SCIENCE, TECHNOLOGY & ENVIRONMENT

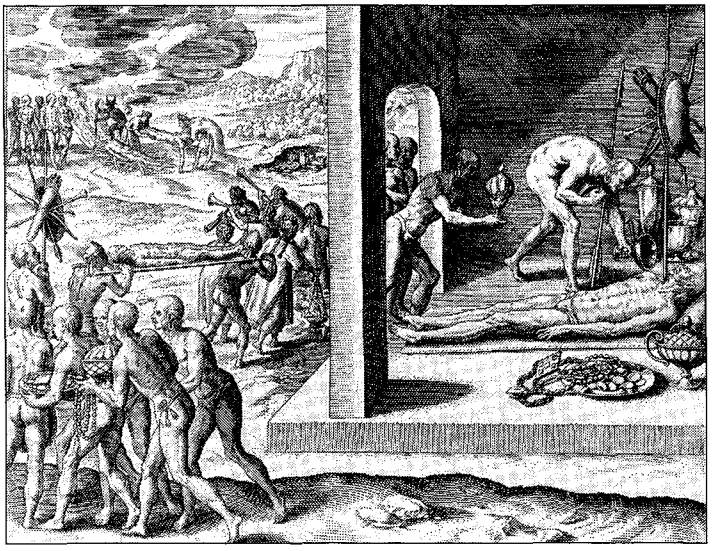
One-Way Plagues

"The Arrow of Disease" by Jared Diamond, in *Discover* (Oct. 1992), 500 S. Buena Vista St., Burbank, Calif. 91521.

Less than 200 years after Christopher Columbus set foot in the New World, the native American population of some 20 million had declined by perhaps 95 percent. The main killers were not swords or firearms but microbes carrying smallpox, measles, influenza, typhus, plague, malaria, and other diseases. But why, inquires Diamond, a UCLA physiologist, was the exchange of lethal germs so one-way? Why is it that, with the possible exception of syphilis (whose origin is still debated), no native American diseases spread back to Europe?

The answer, according to Diamond, has to do with the way in which acute infectious diseases evolved. To survive and spread, such diseases require large, dense human populations. The rise of agriculture and then of cities, in both the Old World and the New, provided the "crowd diseases" with a welcome mat. The rise of farming and cities also put humans in close contact with the apparent source of the disease-bearing microbes: domesticated animals. Among animals, as among people, infectious crowd diseases need large populations to survive, and this, Diamond writes, indirectly explains why the New World exported no deadly diseases to the Old.

In Eurasia, humans domesticated many herd animals, such as cows and pigs, that were rich sources of crowd diseases. In the New World, however, most large wild mammals became extinct at the end of the last ice age, and only a handful of animals came to be domesticated. Besides the dog throughout the Americas, these included the turkey in parts of North America, the llama/alpaca in the Andes, and the Muscovy duck in tropical South America. None of these animals was a likely source of crowd diseases. Muscovy ducks and turkeys do not live in enormous flocks or come into very close contact with humans; llamas never spread beyond the Andes.



Native Americans lacked immunity to Old World epidemic diseases as well as an understanding of how the maladies spread.

Fortunately for the post-Columbian Europeans, the extinctions about 11,000 years ago had removed "most of the basis for Native American animal domestication—and for crowd diseases" that might have made their way back to the Old World.

Sexing the Brain

"Sex Differences in the Brain" by Doreen Kimura, in *Scientific American* (Sept. 1992), 415 Madison Ave., New York, N.Y. 10017.

Are men and women virtually alike, aside from the obvious physical attributes? In the latest chapter of the nature/nurture debate, many feminists insist that most differences between the sexes result from sexism. Kimura, a psychologist at the University of Western Ontario, finds otherwise: The bulk of the evidence suggests that "from the start the environment is acting on differently wired brains in girls and boys."