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About 3,300 words

## RECONSIDERING ECOTOURISM

by  
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Are you a vector?

Presumably, few people desire assisting the spread of disease, but consider this scenario: you are awaiting a flight to Peru in bustling Miami International Airport. You grab a hot dog, and while slathering on the mustard a passerby inadvertently sneezes on your dog. Having shelled out four bucks for it, you eat it anyway.

You board your flight, arrive less than six hours later in Lima, and catch an hour-long connecting flight to Cuzco. There you meet a handful of other ecotourists heading into the Amazon. You all board a final puddle-jumper to Boca Manu, in the heart of one of the last reasonably undisturbed sections of Amazon rainforest. Within nine or ten hours of leaving Miami, you are extremely remote. That night your Machiguenga guide and you share a bottle of beer, then another.

Meanwhile, the Miami sneezer, who was returning from a year of missionary work from deep in Zaire, begins to feel a fever coming on. He has brought back a previously unknown strain of fever, which has a 48-hour incubation period. His sneeze gave it to you at the airport. You gave it to your Machiguenga guide over beers, and he has just taken it back to his village. Before anyone knows they are sick, a rare African virus has made its way into the heart of the Amazon. The results could be a pandemic, if eventually spread among the Amazon indigenous groups, which would destroy much of the remaining native populations.

A worst-case, scenario, yes. However, many less spectacular yet quite plausible risks lurk. More likely is one of the soaring numbers of tourists carrying in a less exotic but nonetheless quite lethal viral infection.

"The scenario of taking an African disease into the Amazon is at the end of the possibility spectrum, but it is conceivably possible," said Bob Howard, a spokesman for the National Center for Infectious Disease at the Centers for Disease Control and Prevention in Atlanta. He noted the more common forms of illness would be more likely in a fast-paced world: "this is part of the challenge for us (at the CDC) that rapid travel has made possible. What we (as tourists) could carry into the rainforest runs the range of infectious disease; parasitic, viral and bacterial."

According to Ted Macdonald, an anthropologist with Harvard's Center for International Affairs who has spent years studying Amazon natives, the most likely threat ecotourists pose is bringing in new strains of upper respiratory illnesses.

"People are likely to leave the northern climes of Europe and North America during the colder months between November and February, at the same time the new flu strains are passing through here," said Macdonald. While he considers the African transmission scenario as "not off the wall," he said he would also be more concerned with the ordinary viral or bacterial strains ecotourists could carry.

"The threat to the indigenous populations depends in part on each group's degree of exposure to outside disease. The main threat now is most likely upper respiratory illnesses--colds, coughs and influenzas," which are usually brought in by loggers, miners, construction crews, or even neighbors, he notes. Still, these strains would be already present in the general area, while an ecotourist jetting in from thousands of miles away could bring in something completely new, he said.

Before we go further, note that ecotourism is defined here in its broadest possible sense: those traveling abroad to experience exotic flora and fauna, native populations, geological formations or anything else in areas generally beyond the reach of tourist hordes, hotels, air conditioning and fast

food. Ecotourists often will come in contact with indigenous populations, either incidentally or intentionally, but this contact should be of concern to anyone going abroad, especially to areas like the Amazon.

Consider the historical implications. After Columbus arrived in the New World, disease took a staggering toll on the natives, far heavier than any form of warfare or slavery. Estimates range from 7 to 57 million aboriginal peoples dead from smallpox, measles, and a host of diseases which by all accounts were commonplace among Old World populations.

How could ecotourists contribute to a modern Amazon scourge? In a 1993 article in "American Scientist," ecologist Richard Levins and others help address the question:

Modern transportation has cut worldwide travel time to almost anywhere to within a few days at most (less than the average incubation time of many pathogens), therefore presenting a less significant barrier to disease spread than before. Manmade transportation can speed pathogens many thousands of miles in a few days. The net effect of so much human migration is that diseases once confined to small regions of the globe can potentially spread to many regions. <sup>(1)</sup>

Air travel, through crowded airports and in increasingly less-healthy aircraft, combined with access to increasingly remote sections of the planet, along with an increasingly adventure-travel-hungry population eager to contact previously isolated groups, are all ingredients in a potentially hazardous stew, especially for the Amazon natives.

Take a deeper look into Western Hemisphere human history. We focus on Amazonia because of the unique genetic makeup which most Native Americans shared, and which many Amazonian populations still maintain.

The timing of the first Siberians crossing into the New World is hotly debated in archaeology, but presently there is no conclusive evidence for occupation before roughly 13-16,000 years ago. This is well before agriculture or any kind of civilizations emerged.

Most likely, a few small bands of Asians moved into a New World "Eden" free of most disease which offered easy hunting. The transition through the cold arctic tundra served as a natural quarantine, killing off tropical and many temperate parasites, eliminating related diseases such as malaria and sleeping sickness. Presumably, only the more hearty members would have survived the treks, culling the human stock somewhat of other disease and illness: the survivors then thrived in the new paradise.<sup>(2)</sup>

By 10,000 years ago the Bering land bridge was re-submerged, halting for many centuries further immigration. (Type O blood in Latin American Indians occurs 95 to 100 percent, suggesting that only relatively few Asian tribes made the trip.<sup>(3)</sup>) For subsequent millennia there would be no flow of disease and their resistant genes as in most parts of the world, no sharing of antibodies and antigens. While there were various diseases present in the New World, the homogeneous, isolated populations were vulnerable to attacks of new pathogens which might appear.

