

Mosquito Swarms Coming Our Way?

The warmer-than-usual winter we experienced this year was a boon in many ways. It definitely lowered heating costs and it even led to a glut in the natural gas markets. It also was a boon for a minute insect, the mosquito, many more of which survived the winter months than usual. What this means is that we may be visited by a plague of mosquitoes this year in proportions never before experienced. Look out—we've warned you.



-Aryeh Cohen



After the historic snowstorm that struck the New York area early last autumn, I went outside to assess the damage to my property. Fallen trees lay strewn everywhere. My neighbor lost the two maple trees that used to provide shade and greenery throughout the summer. The unseasonable snow caught the trees when they were still weighed down with boughs full of leaves. As a result, the added weight of the heavy, wet snow trapped in the canopy of green caused the trees to collapse.

A passerby who noticed me standing outside came over to me. "Look at the *chesed*

The most common mosquito in our region is known to scientists as *Culex pipiens*. It is infamous as the most common carrier of West Nile virus.

of *Hashem*! Now, we understand better why *Hashem* makes the trees shed their leaves in the fall before the arrival of the winter snows."

I recalled that incident several weeks ago when I first heard about a problem we are facing this year. According to New York health officials, most mosquitoes that plague us throughout the summer months are killed by the harsh winter climate. However, in milder seasons the mosquitoes may remain alive, ready to stage a comeback for another round. Since this past winter was unusually

mild, a much larger-than-usual percentage of the mosquito population may have survived. If so, the summer will bring far greater swarms of mosquitoes to contend with. (By the way, the mouse population is another group of pests kept in line by the winter cold. Some exterminators in New York are reporting an uptick in business this year.)

That the mosquitoes are coming is a foregone conclusion. The only question is when and how many.

There is another unknown: How prepared is New York for the epidemic? A massive influx of mosquitoes is likely to cause an increase in the spread of certain diseases, even life-threatening ones—not to mention a lot more itching and discomfort.

One thing is for certain: New Yorkers are not ready to be eaten alive. (Like some rodents, biologists describe mosquitoes using the term "commensals," Latin for *at one table*. In other words, they share our source of nutrition. Quite literally. We are their food!)

If so, what—if anything—are officials doing about it?

Mosquitoes in the Sewers

The mosquito is heavily dependent on pockets of water to complete its life cycle. Females of all mosquito species lay their eggs only in water. It is the survival of those eggs through the winter that ensures mosquitoes will survive the following year. With the arrival of warm—and especially humid—weather, the larvae hatch from the eggs and in no time there is a fresh crop of mosquitoes.

Mosquitoes begin their lives in small puddles in parks, on construction sites, in old tires—wherever water collects. It may be a vast source of water such as a swimming pool or a minute amount in an inverted bottle cap. But the largest single source of water for sheltering mosquito eggs is in sewers. And this is what concerns health officials most.

The sewer openings that drain rainwater and other waste from our streets empty into

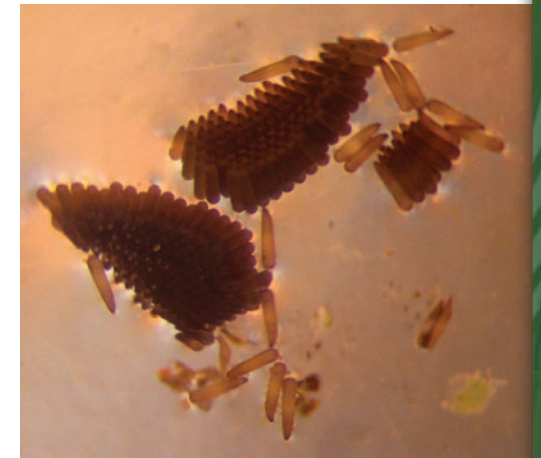
cement structures known as catch basins. These are lower areas that the water has to pass over to reach the central sewer lines that lead the waste away from the city. The catch basins serve to collect heavier matter such as stones or other solids while the water flows over them. Every so often these basins are cleaned out by workers who enter manholes to reach them.

The problem is that the depression is always filled with water. This provides fertile ground for mosquitoes to lay their eggs. Since these areas are also below ground, they are not as affected by the winter freeze. The dirty water is a perfect setting for mosquito young to hatch in. In fact, we could not have done mosquitoes a greater favor than by providing them with endless numbers of catch basins.

But there is much more to it. We have created innumerable cracks and tunnels to collect water where mosquitoes can lay eggs. Many of these are sheltered from the mosquitoes' numerous natural predators. The subway system in New York City constitutes one of the best sanctuaries for the mosquito population. British researchers discovered in 1998 that in London's famous underground subway system, the Tube, mosquitoes can survive the winter without needing to hibernate. Since the cold does not reach them there, they can remain active 12 months a year.

A female mosquito typically lays 200 eggs at a time. Once they hatch, the new female mosquitoes will go on to lay another 200 eggs of their own. Under ideal conditions, mosquitoes can lay eggs as often as once in three or four days! One mosquito that hatches in May can have mothered thousands of mosquitoes by August. Normally the majority of eggs do not survive and most of the mosquitoes are eaten by predators. Still, more than enough will remain for the population to grow dramatically.

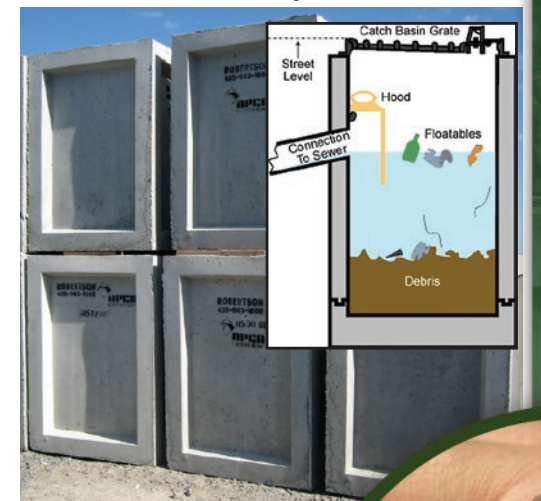
And all that describes only one generation of mosquitoes. In a year with a particularly mild winter when we must still face last year's population as well, the combined effect may well prove overpowering.



Mosquito eggs and larvae can only develop in the presence of water.



Some types of mosquitoes prefer dirty water for their larvae to feed on the bacteria that grow there.



Catch basins ready for installation. Inset: How the catch basin keeps sewer pipes clear by trapping heavy debris.