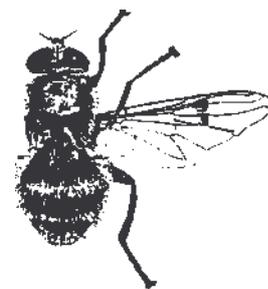


# DYFED INVERTEBRATE GROUP



NEWSLETTER N° 6

June 1987

## WELSH WETLAND INVERTEBRATE SURVEY - P HOLMES

The Nature Conservancy Council project to investigate the invertebrate fauna of Welsh Wetlands is now under way and over the next three years David Boyce, David Reed and myself, Peter Holmes, will be surveying wetlands from Anglesey and Pembroke. The aims of the project are to describe the invertebrate fauna of sites in relation to plant communities (to provide a basis for predicting the likely fauna at unsurveyed sites), and to determine the effect of management practices on the invertebrate communities.

The primary sampling technique will be the use of pitfall traps and already rows of plastic cups are sitting in wetland sites all around Ceredigion and Pembrokeshire. Our aim this year is to cover the main sites throughout Dyfed with the emphasis shifting to North Wales in 1988 and South Wales in 1989. Although we will be mainly using pitfall traps, supplementary methods will be employed to gain a broader picture of the invertebrate communities. Litter searches will be carried out for molluscs, and these will inevitably produce additional insect records as well; sweep-netting in longer vegetation will broaden the range of spiders investigated. Casual observations of dragonflies, butterflies, grasshoppers etc ... seen on site will also be recorded.

The large number of sites to be covered each year means that most of the field season will be spent collecting material, leaving the identification of specimens for the winter months. We have, therefore, not as yet produced many new and interesting records. However, we have already discovered two new sites for marsh fritillaries Eurodryas aurinia in Pembrokeshire and we have recorded the ground beetle Agonum ericeti from a new locality (only the third) in Ceredigion. Other notable beetles recorded so far are the chrysomelids Mantura obtusata and Haltica ericeti and the carabids Chlaenius nigricornis and Trechus secalis.

As a necessary result of the short time available within this project we will not be able to identify all of the invertebrates collected to specific level. Instead, we will concentrate on certain groups which are likely to be more responsive to differences in management, such as spiders, beetles, ants and several Dipteran families (Dolichopodids, Empids, Syrphids, etc ...). We have also gratefully accepted an offer from Ian Wallace and Steve Judd at Liverpool Museum to look at Hemiptera and Trichoptera for us. If anyone feels that they would like to assist the project by handling any other groups, please contact the Welsh Wetland Invertebrate Survey, Nature Conservancy Council, Plas Gogerddan, Aberystwyth, Dyfed SY23 SEE. We will be able to supply Diptera sorted to family level, and any other groups to order, to cater for anyone's pet speciality.

## INVERTEBRATE RECORDING ON SKOMER ISLAND - S SUTCLIFFE

The island of Skomer (12/725095) is justly well-known for its enormous colonies of seabirds and for its fantastic displays of spring flowers but, despite its relative accessibility and status as a National Nature Reserve, with few exceptions its invertebrate fauna is poorly-studied. Lepidoptera have received most attention and butterflies have been monitored since 1977 when Rosanne Alexander started a BMS transect for the Institute of Terrestrial Ecology, and this survey continues. The meadow brown Maniola jurtina is by far the most common species but good numbers of gatekeepers Maniola tithonus, peacocks Inachis io, small coppers Lycaena phlaeas and dark green fritillaries Argynnis aglaja occur, with graylings Eumenis semele locally regular and fifteen other species recorded. Of interest is the apparent colonisation of the island by ringlets Aphantopus hyperantus which were first recorded in 1980 and now appear to be established. Our moth records now number over 180 species and in 1986 alone we added twenty-six species recorded for the first time, some of which were very abundant. Clearly, continued trapping will produce more records and, as yet, the day-flying species, the pugs, and the micros are very under-recorded.

The spiders were well-documented by W S Bristowe in 1930, who listed some sixty-seven species including Qxyptila scabricula, a scarce southern spider of sandy heaths. In 1935 a few more species were added but the next records (and the latest) seem to be those of P Merrett in 1965 and 1966. Records exist for nine species of non-marine isopods, four species of ants, four species of orthoptera, five bumble bees, eleven earthworms and twelve fleas. Diptera have received little attention with only fifty species recorded, but this includes the local muscid Coenosia distinguens which was identified in 1961. Only thirty-five species of coleoptera have been reported, mainly by B Sage in 1973, although the list includes seven nationally notable beetles such as Cassida hemisphaerica, Donacia impressa, Crypticus quisquilius and Trox scaber.

Many of the invertebrate records are pre-1966 and it is likely that further details are available in scattered notebooks etc ... I hope to try and organise the records into a systematic index which will make access to the available data much easier for any visiting invertebrate student or recorder. It will be clear to any of the DIG readers that there is ample scope on Skomer to add to the knowledge of the reserve's fauna and there is every indication that there are plenty of exciting discoveries still to be made in many groups. There is also a great need to have more detail on the ecology and distribution of the Skomer fauna in order to monitor their success and to assess their management requirements. Perhaps Skomer would provide a suitable venue for a future DIG field meeting?

## COLEOPTERA

## GROUND BEETLES IN DYFED - M L LUFF

The Carabidae (Ground Beetles) are one of the more popular beetle families, with about 350 species in Britain. A national ground beetle recording scheme has been run by the author for many years, and this note summarises our knowledge of the ground beetles of Dyfed, on a basis of the records held by the mapping scheme.

A total of 166 species has been recorded from the area (see checklist), and maps of the national distribution of many of these are in the preliminary ground beetle atlas published by the Biological Records Centre, Monks Wood in 1982. The accompanying map shows the number of species recorded from each of the 10 km squares in the area. Note that totals from the bordering squares include all records from those squares irrespective of the county from which each record originated, so that some records from VC's 41, 42, 43, 47 and 48 may also be included in these squares. This is certainly true of the square with the most recorded species, 21/59. The highest species total from any exclusive Dyfed square is 65 from 12/70, although most if not all of the 66 species from 22/69 are from Ceredigion.

