

ARANEAE

A PROVISIONAL ACCOUNT OF THE SPIDER FAUNA OF DYFED - AP FOWLES, S DOBSON & IK MORGAN

With a few notable exceptions, the recording of spiders in Wales has a poor tradition and the vice-counties of Dyfed have undoubtedly shared in this general neglect. It is apparent from the vice-comital checklists (eg. Merrett 1974) that arachnologists certainly ventured into south-west Wales in the past but they left little by way of record of their visits and the task has only just begun to try and trace the whereabouts of some of their manuscript lists. Indeed, if it were not for the magnetic appeal of the Pembrokeshire Islands there would be virtually no historical background to recording in Dyfed. This is unfortunate but it does have some benefits in that the vast majority of species recorded for this paper are verified by modern taxonomy. It is the absence of resident arachnologists that has led to this position and most of the recording to date has resulted from pitfall-trap data generated by general invertebrate surveys or from sporadic visits by experts from other parts of Britain. It is, however, clear that Dyfed has a rich spider fauna with a good range of nationally scarce species, associated particularly with its wetlands, sand dunes and river shingle. With the development of the British Arachnological Society's Spider Recording Scheme and the recent appearance of new books on British spiders, it is to be hoped that a greater interest can be raised amongst local naturalists and that this preliminary review can provide a framework on which to build future knowledge.

On current information, the vice-county of Carmarthen is less well-known than Pembroke or Cardigan. Considering the range of habitats available in this large district it is likely that Carmarthenshire will probably support a greater diversity than the other two, but at present it lags slightly behind with a total of 263 species out of a Dyfed total of 351. This is a direct reflection of recorder-effort, as it is only in the last few years that any substantial interest in the spiders of the vice-county has developed. As yet it has not proved possible to trace the sources of the majority of the records for the 86 species which were mapped for Carmarthenshire in Merrett (1974), including the only Dyfed record of Liocranum rupicola. The only historical paper pertaining to the vice-county which has been consulted so far is a list of ten common spiders collected at Laugharne in 1954 (Sage 1955). A study of the spiders of Dinefwr Castle Woods by Cynthia Merrett (1987) and brief visits in 1987 to Cors Goch Llanllwch, Bishop's Pond, Dinefwr Park and the Pendine coast by Kefyn Catley began the recent phase of recording. A major source of records, with many interesting discoveries, has been the Welsh Peatland Invertebrate Survey, which investigated Carms. sites in 1989. As a result, knowledge of the wetland fauna is more complete than for any other of the major habitats and woodland and coastal sites in particular offer much scope to add to the county list.

The investigations of WS Bristowe on the Pembrokeshire Islands in the 1920's and 1930's (Bristowe 1929, 1931a and 1935) provide the first traceable records for the vice-county. There are obviously other sources since, in 'The Comity of Spiders', Bristowe (1939) lists many Pembs. records which do not appear in his other papers mentioned. However, his records and notes appear to have been destroyed in the Second World War and, as he specifically says in the 'Comity' that there are too many references to list, it is unlikely that they will ever be recovered. In 'British Spiders' (Merrett 1974), the distribution maps obviously drew heavily on Bristowe's records but there are clearly others which are as yet unknown. Similarly with the vice-comital updates (Merrett 1975, 1982 & 1989), most of the entries can be correlated with known sources but there remain a few of unknown origin.

Up until 1986 (apart from Mackie (1962) in which he lists spiders found at Dale Fort Field Centre in 1960), there is only a sprinkling of minor records in the literature: these include Williamson (1948, 1949), Sage (1955), Berman & Callow (1964) and Wallace (1986). Between them they only added a single species to the county list but all contributed to the overall picture of spider distribution. As with the other Dyfed vice-counties, a new impetus to recording began in recent years with casual recording yielding a number of interesting discoveries. Pitfall-trapping undertaken by the Nature Conservancy Council on wet heathland (Evans 1989) and peatlands (Welsh Peatland Invertebrate Survey) has provided the first major habitat studies which have investigated the spider fauna in Pembrokeshire, including the discovery of Glyphesis servulus at two sites. Another major input has been the work of the courses run at the FSC centre at Orierton from 1987 to 1989 and, in particular, a spider study week held there in 1990 when a dozen experienced arachnologists added much to the known spider fauna (Dobson 1990). Whilst there is much more to be done, the total species list for the vice-county currently stands at 273 (with 103 species recorded from the islands), a significant improvement on the 151 species reported by Bristowe in 1935.

The earliest published spider records for Ceredigion were an incidental by-product of investigations of the soil fauna around Aberystwyth by an agricultural student at the University (Thompson 1924). Arachnologists must have visited the vice-county over the next fifty years but so far it has proved difficult to trace their manuscript records. Merrett (1974) was able to map 104 species for VC46, adding a further 23 species in later supplements, but only a handful of these found their way into print, eg. Cloudsley-Thompson (1950), Murgatroyd (1954) and Goodier (1967). Similarly, the only unpublished species lists available for this period are those of GH Locket at Cors Caron in August 1957 (recording 30 species) and JR Parker for Cors Caron and Cors Fochno in May 1963. It is regrettable that so little historical information has passed down to the present day but in part this does reflect the general paucity of invertebrate recording over much of Wales in past decades. Recognising this, the Biological Recording Working Group for Wales (co-ordinated by the National Museum of Wales) initiated a series of field meetings in the early Seventies and their visits to Cardigan and Lampeter, in 1973 and 1974 respectively, provided a welcome boost.

Up until this time it appears that Ceredigion (like the other Dyfed vice-counties) had not enjoyed the services of a resident arachnologist but in the mid 1970's a biology student at UCW Aberystwyth, Evan Jones, studied the the fauna of the northern part of the county. As part of his B.Sc. dissertation he produced reports on the spiders of Ynyslas Dunes and Cors Fochno, but sadly only the former report apparently still survives. The Ynyslas list is by no means a complete appraisal of the dune fauna but, nonetheless, several scarce species were recorded, such as Philodromus fallax and Marpissa nivoyi. Ynyslas was also the focus for a study of winter arthropods (Miles 1983) which provided a short but useful list of spiders, including Mecopisthes peusi.

This sparse background of recording meant that much of the county was unexplored territory and it was inevitable that the appearance of Ceredigion's resident 'Spider-man' would signal an explosion of exciting discoveries and new county records. Kefyn Catley 'announced' his arrival with the discovery of Singa hamata on Cors Caron (Catley 1986b), one of only two known localities in Wales for this handsome orb-weaver. Over the next few years Kefyn recorded a host of species new to Wales and considerably extended the Ceredigion list to bring it towards today's respectable total of 300 species. His enthusiasm for spiders also sparked off an interest among other DIG members and it is largely due to Kefyn that this article has been possible. With his departure for foreign shores in 1989 the county was once

again left without a recognised arachnologist and the field is very much open for a budding enthusiast to step in and take up where Kefyn left off. Apart from casual recording, the main source of records is now likely to come from invertebrate surveys of specific sites carried out by the Countryside Council for Wales or the Dyfed Wildlife Trust. In the past this has led to an invaluable wealth of records, beginning with Fiona Evans' (1989) study of lowland heaths and continuing with the long-term invertebrate monitoring of Cors Fochno NNR. Pitfall-trapping on the Ystwyth and Rheidol shingles; the valley woodlands of Coed Rheidol NNR and Coed Nant Llolwyn; Ynyslas Dunes NNR; and Cors Caron NNR in recent years has also added useful records, but the longest data set has come from the extensive sampling of Dyfed peatlands carried out by the Welsh Peatland Invertebrate Survey (NCC). The results of this survey have still to be analysed but it is already clear that many preconceptions regarding spider distribution in Wales will have to be discarded in light of this new information. There has been a long tradition of arachnological study in Britain but undoubtedly there is still a great deal to be learnt about spiders in Dyfed. This paper provides a sound foundation for future work but there will certainly be many major advances in our knowledge of distribution and habitat preferences as more people become involved in recording Dyfed's spider fauna.

