

Larger Brachycera Recording Scheme

Newsletter 17

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Dipterists
FORUM

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Oxycera Dives in South Wales

Oxycera dives is an attractive black-and-yellow stratiomyid which was once thought to be confined to the Scottish Highlands, but has subsequently been discovered in the Southern Uplands of Scotland and northern England (as far south as North Yorkshire). Originally classified as deserving RDB status, it has now been downgraded to Nationally Scarce, but as Martin Drake remarked in the *Bulletin* 40 (August 1995), 'it is still obviously a very uncommon beast living in a threatened and declining habitat'.

On 25 June 1999, en route to an upland block of Carboniferous Limestone to monitor certain rare plants, I swept the vegetation on and around a base-rich flush at Cwm Mihertach, Mynydd Du, SE of Llanddeusant 22/787233, Carms (vc44). This 2 x 20m NE-facing flush is sourced by water which flows both off the limestone and the underlying Old Red Sandstone. Such calcareous flushes/seepages are already recognized elsewhere as the habitat of *O. dives*.

A female of what I suspected was *Oxycera dives* was caught, and the specimen was quickly confirmed as such by Alan Stubbs. The significance of this record (obviously the first for Wales) is that it represents a substantial increase in the known range of *dives* and suggests that this soldier-fly should be sought on calcareous seepages elsewhere in upland Wales. Certainly, it should occur further east in the Brecon Beacons, of which Mynydd Du is a westward continuum.

On 12 July, I revisited the site in order to make notes on the vegetation of this flush which are offered below:

Chrysosplenium oppositifolium - a
Nasturtium officinale - a
Epilobium brunnescens - a
Myosotis secunda - f

Epilobium palustre - f
Stellaria alsine - f
Hydrocotyle vulgare - f
Cirsium palustre - f

a = abundant, f = frequent

All the above angiosperms were growing amongst bryophyte mats or mounds and there were also occasional unvegetated small rounded rocks and open trickles. The bryophytes noted (identified by G S Motley) were: *Philonotis fontana*, *Cratoneuron commutatum* var. *commutatum*, *Chiloscyphus pallescens*, *Jungermannia exertifolia* ssp *cordifolia* and *Pellia endiviifolia*. My colleague, Graham Motley, who accompanied me on 25 June, suggests that the National Vegetation Classification communities roughly correspond to **M37** (*Cratoneuron commutatum* spring), with the more open rills referable to **M32** (*Philonotis fontana*-*Saxifraga stellaris* spring, with the *Saxifraga* actually absent at this site).

During the 12 July visit, three more females were observed, all regularly flying within 1-3 cm of the flush vegetation and landing to sun themselves on leaves of *Chrysosplenium* or *Nasturtium*.

Ian K. Morgan

Female stratiomyids in flight

The following observations may be of no consequence but do hint that female terrestrial stratiomyids are more active than perhaps we give them credit for. I was idly sweeping empty air well above head-height and at a few feet away from the vegetation of a tall 'hedgerow' of willow, birch and oak bounding pasture at the edge of The Moors RSPB wet grassland reserve in Dorset towards the end of the afternoon of 13 July this year. I collected a few females of *Beris vallata* and *Microchrysa flavicornis*. This did not seem right, so I carried on along about 80m of hedgerow and collected many more individuals of both species, again all females. I then returned along the hedgerow, sweeping the actual vegetation (i.e. the usual thing to do when looking for foliage-dwelling flies). I caught only four female (no males) *vallata* and a few of both sexes of *M. flavicornis*, but no other stratiomyids.

Beris males form swarms, although there are no reports of this behaviour for *Microchrysa*. I suggest that the females of *vallata* were searching for a swarm of males, and it was merely lack of diligence on my part that I did not encounter one. If I am right, then courtship in swarming stratiomyids is not a one-sided affair.

Martin Drake

An unusual encounter with *Eutolmus rufibarbis*

At Chobham NNR on 4 August 1998 I swept three *Eutolmus rufibarbis* from a wet open area at Ship Hill (SU9766). The site had been cleared of dense alder and willow carr two years previously but was still surrounded by woodland. The area is currently covered in cypress sedge,

water mint and skullcap in similar proportions. A singleton could be written off as a stray but finding three in a very brief swish suggests that they live there, a very unusual habitat from what I expect of this beast. Not surprising with all the insects coming to the mint. They were sitting low down in small relatively open patches amidst the tall vegetation.

Jonty Denton

Help wanted in reporting the needs of *Asilus*

Asilus is one of the species for which work is currently being undertaken by Countryside Council for Wales as part of the Biodiversity Action Plan. The species is seen sufficiently frequently that recorders can make a useful contribution to our understanding of its distribution and, more importantly, its habitat needs. To help with this, Mike Howe has produced a fairly detailed form whose aim is to gather information on the way pasture is managed for stock (e.g. types of grazing animals, stocking regimes, use of avermectins), what likely larval food is present (sundry dung beetles) and more.

Mike or I can send any number of such forms to anyone who would like to help. Mike's address is as for Liz Howe, given in the Bulletin.

Martin Drake

***Bombylius discolor* Species Action Plan**

Last year English Nature commissioned John Ismay to summarise the ecology and distribution of this species using published records, those in the national recording scheme and from museums at Oxford and London*. This work showed that there were clusters of recent records for Somerset, Dorset, the Isle of Wight, north Kent and The Gower, where further survey would be profitable.

Following on from this report, David Gibbs has been contracted to survey these counties to locate colonies where future more detailed work can be undertaken, and to attempt to refine the broad habitat requirements. John's study showed that the range of habitats from which the species had been recorded was too broad to be a useful guide to suggesting suitable ways of improving management of the sites, probably because the adults are far-ranging in search of nectar and new bee colonies. This year, David has located a number of healthy colonies in Somerset and Avon. One of the sites is an old mining area within the suburbs of Bristol. It supports large numbers of common species of *Andrena*, such as *cinerea*, which are likely hosts. Pupal exuviae of the bee-fly were frequent in April and May at this site, poking out of vertical banks shortly below the fringe of grass at the top of each bank. (*British Soldierflies* may well be available by next spring, and it includes a key to the pupae of *Bombylius*.)

