Insects and humans share a complex history

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Insects and humans share a complex history

With nearly 1.8 million species identified, insects not only outnumber all other noticeable portion of the earth’s biodiversity, but they play a key role in many areas of human life. The relationship between insects and agriculture, for example, has a long and complex history. On the positive side, insects help pollinate crops, to be sure. But on the flip side, they are carrier of many diseases, harmful to livestock and increasing demand for pesticide use.

"I have been trying to deal with this issue during my professional career and it is hard to address it because there are so few different solutions," said Dr. Kyong Yoon, an assistant professor in the environmental sciences program at Illinois University Edwardsville. "We try to control this insect, as much as we can produce more food, but the problem is that it evolved insecticide resistance. So it’s a growing problem and the best companies try to develop new chemicals, they use the insecticides of the time and then they change them.

A native of Seoul, South Korea, Yoon received his bachelor’s, master’s and PhD from the University of Massachusetts in Amherst. "There has been an interest in head lice in humans. There are a lot of species around the world, but the most parasitic lice are what are called the Pediculus species, meaning they are living in only one species of host. Our studies have shown differences of lice. One of the main issues is, we have the very close body louse, and then there is a distant relative called crab lice," Yoon explained. Scientists have determined that the human louse species diversify more, head louse about 70,000 years ago when humans started wearing clothes. "Then the head louse at that time saw the opportunity to expand from the head to the human body. Body lice can transmit diseases where there is no clinical evidence that head lice transmit the same disease," said Yoon.

Despite the fact that these insects are so common and are always a source of discussion when it comes to school-aged children, we really do not know enough about them, including how they move from one person to another. "It could be in many different ways," said Yoon. "After World War II, people, mostly in developed countries, stopped having a lice problem. Because of that, research on these insects stopped. That is one of the reasons why we still have a poor understanding of the behavior of these insects," Yoon said that the main issue these use to understand their environment is detecting chemicals.

"Most insects can see chemicals, so it’s no mystery that they can also be deterred by certain chemical substances. It’s the process of stages of understanding the behavior of the insect," said Yoon, who added that the biology of lice contritute to their problem for humans.

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