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# The Tip of an Iceberg: Pre-Columbian Indian Demography and Some Implications for Revisionism

Wilbur R. Jacobs\*

**A**LTHOUGH controversies about the nature of the American Revolution and related topics have not diminished our interest in early American Indian-white history, we have largely ignored recent demographic studies of the American Indian which may well give new direction to much of the rationale of colonial growth and progress. While it is difficult to make positive judgments, several scholars (mostly nonhistorians) have suggested an entirely new version of early Indian-white relations showing that Europeans had an overwhelming role in triggering an enormous depopulation of native American people.

What is involved here is truly one of the most fascinating numbers games in history, one that may well have a determining influence upon interpretive themes not only of early United States history but also of the history of all the Americas. The basic questions are these: is there evidence to show that there were some one hundred million Indians in the Western Hemisphere at the time of discovery? Further, is it true that this evidence may give us a new figure of nearly ten million Indians in the North America of 1492? And finally, is it now generally accepted by anthropologists that the figures of James Mooney, Alfred L. Kroeber, and Ángel Rosenblat—some one million Indians for pre-Columbian North America and eight to fourteen million Indians for the Western Hemisphere—are now out of date? If the new estimates for native American population (allowing for disagreement among authorities but general agreement that Mooney, Kroeber, and Rosenblat are now of only relative value) are to be considered, we must now cope with new evidence that indicates there were between fifty and one hundred million Indians in possession of the New World on the day that it was "discovered." Thus we have an invasion of Europeans into areas that were even more densely settled than parts of Europe. There is even the possibility that in the late fifteenth century the Western

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Hemisphere may have had a greater population than Western Europe.

There is one stalwart figure who as late as 1967 continued to dispute the new evidence. This is the Latin American scholar Rosenblat. He has accused Sherburne Cook and Woodrow Borah of discarding the testimony of respectable witnesses ("el testimonio de respetables testigos") in their computations to arrive at high estimates of preconquest populations in central Mexico, in Hispaniola, and the whole Western Hemisphere. In his assessments of the findings of Cook and Borah, however, he consistently avoids either a discussion of their sophisticated methodology or an evaluation of the financial records they used as a basis of calculation. Rosenblat reluctantly concludes that the use of mathematical formulas in demography has given his work the appearance of error which he sought to avoid. One of the weaker links in his argument is his hasty attempt to discredit the original estimates of Indian mortality made by Bartolomé de Las Casas. In the end, Rosenblat's long defense of the researches of Mooney and Kroeber and his manner of repeating and reprinting his own findings (in three books) to strengthen his argument are unconvincing. Furthermore, Rosenblat seems to have overlooked the findings of certain scholars who disagreed with him. For instance, he makes no analysis of the work of the geographer Karl Sapper who as early as 1924 estimated a total of thirty-seven to forty-eight million Indians for the Americas in 1492.<sup>1</sup>

But let us leave Rosenblat and turn to the debate as it concerned other scholars in the 1960s and 1970s. It is somewhat ironic that the growing number of writers on United States history who have successfully employed quantitative methodology should have left Indian demographic research largely to specialists in other fields such as the Berkeley physiologist Cook, and his coauthors, historian-linguist Lesley B. Simpson and Latin Americanist Borah, and anthropologists Henry R. Dobyns

