

Zig-Zag Elm Sawfly *Aproceros leucopoda*. First record for Worcestershire May 2021

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On 15th May I was examining an elm hedge in the village of Defford, south Worcestershire, in the hope of finding a larva of the White-letter Hairstreak *Satyrrium w-album*. This was not to be but I did spot a new county record - Zig-Zag Elm Sawfly *Aproceros leucopoda*.

According to Forest Research (see reference below) the larvae of this sawfly are a non-native pest of elms *Ulmus*. The name comes from the zig-zag pattern the larvae create between the veins in elm leaves. It is native to Japan and parts of China and is now widespread throughout Europe. It was first recorded in Surrey in 2017 with records coming from across eastern England in 2018. Further expansion has followed and according to iRecord (see reference below) Worcestershire is now at the western edge of its current range with records from Defford, Birlingham and Besford joined by a record from the edge of Stourbridge in July and Evesham in September 2021. It has also been seen on the edge of Cheltenham (Sept 2020) and Stroud (Sept 2021).

The jury is out on just how much of a threat they might be to in the UK, both to elm trees and to other elm-foliage feeders. In different parts of Europe they have been responsible for 1-2% defoliation of trees in some areas but reaching 74-98% defoliation in others. In warmer temperatures, like 24°C, they can complete one lifecycle in 23-24 days, giving them the opportunity to go through several generations in one year. In cooler temperatures, this process slows down - perhaps the UK's slightly cooler climate will help to reduce the number of generations per year?

All of which brings me to Defford and surrounding villages. Following the discovery of just one leaf with a zig-zag pattern in May 2021 in a hedge on the eastern edge of the village I was determined to find more and potentially to trace their spread throughout the local area. I was unable to find any more zig-zags despite carefully checking as many hedge-based elms as I could over the course of the next couple of months. It wasn't until July that I found more zig-zags in hedges across the whole village. The hedge in the middle of the village only had one larva but a field hedge to the west of the village had four.

I continued to search elm hedges in Defford and the neighbouring village of Birlingham (although I never did spot a White-letter Hairstreak larva or adult). In September, there were even more larvae in the hedges of Defford (15 in the original hedge) but I also found some in two locations in Birlingham, both towards the lower end of the village. I also heard from Jean Young that, at the end of August, she found elm leaves with zig-zags (but no larvae) in Besford, just a mile from Defford in the opposite direction to Birlingham. It

appeared that in 2021, Zig-zag Elm sawflies went through three generations in Defford. Interestingly in Birlingham I observed a Seven-Spot Ladybird *Coccinella 7-punctata* eating a larva (01), so they are not without their predators.



01. 7-spot ladybird *Coccinella 7-punctata* eating Elm Zigzag Sawfly *Aproceros leucopoda* larva. Birlingham. 11 September 2021. Wendy Carter.

What will 2022 bring? How much further will they have spread across the county and, indeed, the country? How will you know if you've got them in elm trees near you? The adults are rarely seen and difficult to identify - small (less than 1cm) black sawflies with white-ish legs. The species is parthenogenetic - they are all female and do not need a male to reproduce. Females lay eggs onto the edges of elm leaves and when they hatch the larvae eat their way between two main veins in a zig-zag pattern. The larvae pass through four to seven instars, the later instars don't zig-zag and end up destroying earlier zig-zag patterns as they devour the rest of the leaf. The larvae are green and are easily missed within the zig or the zag of their feeding tunnel. Early instars are all green but later ones develop a lateral stripe on either side of their head and the second and third pair of true legs have a brown mark. They then spin a silken cocoon in which to pupate.

Pictures of elm leaves at different stages of their consumption and a larva are shown in image 02.

References

<https://www.forestresearch.gov.uk/tools-and-resources/fthr/pest-and-disease-resources/elm-zigzag-sawfly/>
<https://www.brc.ac.uk/irecord/>

Images

01. 7-spot ladybird *Coccinella 7-punctata* eating Elm Zigzag Sawfly *Aproceros leucopoda* larva. Birlingham. 11 September 2021. Wendy Carter.

02. Zig-Zag Elm Sawfly *Aproceros leucopoda*. Pictures of elm leaves at different stages of their consumption and a larva. Wendy Carter.



Zig-zag sawfly *Aproceros leucopoda*.
Elm leaf damage.



01. Zig-Zag Elm Sawfly *Aproceros leucopoda*. Pictures of elm leaves at different stages of their consumption and a larva. Wendy Carter.