

Leaf Mining Organisms Not Previously Recorded On The Isle of Wight

Dr. D.T. Biggs

Since the publication of my last list of newly found leaf miners (Biggs, 2004) five new species for the Island have been found, three flies and two moths.

Diptera

Agromyzidae

*Agromyza filipendulae*_ Spencer, 1976 on Wild Strawberry, *Fragaria vesca*.

A visit to Northwood Cemetery SZ4994 on 29.11.04 resulted in my finding several mines caused by this fly which more usually mines Meadowsweet, *Filipendula ulmaria*. The mines were found on the upper surface of the leaf, were long narrow straight yet branched corridors, towards the leaf tip, pale yellowish-green in colour and flecked with purplish-red. They were very superficial and faint with inconspicuous frass which was produced in grains initially and in strings later. The exit holes were on the upper surface and pupation is external. The fly mines from June to September in two generations and is reported to be fairly common in the south of England and in the Midlands.

Phytomyza heracleana Hering, 1937 on Hogweed, *Heracleum sphondylium*.

The larvae of several flies mine Hogweed and the identity of the causer cannot be determined from the characteristics of the mine alone for some of these species. However the mine of this species is quite unique and unmistakable. I found four mines on one leaf at Burnt Wood, Porchfield SZ4492 on 14.7.04. Each mine appeared as a circular or oval yellow patch on the upper leaf surface, delimited by two veins, and somewhat mottled brown. The impression given in the field was of localised areas of chlorosis and not until I used a microscope on the leaves did I realise that the yellow patches were in fact full-depth blotch mines containing very scattered frass in grains, and that the blotches expanded from an initial shallow inconspicuous lower surface corridor with very thin delicate strings of frass. I found one buff-coloured larva and three lower surface exit holes. Pupation is external. The fly is described as being locally common in England.

Anthomyiidae

Pegomya setaria (Meigen, 1826) on Russian Vine, *Fallopia baldschuanica*

A large vigorous bush of Russian Vine in Castlehaven Lane, Niton Undercliff SZ5075 attracted the attention of Jim Cheverton, Bill Shepard and myself on 20.10.04 because of numerous very conspicuous white transparent upper-surface blotches on the leaves. The blotches were found to be preceded by a fairly long corridor. Some of the mines contained deep yellow larvae which pupated a few days after collection. The deep purplish-brown pupae had still not hatched by mid-January 2005.

This fly is recorded as mining *Polygonum* but mainly *Fallopia* between June and October, in two generations, and is reported from throughout England and Scotland but is only local in distribution.

Lepidoptera

Gracillariidae

Cameraria ohridella Deschka and Dimic, 1986 on Horse Chestnut. *Aesculus hippocastanum*.

This moth was discovered in Macedonia in 1985 and described as a species new to science in 1986. It then underwent a rapid expansion in range north-westwards across Europe, reaching Austria by 1989, Germany by 1993 and the channel coast of Belgium and the Netherlands by 1999. The first English record was from a private garden in Wimbledon in July 2002. I found it in Hyde Park in September 2003 and here on the Island first at Pelham Woods, St Lawrence SZ541768 on 15.9.04. Since then I have found mines with larvae elsewhere in The Undercliff 19.9.04, at Ryde 23.9.04, in the Arboretum

at Fairlee 27.9.04, Castle Hill, Carisbrooke 19.10.04, Pier Road, Seaview 24.10.04 and at Quarr Abbey 28.10.04. I know of first records from Surrey, Kent and Oxfordshire in 2003, and from Hampshire in 2004. My original record was of one mine on one leaf. A return visit to Pelham Woods a few days later revealed several leaves on the one affected tree to have up to six mines per leaflet. Each mine is an upper surface, elongated oval blotch, buffish-yellow in colour and mainly confined by two adjacent parallel veins, and up to 40mm. x 15mm. The centre of the blotch is dark from the larval frass which is often deposited in arcs. The larva does not produce silk. In continental Europe this moth has altered the appearance of towns and country roads. There can be up to five generations of the mining larva in any one year. Within one to two years of first infection, after the second generation the trees may be completely infected by the summer, with every leaflet affected, gross loss of photosynthetic activity and early loss of foliage, long before autumn. Conker size and number is reduced and the trees weakened and liable to infection by fungal disease such as *Phytophthora*. This moth may have as much effect on our landscape as did the beetle which carried the fungus of Dutch Elm disease.

Phyllonorycter platani (Staudinger, 1870) on London Plane, *Platanus x hispanica*

Known throughout continental Europe and Asia, this moth was not recorded in England until October 1990 when its mines were first recorded in the grounds of Imperial College in S. Kensington. From here it spread into East Anglia and southwestwards, arriving in Surrey and Berkshire in 1991 and in Hampshire in 1998. I have been actively searching for this mine for the last five years and I know that it was not present until 2004. The magnificent specimen tree in what used to be the grounds of Fairlee House at SZ505903 hosted many mines when I re-examined it 27.9.04. I have not found this mine anywhere else on the Island as yet. The mines are typical Gracillariid mines in that they contain silk spun by the larva which eventually contracts the surface of the mine into longitudinal creases producing an inflated tentiform blotch, usually on the lower surface of the leaf. The larva initially feeds in a very inconspicuous upper surface corridor parallel to the veins and which has several small side galleries. This corridor is then expanded into the final blotch which is mottled brown and green above and a translucent yellow below with fine brown stretch marks caused by contraction of the silk. The blotches are up to 6cm. long and 1.25cm. wide. Some of the mines were still tenanted by larvae and some had been vacated. The pupa sometimes overwinters in the fallen leaves on the ground. In Europe the larva is bivoltine, mining in June and July, and again in August to November. Again, in Europe a single leaf can host up to 60 mines and infestation can cause considerable leaf loss with subsequent physiological damage. My identification of the larvae and mines of this moth was confirmed by Dr. J.R. Langmaid.

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