

# DYFED INVERTEBRATE GROUP



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**IMPORTANT NOTE:** As from this Issue the Dyfed Invertebrates Group Newsletter has ceased publication.

## Editorial

This issue will be the last Dyfed Invertebrate Group Newsletter. I should like to sincerely thank all those contributors who, over the years, have taken the time to write about their discoveries of the invertebrates in the former Dyfed – Carmarthenshire, Pembroke and Ceredigion. A glance at one of the atlases produced by the Biological Records Centre will show that, for the three counties, we managed to achieve a respectable covering of recording for many invertebrate groups - indeed for some we were one of the better recorded parts of Britain.

Numerous scarce or rare invertebrates have been found and important sites identified. Let us hope that the conservation bodies and all those involved in wildlife conservation take heed of the wealth of information found in the thirty-seven newsletters which appeared.

I should like to thank Adrian Fowles (now Senior Invertebrate Ecologist with the Countryside Council for Wales) for his crucial role in establishing this Newsletter and for his subsequent support. There was a time, in the late 1980s, when there was much friendly rivalry in invertebrate recording between Adrian in Ceredigion and myself representing Carmarthenshire, but professional and other circumstances have changed and it is with regret that I (and others) are now unable to provide the fieldwork (and subsequent deskwork) to sustain this Newsletter.

However, I feel that we should all feel proud at what we did achieve and hope that this great recording effort should not be forgotten but, as I mentioned earlier, used to the benefit of invertebrate conservation.

# AN ANNOTATED CHECKLIST OF THE GROUND BEETLES (CARABIDAE) OF CARMARTHENSHIRE (V.C.44) G S Motley

## Introduction

Following the publication of the Provisional Atlas of the Ground Beetles of Great Britain (Luff, 1998), hereafter referred to as 'the Atlas', it seems an appropriate time to review the known status of this group of beetles in Carmarthenshire. This account is largely based on the Biological Records Centre data used during the preparation of the Atlas, records from a database of Welsh invertebrates maintained by Adrian Fowles of the Countryside Council for Wales (CCW), together with records made by resident and visiting coleopterists which have been collated by I.K. Morgan. No attempt has been made to examine carabid collections held in museums or elsewhere. There has only been limited checking of records, but it is thought that there are few errors in the data as most records have been made by experienced coleopterists and many of the author's and I.K. Morgan's early records were kindly confirmed by M.L. Luff or P.M. Pavett. It became apparent during examination of the county data set that there are a few errors and omissions in the Atlas and these are highlighted in the accounts.

The earliest records of carabids in Carmarthenshire appear to have been made from the Tywi Valley c. 1846 by the eminent coleopterist T.V. Wollaston. He reported his most significant finds in the Zoologist (1846) where he remarked that the abundance of beetles in flood debris along the length of the Tywi was "one of the golden moments of his life". Some of these beetles have not been recorded since this time and several have only been refound once or twice. Few records are available for the period between 1846 and the early 1970's. However, H.G. Atlee reported the nationally scarce *Perileptus areolatus* from the Tywi Valley in 1905, the abundance of *Bembidion laterale* in the Gwendraeth Estuary was noted by J. Green in 1954 and published in the Entomologists Monthly Magazine and, in the same year, B.L. Sage found the RDB tiger beetle *Cicindela germanica* near Wharley Point. The county distribution of British carabids was published by Moore in 1957, although only 22 species are listed for Carmarthenshire. In the early to mid 1970's D. Davies began recording carabids, mainly in the north-eastern part of the county. Of his records, perhaps the most significant is the elusive and arboreal *Calosoma inquisitor*, which has not been seen subsequently. The most intensive recording period occurred in the years 1984-1998, when numerous records were made by I.K. Morgan and P.M. Pavett in particular. The Welsh Peatland Invertebrate Survey (Holmes *et al.*, 1995) produced many records from some of the more important wetland sites in the county. The Dyfed Invertebrate Group (DIG) was very active during the first part of this period and meetings attracted coleopterists from outside the area. The National Trust has undertaken invertebrate survey work at sites they own and the Environment Agency and CCW have commissioned exposed river sediments surveys (Sadler & Petts, 2001). CCW has also commissioned surveys at a number of sites known to support good invertebrate assemblages, including Dinefwr Park and fens in the Llanelli area. Some of the most important finds from the last twenty years include the RDB species *Panageus crux-major* and *Lionychus quadrillum*. *Bembidion inustum* was recorded new to the British Isles at Dinefwr Park in 1996 (Levey & Pavett, 1998).

Many of the more significant carabid records made since the mid-1980's have previously been reported by I.K. Morgan in his annual summary of Carmarthenshire coleoptera records published in the DIG Newsletter. A variety of articles in which carabids figure highly have also been published in the DIG Newsletter, for example, Luff (1987) presented a checklist of ground beetles for the whole of Dyfed and Morgan (1991) described the important invertebrate habitats in the Tywyn-Pembrey area.

A total of 186 carabid species are known from Carmarthenshire, representing about 53% of the British and Irish fauna. This total includes five Red Data Book species and six which are Priority Biodiversity Action Plan species. The table below lists these species, together with others that are classified as Nationally Scarce.

| Species                              | Status               | BAP      | Main Habitat Preference         |
|--------------------------------------|----------------------|----------|---------------------------------|
| <i>Acupalpus consputus</i>           | Notable B            |          | Edges of waterbodies            |
| <i>Agonum ericeti</i>                | Notable B            |          | Bog                             |
| <i>Agonum nigrum</i>                 | Notable B            |          | Coastal                         |
| <i>Agonum scitulum</i>               | Notable A            |          | Marsh. Fen                      |
| <i>Amara fulva</i>                   | Notable B            |          | River shingle                   |
| <i>Amara lucida</i>                  | Notable B            |          | Dunes                           |
| <i>Amara praetermissa</i>            | Notable B            |          | Dunes. River shingle            |
| <i>Bembidion bipunctatum</i>         | Notable B            |          | Near waterbodies                |
| <i>Bembidion inustum</i>             | ?                    |          | Subterranean                    |
| <i>Bembidion laterale</i>            | Notable B            |          | Saltmarsh, Estuaries            |
| <i>Bembidion litorale</i>            | Notable B            |          | River shingle                   |
| <i>Bembidion lunatum</i>             | Notable B            |          | River banks and shingle         |
| <i>Bembidion monticola</i>           | Notable B            |          | River shingle                   |
| <i>Bembidion pallidipenne</i>        | Notable B            |          | Sand dunes                      |
| <i>Bembidion quadripustulatum</i>    | Notable B            |          | River banks                     |
| <i>Blethisa multipunctata</i>        | Notable B            |          | Marsh, swamp and fen            |
| <i>Calosoma inquisitor</i>           | Notable A            |          | Oak woodland                    |
| <i>Chlaenius nigricornis</i>         | Notable B            |          | River banks. Wetlands           |
| <i>Cicindela germanica</i>           | RDB3                 | Priority | Crumbling coastal cliff         |
| <i>Cicindela maritima</i>            | Notable B            | Priority | Fore dunes                      |
| <i>Demetrias monostigma</i>          | Notable B            |          | Dunes                           |
| <i>Elaphrus uliginosus</i>           | Notable B            |          | Fens and flushes                |
| <i>Harpalus serripes</i>             | Notable B            |          | Dunes                           |
| <i>Lionychus quadrillum</i>          | RDB3                 | Priority | River shingle                   |
| <i>Nebria complanata</i>             | Notable A            |          | Fore dunes and upper strandline |
| <i>Oodes helopioides</i>             | Notable B            |          | Fens and edges of waterbodies   |
| <i>Panageus bipustulatus</i>         | Notable B            |          | Dunes                           |
| <i>Panageus crux-major</i>           | RDB1 (RDB2<br>Shirt) | Priority | Marsh                           |
| <i>Perileptus areolatus</i>          | Notable A            | Priority | River shingle                   |
| <i>Pogonus littoralis</i>            | Notable B            |          | Saltmarsh                       |
| <i>Pterostichus aethiops</i>         | Notable B            |          | Montane                         |
| <i>Pterostichus anthracinus</i>      | Notable B            |          | Damp, shaded habitats           |
| <i>Pterostichus gracilis</i>         | Notable B            |          | Wetland                         |
| <i>Pterostichus oblongopunctatus</i> | Notable B            |          | Woodland                        |

|                                   |           |  |                |
|-----------------------------------|-----------|--|----------------|
| <i>Tachys parvulus</i>            | Notable B |  | River shingle  |
| <i>Thalassophilus longicornis</i> | Notable A |  | River shingle  |
| <i>Trechus discus</i>             | Notable B |  | By waterbodies |
| <i>Trechus fulvus</i>             | Notable B |  | Coastal        |

Note: Broadly speaking RDB1 (Endangered) = occurs in five or fewer 10km squares in Great Britain and in danger of extinction; RDB2 (Vulnerable) = occurs in five or fewer 10km squares, but not yet in danger of extinction; RDB3 = occurs in 15 or fewer 10km squares but neither endangered or vulnerable; Notable A = species thought to occur in 30 or fewer 10km squares and not RDB; Notable B = thought to occur in 31 to 100 10km squares.

There are relatively recent sightings of the vast majority of carabids recorded in the county. The following table lists those species which appear not to have been seen for certain since 1975.

| Species                      | Most recent record |
|------------------------------|--------------------|
| <i>Agonum ericeti</i>        | 1973               |
| <i>Amara bifrons</i>         | 1974               |
| <i>Bembidion bipunctatum</i> | 1974               |
| <i>Calosoma inquisitor</i>   | 1974               |
| <i>Cicindela germanica</i>   | 1954               |
| <i>Patrobus assimilis</i>    | 1846               |
| <i>Trechus micros</i>        | 1973               |
| <i>Trechus secalis</i>       | 1846               |

The vast bulk of carabid records come from relatively few sites, mainly in the Llanelli area, the north-eastern part of the county and around Mynydd Du. Coastal habitats, especially sand dune systems, have been particularly well-worked. Dinefwr Park and shingle banks along the Tywi have also been intensively surveyed. Elsewhere, records have been made from a good range of habitats, giving a reasonably complete picture of the Carmarthenshire carabid fauna.

Of the many habitats found in the county, the sand dune systems at Tywyn-Pembrey and Laugharne-Pendine, the mud and shingle banks along the Afon Tywi, and the fens around Llanelli are perhaps the most important for carabids, supporting many of the Nationally Rare and Nationally Scarce species recorded.

The following accounts show the number of discrete sites for a species, the months in which it has been found and an indication of its national status. Full details are generally given for RDB species and species with three or fewer records. Square brackets have been used to mark out carabids which are doubtfully present in the county. Species order follows that of the Atlas and species status follow Hyman and Parsons 1992, unless otherwise stated. A gazetteer of place names mentioned in the accounts is included in an appendix.

#### Species accounts

##### *Cicindela campestris* Linnaeus, 1758

The green tiger beetle has been recorded widely in the county from a variety of well-drained habitats in the lowlands and uplands, including heathland and moorland, stream banks, forest tracks and coastal cliff-top paths. It is most abundant in late spring.

Localities: 44

Months recorded: 4-7

*Cicindela germanica* Linnaeus, 1758

RDB3; BAP Priority

The only record of the species is by B.L. Sage in 1954. It was found below south-facing cliffs near Wharley Point. The locality has been searched in recent years without success and the species may now be extinct in the county. An account of the species in Britain is given in Else, 1993.

Localities: 1

Months recorded: 8

*Cicindela maritima* Latreille & Dejean, 1822

Notable B; BAP Priority

The dune systems of south Wales are the British stronghold of this species. Most Carmarthenshire records are from the extensive dune systems at Pembrey - Tywyn and Pendine - Laugharne, where it is mainly found on the fore-dunes. There are also a few records from smaller dune systems at Gilman Point and Tan Lan Burrows.

Localities: 7

Months recorded: 5-6, 8

*Cychrus caraboides* (Linnaeus, 1758)

This snail-feeding species has been recorded from a wide variety of habitats, including moorland, mire and damp grassland, sand dune and conifer plantation, however, it is most commonly encountered in broadleaved woodland.

Localities: 20

Months recorded: 2-10

*Carabus arvensis* Herbst, 1784

Recorded on only a handful of occasions. Most records are from peaty habitats in the uplands or on the upland fringe, although it has also been found on the coast at Tywyn Burrows.

Localities: 4

Months recorded: 5-6

*Carabus granulatus* Linnaeus, 1758

The most frequently encountered member of the genus. In a wide range of habitats including marshy grassland, fen, sand dune, plantation, broadleaved woodland as well as upland heathland and grassland.

Localities: 36

Months recorded: 2-7, 9-12

*Carabus problematicus* Herbst, 1786

This species has mainly been recorded on higher ground in the north-eastern and eastern parts of the county, where it occurs in both dry and damp habitats. In the lowlands it has been found in grassland, plantation, broadleaved woodland and sand dune.

Localities: 13

Months recorded: 2-7, 9-10

*Carabus violaceus* Linnaeus, 1758

Widespread but local, this species has been recorded mainly from grassland and woodland habitats.

Localities: 10

Months recorded: 6-7

*Calosoma inquisitor* (Linnaeus, 1758)

Notable A

Only one modern record of this species. D. Davies recorded several on oak trunks at Blaen-nant Melin c.1974. This is an arboreal species, feeding mainly on moth larvae and is easily overlooked. This species was also listed for Carmarthenshire in Moore (1957).

Localities: 1

Months recorded: ?

*Leistus ferrugineus* (Linnaeus, 1758)

Recorded from only five sites including Tywyn and Pembrey Burrows and north-east of Garn-fawr. Most sightings have been in April.

Localities: 5

Months recorded: 4-5, 8,10

*Leistus fulvibarbis* Dejean, 1826

Most records are from semi-natural broadleaved woodland and conifer plantation, where it is often found under logs and bark.

Localities: 23

Months recorded: 1, 3-7,10,12

*Leistus rufescens* (Fabricius, 1775)

Noted mainly from fenland and mire, with a few records from Pembrey-Tywyn Burrows, where it has been found under driftwood.

Localities: 12

Months recorded: 1, 4-8, 10

*Leistus rufomarginatus* (Duftschmid, 1812)

An introduced species, which is extending its range in England and Wales. The only record is from Dinefwr Park, where it was found under a log by I.K. Morgan in 1992.

Localities: 1

Months recorded: 6

*Leistus spinibarbis* (Fabricius, 1775)

Occurs in similar habitats to *L. fulvibarbis* and is also recorded from dry grassland, quarries, sand dunes and under driftwood at HWM.

Localities: 17

Months recorded: 1-2, 4-5, 9-10, 12

*Nebria brevicollis* (Fabricius, 1792)

One of the commonest ground beetles. It is recorded from a wide range of upland and lowland habitats, including gardens, and large aggregations are sometimes encountered.

Localities: 54

Months recorded: 1-10, 12

*Nebria complanata* (Linnaeus, 1767)

Notable A

In Britain, this species is restricted to the coast on both sides of the Bristol Channel, where it is found on the strandline at the edge of dune systems. In Carmarthenshire it has been recorded along much of the coast between Llanelli and Burry Port and from Laugharne and Pendine Burrows.

Localities: 10

Months recorded: 4-10

*Nebria gyllenhali* (Schoenherr, 1806)

A mainly upland species in Wales. It has been recorded only once in the county, from the cliffs above Llyn y Fan Fach by I.K. Morgan in 1987. There are very few records from further south in Britain. This record was omitted from the Atlas.

Localities: 1

Months recorded: 5

*Nebria salina* Fairmaire & Laboulbene, 1854

*N. salina* is very similar to the common *N. brevicollis* and it is likely to have been overlooked as this species on occasions. Most records are from Mynydd Du, although it has also been recorded

from purple moor-grass *Molinia caerulea*-dominated communities at Carmel, Rhos Pwllgawnen and Nant-y-bai . The only coastal records are from Tywyn Burrows, where it has been found on several occasions.

