jungle tribes of South America lose their shield of isolation.<sup>5</sup>

The most spectacular period of mortality among the American Indians occurred during the first century of contact with the Europeans and Africans. Almost all contemporary historians of the early settlements from Bartolomé de las Casas to William Bradford of Plymouth Plantation were awed by the ravages of epidemic disease among the native populations of America. We know that the most deadly of the early epidemics in the New World were those of the eruptive fevers—smallpox, measles, plague, typhus, etc. The first to arrive and the deadliest, said contemporaries, was smallpox.<sup>6</sup>

At this point the reader should be forewarned against too easy credulity. Even today smallpox is occasionally misdiagnosed as in-

---

Americas, on the other hand, there must have been almost no prophylactic miscegenation of this sort. A. E. Mourant, Ada C. Kópéc, and Kazimiera Domaniowska-Sobczak, *The ABO Blood Groups. Comprehensive Tables and Maps of World Distribution* (Springfield, Ill., 1958), 268-270.

<sup>4</sup> P. M. Ashburn, *The Ranks of Death. A Medical History of the Conquest of America* (New York, 1947), *passim*; Gonzalo Fernández Oviedo, *Historia general y natural de las Indias* (Madrid, 1959), I, 53; Henry H. Scott, *A History of Tropical Medicine* (London, 1939), I, 128, 283; Sherburne F. Cook, “The Incidence and Significance of Disease Among the Aztecs and Related Tribes,” *HAHR*, XXVI (August 1946), 321, 335.

<sup>5</sup> Jehan Vellard, “Causas biológicas de la desaparición de los indios americanos,” *Boletín del Instituto Riva-Agüero*, No. 2, 1956, 78-79; E. Wagner Stearn and Allen E. Stearn, *The Effect of Smallpox on the Destiny of the Amerindian* (Boston, 1945), 17.

<sup>6</sup> Ashburn, *Ranks of Death*, 80; Woodrow Borah, “America as Model: The Demographic Impact of European Expansion upon the Non-European World,” *Actas y Memorias del XXXV Congreso Internacional de Americanistas* (México, 1964), III, 379-387.

fluenza, pneumonia, measles, scarlet fever, syphilis, or chicken pox, for example.<sup>7</sup> Four hundred years ago such mistakes were even more common, and writers of the accounts upon which we must base our examination of the early history of smallpox in America did not have any special interest in accurate diagnosis. The early historians were much more likely to cast their eyes skywards and comment on the sinfulness that had called down such obvious evidences of God's wrath as epidemics than to describe in any detail the diseases involved. It should also be noted that conditions which facilitate the spread of one disease will usually encourage the spread of others, and that "very rarely is there a pure epidemic of a single malady." Pneumonia and pleurisy, for instance, often follow after smallpox, smothering those whom it has weakened.<sup>8</sup>

Furthermore, although the Spanish word *viruelas*, which appears again and again in the chronicles of the sixteenth century, is almost invariably translated as "smallpox," it specifically means not the disease but the pimpled, pustuled appearance which is the most obvious symptom of the disease. Thus the generation of the conquistadores may have used *viruelas* to refer to measles, chicken pox, or typhus. And one must remember that people of the sixteenth century were not statistically minded, so that their estimates of the numbers killed by epidemic disease may be a more accurate measurement of their emotions than of the numbers who really died.

But let us not paralyze ourselves with doubts. When the sixteenth-century Spaniard pointed and said, "*Viruelas*," what he meant and what he saw was usually smallpox. On occasion he was perfectly capable of distinguishing among diseases: for instance, he called the epidemic of 1531 in Central America *sarampión*—measles—and not *viruelas*.<sup>9</sup> We may proceed on the assumption that smallpox was the most important disease of the first pandemic in the recorded history of the Americas.

Smallpox has been so successfully controlled by vaccination and quarantine in the industrialized nations of the twentieth century that few North Americans or Europeans have ever seen it. But it is an old companion of humanity, and for most of the last millennium it was among the commonest diseases in Europe. With reason it was long thought one of the most infectious of maladies. Smallpox is usually communicated through the air by means of droplets or dust

<sup>7</sup> C. W. Dixon, *Smallpox* (London, 1962), 68.

<sup>8</sup> Franklin H. Top *et al.*, *Communicable and Infectious Diseases* (St. Louis, 1964), 515; Hans Zinsser, *Rats, Lice and History* (New York, 1960), 87-88.

