

Fungus Gnats Recording Scheme

Newsletter 7 Spring 2014

It was reported in the previous newsletter No 6 (Spring 2013 Bulletin) that a review of the conservation status of all species had been undertaken as part of a Review of Diptera statuses according to the latest IUCN criteria, organised by Buglife on behalf of Natural England. This review suggested trends by comparing numbers of hectads recorded for each species up to 1989 with those from 1990 to 2011. Its conclusions, which have yet to be adopted, result in a significant number of status changes from those proposed by Falk & Chandler (2005). These involve both changes to threat category and assigning statuses to species previously treated as Data Deficient, while the latter category is suggested for recently added species of uncertain status.

Results of Field Meetings in 2013

There were unusually five Dipterists Forum field meetings in 2013, four of which I attended. The summer meeting at Lancaster coincided with my trip to Dundreggan. It was, however, a slow start for the gnats, with a cold spring followed by hot and dry conditions in the summer, so significant numbers were not experienced until the September meeting in Scotland.

Numbers of both individuals and species were low on the earlier meetings. The number of species recorded were: Rockingham Forest, Northamptonshire 17-19 May (45), Eastbourne, Sussex 7-9 June (48), Lancaster University 6-13 July (29), Kingussie 7-14 September (135), Dorking, Surrey 16-20 October (94). The combined total for the four English meetings was only 144 and for all five meetings it was 203.

Remarkably, however, the two autumn meetings each produced a species new to Britain and these are dealt with separately below.

Northamptonshire: Nothing uncommon was recorded during this meeting, but it was useful to have records from a previously under-recorded area. The most productive time was the morning spent at Geddington Chase (SP9084 and SP9194), with 31 species recorded, mostly near a stream. Grafton Park Wood (SP9381) produced 16 species.

Eastbourne: The most productive site was High Wood (TQ7109), where 32 species were recorded from the vicinity of a stream enclosed by steep slopes, where they were sheltering among undergrowth and around dead wood. The small copse near Birling Gap, which had been teeming with gnats on the 2011 autumn meeting, was on this visit gnatless with only *Leia fascipennis* recorded. Park Wood, which produced an extensive list in 2011, yielded only 7 species on this occasion.



Lancaster: Gnats were recorded at 15 sites thanks to the efforts of John Kramer, Alan Stubbs, Rob Wolton and Andrew Halstead. The most abundant species was evidently *Coelosia flava*, which was recorded at twelve of these sites, sometimes in numbers and it was the only mycetophilid species found at some of them. The uncommon northern species *Mycomya vittiventris* was found at Dalton Park Wood (SD545747) on 1 July.

Kingussie: Here the party was split between 7 at the Star Hotel in Kingussie, and a NHM group of 6 staying in a cottage outside the town. The results presented here relate to the Star group, and included contributions by Alan Stubbs, Roger Morris, and myself. The NHM group included Vladimir Blagoderov, whose vigorous sweeping obtained an excellent catch of gnats, and Erica McAlister, so their results are awaited with interest.

Recording was hampered by wet weather on some days and gnats were still sparse following earlier drought in some of the areas visited. To have already identified 135 species from this week, including *Exechiopsis forcipata* new to Britain, is therefore quite pleasing and has exceeded expectations during the meeting. Most of those recorded were widespread, with just a few of the Scottish specialities. Among those *Brevicornu fennicum* was found at Sluggan (NH8721), *Mycomya shermani* at Coylumbridge (NH9110) and *M. trivittata* at Laggan Forest (NH5690) and Inshriach Forest (NN9405). A more significant find was *M. denmax*, only previously known in Britain from two Scottish males (Tokavaig Wood, Skye 1991, Glen Lochay, Perthshire 1997). Alan Stubbs caught a third male on a detour to Bochel Wood (NJ228235) near Tomintoul on 13 September.

Tarnania dziedzickii was found at Uath Lochans (NH8302) on 9 September. This has a scattered distribution in the west of Britain, with some records from caves, so may be under-recorded due to lack of recorder effort in such situations; with the most recent previous records from Swineholes Wood, Staffs (1997) and the Mar Lodge Estate in Aberdeenshire (2000).