These species totals are still rather low: for comparison, north-east England (VC's 66, 67 and 68) has slightly fewer species in total (154) but there is one square with 107 species, and another with 77. Surely the warmer, wetter climate of Dyfed can support more Carabids than the bleak north-east? Examination of the map also shows that almost all extensive lists come from the coastal squares in the region, although some of these are also underworked. Inland squares mostly have very low numbers of ground beetle species recorded, and there is a large part of Carmarthen with no ground beetle records at all!

The species that have been recorded include, of course, ubiquitous species such as Nebria brevicollis, Notiophilus biguttatus and Pterostichus madidus, which occur commonly under stones throughout the area. There are, however, some recent interesting records (see notes by A P Fowles and I K Morgan in the December 1986 Newsletter), including the recent discovery in Ceredigion of Lionychus quadrillum, a shingle-inhabiting species which has not otherwise been found in Britain since its last occurrence at Slapton Ley, Devon in 1943.

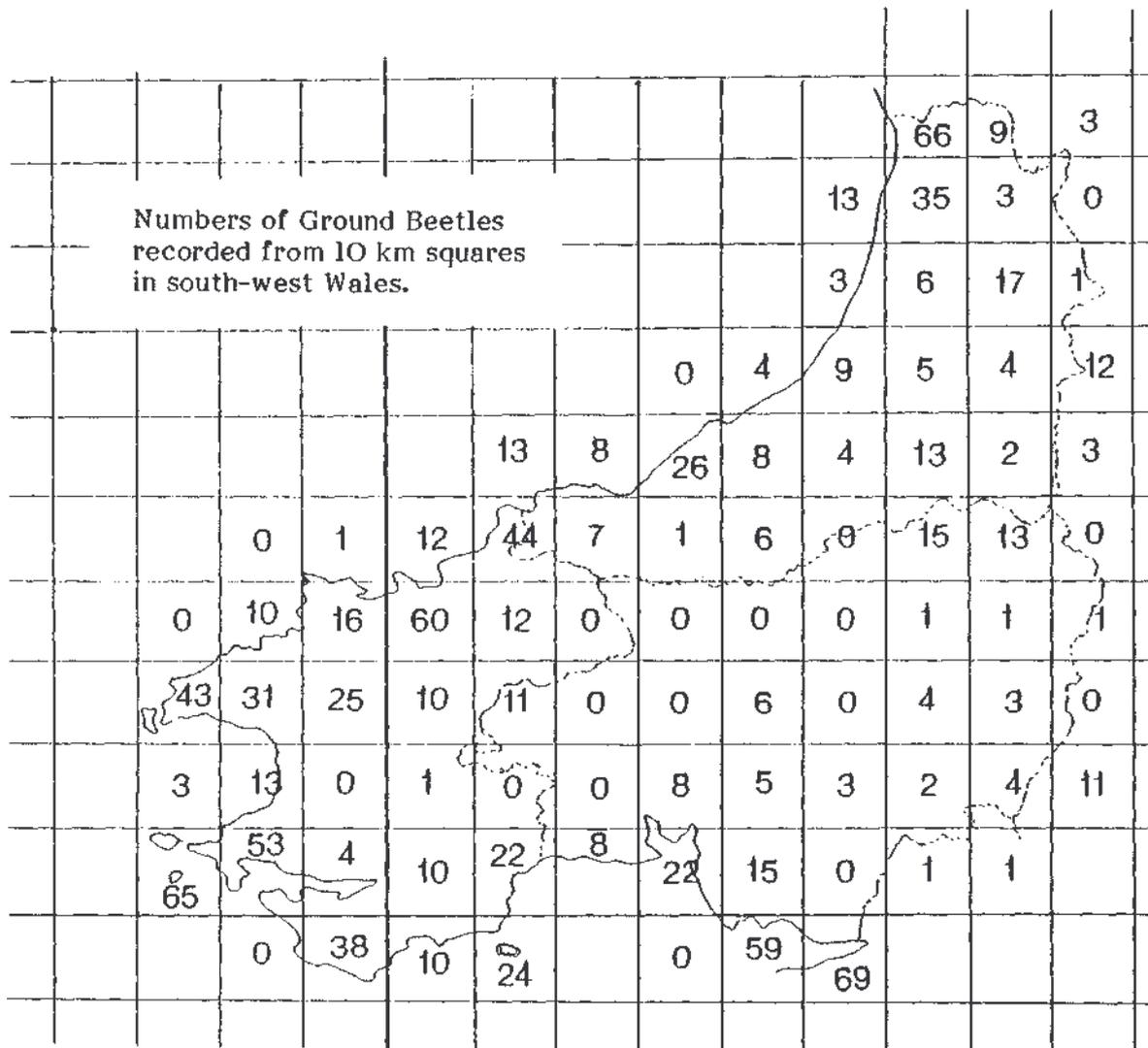
Other notable species in the list include Notiophilus rufipes (in deciduous leaf litter, near the limit of its range); Dyschirius impunctipennis and D. politus (sandy places, usually coastal, where they burrow); Asaphidion pallipes (sand and fine gravel near water); Bembidion nigropiceum (coastal); B. andreae (damp places near rivers); Pterostichus oblongopunctatus (old deciduous woodland); Amara equestris, A. lucida, A. praetermissa, Harpalus neglectus and Licinus depressus (dry, sandy ground, often coastal); Panagaeus cruxmajor, Chlaenius nigricornis, Oodes helopioides and Demetrias monostigma (marshy places).

There are, however, several species which, although not uncommon, have not been recorded from the area. These include Amara apicaria and Bembidion obtusum (usually on arable land); Bembidion monticola (one of several species of the genus found in riverside shingle); Dromius quadrimaculatus (in woodland, where it can be beaten from foliage); Pterostichus adstrictus and Trichocellus cognatus (on upland hills with heather); T. placidus (marshy places).

