Connecticut Entomological Society
Minutes from the 586th Meeting
18 October 2024

Hybrid Zoom held at University of Connecticut Biology and Physics Building.

Members met for a pre-meeting social at the University of Connecticut Biology and Physics Building approx. 6:30pm. Refreshments were served.

Business meeting:
President Richard Cowles called the meeting to order at 7:30pm.

Old Business:

- CES merchandise available: T-shirts for $15.00, caps $10.00, mugs $10.00.
- Connecticut Butterfly Atlas available for $25.00.

New Business:

- Treasurer's report:
    - President Richard Cowles presented the total expenses ($234.57 for last year, and $195.20 from July to October 2024) from Wix, Zoom (Zoom Pro plan including Whiteboard function) and State.
    - Paypal is preferred for paying dues/donations

Guests:

- 13 members, with 3 joining from Zoom
- 2 guests (including the speaker)

Announcements:

- Mark Stukel will be defending his dissertation on cicadas on Friday, October 25th. A link with details will be sent out by email.

Exhibits:

- N/A

The evening presentation started at 7:36 pm.

Evening Presentation:
The *Period* Gene Regulates Daily and Seasonal Diapause Timing in the European Corn Borer

Dr. Jacob Dayton

Dr. Jacob Dayton described how variation in the circadian clock affects daily behavior and the seasonal photoperiodic diapause of the European corn borer. He began with an overview of the biology of this species. Two forms, likely introduced to North America from two different European populations, occur - one which is double-brooded and another which is univoltine. CRISPR gene-editing was used to remove the *period* (PER) gene from individuals of the European corn borer to test if the absence of this gene would prevent the larvae from going into diapause. Dayton found that individuals in which PER was absent continued developing even when the photoperiod was shortened. In addition, the mutant adults emerged at random times of day (as opposed to a typical synchronized hatch) and appeared to lack a functional clock regulating time-dependent behaviors. In conclusion, the circadian clock's PER gene is essential for appropriate timing of daily behaviors. Altering it (as in the case of a larva attempting to continue development throughout the winter in a temperate climate) may result in death of the mutant individual. For possible future directions, Dr. Jacob Dayton mentioned examining if it is possible to speed up the European corn borer's clock in order to make it an obligate univoltine species. Dr. Dayton concluded with acknowledgements.

Meeting ended at 8:22.

Respectfully submitted
Secretary Lukas Keras