A surprising find was *Anatella bremia*, of which one male was swept along the wooded riverbank immediately east of Nethy Bridge (NJ0121). This is the first post-1990 record of this species, as all British records are from the 1980s Welsh wetland surveys, with the exception of a more recently discovered older museum specimen from the Isle of Arran (1953). There is no information on the habitat of the latter record. The Welsh sites include water meadows, floodplain fens and the floating fen at Llyn Hafodol, eroded peat hags and *Molinia* bog. As the biology

is unknown, its occurrence at this rather different Scottish site cannot yet be explained.

Dorking: A wide range of sites was visited and there were reasonable numbers of gnats at several of them. Two visits to Ockham Common on 18 and 20 October together produced 47 species, and 44 species were recorded at Headley Heath. At the latter site, most gnats were concentrated among the dense tall bracken in the birchwood fringes, and this is where *Mycomya danielae*, which is new to Britain, was found. Also at this site numbers of gnats were among visitors to a large clump of ivy in flower by the entrance. Swept from the ivy were *Bolitophila saundersii*, *Synapha vitripennis*, *Cordyla crassicornis*, *C. fissa*, *Exechia cincta*, *E. fusca*, *Mycetophila ocellus*, *M. tridentata* and *Sceptonia membranacea*. It could not be confirmed whether feeding at the flowers by these species was taking place.

Following rain on Saturday afternoon, we visited oak woodland at Friday Street, where the bilberry ground cover provided shelter for gnats and 38 species were recorded, suggesting that a finer day could have been quite productive there. The visit to Ockham Common on 18 October concentrated on the area around Bolder Mere (TQ0758), where *Exechiopsis seducta* was a surprising find. *Ditomyia fasciata* was also found there, as well as at Gomshall alderwood (TQ0947) on 17 October.

Exechiopsis seducta was only known in Britain from two sites nearly 6km apart within the same hectad (Elveden Centerparc 2008; Brandon Country Park 2010, 2011) (Gibbs 2009, Chandler & Perry 2011). Both of those sites adjoin Thetford Forest, a largely coniferised area of former Breckland. This may be a recent arrival in Britain, so its occurrence in a part of Ockham Common that is mainly pine woodland is of some interest.

After the rest of the party had departed on the Sunday morning, I sampled the area near the 19th century semaphore tower (TQ0858) where mature chestnut woodland, with a good amount of fallen dead wood, produced 30 species, including two males of *Mycetophila sublunata*. The latter species was also recorded at Nower Wood SWT Reserve (TQ1954) on 17 October and at Ranmore Common (TQ1250) on 18 October, one male at each site. These are the first records since it was added to the British list from 5 sites in 2011, so it was interesting to see that it is clearly well distributed in Surrey.

Three gnats new to Britain in 2013

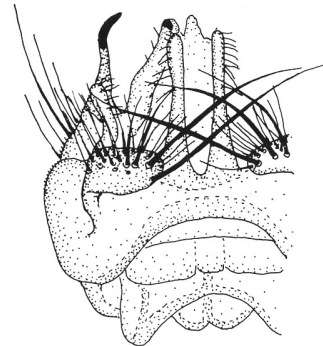
These further additions to the British list are all based on single specimens, like the five reported a year ago. As reported above two were discovered on field meetings. It was interesting to find a third, *Epicypsa fumigata*, among material from Devon submitted by Rob Wolton.

Again it isn't possible to determine if they are recent arrivals or overlooked natives, and the status of these and the species newly reported in Newsletter 6 can presently only be treated as Data Deficient. There have been no further records of those five but there have been new records in 2013 of some other recently added species, including *Exechiopsis seducta* and *Mycetophila sublunata*, both reported above from the Surrey field meeting. The others in this category, of which records are reported below, include *Exechiopsis davatchii*, *Greenomyia mongolica* and *Phronia forcipula*.

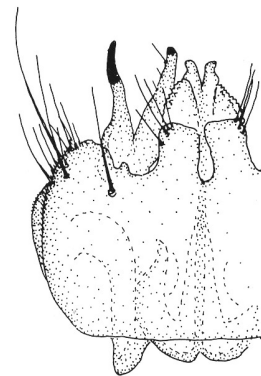
Mycomya (S. *Mycomya*) *danielae* Matile, 1972

One male was swept from bracken in birch woodland at Headley Heath (TQ2053), Surrey on 17 October 2013. This species was described from a single male collected in Savoie, France in 1970 (Matile 1972). It has since proved to be a Holarctic species that is widely distributed in Europe, from Scandinavia to Rumania, across to the eastern Palaearctic, and is widespread in Canada, extending as far south in North America as Arizona and New Mexico (Väisänen 1984. Kjærandsen *et al.* 2007). It might therefore be considered surprising that it has not previously been recorded in Britain. Further recording in Surrey will be necessary to determine if it is established in that area.

