

ANIKA BANK

Brutal: Laser kills female mosquito!

Mankind's greatest enemy is tiny, brown, and very hard to catch. But now researchers have developed a new weapon which they hope will finally give them the edge they need to defeat the aggressors.

It's a battle which has been raging for centuries—an army of blood-sucking creatures just six millimeters long on the attack against enormous opponents. The aggressors are fast and agile, and their opponents' blows often fail to connect. A single bite from this insect can be lethal, and some 600,000 people die every year as a result. The enemy is the malaria-carrying Anopheles mosquito, and the tropical disease it transmits is often fatal, especially in the developing countries of sub-Saharan Africa. Without treatment, malaria can kill in a matter of days. The only way to stay safe is to avoid being bitten. But the only means of achieving this are mosquito nets and insecticides. Both of these defenses can only be used indoors, and the aggressors quickly build up resistance to the chemicals. But hopes have recently been buoyed by a new development from the US funded by the Bill & Melinda Gates Foundation: a "photonic fence" which kills mosquitoes by zapping them with a laser. When a mosquito flies into an area protected by a photonic fence—for example a school, hospital or village—cameras on both fence posts detect the intruder's shadow in the light between the posts. The system immediately fires a non-lethal laser beam at the insect and uses the reflected light to determine its size and the frequency at which its wings are beating. This information tells the system whether the intruder is an Anopheles mosquito and also identifies the insect's gender. This is an important distinction to make because only females bite. Once the mosquito is confirmed as a female Anopheles, the system fires a second, lethal laser beam, shredding the insect in mid-flight. All the components used in the fence come from inexpensive consumer electronics, a fact which will hopefully make the fence affordable in malaria-stricken regions. Who would have thought that the decisive weapon in the battle against malaria would turn out to be a laser diode for a Blu-ray player?



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