Localities: 8

Months recorded: 4-6, 8, 10

*Notiophilus aquaticus* Linnaeus, 1758

Many records are from the sand dune systems at Pembrey and Tywyn, with most other captures from the north-east of the county, where it has been found on shingle banks along the Tywi and on higher ground at Llyn y Fan Fach and Bannau Sir Gaer.

Localities: 8

Months recorded: 4-7, 10

*Notiophilus biguttatus* (Fabricius, 1779)

The commonest member of the genus, it has been recorded from a wide variety of habitats including moorland, marshy grassland, quarries, river shingle and gardens.

Localities: 21

Months recorded: 4-8, 10

*Notiophilus palustris* (Duftschmid, 1812)

Although most records are from coastal habitats, it has also been recorded from screes at Tair Cairn, broadleaved woodland at Allt Rhyd-y-groes and purple moor-grass-dominated grassland at Rhos Pwllgawnen.

Localities: 8

Months recorded: 4-6, 8-9

*Notiophilus rufipes* Curtis, 1829

This woodland species has been recorded on only two occasions. A.B. Drane found it at Brechfa Forest in 1977 and K. Alexander reported it from the Dolaucothi Estate in 1981.

Localities: 2

Months recorded: 7

*Notiophilus substriatus* Waterhouse, 1833

Seldom recorded, it has been noted from a disused limestone quarry, upland screes and sand dunes.

Localities: 6

Months recorded: 4-5, 7, 9

*Blethisa multipunctata* (Linnaeus, 1758)

Notable B

This nationally scarce wetland species has been recorded from fens on the Llanelli Levels, oxbows by the Afon Tywi, marsh/swamp at Ynys Uchaf and at the edge of a moorland pool near Usk Reservoir.

Localities: 6

Months recorded: 4-7

*Elaphrus cupreus* Duftschmid, 1812

Widely distributed, this species has been found in wet habitats by streams, flushes and at the muddy margins of standing water.

Localities: 27

Months recorded: 4-8

*Elaphrus riparius* (Linnaeus, 1758)

Found in similar habitats to *E. cupreus*, although recorded less often than that species. Mostly reported in spring.

Localities: 7

Months recorded: 4-8

*Elaphrus uliginosus* Fabricius, 1792

Notable B

This nationally scarce species is confined to lowland fens on the Llanelli Levels and flushes on Mynydd Du.

Localities: 5

Months recorded: 4-7

*Loricera pilicornis* (Fabricius, 1775)

One of the most frequently recorded carabids, which has been found throughout the year. It occurs in a wide variety of habitats from the coast to the mountains.

Localities: 43

Months recorded: 1-12

*Dyschirius globosus* (Herbst, 1784)

The most frequently recorded member of the genus. It is widespread in wet habitats such as dune slacks, upper saltmarsh, fen, marshy grassland and bog.

Localities: 17

Months recorded: 4-7, 10

*Dyschirius impunctipennis* Dawson, 1854

P.M. Pavett recorded this species at Pembrey Burrows in 1988 and nearby in Pembrey Forest in 1992. It is a coastal species which preys on staphylinids (*Bledius* spp.)

Localities: 1

Months recorded: 4

*Dyschirius luedersi* Wagner, 1915

The only record is from the margins of Witchett Pool at Laugharne Burrows by D. Boyce and A.P. Fowles in 1990. There are few other Welsh records of this species.

Localities: 1

Months recorded: 6

*Dyschirius politus* (Dejean, 1825)

This tiny carabid has only twice been recorded. D.G. Hemingway found it at Tywyn Burrows in 1990 and M.L. Denton reported it from Morfa Uchaf in 1999.

Localities: 2

Months recorded: 5

*Dyschirius salinus* Schaum, 1843

A coastal species reported only from Pembrey Burrows and Tywyn Burrows by M. Darby in 1989.

Localities: 2

Months recorded: 4

*Clivina collaris* (Herbst, 1784)

A species of riverbanks where it is sometimes found with *C. fossor*. Most records are from by the Afon Tywi.

Localities: 9

Months recorded: 1, 4-6

*Clivina fossor* (Linnaeus, 1758)

Widespread in the county and found in a wider range of habitats than the previous species.

Localities: 19

Months recorded: 2-7

*Broscus cephalotes* (Linnaeus, 1758)

Restricted to sandy beaches but generally common there in spring and summer under driftwood and rubbish at the upper strandline.

Localities: 10

Months recorded: 3-7, 9



*Patrobus assimilis* Chaudoir, 1844

The only record is from flood debris in the Tywi Valley by T.V. Woolaston in 1846. This is a moorland species which would have been washed down by floods.

Localities: 1

Months recorded: ?

*Patrobus atrorufus* (Stroem, 1768)

Recorded from a wide scatter of sites, mainly from broadleaved woodland and wet pasture.

Localities: 8

Months recorded: 3, 5-8

*Perileptus areolatus* (Creutzer, 1799)

Notable A, BAP Priority

A species of riverine sediments and shingle, it has been found on a few occasions on shingle banks along the Afon Tywi between Llandovery and Penlan. First recorded by H.G. Atlee in 1905.

Localities: 3

Months recorded: 4-6

*Thalassophilus longicornis* (Sturm, 1825)

Notable A

A subterranean species of river shingle, for which most of the recent British records are from Wales. The only county record is of several specimens found by P.M. Pavett in 1997 under shingle by the Afon Tywi at Llandeilo.

Localities: 8

Months recorded: 6

*Trechus discus* Fabricius, 1792

Notable B

T.V. Woolaston reported this species from flood debris in the Tywi Valley c. 1846. The only modern record is from under a stone on an embankment near Kidwelly by I.K. Morgan in 1987. The subterranean habits of this species mean that it is likely to be under-recorded.

Localities: 2

Months recorded: 7

*Trechus fulvus* Dejean, 1831

Notable B

The only records for this coastal species are from Pembrey Burrows, Tywyn Burrows and Laugharne Burrows.

Localities: 3

Months recorded: 4-5

*Trechus micros* (Herbst, 1784)

Noted from flood debris in the Tywi Valley near Carmarthen by T.V. Woolaston c. 1846 and from near Rhandirmwyn by D. Davies in 1973. There is also a report from Ogof Dan y Lleuad Wen on Mynydd Du.

Localities: 3

Months recorded: 8

*Trechus obtusus* Erichson, 1837

Recorded from a few widely scattered sites. Little habitat information is available, but the species has been noted under strandline debris at Cefn Sidan.

Localities: 6

Months recorded: 2, 8, 10

*Trechus quadristriatus* (Schrank, 1781)

A.P. Fowles noted this species on river shingle at Rhydcymerau and on the cliffs above Llyn y Fan Fach in 1987, and D. Hemingway reported it from Tywyn Burrows in 1992. An earlier record of this species under bark in alder woodland near Ystradffin in 1973 perhaps needs confirming as, according to Luff (1998), *T. quadristriatus* is a species of open habitats.

Localities: 4

Months recorded: 4, 6, 8

*Trechus secalis* (Paykull, 1970)

The only record of this species is from flood debris by the Afon Tywi near Carmarthen by T.V. Woolaston in c.1846.

Localities: 1

Months recorded: ?

*Asaphidion curtum* (Heyden, 1870)

It has recently been shown that *Asaphidion flavipes* actually comprises three species (Speight *et al*, 1986). *A. curtum* is the only *Asaphidion* species to have been recorded with certainty in Carmarthenshire. It has been found in ash woodland, the edge of a fen, a track at the upland edge, coastal shingle and on bare earth in a garden.

Localities: 6

Months recorded: 4, 6, 10

[*Asaphidion flavipes* (Linnaeus, 1761)]

This species has been reported from Stradey Woods and Llwynhendy by P.M. Pavett. The two records are from 1985, just prior to the publication of Speight's paper and therefore require confirmation.

Localities: 2?

Months recorded: 2, 5

[*Asaphidion pallipes* (Duftschmid, 1812)]

Although reported from near Cwmdru in 1988, the specimen has since been re-identified as *A. curtum*. The record, however, appears in the Atlas.

*Bembidion aeneum* Germar, 1824

Recorded only from coastal habitats between Tywyn Burrows and Ferryside. Elsewhere in its British range it is also found in grassland and woodland habitats.

Localities: 4

Months recorded: 3-4

*Bembidion andreae* (Fabricius, 1787)

A species of river margins, it has been recorded only from shingle banks by the Afon Tywi. A.P. Fowles found it at Llandovery in 1987 and R.S. Key collected it at Llanwrda in 1989.

Localities: 2

Months recorded: 4-5

*Bembidion assimile* Gyllenhal, 1810

Although most records of *B. assimile* are from the coast, there is also a good scatter of inland localities, where it is mainly found in wet grassland and fen.

Localities: 16

Months recorded: 1, 3-8, 10

*Bembidion atrocoeruleum* Stephens, 1828

Moderately common on the banks of the Afon Tywi, Afon Cothi and rivers and streams on the northern flanks of Mynydd Du.

Localities: 15

Months recorded: 1, 4-7, 9, 11

*Bembidion biguttatum* (Fabricius, 1779)

Rarely recorded from fens and marsh near the coast and to the north of Llanelli.

Localities: 4

Months recorded: 4-7, 9

*[Bembidion bipunctatum* (Linnaeus, 1761)]

Notable B

The only report is of a specimen found on the surface of a fish pond near Cynghordy by D. Davies in 1974. This record is in need of confirmation as *B. bipunctatum* is mainly found in northern Britain.

Localities: 1

Months recorded: 5

*Bembidion bruxellense* Wesmael, 1835

The few records of *B. bruxellense* are from damp habitats at Rhos Pwlllygawnen, Tywyn Burrows and Nant Llety-gleision.

Localities: 3

Months recorded: 5-6, 8

*Bembidion decorum* (Zenker in Panzer, 1800)

A shingle specialist, most records are from the Afon Tywi, with a few from other rivers and streams in the north-east of the county and in the Llanelli area.

Localities: 16

Months recorded: 3-8

*Bembidion dentellum* (Thunberg, 1787)

Infrequently recorded near water bodies where it has been found on shingle and mud.

Localities: 7

Months recorded: 1, 3-6

*Bembidion doris* (Panzer, 1796)

This species inhabits very wet habitats, often with a floating mat of vegetation. It has been recorded from Ynys Uchaf, ox-bow lakes in the Tywi valley, reed *Phragmites* fen near the Llanelli coast and bog pools at Cors Goch, Llanllwch.

Localities: 4

Months recorded: 5-7

*Bembidion femoratum* Sturm, 1825

All records of this species are centred on the Tywi valley between Llandovery and Abergwili, where it occurs on shingle banks.

Localities: 6

Months recorded: 1, 3-7

*[Bembidion fluviatile* Dejean, 1831]

R.S. Key recorded a carabid which was thought to be either this species or *B. femoratum* from by the Afon Tywi at Dryslwyn in 1989. However, no record of *B. fluviatile* for this 10km square appears in the Atlas and the specimen may have been confirmed as *B. femoratum*.

Localities: 1?

*Bembidion genei* Kuester, 1847

This species has been recorded on bare mud at the side of a ditch near Penclacwydd in 1995 by the author and J. Murphy and on the same substrate at Machynys Ponds SSSI by I.K. Morgan in 2001.

Localities: 2

Months recorded: 4, 6

*Bembidion guttula* (Fabricius, 1792)

A common species, widespread in the county, occurring in a wide variety of habitats.

Localities: 24

Months recorded: 3-10

*Bembidion harpaloides* Serville, 1821

Most records are from the Tywi valley and coastal areas, with a few scattered localities in the west of the county. It has been found in a variety of habitats including shingle and riverbanks, woodland and under tree bark.

Localities: 18

Months recorded: 1, 3-7, 9-10

*Bembidion inustum* Duval

B. Levey and P.M. Pavett, during surveys of saproxylic invertebrates at Dinefwr Park and Llanover Estate (Monmouthshire) in 1996, recorded this species new to the British Isles. The Dinefwr specimen was captured in a flight interception trap by a stream at the boundary of ash wood and open parkland. A full account is given in Levey & Pavett, 1998.

Localities: 1

Months recorded: 6

*Bembidion iricolor* Bedel, 1879

A species of estuarine marshes, it has been recorded only once by A.P. Fowles on saltmarsh at Blackscar on the Taf estuary in 1988.

Localities: 1

Months recorded: 5

*Bembidion lampros* (Herbst, 1784)

A common species, widely recorded.

Localities: 18

Months recorded: 2-7, 9

*Bembidion laterale* (Samouelle, 1819)

Notable B

Recorded from beaches and saltmarshes from Llanelli west to Llansteffan. J. Green (1954) noted its abundance on the Gwendraeth estuary, when he also observed the species feeding on amphipods and itself being preyed upon by ringed plovers *Charadrius hiaticula* and dunlin *Caladris alpina*. He also observed that many *B. laterale* were infected with a fungus *Laboulbenia pedicillata*. The abundance of *B. laterale* in the Burry Inlet has also been noted by B. Stewart (DIG, 1995)

Localities: 10

Months recorded: 4-6

[*Bembidion litorale* (Olivier, 1790)]

Notable B

The only report is by M. Darby from Tywyn Burrows in 1989, where it was found under litter by a dune slack. This record requires confirmation as it is mainly a species of river and stream banks, with no other modern sightings in Wales.

Localities: 1

Months recorded: 4

*Bembidion lunatum* (Duftschmid, 1812)

Notable B

Recorded on only two occasions. It was found on shingle at Llanwrda by D. Hemingway in 1989 and on a muddy stream bank by the coast at Llansteffan by the author and J. Murphy in 1998.

Localities: 2

Months recorded: 4-5

*Bembidion lunulatum* (Fourcroy, 1785)

Found in damp vegetation at scattered sites throughout the county.

Localities: 11

Months recorded: 3-6, 10

*Bembidion mannerheimi* Sahlberg, 1827

Recorded from woodland and damp grassland at a few widely scattered sites.

Localities: 7

Months recorded: 4, 6, 8

*Bembidion maritimum* Stephens, 1835

This coastal species has been recorded by P.M. Pavett from Cefn Sidan in 1988 and "away from its normal habitat" in the nearby Pembrey Forest in 1996.

Localities: 2

Months recorded: 4, 11

*Bembidion minimum* (Fabricius, 1792)

A coastal species, it has been recorded along the entire length of the Carmarthenshire coast, where it has been found under driftwood and seaweed on the strandline and on saltmarsh.

Localities: 7

Months recorded: 3-7, 11

*Bembidion monticola* Sturm, 1825

Notable B

Recorded from shingle banks at Llanwrda by M. Collier in 1989 and at Ferryside by I.K. Morgan in 1988. There is also a 1972 record from Nant Llety-gleision, but the habitat "burnt area in forest", is wrong for this species and it may be an error.

Localities: 2(3)

Months recorded: 3-4

*Bembidion nitidulum* (Marsham, 1802)

Frequently found by woodland streams and on exposed river shingle.

Localities: 18

Months recorded: 1, 3-7, 9, 10

*Bembidion pallidipenne* (Illiger, 1802)

Notable B

Recorded on the coast at Morfa Uchaf, Ferryside on several occasions. It has also been found at Ginst Point, near Carmarthen and at Tywyn Burrows.

Localities: 4

Months recorded: 3-6, 8

*Bembidion prasinum* (Duftschmid, 1812)

The only collections are from shingle banks along the Afon Tywi between Llandovery and Penlan.

Localities: 5

Months recorded: 4-7

*Bembidion properans* (Stephens, 1828)

The only records are from the Tywi shingle banks, Tywyn Burrows, Pembrey Forest pond and Witchett Pool at Laugharne and Pendine Burrows.