It is to be hoped, therefore, that this note will stimulate more carabid collecting and recording in the area. Many species can be found by stone-turning and ground-searching in the appropriate habitat. Other useful collecting methods (especially in winter) are searching in grass tussocks (which should be dug up, inverted and beaten over a sheet), litter and moss sieving and lifting of loose bark (particularly where the beetles have had

to climb to avoid surface flooding). Many carabids are active on the soil surface at night, they can be collected by simple pitfall traps. These can be made of plastic cups, set into the soil with their rim flush with the soil surface. To prevent predation in the traps, and to preserve the contents, a little neat antifreeze (the blue variety) acts as a readily obtainable preservative, even when diluted by rain. If every reader of this article were to set out 10 such traps in his or her garden, our knowledge of the distribution of Dyfed ground beetles would be greatly improved!

Carabidae can be identified using the appropriate Royal Entomological Society Handbook by C H Lindroth. Notes on some particular species have also appeared in the 'Coleopterist's Newsletter'. Any problem specimens can be sent to the author for identification or checking at the Department of Agricultural Biology, University of Newcastle upon Tyne, NE1 6RU, from whom ground beetle record cards can also be obtained. I can also provide lists of the species actually found in any 10 km square for any interested readers.



## GROUND BEETLES RECORDED FROM DYFED

|                 |                  |                  |                |
|-----------------|------------------|------------------|----------------|
| Cicindela       | Asaphidion       | Calathus         | Anisodactylus  |
| campestris      | flavipes         | piceus           | binotatus      |
| maritima        | pallipes         | Laemostenus      | Dicheirotichus |
| Carabus         | Bembidion        | complanatus      | gustavi        |
| arvensis        | lampros          | terricola        | Bradycellus    |
| granulatus      | properans        | Synuchus         | collaris       |
| nemoralis       | nigropiceum      | nivalis          | harpalinus     |
| problematicus   | punctulatum      | Olisthopus       | ruficollis     |
| violaceus       | pallidipenne     | rotundatus       | sharpi         |
| Cychnus         | dentellum        | Agonum           | verbasci       |
| caraboides      | varium           | albipes          | Stenolophus    |
| Leistus         | prasinum         | assimile         | mixtus         |
| ferrugineus     | atrocoeruleum    | dorsale          | Acupalpus      |
| fulvibarbis     | geniculatum      | ericeti          | dorsalis       |
| rufescens       | tibiale          | fuliginosum      | dubius         |
| rufomarginatus  | andreae          | gracile          | Badister       |
| spinibarbis     | bruxellense      | marginatum       | bipustulatus   |
| Nebria          | femoratum        | micans           | Licinus        |
| brevicollis     | nitidulum        | moestum          | depressus      |
| complanata      | saxatile         | muelleri         | Panagaeus      |
| gyllenhali      | stephensi        | nigrum           | cruxmajor      |
| salina          | tetracolum       | obscurum         | Chlaenius      |
| Notiophilus     | laterale         | piceum           | nigricornis    |
| aestuans        | quadrimaculatum  | thoreyi          | Oodes          |
| aquaticus       | gilvipes         | viduum           | helopioides    |
| biguttatus      | minimum          | Amara            | Lebia          |
| germinyi        | normannum        | aenea            | chlorocephala  |
| palustris       | harpaloides      | aulica           | Demetrias      |
| quadripunctatus | quinquestriatum  | bifrons          | atricapillus   |
| rufipes         | biguttatum       | communis         | monostigma     |
| substriatus     | guttula          | convexior        | Dromius        |
| Blethisa        | lunulatum        | convexiuscula    | linearis       |
| multipunctata   | mannerheimi      | equestris        | melanocephalus |
| Elaphrus        | Pogonus          | eurynota         | meridionalis   |
| cupreus         | chalceus         | familiaris       | notatus        |
| riparius        | Stomis           | lucida           | quadrinotatus  |
| Loricera        | pumicatus        | lunicollis       | Metabletus     |
| pilicornis      | Pterostichus     | montivaga        | foveatus       |
| Dyschirius      | aethiops         | ovata            | Lionychus      |
| globosus        | cupreus          | plebeja          | quadrillum     |
| impunctipennis  | diligens         | praetermissa     |                |
| politus         | madidus          | similata         |                |
| Clivina         | melanarius       | tibialis         |                |
| collaris        | minor            | Harpalus         |                |
| fossor          | niger            | anxius           |                |
| Brosicus        | nigrita          | attenuatus       |                |
| cephalotes      | oblongopunctatus | rubripes         |                |
| Patrobus        | strenuus         | rufipes          |                |
| assimilis       | vernalis         | rufibarbis       |                |
| atorrufus       | versicolor       | rufitarsis       |                |
| Aepus           | Abax             | schaubergerianus |                |
| robini          | parallelopipedus | affinis          |                |
| Trechus         | Calathus         | latus            |                |
| fulvus          | erratus          | neglectus        |                |
| obtusus         | fuscipes         | puncticeps       |                |
| quadristriatus  | melanocephalus   | tardus           |                |
| secalis         | mollis           |                  |                |

## ODONATA

### ASPECTS OF THE ECOLOGY OF THE SOUTHERN DAMSELFLY Coenagrion mercuriale IN PEMBROKESHIRE - FEVANS

Coenagrion mercuriale was first recorded in Pembrokeshire on the Preseli range in 1938 by Bertram Lloyd (Lloyd, 1944). A further five sites were located during the 1950's (Sage, 1957) and the total number of known breeding sites at present is eleven (Coker & Fox, 1985). Unfortunately C. mercuriale is believed to be extinct from four of the originally discovered pre-1960 sites for management reasons. The Pembrokeshire colonies are all on wet heath/mire sites, in both coastal and inland localities, up to 300 m above mean sea level, which is the highest recorded British site.

