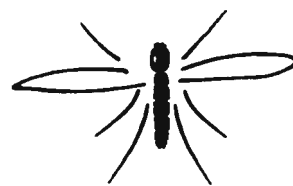


Larger Brachycera Recording Scheme

Newsletter 15

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Oxycera morrisii larvae in streams

The biology of most British *Oxycera* is moderately well understood. At least, one can guess the probable identity of larvae from the habitat in which they were found. Thus, in calcareous seepages one would expect to find *dives*, *pardalina* and *pygmaea*, along muddy water margins it would be *trilineata*, and in wet meadows most likely *rara*. However, Andy Godfrey has been sampling calcareous streams in Lincolnshire and Oxfordshire using the usual river biologist's method of kick-sampling in riffles. Here he has found *morrisii*. The larvae of this species have been found in a range of habitats such as marshes and stream margins. This is the first record of the larvae being found within the body of the stream. This was not a single chance event because several larvae were found at more than one site. Although the separation of the larvae of *morrisii* and *pardalina* is not good using present characters, there is little doubt that *morrisii* is the species involved. Both Andy and myself arrived at the same identification for the Lincolnshire specimens.

Martin Drake

A transport of delight

Jonty Denton's note in the last newsletter about finding *Solva marginata* on the London tube (*Solva marginata* goes down the tube!) reminded me of Parmenter's note along similar lines: "On July 8th, 1949, I caught a male on an omnibus window on Route 2 (i.e. Golders Green to Crystal Palace) as we neared Victoria, passing Buckingham Palace garden." (Parmenter, L., 1950, A note on the genus *Solva* (= *Xylomyia*) (Dipt., Stratiomyiidae) in the London area. *Entomologist's mon. Mag.* **86**, 264). What is it about this species that prompts such detail about the exact route of the collectors?

Martin Drake

***Ptiolina* - species to look out for in the north**

The genus appears to be frequent in northern latitudes, and six of the fifteen Palaearctic species are found north of latitude 60° (well above Britain). In her recent paper, Nartshuk discusses eight species and briefly describes the key features, although she gives no figures or key here (Nartshuk, E. P., 1995. Taxonomic and faunistic data on the Rhagionidae (Diptera, Brachycera) of the northern Palaearctic. *Acta Zool. Fennica*, 199, 17-24). As the genus appears to be in a muddle, we may have unrecognised species in Britain. We are already aware that *nigrina* may occur in Britain although this has not been confirmed. Two other species, *cinerofasciata* (Schummel) and *nitida* Wahlberg may conceivably occur in northern upland areas of Britain. The differences she describes are given here (with slight editing of her English).

Ptiolina nigra. "... the first antennal segment is twice as long as the second and both segments are covered by bristles longer than the diameter of segment. The face of the male is bare (in specimens studied), the face of the female is covered by hairs which are shorter than in *P. nigrina*. The discal cell is rather short, only three times as long as wide. All femora and tibiae of the male have long hairs. In the male genitalia, the aedeagal dorso-anterior plate is rather large."

Ptiolina nigrina. "It is distinguished by long hairs on the face both in males and females. The hairs of the basal segment of the antennae are not as long as in *P. nigra*. In contrast to *P. nigra*, the two basal segments are equal in length in *P. nigrina*. In males, all femora and hind tibiae have long hairs. The discal cell of wing is nearly four times as long as wide."

Ptiolina cinerofasciata. "The species is easily distinguished by the small size of the antennal flagellum, grey colour, white pubescence of the body, absence of long pile on the tibiae in males and females. In the male genitalia, *P. cinerofasciata* is characterized by long basistylar dorso-inner anterior process, and the long and wide (in lateral view) anterior bar of aedeagus."

Ptiolina nitida. "Females are easily distinguished by their polished frons and shining mesonotum. Males are very similar to *P. obscura*, but they are distinguished by their longer antennal flagellomere and light coloured fringe of the alar squamae. In the male genitalia, the dististylus has more short bristles than *P. obscura*. In the males, all femora and tibiae have long hairs."

Nartshuk says that larvae of *nigrina* were found in the thallus of the liverwort *Marchantia polymorpha*. This does not agree with the observations in Britain where *Ptiolina* (which species?) has been found in moss at the foot of tree trunks. *Spania nigra* is the species that we usually regard as being associated with liverworts.

Martin Drake

***Hybomitra ciureai* Seguy (Tabanidae) new to Wales and western Britain.**

This note is to report the discovery of the tabanid *Hybomitra ciureai* in south Wales, this record being the first for the Principality and the first for the west of Britain.

One male *Hybomitra ciureai* Seguy 1937, Magor Marsh SSSI, Monmouth, Gwent, ST425866, on 21 July 1987, water-trapped. Col. Holmes, Boyce & Reed, det. D J Heaver, confirmed A E Stubbs.