The thorax is yellowish with brown stripes, the abdomen brown and narrow yellow markings at the margins of the tergites, and the legs yellow. It runs in the key by Hutson *et al.* (1980) to *M. trivittata*, since it has vein Sc interrupted before the costa, but the male genitalia are quite different. They are very distinctive, as illustrated below, with the median tergal process divided into two long slender lobes, while the lateral appendages are curved towards each other and bear strong bristles.



Mycomya danielae, male genitalia tergal view (from Väisänen 1984)



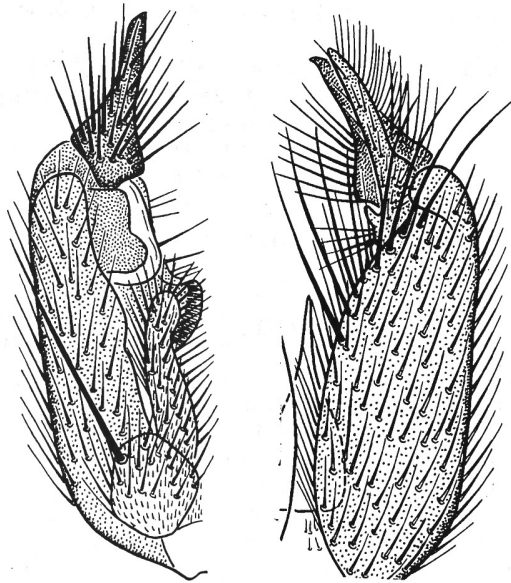
Mycomya danielae, male genitalia sternal view (from Väisänen 1984)

Exechiopsis (S. *Exechiopsis*) *forcipata* (Lackschewitz, 1937)

One male was found at the west end of Loch Morlich (NH8509) on 8 September 2013. It was swept along a wooded stream, running close to the road, near where it flowed into the Loch.

The thorax is yellowish with brown dorsal stripes, abdomen brown with yellow hind margins to tergites 2-4, and legs yellow.

It is best recognised from the structure of the male genitalia, with the gonostylus comprising narrow lobes and a series of strong marginal bristles on the gonocoxites.



Exechiopsis forcipata, male genitalia: left, dorsal view; right, ventral view (from Zaitzev 2003)

This too is a widespread species, mainly northern in Europe with records from Scandinavia, Germany, Poland and Austria, and in Russia from Karelia, the Altai and the Far East Primorye region (Zaitzev 2003). Occurrence in Scotland is therefore not unlikely.

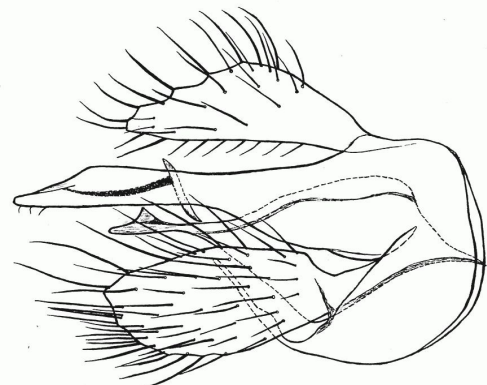
***Epicypya fumigata* (Dziedzicki, 1923)**

One male was found at Rutleigh Wood (SS521009), Devon by sweeping carried out by Rob Wolton in the period October to November 2013. Rutleigh Wood is a large (about 50 hectares) ancient semi-natural wood, some 1.25 km from his study hedge at Locks Park Farm (see comments in Newsletter 6). The wood is mainly oak dominated, on acidic soils, but with extensive areas of wet willow woodland, and alder carr on the thin alluvial plain alongside the River Lew, that forms the southern boundary. The actual area sampled is called Parsons Wood, being glebe land (Rob Wolton pers. comm.).