Coenagrion mercuriale is a rather weak flying damselfly, generally staying low over vegetation and close to its breeding sites, behaviour which is not conducive to dispersal and colonisation of new areas. In Wales the flight period of C. mercuriale extends throughout June, July and August, but most records are from the end of June to the beginning of August (Coker & Fox, 1985). Pairing often results in the female going below the water surface in her efforts to oviposit in the aquatic/emergent vegetation. Plant species observed used as oviposition sites are:- Potamogeton polygonifolius, Hypericum elodes, Juncus articulatus, Apium nodiflorum and Schoenus nigricans (Merritt, 1983). The duration of the egg stage in captivity is 21 days, the resulting larvae, which are predominantly weed-dwelling, take two years to mature to the adult stage (Corbet et al, 1960).

The larval stage of C. mercuriale occupies approximately 95% of its total life span, and knowledge of the habitat requirements of this stage is therefore of paramount importance for the conservation of this species. A larvae sampling programme was carried out at selected sites in Pembrokeshire, and the vegetation was recorded at each point sampled where C. mercuriale larvae were present. The larvae were found to be densest in areas of peaty substrate, with peat depth not exceeding, and usually less than, 30 cms. This is in agreement with a Devon C. mercuriale study where the larvae were only found in shallow boggy seeps adjacent to the runnell (Knights, 1983). C. mercuriale larvae were most abundant in shallow water and where water flow was slow either for topographical reasons or the local effect of the vegetation slowing the flow. As a result, by far the commonest location for larvae was within shallow vegetated runnels percolating across a soligenous mire/wet heath mosaic, with frequently the densest concentration of larvae within 'trickles' of water of less than 10 cms depth and 15 cms width.

Two obviously different generations were sampled on a few occasions at the Pembrokeshire site, the generation I individuals (May) were very small, noticeably more transparent, and striped. It is suggested in Corbet et al (1960) that these features of the very small gen. I larvae may be to camouflage these individuals and thereby protect them from cannibalism by the very much larger gen II larvae. During sampling in Pembrokeshire different age classes were also found with often quite considerable variation in larval length; this finding is in agreement with the Devon study (Knights, 1983).

Very few other Odonata larvae were found with the C. mercuriale larval populations, these were:- Cordulegaster boltonii, Orthetrum coerulescens and Pyrrhosoma nymphula. Both C. boltonii and O. coerulescens have mud/sediment dwelling larvae while P. nymphula, a commonly occurring zygopteran larva which also shows habitat overlap with C. mercuriale, is a surface 'mud' dwelling larva (Corbet et al, 1960). C. mercuriale larvae were normally found within the emergent/aquatic vegetation, but later in the season (November) appeared to be rather inactive and within the sediment layer. Thus a well vegetated, shallow, sediment rich, runnell habitat satisfies the habitat requirements of all four species which occupy different niches within it.

C. mercuriale in Pembrokeshire typically occurs on species rich flush areas, these grazed mosaics of soligenous mire and wet heath vegetation resulting in a diversity of species typical of both communities, grazing tending to promote the replacement of ericaceous species and gorse with a sedge/Molinia/herb rich sward - the extreme wetness of the flush area accelerating this process. The proximity to springs, tapping more base-rich sources, and the constant lateral water flow provides good conditions for poor fen species and more base demanding plants for example:- Anagallis tenella, Triglochin palustris, Mentha aquatica and Pedicularis palustris, although nationally this habitat would be regarded as slightly acid in nature. The aquatic/emergent flora is the most directly important component to the Coenagrion mercuriale larva which spends its life living amongst it. The most important species in Pembrokeshire are:- Apium nodiflorum, Eleocharis multicaulis, Hypericum elodes, Juncus acutiflorus and Potamogeton polygonifolius.

It is apparent from work on the larvae of C. mercuriale that important breeding sites for this species are frequently very small runnels and seepage zones of often less than 5 cms depth. These may easily be dismissed by a land manager as unimportant, concentrating instead on maintaining a stream or streamlet which looks more impressive as an Odonata breeding area. It should also be borne in mind when survey monitoring C. mercuriale sites by sightings of adults alone that the distribution of the adults will not necessarily reflect the distribution of larvae and although these damselflies do not appear to stray far from their breeding sites a difference of a few metres between a breeding runnel and a streamline or ditch which may be a mere prospecting haunt or secondary breeding site, is all important. It is precisely because of the shallow small nature of these runnels that grazing would appear to be important in keeping them open. Grazing levels need not be high to maintain these runnels in an open state as grazing stock often show a preference for this nutrient-improved food supply, grazing flush areas preferentially. Controlled burning may be sufficient to keep runnels open by removing more rank vegetation. As a flush becomes overgrown the increased transpiration and rapid Molinia growth often has the combined effect of shading out the emergent/aquatic vegetation and drying out the seepage line to the detriment of the C. mercuriale population.

Maintaining the site integrity is of paramount importance in the conservation of Coenagrion mercuriale - that is maintaining the habitat, including, all importantly, any springs feeding the flushes, with no drainage of the site and the avoidance of pollution and eutrophication from adjacent land or other land users. The dumping of sheep dip is suspected at one C. mercuriale site in the Preseli's which resulted in a total lack of invertebrates, including larvae, along a stretch of stream known to hold a C. mercuriale colony the previous year.

Shelter for C. mercuriale would not seem to be a significant factor. The flourishing populations on the Preseli range in Pembrokeshire occur within particularly bleak exposed and windswept situations. Presumably Coenagrion mercuriale, being a particularly small and generally low flying damselfly, is able to find sufficient shelter in the adjacent close-cropped sward, indeed field observations would suggest that this species avoids/has difficulty in flying amongst rank, overhanging edge vegetation. In terms of management, however, it would seem sensible to maintain shelterbelt vegetation where it occurs as long as it is at sufficient distance from flush areas. Scrub encroachment over seepage areas is obviously detrimental to C. mercuriale and should be removed, although this is not normally a problem with an active management regime.