Localities: 6

Months recorded: 4-8

*Bembidion punctulatum* Drapiez, 1821

A shingle species recorded only from the Cothi, Tywi and Sawdde. It is most abundant in May and June, when it may be the commonest species on shingle banks.

Localities: 10

Months recorded: 4-7

*Bembidion quadrimaculatum* (Linnaeus, 1761)

Most records are from the Llanelli area and the east of the county. It has been found in grassland, river shingle and coastal habitats.

Localities: 15

Months recorded: 1, 4-7

*Bembidion quadripustulatum* Serville, 1821

Notable B

P.M. Pavett & B. Levey recorded the species, apparently new to Wales, on the banks of the Afon Tywi near Llandeilo in 1996.

Localities: 1

Months recorded: 6

*Bembidion stephensi* Crotch, 1871

Reported from Brechfa Forest by A.B. Drane in 1977. Further details are lacking.

Localities: 1

Months recorded:

*Bembidion tetracolum* Say, 1823

A common species which is widespread in the county. It is found in a wide variety of habitats, but is perhaps most abundant on rivers with crumbling banks.

Localities: 38

Months recorded: 3-11

*Bembidion tibiale* (Duftschmid, 1812)

A riverine species, with most records from the old districts of Llanelli and Dinefwr.

Localities: 22

Months recorded: 2-8, 11

*Bembidion varium* (Olivier, 1795)

Recorded from saltings at Pembrey and Llangennech, from Laugharne and Penrhyngwyn, and from coarse silts by the Tywi at Llandeilo.

Localities: 5

Months recorded: 4-5, 7

*Tachys parvulus* (Dejean, 1831)

Notable B

P.M. Pavett & B. Levey collected four specimens on shingle banks by the Afon Tywi near Llandeilo in 1996. Although the Atlas shows it as being recorded from only one 10km square in Wales, there are now about 16 Welsh records (pers comm. A.P. Fowles). Luff (1998) suggests the species could be spreading in Britain.

Localities: 1

Months recorded: 6

*Pogonus chalceus* (Marsham, 1802)

This species is commonly found under litter on saltmarsh and estuarine mud.

Localities: 11

Months recorded: 4-5, 7-9

*Pogonus littoralis* (Duftschmid, 1812)

Notable B

The only record of this predominantly saltmarsh species is from coastal fen at Llangennech by I.K. Morgan in 1990.

Localities: 1

Months recorded:

*Stomis pumicatus* (Panzer, 1795)

Although seldom recorded, it has been found in a variety of habitats including river shingle, on the coast and under leaves in carr at the edge of a raised bog, Cors Goch near Llanllwch.

Localities: 5

Months recorded: 4, 8

*Pterostichus adstrictus* Eschscholtz, 1823

This upland species is close to the southern edge of its British range in Carmarthenshire. It has been recorded from Bannau Sir Gaer by I.K. Morgan in 1987 and at the same site by the author and J Murphy in 1995.

Localities: 1

Months recorded: 5

*Pterostichus aethiops* (Panzer, 1796)

Notable B

This mainly montane species was recorded at Bannau Sir Gaer by I.K. Morgan in 1987. Rather surprisingly, J. Cooter found it at Dinefwr Park in 1983.

Localities: 2

Months recorded: 5

*Pterostichus anthracinus* (Panzer, 1795) Notable B  
The only records are from woodland at its junction with open parkland at Dinefwr Park by B. Levey and P.M. Pavett in 1996 and at the same site by P.M. Pavett in 1998.  
Localities: 1 Months recorded: 6

*Pterostichus cupreus* (Linnaeus, 1758)  
Most records are from near the coast, with a few from the north-east of the county.  
Localities: 11 Months recorded: 1, 3-6, 8-9

*Pterostichus diligens* (Sturm, 1824)  
One of the most commonly recorded carabid species in the Welsh Peatland Invertebrate Survey (Holmes *et al.*, 1995). It is typically found in well-vegetated wet habitats in both the lowlands and uplands.  
Localities: 25 Months recorded: 1, 3-11

*Pterostichus gracilis* (Dejean, 1828) Notable B  
There are only three records of this nationally scarce species. D. Davies recorded it near Ystradffin in 1972, D. Boyce from Ffrwd Fen in 1989 and R.S. Key from slacks at Tywyn Burrows in 1988.  
Localities: 3 Months recorded: 5, 7, 10

*Pterostichus madidus* (Fabricius, 1775)  
A common species occurring in a wide variety of habitats.  
Localities: 43 Months recorded: 2-11

*Pterostichus melanarius* (Illiger, 1798)  
Surprisingly, there are relatively few records of this common British species. It has been recorded from damp grasslands and sand dune systems.  
Localities: 7 Months recorded: 4, 6-7

*Pterostichus minor* (Gyllenhal, 1827)  
A marshland species, it has been recorded from about 16 widely distributed sites.  
Localities: 16 Months recorded: 3-7, 9-10

*Pterostichus niger* (Schaller, 1783)  
A very common species which is widely distributed in the county. Recorded from woodland, damp grassland and coastal habitats.  
Localities: 25 Months recorded: 3-10, 12

*Pterostichus nigrita* (Paykull, 1790)  
*Pterostichus nigrita* is now known to consist of two species, *P. nigrita* s.s. and *P. rhaeticus* (Luff, 1990). Some *P. nigrita* records will therefore refer to *P. rhaeticus*. *P. nigrita* s.s. has been recorded from damp grassland, marshy grassland, woodland and riverbanks throughout the county.  
Localities: 38 Months recorded: 2-10,12

*Pterostichus oblongopunctatus* (Fabricius, 1787)

Notable B

This woodland species has been found at only two localities. At Allt Rhyd-y-groes it has been recorded on three occasions between 1980 and 1981. K. Alexander also recorded it at Dolaucothi in 1981.

Localities: 2

Months recorded: 12

*Pterostichus rhaeticus* Heer, 1837

*Pterostichus rhaeticus* has been recorded with certainty from moorland at Mynydd Llanybydder and Mynydd Du as well as from coastal habitats and from near to waterbodies. It may be more common than *P. nigrita* in the uplands.

Localities: 9

Months recorded: 4, 6, 8-9

*Pterostichus strenuus* (Panzer, 1796)

Common in woodland and damp habitats throughout the county.

Localities: 26

Months recorded: 1, 3-9, 12

*Pterostichus vernalis* (Panzer, 1795)

Most records are from the Llanelli coast and the north-east of the county. It is usually found near water.

Localities: 16

Months recorded: 3-6, 9-12

*Pterostichus versicolor* (Sturm, 1824)

*Pterostichus versicolor* has been recorded more widely than the similar *P. cupreus*.

Localities: 19

Months recorded: 3-7, 10, 12

*Abax parallelepipedus* (Pillar & Mitterpacher, 1783)

The vast majority of records for this species come from woodlands, although it has occasionally been recorded from open habitats. Widespread throughout the county.

Localities: 32

Months recorded: 2-9, 12

*Calathus cinctus* (Motschulsky, 1850)

Reliably recorded (as *C. mollis* ssp. *erythroderus*) only from Laugharne Burrows by A.P. Fowles and D.C. Boyce in 1990 and from Tywyn Burrows by D. Hemingway in 1991 and 1992.

Localities: 2

Months recorded: 4-6

*Calathus erratus* (Sahlberg, 1827)

Mainly reported from sand dune systems, with records from Morfa Uchaf, Laugharne-Pendine, Llansteffan and Pembrey-Tywyn.

Localities: 9

Months recorded: 4-9, 12

*Calathus fuscipes* (Goeze, 1777)

Few records of this relatively common British species. It has been recorded from sand dunes on the Llanelli coast and from limestone grassland at Pal-y-cwrt.

Localities: 6

Months recorded: 3-6, 8-9



*Calathus melanocephalus* (Linnaeus, 1758)

Some earlier records may possibly refer to *C. cinctus* (Anderson & Luff, 1994). *C. melanocephalus* s.s. has been recorded from Tywyn Burrows, Mynydd Du and Dinas.

Localities: 12

Months recorded: 2, 4-9

*Calathus micropterus* (Duftschmid, 1812)

This species has been reported from Dinefwr Park but details are lacking.

Localities: 1

Months recorded: ?

*Calathus mollis* (Marsham, 1802)

This sand dune species has been recorded from all suitable sites between Llanelli and Pendine.

Localities: 7

Months recorded: 3-9

*Calathus piceus* (Marsham, 1802)

Recorded from woodlands, mainly in the north-east of the county.

Localities: 7

Months recorded: 4-5

[*Laemostenus complanatus* (Dejean, 1828)]

Although records of this species for Carmarthenshire appear in the Atlas, they all seem to be data entry? errors for *Nebria complanata*. *L. complanatus* is also listed for v.c.44 in Moore 1957, although no details are known and the record could be erroneous. However, this North African species has been introduced to many ports around Britain and may well have been introduced to the Llanelli area in the past.

*Laemostenus terricola* (Herbst, 1784)

This species has been recorded on several occasions at Dinefwr Park. The only other record is by J.A. Owen at Pembrey in 1977. The species is known to associate with mammal runs and at Dinefwr Park it has been trapped near to badger setts.

Localities: 2

Months recorded: 4, 6

*Synuchus nivalis* (Panzer, 1797)

Recorded on only two occasions. The author and J. Murphy captured the species in grassland in Dinefwr Park and on the coastal footpath at Pendine in 1994.

Localities: 2

Months recorded: 9

*Olisthopus rotundatus* (Paykull, 1790)

Found only in upland habitats, *Olisthopus* has been recorded from the cliffs above Llyn y Fan Fach by A. Fowles in 1987, at Mynydd Llangyndeyrn by I.K. Morgan in 1990 and at Pal-y-cwrt on Mynydd Du by the author in 1996.

Localities: 3

Months recorded: 4-5, 7

*Agonum albipes* (Fabricius, 1796)

An almost ubiquitous species of the margins of rivers and other fresh water bodies. It has also been recorded under debris on the strandline.

Localities: 50

Months recorded: 1, 3-10

*Agonum assimile* (Paykull, 1790)

A widespread species. Most records are from woodland, although it has also been recorded on shingle and in flood debris.

Localities: 22

Months recorded: 2-8, 12

*Agonum dorsale* (Pontoppidan, 1763)

Many records are from the Tywi Valley, where it has been recorded along much of its length between Rhandirmwyn and the coast. There is also a concentration of sightings from the Llanelli area. Large aggregations have been noted under flood debris.

Localities: 16

Months recorded: 1-7, 10

*Agonum ericeti* (Panzer, 1809)

Notable B

D. Davies recorded *A. ericeti* in 1973 from the edge of a basin mire, a typical habitat for the species, at Bryn Mawr, near Llyn y Gwaith to the north-east of Ffarmers.

Localities: 1

Months recorded: 7

*Agonum fuliginosum* (Panzer, 1809)

A widespread species, most commonly found in marshy/fenland habitats.

Localities: 25

Months recorded: 2-7, 9-12

*Agonum gracile* Sturm, 1824

Occurs in similar habitats as *A. fuliginosum*. Most records are from the north-east of the county and from the fens around Llanelli.

Localities: 14

Months recorded: 1, 3-10

*Agonum marginatum* (Linnaeus, 1758)

Mainly noted from coastal areas and the Tywi valley, where it occurs at the margins of ponds and rivers.

Localities: 10

Months recorded: 2, 4-7

*Agonum micans* Nicolai, 1822

The only records are from tall-herb fen at Techon Marsh, Bynea by P. Kirby in 1993 and from damp woodland at Dinefwr Park by P.M. Pavett in 1998.

Localities: 2

Months recorded: 6

*Agonum moestum* (Duftschmid, 1812)

Mainly recorded from fens and marshes on the Llanelli coast and wet grassland and flushes in the north-east of the county.

Localities: 19

Months recorded: 3-7, 10

*Agonum muelleri* (Herbst, 1784)

Widely recorded, from the coast to mountain tops, in a variety of mostly open habitats including sand dunes, shingle banks, damp grassland and moorland.

Localities: 50

Months recorded: 1-12

*Agonum nigrum* Dejean, 1828

Notable B

A strictly coastal species in the county, it has been found at Pembrey-Tywyn Burrows, Llangennech saltings and Llansteffan beach.

Localities: 6

Months recorded: 1, 4-7

*Agonum obscurum* (Herbst, 1784)

The only record is from Tywyn Burrows by D. Hemingway in 1991.

Localities: 1

Months recorded: 5

*Agonum piceum* (Linnaeus, 1758)

Found at scattered sites in the old districts of Dinefwr (E. Carms) and Llanelli, where it occurs in fen land or swamp habitats.

Localities: 8

Months recorded: 5-9

[*Agonum scitulum* Dejean, 1828]

Notable A

The only report of this nationally scarce species is by K. Alexander from seasonally flooded pasture near Dinefwr Park. This record does not appear in the Atlas and it therefore needs confirming.

Localities: 1

Months recorded: 4

*Agonum thoreyi* Dejean, 1828

Most records are from marshland and fen in the Llanelli area, with a thin scatter from wet sites elsewhere in the county. Both the light- and dark-coloured forms have been noted.

Localities: 15

Months recorded: 1-10, 12

*Agonum viduum* (Panzer, 1796)

Found at only a handful of widely scattered fenland and marshy sites.

Localities: 5

Months recorded: 5-7

*Amara aenea* (Degeer, 1774)

The most frequently recorded member of the genus. It is widespread in the county, occurring mainly in dry grassland and dunes.

Localities: 20

Months recorded: 1-2, 4-6, 8

*Amara aulica* (Panzer, 1796)

The only records of this species are from Allt Rhyd-y-groes by R.P. Bray in 1980 and Llwynhendy by P.M. Pavett in 1985.

Localities: 2

Months recorded: 8, 12

*Amara bifrons* (Gyllenhal, 1810)

Reported from Pembrey by J.A. Owen in 1974. No other details are known.

Localities: 1

Months recorded: 8

*Amara communis* (Panzer, 1797)

There are only four known sites for this species. It has been found in marshy grassland at Ynys Uchaf, on a road at Hafod-y-pont, at Pembrey Burrows and at Machynys Pond.

Localities: 4

Months recorded: 3, 6

*Amara convexiuscula* (Marsham, 1802)

This mainly coastal species has been recorded on just three occasions. P.J. Hodge found it under seaweed on the shore near Kidwelly in 1984, P.M. Pavett recorded it at Penrhynwyn in 1991 and D. Hemingway found it at Tywyn Burrows in 1991.

Localities: 3

Months recorded: 5-6, 8

*Amara eurynota* (Panzer, 1796)

The only record is from under a stone on sandy substrate near Ferryside Yacht Club by the author and J. Murphy in 1994.

Localities: 1

Months recorded: 11

*Amara familiaris* (Duftschmid, 1812)

Surprisingly few localities for a species that is quite common over much of England and Wales.

Localities: 6

Months recorded: 3-8

*Amara fulva* (Meuller, 1776)

Notable B

Apart from a single collection by the Afon Cothi, all other records are centred on the Tywi Valley, where it is found on shingle banks and flood plains.

Localities: 5

Months recorded: 4-6

*Amara lucida* (Duftschmid, 1812)

Notable B

This sand dune species has only been found along the stretch of coast between Pembrey and Tywyn.

Localities: 3

Months recorded: 3-4

*Amara lunicollis* Schioedte, 1837

Found at a few widely scattered sites. Habitats include dry waste ground, parkland and oak woodland.

Localities: 5

Months recorded: 1, 7

*Amara ovata* (Fabricius, 1792)

Recorded from mainly dry habitats on the Llanelli coast and along the Tywi Valley.