<sup>9</sup> Raúl Porras Barrenechea (ed.), *Cartas del Perú, 1524-1543* (Lima, 1959), 22, 24, 33, 46.

particles, and its virus enters the new host through the respiratory tract. There are many cases of hospital visitors who have contracted the disease simply by breathing for a moment the air of a room in which someone lies ill with the pox.<sup>10</sup>

Because it is extremely communicable, before the eighteenth century it was usually thought of as a necessary evil of childhood, such as measles today. Sometimes the only large group untouched by it was also that which had been relatively unexposed to it—the young. Yet even among Spanish children of the sixteenth century smallpox was so common that Ruy Díaz de Isla, a medical writer, felt called upon to record that he had once seen a man of twenty years sick with the disease, “and he had never had it before.”<sup>11</sup>

Where smallpox has been endemic, it has been a steady, dependable killer, taking every year from three to ten percent of those who die. Where it has struck isolated groups, the death rate has been awesome. Analysis of figures for some twenty outbreaks shows that the case mortality among an unvaccinated population is about thirty percent. Presumably, in people who have had no contact whatever with smallpox, the disease will infect nearly every single individual it touches. When in 1707 smallpox first appeared in Iceland, it is said that in two years 18,000 out of the island's 50,000 inhabitants died of it.<sup>12</sup>

The first people of the New World to meet the white and black races and their diseases were Indians of the Taino culture who spoke the Arawak language and lived on the islands of the Greater Antilles and the Bahamas. On the very first day of landfall in 1492 Columbus noted that the Tainos “are very unskilled with arms . . .” and “could all be subjected and made to do all that one wished.”<sup>13</sup> These Tainos lived long enough to provide the Spaniard with his first generation of slaves in America, and Old World disease with its first beachhead in the New World.

Oviedo, one of the earliest historians of the Americas, estimated that a million Indians lived on Santo Domingo when the European arrived to plant his first permanent colony in the New World. “Of all those,” Oviedo wrote, “and of all those born afterwards, there are not now believed to be at the present time in this year of 1548 five

<sup>10</sup> Dixon, *Smallpox*, 171, 299-301.

<sup>11</sup> Ashburn, *Ranks of Death*, 86.

<sup>12</sup> Dixon, *Smallpox*, 325; John Duffy, *Epidemics in Colonial America* (Baton Rouge, 1953), 20, 22; Stearn and Stearn, *Effect of Smallpox*, 14.

<sup>13</sup> Samuel Eliot Morison, *Admiral of the Ocean Sea. A Life of Christopher Columbus* (Boston, 1942), I, 304-305.

hundred persons, children and adults, who are natives and are the progeny or lineage of those first."<sup>14</sup>

The destruction of the Tainos has been largely blamed on the Spanish cruelty, not only by the later Protestant historians of the "Black Legend" school but also by such contemporary Spanish writers as Oviedo and Bartolomé de las Casas. Without doubt the early Spaniard brutally exploited the Indians. But it was obviously not in order to kill them off, for the early colonist had to deal with a chronic labor shortage and needed the Indians. Disease would seem to be a more logical explanation for the disappearance of the Tainos, because they, like other Indians, had little immunity to Old World diseases. At the same time, one may concede that the effects of Spanish exploitation undoubtedly weakened their resistance to disease.

Yet it is interesting to note that there is no record of any massive smallpox epidemic among the Indians of the Antilles for a quarter of a century after the first voyage of Columbus. Indians apparently suffered a steady decline in numbers, which was probably due to extreme overwork, other diseases, and a general lack of will to live after their whole culture had been shattered by alien invasion.<sup>15</sup> How can the evident absence of smallpox be explained, if the American Indian was so susceptible, and if ships carrying Europeans and Africans from the pestilential Old World were constantly arriving in Santo Domingo? The answer lies in the nature of the disease. It is a deadly malady, but it lasts only a brief time in each patient. After an incubation period of twelve days or so, the patient suffers from high fever and vomiting followed three or four days later by the characteristic skin eruptions. For those who do not die, these pustules dry up in a week or ten days and form scabs which soon fall off, leaving the disfiguring pocks that give the disease its name. The whole process takes a month or less, and after that time the patient is either dead or immune, at least for a period of years. Also there is no non-human carrier of smallpox, such as the flea of typhus or the mosquito of malaria; it must pass from man to man. Nor are there any long-term human carriers of smallpox, as, for instance, with typhoid and syphilis. It is not an over-simplification to say that one either has smallpox and can transmit it, or one has not and cannot transmit it.

Consider that, except for children, most Europeans and their

<sup>14</sup> Oviedo, *Historia general*, I, 66-67.

<sup>15</sup> *Ibid.*; *Colección de documentos inéditos relativos al descubrimiento, conquista y colonización de las posesiones españolas en América y Oceanía*. . . (Madrid, 1864-1884), I, 428.

slaves had had smallpox and were at least partially immune, and that few but adults sailed from Europe to America in the first decades after discovery. Consider that the voyage was one of several weeks, so that, even if an immigrant or sailor contracted smallpox on the day of embarkation, he would most likely be dead or rid of its virus before he arrived in Santo Domingo. Consider that moist heat and strong sunlight, characteristic of a tropical sea voyage, are particularly deadly to the smallpox virus. The lack of any rapid means of crossing the Atlantic in the sixteenth century delayed the delivery of the Old World's worst gift to the New.