<sup>1</sup> Ángel Rosenblat's argument rests on the figures of James Mooney and A. L. Kroeber. Mooney, *The Aboriginal Population of America North of Mexico*, Smithsonian Miscellaneous Collections, LXXX (Washington, D. C., 1928), 33, estimates the total pre-Columbian Indian population north of Mexico including Greenland at 1,152,950. Kroeber, *Cultural and Natural Areas of Native North America*, University of California Publications in American Archaeology and Ethnology, XXXVIII (Berkeley, 1939), 131, 166, reduced Mooney's estimate to 1,025,950, nearly 10%, and made a hemispheric estimate of 8,400,000. Rosenblat's hemispheric pre-Columbian estimate is 13,385,000, but his estimate for North America, north of the Rio Grande River, is slightly lower than Kroeber's, an even 1,000,000. His population tables are found in his *La Población Indígena de América desde 1492 hasta la Actualidad* (Buenos Aires, 1945), 92, and in a revised work with unchanged pre-Columbian estimates, *La Población Indígena y el Mestizaje en América, I: La Población Indígena, 1492-1950* (Buenos Aires, 1954), 102. Rosenblat defends his estimates in a third book *La Población de América en 1492: viejos y nuevos cálculos* (Mexico, D. F., 1967), especially 1-9, 11-16, 81. Karl Sapper's statistical tables are printed in Julian H. Steward, ed., *Handbook of South American Indians, V: The Comparative Ethnology of South American Indians*, Bureau of American Ethnology Bulletin 143 (Washington, D. C., 1949), 656.

and Harold Driver.<sup>2</sup> A good place to begin probing the vital statistics in this revisionism is with Dobyns's article, "Estimating Aboriginal Indian Population."<sup>3</sup> What makes this study especially significant is its support of the methodology pioneered by the Berkeley scholars, Cook, Simpson, and Borah, in appraisals of Indian depopulation in California and Meso-America.<sup>4</sup> Dobyns reaches his hemispheric estimates by determining the demographic nadir or lowest population of Indians in regions of the Americas during the modern era when census data are available. Then he multiplies the nadir figure by a number representing the measure of Indian population loss from disease and other factors. By multiplying exponentially he estimates a population of 90,043,000 native Americans with a high projection of 112,553,750. The higher estimate results from the use of a historic depopulation ratio of 25 to 1, and the lower from a ratio of 20 to 1. Using this method, with an estimated nadir population of 490,000 aborigines in 1930 for North America, Dobyns with a ratio of 20 to 1 estimates a pre-Columbian population of 9,800,000. With the ratio of 25 to 1 he estimates a high of 12,250,000.<sup>5</sup>

Although Driver criticizes Dobyns's estimates by pleading for a lower nadir in estimating the aboriginal population of North America, which might result in a 50 percent cut in numbers, he nonetheless praises the

<sup>2</sup> The key publications of these scholars on the Indian demography debate are in the footnotes which follow.

<sup>3</sup> Henry F. Dobyns, "Estimating Aboriginal American Population: An Appraisal of Techniques with a New Hemispheric Estimate," *Current Anthropology*, VII (1966), 395-416.

<sup>4</sup> *Ibid.*, 403-407. Among the published works of the authors Dobyns relies primarily upon S. F. Cook, *The Extent and Significance of Disease among the Indians of Baja California, 1697-1773*, Ibero-Americana, 2 (Berkeley, 1937), 9-14; Sherburne F. Cook and Lesley Byrd Simpson, *The Population of Central Mexico in the Sixteenth Century*, Ibero-Americana, 31 (Berkeley, 1948), 19-22; Sherburne Cook and Woodrow Borah, *The Aboriginal Population of Central Mexico on the Eve of the Spanish Conquest*, Ibero-Americana, 45 (Berkeley, 1963), 6, 22-44, 157. Dobyns stresses that Cook's researches reveal that a "fatal defect" in both Kroeber's data and method was his ignoring of disease, especially epidemics: "Estimating Aboriginal American Population," *Current Anthropology*, VII (1966), 411.

<sup>5</sup> Dobyns, "Estimating Aboriginal American Population," *Current Anthropology*, VII (1966), 415. This estimate is presumably for Indians north of the Rio Grande, but Dobyns is not entirely clear on this point. Dobyns's final table of estimated populations is reprinted in Virgil J. Vogle, ed., *This Country Was Ours: A Documentary History of the American Indian* (New York, 1972), 253. As early as 1962 Borah estimated a hemispheric pre-Columbian population of 100,000,000. Dobyns states that Borah's depopulation ratio would fall between 20 and 25 and that Borah's estimate for population density per square kilometer implies 2.4 persons. Dobyns estimates 2.1 density: "Estimating Aboriginal American Population," *Current Anthropology*, VII (1966), 414. He cites Woodrow Borah, "¿América como modelo? El impacto demográfico de la expansión europea sobre el mundo no europeo," *Cuadernos Americanos*, VI (1962), 176-185.

