## The Plague that Strikes America's Northeast Every 17 Years:

# Say Hello (And Goodby) To Cicadas!

*After 17 years of waiting, they are back at last!*

*Popularly known as 17-year locusts, these bugs are actually cicadas, a large insect with locust-like swarming tendencies. Cicadas appear suddenly in northeastern United States by the billions every 17 years, at precisely the same time. They swarm over the surface of the earth, making a grating racket so loud it is practically deafening. For most of us, their appearance is a cause for annoyance or worse, but for scientists, it is time to celebrate.*

*The good news is that the cicadas hang around for no more than a few weeks. One month after they show up the cicadas die, their task completed. Where do they hide during those 17 years? And why do their visits coincide with such an odd number? Learn about Hashem's miraculous wisdom that is hidden in the lifecycle of the cicada.*

• ***Aryeh Cohen***

When you go for a walk outside, you probably have no clue what you are treading over. Without our having the faintest inkling that they are there, billions of insects lay hidden in the soil just beneath our feet. Unnoticed, they wait just inches below the surface for the right time to appear.

On one warm spring night, the long-awaited time arrives. Tens of billions of cicadas burrow tunnels upward from their subterranean homes and emerge from the ground.

What drives them from their homes of the past 17 years? No one really knows. Yet, as if at a prearranged signal, the billions of cicadas all leave the safety of their underground dwellings simultaneously. At the mercy of birds and small animals that prey on them, they take sure steps in the direction they already know they are headed. During their long stay underground, the tree trunk, cicada nymphs dig their feet in and remain in place. Protected inside a skeletal case, they begin to grow larger and larger. After five days, the protective case dries and opens. Out steps the fully grown adult cicada. It now bears large clear wings and red eyes. This metamorphosis saps a tremendous amount of energy from the insects, and not all of them survive to adulthood.

The cicadas remain near the skeleton they shed for a while as they wait for their wings to dry and become flightworthy. They need to recuperate after the exhausting transformation.

When they are ready, they begin singing….

## From Larva to Butterfly

The lifecycle of insects is remarkable. They begin as larvae. Their appearance at that stage is similar to many types of worms.

**Cicadas are capable of producing a rhythmic grating and rasping nuisance of 120 decibels. That is louder than a clap of thunder, and equivalent to the noise level of a jet at takeoff.**



cicada nymphs are incapable of flight. Now, all that is about to change.

In a rare and breathtaking sight, the floor of the forest suddenly becomes covered with millions of creeping insects, crawling over each other to reach their destinations. They are racing to find the highest spot. They climb higher and higher on tree trunks in search of a place where they can molt (shed their skins). When they are ready, they will launch the final phase of their 17-year lifecycle.

As soon as they are settled on the They then undergo a metamorphosis that results in their final stage as an adult with wings.

The best known example of this is the common butterfly. While colorful butterflies do exist in the Northeast, the most vibrantly colored types by far are found in the hotter climates of South America and equatorial Africa. They begin their lives as rather ugly caterpillars and only later develop the wings that make them so bright and exotic.

On the subject of butterflies, there is a Chicago museum known as the Judy Istock Butterfly Haven. The haven is housed in a greenhouse-like structure, brimming with beautiful flowers and plants from around the world. The 2,700-square-foot room includes an artificial waterfall and a nature path with benches on both sides. The effect conjures up the image of a tropical paradise.

The exhibit's natural beauty aside, the main attraction is the fantastic collection of approximately 1,000 butterflies from around the globe. They dance in the air and flutter between the trees, plants and flowers. At home among the visitors, they fly around the guests walking through their wonderland and occasionally settle on outstretched hands.

The range of color is absolutely breathtaking, and the museum keeps up a rotation so that at any given time, around 80 different species are kept there. Most of these exotic butterflies are not native to the region and would never be found here in the outdoors. These include blue butterflies from Central America, Asian rice-paper butterflies, citrus butterflies from Africa and all sorts of other species.

The river that runs through the center of the greenhouse contains large goldfish. Colorful songbirds native to South America and Australia—carefully picked for their affability toward butterflies—flutter among the branches. One dancing bird hides beneath the trees and feeds off the deceased butterflies that have fallen to the floor, acting as a form of natural janitor.

The butterflies feed on the nectar of the flowers or sip the sap off plates of sweet fruits that are lain out by the museum staff. Visitors learn that butterflies are responsible for a critical component in the lifecycle of plants. As they fly from flower to flower to enjoy the nectar, they are dusted with pollen, which they transfer to the next flower. This cross-pollination allows the flowers to develop into the fruit from which new plants will eventually grow. Butterflies thus play a pivotal role in fruit production.

As guests leave the butterfly haven, a sign asks them to check their clothing carefully. The museum does not want any of its

A naturalist busying himself with preparation for the appearance of the cicadas.

Dirt tunnels dug in a box dug by captive cicada larvae.

A butterfly at the haven that uses a fake enlarged eye to frighten off predators.

Butterflies at the museum enjoy a snack of fresh melon.