It was delayed; that was all. An especially fast passage from Spain to the New World; the presence on a vessel of several non-immune persons who could transmit the disease from one to the other until arrival in the Indies; the presence of smallpox scabs, in which the virus can live for weeks, accidentally packed into a bale of textiles—by any of these means smallpox could have been brought to Spanish America.<sup>16</sup>

In December 1518 or January 1519 a disease identified as smallpox appeared among the Indians of Santo Domingo, brought, said Las Casas, from Castile. It touched few Spaniards, and none of them died, but it devastated the Indians. The Spaniards reported that it killed one-third to one-half of the Indians. Las Casas, never one to understate the appalling, said that it left no more than one thousand alive “of that immensity of people that was on this island and which we have seen with our own eyes.”<sup>17</sup>

Undoubtedly one must discount these statistics, but they are not too far out of line with mortality rates in other smallpox epidemics, and with C. W. Dixon's judgment that populations untouched by smallpox for generations tend to resist the disease less successfully than those populations in at least occasional contact with it. Furthermore, Santo Domingo's epidemic was not an atypically pure epidemic. Smallpox seems to have been accompanied by respiratory ailments (*romadizo*), possibly measles, and other Indian killers. Starvation probably also took a toll, because of the lack of hands to work the fields. Although no twentieth-century epidemiologist or demographer would find these sixteenth-century statistics completely satisfactory, they probably are crudely accurate.<sup>18</sup>

<sup>16</sup> Bedson, *Virus*, 151-152, 157; Dixon, *Smallpox*, 174, 189, 296-297, 304, 359; Jacques M. May (ed.), *Studies in Disease Ecology* (New York, 1961), 1, 8.

<sup>17</sup> *Colección de documentos inéditos*, I, 367, 369-370, 429; *Colección de varios documentos para la historia de la Florida y tierras adyacentes* (London, 1857), I, 44; Bartolomé de las Casas, *Historia de las Indias* (Madrid, 1957), II, 484.

<sup>18</sup> *Colección de documentos inéditos*, I, 368, 397-398, 428-429; Dixon, *Smallpox*, 317-318, 325.

Thus began the first recorded pandemic in the New World, which was “in all likelihood the most severe single loss of aboriginal population that ever occurred.”<sup>19</sup> In a matter of days after smallpox appeared in Santo Domingo, it leaped the channel to Puerto Rico. Before long, Tainos were dying a hideous and unfamiliar death in all the islands of the Greater Antilles.<sup>20</sup> Crushed by a quarter-century of exploitation, they now performed their last function on earth: to act as a reserve of pestilence in the New World from which the conquistador drew invisible biological allies for his assault on the mainland.

Smallpox seems to have traveled quickly from the Antilles to Yucatán. Bishop Diego de Landa, our chief sixteenth-century Spanish source of information on the people of Yucatán, recorded that sometime late in the second decade of that century “a pestilence seized them, characterized by great pustules, which rotted their bodies with a great stench, so that the limbs fell to pieces in four or five days.” The *Book of Chilam Balam of Chumayel*, written in the Mayan language with European script after the Spanish settlement of Yucatán, also records that some time in the second decade “was when the eruption of pustules occurred. It was smallpox.” It has been speculated that the malady came with Spaniards shipwrecked on the Yucatán coast in 1511 or the soldiers and sailors of Hernández de Córdoba’s expedition which coasted along Yucatán in 1517. Both these explanations seem unlikely, because smallpox had not appeared in the Greater Antilles, the likeliest source of any smallpox epidemic on the continent, until the end of 1518 or the beginning of 1519. Be that as it may, there is evidence that the Santo Domingan epidemic could have spread to the continent before Cortés’ invasion of Mexico. Therefore, the epidemic raging there at that time may have come in two ways—north and west from Yucatán, and directly from Cuba to central Mexico, brought by Cortés’ troops.<sup>21</sup>

The melodrama of Cortés and the conquest of Mexico need no retelling. After occupying Tenochtitlán and defeating the army of his rival, Narváez, he and his troops had to fight their way out of the city to sanctuary in Tlaxcala. Even as the Spanish withdrew, an ally more formidable than Tlaxcala appeared. Years later Francisco de Aguilar, once a follower of Cortés and now a Dominican friar, recalled

<sup>19</sup> Henry F. Dobyns, “An Outline of Andean Epidemic History to 1720,” *Bulletin of the History of Medicine*, XXXVII (November-December 1963), 514.

<sup>20</sup> Pablo Álvarez Rubiano, *Pedrarías Dávila* (Madrid, 1944), 608; *Colección de varios documentos para la historia de la Florida*, I, 45.