Localities: 9

Months recorded: 1, 3-6, 8

*Amara plebeja* (Gyllenhal, 1810)

According to the Atlas this is the most commonly recorded member of the genus in Britain. However, there are few records of the species in the county. Most are from the areas around Llandeilo and Kidwelly, where it has been found on river shingle, in marshy grassland, woodland, a limestone quarry and under seaweed on the seashore.

Localities: 7

Months recorded: 4-8

*Amara praetermissa* (Sahlberg, 1827)

Notable B

There are only two known records for the species. It has been found on shingle banks at Llanwrda by I.K. Morgan and others in 1989 and under a log at the edge of Pembrey Forest by P.M. Pavett in 1992.

Localities: 2

Months recorded: 5, 8

*Amara similata* (Gyllenhal, 1810)

Recorded from dry grassland at Dinefwr Park, Dryslwyn Castle and Ystradffin and from sand dunes at Cefn Sidan.

Localities: 4

Months recorded: 2, 4

*Amara tibialis* (Paykull, 1798)

Although widespread at sandy inland sites throughout much of Britain, in Carmarthenshire it is known only from the coastal sand dune systems between Pembrey and Pendine. The species was described as abundant at Tywyn Burrows by D.G. Hemingway in 1992, when he also collected a bright blue variety.

Localities: 6

Months recorded: 4-7

*Harpalus affinis* (Schrank, 1781)

Most records are from coastal areas, where it has been found in dry grassland, on cliff-top paths and pine forest, with relatively few from dune systems. It has also been recorded from shingle banks along the Afon Tywi.

Localities: 23

Months recorded: 3-6, 8-11

*Harpalus anxius* (Duftschmid, 1812)

Recorded from all the main coastal dune systems.

Localities: 6

Months recorded: 4-6

*Harpalus latus* (Linnaeus, 1758)

Although this species occurs in a variety of habitats elsewhere in Britain, in Carmarthenshire it has only been recorded from the sand dunes at Tywyn Burrows, where D.G. Hemingway found it in 1990 and 1991. This species was also listed for the county in Moore (1957).

Localities: 1

Months recorded: 5

*Harpalus neglectus* Serville, 1821

An uncommon species reported only from Pembrey Burrows and Tywyn Burrows. First recorded by I.K. Morgan in 1987, it has subsequently been captured from this area on several occasions.

Localities: 2

Months recorded: 4-5, 7

*Harpalus puncticeps* (Stephens, 1828)

Recorded at Penrhynwyn by P.M. Pavett in 1991 and again in the same area by I.K. Morgan in 1992. These records do not appear in the Atlas.

Localities: 1

Months recorded: 8

*Harpalus rubripes* (Duftschmid, 1812)

Found in dry sandy habitats, this species has been reported on only five occasions from the coast at Pembrey and Pendine.

Localities: 3

Months recorded: 5-6

*Harpalus rufipes* (Degeer, 1774)

Thinly distributed throughout the county and found in a variety of mainly dry, open habitats.

Localities: 11

Months recorded: 3-8

*Harpalus rufitarsis* (Duftschmid, 1812)

The only locality for this species is Laugharne and Pendine Burrows, where it was recorded by D. Boyce and A.P. Fowles in 1990.

Localities: 1

Months recorded: 6

*Harpalus serripes* (Quensel in Schoenherr, 1806)

Notable B

This nationally scarce species is known only from Tywyn Burrows, where it was recorded by D.G. Hemingway in 1990 and 1992 and by I.K. Morgan in 1993.

Localities: 1

Months recorded: 4-5

*Harpalus tardus* (Panzer, 1796)

This coastal species has been found at Gilman Point by I.K. Morgan in 1987, Tywyn Burrows by P.M. Pavett in 1988 and Laugharne Burrows by A.P. Fowles in 1990.

Localities: 3

Months recorded: 4-6

*Anisodactylus binotatus* (Fabricius, 1787)

Noted only from fenland in the Llanelli, Pembrey-Tywyn and Laugharne-Pendine areas.

Localities: 12

Months recorded: 3-10,12

*Dicheirotichus gustavi* Crotch, 1871

Recorded from saltmarsh and under stones and seaweed at HWM on beaches all along the coast.

Localities: 10

Months recorded: 4, 6-10

[*Bradycellus collaris* (Paykull, 1798)]

This species is listed in Moore (1957) but no details are known. No record appears in the Atlas.

*Bradycellus harpalinus* (Serville, 1821)

Recorded from sandy and heathy habitats and also at the edge of a fen at a small number of widely scattered sites.

Localities: 10

Months recorded: 2, 4-6,10

*Bradycellus ruficollis* (Stephens, 1828)

This species has been found associated with heather *Calluna vulgaris* at a handful of boggy sites.

Localities: 5

Months recorded: 6, 8-10

[*Bradycellus sharpi* Joy, 1912]

Listed in Moore (1957), it may well be an error.

*Bradycellus verbasci* (Duftschmid, 1812)

Recorded only from coastal areas. Found in a moth trap at Penclacwydd in 1995, it is one of the few carabid species that is attracted to lights at night.

Localities: 5

Months recorded: 1, 5, 7, 11

*Stenolophus mixtus* (Herbst, 1784)

Mainly recorded from fenland in the Llanelli area.

Localities: 7

Months recorded: 4-7

*Acupalpus consputus* (Duftschmid, 1812)

Notable B

The only county record is of a specimen found in leaf litter under willow carr in coastal marsh at Ddol-fawr by I.K. Morgan in 1990.

Localities: 1

Months recorded: 4

*Acupalpus dorsalis* (Fabricius, 1787)

Recorded only from raised bog, at Cors Goch, Llanllwch, and marshy grassland and fen on the Llanelli Levels.

Localities: 4

Months recorded: 3, 6, 8, 11

*Acupalpus dubius* Schilsky, 1888

Frequently found in coastal fenland and marsh in the Llanelli area

Localities: 16

Months recorded: 3-7, 9-10

*Acupalpus meridianus* (Linnaeus, 1761)

Most captures are from under driftwood on the Llanelli coast and in the Tywi estuary.

Localities: 3

Months recorded: 4-5

*Badister bipustulatus* (Fabricius, 1792)

A wide scatter of records, mainly from dry grassland and dunes.

Localities: 17

Months recorded: 3-6, 8-11

*Badister sodalis* (Duftschmid, 1812)

Almost all records of this species are from under moss, stones and leaf-litter in lowland deciduous woodland.

Localities: 10

Months recorded: 3-6, 9-10

*Panagaeus bipustulatus* (Fabricius, 1775)

Notable B

This nationally scarce species has been recorded from tracks and dry sandy areas at Tywyn Burrows on several occasions since 1988.

Localities: 1

Months recorded: 5, 7

*Panagaeus crux-major* (Linnaeus, 1758)

RDB1 (H&P), RDB2 (Shirt), BAP Priority

This nationally rare species was previously known from several counties in central and southern England and from Llanrhiddian marsh on Gower, but has undergone a serious decline in the last century. It is now known from only two or three localities in Britain (Entotax, 2000). In Carmarthenshire it was first recorded on MOD land at Tywyn Burrows by I.K. Morgan in 1985, where it was found under driftwood at the edge of a seasonally flooded dune slack. Small numbers have been recorded sporadically since that time. The species appears to be confined to this one small area of dune slack which was damaged by storms in 1998. Some new scrapes have been created in an attempt to maintain the presence of the species at the site, but it has not been seen in recent years in spite of intensive searches.

Localities: 1

Months recorded: 3-6, 8-9

*Chlaenius nigricornis* (Fabricius, 1787)

Notable B

Recorded at a thin scatter of wet sites in the north-east of the county, along the Tywi valley and in the Llanelli area. It has been found under shingle and on bare mud and in tall-herb fen.

Localities: 14

Months recorded: 3-7

*Chlaenius vestitus* (Paykull, 1790)

Known only from Machynys Ponds, Llanelli, from where it was reported by P.M. Pavett in 1990 and from the Afon Lliedi, where it was found on a weedy riverbank by I.K. Morgan in 1991.

Localities: 2

Months recorded: 4, 6, 8

*Oodes helopioides* (Fabricius, 1792)

Notable B

This semi-aquatic carabid beetle has been recorded by the Welsh Peatland Invertebrate Survey at Ffrwd Fen and Ynys Uchaf.

Localities: 2

Months recorded: 6-7

*Lebia chlorocephala* (Hoffmannsegg, 1803)

Recorded on only two occasions. It was found in stony grassland at the rear of a pebble beach at Gilman Point by I.K. Morgan in 1988 and on dunes at Tywyn Burrows by D.G. Hemingway and M.L. Denton in 1999.

Localities: 2

Months recorded: 4

*Demetrias atricapillus* (Linnaeus, 1758)

Although common and in a wide range of habitats over most of its British range, this species has only been recorded from the coast and coastal fens in the county.

Localities: 5

Months recorded: 4-7, 9

*Demetrias monostigma* Samouelle, 1819

Notable B

Most records are from the sand-dune systems at Laugharne, Pembrey/Tywyn and Llansteffan, where it has been found amongst marram grass *Ammophila arenaria*. It has also been recorded in wet pasture at Ffrwd Farm Fen.

Localities: 7

Months recorded: 4-7

*Dromius agilis* (Fabricius, 1787)

This arboreal carabid appears to be rare in the county, but it could be overlooked. P.M. Pavett found this species at Pembrey Forest in 1989 and also recorded it from an oak tree at Dinefwr Park in the same year.

Localities: 2

Months recorded: 5, 12

*Dromius linearis* (Olivier, 1795)

Frequently recorded from coastal dunes and fens close to the coast. The only two inland records are from Cors Goch and Cors Farlais, where there is much tussocky purple moor-grass.

Localities: 19

Months recorded: 3-9

*Dromius melanocephalus* Dejean, 1825

Infrequently recorded from coastal areas and from similar habitats to *D. linearis*.

Localities: 6

Months recorded: 3-7, 10

*Dromius meridionalis* Dejean, 1825

As with most of the other members of this genus, most records are from on or near the coast. The only inland records are from Dinefwr Park and from near Llangadog. It is usually found in woodland and under bark, therefore it should be more widely distributed in the county.

Localities: 8

Months recorded: 2-4, 9

*Dromius quadrimaculatus* (Linnaeus, 1758)

Locally recorded from woodland, where it has been beaten from trees

Localities: 4

Months recorded: 5, 11-12

*Dromius quadrinotatus* (Zenker in Panzer, 1800)

This arboreal species is known only from Dinefwr Park, where it has been recorded on several occasions, and from Carreg-Sawdde Common, where it was found under the bark of a willow by I.K. Morgan in 1987.

Localities: 2

Months recorded: 3-5



*Metabletus foveatus* (Fourcroy, 1785)

Found in dry habitats on or near the coast, including pine *Pinus* spp. forest, dune land and a garden.

Localities: 8

Months recorded: 2-7

*Lionychus quadrillum* (Duftschmid, 1812)

RDB3, BAP Priority

This Red Data Book carabid has been found on several occasions on shingle banks by the Afon Tywi at Llanwrda and Llandovery, it is a fully winged species and could also be present along the Cothi Valley. In Wales, this species is known only from the rivers Tywi, Rheidol, Ystwyth and Usk. Although English specimens of this species have front and rear pairs of yellow elytral spots, Welsh *L. quadrillum* only have the back pair.

Localities: 2

Months recorded: 4-6

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#### Appendix: Gazetteer of place names

| Site              | Grid Ref. | Site                 | Grid Ref. |
|-------------------|-----------|----------------------|-----------|
| Abergwili         | SN4420    | Llandoverly          | SN7532    |
| Afon Cothi        | SN6033    | Llanelli             | SN5020    |
| Afon Lliedi       | SN5100    | Llanelli Levels      | SS5198    |
| Afon Sawdde       | SN7125    | Llangadog            | SN7027    |
| Afon Tywi         | SN6222    | Llangennech          | SN5601    |
| Allt Rhyd-y-groes | SN7648    | Llanllwch            | SN3618    |
| Bannau Sir Gaer   | SN8021    | Llansteffan          | SN3510    |
| Bishops Pond      | SN4420    | Llanwrda             | SN7130    |
| Black Scar        | SN3110    | Llyn y Fan Fach      | SN8021    |
| Blaen-nant Melin  | SN7346    | Llyn y Gwaith        | SN6750    |
| Brechfa Forest    | SN4629    | Llwynhendy           | SS5399    |
| Bronwydd Arms     | SN4123    | Machynys Ponds       | SS5198    |
| Bryn Mawr         | SN6750    | Morfa Uchaf          | SN3712    |
| Burry Inlet       | SS5297    | Mynydd Du            | SN7618    |
| Bynea             | SN5419    | Mynydd Llangyndeyrn  | SN4713    |
| Carmarthen        | SN4120    | Mynydd Llanybydder   | SN5339    |
| Carmel            | SN5915    | Nant Llety-gleision  | SN7949    |
| Cefn Sidan        | SS4199    | Nant-y-bai           | SN7744    |
| Cors Farlais      | SN6734    | Ogof Dan y Lleud wen | SN7518    |
| Cors Goch         | SN3618    | Pal-y-cwrt           | SN6818    |
| Craig Clyngwyn    | SN7747    | Pembrey Burrows      | SS4199    |

|                               |        |                 |        |
|-------------------------------|--------|-----------------|--------|
| Cwmdu                         | SN6230 | Pembrey Forest  | SN3900 |
| Cynghordy                     | SN8040 | Pen Lan         | SN4420 |
| Ddol-fawr                     | SS5398 | Penclacwydd     | SS5298 |
| Dinas                         | SN7846 | Pendine         | SN2308 |
| Dinefwr Park                  | SN6122 | Penrhyngwyn     | SS5197 |
| Dolaucothi Estate             | SN6640 | Rhandirmwyn     | SN7644 |
| Dryslwyn                      | SN5420 | Rhos Pwllgawnen | SN2930 |
| Ffarmers                      | SN6544 | Rhydcymerau     | SN8121 |
| Ferryside                     | SN3712 | Stradey Woods   | SN4802 |
| Ffrwd Farm Fen                | SN4102 | Tair Cairn      | SN6816 |
| Garn Fawr                     | SN5315 | Tan Lan Burrows | SN3707 |
| Gilman Point                  | SN2207 | Techon Marsh    | SS5498 |
| Ginst Point                   | SN3207 | Tywyn Burrows   | SN3605 |
| Glynea                        | SS5598 | Usk Reservoir   | SN8127 |
| Hafod-y-pont                  | SN8043 | Wharley Point   | SN3210 |
| Kidwelly                      | SN4000 | Witchett Pool   | SN2807 |
| Laugharne and Pendine Burrows | SN2807 | Ynys Uchaf      | SN4814 |
| Llandeilo                     | SN6222 | Ystradffin      | SN7846 |

## NOTES ON CARMARTHENSHIRE ANTS (HYMENOPTERA: FORMICIDAE) - I K Morgan

### INTRODUCTION

Since the late 1980's, the writer has casually recorded and collected ants in Carmarthenshire and the following brief account seeks to summarize that effort. Eighteen species have been recorded in the county and there is the possibility of additional, as yet unfound, species. As well as this general surveying, in recent years several studies and more detailed autecological work have been carried out on the black bog ant *Formica candida* since its discovery at Cors Goch, Llanllwch in 1991. These are referred to later under the notes on that species. The '*Provisional Atlas*' (Barrett, 1979) exhibits few records for the county and the sources of these have not been investigated.

### SPECIES ACCOUNTS

#### ***Formica fusca***

Recorded at several coastal localities and inland sites, this lively, dull black ant can be confused with the following species from which it can be distinguished, with care, by the absence - or virtual absence - of erect hairs on the pronotum ('shoulders' behind the head). Note that several specimens are required for identification due to variation in hairiness.

### ***Formica lemani***

Very much a typical upland species of north and east Carmarthenshire, but also occurring where 'upland-type' vegetation reaches the coast, eg on the heathy acidic Millstone Grit ridge at Mynydd-y-Garreg, Kidwelly. Very similar to *F. fusca*, it has many erect hairs on the pronotum.

