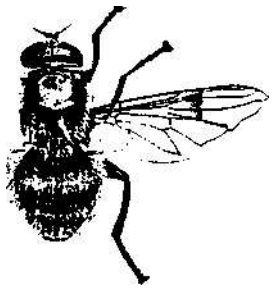
DYFED INVERTEBRATE GROUP



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CHILOPODA

DYFED CENTIPEDES - A D BARBER

In his standard work on British centipedes, E H Eason (1964) listed only nine species from Carmarthen, two from Pembroke, and six from Cardigan. Recording in recent years has considerably added to these totals and the vice-county lists now stand at 24,21 and 22 respectively. This gives a total of twenty-seven species for Dyfed as a whole (plus one rather doubtful one) and it seems very likely that further species will be added in the near future. Eason's lists included his own personal records (mainly from Carmarthen), a report from the Dale area in Pembs. (Bassindale and Barrett, 1957), and two inter-war papers relating to the Aberystwyth area (Thompson, 1924 and Edwards, 1929). This small number of records prompted the publication of a brief note on myriapods from South Wales (Barber & Kime, 1974), which included species from Carmarthen and Pembroke. The data used in the preparation of the Provisional Atlas of British Centipedes (Barber & Keay, 1988) incorporated these older records together with others from the Pembrokeshire Biological Records Centre and a number of individual contributors. Since that time I K Morgan has continued to add greatly to our knowledge of this group and I have also had the opportunity to examine material from a number of pitfall studies carried out recently in Dyfed.

In the following account species already recorded from Dyfed are included together with those that might be expected to be found in the area. The nomenclature and arrangement of species follows that in the Provisional Atlas, with the insertion of Lithobius tenebrosus now known from Aberystwyth. Species not yet recorded from Dyfed are preceded by an asterisk (*). Distribution maps are given for all species recorded from more than three 10km squares. The coverage map indicates that there are still some areas of Dyfed without any centipede records, many other squares just have one or two species recorded. The patchy coverage of the area includes the systematic collecting by Ian Morgan (especially in Carmarthen), a variety of records made during casual visits to the area by several observers, and pitfall-trapping on a range of sites. The results obtained by the latter procedure are interestingly different from those made by hand-sorting, notably in the high numbers of certain species (such as Lamyctes fulvicornis) and the absence of others.

SPECIES LIST

Order GEOPHILOMORPHA

Family HIMANTARIIDAE

Haplophilus subterraneus - This large, yellowish centipede is widespread in woodland and also in urban sites in south and west Britain and is likely to be found by hand-searching in appropriate sites throughout Dyfed. (VCs 44,45,46).

Family SCHENDYLIDAE

Hydroschendyla submarina - As its name would suggest, this is a littoral species. It has been found around the seashores of Great Britain on a number of occasions in such sites as rock crevices and no doubt searching would reveal it in many more. The Dale Fort Marine Fauna (Bassindale & Barrett, 1957) notes it from West Dale (SM70) and Watwick (SM80) but strangely fails to mention the more commonly found Strigamia maritima. Morgan (1988) reports H. submarina from Wharley Point (SN30) in Carms. (VCs 44,45).

Schendyla nemorensis - A small and generally common centipede over much of Britain, usually found under stones or in soil, including that of gardens. It is likely to be found widely in Dyfed. (VCs 44,45,46).

*Schendyla peyerimhoffi - Widespread around the Gower and Devon and Cornwall, this species (which has also been recorded from Anglesey) should be expected to occur around the Dyfed coastline. Flattened stones around high water and estuaries, and rock crevices, are likely sites.

*Brachyschendyla dentata - A very small soil species (12mm long), this could possible be found in synanthropic sites in this area. It was originally found in Britain by Tullgren extraction of soil samples.

Family GEOPHILIDAE

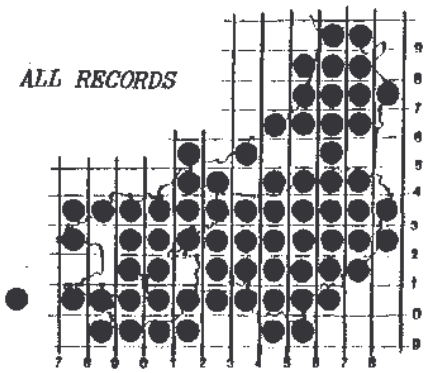
*Henia (= Chaetechelyne) vesuviana - This striking species, greyish with a prominent longitudinal line along the dorsal surface and orange-brown extremities, has been recorded in various parts of southern England and is widespread in south Devon and the Isle of Wight. It has also been found in the Bristol area and so could occur in south Wales.

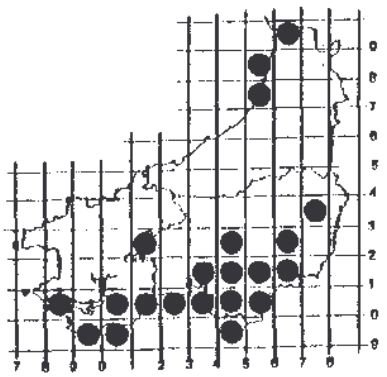
*Henia brevis (= Chaetechelyne montana oblongocribellata) - A pale, synanthropic species of southern Britain which has been found in both Brecon and Gwent and so might be expected in Dyfed.

Strigamia crassipes
Strigamia acuminata - The two terrestrial species of Strigamia are found in scattered sites across much of Britain but are rarely very common. They seem to prefer rural sites but are not confined to them. Both are reddish-brown in colour and fairly easily recognised in the field; the two species are easily separated on segment numbers. (VCs 44,45,46).