<sup>21</sup> Diego de Landa, *Relación de las cosas de Yucatán* (Cambridge, 1941), 42; *The Book of Chilam Balam*, 138.



the terrible retreat of the *Noche Triste*. "When the Christians were exhausted from war," he wrote, "God saw fit to send the Indians smallpox, and there was a great pestilence in the city. . . ." <sup>22</sup>

With the men of Narváez had come a Negro sick with the smallpox, "and he infected the household in Cempoala where he was quartered; and it spread from one Indian to another, and they, being so numerous and eating and sleeping together, quickly infected the whole country." The Mexicans had never seen smallpox before and did not have even the European's meager knowledge of how to deal with it. The old soldier-chronicler, Bernal Díaz del Castillo, called the Negro "a very black dose" for Mexico, "for it was because of him that the whole country was stricken, with a great many deaths." <sup>23</sup>

Probably, several diseases were at work. Shortly after the retreat from Tenochtitlán Bernal Díaz, immune to smallpox like most of the Spaniards, "was very sick with fever and was vomiting blood." The Aztec sources mention the racking cough of those who had smallpox, which suggests a respiratory complication such as pneumonia or a streptococcal infection, both common among smallpox victims. Great numbers of the Cakchiquel people of Guatemala were felled by a devastating epidemic in 1520 and 1521, having as its most prominent symptom fearsome nosebleeds. Whatever this disease was, it may have been present in central Mexico along with the pox. <sup>24</sup>

The triumphant Aztecs had not expected the Spaniards to return after their expulsion from Tenochtitlán. The sixty days during which the epidemic lasted in the city, however, gave Cortés and his troops a desperately needed respite to reorganize and prepare a counterattack. When the epidemic subsided, the siege of the Aztec capital began. Had there been no epidemic, the Aztecs, their war-making potential unimpaired and their warriors fired with victory, could have

<sup>22</sup> Patricia de Fuentes (ed. and trans.), *The Conquistadors. First-Person Accounts of the Conquest of Mexico* (New York, 1963), 159. For the argument that this was measles, not smallpox, see Horacio Figueroa Marroquín, *Enfermedades de los conquistadores* (San Salvador, 1955), 49-67.

<sup>23</sup> Bernal Díaz del Castillo, *The Bernal Díaz Chronicles: The True Story of the Conquest of Mexico* (Garden City, N.Y., 1956), 250; Diego Durán, *The Aztecs. The History of the Indies of New Spain* (New York, 1964), 323; Francisco López de Gómara, *Cortés, the Life of the Conqueror by his Secretary* (Berkeley, 1964), 204-205; Toribio Motolinía, *History of the Indians of New Spain* (Berkeley, 1950), 38; Bernardino de Sahagún, *General History of the Things of New Spain* (Santa Fe, 1950-59), Part 9, 4.

<sup>24</sup> *Anales de Tlatelolco, Unos anales históricos de la nación mexicana y código de Tlatelolco* (México, 1948), 64; *The Annals of the Cakchiquels and Title of the Lords of Totonicapán* (Norman, Okla., 1953), 115-116; Bedson, *Virus*, 155; Díaz del Castillo, *Chronicles*, 289; Miguel León-Portilla (ed.), *The Broken Spears. The Aztec Account of the Conquest of Mexico* (Boston, 1962), 132; Top, *Communicable and Infectious Diseases*, 515.

pursued the Spaniards, and Cortés might have ended his life spread-eagled beneath the obsidian blade of a priest of Huitzilopochtli. Clearly the epidemic sapped the endurance of Tenochtitlán to survive the Spanish assault. As it was, the siege went on for seventy-five days, until the deaths within the city from combat, starvation, and disease—probably not smallpox now—numbered many thousands. When the city fell “the streets, squares, houses, and courts were filled with bodies, so that it was almost impossible to pass. Even Cortés was sick from the stench in his nostrils.”<sup>25</sup>

Peru and the Andean highlands were also hit by an early epidemic, and if it was smallpox it most probably had to pass through the isthmus of Panama, as did Francisco Pizarro himself. The documentation of the history of Panama in the first years after the conquest is not as extensive as that of Mexico or the Incan areas, because the isthmus had fewer riches and no civilized indigenous population to learn European script from the friars and write its own history. We do know that in the first decades of the sixteenth century the same appalling mortality took place among the Indians in Central America as in the Antilles and Mexico. The recorded medical history of the isthmus began in 1514 with the deaths of seven hundred Darién settlers in a month, victims of hunger and an unidentified disease. Oviedo, who was in Panama at the time of greatest mortality, judged that upwards of two million Indians died there between 1514 and 1530, and Antonio de Herrera tells us that forty thousand died of disease in Panama City and Nombre de Dios alone in a twenty-eight-year period during the century. Others wrote of the depopulation of four hundred leagues of land that had “swarmed” with people when the Spanish first arrived.<sup>26</sup>

What killed the Indians? Contemporaries and many historians blame the carnage on Pedrarias Dávila, who executed Balboa and ruled Spain’s first Central American settlements with such an iron hand that he was hated by all the chief chroniclers of the age. It can be effectively argued, however, that he was no more a berserk butcher of Indians than Pizarro, for the mortality among Indians of the isthmus during his years of power is parallel to the high death rates

<sup>25</sup> Hernando Cortés, *Five Letters* (New York, 1962), 226; Díaz del Castillo, *Chronicles*, 405-406; Gómara, *Cortés*, 285, 293; León-Portilla, *Broken Spears*, 92; Sahagún, *General History*, XIII, 81.