This work is not the sole province of English Nature (although it leads on this species in the BAP). There is opportunity for recorders to contribute by making careful note of the conditions and species of bees present where *B. discolor* is seen inspecting bee-banks. The bees will need to be identified by someone who knows what they are doing.

*Ismay, J. W. 1999. A review of the ecology and distribution of *Bombylius discolor* Mikan (Diptera, Bombyliidae). *English Nature Research Reports* No 309. Peterborough. Available from Enquiries Service, English Nature, Northminster House, Peterborough PE1 1UA.

Martin Drake

Notes on predation

Tabanus bromius was frequent at Powerstock Common, a large reserve owned by the Dorset Wildlife Trust, on 11 July this year. It was a hot and sunny day. Many individuals (perhaps as many as twenty) were feeding at the wet mud of puddles in wheel ruts in the sun on a track bordered by scrub and woodland. Wood white (*Leptidea sinapis*) were also feeding at the mud. A few *bromius* were also seen dipping at these wheel ruts. Dipping is the curious behaviour of tabanids in which they dive at the water surface then shoot away again after touching it very briefly.

At another part of the reserve, I saw a female *bromius* settle on the water surface of a recently dug pond and was almost immediately set upon by three back-swimmers (*Notonecta*). The winner rowed away with its dinner under the surface. I retrieved the fly but not the bug so I cannot say which species it was.

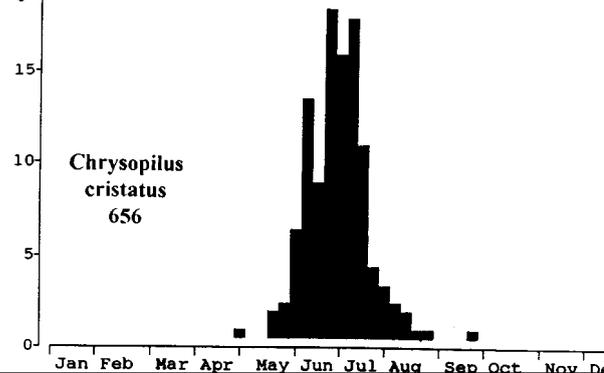
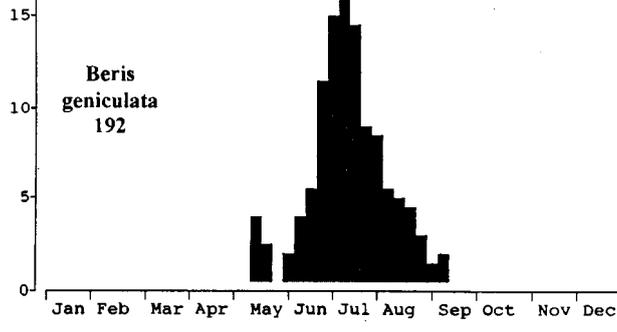
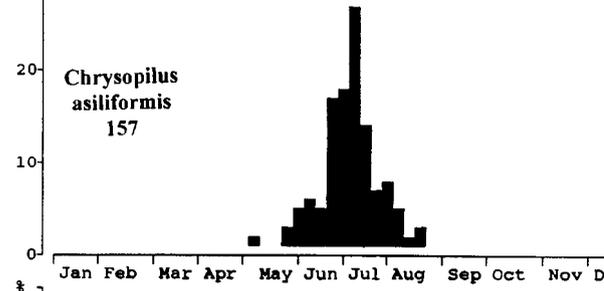
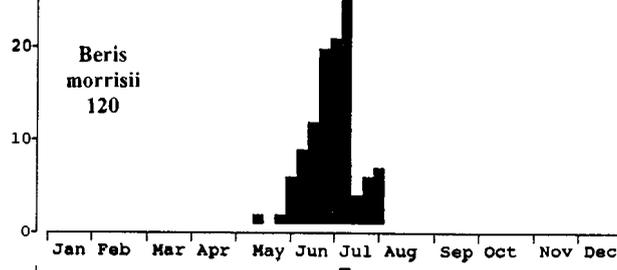
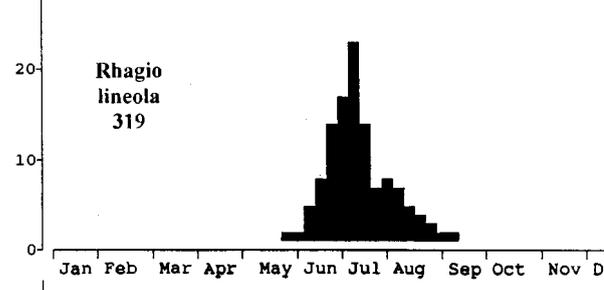
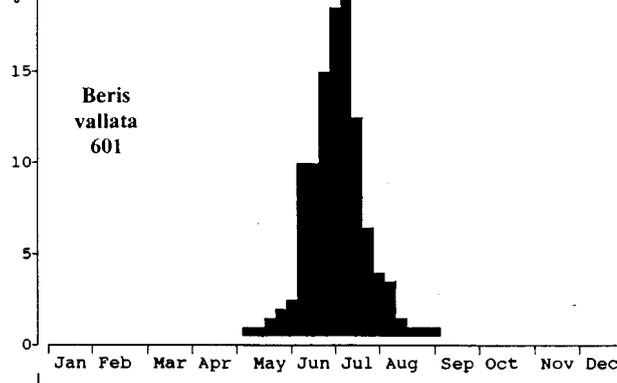
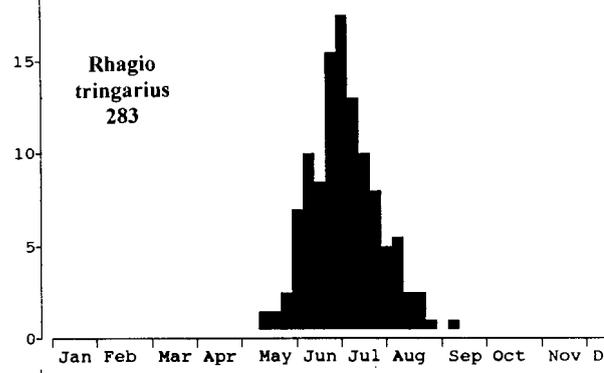
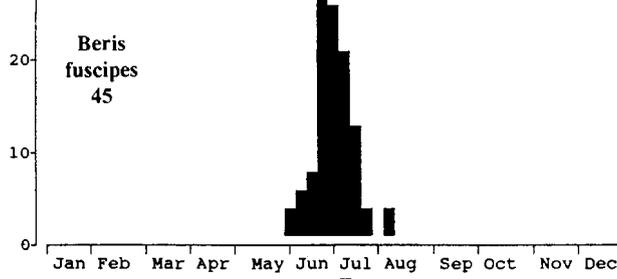
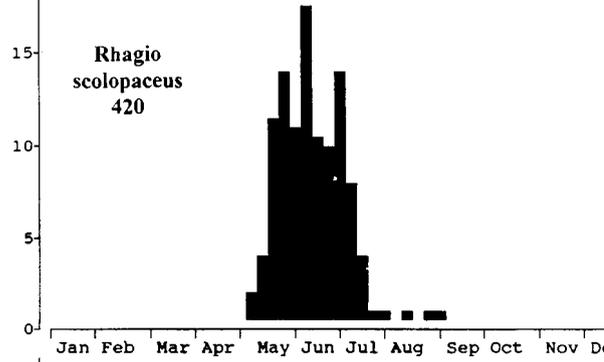
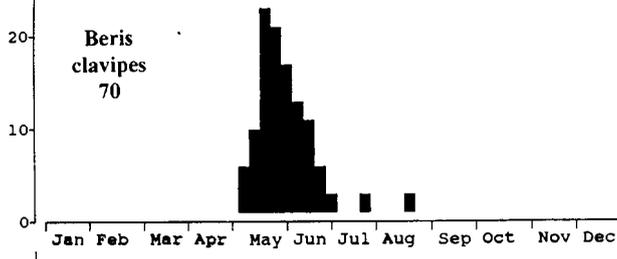
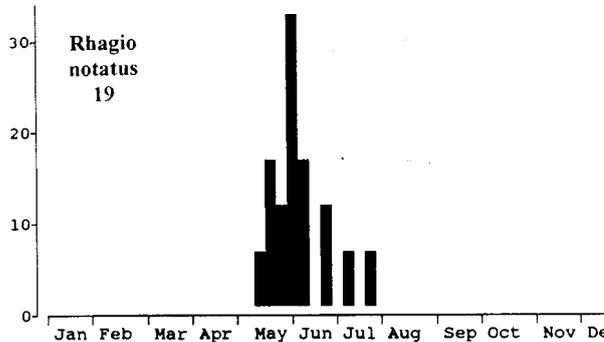
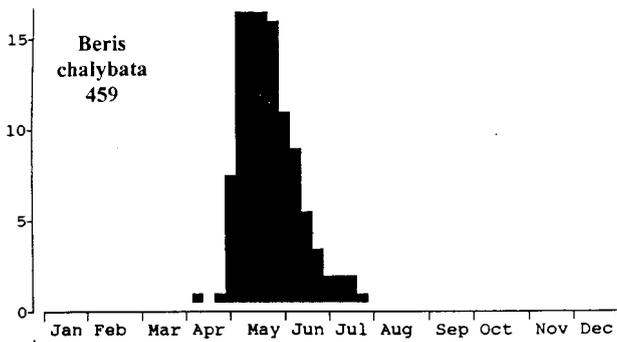
On the same day, the tables were turned against aquatic predators and in favour of the Larger Brachycera at Studland NNR, Dorset, where I found a male *Philonicus albiceps* with the damselfly *Enallagma cyathigerum* as its prey. The capture was made about on heathland at about 300-400m from the dunes, and close to a small reservoir dug for fire water. *Philonicus* is not usually found this far from dunes.