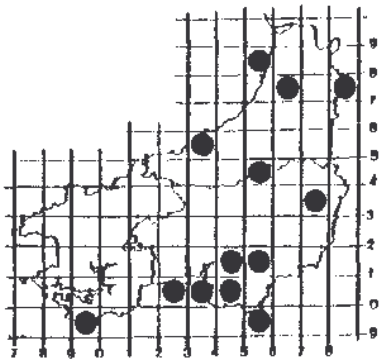
Strigamia maritima - Our commonest littoral centipede, this is often found in large numbers on the seashore and up estuaries. It might be expected to occur in suitable sites all round the Dyfed coast. (VCs 44,45,46).

Geophilus carpophagus - This is a characteristic animal of upland moors in Wales but is also found in woodlands. Large forms with greater numbers of trunk segments are sometimes found in urban sites. (VCs 44,45,46).

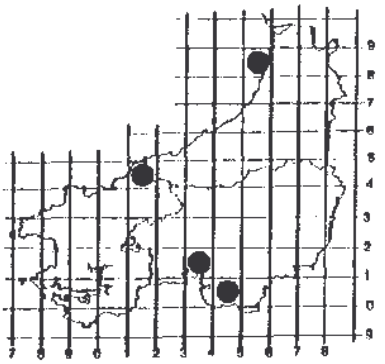




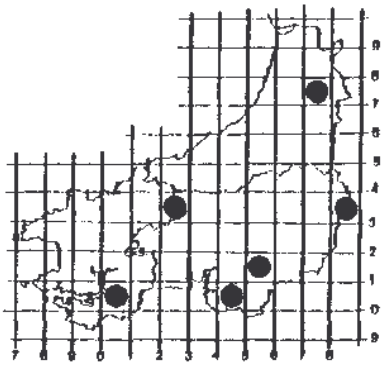
Haplophilus subterraneus



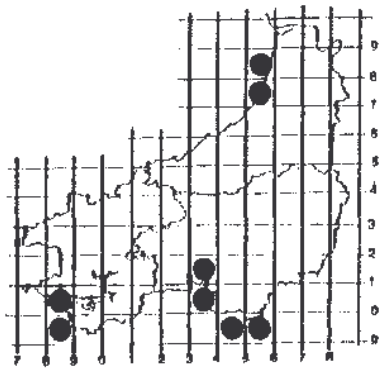
Schendyla nemorensis



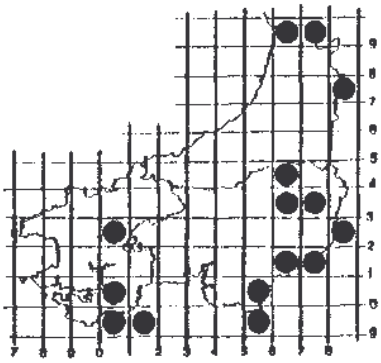
Strigamia crassipes



Strigamia acuminata



Strigamia maritima



Geophilus carpophagus

Geophilus electricus - A rather long, yellowish animal that occurs in scattered, commonly synanthropic, sites all over southern Britain and Ireland. The only record from Dyfed (Morgan, 1988) is from clifftop grassland at Clarach Bay, Ceredigion (SN58). (VC46)

Geophilus osquidatum - The first records of this species for Dyfed were made by the author at Aberystwyth (SN58) and Borth (SN69) earlier this year. However, it is also known from both Glamorgan and Gwent so further localities in Dyfed may be expected.

*Geophilus fucorum seurati - This littoral geophilid has been found in a variety of locations along the southern and western coasts of Britain, including the Gower, and it would be surprising if it did not occur on the Dyfed coast.

Geophilus insculptus - Widespread throughout the British Isles, this species is found in a variety of sites including gardens; it contrasts with G. carpophagus in being largely a lowland species. (VCs 44,45,46).

Necrophloeophagus flavus (= longicornis) - A very widespread British species, especially common in the south-east. It occurs in woodland, gardens, waste ground, arable and other sites and is fairly common in seashore sites. It is one of only three species recorded from Grassholm (SM50) - along with Cryptops hortensis and Lithobius forficatus. (VCs 44,45,46).

Brachygeophilus truncorum - A small geophilid commonly found in woodlands, etc but also in acid grassland up to more than 500 metres a.s.l. It seems to be less common in the south-west and Wales than elsewhere. Only rarely found in urban locations. (VCs 44,45,46).

Order SCOLOPENDROMORPHA Family

CRYPTOPSIDAE

*Cryptops anomalans - Essentially an urban animal, this large species (up to 5cm) can inflict a moderately painful bite. It has been found in a variety of places in southern England, including the Bristol area. In Wales it has been found in an allotment garden in Cardiff and in Llandrindod Wells. It might therefore be profitably sought in urban areas in Dyfed.

Cryptops hortensis - This, the smallest of our Cryptops species, is by far the most widespread although it has not, so far, been found in northern Scotland. It has a marked preference for urban sites but is not confined to them. (VCs 44,45,46).

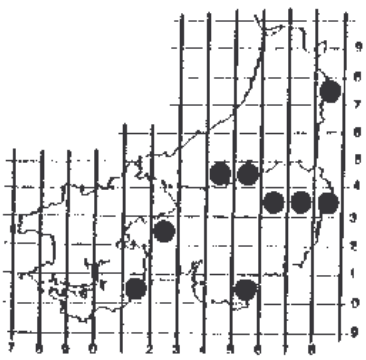
Cryptops parisi - Larger than C. hortensis, this is generally an urban species and has been collected from four sites in Carmarthenshire and two in Ceredigion. (VCs 44,46).

