



The Protozoan Zone

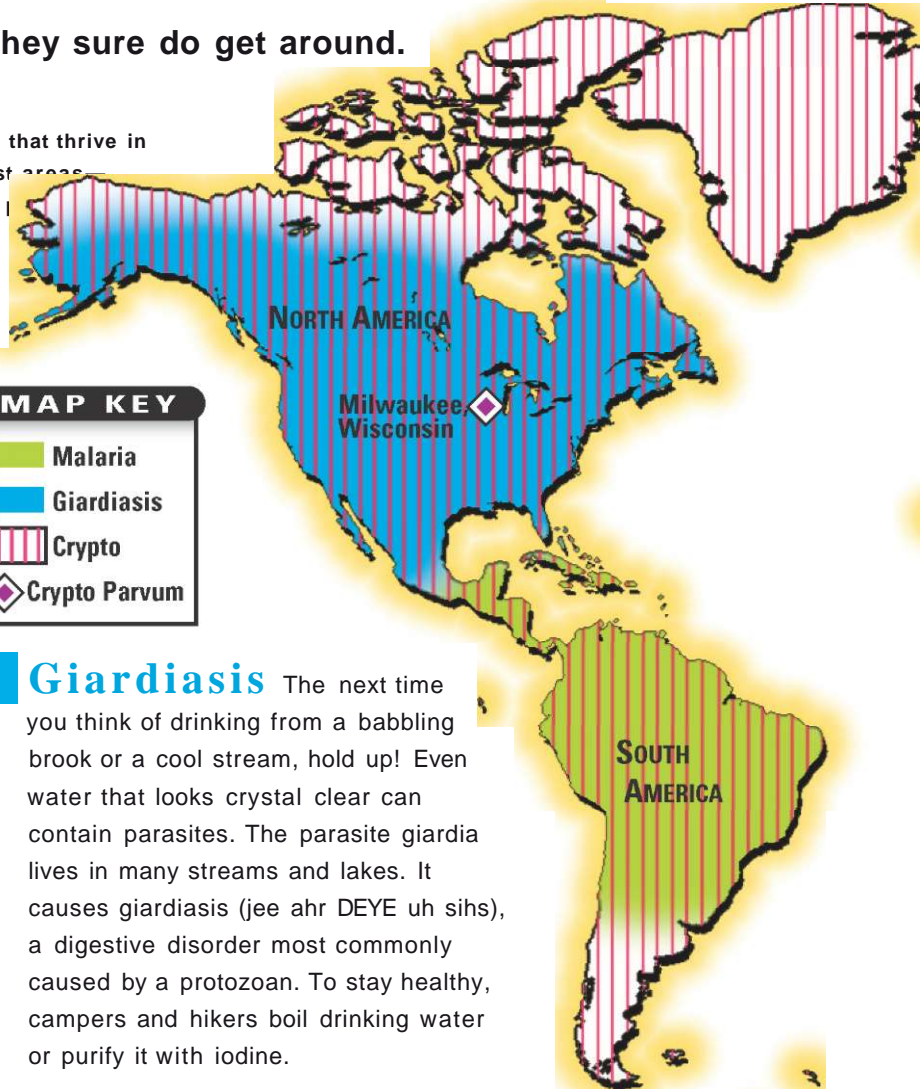
Some protists are tiny, but they sure do get around.

Consider the protozoa, one-celled protists that thrive in seawater, freshwater, soil, and other moist areas, even in cells and fluids of other organisms. Many are parasites, meaning they live inside hosts, or other organisms. Some protozoa are harmless, but others are deadly and cause disease in every corner of the world by spreading through insects, animal waste, unclean water, and contaminated food.

Crypto Parvum

Sometimes a protozoan can strike drinking water. In 1993 a species of *Cryptosporidium* (krip tow spo RIH dee um) made its way into the water supply of Milwaukee, Wisconsin. About 403,000 people fell ill with *Cryptosporidium parvum*, or crypto parvum. High temperatures kill this parasite, so people often boil drinking water during such an outbreak.

Malaria Malaria is the world's worst tropical disease. Blame it on four species of *Plasmodium*, a protozoan that grows inside the *Anopheles* (an OFF el eez) mosquito. When a female mosquito bites someone, the protozoan moves into the person's bloodstream, reproduces, and causes illness. Malaria is a big public health problem in developing countries, where mosquitoes breed in ditches, swampy areas, and standing water.