Acknowledgments

The authors are grateful to Dr Peter Holmes for making available information from the Welsh Peatland Invertebrate Survey. Thanks are also due to Mike Bailey, Kefyn Catley, Cynthia Merrett, Dr Peter Merrett, Clifford Smith and Alex Williams for the identification of specimens. John Bratton (JNCC) kindly provided details of the conservation status of British spiders.

Note.

The checklist which follows is arranged according to Roberts (1987). This differs in some respects from the official checklist accepted by the British Arachnological Society but is adopted here as it is currently the only such list which is widely available. Roberts chiefly differs from the BAS version in his taxonomic treatment of family groupings but he has also 'lumped' together some species which are considered as distinct by other authorities. This affects three species recorded in Dyfed and, to avoid possible confusion in the future, it can be stated that:

(1) Pardosa arenicola (O.P.- Cambridge) has only been reported once, from Pembs. (Bristowe 1939), whilst P. agricola (Thorell) is widespread on river shingle in Cards, and Carms.

(2) All records of Pardosa agrestis (Westring) in the Dyfed vice-counties are referable to P. purbeckensis (F.O.P.-Cambridge), which is not uncommon on saltmarshes.

(3) Oedothorax tuberosus (Blackwall), considered by Roberts to be a form of O. gibbosus (Blackwall), has been widely recorded in each of the three vice-counties, as has the nominate form.

A CHECKLIST OF THE SPIDERS OF DYFED [THE VICE-COUNTIES OF CARMARTHENSHIRE (44), PEMBROKESHIRE (45) and CARDIGANSHIRE (46)].

	VICE COUNTIES		
ATYPIDAE	-	45	-
<i>Atypus affinis</i> Eichwald			
AMAUROBIIDAE			
<i>Amaurobius fenestralis</i> (Stroem)	44	45	46
<i>Amaurobius similis</i> (Blackwall)	44	45	46
<i>Araurobius ferox</i> (Walckenaer)	44	45	46
DICTYNIDAE			
<i>Dictyna arundinacea</i> (Linnaeus)	44	45	46
<i>Dictyna uncinata</i> Thorell	44	-	-
<i>Dictyna latens</i> (Fabricius)	-	45	46
<i>Lathys humilis</i> (Blackwall)	-	45	-
<i>Argenna subnigra</i> (O.P.-Cambridge)	44	45	1 -
<i>Argenna patula</i> (Simon) [Nb]	44	-	-

OONOPIDAE			
<i>Oonops pulcher</i> Templeton	44	45	46
<i>Oonops domesticus</i> de Dalmas	44	-	-
DYSDERIDAE			
<i>Dysdera erythrina</i> (Walckenaer)	-	45	-
<i>Dysdera crocata</i> C.L.Koch	44	45	46
<i>Harpactea hombergi</i> (Scopoli)	44	45	46
SEGESTRIIDAE			
<i>Segestria senoculata</i> (Linnaeus)	44	45	46
PHOLCIDAE			
<i>Pholcus phalangioides</i> (Fuesslin)	44	45	46
GNAPHOSIDAE			
<i>Drassodes lapidosus</i> (Walckenaer)	-	45	46
<i>Drassodes cupreus</i> (Blackwall)	44	45	46
<i>Haplodrassus signifer</i> (C.L.Koch)	44	45	46
<i>Scotophaeus blackwalli</i> (Thorell)	-	45	46
<i>Zelotes lutetianus</i> (L.Koch) [Nb]	-	-	46
<i>Zelotes pusillus</i> (C.L.Koch)	-	45	46
<i>Zelotes electus</i> (C.L.Koch)	44	45	46
<i>Zelotes latreillei</i> (Simon)	44	45	46
<i>Zelotes apricorum</i> (L.Koch)	44	45	46
<i>Zelotes subterraneus</i> (C.L.Koch)	-	-	46
<i>Micaria pulicaria</i> (Sundevall)	44	45	46
CLUBIONIDAE			
<i>Clubiona corticalis</i> (Walckenaer)	44	45	-
<i>Clubiona reclusa</i> O.P.-Cambridge	44	45	46
<i>Clubiona stagnatilis</i> Kulczynski	-	45	46
<i>Clubiona norvegica</i> Strand [Nb]	44	-	46
<i>Clubiona pallidula</i> (Clerck)	-	45	46
<i>Clubiona phragmitis</i> (C.L.Koch)	44	45	46
<i>Clubiona terrestris</i> Westring	44	45	46
<i>Clubiona neglecta</i> O.P.-Cambridge	-	45	-
<i>Clubiona lutescens</i> Westring	44	-	46
<i>Clubiona compta</i> C.L.Koch	-	45	46
<i>Clubiona brevipes</i> Blackwall	44	45	46
<i>Clubiona trivialis</i> C.L.Koch	44	45	46
<i>Clubiona genevensis</i> L. Koch [R3]	-	45	-
<i>Clubiona diversa</i> O.P.-Cambridge	44	45	46
<i>Clubiona subtilis</i> L.Koch	44	45	46
<i>Cheiracanthium erraticum</i> (Walckenaer)	44	45	46
<i>Agroeca proxima</i> (O.P.-Cambridge)	44	45	46
<i>Agroeca inopina</i> O.P.-Cambridge	44	-	-
<i>Agroeca striata</i> Kulczynski [Nb]	-	-	46
<i>Scotina gracilipes</i> (Blackwall)	-	45	46
<i>Liocranum rupicola</i> (Walckenaer) [Nb]	44	-	-
<i>Phrurolithus festivus</i> (C.L.Koch)	-	45	46
ZORIDAE			
<i>Zora spinimana</i> (Sundevall)	44	45	46
<i>Zora nemoralis</i> (Blackwall) [Nb]	-	-	46
ANYPHAENIDAE			
<i>Anyphaena accentuata</i> (Walckenaer)	44	45	46

THOMISIDAE

Misumena vatia (Clerck)	44	45	46
Xysticus cristatus (Clerck)	44	45	46
Xysticus audax (Schrank)	44	45	-
Xysticus kochi Thorell	-	45	46
Xysticus erraticus (Blackwall)	44	45	46
Xysticus ulmi (Hahn)	44	-	46
Oxyptila sanctuaria (O.P.-Cambridge)	-	45	46
Oxyptila scabricula (Westring) [Nb]	-	45	-
Oxyptila trux (Blackwall)	44	45	46
Oxyptila simplex (O.P.-Cambridge)	44	-	-
Oxyptila atomaria (Panzer)	44	45	46
Philodromus dispar Walckenaer	44	45	46
Philodromus aureolus (Clerck)	44	45	46
Philodromus praedatus O.P.-Cambridge [Nb]	-	-	46
Philodromus cespitum (Walckenaer)	44	45	46
Philodromus fallax Sundevall [Nb]	-	-	46
Thanatus striatus C.L.Koch	-	45	46
Tibellus maritimus (Menge)	44	45	46
Tibellus oblongus (Walckenaer)	44	45	46

SALTICIDAE

Salticus scenicus (Clerck)	44	45	46
Salticus cingulatus (Panzer)	44	-	-
Heliophanus cupreus (Walckenaer)	44	45	46
Heliophanus dampfi Schenkel [Rk]	-	-	46
Heliophanus flavipes (Hahn)	44	45	46
Marpissa nivoyi (Lucas) [Nb]	-	-	46
Neon reticulatus (Blackwall)	44	45	46
Euophrys frontalis (Walckenaer)	44	45	46
Euophrys lanigera (Simon)	44	-	-
Sitticus pubescens (Fabricius)	44	-	-
Evarcha falcata (Clerck)	44	45	46
Synageles venator (Lucas) [Na]	44	45	-