Order LITHOBIOMORPHA

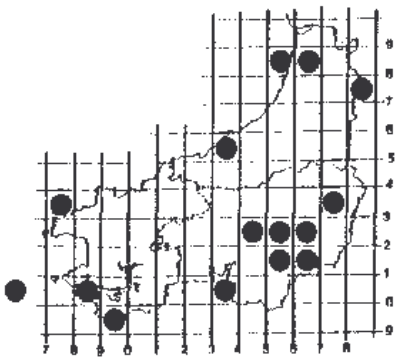
Family LITHOBIIDAE

Lithobius variegatus - A common animal of upland and rural areas generally over most of southern and western Britain and recognised immediately in the field by its variegated legs and habit of remaining still briefly when a stone or log is turned over. It is very rarely found in urban situations but otherwise is probably common over most of Wales. (VCs 44,45,46).

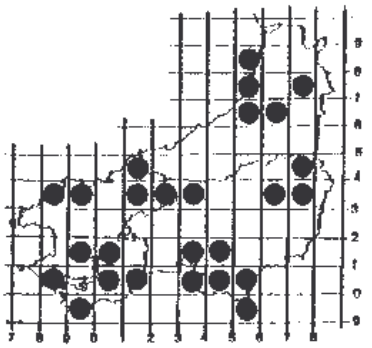
Lithobius forficatus - A very common, large, brown lithobiid found especially in disturbed habitats but not confined to them. The only other animal with which it is likely to be confused in Dyfed is L. pilicornis. (VCs 44,45,46).



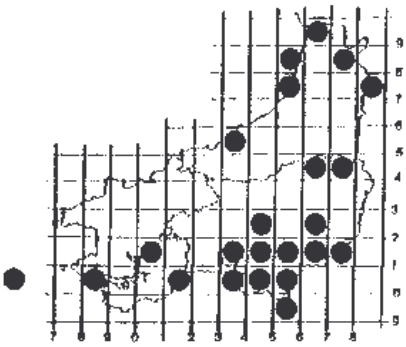
Geophilus insculptus



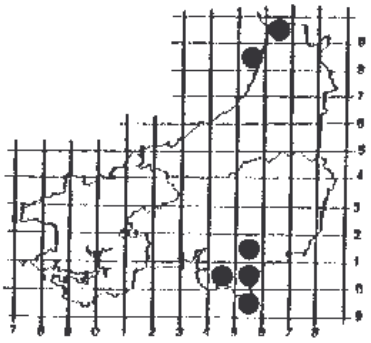
Necrophloeophagus flavus



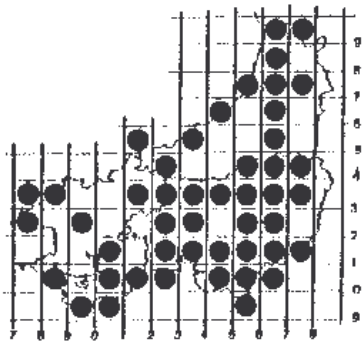
Brachygeophilus truncorum



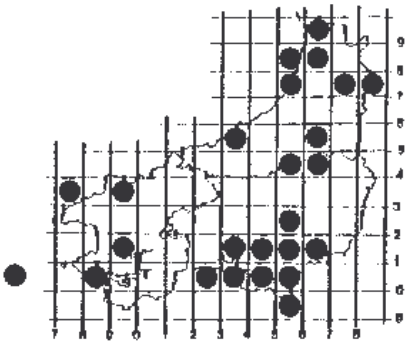
Cryptops hortensis



Cryptops parisi



Lithobius variegatus



Lithobius forficatus

Lithobius melanops - A very characteristic animal of gardens and urban areas, which it may well have colonised from what could be its original habitat of seashore and sand dunes. Occasionally found in woodland. (VCs 44,45,46).

Lithobius macilentus (= aulacopus) - A parthenogenetic species which has been recorded from a variety of areas in Britain, mostly in woodland and more or less rural. The two records from Dyfed (Morgan, 1988) are both associated with limestone - Carreg Cennen (SN61) and Stackpole (SR99). (VCs 44,45).

Lithobius tricuspis - This species is common in France and appears to have its British stronghold in mid- and south Devon. However, single specimens have been collected in the Isle of Wight and at Capel Hendre (SN51) in Carmarthenshire. (VC 44).

Lithobius borealis (= lapidicola) - A characteristic, small lithobiid of upland moors in south-west England and parts of Wales. Eason (1957) described it as the commonest small lithobiid of Snowdonia and this species or L. crassipes seems to occur in such sites in much of Britain, with the latter clearly dominant in eastern areas. (VCs 44,45,46).

Lithobius tenebrosus (= nigrifrons) - R S Bagnall (1913) collected what he identified as this species from two mutilated specimens from a field in Co. Durham, whilst F A Turk (1945) reported two females from a field at Reskadinnick, Cornwall. No further specimens were reported until A N Keay identified a specimen from material collected at Aberystwyth (SN58) in April 1988. It would be valuable to find further specimens of what must now be regarded as an undoubtedly British species.

Lithobius erythrocephalus - There are several old records of this species from Britain, including one by M. Thompson (1924) from near Aberystwyth (SN58). No authentic British specimens have been seen in recent years and so the status of this species, which is widespread in Scandinavia, must remain in doubt for the present.

