

New species of leaf-mining moths and bagworms in East Yorkshire: recent colonists or overlooked residents?

The historical scarcity of many leaf-mining moths in East Yorkshire (vice-county [VC] 61) (see Sutton & Beaumont, 1989. *Butterflies and Moths of Yorkshire: Distribution and Conservation*. Yorkshire Naturalists' Union) is at least partly due to a lack of recorder effort, and a number of apparently local or rare species are actually relatively widespread and common (Chesmore, 2008). The distribution of *Narycia duplicella* (Goeze 1783) (Lepidoptera: Psychidae) in Yorkshire. *The Naturalist* **133**: 101-106; Nunn, 2015. Searching for leaf-mining moths and bagworms in East Yorkshire. *The Naturalist* **140**: 64-68; Nunn & Warrington, 2016. More dots on the map: further records of leaf-mining moths in East Yorkshire. *The Naturalist* **141**: 101-104).

I searched almost 200 sites in VC 61 for leaf-mining moth larvae and bagworms (Psychidae) from 2013-2016. The majority of the sites were visited only briefly, but 15 species were added to the VC list, with another two added to the Yorkshire (VCs 61-65) list (Table 1). These have been documented in both the regional summaries (Frost, 2014. Yorkshire butterflies and moths 2013: an assessment of the status and distribution of Yorkshire's butterflies and moths in 2013. *Argus* **69**: 1-104; Relf *et al.*, 2015, Yorkshire butterflies and moths 2014: an assessment of their status and distribution. *Argus* **72**: 1-104; Relf *et al.*, 2016, Yorkshire butterflies and moths 2015: an assessment of their status and distribution. *Argus* **75**: 1-108) and national (Langmaid & Young, 2014, *Ent. Rec.* **126**: 197-225; 2015 *Ent. Rec.* **127**: 237-264; 2016, *Ent. Rec.* **128**: 279-307) and annual reviews. Other notable species included *Coleophora binderella* (Kollar), *Eriocrania cicatricella* (Zett.), *E. sangii* (Wood), *Heliozela hammoniella* (Sorhagen), *H. sericiella* (Haw.), *Phyllonorycter cerasicolella* (H.-S.), *P. emberizaepenella* (Bouché), *P. esperella* (Goeze), *P. strigulatella* (Lien. & Zell.), *Psychoides filicivora* (Meyrick), *Stigmella atricapitella* (Haw.), *S. glutinosae* (Stt.) and *S. samiatella* (Zell.), all second VC 61 records.

Were the new species merely unrecorded residents, or could some be recent colonists? Certainly, several have probably been overlooked (or not looked for) in the past, as they are widely distributed or common in other parts of the county. Examples include *Ectoedemia argyropeza* (Zell.), *Ectoedemia intimella* (Zell.), *Ectoedemia minimella* (Zett.), *Heliozela resplendella* (Stt.) and *Phyllonorycter joannisi* (Le Merchand), which have been widely recorded in VCs 63 and 64 (Sutton & Beaumont, 1989 *loc. cit.*; Box, 2017 <http://www.yorkshiremoths.info/portal>, accessed 20 January 2017), where the majority of leaf-miner enthusiasts appear to be based. My records suggest that the former three species are local in VC 61, whereas the latter two appear to be widespread (but uncommon). The larval food plants of *E. intimella* (willows) and *E. minimella* (birches and hazels) are widespread, but *E. argyropeza* is

possibly limited by the distribution of aspen *Populus tremula* in VC 61. *Stigmella sakhalinella* Puplesis was first recorded in Yorkshire (in VC 62) in 2001, and so could be a recent colonist, but the wide geographical distribution of the records (VCs 61-63) suggests it is more likely an overlooked resident (Box, 2017. *op. cit.*).

Some of the species may be genuinely scarce or rare residents in Yorkshire. For example, the *Coleophora orbitella* (Zell.) and *Coleophora violacea* (Ström) larvae I found were only the sixth records for Yorkshire, and *Coleophora ibipennella* (Zell.) also appears to be scarce and very local (Sutton & Beaumont, 1989; Beaumont, 2002. *Butterflies and Moths of Yorkshire: a Millenium Review*. Yorkshire Naturalists' Union; Box, 2017). There are historical and contemporary records of all three species from most VCs however, suggesting that they are probably resident in the county. *Bedellia somnulentella* (Zell.) appears to be genuinely rare in the county. In 2014, I found vacated mines and the distinctive pupa, which I successfully reared, on bindweed. An unconfirmed record from near York (VC unknown) is believed to have been regarded by George T. Porritt, the county moth recorder at the time (1884), as unreliable (Frost, 2014. *op. cit.*). In 2016, I found a small number of tenanted mines at another site, but searches elsewhere were unsuccessful. Similarly, despite widespread searching by a number of recorders, *Ectoedemia rubivora* (Wocke) appears to be extremely rare outside the Ripon area, with just two records from elsewhere (Box, 2017, *op. cit.*). I found larval tubes of *Infurcitinea argentimaculella* (Stt.) at two sites in 2014, which were only the second and third Yorkshire records, and at one of the sites again in 2016. As for most of the species with cryptic larvae, it is likely that *I. argentimaculella* has been overlooked in the past, but is probably a local and rare resident in the county (Box, 2017, *op. cit.*). Similarly, although *Diplodoma laichartingella* (Goeze) is more widespread in the county than previously recognised, as demonstrated by a flurry of records in VC 63 in recent years (e.g. Frost, 2014, *op. cit.*), it nonetheless appears to be scarce (Box, 2017. *op. cit.*).