#### References:

COKER, S & FOX, A D (1985) - West Wales Dragonflies. Mountain Books.

CORBET, P S, LONGFIELD, C & MOORE, N W (1960) - Dragonflies. New Naturalist 41. Collins. London.

KNIGHTS, R (1983) - Coenagrion mercuriale on the East Devon Pebblebed Commons. BES Bulletin 14(2): 40-41.

LLOYD, B (1944) - Dragonflies of Pembrokeshire. Entomologist 77: 114-115.

MERRIT, R (1983) - Scarce species status report - Coenagrion mercuriale: with notes on habitat. J. Br. Dragonfly Soc. 1: 9-12.

SAGE, B L (1957) - Notes on Dragonflies in Wales in 1956. Nat. Wales 3: 434-435.

## COLEOPTERA

+

## DIPTERA

### "THE LOST WORLD" - DISCOVERIES IN DYFED - A P FOWLES & I K MORGAN

On 3 August 1967 at a light trap on the edge of Borth Bog, Austin Richardson caught seventeen adults of the rosy marsh moth Eugraphe subrosea. The chance capture of an adult in North Wales two years previously had persuaded a number of eminent lepidopterists to search suitable localities for its breeding grounds so it was with great elation that the presence of a strong colony was confirmed on Cors Fochno (22/69). The rosy marsh moth had been considered to have been a victim of the drainage of the East Anglian Fens in the 1840's, leading de Worms (1978) to describe the events of August 1967 as "the discovery of the century". The fascinating account of that memorable week (de Worms 1968) in essence also relates the entomological discovery of the Lost World of Dyfed. A region that could harbour Red Kites and Polecats through their years of decline elsewhere in Britain should surely have a few other surprises lurking amongst its wild places. As more attention is paid to the lesser-known elements of the county's fauna a number of other species once regarded as "extinct" in Britain are being recorded alive and well. In the past two years a further four invertebrate species have been re-located in Dyfed long after their last recorded British sighting - how many more remain to be discovered?

The recent spell of outstanding finds began with the recording of a dozen distinctive black-and-orange ground beetles (Carabidae) at Tywyn Burrows, Carms (22/30) on 20 April 1985 (IKM). They were subsequently confirmed as Panageus crux-major, a handsome wetland beetle previously known from many counties from central and southern England but it declined dramatically and was last seen in 1961. The locality is a seasonally-flooded dune slack with large stands of Sea Club-rush Scirpus maritimus and the beetles were hiding under driftwood deposited by high spring-tides before the slack was cut off from the sea by the active accretion of sand at Tywyn Point.

In 1986 another long-lost inhabitant of the British fauna was placed firmly back on the British list. At a base-rich flush near Penparc, Ceredigion (22/24) on 9 July, several Odontomyia hydroleon (Diptera : Stratiomyidae) were flying amongst the lush vegetation (APF). This black-and-green soldier-fly was previously regarded as "doubtfully British" mainly on the basis of a specimen labelled as taken in Berkshire about 1840. There are indications that it has declined considerably in western Europe where there are now few modern records. The existence of this Dyfed colony, which appeared to be reasonably strong last summer, is clearly of European significance. The larvae are unknown but are likely to live a semi-aquatic existence on the margins of the flushes. The discovery of further colonies is highly desirable and the coastal marshes of Pembrokeshire would be well worth searching.

Already this year two further species have been re-instated to the British fauna, as a result of investigations on river shingle in Dyfed. Over the Easter weekend IKM and APF independently found specimens of the Five-spot Ladybird Coccinella quinquepunctata (Coccinellidae), in Carmarthen and Ceredigion respectively. On 16 April a single beetle was caught in flight at Llanwrda, Carmarthen (22/73) on the bare shingle on the banks of Afon Tywi - the last time this beetle was seen was in 1953 in the Spey Valley, Scotland. In fact there had only been five records this century; from south Devon and the Spey Valley. Three days later, on 19 April, APF with AO Chater and K Catley found two specimens under a stone on the unstable shingles alongside Afon Ystwyth (22/67) whilst carrying out a general invertebrate search of the area. In subsequent weeks C. quinquepunctata was found at a further eight sites on Afon Ystwyth (22/57 and 22/67) and Afon Rheidol (22/68). Most sightings were of a small number of adults (1-3) walking over bare shingle but at one site at least fifty were seen. They were all associated with small stunted plants of Broom Cytisus scoparia growing in the unstable shingle zone and none were found on mature Broom bushes a couple of metres away in stable communities. They were feeding on aphid nymphs occurring in the leaf axils of the plants and were found commonly here over a period of ten days. In early May, however, they abandoned the Broom and dispersed such that very few adults were located on later visits and these were typically wandering over bare shingle. From these observations it can be assumed that Coccinella quinquepunctata is widespread, if thinly distributed, in suitable localities in west Wales and, indeed, three adults were found at Llandovery on Afon Tywi (22/73) on 8 May (APF) during a casual visit.

The final species relocated (to date) is Lionychus quadrillum (Carabidae), a small black ground beetle which normally has two yellow spots on each elytron but the Dyfed specimens are generally dark. Of forty specimens observed so far all but one have had the elytral markings reduced to one inconspicuous humeral spot. This beetle has been widely reported in the past from the south and east coast of England but the last record was at Slapton Ley, Devon in 1943. A singleton was captured on the shingle banks of Afon Rheidol (22/68) on 22 April (APF) and subsequently at a further five sites on Afon Rheidol and Afon Ystwyth (22/57). It occurs typically on the upper shingle zones where there is a mixture of small pebbles and fine gravels and is very active in bright sunshine. On one shingle bank on one of the hottest days of Spring twenty-five were counted in an area of two square metres as they hunted at speed in and out of the pebbles. Lionychus was also found in Carmarthen at Llandovery (22/73) on 8 May (five specimens, APF).