The specimen was from a batch of tabanids (mostly comprising *Haematopota pluvialis* and *Chrysops viduatus*) water-trapped as part of the Welsh Peatland Invertebrate Survey (WPIS) which was instigated by the then Nature Conservancy Council. I, along with others, volunteered our services to identify the material

gathered from both pitfall and water traps, My initial and somewhat tentative identification of the specimens was of *H. ciureai*, but I sought advice from Joan Morgan at Bangor (where I happened to be living at the time). She felt that it showed distinct characters of *H. ciureai* but that the case was not clear cut. In the meantime, more material arrived to process and the specimen was stored away.

A workshop on the Larger Brachycera at Preston Montford, Shropshire, had me searching for material to work on and I came upon the *Hybomitra*. Thinking to finally solve the issue, I presented it to Alan Stubbs as *H. ciureai*, and he confirmed that it was indeed this species. Having been dried out from alcohol, it is not in the best of conditions, and has extensive damage to both wings. The antennae are present, however, and are a clear and bright orange on all three segments. The eye facet zoning shows a distinct junction between the size classes, especially in comparison with species such as *H. muelfeldi*, and so readily keys out.

The record for this species in the west of Britain is interesting in that it has never been known from locations away from Kent, Sussex and Essex. Whether this is because of the difficulties in recognising it in the older keys, or a lack of recording in this part of Wales is not clear. Oldroyd (1969) utilises the eye facets character in his key to male *H. ciureai* and so separates it out from *H. distinguenda*, so a lack of recording of a naturally rare species may account for its absence from the historical records.

Asides from the present record, it is found in only five vice counties, with the most recent records (from the 1980s) coming from only three sites (Colne Estuary, Fingringhoe Marsh and Offham Marshes - data from the Biological Records Centre and the Invertebrate Site Register). Its current status is RDB3.

Magor Marsh SSSI is situated just south of the small village of Magor in Monmouth, Gwent. It is part of the larger Caldicot Level, although the 22 ha site is now the only remnant of the former extensive fenlands that bordered the coast. The marsh receives some calcareous run-off, this establishing a variety of tall fen communities, with the National Vegetation Community S6 (*Carex riparia* swamp) dominating the areas around the WPIS trap runs (Holmes et al., 1991). The loss of most of the water traps in the survey from cattle trampling (Holmes, pers comm.) on this site begs the question of whether greater trapping effort would show that *H. ciureai* is more numerous here. Its overall rarity in Britain, and its apparent avoidance of inland sites, seems at odds with its European distribution. Chvala et al. (1972) state that it is one of the most common *Hybomitra* species in Europe, with no real centring of distribution on coastal marshes or levels, it generally being found in marshes. It would be worth re-trapping Magor Marsh to see if further specimens can be found, and to explore any other coastal wetlands in the vicinity.

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David Heaver

Personal notes on attacks by female tabanids

I define an attack by a female tabanid as constituting the taking of, or attempting to land on with intention to take, a blood-meal, as opposed to the casual investigation of animals and drab coloured objects indicated by a brief circling before flying elsewhere. Whilst writing this article I realised that I far too frequently net tabanids whilst they fly around me or tube them very soon after they alight on my skin or clothing rather than observe them for a little longer. With the exception of *Haematopota pluvialis* (several times unnoticed)

and *H. subcylindrica* (unable to remove it sooner due to carrying much equipment), I have not allowed any tabanids to take a blood-meal from me, but I have observed this behaviour on other people and animals. To date (Sept 1996), I have encountered only four species which have never attacked me, and of these, *Atylotus plebejus* (Fallén) and *Hybomitra expollicata* (Pandellé) were seen on one day each so do not deserve comment. The other two are large species; *Tabanus sudeticus* Zeller, which I have seen often enough, but seems to prefer to attack large horses, and *T. autumnalis* L., again which I have seen quite a number of times. I have met a member of staff at Fingringhoe Wick NNR who received a painful bite on his arm by a female *T. autumnalis*. My observations on other British species between 1988 and 1996 are given below.

Chrysops caecutiens (L). Females attack in ones and twos, and almost invariably encircle the top and back of the head several times before alighting on hair and moving to a place where they might bite. I have also had the odd fly alight on my forehead.

Chrysops relictus (Meigen). Females usually attack humans as noted for *C. caecutiens*, but I have also had them alight on my torso and arms, and my son was bitten in the middle of his back by a female *C. relictus* at Overcote, Cambridgeshire.

Chrysops sepulcralis (Fabricius). This small and quiet species does not encircle the top and back of the head as obviously and deliberately as the other three British *Chrysops*. Although females will encircle the head a couple of times before alighting, they are just as likely to fly alongside you and alight directly on the head or torso. Attacks are again in ones and twos.

Chrysops viduatus (Fabricius). Attacks are usually as noted for *C. caecutiens*, but I have had them alight on various parts of my body from the knees upwards. Attacks are again in ones and twos. I have seen a couple of females taking a blood-meal from a horse's neck at Marchwood, south Hampshire.