new methodology.<sup>6</sup> Indeed, an examination of the numerous critiques published with Dobyns's estimates shows there is more agreement than dissent. What is more, the most distinguished student of Indian demography, Cook, approved Dobyns's work in conversations and in published commentary.<sup>7</sup> And I must confess that Dobyns in his articles and in convincing dialogue (in personal conversations and in correspondence) has persuaded me that historians may well have to adopt a whole new view of Indian demography, especially of Indian depopulation resulting from smallpox and other epidemic diseases.<sup>8</sup> Current literature on epidemic diseases among Indian people offers corroborative evidence to show, for example, the powerful impact of measles virus, easily airborne and devastating in its effect, upon certain native American communities, especially those in Alaska.<sup>9</sup>

<sup>6</sup> Driver's commentary is published with other critiques of Dobyns's article in *Current Anthropology*, VII (1966), 429-430. He questions Dobyns's exact geographical definition of North America and argues that his nadir population figure should be lowered (250,000 in 1890 for the area of the United States) and that his overall estimates might thus be cut by as much as 50%. Driver is also critical of Dobyns's estimate of 30,000,000 for the population of central Mexico which in turn was based upon the 1963 estimates of Cook and Borah ranging from 25,000,000 to 30,000,000. In their latest study, Cook and Borah arrive at the figure of 27,650,000. See Sherburne F. Cook and Woodrow Borah, *Essays in Population History: Mexico and the Caribbean*, I (Berkeley, 1972), 115. See also Harold E. Driver, *Indians of North America*, 2d ed. rev. (Chicago, 1969), 63-65, and his "On the Population Nadir of Indians in the United States," *Current Anthropology*, IX (1968), 330.

<sup>7</sup> Cook's published comments on Dobyns's estimates are in *Current Anthropology*, VII (1966), 427-429.

<sup>8</sup> Besides Cook's work, cited in n. 4, see Henry F. Dobyns, "An Outline of Andean Epidemic History to 1720," *Bulletin of the History of Medicine*, XXXVII (1963), 493-515, and Wilbur R. Jacobs, *Dispossessing the American Indian: Indians and Whites on the Colonial Frontier* (New York, 1972), 136, 136n, 191n, 214n. For the North American Indian population control, see *ibid.*, 130, 130n, 163.

<sup>9</sup> I am indebted to John C. Bolton, M. D., of San Francisco, a specialist in the study of modern epidemics, who has introduced me to the vast literature on the subject. Jacob A. Brody, M. D., of Alaska and New York State, and his associates have written several key articles on recent measles epidemics among Eskimos, Aleuts, and Alaskan Indians that demonstrate the severity of measles infection. See, e.g., "Measles Vaccine Field Trials in Alaska," *Journal of the American Medical Association*, CLXXXIX (Aug. 3, 1964), 339-342. Disease patterns of Indians in the southwestern parts of the United States where there have long been close association and intermarriage with non-Indians reveal no special weakness for epidemic diseases but that Indians, like their white neighbors, suffer from diabetes, tuberculosis, and cancer, although "hypertension is apparently less frequent than among white persons." See Maurice L. Sievers, "Disease Patterns among Southwestern Indians," *Public Health Reports*, LXXXI (1966), 1075-1083 (quotation, p. 1082). See also S. M. Weaver, "Smallpox or Chickenpox: An Iroquoian Community's Reaction to Crisis, 1901-1902," *Ethnohistory*, XVIII (1971), 361-378, and Mark A. Barrow et al., *Health and Disease of American Indians North of Mexico: A Bibliography, 1800-1969* (Gainesville, Fla., 1972), 57-58. Cook's current research on disease and the New England Indians indicates that earlier population estimates for the North Atlantic littoral (by Mooney and others) are too low. Correspondence in 1973 between W. R. Jacobs and Sherburne Cook.