LYCOSIDAE

Pardosa agricola (Thorell)	44	45	46
Pardosa agrestis (Westring) = purbeckensis	44	45	46
Pardosa monticola (Clerck)	44	45	-
Pardosa palustris (Linnaeus)	44	45	46
Pardosa pullata (Clerck)	44	45	46
Pardosa amentata (Clerck)	44	45	46
Pardosa prativaga (L. Koch)	44	45	46
Pardosa nigriceps (Thorell)	44	45	46
Pardosa lugubris (Walckenaer)	44	45	46
Pardosa hortensis (Thorell)	-	-	46
Pardosa proxima (C.L.Koch)	44	45	46
Xerolycosa miniata (C.L.Koch)	44	45	46
Alopecosa pulverulenta (Clerck)	44	45	46
Alopecosa cuneata (Clerck)	-	45	-
Alopecosa accentuata (Latreille)	44	45	46
Trochosa ruricola (Degeer)	44	45	46
Trochosa terricola Thorell	44	45	46
Trochosa spinipalpis F.O.P.-Cambridge	44	45	46
Arctosa perita (Latreille)	44	45	46
Arctosa leopardus (Sundevall)	44	45	46
Arctosa cinerea (Fabricius) [Nb]	44	-	46
Pirata piscatorius (Clerck)	44	45	46
Pirata piraticus (Clerck)	44	45	46
Pirata tenuitarsis Simon	-	45	-
Pirata hygrophilus Thorell	44	45	46
Pirata uliginosus (Thorell)	44	45	46
Pirata latitans (Blackwall)	44	45	46

PISAURIDAE			
<i>Pisaura mirabilis</i> (Clerck)	44	45	46
<i>Dolomedes fimbriatus</i> (Clerck)	-	-	46
ARGYRONETIDAE			
<i>Argyroneta aquatica</i> (Clerck)	44	45	46
AGELENIDAE			
<i>Agelena labyrinthica</i> (Clerck)	44	45	46
<i>Textrix denticulata</i> (Olivier)	44	45	46
<i>Tegenaria saeva</i> Blackwall	44	45	46
<i>Tegenaria agrestis</i> (Walckenaer)	44	-	-
<i>Tegenaria domestica</i> (Clerck)	44	45	46
<i>Tegenaria silvestris</i> L.Koch	44	45	46
<i>Coelotes atropos</i> (Walckenaer)	44	45	46
<i>Cryphoeca silvicola</i> (C.L.Koch)	-	45	46
HAHNIIDAE			
<i>Antistea elegans</i> (Blackwall)	44	45	46
<i>Hahnia montana</i> (Blackwall)	44	45	46
<i>Hahnia nava</i> (Blackwall)	44	45	46
<i>Hahnia helveola</i> Simon	44	-	46
<i>Hahnia pusilla</i> C.L.Koch	44	-	46
MIMETIDAE			
<i>Ero cambridgei</i> Kulczynski	44	45	46
<i>Ero furcata</i> (Villers)	-	45	46
THERIDIIDAE			
<i>Episinus angulatus</i> (Blackwall)	44	45	46
<i>Euryopis flavomaculata</i> (C.L.Koch)	-	-	46
<i>Dipoena prona</i> (Menge) [Nb]	-	-	46
<i>Dipoena inornata</i> (O.P.-Cambridge) [Nb]	44	-	-
<i>Steatoda grossa</i> (C.L. Koch) [Nb]	44	45	-
<i>Steatoda phalerata</i> (Panzer)	44	-	46
<i>Steatoda bipunctata</i> (Linnaeus)	-	-	46
<i>Anelosimus vittatus</i> (C.L.Koch)	44	-	46
<i>Theridion sisypium</i> (Clerck)	44	45	46
<i>Theridion impressum</i> L. Koch	-	45	-
<i>Theridion varians</i> Hahn	44	45	-
<i>Theridion mystaceum</i> L.Koch	44	45	46
<i>Theridion instabile</i> O.P.-Cambridge	-	45	-
<i>Theridion bimaculatum</i> (Linnaeus)	44	45	46
<i>Theridion pallens</i> Blackwall	44	45	46
<i>Enoplognatha ovata</i> (Clerck)	44	45	46
<i>Enoplognatha latimana</i> Hippa & Oksala	-	45	-
<i>Enoplognatha thoracica</i> (Hahn)	-	45	46
<i>Enoplognatha crucifera</i> (Thorell) [Na]	44	45	-
<i>Robertus lividus</i> (Blackwall)	44	45	46
<i>Robertus arundineti</i> (O.P.-Cambridge)	44	45	46
<i>Robertus neglectus</i> (O.P.-Cambridge)	-	-	46
<i>Pholcomma gibbum</i> (Westring)	44	45	46
<i>Theonoe minutissima</i> (O.P.-Cambridge)	44	-	46
NESTICIDAE			
<i>Nesticus cellulanus</i> (Clerck)	44	45	46

TETRAGNATHIDAE

<i>Tetragnatha extensa</i> (Linnaeus)	44	45	46
<i>Tetragnatha montana</i> Simon	44	45	46
<i>Tetragnatha nigrita</i> Lendl	44	-	-
<i>Tetragnatha obtusa</i> C.L. Koch	44	-	-
<i>Pachygnatha clercki</i> Sundevall	44	45	46
<i>Pachygnatha degeeri</i> Sundevall	44	45	46
<i>Pachygnatha listeri</i> Sundevall	44	-	-
<i>Meta segmentata</i> (Clerck)	44	45	46
<i>Meta mengei</i> (Blackwall)	44	45	46
<i>Meta merianae</i> (Scopoli)	44	45	46
<i>Meta menardi</i> (Latreille)	44	45	-

ARANEIDAE

<i>Gibbaranea gibbosa</i> (Walckenaer)	44	-	46
<i>Araneus diadematus</i> Clerck	44	45	46
<i>Araneus quadratus</i> Clerck	44	45	46
<i>Araneus sturmi</i> (Hahn)	44	-	-
<i>Larinioides cornutus</i> (Clerck)	44	45	46
<i>Nuctenea umbratica</i> (Clerck)	44	45	46
<i>Agalenatea redii</i> (Scopoli)	44	45	46
<i>Neoscona adianta</i> (Walckenaer)	-	45	46
<i>Araniella cucurbitina</i> (Clerck)	44	45	46
<i>Araniella opistographa</i> (Kulczynski)	-	-	46
<i>Hypsosinga albobittata</i> (Westring)	-	-	46
<i>Hypsosinga pygmaea</i> (Sundevall)	44	45	46
<i>Singa hamata</i> (Clerck) [Nb]	-	-	46
<i>Cercidia prominens</i> (Westring)	-	-	46
<i>Zygiella x-notata</i> (Clerck)	44	45	46
<i>Zygiella atrica</i> (C.L.Koch)	44	45	46
<i>Mangora acalypha</i> (Walckenaer)	44	45	-
<i>Cyclosa conica</i> (Pallas)	44	45	46

THERIDIOSOMATIDAE

<i>Theridiosoma gemmosum</i> (L.Koch) [Nb]	44	45	46
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LINYPHIIDAE

<i>Ceratinella brevipes</i> (Westring)	44	45	46
<i>Ceratinella brevis</i> (Wider)	44	45	46
<i>Ceratinella scabrosa</i> (O.P.-Cambridge)	-	45	46
<i>Walckenaeria nudipalpis</i> (Westring)	44	45	46
<i>Walckenaeria obtusa</i> Blackwall	-	-	46
<i>Walckenaeria vigilax</i> (Blackwall)	44	45	46
<i>Walckenaeria antica</i> (Wider)	44	45	46
<i>Walckenaeria alticeps</i> (Denis)	44	-	46
<i>Walckenaeria nodosa</i> O.P.-Cambridge	44	45	46
<i>Walckenaeria incisa</i> (O.P.-Cambridge) [Nb]	-	-	46
<i>Walckenaeria cuspidata</i> (Blackwall)	44	45	46
<i>Walckenaeria furcillata</i> (Menge)	-	-	46
<i>Walckenaeria atrotibialis</i> (O.P.-Cambridge)	44	45	46
<i>Walckenaeria unicornis</i> O.P.-Cambridge	44	45	46
<i>Walckenaeria monoceros</i> (Wider)	44	-	46
<i>Walckenaeria kochi</i> (O.P.-Cambridge)	44	-	46
<i>Walckenaeria acuminata</i> Blackwall	44	45	46
<i>Dicymbium nigrum</i> (Blackwall)	44	45	46
<i>Dicymbium tibiale</i> (Blackwall)	44	45	46
<i>Entelecara acuminata</i> (Wider)	44	-	-
<i>Entelecara erythropus</i> (Westring)	44	45	46
<i>Hylyphantes graminicola</i> (Sundevall)	-	45	-
<i>Gnathonarium dentatum</i> (Wider)	44	45	46