Haematopota bigoti (Gobert). A female was netted whilst flying around my torso in company with several female *H. pluvialis*.

Haematopota crassicornis (Wahlberg). Despite spending many hours at sites where this species is present, I have been attacked only once when the single female flew irregularly about the crutch area, before alighting on the belly. I have seen a female trying to 'bite' through trousers on a man's thigh.

Haematopota pluvialis (L). Females may attack in numbers, at sites where the species is common. I have had this species alight on all parts of my body except the feet, over a number of years, but it generally prefers the torso and arms, with the more precise preferences on me being the wrists, belly and crutch area. I have noted *H. pluvialis* taking a blood-meal on various parts of horses and cattle on a number of occasions. I have been 'bitten' by it several times.

Haematopota subcylindrica (Pandellé). A female landed on my left wrist, and took a blood-meal from between a fold of skin. I felt a very slight pain as its mouthparts pierced the skin, and the same pain as it commenced to take a blood-meal. It was removed by tubing after it had been allowed to feed for about 20 seconds. Bleeding continued for some time afterwards, but no irritation was felt after the fly was removed, nor was any small lump or swelling of any type noted at the point of the bite over the following days.

Atylotus fulvus (Meigen). I have been attacked by single females on a number of occasions, the flies encircling the legs and torso several times before alighting, or attempting to alight.

Atylotus latistriatus (Brauer). A female encircled my legs and lower torso several times before flying at my waist and being netted, whilst I walked along the bottom of a brackish ditch inside a sea embankment at Milford-on-Sea, south Hampshire.

Hybomitra bimaculata (Macquart). Females generally attack in ones and twos, encircling the legs and lower torso several times before alighting. As with most tabanids, to date, I have generally netted them as they encircle, but I have had odd ones alight on my arms and legs. *H. bimaculata* is strongly attracted to black objects.

Hybomitra ciureai (Séguy). Females attack in ones and twos, as noted for *H. bimaculata*. One alighted on the calf of my wife's leg at Copthall, north Essex. *H. ciureai* seems to be a very active seeker of a blood-meal, and I justify this statement not only by attacks noted on myself, but also the relative ease with which females can be trapped in Manitoba traps, windows and cars etc.

Hybomitra distinguenda (Verrall). Females attack as noted for *H. bimaculata*. Occasionally they have alighted on my belly and legs.

Hybomitra montana (Miegen). Females have always attacked me one-at-a-time. Sometimes they encircle the legs and torso, but occasionally they make a more direct route towards the torso.

Tabanus bromius L. Females attack in ones and twos and encircle the legs and torso several times before alighting on the legs or torso. This species is so numerous at some sites that a succession of attacking females have been encountered over periods of half an hour or more, this is as opposed to the usual attacks by larger tabanids, where one or two are encountered at a time, with a break of five minutes or more before the next one or two arrive.

Tabanus maculicornis (Zetterstedt). Despite noticing this species on many occasions at Ashberry Pasture, north-east Yorkshire, I have only once been attacked by it. The attacks occurred on 21.6.1992 in late morning, when three females encircled my legs and lower torso: one landed on my belly, and another on a leg. The three females attacked within a five minute period, and usually, no other *T. maculicornis* were noticed at the site that day performing their more typical morning acts such as resting on rails or posts, or on mud by the streamside.

Andrew Grayson, 56 Piercy End, Kirkbymoorside, York YO6 6DF

Further notes regarding finding male tabanids

During 1992, I discussed finding male tabanids, since when I have found males of several other species (Grayson, A. 1992. Finding male tabanids. *Larger Brachycera Recording Scheme Newsletter* No. 9, p.6). Male tabanids are usually much less in evidence than females in the field, and this is reflected by the low numbers of males to be found in both modern and old collections. Between 1989 and 1996, I have caught males of eighteen species in Britain, and I hope the following notes will be of use to tabanid enthusiasts.

In short, I find the most productive methods for finding male tabanids are (a) checking fence posts, gates, rails, tree trunks etc. at suitable breeding sites, and (b) stealthily stalking at suitable breeding sites for males on the ground or on vegetation. Once a male has been detected by method (a), a glass tube or jar can be placed carefully over it to secure a capture. With practice, most males will not escape the tube or jar, but it is important to slowly move the container to about 25mm from the insect, before sharply bringing it down to the surface on which the insect rests. Surfaces which are not flat are more difficult to capture tabanids on, but the fingers of the free hand can be swiftly used to prevent the insect escaping. With practice, a success rate of 80% or more is to be expected by tubing male tabanids on flat surfaces, but trying to net them as they fly off is almost doomed to fail, with a success rate of about 10% in my experience. Once a male has been detected by stalking, a net needs to be brought down over it: the tabanid will usually fly into the end of the net if it is held upwards, and if the tabanid has not done so with a few seconds, it is likely to be lethargic due to being teneral, in which case the net can be slightly lifted, and a tube placed over the insect. Males amongst longer grasses and higher vegetation can be taken by sweeping, but initial stealth is important. Although some males can be caught by excessive sweeping of a site, this is more likely to

frighten them away as you approach.