An overriding consideration in favorably evaluating Dobyns's work is the consistently high estimates of aboriginal population in the formidable study by Cook and Borah, *Essays in Population*. These essays, concentrating on Mexico and the Caribbean, include both a brilliant analysis of methodology and a revealing commentary on historical demographic problems in making such estimates for pre-Columbian populations as the figure of twenty-five million for central Mexico. There is no question that the Cook and Borah estimates in these essays are as high as or higher than those that Dobyns provided for populations of specific areas. In some cases the Cook and Borah estimates skyrocket as high, for instance, as eight million for the pre-Columbian population of Hispaniola (present Haiti and the Dominican Republic) alone.<sup>10</sup> This figure far exceeds the most extravagant population estimates of contemporary Spaniards. Las Casas judged the native population of Hispaniola to be three or four million.<sup>11</sup>

Of course the most pressing question is how such a dense population could have supported itself in the Caribbean? On the basis of evidence given by Carl Sauer, Cook and Borah argue that the people of Hispaniola had perfected the domestication of food plants to the extent that they had a greater yield per hectare than comparable fields harvested in the Europe of 1492.<sup>12</sup> The supply of maize, beans, and cassava, supplemented by protein obtained by fishing and hunting, was more than enough to feed eight million people.

Given this prosperous state of affairs, there is still another obvious query to make. What brought about the sharp depopulation and finally the extermination of aborigines on Hispaniola, a process that was virtually complete by 1570? Cook and Borah, again partly relying on earlier studies by Sauer, argue that the harsh Spanish rule of native people, especially unusually brutal methods of exploiting Indian labor, was in part responsible for depopulation.<sup>13</sup> It was this brutality, resur-

<sup>10</sup> Cook and Borah, *Essays in Population*, 407.

<sup>11</sup> A table of Las Casas's estimates is in Dobyns, "Estimating Aboriginal American Population," *Current Anthropology*, VII (1966), 397. Philip Wayne Powell, *Tree of Hate: Propaganda and Prejudices Affecting United States Relations with the Hispanic World* (New York, 1971), discusses the significance of Las Casas's indictment of Spanish brutality and the origins of the Black Legend of Spanish cruelty. He argues, 139-159, that the causes of Indian depopulation were very complex.

<sup>12</sup> Cook and Borah, *Essays in Population*, 408, citing Carl Sauer, *The Early Spanish Main* (Berkeley and Los Angeles, 1966), 67-69, 157, *et passim*. Sauer, in his recent volume, *Sixteenth Century North America: The Land and the People as Seen by Europeans* (Berkeley and Los Angeles, 1971), 58, 59, 71, 205, 252-253, 286-288, 294-295, stresses the agricultural skills of the North American Indians, as does Wilbur R. Jacobs, "The Indian and the Frontier in American History: A Need for Revision," *Western Historical Quarterly*, IV (1973), 50-56.

<sup>13</sup> Cook and Borah, *Essays in Population*, 409, and Sauer, *Early Spanish Main*, 202-204, 283-289. Cook and Borah, however, still regard disease as the most important cause of Indian depopulation. Letter from Woodrow Borah to W. R. Jacobs, Apr. 13, 1973.

recting the Black Legend of Spanish cruelty (so distasteful to Kroeber that it may have led him to lower his population estimates of aborigines),<sup>14</sup> as well as disease that killed the Indians. Of all the epidemic diseases, smallpox seems to have been the scourge for millions of Indians in the Caribbean as well as in Meso-America and North America.<sup>15</sup>

If there were, indeed, eight million Indians on Hispaniola and some twenty-five million in central Mexico, how many were there in North America, north of the Rio Grande River? Probably at least as many as Dobyns has estimated—9,800,000 to 12,250,000—if we accept his methodology and mathematics. This estimate contrasts strikingly with the earlier ones of Mooney (1,152,950), Kroeber (1,025,950), and Rosenblat (1,000,000).<sup>16</sup>