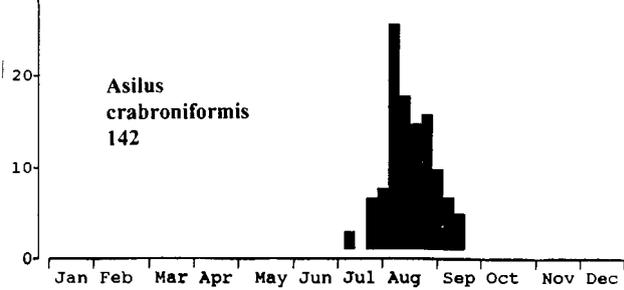
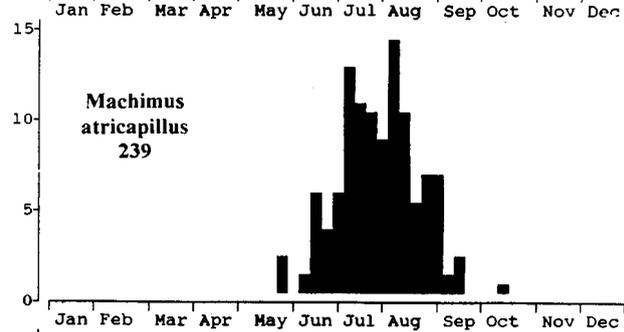
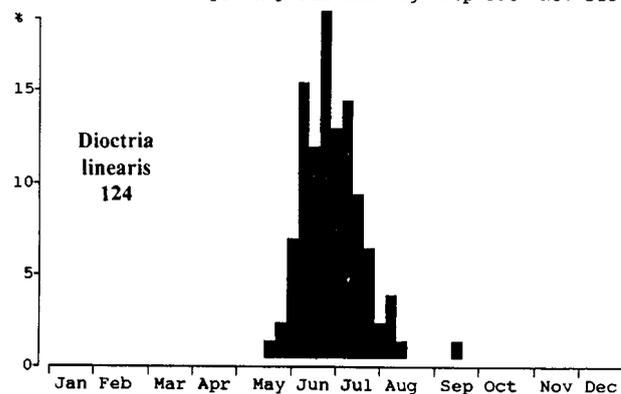
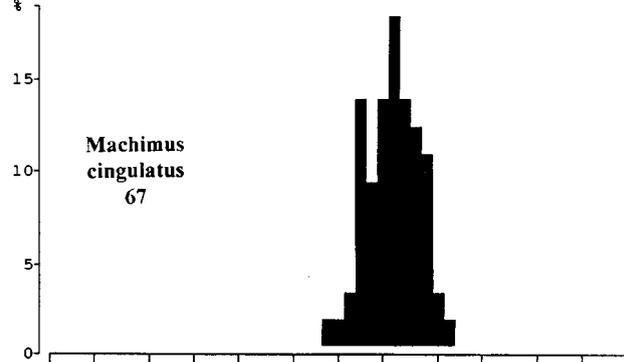
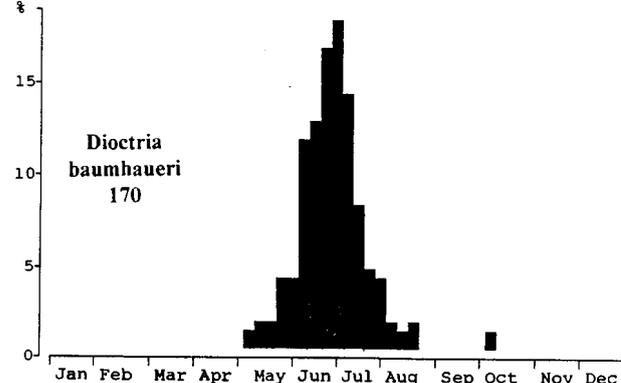
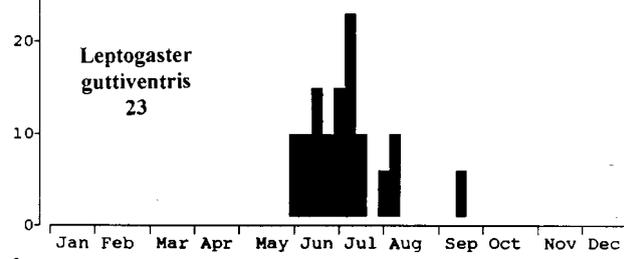
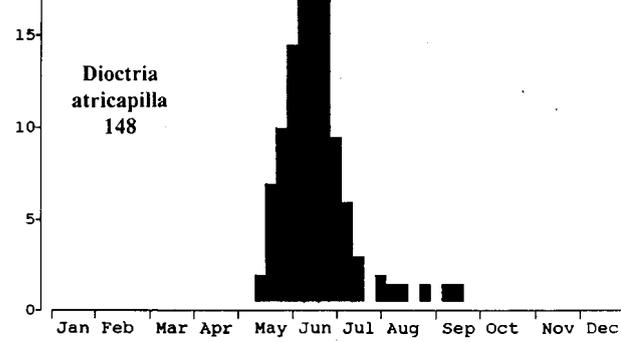
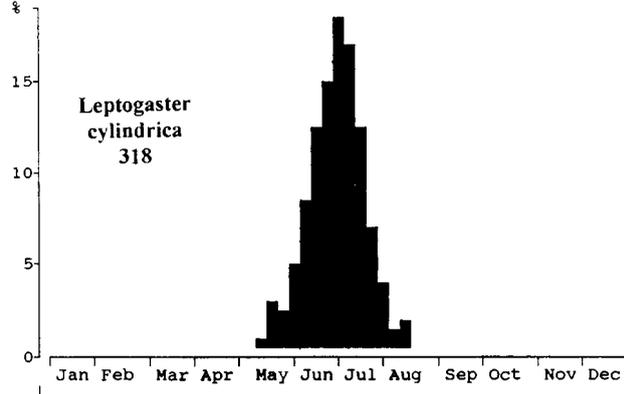
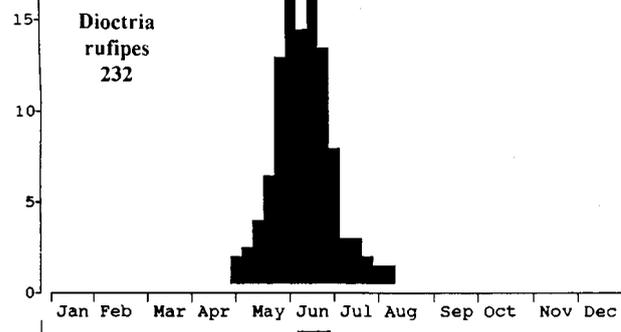
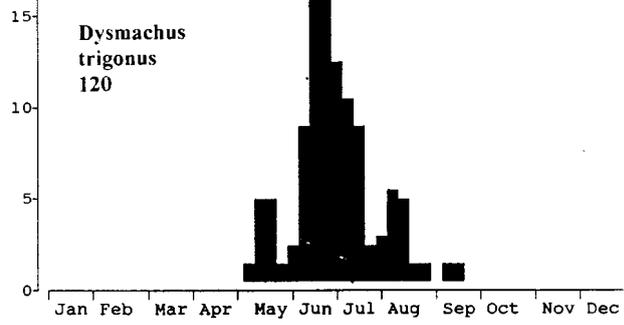
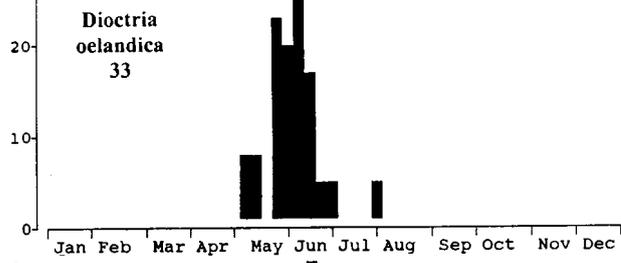
Flight periods of some Larger Brachycera