There are several fairly standard collecting methods which I do not use, or rarely use, that I know have managed to catch male horseflies. Beating bushes produced a male *Hybomitra distinguenda* for a coleopterist; a water trap produced a male *Hybomitra montana* at a peat bog during a survey, and Malaise traps and sticky traps quite obviously have a reasonable chance of success if placed in an ideal situation, but you are not likely to obtain perfect specimens - particularly with any version of a sticky trap. Rearing male tabanids from larvae should be a worthwhile activity, provided you have the knowledge, patience and time.

The following notes on captures etc of male tabanids, contain my own observations only.

Chrysops caecutiens (L). On 7.7.1996, I found a male feeding intensely on a flower of Umbelliferae in a sunny sheltered position at Howe Bridge, N E Yorkshire. The fly was easily tubed.

Chrysops relictus (Meigen). Single males were carefully stalked, and ten swept from amongst tall grasses along a water-filled ditch at North Duffield Carrs, S E Yorkshire on 15.7.1994 and 16.7.1994. Two males were caught by the same method along a very similar ditch at Overcote, Cambridgeshire on 15.7.1995.

Chrysops sepulcralis (Fabricius). Six males were captured by bringing a net down over them as they rested on short grasses etc, on and around a sheltered bog pool with a raft of floating *Sphagnum* and other short bog plants at Decoy Heath, Dorset on 4.7.1995. Many other males and females were observed during a one hour period in early afternoon. Both sexes were seen to rest on grasses etc. for short periods, usually only a few seconds, before flying to another resting place several metres away across the bog. A male was removed from the sticky leaf-tentacles of a sundew (*Drosera* sp).

Chrysops viduatus (Fabricius). Five males were taken by sweeping ferns and long grasses on and very near to bogs in the New Forest, S Hampshire: these being from Matley Bog, 4.7.1994; Tantany Wood, 5.7.1994 and 1.7.1995; and Wootton Coppice Inclosure (2 males) 1.7.1995. A further dead male was removed from a sundew plant at Tantany Wood on 9.7.1994.

Haematopota crassicornis (Wahlberg). In contrast to many other tabanids, I find males of this species easy to find, because they congregate in groups on the top of fence posts, rails, gates, bridges, walls and on tree stumps and trunks (in which case not at the top), usually near to running water. In such situations they are easy to catch by placing a tube or jar over them. Sometimes they can be seen 'dancing' in the sky above their nesting places, this activity lasting a few seconds before alighting, and then repeating the activity. I have noted males at Jeffry Bog, S E Yorkshire on 21.7.1990, 25.7.1990, 21.6.1991; Northdale, N E Yorkshire, 11.7.1990; Overcote, Cambridgeshire, 14.6.1991; Mare Fen, Cambridgeshire, 14.6.1991; Blaiskey Bank, N E Yorkshire, 7.7.1991, 28.7.1991; Harome to Helmsley Road, N E Yorkshire, 22.7.1991; Ashberry Pasture, N E Yorkshire, 7.6.1992; Hackness, N E Yorkshire, 17.6.1992; Hawnby, N E Yorkshire, 7.7.1993; Lunshaw Beck, Boltby, N E Yorkshire, 7.7.1993; Thornton, (along ditch), S E Yorkshire, 12.6.1994; Strensall Common, N E Yorkshire, 8.6.1994, 13.6.1994; Beaulieu, S Hampshire, 3.7.1995; Barden, N W Yorkshire, 16.6.1996; Keepers Cottage, Troutdale, N E Yorkshire, 23.6.1996.

Haematopota pluvialis (L). Despite this being a reasonably common insect, males are very infrequently encountered. On 16.7.1995 I observed a group of about six *Haematopota* 'dancing' in the sky by a brackish ditch at Mersea Island, Essex. The flies rapidly descended and rose between heights of one and four metres from the ground. A male and a female were netted, both of which were *H. pluvialis*. All the other *H. pluvialis* males I have caught were swept as singles from amongst tall waterside grasses at Ashberry Pasture, N E Yorkshire, 7.6.1992 (in cop), 21.6.1992, 20.6.1993, 27.6.1993, 4.7.1993; Strensall Common, N E Yorkshire, 23.6.1992, 6.7.1993, 2.7.1994; Skipwith Common, S E Yorkshire, 23.7.1993; Wheldrake Ings, S E Yorkshire, 13.6.1994.

Haematopota subcylindrica (Pandellé). I tubed a male on the top rail of a fence surround a small pond at Fringringhoe Wick, Essex on 4.7.1996.

