Minutes from the 564th Meeting of the Connecticut Entomology Society

September 17th, 2021

Zoom

Members: 25

Guests: 8

Social pre-meeting began at approximately 18:30.

**Business Meeting:**

-Meeting called to order at 19:32 by president Ray Simpson.

**Reports:**

-Fees have more than doubled since 2018.

-Please pay dues if you haven’t already!

**Old Business:**

-All Fall 2021 meetings will be on Zoom.

-CES merch available (t-shirts and caps) for the field season! Contact ctentsoc@gmail.com for more info.

-Welcome our new officers and governing board!

**New Business:**

-2022 CT EntSoc calendar competition! Photos will be presented at the November meeting, with voting. Send submissions to ctentsoc@gmail.com

**Announcements:**

-Doug Tallamy in October!

-Student Symposium in March!

-CT EntSoc and the CT Butterfly Association will be collaborating.

**Exhibits:**

-Lukas had some cicada specimens collected.

-There was a video clip of a monarch butterfly and a tiger swallowtail mating!

**Evening Presentation:**

-Post-Doc Katherine “Katie” Taylor spoke about resistance evolution in the corn earworm following the release of transgenic corn. She’s working at the University of Maryland, at Megan Fritz’s lab.

-The corn earworm, *Helicoverpa zea*, is a moth wherein the caterpillar consumes an ear of corn and pupates underground. As an adult, it lays eggs on the corn silk. It’s been an agricultural pest for decades. The primary measure used currently is BT crops, with BT being a bacteria that lives in the soil that naturally produces crystalline toxins that are very harmful to some insects, but not harmful to other insects, humans, or the general environments. For over a hundred years, BT has been a tool, usually being sprayed, but in more recently, they’ve had more precise and safer applications. Specifically, BT stands for *Bacillus thuringiensis*. The bacteria’s DNA is integrated into a plant’s DNA, so that the plant produces the toxins naturally. The toxins, when activated, will bind to an insect’s midgut receptors, causing cell death.

-The major issue is that when the plants are modified, the insects evolve resistance to the toxins. This causes a cycle where a new cry-toxin is used, and the insects adapt again.

-Genomic monitoring is supposed to break this cycle, where you keep tabs on the genes of the insects to see if adaptation is occurring. The issue with it, is that it’s not very specific.

-The genome of *H. zea* has 31 chromosomes. Said genome had changed a lot between the introduction of two cry-toxins. Chromosomes 13 and 9 had the greatest divergences after the introductions of the cry-toxins.

-In Katie’s experience, whole genomic monitoring would’ve worked if it paired with a functional study.

-Next steps include paired plots genomic monitoring.

Meeting adjourned at 20:39.

**Note: corrections and additions to the minutes are welcomed. Please email** **maxengel1@gmail.com****.**