<sup>26</sup> *Colección de documentos inéditos*, XXXVII, 200; Oviedo, *Historia general*, III, 353. For corroboration see M. M. Alba C., *Etnología y población histórica* (Panamá, 1928), *passim*; Porras Barrenechea, *Cartas del Perú*, 24; Juan López de Velasco, *Geografía y descripción universal de las Indias* (Madrid, 1894), 341; *Relaciones históricas y geográficas de América Central* (Madrid, 1908), 216-218.

among the Indians wherever the Spaniards went.<sup>27</sup> When charges against Pedrarias were investigated in 1527, his defenders maintained that the greatest Indian killer had been an epidemic of smallpox. This testimony is hard to reject, for another document of 1527 mentions the necessity of importing aboriginal slaves into Panama City, Nata, and "the port of Honduras," because smallpox had carried off all the Indians in those areas.<sup>28</sup>

The Spaniards could never do much to improve the state of public health in the audiencia of Panama. In 1660 those who governed Panama City listed as resident killers and discomforters smallpox, measles, pneumonia, suppurating abscesses, typhus, fevers, diarrhea, catarrh, boils, and hives—and blamed them all on the importation of Peruvian wine!<sup>29</sup> Of all the killers operating in early Panama, however, smallpox was undoubtedly the most deadly to the Indians.

If we attempt to describe the first coming of Old World disease to the areas south of Panama, we shall have to deal with ambiguity, equivocation, and simple guesswork, for eruptive fever, now operating from continental bases, apparently outstripped the Spaniards and sped south from the isthmus into the Incan Empire before Pizarro's invasion. Long before the invasion, the Inca Huayna Capac was aware that the Spaniards—"monstrous marine animals, bearded men who moved upon the sea in large houses"—were pushing down the coast from Panama. Such is the communicability of smallpox and the other eruptive fevers that any Indian who received news of the Spaniards could also have easily received the infection of the European diseases. The biologically defenseless Indians made vastly more efficient carriers of such pestilence than the Spaniards.<sup>30</sup>

<sup>27</sup> Antonio de Herrera, *Historia general de los hechos de los castellanos en las islas y Tierra Firme del Mar Océano* (Madrid, 1936), V, 350; *Relaciones históricas y geográficas de América Central*, 200.

<sup>28</sup> Alvarez, *Pedrarias Dávila*, 608, 619, 621, 623; *Colección de documentos para la historia de Costa Rica* (Paris, 1886), IV, 8.

<sup>29</sup> Pascual de Andagoya, *Narrative of the Proceedings of Pedrarias Dávila* (London, 1865), 6; *Colección de documentos inéditos*, XVII, 219-222; Herrera, *Historia general*, IV, 217; Scott, *History*, I, 129, 288.

<sup>30</sup> Garcilaso de la Vega, *First Part of the Royal Commentaries of the Incas* (London, 1871), II, 456-457; Fernando Montesinos, *Memorias antiguas historiales del Perú* (London, 1920), 126; Pedro Sarmiento de Gamboa, *History of the Incas* (Cambridge, 1907), 187. It has been suggested that the source of the great epidemic in question was two men, Alonso de Molina and Ginés, left behind by Pizarro at Tumbes on the reconnaissance voyage of 1527. Victor W. von Hagen (ed.), *The Incas of Pedro de Cieza de León* (Norman, 1959), n. 51. If the epidemic was smallpox or measles this explanation is unlikely because these diseases are of short duration and have no carrier state. The expedition of which these men were members had had no contact with pestilential Panama for some time before it returned there from Tumbes. If these two men caught smallpox or measles, it must have been already present among the Indians.

Our evidence for the first post-Columbian epidemic in Incan lands is entirely hearsay, because the Incan people had no system of writing. Therefore, we must depend on secondary accounts by Spaniards and by mestizos or Indians born after the conquest, accounts based on Indian memory and written years and even decades after the epidemic of the 1520s. The few accounts we have of the great epidemic are associated with the death of Huayna Capac. He spent the last years of his life campaigning against the people of what is today northern Peru and Ecuador. There, in the province of Quito, he first received news of an epidemic raging in his empire, and there he himself was stricken. Huayna Capac and his captains died with shocking rapidity, "their faces being covered with scabs."

