

NOTES AND OBSERVATIONS

Anarsia lineatella Zeller, 1839 (Lepidoptera: Gelechiidae): a note on the larva

Anarsia lineatella Zeller, 1839, is occasionally found in England as a larva in imported fruit of several species of Rosaceae, mainly *Prunus persica* (L.) Batsch, *Prunus persica* var. *nectarina* and *Prunus armeniaca* L. The only record outside of England in the British Isles is of a female at light at Splott, Cardiff on 17 August 1997, which has been determined by dissection (D. J. Slade, *in litt.*). There are also two records of the adult at light in England. It is impossible to know whether any of those were immigrants or the result of importations.

The first larval account given in the British literature is that by Uffen (1959), based on a fully grown larva found tunnelling in the flesh of an imported *Prunus armeniaca*. The resulting moth was determined by Mr J. D. Bradley. The larval description is simply that it was ‘chocolate-brown’. This is curious as the larva is distinctly banded reddish brown or dark honey-brown with whitish intersegmental divisions. More detailed accounts are given by Heckford (1992) and Gregersen & Karsholt (2017).

In general terms the above two later publications describe the head and prothoracic plate as black or shiny black, the body dark honey-brown or chestnut-brown, the intersegmental divisions whitish, the pinacula small and black, each with one whitish hair, the anal plate black or shining black, the thoracic legs black and the prolegs concolorous with the body. Neither mentions the peritremes of the spiracles nor the crochets on the ventral and anal prolegs, nor an anal comb. Carter (1984: 99–101, pl. 10 fig. 5), however, not only mentions the peritremes of the spiracles and an anal comb but also gives a slightly different larval description in terms of certain colours. His account reads:

‘Head dark brown to black; body reddish brown, with white intersegmental rings; peritremes of spiracles black; pinacula brown; spiracle of prothorax surrounded by L pinaculum; prothoracic and anal plates dark brown; thoracic legs black; anal comb dark brown, with median prongs forked.’

The discovery of a larva while I was eating a *Prunus persica*, purchased on 25 July 2020 at a Superstore in Plympton, Devon and whose stated origin was Spain, led me to examine it more closely. As a result I observed the following points which may not have been previously noted. As regards the pinacula, although the areas immediately surrounding the bases of the setae were black, the remainder of the pinacula were slightly darker than the colour of the segments. The exception was the L pinaculum of the prothorax, which as stated by Carter surrounds the prothoracic spiracle. This was entirely black. The crochets were blackish brown. The anal comb appeared to have six separate prongs. Also, in this larva the dorsal area of abdominal segment 5 was distinctly darker than thoracic segment 3 and the other abdominal segments. Perhaps the gonads lay beneath this segment and if so caused this darker colouration; the resulting moth was male. Finally, the anal plate of this larva was dark brown, as described by Carter.

There were two other aspects that I observed which are not mentioned in the publications cited above. One is that thoracic segments 1 and 2 are a much darker reddish brown than thoracic segment 3 and the abdominal segments. The other



Photo: R. J. Heckford

Fig. 1. *Anarsia lineatella* Zeller, 1839. Larva within *Prunus persica*, 25.vii.2020.

is that there is no white intersegmental division between thoracic segments 1 and 2 or between abdominal segments 9 and 10. The absence of a white intersegmental division between thoracic segments 1 and 2 was, however, noticed and figured by Fischer von Röslerstamm ([1842]: 282–284, pl. 94). It seems that he did not observe the absence of a white intersegmental division between abdominal segments 9 and 10. He appears to have been the first to describe and illustrate the larva, which is shown on plate 94, figures b–e. Figure b shows the entire larva at life-size and so it does not provide much detail. Figures c–e, which are in colour, are considerably larger than life-size and illustrate respectively the head and thoracic segments 1 and 2, an abdominal segment and abdominal segments 9 and 10, all figured dorsally. He provides a very detailed larval description. As regards the general body colour he states, in translation, that it is chestnut-brown and the edges of the segments, with the exception of the first and second rings, namely thoracic segments 1 and 2, are entirely white and form belts. His figure e shows the black anal plate entirely edged white, including the area immediately adjoining abdominal segment 9. His description states that the whitish anal valve has a round, black, shiny spot. It is clear from the rest of his description that the ‘spot’ is the anal plate and that, presumably, the ‘anal valve’ is abdominal segment 10. Perhaps the larva that he used for the description had an atypical abdominal segment 10 because no other accounts that I have traced suggest that this segment is whitish.

In general in mainland Europe, where *Anarsia lineatella* can be a serious pest of cultivated *Prunus*, it has two generations. The first bores into a shoot, causing it to droop and die. This is both described and illustrated by Fischer von Röslerstamm (*loc. cit.*). The second generation feeds in the fruit, which is the source of its arrival in this country. The larva eats the flesh from the inside of the fruit. This is a very viscous area. Fig. 1 shows the larva apparently almost partly



Photo: R. J. Heckford

Fig. 2. *Anarsia lineatella* Zeller, 1839. Larva having left the fruit to pupate, 26.vii.2020.

submerged in such an area. Nothing, however, adheres to the larva as can be seen from Fig. 2 taken the following day after it had vacated the fruit to pupate. The full-grown larva is about 10 mm long. The larva pupated on 29 July and the moth emerged on 8 August.

I am very grateful to Mr O. Karsholt (Copenhagen) for sending me a PDF of his 2017 paper because this refers to Fischer von Röslerstamm's larval description and colour plate. I would not have been aware of this account without sight of this PDF. I also thank Miss S. D. Beavan (Zeal Monachorum) both for translating Fischer von Röslerstamm's entire text for *Anarsia lineatella* and for helpful observations on the larva.

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