

NEXT?

by Cynthia Levinson



Wild animals such as the palm civet and bay duiker are eaten in Cameroon.

The hunter showed his family the mustachioed monkey he had snared for dinner. Before cooking it, he dripped a spot of its blood onto special paper, which he labeled and hung to dry. He knew that by doing this, he might keep his children from getting sick. He could also help keep you from getting sick. How could a bush-meat hunter in a village in the central African nation of Cameroon protect the health of people around the world?

Some of the most dangerous diseases begin as harmless viruses in animals. For example, simian immunodeficiency virus (SIV) does not make the chimpanzees who carry it sick. In people, though, SIV has mutated into HIV (*H* for “human”), which can cause acquired immune deficiency syndrome (AIDS). Other viruses, such as bird flu and Rift Valley fever, can kill both the host animal and people.

A disease that moves from animals to people is called a *zoonosis* (*Zoo-NO-sis*). This transfer from animals to people can happen when blood or saliva from an infected animal enters a person’s bloodstream, for instance, through a cut. The most deadly zoonoses are like AIDS, which not only jumped from animals to people but also spread from human to human. You don’t need to touch the fluids from a monkey with SIV to get sick. You can be infected by another person. Infectious zoonoses can spread quickly, causing a pandemic (*pan-DEM-ik*), a worldwide epidemic.

(continued on page 16)



Hunting and butchering wild animals can be risky. Joseph Dikko speaks with people in Cameroon who handle these animals.



Science can save lives.

Dr. Nathan Wolfe, a biologist, is working to prevent the spread of deadly viruses.

QUARANTINE

CONTAGIOUS



Don't touch!

In many parts of the world, people raise chickens and ducks, and children are often responsible for caring for them. This poster is part of a campaign to educate parents and children that dead or sick birds could be infected with avian flu and should not be played with.

Dr. Nathan Wolfe, a biologist at the Johns Hopkins Bloomberg School of Public Health, worries that the next pandemic will begin with a virus that will first jump from nonhuman primates to people who kill and handle the animals and then spread to other people. He has already seen the first signs, and he wants to stop the spread before it goes too far.

“The objective,” he says, “is to move science from responding to viral movements to understanding pre-emerging viruses.”

The next deadly global disease, he reasoned, will probably come from a virus “hot spot” — a place where humans and other primates interact. He decided to research forests (which are called “the bush”) in Cameroon because hunters there kill and butcher wild bush meat. Also, new roads built to transport logs allow hunters to carry bush meat out of the forests into markets in towns.

If hunters sell infected meat, more people will be exposed to viruses.

To search for and stop zoonoses, Dr. Wolfe and a colleague, Matthew LeBreton, explained to hunters the risks if an infected primate’s blood entered them through a bite, scratch, or wound. The scientists asked them to collect blood samples from

WANTINE

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animals they kill. They also ask permission to take samples of the hunters' blood.

The scientists provide chemical filter paper on which the hunters drip animal blood until the spot is the size of a quarter. The hunters label the paper with the type of animal and the date and place it was killed. They must dry it carefully so that the sample does not become moldy, and then seal it in an envelope. Every several months, LeBreton visits villages in the bush to collect the animal blood samples. He ships them in ziplock bags, kept dry with beads of silica gel, to Johns Hopkins University in Baltimore, Maryland, for analysis. Scientists there look for viruses in the animal blood. They also look for animal viruses in hunters' blood.

The scientists made a surprising and frightening discovery — simian foamy virus (SFV) has jumped from animals to people. SFV is a zoonosis.

"Such transmissions had never been documented in the wild," Dr. Wolfe says.

Like SIV, SFV does not harm the host animal. It does not yet harm people, either. But could SFV mutate into a deadly disease, the way SIV mutated into HIV/AIDS? If this new virus can be transmitted from one person to another and then

Tiny, but deadly. This is a magnified view of one type of bird flu virus.

another, it could start the next pandemic.

The scientists and hunters are working together to prevent this.

Scientists encourage hunters to trap other animals such as giant rats rather than primates, for food. The hunters' labels show success: they are killing fewer primates. Hunters are also learning how to butcher animals safely, not to handle fresh meat if they have a cut, and to wash their hands with soap.

The animals' blood samples will show how far and how fast SFV spreads. If necessary, an antiviral medication could be developed before it's too late.

"In a hundred years," Dr. Wolfe says, "I don't want people to look back and say, 'They went chasing after diseases too late. They didn't pay attention until the diseases were global.' That's not the right way."

Cynthia Levison lives in Austin, Texas, and Boston, Massachusetts, where she writes fiction and nonfiction for young people. She also works with schools on curricula.