These last two discoveries suggest that river shingle has been an underworked habitat for entomologists in recent years, at least in Dyfed if not Britain as a whole, and that this accounts for the absence of records in the past 30-40 years of these species. However, it is probable that many other habitats have been similarly underworked in Dyfed and we can only guess at the potential discoveries still to be made. Naturalists in Dyfed have a great opportunity to contribute significantly to natural history - who knows, there might still be Mammoths in the Preseli Hills!

#### References:

- WORMS, C G M de (1968) - The Recent Discovery in Wales of the Rosy Marsh Moth  
*Coenophila subrosea* (Stephens) (Lep., Noctuidae). *Entomologist's Gazette*. 19: 83-89.
- WORMS, C G M de (1978) - Further Recent additions to the British macrolepidoptera.  
*Entomologist's Gazette*. 28: 32-33.

## COLEOPTERA

### SOME NOTEWORTHY CARMARTHENSHIRE BEETLES - D DAVIES

Perhaps these few records of some of the more unusual Carmarthenshire beetles may be of interest to members of the Dyfed Invertebrate Group. In these notes, all the placenames referred to are in the Rhandirmwyn area (22/7843) unless otherwise stated. Specimens of those species marked with an asterisk (\*) have been donated to the National Museum of Wales.

#### Family : Carabidae

Calosoma inquisitor - Several noted on trunks of oaks in the oakwood of Blaen-nant Melin (22/735466). Joy (1932) describes it as very local although it has a wide distribution in Britain. The adults are arboreal and predate the larvae of moths. Eurynebria complanata - Recorded under stones and debris on the beach between Pendine and Laugharne (22/20) and also at Cefn Sidan sands (22/3606) near Kidwelly. An account of the species is given by King and Stabins (1971). Agonum ericeti - This beetle is restricted to ombrotrophic bogs throughout its European range. In Wales it was previously known only from Cors Caron (22/68 63) but has recently been discovered on Cors Fochno (22/6391) and Figyn Blaen Brefi (22/7154). I recorded it on the edge of the basin mire at Llyn y Gwaith (22/669503), which lies between Farmers and Llanddewi Brefi, on 7 July 1973.

#### Family : Catopidae

Catops longulus\* - Deep in bracken Pteridium aquilinum litter on the edge of the Rhuddalt oakwood (22/792474) on 24 April 1972. It is described by Joy (1932) as rare.

#### Family : Ptiliidae

Ptinella cavelli - Johnson (1975) describes this species which had previously been recorded only from New Zealand. He states "Amongst the British (and European) species cavelli resembles limbata (Heer) in form, but differs abundantly in many characters, most notable of which are the great size, sculpture, colour, long antennae and spermatheca". I should perhaps point out that the length of P. cavelli from head to tip of abdomen is a massive 0.96 - 1.05 mm and that you would be therefore well-advised to ignore this group of beetles unless you enjoy excellent eyesight. It is little wonder, therefore, that this is the only member of the Ptiliidae I have recorded - I found it under the bark of a dead oak in the Goyallt oakwood (22/782442) on 22 February 1974. The specimen was submitted to Johnson for determination. This is not the first record for the county as Johnson himself had collected the species at Llanddowror on 11 July 1973.

#### Family : Rhizophagidae

Rhizophagus aeneus\* - Johnson (1964) describes the twelve known British species of this genus and says of R. aeneus - "A very rare species which is seldom recorded. Its habitat has often been stated as "floating logs in streams" and it has also been associated with old alders. Since alders occur in wet places, especially by rivers and ponds, there would appear to be a connection between the two". The specimens I came across were under the bark of a dead alder that was lodged firmly at one end in the bed of the river Bran at Cynghordy (22/807402) on 16 July 1973. The log lay obliquely across the river and was low over the water so that during flood periods the whole of it was completely submerged. These beetles must be able to survive inundation for considerable periods of time.

### Family : Colydiidae

Aulonium trisulcum\* - This beetle turned up under the bark of a young, dying English Elm Ulmus procera on 11 July 1976, which grew in a hedge forming a boundary to Glansevin Hotel, Llangadog (22/7028). Seven beetles were collected in all and it so happened that three were Scolytus scolytus, three Scolytus multistriatus and the seventh was A. trisulcum -which is a known predator of the larvae and pupae of both of these Scolytid beetles. It is known from a few places in southern England and has been found in Spain and Italy but appears to be scarce even on a European basis, which is a great pity for otherwise we might have been spared the worst ravages of Dutch Elm disease.

Another member of the family I have recorded is Cerylon ferrugineum under the bark of a felled oak at Celynog (22/779423) on 15 March 1973. It was found in association with the ambrosia beetle Trypodendron signatum.

### Family : Scarabaeidae

Amphimallon ochraceus\* - Of the two Amphimallon species we have, this is the rare one. I found it at midday on 20 June 1973 flying in bright sunshine over a small bog above low cliffs overlooking Marros Beach (22/2107) about 1/4 mile west of Ragwen Pont and not far from Pendine. Trichius fasciatus\* - This hairy beetle with its black and orange elytra is an attractive insect which is said to be fairly common in mountainous areas on the continent. I wonder if it has decreased in Wales since Dillwyn (1829) talks about "forty of these beautiful insects have been taken in the neighbourhood". The only one I have recorded was on Thrift Armeria maritima on the saltmarsh at Tywyn Burrows (22/3806) in June 1984.

### Family : Lucanidae

Sinodendron cylindricum - The remains of two dead ones were found under the bark of a dead oak at Goyallt (22/782442) on 31 July 1973 and a live one under birch bark in Cwm Doethie (22/7747) on 30 June 1974, Although this beetle appears to have a wide distribution it cannot be very common.