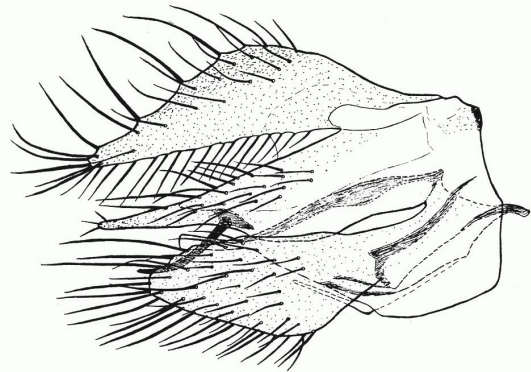
Epicypya fumigata is black bodied, with yellow legs and is externally very similar to *E. aterrima* (Zetterstedt, 1852). Like all *Epicypya* species it has a pair of long bristles on the second abdominal sternite. The other British species *E. limnophila* Chandler, 1981, which is smaller and occurs in wetlands, has the abdomen partly yellowish brown, only dark dorsally. These two species are certainly distinguished only by the male genitalia, in which the lateral lobe of the gonocoxites in *E. fumigata* is distinctly longer than the cerci and with an angular truncation apically, while in the other British species it is evenly tapered apically and not exceeding the cerci in length (see lateral views). The parameres, as seen in the ventral views are also angularly truncated apically in *E. fumigata*, but with a slender apically rounded apical portion in *E. aterrima* and in *E. limnophila*

Epicypya species have the genitalia contracted into the end of the abdomen and it is usually necessary to extrude the genitalia, most readily accomplished with specimens preserved in alcohol, in

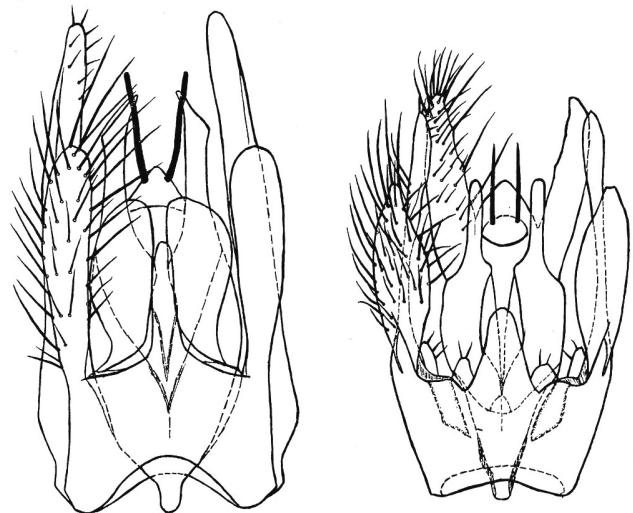
order to determine the sex of specimens. It is therefore possible that undissected dry specimens of *E. fumigata* could have been determined as *E. aterrima*. However, *E. aterrima* is widespread in Britain and this is the first British specimen recognised to be *E. fumigata*, so it would appear to be much less common even if previously overlooked.



Epicypya fumigata, male genitalia, lateral view (from Chandler 1981)



Epicypya aterrima, male genitalia, lateral view (from Chandler 1981)

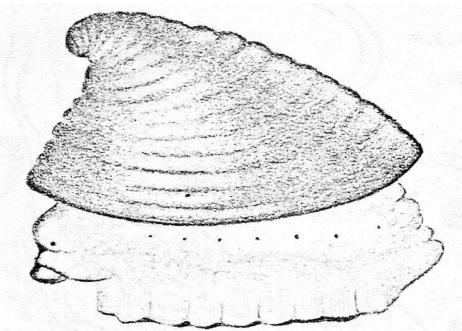


Epicypya male genitalia ventral view: *E. fumigata* left, *E. aterrima* right (from Chandler 1981)

Chandler (1981) revised the Holarctic species of this genus, following the discovery that the British species previously identified as *E. scatophora* (Perris) was not that species, which has conspicuously long cerci, but an undescribed species *E.*

limnophila with short cerci like *E. aterrima* and *E. fumigata*. At that time only one Austrian specimen of *E. fumigata* was available for examination, but I have since examined specimens from France, Switzerland and Italy. It is also known from Finland and Sweden and is widespread in Russia across to the Far East (Zaitzev 2003).

The ovoid larvae of *E. aterrima* live on the surface of moist rotten wood within conical black cases of distinctive form (Edwards 1925); Perris (1849) recorded similar biology for *E. scatophora*. Jakovlev (2011) reared *E. fumigata* in Finland from a decayed hazel log bearing the encrusting fungus *Hyphodontia*, but it wasn't recorded whether the larvae were case-bearing. The biology of most other species of the genus is unknown, but is likely to be similar. *Epicypa* is a large genus in the tropics, and Holmgren (1907) described a similar larval case for the Peruvian species *E. ancyliformans* (his illustration of larva and case is reproduced here).