<i>Gongylidium rufipes</i> (Sundevall)	44	45	46
<i>Dismodicus bifrons</i> (Blackwall)	44	45	46
<i>Hypomma bituberculatum</i> (Wider)	44	45	46
<i>Hypomma cornutum</i> (Blackwall)	-	45	-
<i>Metopobractus prominulus</i> (O.P.-Cambridge)	44	45	46
<i>Baryphyma pratense</i> (Blackwall)	-	-	46
<i>Baryphyma gowerense</i> (Locket) [Rk]	44	-	46
<i>Baryphyma trifrons</i> (O.P.-Cambridge)	-	45	46
<i>Gonatium rubens</i> (Blackwall)	44	45	46
<i>Gonatium rubellum</i> (Blackwall)	44	45	46
<i>Maso sundevalli</i> (Westring)	44	45	46
<i>Maso gallicus</i> Simon [Na]	-	-	46
<i>Peponocranium ludicrum</i> (O.P.-Cambridge)	44	45	46
<i>Pocadicnemis pumila</i> (Blackwall)	44	45	46
<i>Pocadicnemis juncea</i> Locket & Millidge	44	45	46
<i>Hypselistes jacksoni</i> (O.P.-Cambridge)	44	45	46
<i>Oedothorax gibbosus</i> (Blackwall)	44	45	46
<i>Oedothorax fuscus</i> (Blackwall)	44	45	46
<i>Oedothorax agrestis</i> (Blackwall)	44	45	46
<i>Oedothorax retusus</i> (Westring)	44	45	46
<i>Oedothorax apicatus</i> (Blackwall)	44	45	46
<i>Trichopterna thorelli</i> (Westring)	-	45	46
<i>Pelecopsis parallela</i> (Wider)	44	45	46
<i>Pelecopsis menzei</i> (Simon)	-	-	46
<i>Pelecopsis nemoralis</i> (Blackwall)	-	45	46
<i>Silometopus elegans</i> (O.P.-Cambridge)	44	45	46
<i>Silometopus ambiguus</i> (O.P.-Cambridge)	44	-	-
<i>Mecopisthes peusi</i> Wunderlich [Nb]	-	-	46
<i>Cnephalogocotes obscurus</i> (Blackwall)	44	45	46
<i>Ceratinopsis romana</i> (O.P.-Cambridge) [Nb]	44	45	46
<i>Ceratinopsis stativa</i> (Simon)	-	45	-
<i>Tiso vagans</i> (Blackwall)	44	45	46
<i>Troxochrus scabriculus</i> (Westring)	-	45	46
<i>Minyriolus pusillus</i> (Wider)	-	-	46
<i>Tapinocyba praecox</i> (O.P.-Cambridge)	-	-	46
<i>Tapinocyba pallens</i> (O.P.-Cambridge)	-	-	46
<i>Satilatlas britteni</i> (Jackson) [Nb]	44	45	46
<i>Thyreosthenius parasiticus</i> (Westring)	44	-	46
<i>Monocephalus fuscipes</i> (Blackwall)	44	45	46
<i>Monocephalus castaneipes</i> (Simon)	44	45	46
<i>Lophomma punctatum</i> (Blackwall)	44	45	46
<i>Gongylidiellum vivum</i> (O.P.-Cambridge)	44	45	46
<i>Gongylidiellum latebricola</i> (O.P.-Cambridge)	-	-	46
<i>Micrargus herbigradus</i> (Blackwall)	44	45	46
<i>Micrargus subaequalis</i> (Westring)	44	45	46
<i>Glyphesis servulus</i> (Simon) [Rk]	44	45	-
<i>Erigonella hiemalis</i> (Blackwall)	44	45	46
<i>Erigonella ignobilis</i> (O.P.-Cambridge)	44	45	46
<i>Savignya frontata</i> (Blackwall)	44	45	46
<i>Diplocephalus cristatus</i> (Blackwall)	44	45	46
<i>Diplocephalus permixtus</i> (O.P.-Cambridge)	44	45	46
<i>Diplocephalus latifrons</i> (O.P.-Cambridge)	44	45	46
<i>Diplocephalus picinus</i> (Blackwall)	44	45	46
<i>Araeoncus humilis</i> (Blackwall)	-	45	46
<i>Araeoncus crassiceps</i> (Westring)	44	45	46
<i>Typhocrestus digitatus</i> (O.P.-Cambridge)	-	45	46
<i>Milleriana inerrans</i> (O.P.-Cambridge)	44	45	-
<i>Diplocentria bidentata</i> (Emerton)	-	-	46
<i>Erigone dentipalpis</i> (Wider)	44	45	46
<i>Erigone promiscua</i> (O.P.-Cambridge)	-	45	46
<i>Erigone atra</i> (Blackwall)	44	45	46

Erigone arctica (White)	-	45	46
Erigone longipalpis (Sundevall)	44	45	46
Rhaebothorax morulus (O.P.-Cambridge)	-	-	46
Leptorhoptrum robustum (Westring)	44	45	46
Drepanotylus uncatus (O.P.-Cambridge)	44	45	46
Leptothrix hardyi (Blackwall)	44	-	46
Hilaira excisa (O.P.-Cambridge)	44	45	46
Halorates reprobis (O.P.-Cambridge)	44	45	46
Halorates distinctus (Simon)	-	-	46
Caviphantes saxetorum (Hull) [Na]	44	-	46
Jacksonella falconeri (Jackson)	-	45	-
Ostearius melanopygius (O.P.-Cambridge)	44	45	46
Aphileta misera (O.P.-Cambridge)	44	45	46
Porrhomma pygmaeum (Blackwall)	44	45	46
Porrhomma convexum (Westring)	44	45	-
Porrhomma pallidum Jackson	44	-	46
Porrhomma oblitum (O.P.-Cambridge) [Nb]	44	-	-
Porrhomma montanum Jackson	-	-	46
Agyneta subtilis (O.P.-Cambridge)	44	45	46
Agyneta decora (O.P.-Cambridge)	44	45	46
Agyneta cauta (O.P.-Cambridge)	44	45	46
Agyneta olivacea (Emerton)	44	45	46
Agyneta conigera (O.P.-Cambridge)	44	45	46
Agyneta ramosa Jackson	-	45	46
Meioneta rurestris (C.L.Koch)	44	45	46
Meioneta gulosa (L.Koch)	-	-	46
Meioneta beata (O.P.-Cambridge)	-	45	-
Meioneta mollis (O.P.-Cambridge)	-	45	46
Meioneta saxatilis (Blackwall)	44	45	46
Microneta viaria (Blackwall)	44	45	46
Maro minutus O.P.-Cambridge	-	-	46
Maro lepidus Casemir [R3]	-	-	46
Centromerus sylvaticus (Blackwall)	44	-	-
Centromerus prudens (O.P.-Cambridge)	-	45	46
Centromerus arcanus (O.P.-Cambridge)	-	-	46
Centromerus dilutus (O.P.-Cambridge)	44	45	46
Tallusia experta (O.P.-Cambridge)	44	45	46
Centromerita bicolor (Blackwall)	44	45	46
Centromerita concinna (Thorell)	44	45	46
Oreonetides vaginatus (Thorell)	-	45	-
Saaristoa abnormis (Blackwall)	44	45	46
Saaristoa firma (O.P.-Cambridge)	44	-	46
Macrargus rufus (Wider)	44	45	46
Bathyphantes approximatus (O.P.-Cambridge)	44	45	46
Bathyphantes gracilis (Blackwall)	44	45	46
Bathyphantes parvulus (Westring)	44	45	46
Bathyphantes nigrinus (Westring)	44	45	46
Bathyphantes setiger F.O.P.-Cambridge	-	45	46
Kaestneria dorsalis (Wider)	44	-	46
Kaestneria pullata (O.P.-Cambridge)	44	45	46
Diplostyla concolor (Wider)	44	45	46
Poecilometes globosa (Wider)	44	45	46
Drapetisca socialis (Sundevall)	-	45	46
Tapinopa longidens (Wider)	44	45	46
Floronia bucculenta (Clerck)	44	45	46
Taranucnus setosus (O.P.-Cambridge)	44	45	46
Labulla thoracica (Wider)	44	45	46
Stemonyphantes lineatus (Linnaeus)	44	45	46
Bolyphantes luteolus (Blackwall)	44	45	46