### Family : Cerambycidae

Prionus coriarius\* - I have recorded two of these fine beetles. The first was found lying on its back on the floor below the light in the porch of Rhandirmwyn school on 14 August 1972. The second was noted on 14 July 1974 in the front lawn of Ty'r Ysgol (which is attached to the school) near the decayed stump of an ornamental cherry. Since this beetle is attracted to light it is surprising that more have not been recorded in Wales. However, I have had a Rothamsted light trap operating in the garden since 1976 and I've never taken this beetle in it.

Another unusual longhorn is Strangalia quadrifasciata - one I noted was resting on a sycamore leaf near Capel Cynfab School, Cynghordy (22/808403) on 21 June 1974. It is stated that the larvae feed in stumps and dead branches of trees, usually willows.

### Family : Chrysomelidae

Chrysolina fastuosa - I include this beetle not only because of its local status but also because it is one of the most beautiful of the beetles with its brilliant metallic hues of blue, green and gold along the length of the elytra. I have recorded one in an alder carr on Hemp Nettle Galeopsis tetrahit on the banks of the Bran at Cynghordy (22/807402) on 2 May 1972. Cassida murrea - This belongs to that curious group known as 'Tortoise beetles' because the thorax and elytra enclose the underpart of the body forming a kind of carapace. It

appears to be quite a scarce beetle. I have recorded one on Marsh Thistle Cirsium palustre on Troedyrhiw Farm, Llanfynydd (22/55 27) on 7 June 1974.

### References

- DILLWYN, L W (1829) - Memoranda relating to Coleopterous Insects found in the neighbourhood of Swansea. Privately circulated manuscript.
- JOHNSON, C (1964) - The British species of the genus Rhizophagus Herbst (Coleoptera : Rhizophagidae). Annual Reports, Proceedings and Transactions 1961-1963, Manchester Entomological Society.
- JOHNSON, C (1975) - Five species of Ptiliidae (Col.) new to Britain, and corrections to the British list of the family. Ent. Gaz. 26:211-223.
- JOY, N H (1932) - A Practical Handbook of British Beetles. H F & G Witherby.
- KING, P E & STABINS, V (1971) - Aspects of the biology of a strand-living beetle, Eurynebria complanata (L.). J. Nat. Hist. 5:17-28.

### **DYFED INVERTEBRATE BIBLIOGRAPHY - 1986**

- BRETHERTON, R F & CHALMERS-HUNT, J M (1986) - The immigration of Lepidoptera to the British Isles in 1985. Ent. Rec. J. Var. 98: 226-228.
- BROWN, P J (1986) - The Dowrog Common Invertebrate Survey, 1986. West Wales Trust Nat. Cons. Bull. 42: 7.
- CATLEY, K (1986) - Singa hamata (Clerk): the first Welsh record. Newsl. Br. Arachnol. Soc. 46; 8.
- CHATER, A O (1986) - Recent woodlouse records from Dyfed. British Isopod Study Group. Newsletter 21: 4-5.
- COKER, S (1986) - West Wales riparian Odonata. J. Br. Dragonfly Soc. 2: 23-28.
- COKER, S & FOX, A D (1986) - West Wales Dragonflies. Mountain Books.
- COWIE, R H (1986) - Reduction in the distribution of the land snail Theba pisana in the Tenby area, Dyfed. Nat. Wales. New Series 4 (1985): 66-70.
- ELLIOT, R (1986) - The Marsh Fritillary. West Wales Trust Nat. Cons. Bull. 40: 5.
- EVANS, F (1986) - The Brimstone butterfly at Ynyshir Reserve. Ynys-hir Reserve Report, 1985. RSPB. pp 20-21.
- FISH, J D (1986) - The estuarine fauna at Ynyslas. Ynyslas Nature Reserve Handbook. Part 4 - The estuary. NCC. pp 147-159.
- FOWLES, A P (1986) - The Butterflies of Ceredigion. Nat. Wales. New Series 3 (1984): 25-43.
- FOX, A D (1986) - The dragonflies of Ceredigion - an update. J. Br. Dragonfly Soc. 2: 4-7.
- FOX, A D (1986) - Effects of ditch-blockage on adult Odonata at a coastal raised mire site in central west Wales, United Kingdom. Odonatologica 15: 327-324.
- KERNEY, M P (1986) - Recorder's report: Non-marine Mollusca. J. Conch. Lond. 32: 252-256.
- MICHAELIS, H N (1986) - Species of Pyralidae and Pterophoridae (Lep.) in North Wales. Ent. Rec. 98: 231-240.
- MILES, P M (1986) - Some parasitic and phoretic nematoda associated with Collembola. Ent. Mon. Mag. 122: 239-242.
- MORGAN, I K (1986) - The Carmarthenshire butterfly recording scheme. West Wales Trust Nat. Cons. Bull. 40: 3.
- MORGAN, I K (1986) - Butterflies in Carmarthenshire. West Wales Trust Nat. Cons. Bull. 40: 7-8.

