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# Infectious Diseases and Nature's Revenge

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**T**here is an important philosophical perspective that must be appreciated to understand the current re-emergence of infectious diseases and to begin to think about a response. One could entitle it “Nature’s Revenge” or “Nature versus Art.”

We are, essentially, an unnatural species. With the evolution of intelligence, the transmission of culture, the development of technology, and the building of social institutions, humans are unique among all creatures on earth. We have expanded far beyond the bounds provided by nature. We use technology to augment our numbers, approximately a thousand-fold over what a natural species of our capabilities would have achieved.

We have created artifacts—crowded cities, health-care systems, medical technologies—to support our lives. We also have an extraordinary propensity for travel. A million passengers a day cross interna-

**The human species has used its technology to augment its numbers approximately a thousand-fold over what a natural species of our capabilities would have achieved. We are victims of our own success.**

tional boundaries by air alone.

Armies, refugees, truckers, and the normal pedestrian all contribute to an endless mixing of the species.

This makes a wonderful breeding ground for nature's germs.

In the past, we have used our technologies and artifacts to triumph over these germs, over

infectious disease. As we have become complacent, however, what we call the emergence of infectious diseases is really the prospect of regression, of falling back to the time before technology gave us our first victories. We have nodded off on our watch. But, the bugs aren't sleeping. A very powerful process of natural selection is operating, and they will exploit every available niche that we provide. And, without applying technology and defenses that we know over time to be successful, we will provide more and more niches as time goes on.

**We may drop our vigilance against infectious diseases, but the bugs are not sleeping. A very powerful process of natural selection is operating, and they will exploit every imaginable niche that we provide.**

Having once committed ourselves as a species to a highly unnatural course of development, one that meant a life span of thirty or forty years beyond the years of procreation, having developed all the artifacts of civilization, having decided we are going to rely on our wits for survival, we cannot afford to drop our vigilance. No other creature on earth can compete with our species, except ourselves and microbial predators. We are in a necessarily constant struggle with those predators, and we had best not drop our guard. ■