

White-letter Hairstreak *Strimonidia w-album* (Knoch) ovipositing sites

On 7 August 1993, I visited Red Lodge Plantation, an uneven-aged Forestry Commission oak woodland in north Wiltshire, to look for dragonflies. Driving along the east-west ride at 13.00 hours, I noticed a group of Peacock butterflies feeding on a stand of creeping thistles growing in the sun on the edge of the ride. They were accompanied by several other species including Brimstone, Comma, White Admiral, Silver-washed Fritillary and at least six White-letter Hairstreaks.

I watched the behaviour of the hairstreaks for an hour during which time three individuals continued to feed together on a group of flower heads. Their movement was minimal and the similarity between drooping dead thistle heads and the faded under sides of the butterflies' wings made for excellent camouflage. From time to time, an individual feeding elsewhere in the patch of thistles would take off and disappear into the tree canopy but at no time during the hour were fewer than six individuals present which indicated that the total colony was much greater than six. Several young wych elm trees *Ulmus glabra* growing along the woodland edge close to the thistles seemed likely to be the colony's breeding site. In order to confirm the theory a visit during the following winter would be necessary.

A visit was made on 21 November in poor light. The ride verges had been swiped and evidence of the bed of thistles had been obliterated. However, the unmistakable silhouette of the wych elms marked the spot. The few branches that were accessible were examined for eggs. Every terminal bud was found to be a leaf bud and each twig bore up to three flower buds spaced on average 15 mm apart. Eggs were found on two branches but, due to the poor light and the awkward height of the branches, others may well have been overlooked.

On one branch, twig A had two eggs side by side under the terminal leaf bud and a third 13 mm below under the first flower bud. Twig B bore a single egg beneath the terminal bud. All eggs were laid on the opposite side of the twig to the leaf scar. No fresh eggs were found on any of the girdle scars. The placing of an egg as close as possible to a bud to which the newly-emerged larva must crawl to feed would be the best strategy for its survival. On closer examination of the girdle scars under x10 magnification, four were found to have empty egg-shells from which larvae would have hatched the previous year (1992). They were invisible to the naked eye but magnification showed the exit hole, close to the micropyle, as a dark speck in the top of the spherical egg-shell. In each case, the egg-shell, the bark on the girdle scar and on the 1992 year's growth were clothed with algae which appeared as a fine green dust which more or less obliterated the shape of the shell. The position of girdle scars which marked the junction of the 1992/93 year's growth, would have been beneath the terminal bud in the 1992 growing season, the position in which three of the four 1993 eggs had been laid. Therefore, the same twig had been chosen by a female hairstreak in 1992 and 1993. Twigs A and B each had an empty egg-shell on the girdle scar in addition to the eggs laid in 1993. Twig C was a year older and therefore had two scars each having an empty egg-shell, one laid in 1992 and one in 1991 but none in 1993.

On a second branch, a single egg was found under the terminal bud and another close to the base of a flower bud on the same twig. All the above evidence strengthened the theory that a strong colony of White-letter Hairstreaks was supported by this and adjacent wych elms.

On 11 June 1994, the egg-bearing tree was searched for larvae and pupae. A full-grown larva was feeding on the underside of a leaf and continued feeding while being photographed; one pupa was found at the end of a twig on a low branch and two were detected, using binoculars, on the underside of leaves in the crown of the tree. On 17 July, an empty pupal case was found on the low branch and three adults were seen, one feeding on creeping thistles as in 1993 and two flying in the ride nearby.

The following references to the positioning of eggs (listed in chronological order) are conflicting and most are rather vague.

E Mansell, L Hugh Newman. *The Complete British Butterflies in Colour*. 1968. "... usually depositing them close to a bud."

Robert Gooden. *British Butterflies. A Field Guide*. 1978. "... usually in the forks of the twigs."

J A Thomas. *RSNC Guide to the Butterflies of the British Isles*. 1986. "... fixed below a flower bud or on a twig."

A Maitland Emmet, J Heath (Eds). *The Moths and Butterflies of Great Britain and Ireland*. Vol. 7, Part 1. 1989. "Generally laid on the girdle scar. . . .; more rarely in a bud axil or at a junction of twigs (White, *pers. comm.*)."

Jeremy Thomas and Richard Lewington. *Butterflies of Britain and Ireland*. 1991. "... most are laid beneath flowerbuds, in forks and particularly on the wrinkled girdle scar."

Martyn Davies. *The White-letter Hairstreak Butterfly*. 1992. "The favoured site on a wych elm . . . is the girdle scar."

My observations from a single tree occupied by a single colony, and the placing of the eggs by the females consistently at the base of buds and not on the girdle scars, may be unusual but, unfortunately, I have been unable to reach other possible egg sites. It is, of course, known that a White-letter hairstreak larva does not eat its egg-shell but I have found no mention in the entomological literature available to me that empty shells can be found on girdle scars a year or more after they were laid.

In December 1996, a meeting of the Wiltshire Branch of Butterfly Conservation was arranged to search for the eggs of Brown and White-letter Hairstreaks in Red Lodge. The tree where I had made my earlier observations, and those adjacent to it, were examined. With the advantage of more than one pair of eyes and a tall member among the searchers, thirteen eggs including three pairs were soon found, all at the base of terminal buds. The search is to be repeated during the coming winter.—
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Gillam, Beatrice. 1998. "White-letter hairstreak Strimonidia [Strymonidia] w-album (Knoch) ovipositing sites." *The entomologist's record and journal of variation* 110, 133–134.

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