### ***Formica rufa***

This large, reddish wood ant is of 'conservation concern' in Carmarthenshire and strongly associated with ancient woodlands; it has been lost from one locality in the late 20th Century.

The latter refers to the small colony - known to many Llanelli schoolboys - by the footpath on the western side of the Lower Lledi Reservoir 22/516037, where it endured much disturbance. I actually last saw these ants, with their distinctive mound nests in the late 1970's, though recent conversations with others with natural history interests suggests that they survived into the early 1980's. The actual locality is next to a reservoir which itself flooded a deep, wooded gorge.

The surviving colonies occur in the Crychan Forest (extreme NE Carmarthenshire); the heavily-wooded Brechfa-Abergorlech complex in mid-Carmarthenshire and a surprising outlier near Whitland.

The nests in the Crychan Forest have recently been rather elusive - I have made two (albeit brief) unsuccessful late 1990's surveys. Dafydd Dafis observed a queen walking across a forest track <sup>1</sup>/<sub>2</sub> mile north of Cwm Crychan Farm 22/838401 on 21 August 1972, possibly a dispersing individual. Later, Forest Enterprise Ranger Alan Enoch reported *F. rufa* from 2 sites in Crychan Forest (both c. 1990):

- a new picnic area NE of Esgair-fwyog 22/837413 'nest apparently destroyed' and
- near Tre-fawr 22/842393 - 'ants seen but no nest found'.

Given the extent of Crychan Forest, it is my belief that the species still occurs there.

It was Alan Enoch again who brought my attention to the still-established colony along the 'Burma Road' (as the track is nicknamed), at Abergorlech 22/583345. I have visited this site on several occasions eg '11.5.1994 - out en-masse, large numbers swarming densely over nests....*Formica lemani* also about'. Approximately seven nests is the maximum number counted (see map) and it would be useful to ascertain whether wood ants occur in other parts of the Brechfa-Abergorlech Forest. An eager naturalist could simultaneously look out for pine marten, red squirrel and goshawk, other specialities which occur in these woods.

There has been virtually no work done on other invertebrates - scavengers, guests or parasites - associated with wood ant nests (or, indeed, any other species). The only

exception is the distinctive black and orange chrysomelid beetle *Clytra quadripunctata*, which was found near wood ant nests in Abergorlech in late May 1998. *Formicoxenus nitidulus* has been recorded from widely-spread wood ant nests in the UK (but not in Carmarthenshire). As this small shiny ant lives *inside* the nests of wood ants - which will very energetically defend their mounds - it is very difficult to find. However, Bolton and Collingwood (1975) advise that this species wanders over the surface of the wood ant nests *on warm, dull days*. John Pontin (BWARS Newsletter, Autumn 2000) suggests sticking dead split bracken stems into warm parts of nests and coming back a few months later to see whether there are *Formicoxenus* nests in these stems.

In March 1994 I was surprised to be told, by Dr Malcolm Holding, of the presence of wood ant nests at Forest Farm, SE of Whitland 22/227162 etc. Consequently, I visited the site on 11 May 1994 and counted at least 6 nests, all - typically - in sunny positions on the edge of a wood, upslope from the adjacent path or wood edge. There is much surviving woodland alongside the Afon Taf in this area, though much has now been coniferised. This woodland was, in the Middle Ages, under the control of the Cistercian monastery at Whitland, and it is known that this community actively utilised - and preserved - areas of woodland. The modern-day survival of woodland and local place- names such as Great-Pale (ie 'enclosure') reflects this. This Whitland colony is the most south-westerly in Wales and, apart from the few other Carmarthenshire sites, the nearest populations are on NE Gower. For this site and Abergorlech, see Appendix.

Forest Enterprise are aware of conservation importance of this species and positive management has taken place at Abergorlech (removal of overshadowing trees etc). It would be useful to ascertain its current status in Crychan Forest.

### ***Formica candida* (syn. *F. transcaucasica*)**

First found at Cors Goch Llanllwch by Lin Gander on 10 September 1991, this astonishing discovery led credence to an old (and mostly dismissed) 1913 record from Rhosili Down, Gower, where it was re-discovered by Clive Hurford and others in 1996. These remain the only populations of the black bog ant in Wales, which is otherwise only found on a few wet heaths and bogs in Dorset and Hampshire. This shining medium-sized black ant constructs small conical nests consisting of bog moss (*Sphagnum* spp.) and grass fragments in wet boggy situations, typically amongst tussocks of purple moor- grass *Molinia caerulea*. Colonies contain a single queen ant and up to 1000 workers, although populations can fluctuate according to the amount of suitable nesting habitat'. (*Action for Wildlife*, CCW 1997: 41).

At Cors Goch Llanllwch, the species occurs on the Wildlife Trust: West Wales-owned southern section (the National Nature Reserve). Within this section it only occupies a discrete area of the site where bog moss, heather and purple moor-grass dominate. It requires high humidity, so recent positive management by the Wildlife Trust (blocking ditches etc) is likely to be beneficial, but scrub invasion remains a problem, in terms of shading and increased evapo-transpiration as well as providing better habitat for competitor species such as *Lasius* spp.

Due to the conservation significance of the black bog ant - a RDB2 and a BAP Priority Species, much research has been carried out at Cors Goch Llanllwch. The interested reader is referred to the *References* section for further details.

### ***Lasius alienus***

A small dark brown species of dry coastal situations, with four recent vc44 records:

- Wharley Point 22/341093, 4.2.1988 (Old Red Sandstone cliffs )
- Dolwen Point, Pendine 22/233078, 27.3.1991 (Carboniferous Limestone cliffs)
- 'Banc y Lord', Kidwelly 22/408049, 17.6.1992 (sea embankment)
- Pembrey Forest 22/389030, 7.5.01

It is common on dunes on Gower (Blacker, 1989).

### ***Lasius flavus***

The familiar and common yellow meadow ant, whose mound nests are so typical of old pastures on the lower flanks of Mynydd Du, NE Carmarthenshire and elsewhere, where the species tends root aphids. Like many ants, this species is distinctly thermophilous - liking sunny, open situations.

### ***Lasius fuliginosus***

A very distinctive, highly glossed black ant, often seen climbing on herbage or on bushes. Quite a few records from the Pembrey - Llanelli coastal area eg Pentrepoeth, Furnace 22/506016, 20.5.1995, 'climbing actively on brambles at edge of footpath'; 'Cwm', Burry Port 22/437013, 10.8.2000 - in *Lamium album* flowers and Llwynhendy 21/537993, 12.8.2000 in *Primus avium* leaf curls'.

This species makes a wood pulp nest in old stumps and is said to parasitise the less conspicuous yellowish *L. umbratus*, which has not yet been recorded in the county.

### ***Lasius niger***

Perhaps the best known ant, at least to the general public, because of its tendency to wander into houses. The 'common black ant' is dark brown rather than black and is a familiar species along the coast, the main valleys and around habitations etc. It occurs in open sunny conditions.

### ***Lasius platythorax***

This species, which was only 'split' from *L. niger* in 1991, has been recorded (recorder unknown, though possibly associated with survey work at Cors Goch, Llanllwch) from SN31 - see Tony Prince's account in the *BWARS Newsletter* (Spring 1998: 10-11).

### ***Leptothorax acervorum***

A small, delicate brownish ant, this species is typically associated with open woodland, nesting in tree stumps, under bark and even in a large pine cone in Pembrey Forest. Records emanate from both coastal (eg Tywyn Burrows) and inland (eg Albert Mount, Caeo) localities.

### ***Monomorium pharaonis***

The pestilent, heat-dependent 'pharaoh ant' has been known as a Carmarthenshire species since at least 1950, when an article appeared in the *Llanelly Mercury* (Thursday, Oct. 19th, 1950) reporting an infestation at High Street, Tumble c. 22/54-11- (see also *DIG 31:18*). Reports of this species from Carmarthen Town 22/42 in the *Western Mail* (July 1988) need confirmation.

In August 2000, concerned 'Llanelli Naturalists' member Diana Hopkins, brought me some minute yellowish ants from her house at Glevering Street, Llanelli 22/513004, which I determined as *M. pharaonis*.

### ***Myrmica lobicornis***

The first record was that made by K F G Barrett (see *Em. Mon. Mag.* **104**: 260 (1968)), for a ♀ with her brood in soil on the SE face of the Sugar Loaf, Cynghordy (22/835427) on 31 May 1968 (he also recorded *F. lemni* "abundantly"). It is said to be an unobtrusive, often solitary species - this perhaps contributing to the paucity of records.

The only other record was made by myself at Carreg Eidon, Mynydd Llangyndeyrn 22/494138, 18.4.1989 on a south-facing limestone dip slope.

### ***Myrmica rubra***

One of the three common 'red ants' (the others being *M. ruginodis* and *M. scabrinodis*) occurring in all sorts of habitats, including open woodland, often on flowers etc in gardens and regularly stings gardeners and children when disturbed.

### ***Myrmica ruginodis***

Like the preceding species, it is common and widespread, though seemingly more tolerant of upland situations.

### ***Myrmica sabuleti***

Most of the few records of this apparently scarce ant hail from the limestone ridge - near Four Roads, Capel Dyddgen, Carmel Woods, Carreg Cennen etc but also with two records from the Rhandirmwyn district in the NE. The records are from soils on the limestone ridge (shallow 'rendzinas') which receive high levels of summer sunshine.

### ***Myrmica scabrinodis***

The third of the common and widespread 'red ants', this rather smaller species being recorded from throughout the county from coastal cliffs and dunes to the most inland upland sites. It is said to prefer drier soils and shorter vegetation than *M. rubra* and *M. ruginodis*.

### ***Stenamma debile***

A fragile, often semi-solitary small ant with tiny eyes and with just one recent record (of a singleton) from under leaf litter near the Bishop's Palace, Abergwili 22/446211 on 19.6.1999. When I found this species, I was not actually looking for ants but myriapods and no more individuals of *Stenamma* were subsequently seen, in spite of then deliberate searching.

Coincidentally, the only other record was that of Rev. E.J. Pearce, who recorded it here on 25 October 1946! - 'one worker under a mossy bank at Abergwili'. (Incidentally, for an interesting obituary for the Rev. Pearce, read the '*Entomologists Monthly Magazine*' **119**: 171 - 176 (1983)).

### ***Tetramorium cespitum***

There is an old (pre-1961) record in the 'Atlas' for the Wharley Point cliffs near Llansteffan. This undated record of E.A. Butler is cited in Donisthorpe (1915).

In the modern period, the first record was at Telpyn Point 22/185073 on 14.10.1987, when this small dark species was quite frequently noted under loose flaggy sandstone on the headland, together with the tiny millipede *Polyxenus lagurus*. It was also noted here on 6.4.1994, and it is also known from Ragwen Point 22/222073, 12.1.1989.

### **Suggested possible species as yet unrecorded in Carmarthenshire**

Several species recorded in Glamorgan (Blacker, 1989) and Ceredigion (Chater, 1994) have yet to be recorded in Carmarthenshire. These include *Lasius mixtus*, which is easily overlooked because of its subterranean habits, and *Lasius umbratus*, a yellowish species often associated with logs or tree stumps or - in the case of the Ceredigion records - old parkland trees. With *Myrmica schenki* it is a genuinely scarce, southern species, and the general difficulty of casual identification within the genus *Myrmica* perhaps also contributes to the absence of records in vc44. There is also the possibility that two other species, noted on the warm, south-facing limestone cliffs of Gower - *Leptothorax albipennis* (syn. *tuberum*), where a nest was found on a gorse stump, though this small yellow species is more usually found in rock crevices, and *Myrmecina graminicola* (a 'small, dark thick-set species') - could occur in similar habitat on the western coastal cliffs of Carmarthenshire. *Myrmecina* should be looked for in the nests of *Lasius flavus* and *alienus*; it is said to curl into a ball when disturbed.



*Formica cunicularia*, a southern heathland species, has also been recorded on Gower (and South Pembrokeshire). It is possible that this *Formica*, with its reddish-brown thorax could be found on the cliffs west of Pendine; on Gower it is 'fairly common below the Carboniferous Limestone cliffs, completely replacing *F. fusca* in many places' (Blacker, 1989).

Please refer to the section on *Formica rufa* for comments on *Formicoxenus nitidulus*.

### **The Woodlouse *Platyarthrus hoffmanseggi* in Carmarthenshire Ant Nests**

The little blind, white woodlouse *Platyarthrus hoffmanseggi* is a well-known commensal of ants, being found almost exclusively in ants' nests where it is said to feed on their excreta and other debris. In Carmarthenshire, I have found it in the nests of *Lasius niger*, *L. flavus* and *Myrmica rubra*. Once, I found no less than 145 individuals of *P. hoffmanseggi* in a *L. niger* nest (after heavy rain) at Machynys, Llanelli. In my experience, this woodlouse is most easily found in the damp, but warmer late winter/early spring period.

#### Acknowledgements

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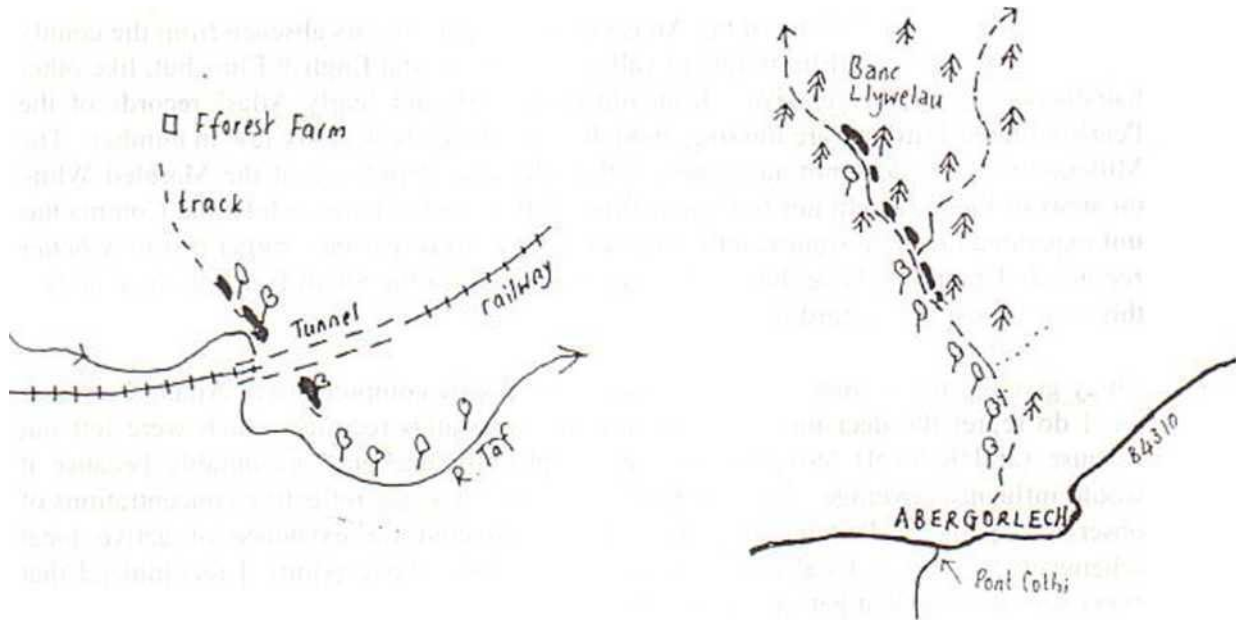
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APPENDIX: maps are given below for the Forest Farm (Whitland) and the Abergorlech wood ant colonies:



## THE MILLENNIUM ATLAS OF BUTTERFLIES IN BRITAIN AND IRELAND - I K Morgan

At the outset, my advice is 'get this book' - it is superb in terms of the information that it contains and is well-produced. It holds a wealth of distributional, ecological and conservation-related data which, in major 'subsidiary' chapters, complement the 'Species Accounts'. I can thoroughly recommend this book.