Larva of *Epicypa ancyliformans* (from Holmgren 1907)

Larvae of this genus thus resemble those of *Phronia* in form and those of some species of that genus in constructing protective cases. Pupation takes place within the case, unlike the case-bearing *Phronia* larvae, which pupate in a separate cocoon (Edwards 1925).

Visit to Dundreggan 8-11 July 2013

I made another visit to the Dundreggan Estate to continue recording Diptera there. There had been a dry winter and spring since my September 2012 visit and conditions remained dry, and it was as hot as in the south, during my stay that coincided with the field week at Lancaster.

The streams in the birchwoods arising from the lower slopes were practically dry, the only stream still flowing being the Red Burn (Allt Ruadh) which arose on higher ground. Consequently gnat numbers were low except by that stream, where they were congregating in large numbers. On 10 July I followed the Red Burn beyond the birch- and alder-lined lower slopes as far as a narrow gorge, which had some mature pines nearby, where gnats were also sheltering. I then made a further visit to its lower part on the final day to maximise sampling there.

Altogether 82 species of gnats were recorded, of which 22 were additions to the Estate list to the end of 2012, bringing the total for the Estate to 190.

The additions included *Keroplatus testaceus*, of which two males were found flying along the lower reaches of the Red Burn (NH3214). Scottish records are still sparse for this species, but it

has been known from the north since I reared a female from a larva found in 1992 at Amat Forest, West Ross (Chandler 1992). The Amat record was from a larva found in its web on a *Fomes fomentarius* bracket on a birch branch close to ground level. A similar vacated web on a fallen branch on the bank of the Red Burn was considered most likely to have belonged to *K. testaceus*, although no vestige of its cocoon was found.

Mycetophila mohilevensis was the most interesting find during the visit. One male was caught near aspens by one of the dry streams in the birchwood (also NH3214). This is only previously known in Britain from three records from damp broad-leaved woodlands in the Scottish Highlands (Dalnapot, Morayshire 1962; Camusurich Wood, Perthshire 1979; Dinnet Oakwood NNR, Aberdeenshire 1993). It has been reared in Slovakia from the soft polypore *Tyromyces chioneus* (Ševčík 2010)

Other significant 2013 records

Batches of material from diverse localities were received from Ivan Perry (141 species) and Martin Drake (134 species). Ivan noted that he had done less well in numbers of specimens than in previous years, evidently affected by the weather conditions, but had some interesting finds, in particular from Scotland and from his continuing visits to the Warburg Reserve at Bix Bottom, Oxfordshire. Material from Martin was mainly from his local area in the south-west, and he obtained some species new to that region.

Rob Wolton ran Malaise and moth traps in a small copse (SS516023) linked to the study hedge on his farm, and obtained 77 species. Twenty of these were additional to the 139 species trapped at his hedge in 2011-2012. These additions to the Locks Park Farm list included *Brachypeza armata*, *Exechia cincta* and *Sciophila nonnisilva*. This copse is only 1 hectare and is not ancient; oak dominates the canopy, but there are wet patches with alder and willow, as well as birch. The traps were set under an ash tree in an area that was coppiced about 8 years ago.

Geoff Hancock recorded Diptera on the treeless (and sheepless) island of Mingulay in the Western Isles, from 31 July to 3 August. He caught three species of fungus gnats, *Boletina dubia*, *Acnemia nitidicollis* and *Brevicornu nigrofuscum*. The last species was found in numbers and it could be assumed that the females of this genus, that were also caught there, are conspecific.

Batches from several sites examined for Keith Alexander, Martin Townsend and Ivan Wright provided gnat records, some of which are detailed below.

Trap samples of Diptera from a wooded hollow way near Linky Down at Aston Rowant NNR, were sorted by Judy Webb, on behalf of Natural England. These included 103 species of fungus gnats, with several interesting records; 101 species were recorded in a Malaise trap (SU723964) and 14 species caught in bottle traps placed in decaying trees (also in SU7296) added two more. The Malaise trap (photograph below) was set next to a rotting fallen trunk, which became covered with inkcap fungi for one week in the autumn (Judy Webb pers. comm.).

