1795 (8442) November Moth *Epirrita dilutata* ([Denis & Schiffermüller], 1775) Common
1796 (8443) Pale November Moth *Epirrita christyi* (Allen, 1906) Common
1797 (8444) Autumnal Moth *Epirrita autumnata* (Borkhausen, 1794) Common
1798 (8445) Small Autumnal Moth *Epirrita filigrammaria* (Herrich-Schäffer, 1845) Common

Diagnostic external characters

As described by Waring *et al*. (2009), Skinner (2009) and Leverton (2000), forewing markings are a useful guide for the identification of this group. In *dilutata*, the post-median line tends to approach or obscure the discal spot (where this is present). In *christyi*, it tends to curve around it and in *autumnata* it tends to be angulated around it. However, the course and shape of the post-median line vary within each species (even in some cases from one forewing to the other) and the discal spot is often absent, and these trends should not be regarded as confirming identity. In many places, the moths (especially *dilutata* and *christyi*) are obscurely marked rendering external features useless for identification purposes. Whether or not the females follow the same trends in wing markings as the males is poorly known, since they cannot be reliably identified using genitalia features. Therefore, we recommend that for recording purposes only males are identified. If confirmation is required for females, eggs are easily obtained and larvae can be reared to produce adult males.

Key to diagnostic morphological characters of the males

Full dissection is unnecessary for recording purposes, but examples of each are useful for future reference. The projections (octavals) on the posterior margin of the eighth sternite can be readily seen by gently brushing scales from the tip of the abdomen on dead or anaesthetised moths. The eighth sternite is part of the last 'normal' segment of the abdomen; beyond it lie the segments housing the extrusible male genitalia, including the valvae. The dark, quite heavily sclerotised dentate projections on the valvae (of *dilutata* and *christyi*) can usually be seen in a roughly diagonal position beyond the posterior margin of the eighth sternite, but may be partly hidden behind it. Note that the length and shape of the octavals on *dilutata* and *christyi* can vary, so the valvae should always be checked first. With practice, a positive identification can be made in a matter of a few seconds.

The octavals and genitalia of *autumnata* and *filigrammaria* resemble one another, therefore the latter is not illustrated. The differences between them given by Tams (1941) are not helpful. *E. autumnata* can be abundant on moorland where *filigrammaria* is present, but the former has a later flight period, generally peaking around mid-October in the north and late October or November further south. However, their size ranges also overlap and it may not always be possible to make a positive identification. *E. filigrammaria* is occasionally encountered away from moorland, probably as a vagrant. The larvae of *filigrammaria* are quite distinct from those of the other species (see Porter, 1997).

1. Valva with dentate projection on costa (situated less than halfway from base) (Figs. 22 and 24, A). Pair of dentate processes (octavals) on posterior margin of eighth abdominal sternite usually relatively long and straight (Figs. 23, 25).....2

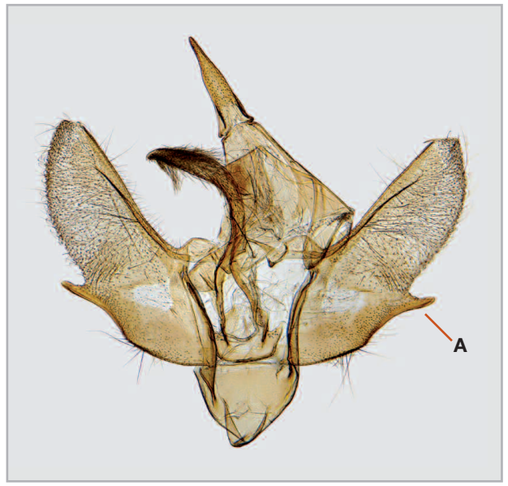
– Valva lacking dentate process on costa (Fig. 26, A), which has smooth curves centrally, meeting in a blunt point (appears somewhat sharper *in situ*). Pair of dentate processes (octavals) on posterior margin of eighth abdominal sternite short, inclined slightly inwards (Fig. 27).....3

2. Octavals well-spaced (Fig. 23).....*dilutata*

– Octavals closely spaced (Fig. 25).....*christyi*

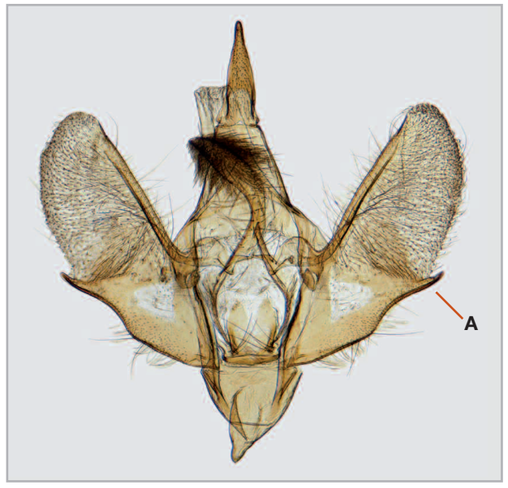
3. Moths flying from late September to November, generally larger.....*autumnata*

– Moths flying in August and September usually on acid heathland or moorland, generally smaller.....*filigrammaria*

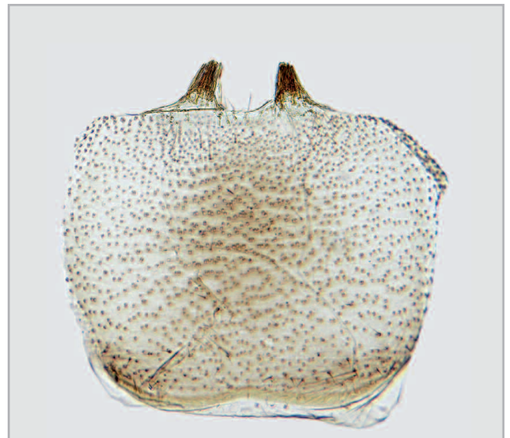


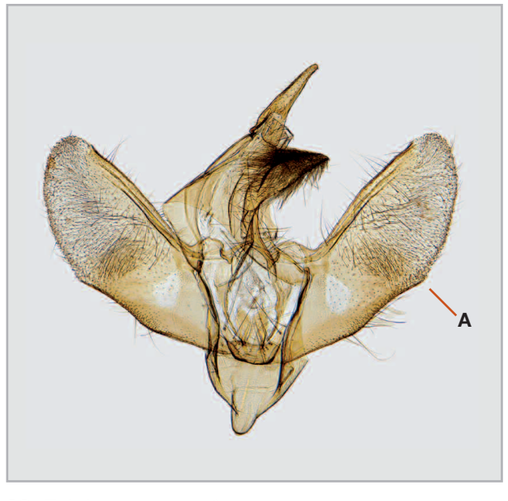
22. *Epirrita dilutata*


23. *Epirrita dilutata* eighth sternite (close up)



24. *Epirrita christyi*


25. *Epirrita christyi* eighth sternite (close up)



26. *Epirrita autumnata**


27. *Epirrita autumnata* eighth sternite (close up)*

Plate 6. *Epirrita* species males - genitalia (aedeagus not shown) and close-up of eighth abdominal sternite.
*Note that the genitalia and eighth sternite of *E. filigrammaria* resemble those of *E. autumnata* and therefore are not illustrated.