

Old Diseases in New World

Ecological Imperialism:

The Biological Expansion

of Europe, 900-1900

(Cambridge University

Press, 1986)

By JOEL E. COHEN

When white men and women set off from Europe to explore, colonize and subdue the earth, they did not travel alone. From the 10th century onward, they carried with them what Alfred W. Crosby, professor of American Studies at the University of Texas, Austin, calls their portmanteau biota—weeds and seeds, shoots and fruits, fleas and honeybees, rats, cats, dogs, goats, pigs, sheep, asses, horses and cattle; and, as influential as any of these, infectious and parasitic diseases: smallpox, measles, influenza, tuberculosis, sexually transmitted diseases, worms and hosts of others unknown and unnamed.

Where European efforts at colonization succeeded most dramatically, in North America, southern South America, Australia and New Zealand, the portmanteau biota collaborated with the human invaders in pulling the ecological rug from under the indigenes.

"Perhaps," Mr. Crosby argues in his new book, *"The Biological Expansion of Europe, 900-1900"* (Cambridge University Press, 368 pages, \$22.95), "the success of European imperialism has a biological, an ecological, component."

In 1291, two Vivaldi brothers, intending to circle Africa, sailed from Genoa past Gibraltar, to oblivion. The first Europeans to venture far into the warm Atlantic, they were soon followed by others, who rediscovered what Pliny in the first century called the Fortunate Isles: the Canaries, the Madeiras and the Azores.

In these little-known laboratories of colonialism, the Europeans learned how to Europeanize a land for their own ease and comfort. Passing ships seeded the Azores with sheep, cattle and goats. The captain of the colony on the island of Porto Santo in the Madeiras introduced a single female rabbit and her offspring. The resulting rabbits ate everything the colonists could grow. The colonists had to retreat to the island of Madeira, presumably leaving the triumphant rabbits to starve. Later colonists were to set off elsewhere similar population explosions of burros, rats, more rabbits and, of course, humans.

Burning Madeira's great forests and replacing them with sugar cane to feed an insatiable European market required slaves. The first slaves in the Atlantic slave trade were not black, but the olive-skinned Guanches of the Canary Islands.

The Guanches had to battle men on horseback when they had never seen an animal as large as a horse before. More lethally, the Guanches suffered from new illnesses that arrived with the Spaniards. On Gran Canaria, an epidemic destroyed between two-thirds and three-quarters of the Guanches. On Tenerife, another pestilence, perhaps typhus, obliterated all but a handful of them.

These were "virgin-soil epidemics," outbreaks of communicable diseases among people never before exposed to them. Such epidemics make infected individuals extremely sick before they die and kill nearly all the infected, often leaving too few survivors to care for the ill, bury

the dead, or plant and harvest food for the future. Those skeptical of the potential demographic and cultural impact of AIDS, now a virgin-soil epidemic in the U.S. and elsewhere, would do well to have their imaginations enlarged by reading about such epidemics here.

As the Guanches were defeated militarily, sold into slavery, killed by infection or exiled to die abroad, the Europeans transformed the Canaries. They brought cattle, chickens, ducks, grapes, melons, pears and apples. By 1520, the European elite considered the Canaries a part of Europe.

Europeans learned from the Canaries that they and their plants and animals could prosper famously in new lands. Once European sailors understood the prevailing ocean winds, they and their masters set to creating new ecological colonies. In the half millennium after Columbus, "Neo-Europes"—regions dominated by people of European origin accompanied by plants and animals of Old World Neolithic origin—replaced indigenous cultures in Canada and the U.S., Argentina and Uruguay, Australia and New Zealand.

Mr. Crosby suggests that two essential factors distinguished what have become

Bookshelf

"The Biological Expansion of Europe, 900-1900"

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Neo-Europes from other areas of attempted European colonization that are today neither demographically nor ecologically European, such as Greenland, the tropics, Siberia and southern Africa.

The first, and an obvious, factor is that the target had to have land and climate like those of some part of Europe. The second, far from obvious, factor is that the target had to be very remote ecologically from Europe. Sufficiently remote regions had few large predators and few small parasites, pests and plagues adapted to preying on Europeans and their portmanteau biota. The human inhabitants of such remote lands had no resistance to the disease complexes of dense Old World settlements.

This explanation calls for another. Why did today's Neo-Europes then have few large predators and few diseases of humans, animals or plants to which the invading European biota fell prey? I will not steal Mr. Crosby's thunder, revealed in a brilliant, frankly speculative chapter.

In telling his very readable story, Mr. Crosby combines a historian's taste for colorful detail with a scientist's hunger for unifying and testable generalizations. He exploits a truly astonishing range of primary and secondary sources, all documented in 48 awesome pages of notes.

Mr. Crosby shows that there is more to history than kings and battles, and more to ecology than fruits and nuts:

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