- MORGAN, I K (1986) - Invertebrate recording 1985: Syrphidae (Hoverflies). Llanelli Nats. Newsletter (March 1986), pp 11-12.
- MORGAN, I K (1986) - Diptera: Asiloidea. Llanelli Nats. Newsletter (March 1986), p 12
- MORGAN, I K (1986) - Carmarthenshire Mollusca, 1985-86. Llanelli Nats. Newsletter (March 1986), pp 13-14.
- MORGAN, I K (1986) - A naturalists guide: some notes on sites of interest in the Llanelli area. Part 14. Around St Ishmaels, near Ferryside. Llanelli Nats. Newsletter (March 1986), p 15.
- MORGAN, I K (1986) - A naturalists guide: some notes on sites of interest in the Llanelli area. No. 15: Bynea. Llanelli Nats. Newsletter (June 1986) pp 9-10.
- MORGAN, I K (1986) - Some distribution maps of Carmarthenshire Coleoptera. Llanelli Nats. Newsletter (June 1986) p 12.
- MORGAN, I K (1986) - Butterflies and Moths, 1986. Llanelli Nats. Newsletter (Sept 1986) p 9.
- MORGAN, I K (1986) - Chordeuma proximum in Dyfed, SW Wales. British Myriapod Group Newsletter 6: 5.
- MORGAN, I K (1986) - The dark bush cricket in SE Carmarthenshire. Llanelli Nats. Newsletter (Dec 1986) p 8.
- MORGAN, I K (1986) - Syrphidae in Carmarthen. VC44, 1986. Llanelli Nats. Newsletter (Dec 1986) pp 9-10.
- MORGAN, I K (1986) - A naturalists guide: some notes on sites of interest in the Llanelli area. No 17: Pembrey Forest. Llanelli Nats. Newsletter (Dec 1986) pp 11-14.
- MORGAN, M J (1986) - Field Notes (1984: Invertebrates). A good butterfly summer. Nat. Wales. New Series 4 (1985): 119.
- MORGAN, M J (1986) - Field Notes (1984: Invertebrates). An abundance of Chafers. Nat. Wales. New Series 4 (1985): 119-120.
- POLLARD, E., HALL, M L & BIBBY, T J (1986) - Monitoring the abundance of butterflies, 1976-1985. Research and Survey in Nature Conservation. No 2. Nature Conservancy Council, Peterborough, pp 140-1, 224-7, 268-9.
- PRYCE, R D (1986) - Report on Field Meeting - Pembrey Mountain. 14 June 1986. Llanelli Nats. Newsletter (June 1986) p 8.
- PRYCE, R D (1986) - Report on Flora Recording Meeting - Coygan Quarry, Laugharne, Sat 5 July 1986. Llanelli Nats. Newsletter (Sept 1986) p 3.
- PRYCE, R D (1986) - Report on Field Meeting - Joint meeting of the West Wales Trust for Nature Conservation and Llanelli Naturalists to Tywyn Burrows on Sun 20 July 1986. Llanelli Nats. Newsletter (Sept 1986) pp 4-5.
- RILEY, A M (1986) - Suspected second brood of Eupithecia lariciata (Larch Pug). Ent. Rec. J. Var. 9:8: 207-208.
- SQUIRES, R (1986) - The Butterfly Season. Ynys-hir Reserve Report, 1985. RSPB. p19.
- SQUIRES, R (1986) - Dragonflies and damselflies. Ynys-hir Reserve Report, 1985. RSPB. pp 21-22.
- SQUIRES, R (1986) - Moth records. Ynys-hir Reserve Report. RSPB. p 22.
- STUBBS, A E (1986) - News from last summer's field meetings: Carmarthen 5-13 July 1986. Diptera Recording Schemes Bull. 21: 4-5.
- TILLOTSON, I J L (1986) - Mythimna loreyi (The Cosmopolitan) in west Wales. Ent. Rec. 98: 61.
- WALLACE, I D (1986) - Three new vice-county spider records. Newsl. Br. Arachnol. Soc. 46: 4.

**FIELD MEETING - DINEFWR PARK AND CASTLE WOODS (22/615217) VC44, 13  
JUNE 1987 - IK MORGAN**

The 1987 DIG field season began with a visit by nine members to the Dinefwr Castle Woods and Deer Park in pleasant, if not ideal, weather conditions. The need to survey the biological importance of this area (much of which is an SSSI in the ownership of the WWTNC and the National Trust) was first highlighted by PT Harding. Subsequent fieldwork has shown the site to be of great lichenological interest with 154 epiphytic taxa recorded to date, but until recently little research had been done on the invertebrates. Sampling in 1985 and 1986 - principally by Keith Alexander, Arthur Chater, Graham Hopkins and the author - had given a provisional insight to the richness of Dinefwr's invertebrates.

The DIG visit was planned to coincide with the peak flowering period of the hawthorn Crataegus monogyna, which is an important nectar source for many insects, but unfortunately flowering was already over and sampling was less productive than expected. The woodland areas of the estate are mixed deciduous with a predominance of oak and the ground flora indicates a reasonable base status with several calcicolous plants present. The sunny slopes of the Castle Woods provided the first capture of interest, a single specimen of the horsefly Tabanus cordiger (probably a new county record), whilst nearby on fallen logs the syrphid Chalcosyrphus nemorum was observed. On these same slopes the brick-red Cardinal beetle Pyrochroa serraticornis was frequent, but by far the best beetle recorded in this section was Conopalpus testaceus (Melandryidae), found on dead elms by David Boyce. This is the seventh member of the saproxylic coleoptera listed by Harding and Rose (1986) as indicators of the continuity of dead-wood habitats in ancient woodlands which has been recorded from the Dinefwr estate. The others are - Sinodendron cylindricum, Ctesias serra, Pediacus dermestoides, Orchesia undulata, Thymalus limbatus and Stenagostus villosus (Alexander 1986).

Following lunch the party descended to the old ox-bows of the Twyi where, near the old pump-house, the hoverflies Anasimyia lineata and A. contracta were noted. Dragonflies were represented by Coenagrion puella, Ischnura elegans, Libellula depressa, and Calopteryx virgo. Apart from the longhorn Judolia cerambyciformis nothing of note was seen at the ox-bows, although all recognised the entomological potential of these eutrophic waters backed by old woodland. The Deer Park itself, with its huge ancient oaks and abundant deadwood, was only briefly surveyed. One venerable, gnarled oak yielded two spiders new to Carmarthenshire (Theridion mystaceum and Lepthyphantes obscurus) and two individuals of the curious larvae of the beetle Ctesias serra (Dermestidae) which live as commensals in spider webs. Amongst the twenty-one species of spider recorded by Kefyn Catley during the day was another new county record, Entelecara erythropus, swept from tall, herb-rich vegetation.

References

- ALEXANDER, KNA (1986) - Dinefwr Deer Park, Carmarthenshire (22/612217) - the best Dyfed site for deadwood invertebrates? DIG Newsl. 4: 13
- HARDING, PT & ROSE, F (1986) - Pasture-woodlands in lowland Britain. Huntingdon. Institute of Terrestrial Ecology.