In addition to the significant records highlighted below the catch included *Keroplatus testaceus*, *Brachypeza armata*, *Docosia flavicoxa*, *Leptomorphus walkeri*, *Sciophila thoracica* and *Grzegorzekia collaris*, the last in samples from June to October.



Location of Malaise trap at Aston Rowant NNR (Judy Webb)

In addition to the fieldwork mentioned above, I made two visits to Oxwich Wood on the Gower peninsula and five visits to Bushy Park, Middlesex. Dry conditions prevailing at the latter site were considered responsible for the smaller numbers of individuals and species observed there compared to the visits in 2011 and 2012. An area that I first visited in August 2013, comprising a strip of woodland between Brewhouse Fields and the Longford River, with a good quantity of fallen trees and dead wood, produced interesting finds in other families and invited more attention in 2014.

The following records are noted:

Mycomya collini Cinderford, Gloucestershire (SO634153), 30.viii-5.ix.2013, male (M. Townsend). There are five previous British records scattered in England north to Cumbria and this is a new regional record.

Greenomyia mongolica Minsmere NNR (TM478665), 28.viii.2013, male in willow and alder carr at edge of a reedbed (I. Perry). Records of this species are still relatively few but it is clearly now widespread.

Palaeodocosia flava Warburg Reserve, Oxfordshire (SU715879), 8.vi.2013, male in mixed woodland (I. Perry). Ivan also found it at this site in 2012, which was the first British record since Standish Wood, Gloucs in 2004.

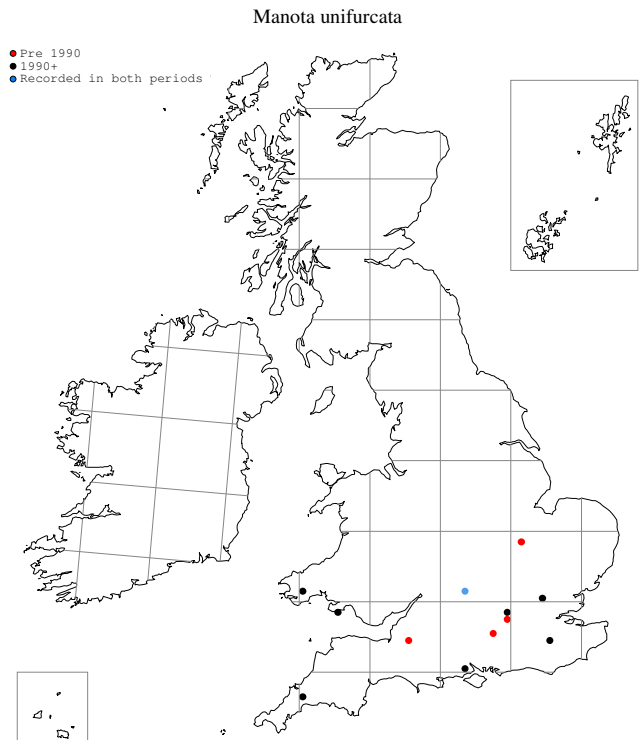
Manota unifurcata Oxwich Wood, Glamorgan (SS5086), 22.vii.2013, male in ash and sycamore woodland on steep slope (P.J. Chandler).

Aston Rowant NNR, Oxfordshire (SU7295), males in Malaise trap catches for periods 24.vi-1.vii and 8-15.vii.2013 (J. Webb).

This very distinctive species, with antennae set high on the head and median veins (M_1 and M_2) interrupted basally (see Kurina 2010 for habitus photograph), is known from scattered records in S England north to Cambs, and in S Wales. It is usually seen singly and in the current review of conservation statuses mentioned above, where Near Threatened status is provisionally retained, I have suggested that it is possibly too secretive in behaviour to be detected more frequently.

It was reared at Windsor Forest in 1967 from rotten beech wood bearing a myxomycete, but the precise larval habitat was uncertain as no early stages were observed. Zaitzev (1990) recorded larvae on decayed birch wood bearing an unidentified

greyish white fungal growth; larvae were observed to penetrate the rotten wood with rapid gliding movements.