One of the irritations at work is the annual cycle of enquiries from the press, radio and television about why there are so many wasp/butterflies/dragonflies. This year it has been why are there so few wasps/butterflies Which set me thinking that it would be helpful to recorders to know a little more about when different species of Larger Brachycera were flying. The following is a brief summary of phenology for about a fifth of the species.

My choice of species is idiosyncratic but has been tempered by some constraints. I am more interested the typical than in extremes, so while your eye may be drawn to the earliest and latest occurrences, I feel that the middle ground (the peaks) is more useful for making generalisations about phenology. For this reason, I have restricted my choice to common species (mostly) for which I have sufficient data to override recorders' preference for collecting in sunnier months. I am also interested in identifying phenological differences that could be contributing to niche separation. For this, I have chosen genera with a number of common species, where one would expect the least difference in niche separation in other aspects of the life history.

As I still do not have the BRC dataset on my own computer, the histograms are based on the records submitted since the Provisional Atlas was published. I have not entered every record sent





to me since then but most (perhaps 95%) are included. The histograms are produced by Recorder which scales the Y axis as a percentage of all records, so the amount of black does not reflect the amount of data; I have added the number of records used under the species name. All comparisons made using these data have one big error. They are based on a compilation of records from different years, and there may be more pronounced year-to-year differences in the peak emergence in any one place than between species when generalised over many years. Only when there are lots of records do the data follow a convincing normal distribution (bell-shaped curve) which suggests that these variation have been smoothed out. The examples for *Haematopota pluvialis* (c. 530 records) and *Beris vallata* (c. 600 records) are two of the better examples.

Beris. *B. chalybata* and *B. clavipes* are the two spring species of *Beris*, becoming really scarce by the time the other four species reach their peak a month later. Given the number of records for the four summer species, I suggest that they show little phenological separation. The spread of dates for *B. geniculata* well into late summer may well be a real difference from the more common *vallata* (with three time as many records overall). I suspect that the late records of *clavipes* are misidentifications of *vallata* (this exercise has pinpointed several possible errors!).

Rhagio. Brindle noted that the order of appearance of adults of the four commoner species was *notatus*, *scolopaceus*, *tringarius* then *lineola* (Brindle, A. 1962. Taxonomic notes of the larvae of British Diptera: 12. The genus *Rhagio* F. (Rhagionidae). *Entomologist* 95:311-315). This appears to be borne out (just, with some imagination) for the recording scheme data; *notatus* and *scolopaceus* are clearly in advance of the other two species. Generalisations about *notatus*, with only 19 records with full dates, need to be cautious.

Chrysopilus. There is the merest suspicion that *cristatus* peaks earlier than *asiliformis*, but since the adult biology of these two species is rather different, this does not make a convincing example of niche separation.

Dioctria. These may be grouped as the 'earlier' species (*oelandica*, *rufipes*, *atricapilla*) and the 'later' species (*baumhaueri* and *linearis*), although the difference is slight. This division does not coincide with groupings made on the basis of their habitat preferences. The record for *baumhaueri* in October is from a Malaise trap in Jersey and I suspect the date given is when the trap was emptied. The late *linearis* is a genuine record from south-east England.