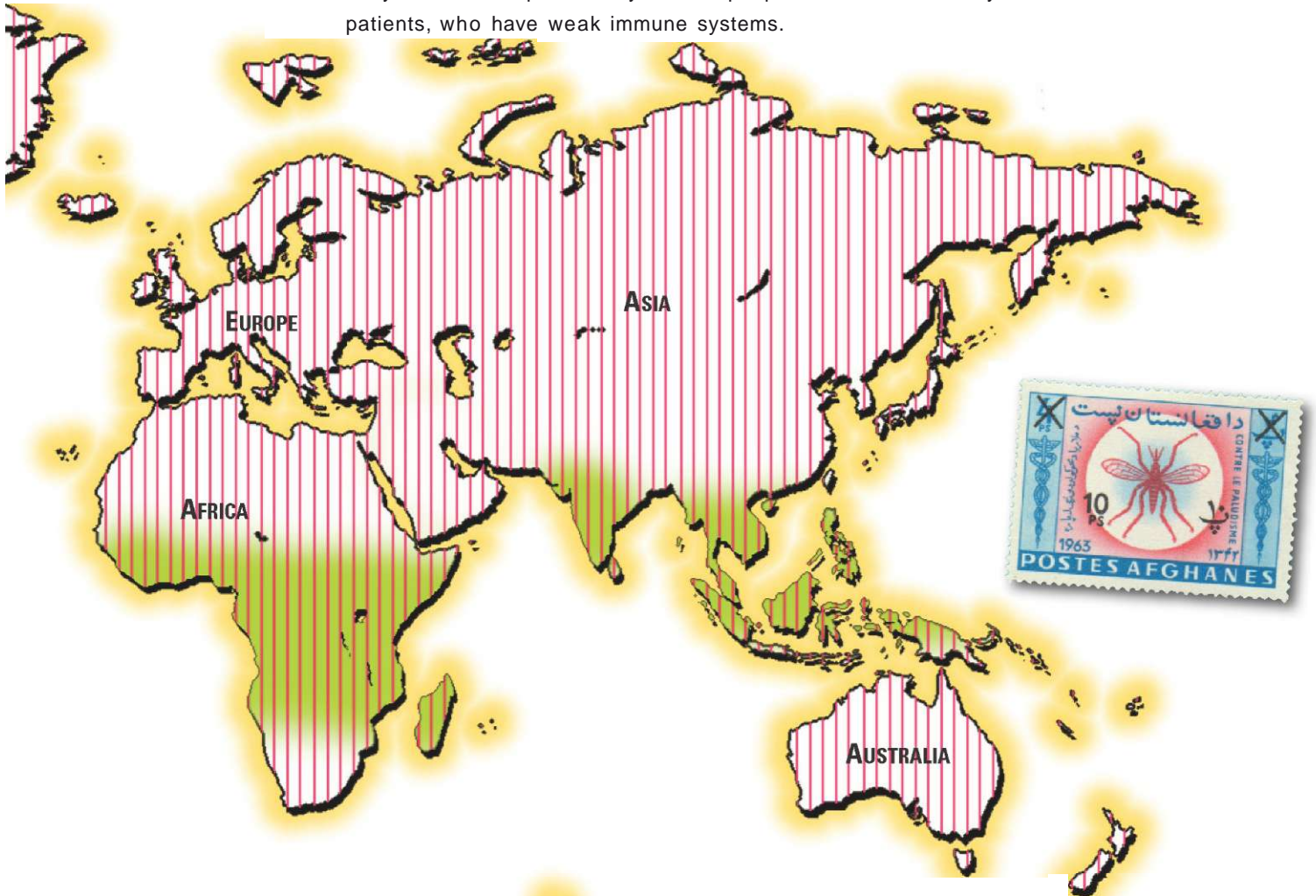
Giardiasis The next time you think of drinking from a babbling brook or a cool stream, hold up! Even water that looks crystal clear can contain parasites. The parasite giardia lives in many streams and lakes. It causes giardiasis (jee ahr DEYE uh sihs), a digestive disorder most commonly caused by a protozoan. To stay healthy, campers and hikers boil drinking water or purify it with iodine.

KISS OF DEATH

Chagas Watch out for the kissing bug: It bites the lips, eyelids, or ears of a person sleeping. The insect carries a trypanosome protozoan and spreads the disease called chagas (SHAH gus) to humans through its waste. Inside a human host, the protozoan damages the heart. Chagas is the main cause of heart failure in South and Central America. As the rain forest is cut down, kissing bugs are losing their habitat. Many now live in cracked walls and thatched roofs in houses bordering the rain forest.



C r y p t o Some protozoa spread to people who live and work closely with animals. Take *Cryptosporidium*, which breeds in cows, dogs, or cats. People can come down with cryptosporidiosis—crypto, for short—if they are exposed to animal waste. The protozoan causes diarrhea, fever, and dehydration. It is particularly bad for people such as the elderly and AIDS patients, who have weak immune systems.



Activity

African Sleeping Sickness

Like the kissing bug, the African tsetse (TEET see) fly carries a trypanosome protozoan. It enters the bloodstream through a bite; there it multiplies and damages the nervous system. It's called sleeping sickness because it makes people extremely tired; it also causes sore muscles and severe headaches. Although treatable, sleeping sickness kills many people in areas that lack well-equipped health clinics or hospitals.



DISEASE AND NUMBERS Research one of the diseases shown on the map. Answer the following questions:

1. In what 10 countries is the disease most prevalent?
2. How many cases have been reported in each country in the past five years?
3. When was the last major outbreak? Are reported cases decreasing or increasing?
4. What percent of the population is affected each year? What is the death rate from this disease?