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The (other) butterfly effect

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WHY BUGS ARE MORE THAN ANNOYING PESTS — AND MAY BE KEY TO A SUSTAINABLE FUTURE

BY LAUREN IVESON
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Aside from the occasional butterflies that soar around campus, the only insects most students come in contact with are ants crawling on buildings and cockroaches in the dormitories. Though these miniscule creatures have most of us running in the other direction, insects are actually vital to our survival on Earth.

“We tend to focus on the one to five percent of the insects in the world that somehow cause us loss or pain or annoyance, but from a broader perspective, insects are very important for ecological services,” says Dr. Donald Lewis, a professor and extension entomologist in Iowa State’s Department of Entomology.

One of the most important ecological services that insects provide is pollination. The process, which is carried out by insects including bees, beetles, butterflies and ants, is when pollen is carried from the male flower to the female flower, which then sparks the development of seeds into the food we eat today.

To put the importance of pollinators into perspective, approximately one out of every three bites of food you eat is provided by pollinators, according to research done by Gary Paul Nabhan and Stephen Buchmann. Not only are they the sole responsibility of at least one third of our food source, they are also contributing to the global economy — nearly $217 billion to be exact, according to John Losey and Mace Vaughan in “The Economic Value of Ecological Services Provided by Insects.”

“IF YOU WANT TO EAT, YOU SHOULD APPRECIATE INSECTS,” LEWIS SAYS.

Some crops could survive the extinction of pollinators, including corn, which is gravity pollinated, wheat and possibly soybeans. Without pollinators, however, we can wave goodbye to all other fruit and vegetable crops such as coffee, avocados, tomatoes, peaches, broccoli, raspberries and cashews.

Though pollinators play a huge role in nature, they aren’t the only insects that are of importance to our society. So are decomposers, or the insects that break down dead or decaying materials.

“[Decomposer insects] get way too little attention,” Lewis says. “If we didn’t have them then we would be up to our armpits in dead plants and animals.”

Deemed nature’s recyclers, decomposers include creatures like mites, centipedes and earthworms. When plants or animals die, these insects will break down the tissue and recycle the nutrients back into the soil. That means the piles of dead leaves you see every season and the roadkill you pass on the interstate doesn’t just disappear on its own, and without the insects to break it down, the responsibility would fall on humans to clean up the abundance of rotting material.

“The decomposers are an important part of keeping our energy cycles going round and round, and if we tie up too much energy into dead material then that’s less available for us,” Lewis says.

Insects are vital to our way of life, but one thing that has yet to become popular in western culture is entomophagy — eating insects. A delicacy in many Asian and south African countries, insects are a power source for protein. Though the insect diet hasn’t been fully adapted yet, it could soon be making its way into our food pyramid.

“One of the things that’s under development is cricket flour,” Lewis says. “You know how you grind wheat into flour? Well, you grind dried crickets into flour and it becomes a high-protein base for making things like energy bars.”

A half-cup serving of cricket flour can provide nearly three times the amount of protein that you will find in an entire sirloin steak, according to research done by Cricket Flours LLC, a brand that currently sells the increasingly popular product. Additionally, crickets are extremely easy to raise in captivity, making their species even more available for edible purposes.

“CRICKET FLOUR AND GRASSHOPPER FLOUR ARE NOT TOO FAR AWAY FROM BEING IN THE FOOD YOU BUY,” LEWIS SAYS.

Insects are often viewed as creepy crawlies that terrorize your home, but the human race depends on them to continue living in a clean, produce-growing environment. Next time you’re wincing at the sight of an insect, remember that without it, the quality of life would drastically decrease.

“There are always these dire statements that say insects would do fine without humans but humans wouldn’t do fine without insects,” Lewis says. “The loss of species could be detrimental to our food supply and the energy cycles of the world. We need that diversity to keep things going.”

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