<i>Lepthyphantes nebulosus</i> (Sundevall)	-	45	-
<i>Lepthyphantes leprosus</i> (Ohlert)	-	45	46
<i>Lepthyphantes minutus</i> (Blackwall)	44	45	46
<i>Lepthyphantes alacris</i> (Blackwall)	44	45	46
<i>Lepthyphantes whymperi</i> F.O.P.-Cambridge [Nb]	-	-	46
<i>Lepthyphantes obscurus</i> (Blackwall)	44	45	-
<i>Lepthyphantes tenuis</i> (Blackwall)	44	45	46
<i>Lepthyphantes zimmermanni</i> Berktau	44	45	46
<i>Lepthyphantes cristatus</i> (Menge)	44	45	46
<i>Lepthyphantes mengei</i> Kulczynski	44	45	46
<i>Lepthyphantes flavipes</i> (Blackwall)	44	45	46
<i>Lepthyphantes tenebricola</i> (Wider)	44	45	46
<i>Lepthyphantes ericaeus</i> (Blackwall)	44	45	46
<i>Lepthyphantes pallidus</i> (O.P.-Cambridge)	44	45	46
<i>Helophora insignis</i> (Blackwall)	44	45	46
<i>Linyphia triangularis</i> (Clerck)	44	45	46
<i>Linyphia hortensis</i> Sundevall	44	45	46
<i>Neriere montana</i> (Clerck)	44	45	46
<i>Neriere clathrata</i> (Sundevall)	44	45	46
<i>Neriere peltata</i> (Wider)	44	45	46
<i>Microlinyphia pusilla</i> (Sundevall)	44	45	46
<i>Microlinyphia impigra</i> (O.P.-Cambridge)	-	45	46
<i>Allomengea scopigera</i> (Grube)	44	45	46
<i>Allomengea vidua</i> (L.Koch)	44	45	46
[TOTAL SPECIES - 351]	263	273	300

NOTABLE AND RARE SPIDERS OCCURRING IN DYFED

Knowledge of the distribution of spiders in Britain, as with most invertebrates, is still imperfect but the long tradition of recording does allow an assessment to be made of those species which are rarely found, geographically restricted, or particularly threatened by pressures on their specialised habitats. Gradings have been assigned to the scarcer species by the Nature Conservancy Council as part of their Invertebrate Site Register and these notes incorporate the latest situation as considered by the Joint Nature Conservation Committee, a successor agency of the NCC. An account of the Nationally Notable spiders of Britain has already appeared (Merrett 1990) and the forthcoming Red Data Book of non-insect invertebrates will include a review of the rarer species.

Argenna patula (Simon) [Notable B]. A coastal species, usually found amongst strandline litter on saltmarshes and estuaries. A single male was collected at Pembrey Burrows (21/41-99-, VC44) on 20 May 1987 (IK Morgan).

Zelotes lutetianus (L. Koch) [Notable B]. One of several spiders which occur both on sand dunes and marshes, this is a scarce species nationally with few modern records. The first record for Wales was of a female taken under stones on the shingle beach at Cei Bach (22/414599, VC46) by KM Catley (Catley 1987). Pitfall-trapping from 1986-1990 on the raised mire at Cors Fochno (22/63-91-, VC46) has shown it to be present annually in small numbers and it was also found by the Welsh Peatland Invertebrate Survey (W.P.I.S.) on Cors Caron (22/68-64-, VC46) in 1987.

Clubiona norvegica Strand [Notable B]. A northern and western species of upland acidic mires, W.P.I.S. has shown this to be a widespread spider on suitable peatlands in Wales. It has been recorded from six sites in Ceredigion and at Cors Bryn-mawr (22/671501) in Carmar.

Clubiona genevensis L. Koch [RDB 3]. The only Dyfed records are for Ramsey and Skokholm Islands (VC45) by Bristowe (1935). His comments are rather ambiguous but it appears that he found adult(s) on Ramsey but only immatures on Skokholm. *C. genevensis* is a rare species of coastal heath and grasslands in south-west Britain and these are the only records for Wales.

Agroeca striata Kulczynski [Notable B]. Recorded as new to Wales in 1986 (Catley 1987) from specimens collected in pitfall-traps on the raised mire of Cors Fochno (22/63—91-, VC46) and it has appeared commonly each year since then. Nationally it is a widespread but local inhabitant of wetlands in southern Britain and it is curious that there were no records of A. striata anywhere in Wales during the W.P.I.S. In 1987 eight specimens were taken in pitfall-traps on river shingle on the Afon Ystwyth (22/595765, VC46) and a female was collected on river shingle further upstream (22/638749, VC46) in 1988 (AP Fowles).

Liocranum rupicola (Walckenaer) [Notable B]. This species is recorded by Merrett (1974) as occurring in Carmarthenshire but no further information is available. It is a local, chiefly south-western, species in Britain, occurring under stones and in rock crevices in dry habitats - the disused limestone quarries of Carms. would provide suitable localities for this species.

Zora nemoralis (Blackwall) [Notable B]. A northern species of woodlands where it occurs amongst moss and heather. A single male was taken in a pitfall-trap in the sessile oakwood of Coed Rheidol NNR (22/742779, VC46) in June 1988.

Oxyptila scabricula (Westring) [Notable B]. Typically associated with sandy heathland in southern England, the only Welsh record is for Skomer (VC45) in 1929 (Bristowe 1929). Unfortunately there is no information regarding numbers present or the habitat in which they occurred.

Philodromus praedatus O.P.-Cambridge [Notable B]. This species was only recognised as distinct from P. aureolus in 1974 and its distribution in Britain is likely to be incompletely known at present. The only Welsh record to date is a single female collected by MP Bailey on 22 June 1991 from a roadside wall in Eglwys-fach (22/699964, VC46). P. praedatus usually occurs on tree trunks in oakwoods and this individual has presumably strayed from the adjacent oaks of Coed Cymerau.

Philodromus fallax Sundevall [Notable B]. A beautifully camouflaged spider of foredunes around the coast of England and Wales. The only Dyfed records are for Ynyslas Dunes (22/60—93—, VC46) where it was found in 1977 by E Jones and in 1990 by AP Fowles (Fowles 1991), but it should also occur in other dune systems in Dyfed.

Heliophanus dampfi Schenkel [RDB K]. This species was recorded as 'new to Britain' from a single female taken in a pitfall-trap on Cors Fochno (22/63-91-, VC46) in September 1989. Subsequently it was discovered that KM Catley had swept a female from heather on Cors Fochno in June 1986. It is restricted to raised mires in its European localities but no specimens were found in Wales during the W.P.I.S. There are no other British records so far but as it can be confused with H. flavipes it may have been overlooked by other workers and the situation may change when an account of its discovery has been published (Williams, In press).

Marpissa nivoyi (Lucas) [Notable B]. A distinctive spider, usually found amongst marram on sand dunes but also on soft-rock cliffs in southern England and occasionally occurring inland on fens. It is relatively common on Ynyslas Dunes (22/60-93-, VC46) and singletons have been captured on Cors Fochno (22/63-91-, VC46) in 1988, 1989 and 1990.

Synageles venator (Lucas) [Notable A]. Mapped as occurring in Pembrokeshire by Merrett (1974), the only other Dyfed record is of a single female captured on Pembrey Burrows (21/41-99-, VC44) on 11 July 1987 (IK Morgan). This convincing ant-mimic is known from a few of the East Anglian fens but is otherwise restricted to sand dunes in southern England and along the coast of south Wales.