Atylotus fulvus (Meigen). A male was captured by bringing a net down over it as it rested on short bog vegetation at Matley Bog, S Hampshire on 3.7.1995.

Atylotus latistriatus (Brauer). A male was netted as it flew up from saltmarsh vegetation beside a ditch behind the sea embankment at Farlington Marshes, Hampshire on 6.7.1995. Six males were captured by stealthy stalking of Sea Lavender (*Limonium vulgare*) dominated parts of saltmarshes in Essex. All six were caught by swiftly bringing a net down over them as they either rested on saltmarsh plants or fed on *Limonium*. One male was caught at Old Hall Creek on 26.7.1996; one on saltmarsh at Mersea Island on 25.7.1996, and four at the same site on 26.7.1996.

Atylotus plebejus (Fallén). One male was captured by bringing a net down swiftly over it as it alighted on short bog-side vegetation at a bog pool of floating *Sphagnum* etc at a kettlehole bog near Nunsmere, Cheshire on 21.7.19.

Hybomitra bimaculata (Macquart). About ten males were observed resting together with females, between 1 and 2 metres from ground level, on birch (*Betula* sp) trunks in sunlight, at the edge of wet heathland on Strensall Common, N E Yorkshire on 8.6.1994: 3 males were tubed, the rest were observed closely and were fairly reluctant to fly from their resting places. The time of day was mid-morning. I tubed a male in identical circumstances at the same site on 23.5.1995, but this time in mid-afternoon.

Hybomitra ciureai (Séguy). A male was captured after it had trapped itself inside the window of a house at Copthall, Essex on 26.7.1996.

Hybomitra distinguenda (Verrall). I have regularly tubed males on the middle fence rails at the southern end of Fen Bog, N E Yorkshire: several males and females were noticed on the fence rails on 11.7.1990, 1.7.1991, 14.7.1992 and 11.7.1994, mainly being seen on the rails during mid morning. A male, almost certainly of this species, was observed hovering at a height of about 2 metres, above boggy ground, near bushes at Ashberry Pasture, N E Yorkshire circa 1992. The hovering occurred at approximately 10.00 am, and lasted for only a couple of minutes before the insect flew away. It had not returned by 12.00 am.

Hybomitra montana (Meigen). A male was noticed climbing a grass stem at the edge of a peaty pool on Skipwith Common, S E Yorkshire, on 27.7.1991: a net was used to sweep it from the grass stem. A male was observed apparently drinking on wet ground at a peaty pool on Strensall Common, NE Yorkshire on 24.7.1995: it was captured by swiftly bringing a net down over it.

Tabanus autumnalis L. A teneral male was swept from amongst tall grasses in a brackish ditch at Milford-on-Sea, S. Hampshire on 7.7.1995. All my other sightings of males have been in Essex. Several males were found resting on fence rails at Copthall on 17.7.1995 and singles were seen at the same site on 5.7.1996, and at nearby New Hall on 17.7.1995 and 30.6.1996. A male was tubed on the top rail of a fence at Fringringhoe Wick on 24 July 1996 and another male was caught at the same site on the following day by swiftly bringing a net down over it as it rested on a wooden picnic table in late afternoon.

Tabanus bromius L. I observed a male climbing a fence post before flying away, beside a horses' drinking trough near Marchwood, S Hampshire on 8.7.1994. I noticed a male on short bog vegetation at Tantany Wood, S Hampshire on 8.7.1995, and captured it by swiftly bringing a net down over it.

Tabanus maculicornis Zetterstedt. I have regularly seen males at Ashberry Pasture, NE Yorkshire since 1992. Initially, some specimens were tubed whilst at rest on fence rails etc., later males have merely been observed. On 7.6.1996 I saw about 20 males during a two hour period from 10.00am: most of these were

seen resting on fence rails etc., but three or four were observed apparently drinking on wet mud beside a small stream. I have also swept a male from long grass beside the stream, but all other sightings have been on the fence rails. I have noted males at Ashberry Pasture on 7.6.1992, 19.7.1992, 13.6.1993, 27.6.1993 and 10.7.1994.

Tabanus sudeticus Zeller. A male was captured using a jam jar whilst on the roadside at Thornton Dale, NE Yorkshire on 13.7.1989. I have regularly seen males on fence rails at Fen Bog, NE Yorkshire, and three were captured on 14.7.1992, and one on 11.7.1994. All four captures were made by placing a glass tube or jar over the flies.

Finding male tabanids depends mainly on being at the right place at the right time: the right place being at or near breeding sites; the right time being apparently the early morning of one or two days for some species.

Andrew Grayson, 56 Piercy End, Kirkbymoorside, York, YO6 6DF.

Asilids new to the British list

This year has been a bumper year for new asilids. Perhaps the most remarkable is the species collected by Mike Edwards from coastal cliff grassland in Devon (see *Larger Brachycera Newsletter* No. 13). This single female was then thought to be an odd species of *Machimus*. However, the new Swiss key to asilids (Weinberg & Bächli - see last Newsletter for details) allowed Alan Stubbs to key it out as *Neomochtherus pallipes*. The males have especially distinctive genitalia, and the character that singles out the female among other British species is the shining sternites.