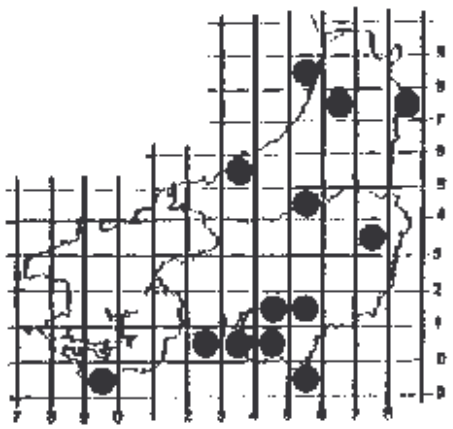
Lithobius pilicornis - Our largest lithobiid, sometimes up to 4cm or more long, this is characteristically an animal of south-western coastal areas, although with scattered urban records across much of England. Where it occurs it tends to replace L. forficatus, although nearby sites may have the latter species instead. (VCs 44,45).

Lithobius calcaratus - This is a relatively small, very dark species which is found in acid heath and also dry calcareous sites, always in rural areas. There are comparatively few records from woodland. It has been found in river shingle as well as other habitats in Dyfed. (VCs 44,45,46).

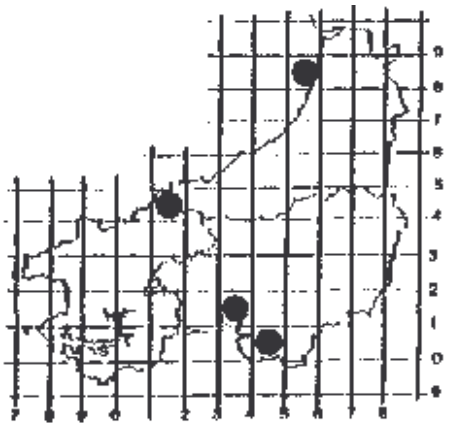
Lithobius crassipes - In eastern Britain this is the common small lithobiid of rural (including upland) areas, whereas it seems to be largely or entirely absent from Devon and Cornwall. Occurring at a variety of sites in Dyfed, it would be interesting to know more about the relative habitat and distribution occurrences of this species and L. borealis. (VCs 44,45,46).

Lithobius curtipes - A puzzling species; there are insufficient records to get a clear picture of its ecology but in Scandinavia it occurs quite differently to the preceding species which it rather closely resembles. There are only two records from Dyfed, both from under stones in exposed grassland at over 500 metres a.s.l. (SN71 & SN82). In other parts of Britain it is most frequently recorded in woodlands. (VC 44).

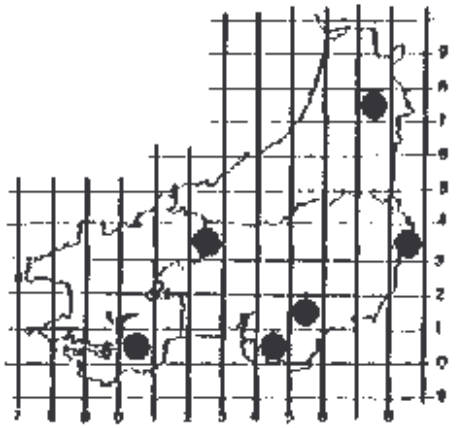
Lithobius microps (= dubosqui) - One of our smallest species of Lithobius, this is a very characteristic animal of urban areas of much of Britain but it also occurs in dry woodland, etc and was found in a number of pitfall traps set by A P Fowles in river shingle. (VCs 44,45,46).



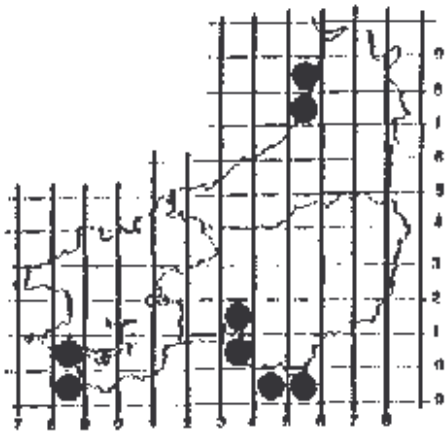
Schendyla nemorensis



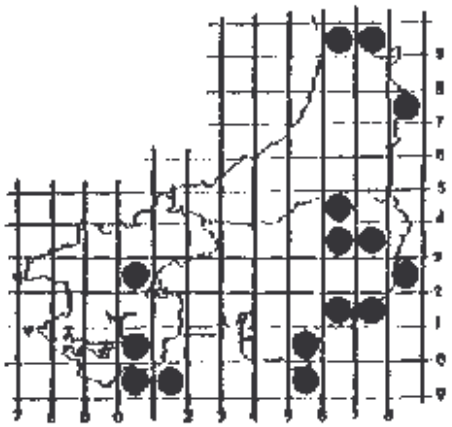
Strigomia crassipes



Strigamia acuminata



Strigamia maritima



Geophilus carpophagus

Family HENICOPIDAE

Lamyctes fulvicornis - An animal which is most commonly found in late summer and autumn. There are a number of Dyfed records, often from pitfall traps - a method which seems more successful with this species than many others. A P Fowles captured more than a hundred specimens between July and September 1987 in his river shingle pitfall traps, probably the largest collection of this species ever made in Britain. Previous recorders have usually found the species only in ones or twos. (VCs 44,45,46).