It was only a matter of time. Funded by Queen Isabella in 1492 to find a new route back to Spain, Christopher Columbus crossed the Atlantic and landed on Hispaniola instead. He returned to the New World in 1493 with 17 ships, many foreign plants and livestock and 1,200 men. In 1498 and 1500 he made his third and fourth voyages. Rapacious Europeans heard the wonderful tales of the rich new world and came in droves.

Historical accounts trace the ravages of new pathogens brought from the Old World. In 1519 smallpox decimated the Indians of Santo Domingo, killing up to half the natives. Soon it spread to Puerto Rico and other islands, then to the Yucatan. It took an appalling toll among the Indians of Central America, then spread down the Andes and was killing Incas by 1525, seven years before Pizarro overthrew the empire.<sup>(4)</sup>

The list of Old World diseases which caused havoc in the New World include smallpox, chicken pox, measles, influenza, bubonic plague, diphtheria, typhus, cholera, scarlet fever, yellow fever, whooping cough, malaria and possibly typhoid fever. Trichinosis probably came with imported pigs. Fourteen to

17 major epidemics were recorded between 1520 and 1600. <sup>(5)</sup>

The natives were vulnerable because, for centuries, epidemics occurring in Asia, Africa and Europe--caused by viruses, bacteria and parasites--did not cross the oceans. Thus, American populations had remained free from attack of such epidemics and never developed any specific immunological defenses.

Researchers note that even though American natives are generally able to produce specific antibodies to new antigens, the lack of nourishment and water during illness, ignorance of treatment, general cultural disorder and lack of anyone healthy to treat the sick all contributed to high mortality. The lack of even minimal care and starvation--because all were taken ill at once--led to an immense death rate.<sup>(6)</sup> Mexico dropped from 25 million people on the eve of the conquest to 16.8 million a mere decade later. Some estimates reach 95 percent of natives killed by Old World disease. Even later, in 1699, a German missionary in Mexico was quoted as having said "Indians die so easily that the bare look and smell of a Spaniard is enough to cause them to give up the ghost".

The Indians' America was, by the end of the eighteenth century, nearly completely destroyed. The results were disintegration of culture and subsistence patterns, the collapse of exchange and rapid disintegration of extra-village relationships. From this process of rapid change, the current Amerindian cultures were created.

The native populations remain under stress and are at risk to this day. Currently, the health and welfare of native Amazonians is affected by numerous external factors over which they have little or no control, such as national governments' construction of dams and highways, and the ensuing deforestation and colonization. By the year 2000 the Amazon countries will add a minimum population of 48.5 million people from 1990. Population pressure is likely to have an enormously destructive effect on both the Amazon environment and its native inhabitants. <sup>(7)</sup>

Several studies point out that the Amazon population, while there are some patterns of variation, is still relatively homogenous genetically, and thus, still at risk on the whole from introduced diseases. Case studies assert that it is not uncommon to find 85 to 90 percent of any group destroyed by a rapid series of epidemics. The results are no one to tend the crops, teach essential rituals or perform tribal ceremonies. New pathogens are being introduced all the time, and dietary changes--an increase in the consumption of carbohydrates and a decrease in fiber and protein intake--add a totally new dimension to the epidemiological picture of these groups.<sup>(8)</sup>

Tragically, a major cause of mortality among some groups, especially in early childhood, is diarrhea. Introduced diseases which are a threat in Amazonia today include measles, chicken pox, tuberculosis (from the highlands), malaria, yellow fever, Chagas's disease and Leishmaniasis, onchocerciasis, schistosomiasis, helminthiasis... the list goes on.<sup>(9)</sup> But as Harvard's Macdonald points out, it is the simple, upper respiratory viruses which are causing the greatest damage.

Given the activities of gold miners, rubber tappers, missionaries, poachers, highway crews, engineers, oilmen, traders, bandits, adventurers and settlers in the past few generations, the number of groups who escaped contact with outside disease is probably very small. Still, there are new mutations and pathogens around, and many contacted groups have not experienced the full range of pathogens existing in other areas. The changing nutrition patterns and lack of medical care create a greater risk of suffering once they contract the diseases.

Ecotourists in this context will be of prime concern, as they are likely to increase in significant numbers into Amazonia. In travel industry data, world ecotourism was expected to grow 30 to 40 percent between 1990 and 1995, compared to a forecast of eight percent growth in overall tourism. The World Tourism Organization contends most of the 86 percent (sic) increase in worldwide tourism by the end of the century will come from ecotourists.

'Here is a staggering figure: According to the International Air Transport Association, there were 63 million international air passengers in 1980, quadrupling to 280 million by 1990. The figure is

expected to approach an astronomical 600 million by the year 2000. How many of these will be ecotourists? How many will travel with a sniffle or sore throat?