Leptarthrus vitripennis was the next exciting find, made by Roger Hawkins who has only recently begun to look at Brachycera. I have no doubt that his careful approach led him to notice this species when experienced workers would have passed it over without another glance, as our common species. *Leptarthrus vitripennis* is the second species in the genus in Europe. Roger's specimen was taken at Riddlesdown SSSI on the chalk downs in Surrey. The fly was captured in an area of grassland although there was scrub and woodland nearby. This habitat is typical for *brevirostris*, so in future all *Leptarthrus* recorded from the Chalk will need to be looked at rather more carefully. You may wish to check your collections, although those who have done so have not found it (there is one specimen, misidentified as *brevirostris*, in the Natural History Museum).

The final delectation is a possibly new species of *Machimus*. In the last Newsletter, I reported Alan Stubbs' record that he thought was *arthriticus*, taken in the Breck. A similar specimen was also taken in the Breck last year by Steve Falk, so we now have a few males and females. Although these specimens differ from each other somewhat in leg colour and size, they have pale tergite hairs, so differ from the specimens that Collin identified from the Breck as *arthriticus*, leading Alan to consider that these 1996 specimens are indeed different species. However, I have looked at the parameres of the genitalia, and as far as I can make out without dissecting Collin's specimens, these are remarkably similar (and very different from other *Machimus* that I have dissected). Also, all these specimens have very long stout white bristles on the sternites, quite unlike any other *Machimus* (although I have not compared *cowini*). For the moment, this is Species A.

Key characters are not given here because there is an updated draft key by Alan included with this Newsletter. An earlier draft was inadvertently omitted from the set of keys circulated a year ago, so some of you may not have seen this.

Martin Drake

***Eutolmus rufibarbis* rediscovered in the New Forest**

A single male specimen of *Eutolmus rufibarbis* was found resting on a sandy path through heathland at Vales Moor in the New Forest (SU188042) on 5/8/96.

This species has a very limited distribution on southern heathlands in the UK. Formally classified as RDB2 (Shirt 1987), revision to "Rare" (equivalent to RDB3) was recommended by Falk (1992). According to data in the Larger Brachycera Recording Scheme files, this species was captured several times in the Lyndhurst area around the turn of the century, but it has not been recorded in the New Forest since 1904. The nearest subsequent records are from Studland in Dorset in 1909 and from Newchurch on the Isle of Wight in 1947. Post-1904 records are otherwise limited to the Surrey/Sussex heaths, a small area in Kent and, since the 1960s, the heaths of East Anglia.

The present record appears to represent the rediscovery of a relict population. At the time of the record *E. rufibarbis* was clearly not frequent: only one specimen was seen, right at the end of a full day's observation in the area during which several specimens of the superficially similar *Machimus atricapillus* were noted. It highlights the fact that small populations of even quite large and conspicuous rare species can exist undetected for many years, even in relatively well-recorded areas.

I am currently reviewing the statistical data on the distribution of *E. rufibarbis* and would welcome hearing of any records which have not yet been submitted to the Larger Brachycera Recording Scheme, particularly of specimens taken in Norfolk and Suffolk before 1960. The Recording Scheme database contains no records north of Norfolk but Verrall mentions a record from "Mumby Chapel in Lincolnshire" (J.E.Mason). Has anyone seen any specimens from that area or does anyone know of the whereabouts of Mr. Mason's collection so that the record can be checked?

Malcolm J. Smart, "Southcliffe", Pattingham Road, Wolverhampton WV6 7HD.

Observations on egg laying by the robberfly *Machimus rusticus* (Diptera: Asilidae)

The biology of some of our rarer robberflies is little known. *Machimus rusticus* is one of our larger species but, being drab brown, it is rather inconspicuous. It is classified as a Red Data Book species, with most of its sites in the southern counties where it is found on chalk and other limestone grasslands. The northernmost locality is at Hills and Holes NNR (about 6 miles north-east of Peterborough, modern Cambridgeshire) where, after several rather uneventful visits, some useful observations were made on 17 August 1991. The reserve has very uneven ground, literally hills and holes, formed of spoil from former limestone quarrying, largely abandoned after the 15th century. Limestone grassland with a rich flora is managed with winter sheep grazing, creating a mosaic of long and short turf, with scattered bushes and patches of scrub.

Machimus rusticus is mainly found in the more open grazed areas but, under very windy conditions, it can also be seen in ungrazed compartments with a mosaic of scrub and long grassland. The robberfly sometimes sits on paths resulting from trampling by the visiting public. However, it is mostly associated with short turf on south facing-slopes where the soil is skeletal (poorly developed), seemingly avoiding medium to long grassland.