It can be seen from the above account that a wide variety of species, 27 out of about 50 on the British list, have already been recorded from Dyfed and on the basis of our knowledge of adjacent areas up to another half-dozen or so may be found. This richness compares, not unexpectedly, with south-west England and there are considerable similarities in the species composition of the two areas although neither L. macilentus, L. crassipes or L. curtipes have been found in Devon or Cornwall with the single exception of a L. crassipes report from the Lizard area.

There are species other than those mentioned that may have a wider distribution than we currently presume and might be found here. For instance, Chalandea pinguis is only known from an area of north Devon (also S France and Italy) but might conceivably occur on the other side of the Bristol Channel. New species, not yet described, have been found in parts of the south/south-west and conceivably a similar situation could occur in the mild coastal areas of south Dyfed.

Interesting ecological problems arise from our knowledge of Dyfed centipedes, such as the relationships between L. borealis, L. crassipes, and L. microps or the behavioural and ecological features of Lamyctes which cause it to turn up in pitfall traps so often compared with others. As can be seen from the maps there are also plenty of "blanks" to be filled in terms of distribution. Nevertheless, this is probably one of the best known areas of Wales as far as this group of animals is concerned.

ACKNOWLEDGEMENTS:

Thanks - for knowledge, specimens, or records made freely available - are due to all those mentioned above and especially to Ian Morgan for his thorough work in the area. Thanks also to Mr J G Blower for useful information on Gower centipedes.

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COLEOPTERA

SOME INTERESTING BEETLE RECORDS FROM CARMARTHENSHIRE - P M PAVETT

During trips to the Llanelli area of south-east Carms. in recent years I have been recording insects and two sites have regularly produced noteworthy beetles. The Corsican Pine Pinus nigra var. maritima plantations of Pembrey Forest (22/397007) have yielded a number of scarce beetles, one of my earliest being the so-called 'ant-beetle' Thanasimus formicarius on 11 August 1984. It is said to favour coniferous woods (though it can also be found in deciduous woodland) where it preys on bark beetles. In 1986, on young oaks in the forest, there wre three swiftly-moving (and difficult to capture) individuals of the 'Jewel beetle' Agrilus angustulatus. Although this is the commonest member of the Buprestidae there are very few records for Wales. Several uncommon chrysomelids have also been taken - Cryptocephalus aureolus (6 Aug 1984), C. hypochaeridis (31 May 1985) and Chrysolina staphylea (19 June 1987).

The marshy low-lying area of Llwynhendy (21/53-99-) in the extreme south-east of the county has wet meadows and tall fen habitats with willow carr. Dead elms in the hedgerows bordering the meadows have yielded aggregations of the attractive beetle Endomychus coccineus which feeds on fungi on dead timber. Also under elm bark here was the cucujid beetle Uleiota planata - it has been considered to be associated with areas of ancient forest and is known from very few localities in Britain this century, although they are also occasionally found amongst imported timber. Another rarity from this area is the chrysomelid Plateumaris braccata which was recorded on 6 June 1984, the first record for Wales. Most British records refer to the eastern half of England but it is also known to occur in the Republic of Ireland (M L Cox, pers. comm.). At Llwynhendy it was collected amongst willow carr adjacent to common reed Phragmites communis and reedmace Typha sp. fen.

HYMENOPTERA

THE ANTS OF CORS FOCHNO (22/69), 1986-87 - A O CHATER

A total of six species of ants have been caught in the first two seasons of pitfall trapping on Cors Fochno (for details of the trapping programme see Fowles, 1987), with 229 individuals caught in 1986 and 246 in 1987. Three of the species, Myrmica ruginodis, M. scabrinodis and Lasius niger, were commonly caught, comprising 97.7% of all captures, and must be nesting over much of the bog. Two others, Leptothorax acervorum and Myrmecina graminicola were rare but must be nesting in the vicinity of the traps as the captured individuals were workers. The sixth species, Myrmica rubra, was found only as a queen and may well not be resident on the mire. Leptothorax acervorum has been recorded only very rarely in Ceredigion, and its distribution here is unknown, although in other parts of Britain it occurs from time to time on mires where it can nest in a variety of sites such as fragments of twigs or wood, dry tussocks or even in peat. Myrmecina graminicola, a very unobtrusive and under-recorded species, has not previously been recorded north of a line from the Gower to the Wash (Barrett 1979), and is normally found in dry pastures and open woods. Its presence on Cors Fochno is thus of some interest.

Lasius niger is one of the commonest ants in Ceredigion, nesting in a wide range of all but the driest and wettest sites. Myrmica ruginodis and M. scabrinodis are also very widespread in Ceredigion, the former being in general much the commoner in wetland sites (D Boyce pers. comm.) and the latter seeming to favour drier sites with shorter or more open vegetation.

In Britain as a whole, Lasius niger usually favours cooler, wetter and damper vegetation than the Myrmica species (Brian et al. 1977). It usually also occurs in much larger colonies, and the workers frequently make definite trackways in the foraging area which usually extends to c.4m from the nest. The workers forage widely in all levels of the vegetation. The Myrmica species often occur in more insolated, drier and more open vegetation, and they have much smaller colonies of not more than a few hundred workers which forage over a wider area up to c.6m from the nest. They forage much closer to the ground and usually do not form trackways. In West Scotland, M. ruginodis tends to live in sites with taller vegetation (Brian 1977), being adapted to foraging at higher levels than M. scabrinodis which inhabits shorter vegetation and is adapted to foraging just above the soil surface between the bases of the plants. M. ruginodis tends to retreat completely underground in winter, whereas M. scabrinodis usually keeps many workers at the surface. It must be stressed though, that there is great variation in the relative habits of these species in different parts of Britain, and for example on Ramsey island Lasius niger foraged chiefly on flat, open terrain and M. scabrinodis chiefly where there was tall vegetation (Doncaster 1983). Leptothorax acervorum forms smaller colonies again even than the Myrmica species but forages much more widely (Brian 1956).