For Carmarthenshire butterfly enthusiasts, however, there may be some confusion and disappointment. The main phase of exploratory and species-targetted survey work occurred between 'Atlas' periods (ie 1970-82 and 1995-99) - in other words during the period 1984 - 1995. The cumulative map on page 49 better demonstrates this latter period, and this data was incorporated into the distributional maps of *The Moths and Butterflies of Great Britain and Ireland (Vol 7. Part 1)* which, perhaps, gives a better resume of the *distribution* - rather than relative abundance - of Carmarthenshire butterflies.

Particularly noticeable by their absence in the current 'Millennium Atlas' are the historical records of long-disappeared species such as the Purple Emperor, Duke of Burgundy, Wood White, Large Tortoiseshell and (to a lesser extent), Silver-studded Blue. Whilst we can perhaps expect the Purple Emperor to possibly return, habitat change has probably rendered the county unsuitable for most of the others. Readers are referred to my 'Provisional Review' (Morgan, 1989) for more details regarding these extinct butterflies.

Other omissions that readers should be aware of concern several species, for example the White-letter Hairstreak. For some unknown reason, records sent in to the earlier 'Atlas' survey (1970-82) were not included in those maps (other species were missing too!) and subsequent records fall *between* the Atlas periods, suggesting its absence from the county - yet it occurs in Wych Elm in inland valleys and on coastal English Elms but, like other hairstreaks, it is rather elusive. Both old (pre-1970) and 'early Atlas' records of the Pearl-bordered Fritillary are missing, though again these are actually few in number. The Millennium Atlas does not adequately reflect the true abundance of the Marbled White on areas of the Coalfield nor the Small Blue on the coastal dunes, whilst the Comma has not expanded its range significantly since the 'early Atlas' period - rather it is now *better recorded*. I cannot believe there is the gap of records for the Small Heath in the county - this surely must be a recording 'blip'.

I may give the impression that I am critical of this new comprehensive Atlas. I am not, but I do regret the decision *not* to include the inter-atlas records, which were left out because (at UK-level) 'coverage was geographically uneven', presumably because it would influence coverage. But coverage *is* uneven anyway - reflecting concentrations of observers (parts of Britain are always poorly covered) or existence of active local schemes. As long as local recorders are aware of the above points, I recommend that every serious naturalist gets a copy for their shelves.

*The Millennium Atlas of Butterflies in Britain and Ireland* is written by Jim Asher, Martin Warren, Richard Fox, Paul Harding, Gail Jeffcoate and Stephen Jeffcoate, and is published by Oxford University Press (2001). ISBN 0-19-850565-5. £30.00 hardback.

## THE PROVISIONAL ATLAS OF BRITISH HOVERFLIES

Another atlas which has recently appeared is the *Provisional Atlas of British Hoverflies*, compiled by Stuart Ball and Roger Morris. Again, this has been a mammoth venture and the authors and others are to be congratulated. As this atlas (unlike the butterfly atlas) *did* coincide with the period of maximum effort in Carmarthenshire (with first class coverage also in Pembrokeshire and Ceredigion), the maps do reflect the distributional status of hoverflies in our area. In case readers are misled, there are a couple of erroneous records such as the record for *Anasimyia lunulata* for SN41 (which should be deleted) and I suspect the SN30 record for *Volucella inanis* is a transcription error. A few *Cheilosia* records (*antiqua*, *fraterna*, *impressa* and *grossa*) are missing. Again this atlas is highly recommended to readers.

## DRAGONFLIES & DAMSELFLIES IN CARMARTHENSHIRE, 2001 – I K Morgan

The Odonata season kicked off with a freshly emerged large red damsel fly *Pyrhosoma nymphula* at Ffordd-y-Wagen, Pwll 22/463013 on 23 April. There was a couple of records of the classic 'grazing levels' species, the hairy dragonfly *Brachytron pratense* - at a ditch on Laugharne - Pendine Burrows 22/298072, 11/5 (a pair 'in cop.', N R Matthew); and an ovipositing ♀ at the 'Starfish Pond' in Pembrey Forest 22/391016 on

14/5. A visit to the Wildfowl and Wetlands Trust's 'Millennium Wetland' (aka 'The Swannery') 21/535986 on 15/5, produced records of the scarce blue-tailed damselfly *Ischnura pumilio* (immature ♀ *aurantiaca* phase) and the black-tailed skimmer *Orthetrum cancellatum*. Regular and comprehensive survey work at the last named-site by Wendell Thomas and Malcolm Holding showed that at least 17 species were using this man-made wetland:-

|                                |                                 |   |
|--------------------------------|---------------------------------|---|
| ■ banded damselfly             | <i>Calopteryx splendens</i>     | (1 ♀ early in season - probably a dispersing individual). |
| ■ emerald damselfly            | <i>Lestes sponsa</i>            |   |
| ■ large red damselfly          | <i>Pyrrhosomma nymphula</i>     |   |
| ■ azure damselfly              | <i>Coenagrion puella</i>        |   |
| ■ common blue damselfly        | <i>Enallagma cyathigerum</i>    |   |
| ■ scarce blue-tailed damselfly | <i>Ischnura pumilio</i>         | (1 ♂, 3♀ at 2 sites)                                      |
| ■ blue-tailed damselfly        | <i>I. elegans</i>               |   |
| ■ common hawkker               | <i>Aeshna juncea</i>            | (1 ♂ on fishing platform. 8 on 'deep water lake')         |
| ■ migrant hawkker              | <i>A. mixta</i>                 | (26 on 1 day, as well as other records)                   |
| ■ southern hawkker             | <i>A. cyanea</i>                | (2 ♂♂ near 'Heron's Wing Hide')                           |
| ■ emperor                      | <i>Anax imperator</i>           |   |
| ■ hairy dragonfly              | <i>Brachytron pratense</i>      | (1 ♂ N. part of wetland)                                  |
| ■ golden-ringed dragonfly      | <i>Cordulegaster boltonii</i>   |   |
| ■ four-spotted chaser          | <i>Libulella quadrimaculata</i> |   |
| ■ broad-bodied chaser          | <i>L. depressa</i>              |   |
| ■ black-tailed skimmer         | <i>O. cancellatum</i>           | (now well established)                                    |
| ■ common darter                | <i>Sympetrum striolatum</i>     |   |
| ■ ruddy darter                 | <i>S. sanguineum</i>            | (2♂, 1♀)  |

*Orthetrum cancellatum* was also seen during 2000 at 'Ashpits Pond' (near Burry Port 22/463012) and Machynys Pond 21/513979. A visit to the Usk Reservoir 22/818275 etc, 30/6 yielded common blue damselflies, golden-ringed dragonfly and a couple of beautiful demoiselles *Agrion virgo*, typically in streamside habitat. A pleasing record was of 15 small red damselflies *Ceriagrion tenellum* and 1 black darter *Sympetrum danae* for Cors Goch, Llanllwch 22/363187 (a known site) on 25/7.

STOP PRESS! As this issue of the newsletter is late in appearing, and as it will be the last one, attention is drawn to Wendell Thomas' and Malcolm Holding's records (several were seen) of the variable damselfly *Coenagrion pulchellum* at the northern part of the 'Millennium Wetland', WWT Penclacwydd (c. 21/535985) in mid-May 2001.

## CARMARTHENSHIRE BUTTERFLIES AND MOTHS, 2000 – I K Morgan

### Butterflies

2000 was a good year for records of the brimstone *Gonepteryx rhamni* and, at the other end of the butterfly season, the clouded yellow *Colias croceus*. The first brimstone - typically a ♂ - hurtled past a garden at Denham Avenue. Llanelli 22/495014 on a sunny afternoon on 12 March, when small tortoiseshells *Aglais urticae* and peacocks *Inachis io* were also on the wing.

As is now traditional, the other brimstone sightings are listed below:

|  |           |      |   |
|--|-----------|------|---|
| Machynys                                   | 21/512984 | 12/3 | 2 RN Stringer & RH Davies   |
| Stradey Woods                              | 22/489017 | 19/3 | IKM (with 3 commas<br><i>Polygonia c-album</i> )  |
| 'Ffordd y Wagen', Pwll                     | 22/463031 | 22/4 | IKM   |
| WWT, Penclacwydd<br>(‘Millennium Wetland’) | 21/541980 | 30/4 | IKM   |
| Pwll                                       | 22/477012 | 1/5  | RD Pryce  |
| WWT, Penclacwydd                           | 21/535984 | 6/5  | ovipositing on young planted,<br>pathside <i>Frangula alnus</i> , laying<br>a single egg conical and yellow on<br>young leaf. Repeated on other leaves. |
| Maes y Betws, Ammanford                    | 22/639117 | 6/5  | S Lucas   |
| WWT, Penclacwydd                           | 21/535984 | 8/5  | 2 IKM   |
| Waun Henllan                               | 22/602155 | 5/5  | RNS   |
| nr Pontyberem                              | 22/512115 | 5/5  | RNS   |
| Glan-ddu                                   | 22/581251 | 8/5  | flying around planted alder<br>buckthorns) - J Friese   |
| 'Ashpits Pond', Burry Port                 | 22/462012 | 6/6  | IKM   |

Holly blues *Celastrina argiolus* were noted at Cwm Felin, Bynea 21/544993 (30/4), characteristically flying quite high over a town-edge hedgerow habitat and another was at Dinefwr Castle Woods 22/605233 on 2/5 (JF). Others were seen in August at Bryn Hebog, Llanmiloe 22/244084 by Pat Owen (PO). Four small blues *Cupido minimus* were out near the ‘Ski-slope Pond’ in Pembrey Country Park 22/409001 on 6 June, whilst another singleton was in Pembrey Forest 22/391016 on 14 May, an early date. With the latter small blue were some 15 or so common blues *Polyommatus icarus* and no less than 12 dingy skippers *Erynnis tages*. All these species utilise various members of the legume or pea family for their larval food requirements - kidney vetch for the small blue and bird's-foot trefoil for the latter two butterflies, plants which are still commonplace on the slightly calcareous sands of the Pembrey area. Whilst bird's-foot trefoil is still frequent on the badly mis-named ‘wasteground’ of some urban situations or on certain colliery spoil areas, it has become very scarce indeed in the farming landscape of

Carmarthenshire due to agricultural 'improvement' of the neutral pastures where it was normally found. Dingy skippers were also seen at Laugharne-Pendine Burrows 22/302072 and on an old colliery site at Llangennech 22/563009. Al Parrott communicated a record of small blues from the North Dock dune spit 21/498991 (a known site) in June and August; here small blues share this remnant dune area with marbled whites, common blues, skippers and 6-spot burnet moths. PO also noted small blues around the car park at Ginst Point 22/324079 on 18/6. Records of commas hail from near the roundabout at Morfa 21/518987, 8/7; 'Ffordd-y-Wagen', Pwll 22/462012, 7/7; Rhosmaen 22/652247, 11/7 - 3 individuals (JF); Bryn Hebog, 26/7 and 5/8 (PO); Brohedydd, Llangynog 22/342179, 29/6, (Shirley Wynn-Davies); and Maes y Betws 30/9 (SL). They were also seen at Nant-y-Llyn, Ffarmers 22/671493 (April/May, Tony Braithwaite), and further records were submitted by P. Swire, including sightings at Tawelan, Carmarthen 22/388207, 22/9; Green Castle 22/394166. 23/9 and Ysguborstone 22/399204, 22/7.

Matthew Steadman-Jones undertook some very valuable marsh fritillary *Eurodryas aurinia* survey work in the Gorslas area, on land which was once Mynydd Mawr Common prior to its late enclosure. The bulk of the sightings - of adults or larval webs - came from the Cwmgwili-Thornhill-Broad Oak area of the erstwhile common, though with a small scatter of sightings nearer Gorslas itself. As the range of the marsh fritillary in Carmarthenshire is now highly fragmented (even on the coalfield), metapopulation studies such as Matthew's are of crucial importance so that possible conservation measures can be implemented. Marsh fritillaries were again recorded by Janet Crowden *et al* at the Wildlife Trust's reserve at Rhos Cefn Bryn, Llwyn-teg, Llannon 22/555072, as well as a record of 4 adults at Parc Ynys Dawela, c.22/707139 near Brynamman (a proposed Local Nature Reserve) on 7 June (Jim Davies, Steve Lucas & Matthew Steadman-Jones).

The first clouded yellows seemingly arrived in late June - such as the individual seen east of Llanelli Railway Station 21/511993 on the 26th. They were subsequently seen throughout the county with impressive numbers on the coast, such as the 18 counted at Machynys 21/51-97- on 20/8, including the pale form '*helice*' (an individual was caught and checked) and many presumably migratory large whites *Pieris brassicae*. Two were still around at Machynys on 21 October, on a beautiful sunny and clear day (when even the lighthouse on Caldey Island and the Milford Haven chimney stacks were visible!). August also witnessed an influx of red admirals *Vanessa atalanta* and painted ladies *Cynthia cardui*, for example at Glan-ddu on 3/9 (JF).

Grizzled skippers *Pyrgus malvae* are evidently quite rare in the county, with most recent records hailing from Pembrey Forest - where one was seen, on a dandelion flower 22/389011 on 28 April. Marbled whites *Melanargia galathea* were out at Tumble 22/542127 on 18/5, nr. Tycroes 22/614113 on 18/7 - both old coal spoil tips - and Caeau Blaenau Mawr 22/595124 where 4 were observed by RNS on 21/7. Marbled whites were also reported during the first half of July from Bryn Hebog by PO; she also recorded this species near Dolwen Point 22/227076 on 26/6.

At the end of September (30/9), Pat Owen recorded a monarch *Danaus plexippus* at Bryn Hebog. This is the second year running for a record of this gigantic vagrant from North America and this occurrence constitutes the 4th county record. This butterfly is common in North America, where it can gather in great numbers which migrate to Mexico for the winter and, inevitably, a few get blown across the Atlantic (with many more perishing *en route*). Incidentally, the very first British record was at Neath in September 1876. For an interesting account, read Thomas (1991).

Richard Smith discovered brown hairstreak *Thecla betulae* eggs at four localities, on young shoots of blackthorn. These eggs are typically laid on young suckers up to 1 metre from the ground (though sometimes higher) and are a profitable way to ascertain presence of this elusive butterfly. The white ova are normally laid singly (but occasionally more) on the bark of the blackthorn, near the base of a spine or junction of one - or two - year old growth. The sites where ova were recorded are: Capel Isaf Farm, Capel Dewi 22/471203; Penallt, Llanarthne 22/534187; Pontargothi 22/506225 and Cefn Coed, Llangdog 22/709264 (all 7 November).

Note: All unattributed records are those of the author: grid references and full site names are usually only given at their first usage.

#### Acknowledgements

Thanks to the County Lepidoptera Recorder, Steve Lucas for providing listings of records.

#### Reference

Thomas, J. (1991) - *The Butterflies of Britain and Ireland*. Dorling Kindersley: 216 - 218

#### **Carmarthenshire Moths, 2000 - I K Morgan**

Following instructions from Barry Stewart and the excellent Glamorgan Moth Recording Group Newsletters, several interesting larval records were made for micro-lepidoptera. The plume moth *Platyptila gonodactyla* was found in seedheads of coltsfoot *Tussilago farfara* at the 'Ashpits Pond', Burry Port 22/462008, 20/4 and *Metzeneria aestivella* (**Nb**) was similarly found on carline thistle *Carlina vulgaris* SE of the Witchett Pool 22/293074, 4/5. Bronzy adults of *Adella cuprella* were abroad over flowers of creeping willow *Salix repens* in Pembrey Forest 22/387017, 28/4 and likewise, *Pyrausta aurata* was over marjoram *Origanum vulgare* in my garden at Coronation Road, Llanelli 21/514999, 6/5. A micro-moth record of interest (det. B. Stewart) from Coronation Road was that of the alien (Australian) *Epiphyas postvittana* on 24/8; Barry adds that 'it is now common around Swansea'.