Of what did the Inca and his captains die? One of the most generally reliable of our sources, that of Garcilaso de la Vega, describes Huayna Capac's death as the result of "a trembling chill . . . , which the Indians call *chucchu*, and a fever, called by the Indians *rupu*. . . ." We dare not, four hundred years later, unequivocally state that the disease was not one native to the Americas. Most accounts call it smallpox, or suggest that it was either smallpox or measles. Smallpox seems the best guess because the epidemic struck in that period when the Spaniards, operating from bases where smallpox was killing multitudes, were first coasting along the shores of Incan lands.<sup>31</sup>

The impact of the smallpox pandemic on the Aztec and Incan Empires is easy for us of the twentieth century to underestimate. We

<sup>31</sup> Felipe Guamán Poma Ayala, *Nueva corónica y buen gobierno* (Lima, 1956), 85-86; Cieza de León, *Incas*, 52, 253; P. Bernabé Cobo, *Obras del P. Bernabé Cobo* (Madrid, 1956), II, 93; Garcilaso de la Vega, *Royal Commentaries*, II, 461; Martín de Murúa, *Historia general del Perú, origen y descendencia de los Incas* (Madrid, 1962), I, 103-104; Clements R. Markham (trans.), *Narratives of the Rites and Laws of the Incas* (London, 1873), 110; Pedro Pizarro, *Relation of the Discovery and Conquest of the Kingdoms of Peru* (New York, 1921), I, 196-198; Sarmiento de Gamboa, *History*, 167-168; Miguel Cabello Valboa, *Miscelánea antártica una historia del Perú antiguo* (Lima 1951), 393-394. Did smallpox exist in the Incan lands before the 1520s? Fernando Montesinos, writing in the seventeenth century, claimed that Capac Titu Yupanqui, a pre-Columbian Peruvian, died of smallpox in a general epidemic of that disease. Also, some examples of the famous naturalistic Mochica pottery show Indians with pustules and pocks which bear a very close resemblance to those of smallpox. But Montesinos is regarded as one of the less reliable historians of Incan times, and there are several other diseases native to the northwestern section of South America, such as the dreadful *verruugas*, which have a superficial dermatological similarity to smallpox. Furthermore, the aborigines of the Incan Empire told Pedro Pizarro that they had had no acquaintance with smallpox in pre-Columbian times. Montesinos, *Memorias*, 54; Pizarro, *Relation*, I, 196; Victor W. von Hagen, *Realm of the Incas* (New York, 1957), 106; see also Raoul and Marie D'Harcourt, *La médecine dans l'ancien Pérou* (Paris, 1939), *passim*.

have so long been hypnotized by the derring-do of the conquistador that we have overlooked the importance of his biological allies. Because of the achievements of medical science in our day we find it hard to accept statements from the conquest period that the pandemic killed one-third to one-half of the populations struck by it. Toribio Motolinía claimed that in most provinces of Mexico "more than one half of the population died; in others the proportion was little less." "They died in heaps," he said, "like bedbugs."

The proportion may be exaggerated, but perhaps not as much as we might think. The Mexicans had no natural resistance to the disease at all. Other diseases were probably operating quietly and efficiently behind the screen of smallpox. Add too the factors of food shortage and the lack of even minimal care for the sick. Motolinía wrote: "Many others died of starvation, because as they were all taken sick at once, they could not care for each other, nor was there anyone to give them bread or anything else." We shall never be certain what the death rate was, but, from all evidence, it must have been immense. Woodrow Borah and Sherburne F. Cook estimate that, for one cause and another, the population of central Mexico dropped from about 25,000,000 on the eve of conquest to 16,800,000 a decade later, and this estimate strengthens confidence in Motolinía's general veracity.<sup>32</sup>

South of Panama, in the empire of the Inca, our only tool for estimating the mortality of the epidemic of the 1520s is the educated guess. The population there was thick, and it provided a rich medium for the transmission and cultivation of communicable diseases. If the malady which struck in the 1520s was smallpox, as it seems to have been, then it must have taken many victims, for these Indians probably had no more knowledge of or immunity to smallpox than the Mexicans. Most of our sources tell us only that many died. Cieza de León gives a figure of 200,000, and Martín de Murúa, throwing up his hands, says "infinite thousands."<sup>33</sup>

We are reduced to guesswork. Jehan Vellard, student of the effect of disease on the American Indian, states that the epidemics in Peru and Bolivia after the Spanish conquest killed fewer than those in Mexico and suggests the climatic conditions of the Andean highlands as the reason. But smallpox generally thrives under dry, cool conditions. Possibly historians have omitted an account of the first and,

<sup>32</sup> Woodrow Borah and Sherburne F. Cook, *The Aboriginal Population of Central Mexico on the Eve of Spanish Conquest* (Berkeley, 1963), 4, 89; Motolinía, *History*, 38; Sahagún, *General History*, XIII, 81.

<sup>33</sup> Ashburn, *Ranks of Death*, 20; Cieza de León, *Incas*, 52; Murúa, *Historia general*, 104; Pizarro, *Relation*, I, 196.

therefore, probably the worst post-Columbian epidemic in the Incan areas because it preceded the Spanish conquest.<sup>34</sup> A half century or so after the Conquest, Indians in the vicinity of Lima maintained that the Spanish could not have conquered them if, a few years before Pizarro's invasion, respiratory disease (*romadizo y dolor de costado*) had not "consumed the greater part of them."<sup>35</sup> Was this the great killer of the 1520s in the Incan Empire? Perhaps future archaeological discoveries will give us more definite information.