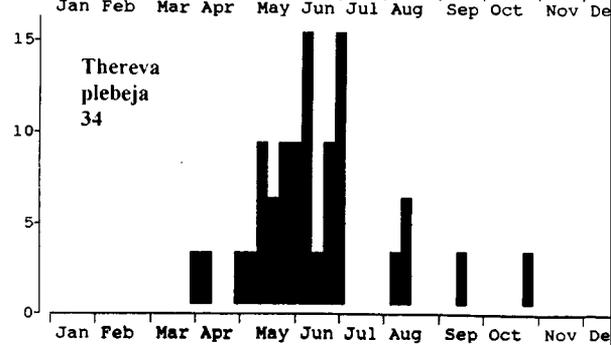
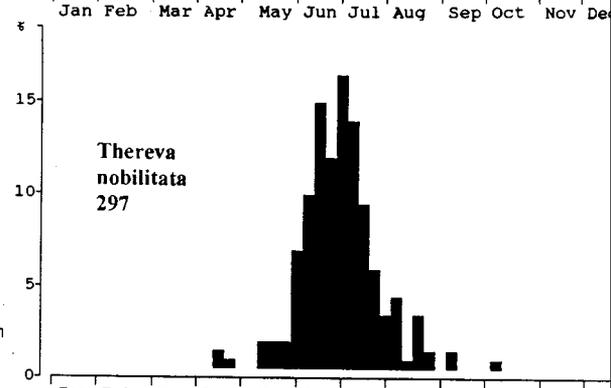
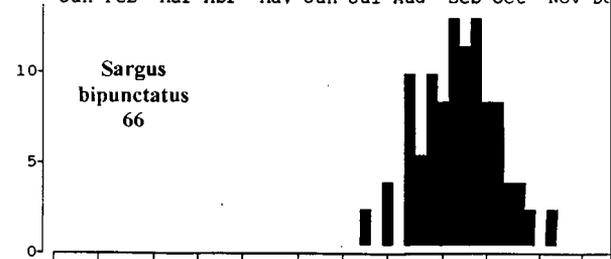
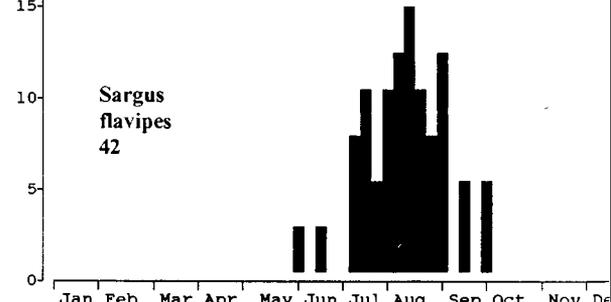
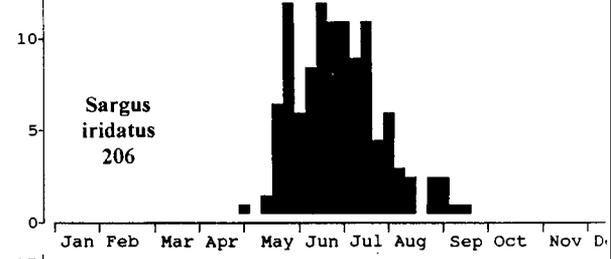
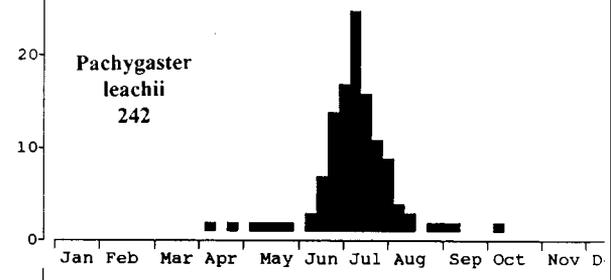
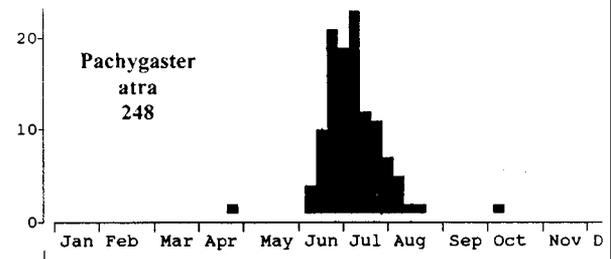
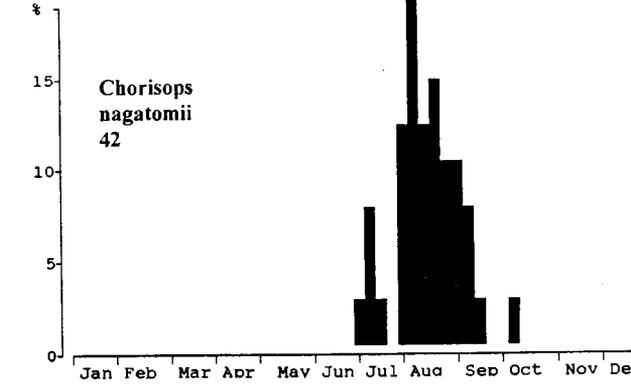
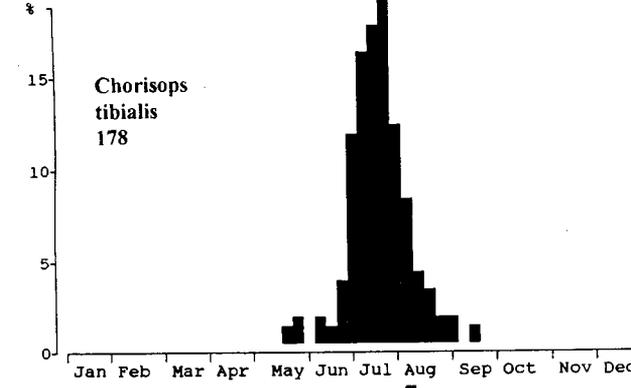
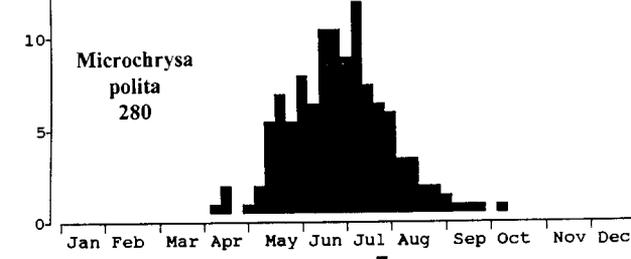
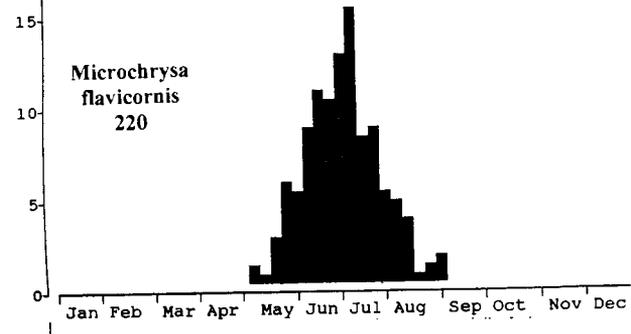
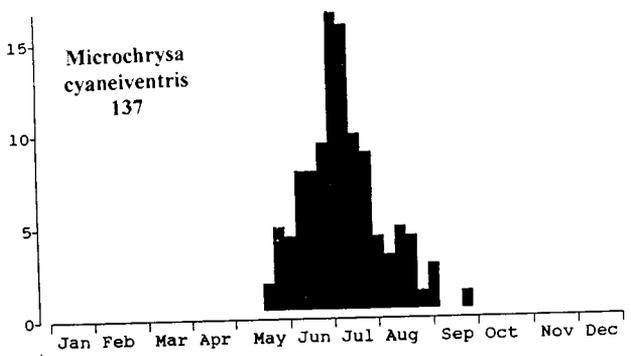
Dysmachus trigonus. A rather long flight period. *Philonicus albiceps* (not shown) has a very similar flight period.