There were reports of hummingbird hawk-moths *Macroglossum stellatarum* at several localities:-



|                 |           |      |                                     |            |
|-----------------|-----------|------|-------------------------------------|------------|
| ■ Capel Isaac   | 22/583268 | 16/6 | at flowers of catmint <i>Nepeta</i> | (K Taylor) |
| ■ Capel Seion   | 22/517133 | 19/6 |                                     | (G Harper) |
| ■ Llansteffan   | 22/353102 | 18/6 | at red valerian <i>Centranthus</i>  | (G Motley) |
|                 |           |      | <i>ruber</i>                        |            |
| ■ Eithin-tewion | 22/744414 | 18/6 |                                     | (J Iliff)  |
| ■ Parc Dinefwr  | 22/614223 | 10/7 |                                     | (K Day)    |
| ■ Glan-ddu      | 22/581251 | 16/7 | 'sunning itself on road surface'    | (J Friese) |

(also note Jon Baker's records and other migrants later)

A dead specimen of the lunar hornet moth *Sesia bembeciformis*, found as a roadside casualty near Carmel Woods 22/599165 (Mike Bailey and Jon Turner, 18/7) is a NCR. Also new to the county was the small white pyralid *Crambus uliginosellus*, collected flying over *Sphagnum*-hollows at Cors Goch, Llanllwch 22/363187, 25/7, when beautiful yellow underwings *Anarta myrtilli* were also noted.

Other miscellaneous moth records of interest were a yellow belle *Aspitates ochrearia* at the shingle beach at Penrh yngwyn 21/517973, 6/5; a privet hawk-moth *Laothoe populi* behind the chemical works at Bynea 21/566987, 10/7, (Jeff Davies) and scarlet tigers *Callimorpha dominula* NE of Siloh 22/745376, 12/7 and W of Troed-y-rhiw 22/700352, 17/7 (M Chadwick).

Jon Baker was very active this year and he has contributed many noteworthy records both from his father's home at Nantgwyn (north of Carmarthen 22/366238) and a variety of other sites, where he was sometimes assisted by other moth enthusiasts (details below). All of the following records (unless otherwise indicated) are Jon's.

**NANTGWYN** (trapping site on edge of wooded valley, with adjacent pastures etc).

Jon, in his accompanying notes, draws attention to the noteworthy numbers of migratory moths, citing 'most notably the unprecedented influx of White-speck *Mythimna unipuncta* and 'record-breaking numbers of *Udea ferrugalis* and Dark Sword-grass *Agrotis ipsilon*, along with *Nomophila noctuella*. Turnip Moth *Agrotis segetum*, Convolvulus Hawk-moth *Agrius convolvuli*, Hummingbird Hawk-moth *Macroglossum stellatarum*, The Gem *Orthonama obstipata*, The Vestal *Rhodometra sacraria*, Bordered Straw *Heliothis peltigera* and Pearly Underwing *Peridroma saucia*.

Some Highlights from Nantgwyn (JB's main trapping station)

| First Date: | Species:                                       | Further Notes:    |
|-------------|--|-------------------|
| 1 April     | Frosted Green <i>Polyploca ridens</i>          | Regular in April  |
| 10 Apr      | Lunar Marbled Brown <i>Drymonia ruficornis</i> | Common to mid-May |

|        |   |  |
|--------|---|--|
| 9 May  | Dwarf Pug <i>Eupithecia tantillaria</i>   | Small numbers through May  |
| 12 May | Yellow-barred Brindle <i>Acasis viretata</i>  | A poor year, usually common  |
|        | Mottled Pug <i>Eupithecia exiguata</i>  | Small numbers to mid-June  |
| 5 Jun  | Beautiful Snout <i>Hypena crassilis</i>   | Regular through to late July   |
| 7 Jun  | White-spotted Pug <i>Eupithecia tripunctaria</i>  | Uncommon   |
|        | <i>Epermenia falciformis</i>  | Also 10/9 & 23/9   |
|        |   | -a species only recorded at this site, the 2 <sup>nd</sup> -4 <sup>th</sup> county records |
| 11 Jun | Scorched Wing <i>Plagodis dolabraria</i>  | Common at this site  |
|        | Devon Carpet <i>Lampropteryx otregiata</i>  | Common at this site  |
|        | Notable B, (Nb)   |  |
|        | Alder Moth <i>Acronicta alni</i>  | Also 18/6  |
|        | <i>Phlyctaenia stachydalis</i>  | Regular to late July   |
|        |   | -a RDB species, feeds on <i>Stachys</i>  |
| 15 Jun | Triple Spotted Pug <i>Eupithecia trisignaria</i>  | Uncommon   |
| 18 Jun | Hummingbird Hawk-moth <i>Macroglossum stellatarum</i>   | 5 together. Also 24/6, 26/6  |
|        | -migrant, a notable influx  |  |
|        | Waved Carpet <i>Hydrelia sylvata</i> - <b>Nb</b>  | Common to late July, common at this site.  |
|        | Bilberry Pug <i>Chloroclystis debiliata</i> - <b>Nb</b>   | Common to late July, only known county site  |
|        | Red-necked Footman <i>Atolmis rubricollis</i>   | Uncommon   |
|        | Pearly Underwing <i>Peridoma saucia</i>   | Uncommon Migrant   |
|        | Lesser Wax Moth <i>Galleria mellonella</i>  | Common at this site  |
|        | - although <i>new</i> to Carmarthenshire, this species has obviously been overlooked in the past. |  |
| 26 Jun | Brussels Lace <i>Cleorodes lichenaria</i>   | Regular to mid-July  |
| 3 Jul  | <i>Olindia schummacherana</i>   | Also 21/7  |
|        | - <b>Nb</b> Only known Carmarthenshire site   |  |
| 18 Jul | Buff Footman <i>Eilema lurideola</i>  | Occasional to late Aug   |
|        | Scarce Silver Lines <i>Bena bicolorana</i>  | Occasional to mid Aug  |
| 5 Aug  | Marsh Oblique Barred <i>Hypenodes humidalis</i> - <b>Nb</b>                                       | Two  |

|         |  |   |
|---------|--|---|
|         | Only known Carmarthenshire site<br>Bleached Pug <i>Eupithecia expallidata</i> - <b>Nb</b><br>Golden-rod Pug <i>Eupithecia virgaurea</i><br><i>Mompha locupletella</i><br>Only known county site. | Annual records here<br><br>Regular and annual |
| 22 Aug  | Vestal <i>Rhodometra sacraria</i><br>- migrant. 15 <sup>th</sup> county record.  | One   |
| 27 Aug  | Convolvulus Hawk-moth <i>Agrius convolvuli</i><br>migrant. 7 <sup>th</sup> county record.  | One   |
| 8 Sept  | White-speck <i>Mythinna unipuncta</i><br><br>migrant. Only 2 previous county records.  | Also 10/9, 13/9,<br>22/9 & 23/9               |
| 11 Sept | Bordered Straw <i>Heliothis peltigera</i><br>migrant. 7 <sup>th</sup> county record.   | One   |
| 22 Sept | Merveille du Jour <i>Dichonia aprilina</i><br>The Gem <i>Orthonoma obstipata</i><br>migrant. 16 <sup>th</sup> county record.   | Regular to late Oct<br>One                    |

Other macro species regarded as scarce in the county (though this may be due to a paucity of recorders), recorded at Nantgwyn were: Common Lutestring *Ochroplacha duplaris*, Little Emerald *Jodis lactearia*, Clay Triple-lines *Cyclophoria linearia*, Beautiful Carpet *Mesoleuca albicillata*, Red-green Carpet *Chloroclysta siterata*, Mottled Grey *Colostygia multistrigaria*, Scallop Shell *Rheumaptera undulata*, Sharp-angled Carpet *Euphyia unangulata*, Northern Winter Moth *Operophtera fagata*, Oak-tree Pug *Eupithecia dodoneata*, Small White Wave *Asthena albulata*, Small Yellow Wave *Hydrelia flammeolaria*, Lilac Beauty *Apeira syringaria*, August Thorn *Ennomos quercinaria*, Dusky Thorn *Ennomos fuscantaria*, September Thorn *Ennomos erosaria*, Lunar Thorn *Selenia lunularia*, Satin Beauty *Deileptenia ribeata*, Square Spot *Paradarisa consonaria*, Great Prominent *Peridea anceps*, Four-dotted Footman *Cybosia mesomella*, Least Black Arches *Nola confusalis*, Pale Pinion *Lithophane hepatica*, Grey Shoulder-knot *Lithophane ornitopus*, Brindled Green *Dryobotodes eremita*, The Brick *Agrochola circellaris*, Flounced Chestnut *Agrochola helvola*, Beaded Chestnut *Agrochola lychnidis*, Oak Nycteoline *Nycteola revayana*, Dark Spectacle *Abrostola trigemina* and Pinion-streaked Snout *Schranksia costaestrigalis*.

Around 200 species of micro-moth were also recorded at the site. Space and time means that these are not covered here in detail, but details are available from Jon and are on the database.

## OTHER SITES SURVEYED:

Jon also did some recording at a number of other sites. Full data from these visits is available from him and also on the moth database, but some of the highlights were:

AT CYNWYL ELFED SN358276: Waved Carpet *Hydrelia sylvata*, Little Emerald *Jodis lactearia*, Alder Kitten *Furcula bicuspis*, Devon Carpet *Lampropteryx otregiata*, Welsh Wave *Venusia cambrica*, Scalloped Hook-tip *Falcaria lacertinaria*, Lilac Beauty *Apeira syringaria*, Dingy Shell *Euchoeca nebulata*, Satin Beauty *Deileptenia ribeata*, *Phlyctaenia stachydalis* (**RDB**...the second county site) and *Gelechia sororculella*. (18 and 27 June, 4 July)

AT CORS GOCH NR SN365188: Slender Pug *Eupithecia tenuiata* and Striped Wainscot *Mythimna pudorina*, (with Sam Bosanquet). (18 July)

AT MORFA FARM, JOHNSTOWN, SN3919: Small Rufous *Coenobia rufa*, Old Lady *Mormo maura*, Leopard Moth *Zeuzera pyrina* (3<sup>rd</sup> Carms record) and *Plutella porrectella*.

AT PEMBREY BURROWS SS4299: Ash Pug *Eupithecia fraxinata*, The Vestal *Rhodometra sacraria*. Vine's Rustic *Hoplodrina ambigua* (a new species for the county), Grass Eggar *Lasiocampa trifolii* (**Notable A**), Dark Spinach *Pelurga comitata*, Plain Pug *Eupithecia simpliciata* (a new species for the county), White-line Dart *Euxoa tritici*, Archer's Dart *Agrotis vestigialis*, Brown-veined Wainscot *Archanara dissoluta* and unprecedented numbers of *Udea ferrugalis*, *Nomophila noctuella*, White-speck *Mythimna unipuncta* and other migrants, (other obs: Sam Bosanquet and Eddie Cooper). (11 and 30 Aug, 2 Sept).

Erratum Barry Stewart has drawn Steve Lucas' attention to two errors in the 1999 moth report - *Onocera semirubella* at Pwll Edrychiad 22/8/99 and a common footman *Eilema lurideola*. Both these records should be deleted (the first-named was actually a vestal *Rhodometra sacraria*).

PLEASE NOTE that *all moth records should be sent to Jon Baker*, the new moth recorder for Carmarthenshire - at 14, Job's Well Road, Johnstown, Carmarthen, SA31 3HG (e-mail: [Mothboy8@aol.com](mailto:Mothboy8@aol.com)).

AN APPRECIATION: Jon Baker, myself and - I am sure others - would like to express our sincere thanks to Steve Lucas who has 'held the fort' as County Recorder for some years. Steve informs us that he still will be moth recording - if time permits!

## DIPTERA RECORDING IN CARMARTHENSHIRE, 2000 - I K Morgan

Given that the amount of time spent recording has dropped catastrophically since the halcyon days of the late 1980's, a surprising number of useful records were made in 2000. Not a significant record, but Diptera's swallow-equivalent is the bee-fly *Bombylius*

*major*, first announcing Spring on the outskirts of Stradey Woods 22/489013 on 19 March; a later individual was busily foraging at flowers of ground ivy *Glechoma hederacea*, again in Stradey Woods.

Two asilids (or 'robberflies') peak in mid - late May and both can be seen in Pembrey Forest. The first is the neat little black *Lasiopogon cinctus*, one of which was seen holding a small yellow crane-fly at 22/389023 on 14/5. In contrast, the robustly built and colourful (probably the most handsome UK species) *Pamponerus germanicus* was also seen that evening - swept from creeping willow *Salix repens* etc in a wide forest clearing 22/389019. I have always been intrigued by the absence of robberflies from the Stradey Woods complex - even the relatively frequent *Machimus atricapillus* seems to be missing from bracken, wood-edge clearings. I was pleased, therefore, to catch a specimen of the diminutive *Dioctria hyalipennis* (a NCR), which had been resting on a bracken frond at 22/489015 on 25/6 (others were subsequently seen at this site on 2/7). This species is regarded as scarce in Wales.

Another NCR was *Machimus cingulatus*, which somehow I had missed during the aforementioned frenzy of diptera recording a decade or so ago. This year, prompted by the statement in the literature that this species peaked mid-August - early September, I specifically searched for it and was rewarded by finding it in some quantity (20+) on a sandy track on the outskirts of Pembrey Forest 22/388041, 28/8. Surprisingly, I also noted it NW of Pembrey Farm 22/433018\* (again 28/8), on a bare rocky track amongst typical improved pastoral farmland (\*in spite of its name this site is away from the coastal dunes of Pembrey Forest and lies on the Pennant Sandstone escarpment). *Machimus cingulatus* is noticeably more yellow-buff than the greyish *Philonicus albiceps* and the smaller dark grey *Dysmachus trigonus* with which it co-habits the coastal dunes. *Philonicus albiceps* was observed catching a specimen of the azure damselfly *Coenagrion puella* at the 'Ski-slope Pond', Pembrey Country Park 22/409001, on 6/6.

A Sunday afternoon visit to Stradey Woods 22/494013 on 16/7 was made worthwhile by patiently watching a newly-felled old oak. The hoverfly *Brachypalpoidea lenta* (new to this woodland), *Myathropa florea*, *Xylota segnis* and *X. sylvarum* (this now commoner than it used to be) all visited the cut or broken stump and branches within a half-hour period; the first and last-named only briefly visited in that period, leading me to wonder what else could have come to this lure had I the time to wait longer?

Lastly, some coastal records were of interest - the large soldierfly *Stratiomys singularior* on a shallow brackish pond on wasteground near Machynys Cross Roundabout 21/513984, 23/7, and *Hybomitra montana* near another roundabout - at Berwick 21/542988, 24/6 (this being a grazing levels site, I had initially hoped that it could have been one of the rarer horseflies!). There was a relative glut of *Haematopota grandis* - at 4 sites in the second half of August:-

- |                  |           |      |                           |
|------------------|-----------|------|---------------------------|
| ■ Llangennech    | 22/562006 | 15/8 | Upper saltmarsh           |
| ■ Pembrey Forest | 22/375035 | 19/8 | Afforested dunes, several |

|              |           |      |                         |
|--------------|-----------|------|-------------------------|
| ■ Machynys   | 21/512979 | 20/8 | grazing levels, several |
| ■ Cefn Sidan | 22/380019 | 24/8 | sand dunes              |

## 2001 Diptera Records

There were several records worth reporting from 2001. Perhaps the most important was the discovery of the 'stilleto-fly' *Thereva cinifera* (3 males, conf. AE Stubbs) at the North Dock dunes, Llanelli 21/499987 on 9<sup>th</sup> July 2001. This species was only added to the British list from specimens collected at Kenfig in the early 1990's. The attractive tachinid *Alophora hemiptera* was at flowers of *Oenanthe croccata* (4, both males and females) in Stradey Woods 22/489016 on 1<sup>st</sup> July — only the 2<sup>nd</sup> vice-county record (the other was at Alltypistyll in W. Carms. in 1985). A specimen of *Oxycera trilineata* - with very noticeable bright green eyes- was caught as it sunned itself on a small group of elms at Nevill's Dock. Llanelli 21/505986 on 5<sup>th</sup> July.