Distribution map of records of *Manota unifurcata* to end of 2011

Manota unifurcata belongs to a genus that is species-rich in tropical rainforests, in all zoogeographic regions, but it is the only European species of its subfamily. Jaschhof *et al.* (2011) commented on the rarity of records of *Manota* in Europe and North America, and considered the only species recorded from the latter region to be of South American origin. They noted that there are five further described *Manota* species in the eastern Palearctic and that numerous undescribed species exist in Japan, of which at least five occur in the beech forests of north Honshu.

That only a single species exists in Europe is therefore surprising but, as it is not closely related to other known species, it appears to represent an ancient isolated lineage. Kurina (2010) summarised knowledge of the distribution in Europe of *M. unifurcata*, when he recorded it as new to Estonia. Jaschhof *et al.* (2011) added further records from Germany and Sweden, noting that most records are from old broad-leaved forests. Many records are from Malaise trap catches and both these papers include photographs of trapping sites. Jaschhof *et al.* show a site in Stenshuvud National Park in Sweden, which is in beech-dominated forest with limited ground cover, and also report its occurrence in swamp forests of black alder, both there and elsewhere in Sweden. Kurina's trap in the Alam-Pedja Reserve is situated in the herb-rich edge of mixed forest and resembles the trap location at Aston Rowant.

Anatella ankei Bewley Down (ST287065), Devon, 30.vi.2013, male in wet broad-leaved woodland (C.M. Drake). The few records are widely dispersed in Scotland and Wales, with one from Somerset, so this one extends the distribution a little further to the south-west.

Exechiopsis (Xenexechia) davatchii Aston Rowant NNR, Oxfordshire (SU7295), male in Malaise trap catch for period 16.viii-30.ix.2013 and male in bottle trap on dead hazel in same

period (J. Webb). Recorded as new to Britain by Chandler & Perry (2011) and hitherto known from four widely scattered sites as detailed in the previous newsletter No 6 (p. 4). The biology of the subgenus *Xenexechia* remains unknown.

Rymosia affinis Warburg Reserve, Oxfordshire (SU715879), 29.ix.2013, male in mixed woodland (I. Perry). Ivan's previous records of *R. affinis* from this site in 2011 and 2012 were the first in Britain since 1980 (see Newsletter 6, p. 2).

Synplasta ingeniosa Burrigge Common (ST311058), Devon, 20.viii.2013, male in wet woodland with stream (C.M. Drake). This is widespread in Britain, but generally scarce. There are records for Somerset, but this is the first for Devon.

Mycetophila lubomirskii Linn of Tummel (NN911606), 15.vii.2013, male in wooded ravine (I. Perry). This is new to Scotland, the previous most northerly record being from Sherwood Forest (Pittance Park in Edwinstowe Center Parcs, 13.vii.2008, D. Gibbs).

Mycetophila signata Andrew's Wood Devon Wildlife Trust NR (SX713520), South Devon, male in bottle trap catch for period 24.viii-26.x.2013, secondary oak and birch woodland (K.N.A. Alexander). This is the first record for SW England for this widespread northern and western species, with nearest previous records from Herefordshire and Somerset.

Phronia forcipula Aisholt Wood Somerset Wildlife Trust NR (ST197360), 20.vii.2013, male by stream in broad-leaved woodland (C.M. Drake). The five previously known British sites are in the south-east, Derbyshire and Yorkshire. This was first found in Britain at Langley Park, Buckinghamshire in 2007, then at Wortley Top Forge, Yorkshire (2009), Burton Mill Pond, Sussex and Bushy Park, Middlesex (both 2011), and Hardwick Hall, Derbyshire (2012). It is a small easily overlooked species, so it is unclear whether it is a recent arrival in the country.

Phronia portschinskyi Flitwick Moor NR (TL046352), Bedfordshire, 6.x.2013, male in area comprising wet alder carr and drier birch and oak woodland (I. Perry). As all previous British records are from wetlands in Wales and East Anglia, the carr seems the most likely habitat here.

Acknowledgements

I thank all those who have provided records and specimens for examination, and in particular Keith Alexander, Martin Drake, Geoff Hancock, Ivan Perry, Alan Stubbs, Martin Townsend, and Rob Wolton for the opportunity to include their records here. I also thank Judy Webb for providing the Diptera catches from Aston Rowant NNR and Mick Venters of Natural England for the opportunity to examine this material. I am also indebted to Alan Watson Featherstone, Director of Trees for Life, for the assistance and hospitality shown to me during my further visit to Dundreggan.

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