On 17 August 1991, between 3.45 and 4.10 pm BST, two females were found ovipositing. There had been prolonged sunshine and the air temperature was moderately high, though a strong north-east wind prevented a build-up of heat. The first female was observed for about three minutes at a spot where the turf was sparse and stunted, and having a very arid appearance under prevailing drought conditions. The female was first

seen on a dead flower-head of thyme *Thymus* only 1 cm above ground. The fly poked about with the tip of its abdomen in an active, dextrous manner trying to locate crevices. It then flew a few centimetres where it more or less stumbled onto a bare patch of soil, its ovipositor actively poking about for about a minute before moving on to an adjacent dry seed head of salad burnet *Sanguisorba minor* about 1.5 cm above ground (the plant was very stunted and the flower stalk leaning). After continuing the same behaviour it flew off into the wind, so my priority was to retrieve the seed heads. Eggs could be seen without a hand lens. Subsequent examination under a microscope revealed six eggs on the thyme, laid just inside the calyx, comprising three, two and one egg respectively in three of the eight available calyces. Interestingly, two eggs were very pale yellow, the others darker dirty white as if the darker eggs had been laid on a previous occasion. Three eggs had been laid on the salad burnet.

The second female was observed for about five minutes on rather similar but less stunted turf. It was seemingly very inefficient since it expended a lot of time and energy actively poking its ovipositor onto dead leaf surfaces and grass stems where they touched in crossing one another. It would spend 15-30 seconds before walking on or taking a short flight of 5-10 cm before trying again. Eventually it flew off.

Several other females and males were seen. For the most part, if disturbed, they flew low for about a metre, confusingly resembling the action of the numerous grasshoppers (*Chorthippus brunneus* was the same brown colour but *C. parallelus* was green). With less wind they often flew further and on one occasion, in a scrubland glade, something flew up over my head, wind assisted, which when netted proved to be a male and a female (they were separate in the net but may have been *in cop.* initially).

A few days later, a further visit was less satisfactory. Cooler windier conditions resulted in very half-hearted oviposition behaviour by the three females that were located. In one instance, a few eggs were laid in an old stunted dead flower-head of rock-rose *Helianthemum nummularium* but otherwise there was no activity that seemed likely to conclude in egg laying.

As yet I have not seen any adults with prey. It is unknown what the larval diet may be in such arid soils: cockchafer larvae are a possibility in view of what little is known of robber fly life histories; alternatives could be grasshopper egg-pods or bibionid fly larvae.

As indicated above, *Machimus rusticus* is a relatively large brown robberfly. In the same locality there is the more generally distributed *M. atricapillus* which is smaller and of a more blackish-brown appearance. The latter species has been known to oviposit in situations similar to those described above.

In my experience, *M. rusticus* has been elusive but I await the day when I see it in better numbers and greater activity.

Alan Stubbs

[Since writing this article several years ago (!), Alan has discovered the publications of Musso who reared *M. rusticus* in France. More of this in the forthcoming book. ed.]

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Index to the Larger Brachycera Recording Scheme Newsletter Nos. 1 - 15

Notes. Tony (A. G.) Irwin edited issues 1 - 3. Number 1 was devoted to general information about the new scheme and instructions for recorders so has not been included in this bibliography. Martin Drake edited the remaining issues. Where no author was given, articles are ascribed to the Editor. A few editorial notes of no consequence and requests for information have been omitted. Where the content of the article is not obvious, a brief note is given in brackets. Articles are listed chronologically within families.

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- Irwin, A. G. 1984. Name changes for new cards. No. 2, 4 - 5.
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Irwin, A. G. 1985. Editorial. No. 3, 1 - 2. [*Rhagio lineolus*, *R. scolopaceus*, *Ogcodes gibbosus*]
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Editor. 1988. Guide to British species not mentioned in Oldroyd. No. 5, 5 - 7.
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Editor. 1989. British versus world rarities. No. 6, 1.
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Editor. 1989. Omissions and possible mistakes. No. 6, 4. [in Palaearctic catalogue]
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Drake, M. 1990. Catalogue of Palaearctic Diptera, 6: Therevidae - Empididae, Soos & Papp. No. 7, 4.
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Drake, M. 1993. Alliterative conservation. No. 10, 9. [common name for rare American fly]
Drake, M. 1993. Coastal and brackish-water species inland. No. 10, 9.
Plant, C. W. 1993. Essex larger Brachycera atlas. No. 10, 9 - 10.
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- Irwin, A. G. 1984. Stratiomyidae - overwintering. No. 2, 5