The pandemic not only killed great numbers in the Indian empires, but also affected their power structures, striking down the leaders and disrupting the processes by which they were normally replaced. When Moctezuma died, his nephew, Cuitláhuac, was elected lord of Mexico. It was he who directed the attacks on the Spaniards during the disastrous retreat from Tenochtitlán, attacks which nearly ended the story of Cortés and his soldiers. And then Cuitláhuac died of smallpox. Probably many others wielding decisive power in the ranks of the Aztecs and their allies died in the same period, breaking dozens of links in the chain of command. Not long afterwards Bernal Díaz tells us of an occasion when the Indians did not attack "because between the Mexicans and the Texcocans there were differences and factions"<sup>36</sup> and, of equal importance, because they had been weakened by smallpox.

Outside Tenochtitlán the deaths due to smallpox among the Indian ruling classes permitted Cortés to cultivate the loyalty of several men in important positions and to promote his own supporters. Cortés wrote to Charles V about the city of Cholula: "The natives had asked me to go there, since many of their chief men had died of the smallpox, which rages in these lands as it does in the islands, and they wished me with their approval and consent to appoint other rulers in their place." Similar requests, quickly complied with, came from Tlaxcala, Chalco, and other cities. "Cortés had gained so much authority," the old soldier Bernal Díaz remembered, "that Indians came before him from distant lands, especially over matters of who would be chief or lord, as at the time smallpox had come to New Spain and many chiefs died."<sup>37</sup>

Similarly in Peru the epidemic of the 1520s was a stunning blow to the very nerve center of Incan society, throwing that society into

<sup>34</sup> Jehan Vellard, *Boletín del Instituto Riva-Agüero*, No. 2, 1956, 85; Bedson, *Virus*, 157, 167; Dixon, *Smallpox*, 313.

<sup>35</sup> Reginaldo de Lizárraga, *Descripción colonial por Fr. Reginaldo de Lizárraga* (Buenos Aires, 1928), I, 136.

<sup>36</sup> Díaz del Castillo, *Chronicles*, 282, 301; Gómara, *Cortés*, 238-239.

<sup>37</sup> Cortés, *Five Letters*, 136; Díaz del Castillo, *Chronicles*, 289, 311.

a self-destructive convulsion. The government of the Incan Empire was an absolute autocracy with a demigod, the Child of the Sun, as its emperor. The loss of the emperor could do enormous damage to the whole society, as Pizarro proved by his capture of Atahualpa. Presumably the damage was greater if the Inca were much esteemed, as was Huayna Capac. When he died, said Cieza de León, the mourning "was such that the lamentation and shrieks rose to the skies, causing the birds to fall to the ground. The news traveled far and wide, and nowhere did it not evoke great sorrow." Pedro Pizarro, one of the first to record what the Indians told of the last days before the conquest, judged that had "this Huayna Capac been alive when we Spaniards entered this land, it would have been impossible for us to win it, for he was much beloved by all his vassals."<sup>38</sup>

Not only the Inca but many others in key positions in Incan society died in the epidemic. The general Miheñaca Mayta and many other military leaders, the governors Apu Hilaquito and Auqui Tupac (uncle and brother to the Inca), the Inca's sister, Mama Coca, and many others of the royal family all perished of the disease. The deaths of these important persons must have robbed the empire of much resiliency. Most ominous loss of all was the Inca's son and heir Ninan Cuyoche.<sup>39</sup>

In an autocracy no problem is more dangerous or more chronic than that of succession. One crude but workable solution is to have the autocrat, himself, choose his successor. The Inca named one of his sons, Ninan Cuyoche, as next wearer of "the fringe" or crown, on the condition that the *calpa*, a ceremony of divination, show this to be an auspicious choice. The first *calpa* indicated that the gods did not favor Ninan Cuyoche, the second that Huascar was no better candidate. The high nobles returned to the Inca for another choice, and found him dead. Suddenly a terrible gap had opened in Incan society: the autocrat had died, and there was no one to take his place. One of the nobles moved to close the gap. "Take care of the body," he said, "for I go to Tumipampa to give the fringe to Ninan Cuyoche." But it was too late. When he arrived at Tumipampa, he found that Ninan Cuyoche had also succumbed to smallpox pestilence.<sup>40</sup>

Among the several varying accounts of the Inca's death the one just related best fits the thesis of this paper. And while these

<sup>38</sup> Cieza de León, *Incas*, 53; Pizarro, *Relation*, I, 198-199.

<sup>39</sup> Ayala, *Nueva corónica*, 86; Cobo, *Obras*, 93; Sarmiento de Gamboa, *History*, 167-168; Valboa, *Miscelánea*, 393.