The status of *Stigmella alnetella* (Stt.) and *Stigmella ruficapitella* (Haw.) in Yorkshire is unclear, due at least partly to identification issues in the past. Distinguishing the mines of the two alder-feeding *Stigmella* species can be difficult and, although suspected individuals of both had been recorded previously, *S. alnetella* was not confirmed in VC 61 until 2016. Similarly, the mines of most oak-feeding *Stigmella* species can be difficult, or impossible, to identify to species, and are therefore likely to be under-recorded. Thus, *S. alnetella* and *S. ruficapitella* are inevitably more common and widespread than the records (see Sutton & Beaumont, 1989, *op. cit.*; Box, 2017, *op. cit.*) suggest, but increased recording effort is required to clarify the situation.

Site	O.S. grid reference	Species
Allerthorpe Common	SE 7547	<i>Infurcitinea argentimaculella</i> ³
Broomfleet	SE 8628	<i>Ectoedemia intimella</i> ³
Easington	TA 4115	<i>Phyllocnistis xenia</i> ⁴
Howsham ¹	SE 7362	<i>Stigmella alnetella</i> ³
Hull (University)	TA 0731	<i>Bedellia somnulentella</i> ⁴ , <i>Phyllonorycter joannisi</i> ³
Little Weighton	SE 9934	<i>Ectoedemia lousiella</i> ³
Newport	SE 8530	<i>Ectoedemia argyropeza</i> ³
North Cliffe Wood	SE 8637	<i>Coleophora ibipennella</i> ³ , <i>Coleophora orbitella</i> ³ , <i>Coleophora violacea</i> ³ , <i>Ectoedemia minimella</i> ³ , <i>Heliozela resplendella</i> ³ , <i>Stigmella ruficapitella</i> ³ , <i>Stigmella sakhalinella</i> ³
Skipwith Common	SE 6637	<i>Diplodoma laichartingella</i> ³
Thorpe Bassett ²	SE 8673	<i>Ectoedemia rubivora</i> ³

¹ With Charles Fletcher and Ian Marshall² With Charles Fletcher, Ian Marshall and Barry Warrington³ New vice-county record⁴ New county record

Two of the new species could be recent colonists. In 2013, I found a *Phyllocnistis xenia* (M. Hering) mine on a white poplar *Populus alba* sapling, which was the first record for Yorkshire. The occurrence was north of other UK records (Frost, 2014, *op. cit.*), possibly reflecting a shift or expansion in the geographical range of the species. I intend to search specifically for *P. xenia* in 2017, in an attempt to establish whether it has colonised the county. *Ectoedemia lousiella* (Sircom) was added to the county list in 2015, when larval mines were recorded near Doncaster (VC 63); this was believed to be the most northerly UK record at the time (Relf *et al.*, 2016, *op. cit.*). It is unclear whether it is an overlooked resident or a recent colonist, but a number of records from the south-east of VC 63 in 2016 (C. H. Fletcher, *pers. comm.*) suggest that it is established in the county. In 2016, I found a single mine on a field maple *Acer campestre* samara to the north-west of Hull, but further searches were negative, suggesting that it is local and/or scarce or rare in VC 61.

The population status and known ranges of all species are necessarily a product of their abundance and geographical distribution, respectively, and recording effort (Nunn, 2015, *op. cit.*). It seems that the recent additions to the

VC 61 species list are largely a consequence of increased recording effort detecting overlooked or scarce residents, but two of the species may have colonised from the south. It is likely that other species will colonise the county as their ranges shift or expand in response to climate change and other factors, and monitoring may allow their arrival to be detected.

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Notes from a red hole in south-east England

The April 2016 issue of Butterfly Conservation's E-moth newsletter showed the progress of the National Moth Recording Scheme (NMRS) towards its planned *Atlas of Britain and Ireland's Larger Moths*, evaluated on 7 January 2016 at the start of its last recording year. The report highlighted some 123 'white holes' with no moth records, and 515 'red holes' defined as having 50 or fewer records plus 25 or fewer species; the vast majority of the holes, as expected, were located in the north of the country. In south-east England, where we live, there were only a few of these under-recorded 10 km squares, and most of them were around the coast or towards The Wash, with just four inland. One seemed surprisingly close to TL54, where we record – we say 'surprisingly' because we had already entered four years of data into the online recording system for the NMRS database. Further investigation showed that the red hole was indeed TL54, with just 28 records of six species, and that the online recording system entries had not been incorporated into the database at that time.

The red hole status of TL54 was thus a consequence of the vagaries of the NMRS recording system but, together with the editor's appeal for contributions (Plant, 2017. *Ent. Rec.* **129**: 56), provides a motivation to summarise a total of six years recording (January 2011-December 2016) in an otherwise unremarkable 10 km square where there seem to be almost no other active moth recorders.

The recording site is a 1.3 acre garden at the edge of the village Linton in the extreme south of the county of Cambridgeshire (vice-county 29), and very close