Evidence found that insects are possibly able to feel pain

6 July 2022, by Bob Yirka

A trio of researchers, two from Queen Mary University of London, the other from the University of Tehran, has found evidence that suggests insects might be able to feel pain. In their paper published in *Proceedings of the Royal Society B*, Matilda Gibbons, Lars Chittka and Sajedeh Sarlak, describe issues they encountered in attempting to find out whether insects feel pain, and the logic they used in showing its possibility.

Prior research and anecdotal evidence has suggested that insects do not feel pain. Because of this, humans have found it easy to harm or kill them. In this new effort, the research trio suggest our assumptions may have been wrong.

The researchers began by noting prior research has shown that both animals and insects have physiological systems that react to what in animals would be described as a painful experience. Such experiences have been separated into what has come to be known as nociception—the difference between responding physically to a physical trauma and any possible pain associated with the event. Both respond if you cut off one of an insect's legs for example. But what has not been clear is if doing so is painful for insects. To help answer that question, the researchers used what has come to be known as descending order of nociception—where higher level behavior can be associated with a harmful event.

Humans have been shown to be able to shut down a pain response if it happens during an emergency—some people do not realize they have been injured in a car crash, for example, until they are being treated at a hospital. Prior research has shown that this is possible because such a traumatic event can push the brain to begin producing opiates. Insects do not produce opiates, the researchers note, but they do produce other neuropeptides that could serve the same purpose. They found that such neuropeptides are produced in insects during traumatic events, suggesting they are capable of descending order of nociception, which is possible evidence of them feeling pain.

The researchers suggest more work needs to be done to further determine if insects do indeed feel pain, and if they do, how to address the ethical issues surrounding their treatment by humans causing them harm.


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