Arctosa cinerea (Fabricius) [Notable B]. Perhaps the most impressive member of Dyfed's spider fauna, large females can be an alarming discovery when turning stones on river shingle. Not uncommon along the banks of the Rheidol and Ystwyth (VC46) and Tywi (VC44) but seemingly absent from the smaller river systems. There are no records for the Teifi so far, despite several searches, but there is plenty of suitable habitat unexplored.

Dipoena prona (Menge) [Notable B]. A single male taken in a pitfall-trap on Cors Fochno NNR (22/63-91-, VC46) in April 1989 (Fowles 1990) was the first Welsh record and the only other record since then is of another male captured by MP Bailey on Cors Fochno on 20

June 1991. It is a scarce species of dry, sparsely vegetated habitats in southern England and its occurrence on the raised mire at Cors Fochno is rather surprising.

Diploina inornata (O.P.-Cambridge) [Notable B]. Recorded on 27 March 1991 from coastal heath at Dolwen Point (22/233078, VC44) by IK Morgan, the only Dyfed record. D. inornata is a local species in Britain, occurring chiefly on dry heathland.

Enoplognatha latimana Hippa & Oksala. Not discussed by Merrett (1990) as a 'Nationally Notable' species but this is clearly an oversight as it is only known from 36 10-km squares in Britain (Oxford 1991). Although it was only separated as a distinct species from E. ovata in the early 1980's it does appear to have a restricted distribution, being currently confined to coastal districts in East Anglia, Dorset, Hants and South Wales. It was first found in Dyfed in 1987 at Orielson (11/95-99-, VC45) and subsequently in many sites along the South Pembrokeshire coast.

Enoplognatha crucifera (Thorell) [Notable A]. Mapped as occurring in Carmarthenshire by Merrett (1974), the only other Dyfed record is of a single specimen taken by D Nellist on the saltmarsh at West Williamston (22/02-05-, VC45) in August 1990. It is restricted to saltmarshes in Britain where the adults occur amongst strandline litter.

Singa hamata (Clerck) [Notable B]. Recorded as new to Dyfed on 13 October 1985 when an adult female was collected by KM Catley on Cors Caron NNR (22/683622, VC46) (Catley 1986b). This local species of wet heaths and damp pastures was subsequently found to be widely distributed on all three of the raised bogs at Cors Caron. The only other Welsh site is a single locality in Denbighshire.

Theridiosoma gemmosum (L. Koch) [Notable B]. An uncommon spider of fens in southern Britain, but possibly overlooked on account of its diminutive size. There are records from eight sites in the three vice-counties (chiefly from pitfall-trapping carried out by W.P.I.S.), mainly for late June and July.

Walckenaeria incisa (O.P.-Cambridge) [Notable B]. Little is known about the habitat requirements of this widespread but scarce spider. The sole Dyfed record is of a single female captured on the shingle heath at Llanafan (22/695717, VC46) on 22 Feb 1987 by KM Catley (Fowles & Chater 1990).

Baryphma gowerense (Locket) [RDB K]. Prior to the W.P.I.S. this was considered to be a very rare spider known only from upper saltmarsh habitats on the Gower dunes and a valley fen in Norfolk. W.P.I.S. recorded B. gowerense from a number of fens in Wales, including a singleton at Ynys Eidiol (22/672952, VC46) in 1987 and six specimens at Llannon (22/545085, VC44) in 1989.

Maso gallicus Simon [Notable A]. Generally found in fens and on calcareous grassland in the East Midlands, four specimens collected by W.P.I.S. on Molinia mires around the margins of the Dyfi estuary (22/69, VC46) in 1987 (Catley 1990) and a male taken by MP Bailey on Cors Fochno (22/63-91-, VC46) on 16 June 1991 represent the only Welsh records for this nationally restricted spider.

Mecopisthes peusi Wunderlich [Notable B]. Relatively common on sandy heathland in southern England, M. peusi is confined to sand dunes in Wales. The only records for Dyfed are from Ynyslas Dunes (22/60-93-, VC46) where it has been taken in recent years by PM Miles (Miles 1983) and KM Catley (Catley 1986c).

Ceratinopsis romana (O.P.-Cambridge) [Notable B]. Recorded widely from sand dunes around the coasts of England and Wales, C. romana is known from three sites in Dyfed - Pembrey Burrows (22/41-99-, VC44) by IK Morgan on 30 March 1989; Freshwater West (11/88-99-, VC45) in August 1990 by S Dobson; and Ynyslas Dunes (22/60-93-, VC46) on 3 April 1988 by AP Fowles. Specimens recorded by W.P.I.S. on the upland basin mire of Cors Llyn Farch (22/595635, VC46) seem most unlikely and require confirmation.

Satilatlas britteni (Jackson) [Notable B]. A western species of mires and saltmarshes, S. britteni has been recorded widely in Wales by W.P.I.S. and will probably be downgraded from its Notable status. There are Dyfed records for one site in Carmarthen, two in Pembrokeshire, and seven in Cardiganshire, all of which are acidic, chiefly upland, mires and there are no records as yet from Dyfed's saltmarshes.

Glyphesis servulus (Simon) [RDB KI. Another of the W.P.I.S. discoveries, (having previously been known from only three sites in England), this tiny spider was found at seven sites in Wales, all of which are Molinia dominated mires and fens. In Dyfed G. servulus was taken on the raised mire of Cors Goch Llanllwch (22/363186, VC44), the raised mire at Esgyrn Bottom (12/968346, VC45) and the valley fen of Llangloffan Fen NNR (12/907317, VC45) (Catley 1990).

Caviphantes saxetorum (Hull) [Notable A]. One of the specialities of Dyfed's river shingle habitats, C. saxetorum has been recorded widely from the Rheidol and Ystwyth in Cards. (AP Fowles) and on the Tywi in Carms. (Cooke & Merrett 1967). In common with the distribution of its habitat, Caviphantes is a northern and western species in Britain but it is undoubtedly under-recorded as it spends its life beneath large stones embedded in shingle banks where the spider constructs a small web in an air pocket. As with Arctosa cinerea, it does not appear to be present along smaller river systems and the lack of records from the Teifi is probably a reflection of recorder effort.

Porrhomma oblitum (O.P.- Cambridge) [Notable B]. A scarce species of wet woodland, the single Dyfed record is of a specimen collected at Ffrwd Fen (22/420025, VC44) by W.P.I.S. on 27 June 1989.

Maro lepidus Casimir [RDB 3]. The few British records of M. lepidus are for mires and fens in northern England and Wales. The only Dyfed record is of a single female collected by W.P.I.S. on the river fen at Cors Caron NNR (22/690635, VC46) on 29 June 1987.

Lepthyphantes whympersi F.O.P.-Cambridge [Notable B]. A montane spider, usually found above 700m asl on mountains in N. Wales, the Lake District and Scotland. Bristowe (1939) reports that L. whympersi occurs on Pumlumon (22/789869, VC46) at 2409' but Goodier (1967) lists no other records for Dyfed and recent collections of spiders on the Pumlumon summit have failed to re-find the species.

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OXFORD, GS (1991) - The distribution and ecology of *Enoplognatha ovata* and *E. latimana*. Spider Recording Scheme Newsletter 10: 3.

ROBERTS, MJ (1987) - The spiders of Great Britain and Ireland. Vol. 2. Harley Books, Colchester.

SAGE, BL (1955) - Notes on some Arachnida recorded in Wales in 1954. Nature in Wales 1(4): 174-176.

SUTCLIFFE, S (1987) - Invertebrate recording on Skomer Island. DIG Newsletter 6: 2.

THOMAS, JD (1962) - The food and growth of brown trout *Salmo trutta* L. and its feeding relationships with the salmon parr *Salmo salar* L. and the eel *Anguilla anguilla* (L.) in the River Teify, West Wales. J. Anim. Ecol. 31: 175-205.

THOMPSON, M (1924) - The soil population: an investigation of the biology of the soil in certain districts of Aberystwyth. Ann. App. Biol. 11: 349-394.

WALLACE, ID (1986) - Three new vice-county spider records. Newsl. Br. arachnol. Soc. 46: 4.

