

White-letter Hairstreak Butterflies



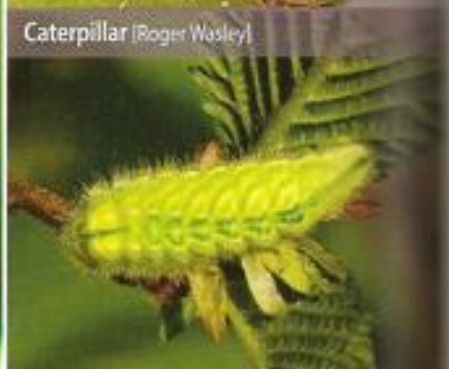
The 'false head' on the rear of the hindwings often has a piece missing as it is thought to deflect bird attacks [Patrick Clement]



The female (right) is slightly paler in ground colour and has longer tails (Jim Asher)



Eggs (Antony Moore)



Caterpillar (Roger Wasley)



Chrysalis (Roger Wasley)

[illegible]

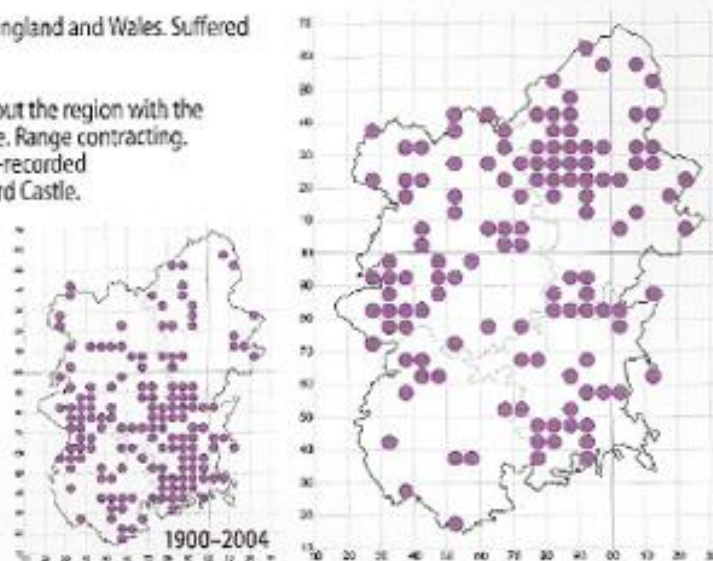
White-letter Hairstreak

Satyrrium w-album



Christine and Robin Hemming

- **NATIONAL STATUS** Scattered colonies throughout England and Wales. Suffered major range contraction with Dutch Elm disease. Population trend 10 years -77%; since 1976 -96%.
- **WEST MIDLANDS STATUS** Isolated colonies throughout the region with the greatest concentration in north-west Staffordshire. Range contracting. Population trend 10 years - decreasing but under-recorded
- **HOTSPOTS** Upton Warren in Worcestershire, Stafford Castle. Walks: 9 Bagderidge Country Park, 14 Haugh Wood, 19 North Hill, Malvern, 24 Woodgate Valley.
- **HABITAT** Elm trees *Ulmus* spp. in all suitable habitats, such as woodland edges, hedges and even solitary large elms in gardens. Elms, with an open, sunny, southern aspect are preferred.
- **FLIGHT PERIOD** Late June to mid-August.
- **LARVAL FOODPLANTS** Elms with a preference for Wych Elm *Ulmus glabra* and English Elm *U. procera*.
- **WINGSPAN** 25-35 mm.



LIFE CYCLE Eggs can be searched for anytime from July onwards and remain on the tree, when they are laid, through to the following spring. On Wych Elm it is best to look on the girdle scar between the two most recent years' growth or in a fork where two twigs are joined together. Here you may find up to three eggs which look like the cartoon "flying saucer" shape, each about 0.8 mm in diameter. On English Elm, the eggs are more likely to be on an internode that is the length of clear stem between two adjacent buds. Eggs are also laid on both species of elm at the base of a leaf bud. The eggs have a dark brown dome with a small central depression and a whitish rim which fades over the winter. When they are first laid, they are a dark green but this soon changes and they become brown after 48 hours. The depression in the centre of the top of the egg has a small hole in it called the micropyle and it is through this that the caterpillar emerges in early spring, having eaten part of the surrounding parts of the egg. It does not eat all of the egg and the remains of the egg can be found for a short time after.