Apart from the information from the present survey, nothing is known of the distribution and behaviour of ants on Cors Fochno, and in particular it is not known whether it is competition for nesting sites or for foraging sites, or what combination of both, which is most important, if such competition is indeed of signficance at all. In some parts of Britain, colonies of Myrmica species can, because of their smaller size, be more opportunistic and settle in small areas of favourable habitat between the bigger, more permanent territories of Lasius species (Doncaster 1981), but again it is not known to what extent this applies on Cors Fochno.

Pitfall traps are even less satisfactory for sampling ant communities than for most other ground-active groups of invertebrates. The great variation of foraging patterns between different species means that the probability of ants encountering traps is non-predictive for all practical purposes (Marsh 1984). It is obvious that if a trap happens to be on a Lasius niger trail, large numbers could be caught, whereas the less organised and more random foraging of Myrmica species may mean that more informative proportions could be caught, although M. scabrinodis, if it forages more on the soil surface, could be expected to be caught more frequently than M. ruginodis if it was foraging higher in the vegetation. In many species of ant, foraging patterns vary greatly from nest to nest. Ants may well also divert trails to avoid traps, and may be very adept at avoiding falling in. In spite of these very considerable qualifications, it may still be worth suggesting a few interpretations of some of the apparent changes and differences in the composition of the ants caught in the Cors Fochno traps.

There is, not surprisingly, a tendency for the same species to predominate in particular traps at different dates, presumably because of the proximity of nests, but because of the colonial habit it would be unwise to attempt to draw any conclusions from the distribution of the various species along the transect. Myrmica scabrinodis was caught proportionally more frequently than M. ruginodis in traps on the drier central dome, both in 1986 and 1987, than in the wetter marginal areas. Lasius niger was caught chiefly in the wetter marginal zone, but was also caught in some numbers in one trap on the central dome.

Cumulating the records of all species of ant from the traps which were in use over a similar period in both years, we find that, as with the ground beetles, roughly four times as many individuals were caught in the burnt areas as in the unburnt in 1986 (25 as against 102), whereas in 1987 the proportions were dramatically reversed (170 as against 76).

As has been suggested in explanation of these proportions in the ground beetles, the ants, which must have survived the fire reasonably successfully, may well have found the charred peat surface convenient for foraging, or at least for getting caught in the traps. Species which, by preference, forage more in the upper parts of the vegetation may well, in 1986, have been forced to spend more time on the ground and hence have been more likely to be caught. If we consider the two Myrmica species, we find that for M. ruginodis three times as many were caught in the burnt area as the unburnt area in 1986, but about 20 times as many in the unburnt as in the burnt area in 1987. For M. scabrinodis the proportions are very different - six times as many were caught on the burnt mire in 1986 compared to the unburnt mire and in 1987 there were still more than twice as many caught on the burnt mire than on the unburnt area.

It is difficult to suggest any explanation for these differences. Factors which might be expected to be relevant include the tendency of M. ruginodis to forage in higher vegetation (which may not have regenerated sufficiently in the summer of 1986 for them to be using it to the normal extent) and the tendency of M. scabrinodis to have more workers at the surface in the winter (which might have caused greater losses of this species in the fire). If M. ruginodis is much more abundant in the unburnt areas, (for reasons unconnected with the fire) as the figures of 1987 might superficially suggest, the burning may have, by destroying the normal foraging sites, caused an unexpectedly large proportion of the population to get caught in the traps in 1986 in the burnt areas, but so many unconnected factors may be involved that it would be unwise to speculate along these lines. As regards the survival of M. scabrinodis in the fire, the figures suggest the opposite of what one might expect.

In all three species the widely differing numbers caught in the two years in the unburnt areas suggests that it would be virtually impossible to identify changes which were due to the burning rather than to other, unknown factors. The numbers of ants foraging in any given area always fluctuate very widely, probably depending chiefly on weather conditions, and it may be that an analysis of weather readings during the trapping periods would suggest much more plausible explanations for the trapping results than any of the other factors discussed here.

Some seasonal differences of activity seem to be apparent among the three common species from the trapping results. Lasius niger decreased sharply after June and none were caught after the end of August. The Myrmica species, though at a peak in June, remained fairly abundant into September or even October, although M. scabrinodis disappears earlier than M. ruginodis. The Leptothorax specimens were caught in April, June and July, and the Myrmecina specimens in August and September.

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COWIE, R H - Rediscovery of Theba pisana at Manorbier, South Wales. J Conch. 32: 384-5.
[A short account of the small colony of this Mediterranean snail at Manorbier, with a discussion of the possible causes leading to its re-discovery].

FOSTER, G N - Records received. Balfour-Browne Club Newsletter 41: 5-7.
[Significant recent water-beetle records from Pembs. and Cards].

FOX, A D - Ischnura pumilio in Wales: a preliminary review. J. Br. Dragonfly Soc. 3(2): 32-36.
[A brief account of habitat preferences reported from Pembs. and Cards. with notes on altitudinal range and flight period].

GODFREY, A - 1986 Annual Exhibition: Diptera. Proc. Trans. Brit. Ent. Nat. Hist. Soc. 20; 58.
[Acrocera orbicula from Dowrog Common, Pembs.].