## CARMARTHENSHIRE COLEOPTERA RECORDS, 2000 - I K Morgan

Extremely little recording was undertaken and virtually all of the records were incidental to other work. A mating pair of the longhorn beetle *Arhopalus rusticus* were seen by a driftwood log at Llangennech 22/563009 (15/8); the green form of *Cassida murraea* was at Cynheidre 22/492082 (29/8) and a dead specimen from the old farmhouse at Aberdaunant 22/672307 (1/11) proved to be *Blaps mucronata*. This species was also reported in the former stables and house at Parc Dinefwr 22/614223 in August/September by Ken Day. Graham Motley recorded the scarce carabid *Blethisa multipunctata* from a streamside mire near the Usk Reservoir 22/806278 with the 'click' *Hypnoides riparius*. Ken Day also passed on a 1999 record (20 July) of the 'sawyer beetle' *Prionus coriarius* - at Taliaris 22/637383 - only the third county record of this large longhorn (the other records hail from Dinefwr and Rhandirmwyn). Dave Hemingway reported the small nitidulid (or sap) beetle *Epurea distincta* from bracket fungi growing on old willows in the small overgrown canal at Ffrwd Fen NR 22/422026, 7/4 and Adrian Fowles found the equally obscure (and tiny) *Kissister minimus* on a mown, grassy area at Pembrey Country Park 22/402001, on the same day.

Erratum: Adrian Fowles has pointed out that the record of *Meloe proscarabaeus* (see DIG 36:14) could well be *violaceus*.

## 2001 Coleoptera Records

The outstanding record of the year was the longhorn *Anoplura (Leptura) rubra* (a female), found by SA Day at Dinefwr Park 22/613221 on 28<sup>th</sup> August - a NCR for this mostly eastern English species, which is associated with old conifers. Lesser records of interest were:

*Bembidion genei* at Machynys Ponds 21/514978, June (det. GS Motley); *Trichius fasciatus* at flowers of *Eryngium maritimum*, Pembrey Burrows 21/430994 on 24<sup>th</sup> Aug, and *Anthocomus rufus* at 'Ashpits Pond', Burry Port 22/463013, 7<sup>th</sup> Sept.

## MISCELLANEOUS INVERTEBRATE RECORDS, 2000 - I K Morgan

An alien orthopteran - the Egyptian Grasshopper *Anacridium aegyptium* - was collected by Jeff Lewis on 25.11.1998 and passed on alive to Barry Stewart, who determined the specimen. Other records are far less exotic, such as the slender groundhopper *Tetrix subulata* beside a pond in Pembrey Forest 22/392016, 1/5 and confirmation of the continued presence of bog bush-crickets *Metrioptera brachyptera* at Cors Goch, Llanllwch 22/363187, 25/7. The best record of the year was the discovery of the grey bush-cricket *Platycleis denticulata* at Pendine Burrows 22/250075 by Greg Jones on 10<sup>th</sup> September. This NCR was not entirely unexpected as this species occurs on both Gower and in Pems.

The shiny dark battleship-grey pillbug *Armadillidium depressum* was noted one evening on a mortared wall at the rear of College Hill, Llanelli 22/513003, 8/7, the first record of this woodlouse from this particular town. Not far away, the scarce slug, *Limax flavus* was abroad one damp night on pavements and walls at Walters Road 21/513999, 30/8 - this nocturnal slug is rarely encountered.

A very welcome new county record was that of a hornet *Vespa crabro*, a single worker which was watched at close range by Ken Day at Dinefwr Court, Llandeilo 22/614223 on 15 July 1999. Ken is very familiar with the hornet in Gloucestershire and has previously written about its behaviour in that county. An interesting **2001** record was the finding of a substantial colony of the 'bee-wolf' *Philanthus triangulum* on a 'mini-cliff' at the N. end of the northernmost of the (new) Machynys beaches 21/503985 on 13<sup>th</sup> July and subsequently. *Ammophila sabulosa*, *Megachile maritima*, *Tiphia femorata* and *Pompilius cinereus* were also nearby.

## WELSH PARKLANDS SURVEY - DINEFWR PARK SAPROXYLIC INVERTEBRATES - B LEVEY AND P M PAVETT

In 1996, a National Museum of Wales team comprising Brian Levey and Mark Pavett, undertook a Countryside Council for Wales (CCW) commissioned survey at Dinefwr Park, Llandeilo, which was already recognized as of importance for its saproxylic invertebrates (eg Hammond & Hine, 1994). An array of trapping techniques were used including flight-interception traps and hand searching.

An amazing 851 species were identified (478 Coleoptera and 373 Diptera). Of these, there were 27 RDB species and 71 nationally scarce species. Two species of beetle and two species of fly were new to Britain and no less than 52 species appeared to be new to Wales. Needless to say, many more were new to Carmarthenshire. The survey demonstrated that Dinefwr Park had 44 Indicator Species of Ecological Continuity of dead wood habitats and an Index of Ecological Continuity (IEC) score of 58. To further quote the report, 'on available information it is the most important site for saproxylic Coleoptera and possibly other invertebrates in South Wales and South-west England'.

## Reference

Hammond, P.M. & Hine, S.J. (1994) - *Welsh Parklands and their Saproxyllic Invertebrates*. CCW Contract Science Report No 118

### ***Datonychus arquatus* (Herbst, 1795) (Curculionidae) in the British Isles**

Readers may be interested to know of a paper (title given above) by A.P. Fowles and M.G. Morris, which appeared in the *Coleopterist* **(8(3))**: 117-119, Nov. 1999). This paper includes details of the occurrence of this rare weevil at Tywyn Burrows and they suggest an association with Gipsywort *Lycopus europaeus*.

## CLEARWINGS IN CARMARTHENSHIRE - I K Morgan

The recent finding, by Barry and Sandra Stewart of the Large Red-belted Clearwing at Pembrey Forest (see below) has prompted me to review the records of clearwings in Carmarthenshire. The following are all the records known to me - most of my records were made whilst engaged in daylight 'sweeping' or more focussed recording of other invertebrates.

- |                                   |  |
|-----------------------------------|--|
| [ <i>Sesia apiformis</i>          | <b>Hornet moth</b> - shown for Glamorgan in M&B of GBI].   |
| <i>Sesia bembiciformis</i>        | <b>Lunar Hornet Moth</b> - 2 Carmarthenshire records: 1983 RSPB Gwenffrwd-Dinas Reserve, 22/74 and, 18/7/2000 near Carmel Woods 22/599165 (Mike Bailey and Jon Turner).  |
| [ <i>Synanthedon tipuliformis</i> | <b>Currant Clearwing</b> . I looked in vain (in the late 1980's) for this species on old blackcurrant bushes at Erw-las, Llwynhendy (SE of Llanelli) without luck. Apparently, this species has markedly declined; it is recorded for Glamorgan].  |
| <i>S. vespiformis</i>             | <b>Yellow-legged Clearwing</b> - A colony was found on a dead sweet chestnut (now sadly felled) SW of Stradey Castle, Llanelli 22/489013, IKM, 8/6/1992. Photos were taken by Barry Stewart.   |
| <i>S. spheciformis</i>            | <b>White-barred Clearwing</b> - T. W. Barker (1907) cited an older record in ' <i>Tutt's Practical Hints for the Field Entomologist</i> ' which said it was 'abundant at Dolaucothi' (22/66-40-). On 4/7/1977, D. Davies took a specimen (now with IKM) on an alder beside the Afon Bran, Cynghordy 22/808403. |
| <i>S. formicaeformis</i>          | <b>Red-tipped Clearwing</b> - I took a specimen in a woodland clearing with much <i>Salix</i> at Coed Gwempa 22/433116 on 12/6/1990.   |



*S. culiciformis*

**Large Red-belted Clearwing.** Barry and Sandra Stewart caught an individual using a pheromonal lure at Pembrey Forest 22/381042 on 23/5/2001.

*Bembecia scopigera*

**Six-belted Clearwing** - Three records, all found by sweeping (IKM) at sites with abundant bird's-foot trefoil *Lotus corniculatus*: Machynys 21/511979, 7/8/1985; Morlais Colliery, Llangennech 22/573023. 21/7/1992 and SW of Carmel 22/577161, 1/7/1993.

*B. muscaeformis*

**Thrift Clearwing** - this species is known from Wharley Point 22/355095, 23/6/1988 and Ragwen Point 22/222073, 15/6/1994.

Other species that might occur in the county include the **Red-belted Clearwing** *S. myopaeformis* (associated with various fruit trees including apples), recorded in N. Wales and more widespread in S. England, and the **Welsh Clearwing** *Synanthedon scoliaeformis* for which there are records for North Wales and - intriguingly - for Coalfield Glamorgan (it seems to have a circum-Cambrian Mountains distribution). On 9 September 1992, I found emergence holes in old birches at Allt Rhyd y Groes (near Rhandirmwyn in NE Carmarthenshire) which *may* belong to this moth. They were found in old birches (its host plant) at c SN771472 and were of c 5mm diameter. Incidentally, apparently this clearwing prefers birches without a covering of moss ie clear trunks. Perhaps more intensive survey work will relocate this magnificent species in South Wales?

### References

Barker, T.W. (1905)

*Handbook to the Natural History of Carmarthenshire.*  
W. Spurrell & Son, Carmarthen.

Heath, J. et al (Ed.) (1985)

*The Moths and Butterflies of Great Britain and Ireland.*  
T.W. Poyser.

### SOME MOTH RECORDS FROM CEREDIGION, 1997-2000 - MIKE BAILEY

Immigrant species made a notable impact on my garden moth list in 2000, with first records for **Vestal** (28/8), **White-speck** (16/9) and **Blair's Shoulder Knot** (6/10). The last of these has been recorded only once previously in Ceredigion and White-speck appears to be new to the vice-county. **Pearly Underwing**, **Turnip** and **Dark Swordgrass** also visited my garden trap in September/October.

My home, Troedrhiw Seiri (SN674853), lies 3km east of Penrhyncoch in the valley of the Afon Stewi. It is surrounded by a good range of habitats including the oakwood of Coed Troedrhiwseiri, a small area of 'rhos' by the river, a small south facing acidic pasture, together with stands of bracken and gorse.

Amongst the range of macro-moths recorded at this location in 2000, the following are worthy of note and indicate that the surrounding woodlands have local conservation value, even though they are mostly grazed and lacking in understorey: **Red-green Carpet** (9/9-21/10), **Autumn Green Carpet** (1/10), **Black Arches** (29/7-28/8), **Green Arches** (8/7-1/8), **Double Line** (30/6), **Brindled Green** (9-16/9), **Brick** (1/10), **Coronet** (30/6-29/7), **Beautiful Snout** (30/6), and **Grey Shoulder-knot** (20/10). Wetland species attracted to light included **Striped Wainscot** (22/6-8/7) and **Double Kidney** (29/7), whilst the blackthorn feeder **Short-cloaked** was caught on three occasions between 20-27/7/00. A **Feathered Ranunculus** was a surprise visitor on 23/9/00.

Relatively little moth recording has been undertaken at Ynyslas Dunes (SN6094) in recent years but, with the notable exception of National Moth Night 2000 when the strong wind limited the catch to a single **Dark Marbled Carpet**, most trapping nights have been rewarding. Captures have included: **Coast Dart** and **White Colon** (10/7/97) both nationally notable (**Nb**), **Archer's Dart** and **White-line Dart** (4/8/98). On 8<sup>th</sup> September 2000 a **Convolvulus Hawk** was seen resting on a fence post in the dunes.

Four nights of recording in June and July 2000 at nearby Aberleri fields (SN611912), where the western fringe of Cors Fochno (Borth Bog) meets with coastal grassland were rewarded with some interesting coastal moths. These included **Shaded Pug**, **Coast Dart**, **Crescent Dart** and **Blackneck**, in addition to wetland species, such as **Oblique Carpet**, **Striped Wainscot** and **Crescent**.

A single night's recording closer to the centre of the raised bog (SN636920) on 6-7 August 1997, re-confirmed the high importance of the site for lepidoptera, when Duncan Brown, Mike Hammet and Mike Hull attracted 60 macros and 15 micros to their traps. In addition to the renowned **Rosy Marsh Moth** they confirmed the presence of **Round-winged Muslin**, **Sallow Kitten**, **Fen Square-spot**, **Pinion-streaked Snout** and **Marsh Oblique-barred (Nb)**, and added the following to the already extensive site list: **Barred Hook-tip**, **Tissue**, **White Satin**, **Deep Brown Dart**, and **Saltern Ear**, together with the 'micros' *Agonopterix nervosa*, *Aphomia sociella* (Bee Moth), *Blastobasis lignea*, *Deltote deceptoria*, *Dipleurina lacustrata* (White-horn Grey) and *Eucosma cana*.

## SPIDER RECORDING IN CEREDIGION, 1998-2000 - Mike Bailey

In 1998 I set out to confirm the presence of a number of notable arachnids from Ynyslas Dunes. *Philodromus fallax*, *Marpissa nivoyi*, *Mecopisthes peusi* and *Ceratinopsis romana* (all **Notable Nb**) were each collected from marram dominated foredunes within the period mid-March to mid-April. Also, and more unexpectedly, on 7<sup>th</sup> April I discovered two males and an immature female *Dipoena inornata* (**Nb**) amongst exposed roots of marram where a high dune was being undercut by wind erosion. Interestingly, this appears to be the first time this species has been recorded from sand dunes. Normally, *D. ornata* is found under overhanging heather on sandy banks on heathland.

During May 1998 a female *Porrhomma campbelli*, new to Ceredigion, was captured in a pitfall trap set on upper saltmarsh on the Dyfi estuary. In June the same location yielded a specimen of *Agraecina striata* (**Nb**). This species is well known from the nearby raised mire of Cors Fochno, but this appears to be the first record from saltmarsh habitat.

On 10<sup>th</sup> July 1998 whilst carrying out sweep-netting with the aim of monitoring the population of the **RDBk** jumping spider *Heliophanus dampfi*, I collected a single female *Entelecara flavipes* from the dwarf shrub canopy. This is a new vice-county record and only the second record for Wales. *H.dampfi*, which is still unknown elsewhere in England and Wales, appears to be reasonably abundant on the undamaged part of the bog, and was recorded annually 1998-2000.

Pitfall trapping at Ynyslas Dunes during October 1998 produced another interesting record, a single male *Prinerigone vagans*. Although not rated nationally notable this is an uncommon species found mainly on wet grassy habitats or sewage filter-beds. It is only the second record for Wales and was taken from the edge of a wet sparsely vegetated dune slack.

*Maso gallicus* (**Na**) was collected in June 2000 from the primary mire dome of Cors Fochno. The species has been recorded on a number of previous occasions at this its only known Welsh site, but all other records have been from areas modified by past peat-cutting and drainage.

In the spring of 2000, a large all black spider was noticed inhabiting a cupboard in a house at Llanbadarn Fawr, Aberystwyth. This turned out to be a female *Steatoda grossa*, a species largely confined to southern Britain which appears to be extending its range and is new to Ceredigion.