Here we have it then—a new hemispheric estimate of Indian population that is almost breathtaking in its magnitude. If there ever was a tool for presentism in the writing of early American history in coping with the dispossession of the Indians, this is it. It is hard to imagine that our history can ever be the same again since we can scarcely portray the European invasion of the Western Hemisphere as the relatively quiet expansion of Europeans into sparsely settled lands. What we do with these new data and how we interpret them will be of great consequence, and we may be sure that Indian historians and the increasingly vocal American Indian Historical Society will have perceptive comments on their significance. Even if there is a general consensus that reduces the figure from one hundred million to fifty million—and some qualified investigators concede that we could hardly settle for less than that number—we must now accept the fact that the dismal story of Indian depopulation after 1492 is a demographic disaster with no known parallel in world history.<sup>17</sup> We must also acknowledge that the catalyst of all this was undoubtedly the European invasion of the New World.

<sup>14</sup> Dobyns, "Estimating Aboriginal American Population," *Current Anthropology*, VII (1966), 397, alludes to this point which seems to have validity if one notes the absence of condemnation of Spanish brutality in Kroeber's writings dealing with the Spanish occupation of the New World.

<sup>15</sup> Dobyns, "Estimating Aboriginal American Population," *Current Anthropology*, VII (1966), 410-412.

<sup>16</sup> See n. 1.

<sup>17</sup> Magnus Mörner in his perceptive study, *Race Mixture in the History of Latin America* (Boston, 1967), 50, was one of the first historians of Hispanic America to give tentative acceptance to the figure of 50,000,000, and about the same time J. H. Parry, *The Spanish Seaborne Empire* (New York, 1966), 213-228 (a chapter entitled "Demographic Catastrophe"), accepted the figure of 25,000,000 for the preconquest population of New Spain. Historians of the United States, however, seem to have overlooked the increasing volume of literature on Indian demography, and anthropologists who had a role in the debate have moved on to what appear to be other controversies in demography, in nonhistorical topics such as fecundity and recent trend analysis.

Admittedly, what we are dealing with is the tip of a formidable iceberg. Although there is sufficient evidence to tell us that the iceberg is really there, several questions suggest themselves. There is, for instance, reason to believe that the Indians were on the verge of a population decline before the Europeans arrived. This may well have been the case in central Mexico.<sup>18</sup> The possibility also exists that Indian populations were already in a cycle of depopulation. Even if we accept these arguments, there remains the question of why societies so large should have been so vulnerable. Where, moreover, is there evidence of a material culture to sustain such a large population? In Meso-America the remains of great Indian societies that flourished before and after the Spanish conquest still exist despite efforts to obliterate Indian civilizations. But in North America, at the time of first contacts with the Indians, there was no concerted effort to eradicate Indian culture. Yet the material remains of prehistoric Indian societies are sparse indeed.

If we accept the evidence pointing to disease as the most important factor in causing Indian depopulation, much remains to be done in studying the ability of individual tribes to resist waves of epidemics. Another factor is the significance of such data as the physical distance between population centers. There is also the argument that the infusion of Spanish blood (as well as the blood of other Europeans) into Indian societies helped to preserve them and to strengthen them against the impact of recurring epidemic disease waves. Anthropologist Edward Spicer sets forth a cycle theory of conquest and withdrawal of Europeans who may leave behind invigorated native societies enriched by cultural exchange.<sup>19</sup>

Given such probabilities and possibilities, the natural reaction may well be to doubt the veracity of recent theorizing on high pre-Columbian population estimates. Since most of the new data is based upon calculations which in turn rest upon a sifting of more conventional evidence, the hard documentary sources are lacking. Yet because such documentation is missing we may well be in error if we assume that the new methodologies cannot be trusted. In Indian history, as in the histories of other minorities, we are finding that the conclusive evidence found in Anglo-Saxon sources is often impossible to obtain.