<sup>40</sup> Sarmiento de Gamboa, *History*, 167-168, 197-199. For corroboration see Cieza de León, *Incas*, 253; Valboa, *Miscelánea*, 394.

accounts may differ on many points, they all agree that confusion over the succession followed the unexpected death of Huayna Capac. War broke out between Huascar and Atahualpa, a war which devastated the empire and prepared the way for a quick Spanish conquest. "Had the land not been divided between Huascar and Atahualpa," Pedro Pizarro wrote, "we would not have been able to enter or win the land unless we could gather a thousand Spaniards for the task, and at that time it was impossible to get together even five hundred Spaniards. . . ."<sup>41</sup>

The psychological effect of epidemic disease is enormous, especially of an unknown disfiguring disease which strikes swiftly. Within a few days smallpox can transform a healthy man into a pustuled, oozing horror, whom his closest relatives can barely recognize. The impact can be sensed in the following terse, stoic account, drawn from Indian testimony, of Tenochtitlán during the epidemic.<sup>42</sup>

It was [the month of] Tepeilhuitl when it began, and it spread over the people as great destruction. Some it quite covered [with pustules] on all parts—their faces, their heads, their breasts, etc. There was a great havoc. Very many died of it. They could not walk; they only lay in their resting places and beds. They could not move; they could not stir; they could not change position, nor lie on one side; nor face down, nor on their backs. And if they stirred, much did they cry out. Great was its [smallpox'] destruction. Covered, mantled with pustules, very many people died of them.

In some places in Mexico the mortality was so great that, as Motolinía recorded, the Indians found it impossible to bury the great number of dead. "They pulled down the houses over them in order to check the stench that rose from the dead bodies," he wrote, "so that their homes became their tombs." In Tenochtitlán the dead were cast into the water, "and there was a great, foul odor; the smell issued forth from the dead."<sup>43</sup>

For those who survived, the horror was only diminished, for smallpox is a disease which marks its victims for the rest of their lives. The Spanish recalled that the Indians who survived, having scratched themselves, "were left in such a condition that they frightened the others with the many deep pits on their faces, hand, and bodies." "And on some," an Indian said, "the pustules were widely separated; they suffered not greatly, neither did many [of them] die. Yet many people were marred by them on their faces; one's face or nose was pitted." Some lost their sight—a fairly common aftereffect of smallpox.<sup>44</sup>

<sup>41</sup> Pizarro, *Relation*, I, 199.

<sup>42</sup> Sahagún, *General History*, XIII, 81.

<sup>43</sup> Motolinía, *History*, 38; Sahagún, *General History*, IX, 4.

<sup>44</sup> Sahagún, *General History*, XIII, 81; Gómara, *Cortés*, 204-205; Dixon, 94;



The contrast between the Indians' extreme susceptibility to the new disease and the Spaniards' almost universal immunity, acquired in Spain and reinforced in pestilential Cuba, must have deeply impressed the native Americans. The Indian, of course, soon realized that there was little relationship between Cortés and Quetzalcóatl, and that the Spaniards had all the vices and weaknesses of ordinary men, but he must have kept a lingering suspicion that the Spaniards were some kind of supermen. Their steel swords and arquebuses, their marvelously agile galleys, and, above all, their horses could only be the tools and servants of supermen. And their invulnerability to the pox—surely this was a shield of the gods themselves!

One can only imagine the psychological impact of smallpox on the Incan peoples. It must have been less than in Mexico, because the disease and the Spaniards did not arrive simultaneously, but epidemic disease is terrifying under any circumstances and must have shaken the confidence of the Incan people that they still enjoyed the esteem of their gods. Then came the long, ferocious civil war, confusing a people accustomed to the autocracy of the true Child of the Sun. And then the final disaster, the coming of the Spaniards.

The Mayan peoples, probably the most sensitive and brilliant of all American aborigines, expressed more poignantly than any other Indians the overwhelming effect of epidemic. Some disease struck into Guatemala in 1520 and 1521, clearing the way for the invasion shortly thereafter by Pedro de Alvarado, one of Cortés' captains. It was apparently not smallpox, for the accounts do not mention pustules but emphasize nosebleeds, cough, and illness of the bladder as the prominent symptoms. It may have been influenza;<sup>45</sup> whatever it was, the Cakchiquel Mayas who kept a chronicle of the tragedy for their posterity, were helpless to deal with it. Their words speak for all the Indians touched by Old World disease in the sixteenth century:

Great was the stench of the dead. After our fathers and grandfathers succumbed, half of the people fled to the fields. The dogs and vultures devoured the bodies. The mortality was terrible. Your grandfathers died, and with them died the son of the king and his brothers and kinsmen. So it was that we became orphans, oh, my sons! So we became when we were young. All of us were thus. We were born to die!<sup>46</sup>

C. E. van Rooyen and A. J. Rhodes, *Virus Diseases of Man* (New York, 1948), 289.

<sup>45</sup> F. Webster McBryde, "Influenza in America During the Sixteenth Century (Guatemala: 1523, 1559-1562, 1576)," *Bulletin of the History of Medicine*, VIII (February 1940), 296-297.

<sup>46</sup> *Annals of the Cakchiquels*, 116.