- Irwin, A. G. 1984. Stratiomyidae - *Beris* biology. No. 2, 6-7.
- Irwin, A. G. 1984. Stratiomyidae - *Praomyia* (= *Pachygaster*) *leachii*. No. 2, 7.
- Irwin, A. G. 1984. Stratiomyidae - *Sargus rufipes*. No. 2, 8.
- Irwin, A. G. 1984. Maps - *Beris* species. No. 2, 13 - 16.
- Drake, M. 1987. Aquatic Stratiomyidae larvae of grazing marshes. No. 4, 2.
- Stubbs, A. 1987. A stampede of strat larvae - to grapefruit skins. No. 4, 4 - 5.
- Stubbs, A. 1987. More on strat larvae. No. 4, 5 - 6.
- Laurence, B. 1988. Swarming in *Chloromyia formosa*. No. 5, 1.
- Drake, M. 1988. "Swarming" and "courtship" in *Odontomyia tigrina*. No. 5, 1 - 2.
- Drake, M. 1989. Field observations. No. 6, 5. [*Odontomyia ornata*, *Acrocera globulus*]
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- Porter, K. 1989. Malaise traps and Stratiomyidae. No. 6, 6.
- Porter, K. 1989. Leave no leaf unturned. No. 6, 6. [*Pachygaster atra*, *Microchrysa polita*]
- Drake, M. 1989. *Odontomyia argentata* and *O. ornata* in Suffolk. No. 5, 6.
- Drake, M. 1989. *Oxycera trilineata* and *O. rara* - semiterrestrial strats? No. 6, 6.
- Stubbs, A. 1989. Strat larvae update. No. 6, 7 - 8.
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- Drake, M. 1990. *Chorisops* scutellar spines. No. 7, 1.
- Drake, M. 1990. *Zabrachia*. No. 7, 2.
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- Editor. 1990. *Odontomyia argentata* swarms. No. 7, 2.
- Stubbs, A. 1991. The larval habitat of *Chorisops tibialis*. No. 8, 4.
- Editor. 1991. Stratiomyidae larvae - material needed. No. 8, 5.
- Drake, M. 1992. Stratiomyidae in Malaise traps. No. 9, 4.
- Stubbs, A. 1992. *Beris* and drought. No. 9, 4.
- Paskin, M. 1992. Swarming in *Beris chalybata*. No. 9, 4 - 5.
- Porter, K. 1992. Drought and stratiomyids. No. 9, 5.
- Drake, M. 1993. *Pachygaster leachii* larvae in elder. No. 10, 4.
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- Drake, M. 1993. *Stratiomys* eggs. No. 10, 5.
- Drake, M. 1994. Stratiomyids in garden grass. No. 11, 1.
- Morgan, I. K. 1994. Notes on *Stratiomys singularior* and *Haematopota grandis*. No. 11, 1.
- Drake, M. 1994. Stratiomyid larvae in Ivermectin-treated cow pats. No. 11, 2.
- Drake, M. 1995. Preston Montford Brachycera and Conopid Workshop. No. 12, 2. [report of meeting and observations on larval habitats of *Chloromyia* and "*Beris*" - see No. 14, 1]
- Drake, M. & Stubbs, A. 1995. *Chloromyia* swarming. No. 12, 2.
- Grayson, A. 1995. Further notes on the occurrence of *Stratiomys singularior* at inland localities. No. 12, 3.
- Bratton, J. 1995. *Stratiomys singularior* not restricted to saline localities. No. 13, 1 - 2.
- Drake, M. 1995. *Oxycera dives* takes a status dive. No. 13, 2.
- Drake, M. 1996. *Chorisops tibialis* larval habitat. No. 14, 1.
- Drake, M. 1996. Feeding in stratiomyid larvae. No. 14, 1 - 2.
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- Irwin, A. G. 1985. Xylophagidae - *Xylophagus ater*, Mg. No. 3, 2 - 3.
- Editor. 1988. Rearing technique. No. 5, 3. [*Xylophagus ater*]
- Clements, D. & Alexander, K. 1988. British Xylophagidae - more records please. No. 5, 3.
- Stubbs, A. 1989. Field observations. No. 6, 5. [*Xylophagus*]
- Alexander, K. & Clements, D. 1991. *Xylophagus* - the continuing story. No. 8, 1 - 2.

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- Drake, M. 1991. *Solva marginata* behaviour. No. 8, 3. [mistakenly called *maculata*]
- Palmer, C. 1993. A note on rearing of *Xylomyia maculata* (Meigen) (Xylomyiidae). No. 10, 3 - 4.
- Drake, M. 1993. *Solva marginata* larvae on sycamore. No. 10, 4.
- Denton, J. 1996. *Solva marginata* goes down the tube! No. 14, 2.
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- Irwin, A. G. 1984. Rhagionidae - Possible name changes. No. 2, 8.
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- Holloway, M. & Waage, J. 1984. Tabanidae - in the New Forest and on horses. No. 2, 9. [request for information]
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- Stubbs, A. 1993. *Thereva* names. No. 10, 7 - 8.
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- Irwin, A. G. 1984. Bombyliidae - *Villa* news. No. 2, 10 - 11. [*circumdata*]
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