KERNEY, M P - Recorders Report: Non-Marine Mollusca. J. Conch. 32: 380 and 383.
[New vice-county records for Carms. and Cards.].

McLEAN, I F G - 1986 Annual Exhibition: Diptera. Proc. Trans. Brit. Ent. Nat. Hist. Soc. 20: 60.
[Species collected from Pembrey Burrows (Carms.), Broomhill Burrows (Pembs.) and Gwaun Garthenor (Cards.)].

RILEY, A M - White-spotted Pug Eupithecia tripunctaria in Cardiganshire. Ent. Rec. J. Var. 99: 129.
[Announced, erroneously, as new to the county list].

SIMPSON, A N B - 1986 Annual Exhibition: British Microlepidoptera.. Proc. Trans. Brit. Ent. Hist. Soc. 20: 54.
[Elachista dispunctella and Haplotinea insectella from Cards.].

STUBBS, A E - Cranefly Recording Scheme. Diptera Recording Schemes Bull. 24:5.
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FIELD MEETING - DENMARK FARM, LLANGYBI (22/586536) AND SILIAN COMMON (22/567513)
VC 46, 9 JULY 1988 - A P FOWLES

The first part of the day was spent recording on the forty-acre hill farm at Llangybi owned by Barbara and Neil Taylor. They are developing Denmark Farm as a centre to display a range of conservation projects which can be adopted by farmers to improve the wildlife value of the agricultural landscape. DIG had been invited to comment on the management and potential from a viewpoint of invertebrate conservation. The weather was far from perfect for the purposes of fully evaluating the invertebrate interest of the site but the brief spells of bright sky were sufficient to encourage a few of the mobile species into activity. Nine members spent two hours investigating the different habitats being established on the farm and then discussed their findings and thoughts on management over lunch.

Considering the history of the site rarities were not expected but it was a pleasant surprise to find two nationally uncommon species - the longhorn beetle Strangalia quadrifasciata and the scarce blue-tailed damselfly Ischnura pumilio. Nine specimens of the latter were found around the large pond that was dug in May 1987. A total of nine dragonfly species were recorded during the day and as the pond develops its flora and fauna it is bound to become a major conservation asset. Dave Boyce compared the aquatic fauna of the new pond with the old farm pond and predictably found the latter to be richer in species but it will be interesting to record the colonisation of the new pond in the coming years. S. quadrifasciata was found in a pile of old tree-stumps that originated from the Molinia marsh at the far end of the farm. This area had the scrub cleared from it several years ago but it retains a characteristic flora and it was pleasing to record a colony of small pearl-bordered fritiillaries Boloria selene still in residence here.

Arthur Chater investigated the old mortared walls of the pig-sty with typical dedication and found a population of the woodlouse Porcellio spinicornis well-established. Trichoniscus pygmaeus was another locally uncommon woodlouse recorded in the farmyard and this, predictably, proved to be the richest site for molluscs with 14 of the 21 species seen during the meeting, including Boetgerilla pallescens.

After lunch focus turned to the nearby Silian Common, an extensive area of rhos pasture that was more or less unknown to county naturalists. A botanical find opened the recording with Ian Morgan locating musk plant Mimulus moschatus, a naturalised species recorded here by Dr J H Salter in 1939. Anne and Stephen Coker found single examples of scarlet tiger Callimorpha dominula and Ischnura pumilio whilst beetles included the local chrysomelids Plateaumaris discolor, Galeruca tanaceti, Cassida viridis and C. flaveola. Flea-beetles taken on lousewort Pedicularis spp. proved to be the uncommon Longitarsus holsaticus. There are a number of records still outstanding for the site and further surveys could show that Silian Common is an important site locally for invertebrates - I would certainly anticipate the discovery of a colony of marsh fritillaries Eurodryas aurinia here.

Finally, a splinter-group briefly visited the adjacent fen and neglected pasture of Allt Gelli-gwenyn (22/564524) where a colony of dark green fritillaries Argynnis aglaja were flying with small pearl-bordereds - the former species is scarce inland in Ceredigion apart from the regular sightings of singletons in the uplands.

FIELD MEETING - PEMBREY FOREST (22/37-03-) VC44, 6 AUGUST 1988 - I K MORGAN

In hot, sunny weather - atypical for summer 1988 - Dyfed Invertebrate Group members assembled to inspect various areas of entomological interest within the extensive Forestry Commission Corsican Pine Pinus nigra var. maritima plantations on Pembrey Burrows. The first site visited was the pond at 22/373039. This pond, produced by the excavation of an old dune slack that was prone to flooding, is of recognised importance for its sciomyzid or 'snail-killing' flies (the larvae prey on snails), which are favoured by the fluctuating water table which results in the stranding of the snail prey. Several Red Data Book species have been recorded by visiting specialist dipterists. As the party lacked expertise in this group, other invertebrates were surveyed. The emerald damselfly Lestes sponsa was abundant and a solitary emperor dragonfly Anax imperator was admired as it swooped around the pond; we were, however, too late in the season to see the hairy dragonfly Brachytron pratense which also frequents this locality. Two specimens of the long-horn beetle Strangalia quadrifasciata were noted; its larvae are said to develop in old willows. Two members of the party visited a nearby ride (at 22/375033) which is a regular haunt of the silver-washed fritillary Argynnis paphia and, indeed, several of these graceful butterflies were recorded, as were the distinctive caterpillars of the local alder moth Acronicta alni.