The caterpillar, as it grows, undergoes three moults and after a period of between 8-11 weeks, depending on the weather and the aspect, it changes into a chrysalis. During this period, it grows from about 2 mm long into a caterpillar 15 mm or more. All of this is achieved, by eating first the contents of a bud, then the flowers and developing seeds, followed by the leaves. The second instar caterpillar has a pinkish tinge to match the developing elm flowers and the third and fourth instars are green to match the leaves. As camouflage goes, this is one of the best examples in the butterfly world, but careful searching especially under the leaves, will reveal them.

When the larva is fully grown it pupates, normally in late May/early June. Before this, the colour changes again this time taking on a greyish tinge. The caterpillar produces a silk pad and a cremaster, which is a silken 'safety rope' encircling the body and holding it onto the chosen pupal site. Over half of the pupae in a small survey chose to pupate on the underside of a leaf, whilst many of the remainder pupated on a twig and a few in a fork between two twigs. The chrysalis looks uncommonly like an elm bud, once again demonstrating the remarkable camouflage which has evolved within this species. It will usually remain a chrysalis for around three weeks and then the adult emerges from the case.

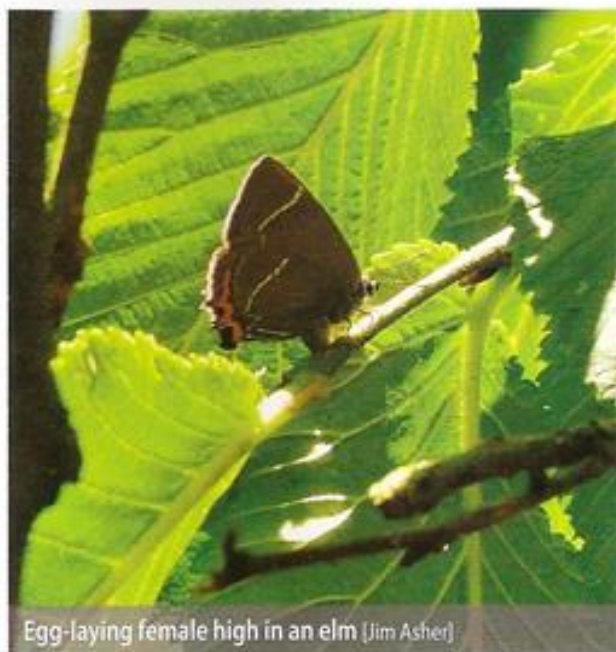
The adult butterfly feeds on nectar from available sources such as Creeping Thistle *Cirsium arvense*, Bramble *Rubus fruticosus* agg., Marjoram *Origanum vulgare*, Hemp-agrimony *Eupatorium cannabinum* and ragworts *Senecio* spp. There are relatively few reports of the adult butterfly extracting minerals from patches of mud or damp ground, behaviour which is witnessed with many other species. Observations on a colony near Hereford indicated that the amount of time spent on any one site was about seven days for both male and female butterflies (Davies 1992). This is not necessarily the same thing as life

expectancy, as marked butterflies were recaptured up to 21 days after they were first caught and marked. There is some evidence that the adults may migrate away from the colony but more work is required to confirm this. Perhaps the most remarkable instance of this was the report by Price (1993) of an absolutely fresh White-letter Hairstreak found on the pavement outside Boots the Chemist on New Street in Birmingham which was taken into the nearby museum for verification.

Some butterfly enthusiasts love to seek and find aberrations. These are individual butterflies where the normal colour pattern has broken down or there is some other change from the norm. White-letter Hairstreaks do not produce many aberrations and only two have been recorded in the region. The first ab. '*rufextensa*' has only been recorded once from Symonds Yat and that was in 1906, while ab. '*albovirgata*' is slightly more common with five or six examples having been recorded nationally in the last 200 years, including one specimen in Haugh Wood near Hereford in 1984. It is thought that aberrations are caused by unusual temperature conditions during pupation and there is no evidence that aberrations are genetic.