My examination of the work of Cook, Borah, Sauer, Dobyns, and

<sup>18</sup> This point is mentioned in the debate over the 25,000,000 estimate for central Mexico. But the key issue is the reliability of evidence behind the estimate, for once the 25,000,000 figure for central Mexico is accepted, other high estimates based upon exponential calculations follow. For Rosenblat's criticism of Cook and Borah on this estimate see his *La Población de América en 1492*, 78-81.

<sup>19</sup> Edward H. Spicer, *Cycles of Conquest: The Impact of Spain, Mexico, and the United States on the Indians of the Southwest, 1533-1960* (Tucson, Ariz., 1962), 568. He neglects, however, to point out that examples of the withdrawal of Europeans are few indeed.



their critics leads me to believe that they have discovered a great historical iceberg concerning Indian populations. My own investigations, partly based upon examination of modern medical literature concerning Indians<sup>20</sup> and upon field research, tend to bear out their findings, as does archival evidence.

For instance, in my study of native-white contacts in Australia I have found that Australian Aborigines (who have a marked resemblance to certain Indian tribes of the American Southwest) had a swift depopulation after first contacts with whites in the 1830s. English agents, called "Protectors," reported a great "mortality" caused by disease and forced transfer to unfamiliar surroundings.<sup>21</sup> In my field trips to modern reserves of the Aborigines in Darwin, Alice Springs, and at Palm Island (off the coast of Queensland), there was a problem of being admitted at times because of recurring quarantines. Everywhere on reserves, despite medical precautions, native people seemed to be fighting off one epidemic after another of typhoid and other diseases. Leprosy, although partially checked, still persists among the native people of Queensland. Despite these onslaughts of disease, the Aboriginal population is now increasing, largely because of the Australian government's excellent social programs and medical facilities. The overall evidence, however, shows that widespread depopulation took place in early Australian history and that some native people, such as the Tasmanians, were finally wiped off the face of the earth.<sup>22</sup> Considering these facts, it is not surprising that Australia's leading anthropologist, the late A. P. Elkin, saw many parallels in the history of native-white relations in his country and in North America.<sup>23</sup>

In my field work and archival research on the impact of European contact with the native people of Papua, New Guinea, I found that the Melanesians withstood European invasion with more success than either the Australian Aborigines or the American Indians.<sup>24</sup> And the Polynesians, especially those of the Hawaiian Islands that I have studied, also

<sup>20</sup> See examples in n. 9.

<sup>21</sup> Protector George Augustus Robinson's reports and letters of the 1830s detail the depopulation of the Aborigines. See especially his "Reports on the Tasmanian Aborigines," A 612, 70ff, and his letter to Gov. George Arthur, Sept. 9, 1839, Mitchell Library, Sydney, Australia.

<sup>22</sup> Details of this unpleasant story are in Wilbur R. Jacobs, "The Fatal Confrontation: Early Native-White Relations on the Frontiers of Australia, New Guinea, and America—A Comparative Study," *Pacific Historical Review*, LX (1971), 293-309.

<sup>23</sup> See Elkin's classic study, *The Australian Aborigines*, 3d ed. (Sydney, 1954), 29, 44, 156-162 *et passim*, for his strictures on missions and missionaries among Aborigines and California Indians.

<sup>24</sup> The complexities of this contest are discussed in Jacobs, "The Fatal Confrontation," *Pac. Hist. Rev.*, LX (1971), 293-309.

seem to have withstood the disease and the cultural impact of Europeans better than the Indians or the Australian Aborigines. Nevertheless, Anglo-American pressure to dispossess Hawaiian native people of their lands and to stamp out their religion was (and continues to be) unrelenting.<sup>25</sup>