WILD, AM (1952) - Additions to the known spider fauna of Glamorgan, Carmarthen, Monmouth and other counties in the British Isles. Trans. Cardiff Nats. Soc. 80: 8-11.

WILLIAMS, SA (In Press) - *Heliophanus dampfi* Schenkel (Salticidae) in mid Wales and new to Britain. Newsl. Br. arachnol. Soc.

WILLIAMSON, MH (1948) - The habitat distribution of Lycosids (Araneae) on Skokholm. Skokholm Bird Observatory Report 1948.

WILLIAMSON, MH (1949) - A preliminary note on the ecology of Lycosids (Araneae). Ent. mon. Mag. 85: 92-93.

DYFED INVERTEBRATE BIBLIOGRAPHY, 1990

BRATTON, JH - A review of the scarcer Ephemeroptera and Plecoptera of Great Britain. Research & Survey in Nature Conservation No. 29. Nature Conservancy Council, Peterborough. [Records of four species of stoneflies and mayflies from Dyfed are discussed.]

CATLEY, KM - The Welsh Peatland Invertebrate Survey: an interim note on spider records. Newsl. Br. arachnol. Soc. 57: 2-3.

[Reports the occurrence of seven rare species encountered in Pembs. and Cards, during the NCC investigation of peatland faunas.]

CHANDLER, P - Notes on *Macrocera* Meigen (Mycetophilidae, Keroplatidae) including *M. nigropicea* Lundstrom new to Britain. Dipterists Digest 3: 27-31.

[A description of this addition to the British fungus-gnat fauna, which has been found at two sites in Cumbria and three in Wales, inc. Rhos Rydd (VC46). Elsewhere it is only known from bogs in Russian Lapland and Iceland.]

CLEMENTS, DK - Provisional distribution maps for *Leopoldius* species in Britain (Diptera: Conopidae), with some comments on the known biology. Dipterists Digest 7: 34-38.

[Mentions that a specimen of *L. brevirostris* was taken in Pembs. in 1948, one of only eleven British records for this rare fly.]

DRAKE, M - Interesting recent records. Larger Brachycera Recording Scheme Newsletter 7: 5-6.

[Includes *Haematopota grandis* from Carms., a scarce horsefly of saltmarshes.]

FOSTER, GN (ed.) - Records Received. Balfour-Browne Club Newsletter 48: 19-20.

[Nine species of water beetles reported from the three Dyfed vice-counties.]

[FOWLES, AP] - Butterflies in Ceredigion. Dyfed Wildlife Trust Bulletin 52: 10.

[A curious abstract of summary information contained in an unpublished report on butterfly distribution in VC46.]

FOWLES, AP - The Invertebrates of Aberporth Cliffs SSSI. Sanctuary (M.O.D.) 19: 18.

[A copy of the article in DIG 14: 19-20.]

FOWLES, AP & OWEN, JA - *Haploglossa picipennis* (Gyllenhal) (Col., Staphylinidae) in the nests of Red Kites. Entomologist's Record 102: 186-187.

[An account of the occurrence of this scarce rove-beetle in Kite nests from mid-Wales.]

GLADMAN, J - Letter from Wales. Leicestershire Entomological Society Newsletter 5: 7. [Records small pearl-bordered fritillaries at Cwm Tydu, VC46.]

GOLDIE-SMITH, EK - Distribution maps for Dixidae in Great Britain and Ireland. Dipterists Digest 3: 8-26.

[Twelve of the fourteen British species of meniscus midge are mapped as occurring in Dyfed.]

HAES, ECM (ed.) - Orthoptera Recording Scheme Newsletter 15; pages 1 & 7.

[Reports *C. brunneus* and *F. aricularia* from Cardigan Island and *M. thalassinum* from the Teifi Valley (VC46). The reference to *Stethophyma grossum* in VC46 is an error as the specimen referred to is reputed to come from Arthog Bog, Merioneth, and was subsequently found to be *Omocestus viridulus* (ECM Haes, pers. comm.).]

HARPER, Dr. MW - Lepidoptera records in Wales and Scotland. Ent. Rec. 102; 243-244.

[Reports six scarce species of micro-lepidoptera recorded in VC46 during the 1980's.]

HOLMES, PR, BOYCE, DC & REED, DK - *Hadrognathus longipalpis* (Mulsant & Rey) (Col., Staphylinidae) in South Wales. Br. J. ent. nat. hist. 3: 192.

[This small rove-beetle was previously only known from one site in Cumbria but was found in eight peatland sites in S. Wales, inc. three in VC44, by the Welsh Peatland Invertebrate Survey.]

HYATT, KH - Mites associated with terrestrial beetles in the British Isles. Ent. mon. Mag. 126: 133-147.

[Includes record of *Scarabaspis inexpectatus* collected from the dung-beetle *Aphodius fossor* at Llyn Glandwyn (=Glandwgan?), VC46.]

KIRBY, P - Notes on the habits and habitats of *Psectra* diptera. Neuro News 7: 4-10.

[A thorough account of the British records of this elusive, and practically flightless, lacewing; includes records from two sites in VC44 and two in VC46.]

MERRETT, P - A review of the Nationally Notable spiders of Great Britain. Contract Surveys No. 127. Nature Conservancy Council, Peterborough.

[Includes records of five scarce species in VC44, five in VC45 and ten in VC46.]

MILES, PM - Early occurrence of red admiral *Vanessa atalanta* (L.) in Cardiganshire in 1990. Ent. Rec. 102: 298-299.

[Records for Feb & March 1990 and also notes humming-bird hawkmoths in VC46.]

MILES, PM - New Welsh records of *Boreus hyemalis* (L.) (Mecoptera). Ent. mon. Mag. 126: 153-155.

[An account of the snow flea in the Llanafan district, VC46.]

MILES, PM - Dwarfism in Heterocera - physiological response to climatic change in mid- Wales 1989. Ent. Rec. 102: 182-183.

[Measurements of twelve species of common moths trapped at Cnwch Coch, VC46, suggest that the mild climate of 1989 might have induced dwarfism.]

MORGAN, IK - *Thereva lunulata* in Carmarthenshire. Larger Brachycera Recording Scheme Newsletter 7: 4.

[An account of the discovery of this rare stilleto fly on river shingle on the Tywi at Llanwrda, V44.]

MORGAN, IK - Butterflies and moths in Carmarthenshire. Dyfed Wildlife Trust Bulletin 53: 11.

[An appeal for Lepidoptera records for VC44.]

MORGAN, IK - The Machynys Ponds - an important local wildlife site threatened by development. Llanelli Nats. Newsletter (Summer 1990). pp 4-5.

[A discussion of the threats facing this unique series of coastal ponds, including a summary of the range of scarce invertebrates which inhabit the ponds and their rich marginal fens.]

MORGAN, IK - *Oxidus gracilis* new to Dyfed. Brit. Myriapod Group Newsletter No. 12 (March 1990). p3.

[An account of the occurrence of this tropical millipede in the hothouses at UCW Aberystwyth, VC46.]