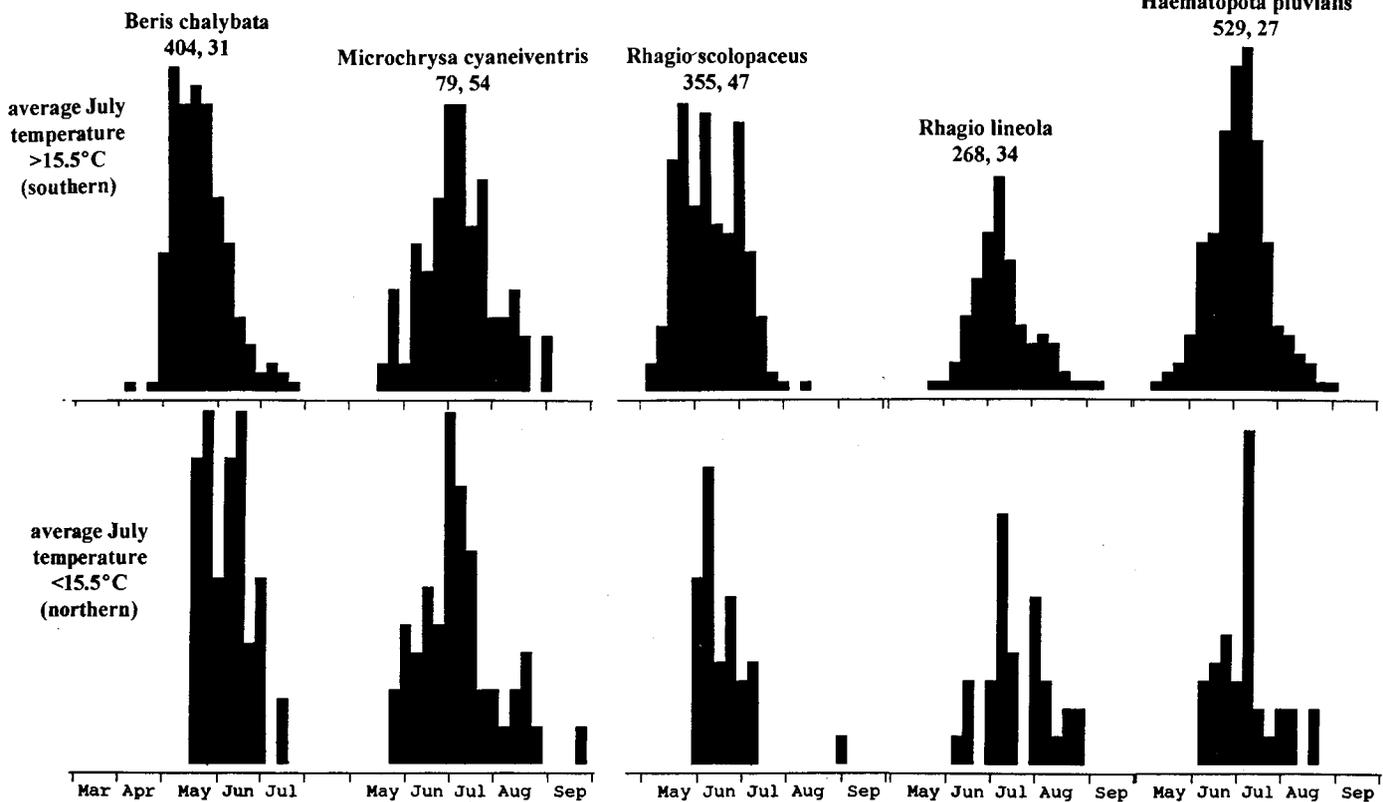
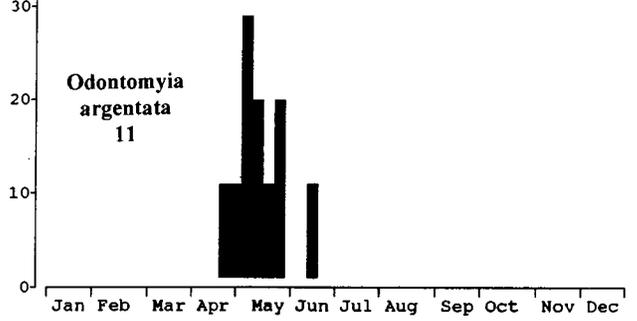
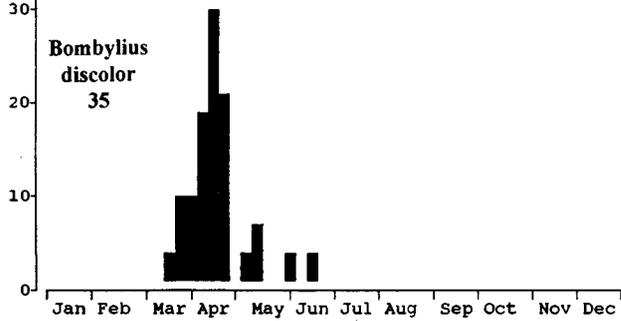
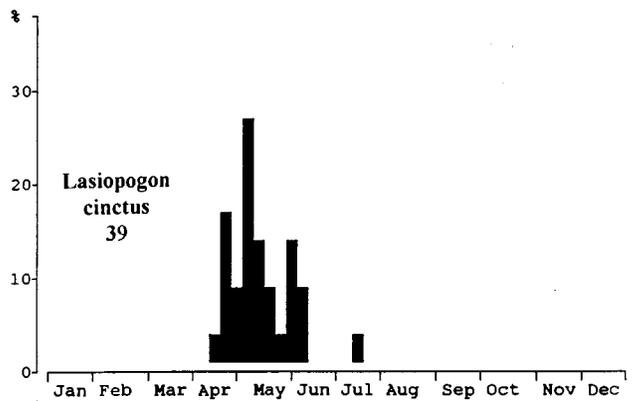
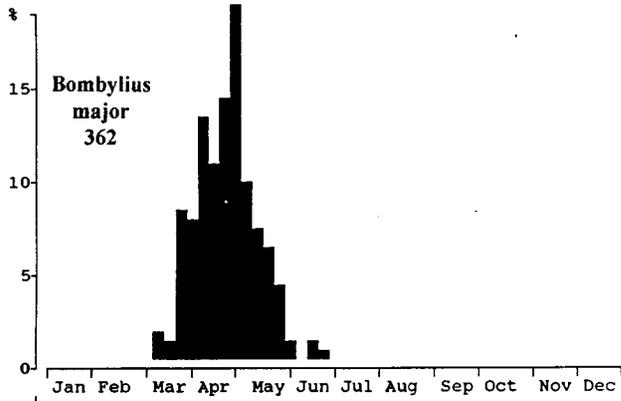
Leptogaster. The ecological factors that separate these two species remain unclear but I do not think flight period is one of them. However, there are too few records for *guttata* to be sure.