At the same time, air travel is getting much less healthy. Airlines are circulating less fresh air less often into passenger cabins in order to save fuel.<sup>(10)</sup> Some flu outbreaks have been traced to aircraft, and the CDC was investigating a case in 1992 where tuberculosis was contracted by 23 crew members from a single flight attendant.<sup>(11)</sup>

Reports are only beginning now to trickle in: a study by anthropologists in 1993 on the geographic spread of measles on the West Indies island of Dominica found that tourism is undoubtedly important in the spread of infectious diseases on the island.<sup>(12)</sup>

So what can the conscientious ecotraveler do? CDC spokesman Howard said healthy travel is common sense: keep immunizations up to date, if sick, don't travel or rest in bed and don't mix with others, drink bottled water and eat properly prepared food, and alert your doctor upon return if you fell ill while abroad.

"We live in a global village," he noted. "What we live with here, we can take with us elsewhere--and we can bring things back from other places." He added, for example, that the CDC has been following with some interest new diseases such as cyclosporin strains brought back by travelers from Nepal in recent years.

"Tourists should be very cautious, especially if they are going into an isolated area, or if they have any kind of flu or cold," added Harvard's Ted Macdonald. "You have to ask yourself, 'am I going to put the population at risk? I could be responsible for a child or elderly person's illness or death if I don't act in a responsible manner.' It is up to the individual."

Still, Macdonald said that ecotourism is overall a pretty benign activity to date in transmitting disease, and the mere promotion of tours has helped bring the world's attention to the plight of indigenous

peoples.

"Even though the tourists might not be well informed, they are usually sympathetic," he explained.

"The promotion of ecotourism has helped."

The onslaught does not need to be fatal: the accompanying sidebar outlines how tourists can better plan an ecotour, individually or in a group. Macdonald pointed out other areas of the world potentially at risk: islands in the Philippines and Indonesia, Papua New Guinea, lowland Central America and the Taiga forest area of southern Siberia, home to many of the world's remaining, isolated indigenous populations.

Travelers need to understand the increasing risks posed by ecotourism. Ironically, most guidebooks go into great detail about protecting travelers from local illnesses, yet little is said about the travelers bringing their own illnesses to the natives. Nature has a random and distressing habit of making seemingly remote risks become real, and it will take more vigilance than simply covering our hot dogs to ensure travel remains healthy for everyone.

sidebar

Deborah McLaren, the coordinator for the "Rethinking Tourism" project, said ecotourists need to understand what is happening behind the scenes in the industry. (Her project works to provide educational resources to indigenous peoples to help them organize and develop tourism on their own terms and for their own benefit.)

"This is a life or death issue for people, and we need to start considering the issue (of larger-scale ecotourism)," she said. "Often the natives face haphazard development with many social and environmental impacts. The whole concept of our traveling to other places and focusing solely on protecting our own health is imperialistic. The question about what kind of disease we spread among



people in developing countries--especially indigenous peoples--is an extremely important and timely one. The travel industry needs to be involved in health issues much more than they are."

Her suggestions are for ecotourists to check tour companies and ask lots of questions: How long have they been in business? How they go about providing tours? Do they have a code of conduct? Do they provide cross-cultural orientations? and the like.

McLaren is also writing a book soon to be published, tentatively titled "Rethinking Tourism and Ecotravel" which is a critical analysis of the subject. It should be good reading for responsible travelers.

Dianne Brause, founder and director of One World Family Travel, has been writing about responsible travel for the past decade. She agrees that responsibility lies mainly with the traveler asking lots of questions.

"Ask the tour operator about their philosophy. Find out where the money goes. Does a percentage of the profit go towards environmental or cultural projects, particularly those run by the people who are to be visited? Do they use local guides?" she said.

"For me, it is extremely important that I am actually invited by the village or the community to be there. They are willing to risk their people with the group I am bringing in, because they think it is appropriate," Brause explained. She also suggests travelers get the names of five former clients of a tour operator, and call them, to see if the company behaved in a responsible manner.

"Ask where the money goes, and ask whether they have been invited by the group to visit," Brause concludes. "That is the epitome of turning around colonialism."

The Ecotourism Society, a non-profit group based in Vermont, publishes guidelines on how to choose an ecotour operator. The guidelines include general information, questions to ask, and a list of

resources for further reading. Another organization which will provide similar information is the Center for Responsible Tourism, San Anselmo, CA. Other organizations to contact include Global Exchange, San Francisco, CA, and Cultural Survival, Cambridge, MA.

Those traveling independently will have to consider where they are going and to what extent the natives have already contacted tourists. Consider your own health status and keep in mind the local accessibility of health facilities for the natives. You may be able to hold off illness for a day or two until you can get to some antibiotics: what about the villagers you left behind?

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(10) For a summary of airliner air quality, look up Michael Castleman's article in *Sierra* magazine, May-June 1995, volume 78, pages 16-18

(11) Taken from Garrett, Laurie, 1994, *The Coming Plague; Newly Emerging Diseases in a World out of Balance*, New York, Penguin Books. This is an interesting and extremely thorough account of new disease in the past fifty years or so; highly recommended

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