

Geography in the News™

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Lineback



MALARIA: THE PLAGUE OF THE TROPICS

For the second time in six years, a North Carolinian has died of malaria. Both cases were contracted in Africa, the most recent being a young woman from North Carolina A&T University visiting Ghana. Both cases are tragic because most malaria cases are preventable and curable.

More than 300 million people worldwide contract the disease annually and an estimated 1.5 million die. Most malaria sufferers survive, but those who contract it for the first time usually have severe cases and may die, if not treated. Babies, pregnant women and others with suppressed immune systems are particularly vulnerable and have high fatality rates from malaria.

Malaria was once believed to be eradicable using pesticides, such as DDT, to eliminate mosquitoes. The disease has survived mostly in the tropical world despite modern chemical warfare. Science has been able, however, to deliver medications that prevent or cure the disease, if strictly administered.

Malaria is a parasitic disease particularly prevalent in the tropics and subtropics. The parasite is a protozoan transmitted between humans through the bite of the female *Anopheles* mosquito. The protozoa development involves three stages. The first occurs when the mosquito, serving as the vector, bites a person who has active malaria. In the mosquito's stomach, the protozoa multiply. In the second stage, the mosquito bites a new victim and transmits malarial protozoa into the victim's bloodstream. The protozoa travel to the victim's liver and multiply in clumps.

In the third and final stage, these

masses burst and release large numbers of protozoa into the bloodstream, invading individual red blood cells. The result is sudden fevers, as large numbers of infected red blood cells rupture. The victim suffers high fevers (106 F., 41 C.) and violent chills. The episode ends with intense sweats that help lower fever. Victims may have recurring episodes, unless treated with modern drugs. Re-infection is also possible, although successive rounds of symptoms are usually reduced, as victims acquire some immunity.

There have been successes in breaking the malaria cycle in some parts of the world, notably in the southeastern United States. By aggressively treating infected individuals and reducing mosquito-breeding habitats, health officials have been able to eliminate the sources of protozoa for mosquitoes.

The World Health Organization reports that malaria is endemic in more than 100 countries. Eighty percent of the world's malaria cases occur in Africa south of the Sahara. Central and tropical South America and Southwest, South, Southeast and East Asia also are endemic areas, meaning that there are reservoirs of malarial cases scattered across these regions. Even in desert regions of the world, such as Egypt, Syria and Iraq, irrigation ditches are havens for breeding mosquitoes and endemic malaria occurs.

Malaria is usually preventable and curable, through the use of oral medications derived from quinine and cinchona, two naturally occurring plants. Preventative regimens begin weeks before a visit to an endemic area and

continue for several weeks following. Strict attention to taking the tablets or capsules on time and for the prescribed duration is essential.

Individuals who live in endemic areas may find the cost of medication much too high. They may simply rely upon devices and actions to avoid mosquito contact, including use of mosquito netting and avoiding outdoor activities in late evening and early morning. Still, malaria is debilitating to those without access to medication.

We do not know precisely what happened to the N.C. A&T student, Julia Scott. She contracted malaria in Ghana and died after a brief malarial episode. We do know, however, that the Feb. 20, 1998, death of a 44-year old North Carolina man occurred because he refused to take the preventative medication during a six-month visit to Zimbabwe, Africa.

Two critical lessons can be learned from these two tragic deaths: strict attention must be given to preventative medication for travelers to malarial-endemic regions and malaria symptoms require immediate medical attention. Trifling with this disease can be deadly.

And that is Geography in the News™. May 14, 2004. #728.

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Additional Sources:

http://www.who.int/ith/chapter05_m08_malaria.html

Endemic Malaria