FLUCTUATING FORTUNES With this difficult to find species, the distribution of records during any one period of time is likely to reflect the distribution of people looking for the butterfly and passing on their records. Before the ravages of Dutch Elm disease, which has eliminated many former colonies, the butterfly had been widespread through our region and this is confirmed by looking at the various *Victoria County History* volumes. Only in Staffordshire does it suggest that localities were few, elsewhere it is described as "numerous", "widely distributed" and "common". Interestingly, one of the Worcester localities listed is Trench Wood where the butterfly survives to this day.

A VICTIM OF DUTCH ELM DISEASE The butterfly's life cycle is totally linked to the elm and the outbreak of Dutch Elm disease, which passed through the Midlands in the mid to late 1970s, decimated the populations of mature trees. Twenty-five million trees have been lost, more than were destroyed by the great storm of 1987, and the disease is still affecting any elm growth which reaches a height of about 5 m or a diameter of 150 cm. Preventing further outbreaks of the disease is very difficult and expensive. Options include treating trees to prevent infection, actively searching for any naturally occurring disease resistant trees and then propagating from them or by planting disease resistant hybrids of different elm species in selected areas. This is something which West Midlands Butterfly Conservation has undertaken at a number of sites using a variety known as 'Sapporo Autumn Gold'. Hopefully these trees will prove Dutch Elm disease resistant and could form a reservoir of colonies until the disease dies out or a treatment is widely available.



Egg-laying female high in an elm [Jim Asher]

SEARCHING FOR WHITE-LETTER

HAIRSTREAKS All stages of the life cycle can be found by careful searching on the right part of the elm, including adults who spend much of their short life sitting on the leaves up in the canopy where they feed on 'honeydew'. The starting point of any search is to locate suitable looking elm trees which are most easily spotted when they are in flower. Trees on the south side of a wood are preferable to those on the northern side but any trees with an open, sunny, southern aspect may well be worthy of searching. Once potential trees have been identified, return in April, May or June, later following a cold spring or long winter, and look for leaves where large panels along the veins have been created which is indicative of the presence of White-letter Hairstreaks. Once found, look for the caterpillars either by carefully pulling



A group of West Midlands members with Tony Moore searching for White-letter Hairstreak eggs (Roger Wasley)

down low branches and checking the underside of the leaves or by staring up into the tree and looking where their shape is revealed by the light shining through the leaves. Beating the branches with a stick may also dislodge some caterpillars onto a white sheet spread below the tree, but this method is likely to dislodge many other larvae, as well as White-letter Hairstreaks, and should be exercised with caution. Any resulting insects should be returned to a suitable branch amongst the leaves. Later in the year, leaves dropped in autumn will still show the distinctive feeding patterns and might indicate a tree or elm regrowth worthy of further investigation.

The chrysalises are more difficult to find as their camouflage is excellent but they can sometimes be spotted silhouetted on the underside of a leaf.

Looking for adults is a pleasant occupation. A folding chair, pair of binoculars and a flask are all that is required. Take up position where the upper part of the tree is visible and wait. If adults are present they may eventually come down out of the tree to feed as well as moving around in the canopy. Bouts of nectaring can be prolonged and a good example of this was one seen in Phil Williams' garden in Worcester in 1987 which remained on the same flower for three hours – long enough for the recorder to go into the city centre to buy a new film for his camera and still be able to photograph the butterfly on his return! Research in Herefordshire, suggests that the optimum time for adults to descend to lower level is between 3.00 pm and 5.00 pm although they will feed at all times of the day. During this time, the adults come down to their chosen nectar source usually close to the host elm.

Once there are adults on the wing, one can also start to look for eggs, however, it is often easier to find these once the current year's leaves have dropped. Finding eggs or other of the life stages of the White-letter Hairstreak does require practice and if possible go out into the field with someone who has experience in searching for the various stages. A group of West Midlands' members did just this in 2014 led by Tony Moore (see photo above) and succeeded in locating a number of eggs in the Stafford area. Once shown what to look for, members quickly 'got their eye in' and were able to search with more success. Locating new colonies and monitoring those that are known is very important so, if possible, do go out and search local elms for signs of the butterfly. 2015 appeared to be a good year for the species and a number of new reports were received helped by an unusual number of sightings of adults nectaring on flowers at low level. A freshly emerged specimen on a flower close to your camera is well worth the effort.