Machimus. The earlier start of the flight period of *atricapillus* may be just an artifact of the larger sample. The 'tail' of *atricapillus* well into October is real.

Asilus. One of the few Larger Brachycera that really does like August.

Microchrysa. Three species with almost indistinguishable phenologies; *polita* may appear a fraction earlier and reach its peak sooner.





Chorisops. Even when July is filled in for *nagatomii*, it will still be a later beast than *tibialis*, appearing well after spring and going into early autumn.

Pachygaster. Compared with the broad spread of dates for all *Microchrysa*, both species of *Pachygaster* have a more 'peaky' flight period. The long tails either side are based on records that I cannot justify excluding (there are not larval records and these species are not easy to misidentify); only the October records are uncertain, coming from Malaise traps in Jersey (see comment under *Dioctria*).

Sargus. These three commoner species show very neat separation of their flight periods. I removed four records of *bipunctatus* from early May to late June, all submitted by one recorder; I'm hoping they really are misidentifications, otherwise they spoils the story.

Thereva. Since all but *nobilitata* are scarce, comparisons with my slender database could be meaningless. However, *plebeja* does seem to out-perform *nobilitata* in the length of its flight period and may even be a species of early summer by comparison.

Bombylius. *B. discolor* is pretty well as early as the more familiar *major*. Is it odd that we should have two such early-flying representatives of this 'Mediterranean' family which is very much on the edge of its range in Britain.

Lasiopogon cinctus and *Odontomyia argentata*. These uncommon species are included as a reminder that they are out in spring so may be more common if recorders were out at that time too. I suspect the late record of *cinctus* is an error since it was a field identification.

How much of the spread of dates can be attributed to geographic location? One would expect some effects arising from climate, such as later appearance or narrower flight periods in the north. Using my 1938 Phillips School Atlas which has maps with isotherms, I divided Britain into the cold north where the average July temperature was (prior to 1938!) below 15.5°C (Scotland and VCs 67,68 and 70 in the north of England), and the sunny south (excluding the Channel Islands). The biggest problem was finding species that are sufficiently widespread and well recorded in the north; the resulting selection is therefore rather limited. However, I felt that I needed to use these extremes of Britain to give myself a sporting chance of detecting any differences at all. The number of records in the south and north is given under the species name. It is obvious that any conclusions based on such an uneven distribution of records need to be cautious.

I would like to believe that the spring species *Beris chalybata* really does have a slightly later peak in Scotland than in England, perhaps by two weeks. This agrees with expectation - that spring comes later in the north. As most of the northern records are inland, there is no confounding influence of warmer coastal areas.

I think this is where the differences stop. *Rhagio scolopaceus*, another fairly early species, shows no difference that a statistician would agree with. The lack of May records could well be an artifact of the small sample. *Microchrysa cyaneiventris* is as common in the north as in the south, yet shows no differences with a similar sample size in both areas. The remaining two midsummer species also show no differences either side of the 15.5°C isotherm. Perhaps this also agrees with expectation - summer comes in summer wherever you are since you can't make

summer later without running into autumn. Perhaps temperature is less important than day length, or the temperature at some other time of year is more important.

A few conclusions can be drawn. No species shows a bimodal distribution in its flight period, or any pattern that may suggest more than one generation per year. This does not exclude the possibility of small species with long flight periods (e.g. *Microchrysa*) squeezing in more than one generation, although sampling larvae would be needed to show this in the absence of evidence from their flight patterns. No species overwinters as an adult - there are no very late and very early individuals in any species on the British list. Geographic location appear (on slender evidence) to have at most only a small influence on the flight times of a species.

Martin Drake

International connections

Fritz Geller-Grimm undertook his PhD on the ecology of asilids several years ago. His thesis contains a wealth of information on a number of species that also occur in Britain.

Geller-Grimm, F. 1995. *Autökologische Studien an Raubfliegen (Diptera: Asilidae) auf Binnendünen des Oberrheintalgrabens*. Technischen Hochschule Darmstadt.

See his web page on:

<http://www.geller-grimm.de/asilidae.htm>

Robert Lavigne in Australia has published *Bibliography update 1977-1995 for the Asilidae (Insecta: Diptera) including short translations from Japanese and Russian*. It includes some translations of German papers too, I believe. It is available at Fritz's web site (as above) and at: www.uwyo.edu/ag/ces/rangemgt.htm

Robert is also compiling a database of prey records of Asilids (which currently hold c. 10,000 records). He would be interested in any additions. Contact him on

rjlavigne@adelaide.on.net

or by post at P.O. Box 1010, Mount Barker, SA 5251, Australia.

Interesting records

Odontomyia angulata female at Thompson Common 1 August 1998, swept from beside an open pingo. Jonty Denton. This site is one of the few places where *angulata* can be regularly recorded.

Atylotus latistriatus abundant either side of Harty Ferry, Kent, on Sheppey (TR0165) in August 1997, and at Oare (TR0164) and Luddenham (TQ9965) marshes on 7 July 1998. Jonty Denton.

(..... and more which I'll include next time.)

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Recording cards are available from :

Biological Records Centre
Institute of Terrestrial ecology
Monks Wood Experimental Station
Abbots Ripton
Cambs PE17 2LS