I found additional data bearing on the findings of Cook, Borah, and Dobyns in my field work and examination of archival data relating to the Arawaks, who were all but exterminated on Jamaica, Hispaniola, and other Caribbean Islands in the sixteenth century. Examination of the artifacts at the Arawak Museum and Burial Ground, maintained by the Institute of Jamaica, indicates that these peaceful, friendly people were skilled fishermen. It is certain that they ate large amounts of shellfish which, in addition to their skills in gardening, could have enabled them to feed a large population. One big Jamaican village site has five thick layers of shells, pottery, and bones dating back to about 1000 A.D. There are many other such sites, especially along the Jamaican coastline, formerly occupied by Arawaks.<sup>26</sup>

Although Cook and Borah find that the Arawaks were gone by about 1570 in Hispaniola, a handful of them survived in Jamaica as late as 1598. Spanish governmental manuscript material, preserved at the Institute of Jamaica, reveals that in 1598 the government attempted to protect the scattered survivors "from the many that there were" by giving them an independent village sanctuary. This effort, however, was bitterly resisted by the local Spanish ranchers who succeeded in keeping the Indians in virtual slavery as fieldhands or cattleherders.<sup>27</sup> Later English records, some as late as 1700, show Indians as slaves or servants on Jamaican plantations, but there is no way to determine if these Indians were surviving Arawaks or other tribesmen.<sup>28</sup> Many Indians,

<sup>25</sup> On dispossession of native Hawaiians from their lands see, e.g., translations of "Native Testimony," I: Land of Papua, in Gov. Kekuanaoa's sworn testimony, Mar. 18, 1846, Hawaiian Archives, Honolulu. The "Thaddeus Journal," 1819-1820, Hawaiian Mission Children's Society, Honolulu, has entries through March and April 1820 which reveal the almost astonishing fear and hostility New England missionaries had toward native religions. Modern American Mormon missionaries are among the most enthusiastic proselytizers among native Hawaiian people. Their success is assured by the popularity of their operation of a Polynesian Cultural Center on Oahu.

<sup>26</sup> I am indebted to Professor Richard S. Dunn of the University of Pennsylvania for assistance in locating this Arawak burial site and for other help in carrying out my investigations in Jamaica.

<sup>27</sup> Translations from the Archivo De Indias, Seville, AGI, 54-3-28, Dec. 26, 1598, Audiencia de Santa Domingo Isla de Jamaica, Pietrsz Bequest, Institute of Jamaica, MST 29, Vol. 2. This manuscript volume also contains documents concerning the unsuccessful governmental project to create a special Indian village sanctuary.

<sup>28</sup> See the English estate inventories preserved at the Jamaica Archives, Spanish Town, Jamaica. The following inventories are representative of those listing Indian slaves: Inventory, Book 5, 48B; Inventory of James Pinnock Junior, enrolled at

after seventeenth-century wars in the British North American colonies, were sent as slaves to the British West Indies.

Thus, although the evidence is fragmentary and scattered among a number of different sources, it does show that native peoples have greatly suffered under the impact of the European invasion. In some cases, as clearly illustrated by the experience of Australian Aborigines and the Arawaks of the Caribbean, there was a sharp decline in native population after first contacts with whites, even the wiping out of indigenous native communities that accompanied dispossession and seizure of their homelands.<sup>29</sup> But a still larger transformation took place in the Western Hemisphere in the great demographic disaster involving the disappearance of millions of Indians following the first invasions of Europeans. The dimensions of this disaster have now been outlined by Cook, Borah, and Dobyns. It does indeed appear to be the tip of an iceberg of tremendous proportions.

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Mar. 22, 1700, *ibid.*; Inventory of Elizabeth Potts, Widow [Mar. 1700], 67, 67B, *ibid.*; Inventory of chattels and debts of Thomas Harry [Jamquier], [Mar. 1675], Inventory Book I, 1674-1675. The latter inventory is on microfilm.

<sup>29</sup> Jacobs, *Dispossessing the American Indian*, 19-30, 126-172, discusses the significance of interrelationships between dispossession and depopulation of native peoples. See also Douglas L. Oliver's learned study, *The Pacific Islands*, rev. ed. (New York, 1961), 1-80.