The lunch-time halt at an adjacent sunny ride (22/369043) produced its share of interesting records. As well as several common butterflies, the August second brood of the small blue Cupido minimus was in evidence, and several members had the opportunity to view this attractive species. Conversely, a gruesome-looking invertebrate hereabouts was the large fly Tachina grossa, one of which was perched on an umbel of wild parsnip Pastinaca sativa. Many individuals of the 'dry-grassland' six-spot burnet Zygaena filipendulae were also to be seen.

After lunch, the party proceeded to the main halt - the wood edge and wet grassland with sea-buckthorn Hippophae rhamnoides scrub at the junction of Pembrey Forest and 'Kidwelly Marsh' (22/387041). Here, in a damp part of the forest, specimens of the large black and yellow soldier-fly Stratiomys furcata were taken, whilst out on the marsh grassland Oplodontha viridula was abundant on flowers of water mint Mentha aquatica, marsh ragwort Senecio aquatica, and parsley water-dropwort Oenanthe lachenalii. Nemotelus notatus was also present. The hoverflies Chrysotoxum bicinctum, Xanthogramma pedissequum, Eristalis abusuvius, and Sphaerophoria menthastri were also collected. Sweeping of the upper saltmarsh grassland produced the small uncommon tortoise-beetle Cassida vittata. Ranker, taller vegetation with much rush Juncus sp, had the short-winged conehead Conocephalus dorsalis, a distinctly coastal species in Carmarthenshire.

Returning to the parked cars, a comma butterfly Polygonia c-album was watched as it fed at bramble blossom, whilst marbled whites Melanargia galathea were regularly seen along the sunnier main forest trackway.

The last halt was at a large sandy clearing (22/393025), a good aculeate site, possessing sunny, bare banks for nesting purposes and a continuum of nectar sources; alas no notable species were recorded on the day of the visit. The 'sulphur-beetle' Ctenopius sulphureus was frequent with many individuals massing on one flowering mignonette Reseda lutea. A black-necked moth Lygephila pastinum was flushed from rough herbage, and the gentle song of dark bush-crickets Pholidoptera griseoaptera could be heard emanating from brambly vegetation. The even more unobtrusive speckled bush-cricket Leptophyes punctatissima was also recorded.

Finally, recording work elsewhere in the Forest by Adrian Fowles - who initially missed the main party - produced a host of useful records, the most interesting of which were a second county record for the snail Monacha cantiana [which was frequent on trackside vegetation around (22/410009)] and the 'jewel-wasp' Trichrysis cyanea (22/388026), which is new to the vice county.

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The above report is based on records supplied by S & A Coker, A P Fowles, P M Pavett and the author.

FIELD MEETING - ST DAVID'S HEAD AND WHITESANDS BAY (12/733277) VC 45, 25 JUNE 1988 -S J COKER

Although virtually the whole of Pembrokeshire was bathed in warm sunshine throughout the day, we were unfortunate enough to choose a site for our field meeting in the path of a heavy sea-mist which did not clear until well into the afternoon. Most of the day was therefore cool and misty with quite a strong wind coming off the sea. St David's Head is the very tip of one of the most westerly peninsulas in Wales and habitats at the site include a small sand dune system, cliff grassland with traditional stone walls, and the maritime heath of the headland itself.

In spite of the overcast and windy conditions, ten species of butterflies were recorded, including several small blues Cupido minimus on the sandy grassland of Whitesands Bay and small pearl-bordered Boloria selene and dark green Argynnis aglaja fritillaries on the coastal heath. Other lepidoptera included thrift clearwings Bembecia muscaeformis (several sightings along the cliffs) and a larval scarlet tiger Callimorpha dominula feeding on brambles along the coast path. Diptera were not so well represented, perhaps due to the weather, but Keith Alexander found Platycheirus fulviventris at the small pond on St David's Head and Graham Hopkins recorded Eumerus strigatus. The coastal robberfly Philonicus albiceps was frequent in sandy areas and Dioctria rufipes was also recorded.

The cliff slopes of Whitesands Bay, with a combination of sandy soil and sheltered bare ground provided by the walled coastal path, are home to a host of bees and wasps. Two local species, Megachile maritima and Andrena thoracica, were identified and several other await determination. The abundance of nectar sources is another positive feature in favour of the aculeate hymenoptera and Ian Morgan was so impressed with the potential for this group he was heard to declare that the site was "Excellent" (can such a place exist outside Carmarthenshire?). This area also produced a number of good beetle records including the chafers Amphimallon ochraceus and Cetonia aurata, the sulphur-beetle Cteniopus sulphureus and the chrysomelid Chrysolina banksi.

Under stones on the exposed dry heath above the cliffs three shells of the scarce snail Ponentina subvirescens were found. A little out of place here was the spider Clubiona corticalis - a species usually found in woodlands. A highlight of the day was the discovery by Adrian Fowles and Kefyn Catley of twenty-seven webs of the primitive purse-web spider Atypus affinis on the south-facing bank of Trwynhwrddyn. The webs are silken tubes covered with particles of soil which extrude from burrows concealed amongst tufts of red fescue Festuca rubra. The colony was restricted to a 20 metre band of sand overlying the boulder-clay within five metres of the high tide mark. There have only been three previous records of this species in Wales. In the same area the ant-mimic money-spider Micrargus subaequalis was found in a nest of Lasius niger and on the adjacent cliff grassland large numbers of the orb-weaver Neoscona adianta, a very scarce species in Wales, were spun-up amongst the herbaceous vegetation.