- MORGAN, IK - Carms. butterflies and moths, 1990. Llanelli Nats. Newsletter (Winter 1990-1991), pp4-II.
[Comprehensive review of Lepidoptera recording in VC44 during 1990.]
- MORGAN, MJ - Recording in Wales - Part 3. Neuro News 5: 6-8.
[Distribution maps for the nine species of lacewings in the genus *Hemerobius* known from Wales, eight of which are recorded from Dyfed.]
- MORGAN, MJ - Recording in Wales: Part 4. Neuro News 7: 12-13.
[Distribution maps for lacewings of the genus *Wesmaelius*, of which three species are recorded from the Dyfed vice-counties.]
- MORRIS, MG - Orthocerous weevils. Handbooks for the identification of British Insects. Vol. 5, Part 16. Royal Entomological Society, London.
[Standard RES key to Apionidae and related families. Distribution notes relate to many species from Wales in general and there are specific county records for *Apion aethiops* (VC44), and *A. stolidum*, *A. confluens* and *A. viciae* from VC45.]
- ORMEROD, SJ, WEATHERLEY, NS & MERRETT, WJ - The influence of conifer plantations on the distribution of the golden-ringed dragonfly *Cordulegaster boltoni* in upland Wales. Biol. Cons. 53: 241-251.
[Investigation of streams in the Upper Tywi catchment reveals *C. boltoni* absent from afforested areas.]
- PLANT, CW - Neuroptera in the Rothamsted light traps in 1988. Rothamsted Insect Survey Light Trap Newsletter 1990, pp6-8.
[Includes records of twelve species collected in the RIS traps at Aberystwyth, Aberporth and Tregaron in VC46.]
- POLLET, M - Two *Hercostomus* (*Gymnopternus*) species new to Great Britain. Dipterists Digest 7: 30-33.
[Includes a record of *H. assimilis*, a relatively common dolichopodid fly, from Pembrey Forest, VC44.]
- RILEY, AM - Second brood records of *Lacanobia thalassina* (Lep., Noctuidae), the pale-shouldered brocade, from Rothamsted Insect Survey light traps. Ent. Rec. 102: 248.
[Normally univoltine, this species is occasionally bivoltine and RIS records include two from Plas Gogerddan, VC46, in Sept 1982.]
- RILEY, AM - Delayed emergence in *Chloroclystis v-ata* Haworth (V-pug) (Lep., Geometridae). Ent. rec. 102: 38-39.
[Larvae of this common moth collected from RAE Aberporth (VC46) in Aug 1988 pupated in September but overwintered as developed adults inside the pupal skin.]
- SHAW, MR - More *Trigonalis hahnii* Spinola (Hym., Trigonalidae) in Norfolk. Ent. mon. Mag. 126: 86.
[Mentions that a specimen of this very rare parasitic wasp collected in VC45 in 1966 is in the BM(NH) Collection.]
- SQUIRES, R - Butterflies recorded at Ynys-hir in 1989. Ynys-hir Nature Reserve Report 1989. No. 11, pp21-22. RSPB, Sandy.
[Annual list of species with notes on the attempt to re-introduce brimstones to Ynys-hir, VC46.]
- SQUIRES, R - Dragonflies recorded in 1989. Ynys-hir Nature Reserve Report 1989. No. 11, p23. RSPB, Sandy.
[List of thirteen species recorded on RSPB Ynys-hir, VC46, in 1989.]
- WARING, P - Wildlife reports: Moths. British Wildlife 1(6): 360.
[Records the occurrence of the red-tipped clearwing in VC44.]

WEATHERLEY, NS & ORMEROD, SJ - The constancy of invertebrate assemblages in soft- water streams: implications for the prediction and detection of environmental change. J. App. Ecol. 27: 952-964.

[A statistical treatment of invertebrate samples collected from the Upper Tywi catchment, VC44.]

DYFED INVERTEBRATE BIBLIOGRAPHY, 1989 - ADDENDA.

WEATHERLEY, NS, RUTT, GP & ORMEROD, SJ - Densities of benthic macro-invertebrates in upland Welsh streams of different acidity and land use. Arch. Hydrobiol. 115: 417-431. [Studies on the aquatic invertebrates of the Upper Tywi catchment, VC44.]

THE INVERTEBRATE GROUPS OF BRITAIN

Mention has been made in past DIG Newsletters that other Invertebrate Groups have sprung up around England and Wales in the five years since the formation of the Dyfed Invertebrate Group. It is to be hoped that this trend continues and more invertebrate zoologists and general naturalists band together in other regions of the country to strengthen the network of organisations devoted to the promotion of the aims of invertebrate conservation. There are, of course, many long-standing Entomological Societies that cover similar ground but it may be of interest to readers to have a list of contacts for our 'sister' Groups in case they are in a position to carry out fieldwork in other areas. The proposed formation of a South Wales Invertebrate Group, the latest addition to the network, means that Wales now has almost complete coverage and we await the appearance of a Powys Invertebrate Group with eager anticipation. Most of the Groups listed below produce regular Newsletters and welcome new subscribers but subscription rates vary so contact the Group secretary in the first instance.

BERKSHIRE INVERTEBRATE GROUP - c/o H Carter, Museum & Art Gallery, Blagrove Street, Reading, RG1 1QH.

BUCKINGHAMSHIRE INVERTEBRATE RECORDING GROUP - c/o Bucks. County Museum Technical Centre, Tring Road, Halton, Aylesbury, HP22 5PJ.

CLWYD ENTOMOLOGICAL SOCIETY - c/o B Formstone, 15 Beech Ave, Gresford, Wrexham, Clwyd.

GLOUCESTERSHIRE INVERTEBRATE GROUP - c/o KNA Alexander, 22 Cecily Hill, Cirencester, Glos., GL7 2EF.

LEICESTERSHIRE ENTOMOLOGICAL SOCIETY - c/o DA Lott, Leics. Museum Service, 96 New Walk, Leicester, LE1 6TD.

NORTH WALES INVERTEBRATE GROUP - c/o Mrs MJ Morgan, School of Animal Biology, UCNW, Bangor, Gwynedd.

OXFORDSHIRE INVERTEBRATE GROUP - c/o K Porter, English Nature, Foxhold House, Crookham Common, Newbury, Berks., RG15 8EL.

SHROPSHIRE INVERTEBRATE GROUP - No address currently available for secretary.

SORBY INVERTEBRATE GROUP - c/o D Whiteley, 17 Rustlings Road, Sheffield, S11 7AA.

SOUTH WALES INVERTEBRATE GROUP - c/o AH Kirk-Spriggs, National Museum of Wales, Cathays Park, Cardiff, CF1 3NP.

STAFFORDSHIRE INVERTEBRATE GROUP - No address currently available for secretary.

RECORDS OF *MELIGETHES* (COLEOPTERA: NITIDULIDAE) AND RELATED GENERA FROM CARDIGANSHIRE (V.C. 46) - A.H. KIRK-SPRIGGS¹; A.P. FOWLES² & D.C. BOYCE³

In Britain the genus *Meligethes* is represented by thirty-six species, thirty-four of which are known to be extant. Adults and larvae feed on pollen, as well as the developing sexual parts of flowers. The British species utilise the botanical families Cistaceae, Rosaceae, Campanulaceae, Cruciferae, Labiatae, Papilionaceae and Boraginaceae as larval host-plants (Kirk-Spriggs in prep.). By far the largest number of species are associated with members of the Labiatae. The commonest species *M. aeneus* (Fab.) and *M. viridescens* (Fab.) are very widely distributed, occurring throughout the British Isles from the Channel Islands to the Shetland Isles. Other British species are more limited in their range, many being more or less restricted to southern or south-eastern England.

Wales is interesting in being a stronghold for some of our more western species, including *M. subrugosus* (Gyllenhal) and *M. exilis* Sturm which occur along the western coast, as well as parts of Devon, Cornwall and Cumberland, etc.

Meligethes has long been regarded as a taxonomically difficult genus and has, as a result, been largely ignored by most local collectors. It is perhaps not surprising, therefore, that so little material is available for study from Cardiganshire, that which is available being limited in range and species. Thirteen species have been confirmed as occurring in the vice-county and a further five are known from the related genera *Pria*, *Kateretes* and *Brachypterus*.

Meligethes flavipes Sturm has been recorded from Pont-rhyd-y-groes, 31.viii.1957, on grass, by Sage (1957:266); *M. atratus* (as *M. rufipes*), has been recorded from R.S.P.B. Ynys-hir (Waterhouse, 1974); *M. viridescens* is noted from Artists Valley, 22/6894, 16.viii.1949 (Tottenham, undated); *M. aeneus*, *Brachypterus urticae* and *Kateretes rufilabris* have been noted from Banc y Mwldan, 22/198486, 13-14.vii.1987 (Key, 1987). The material concerned has not been examined and cannot, therefore, be confirmed.

The records included in this paper are based largely on the important Cardiganshire collection of the late Professor J.H. Salter, now in the National Museum of Wales, and the unpublished records of the late Dr. Alan M. Easton. Additional records from the Welsh Peatland Invertebrate Survey (Nature Conservancy Council), the D.C. Boyce and P.M. Miles collections now in the National Museum of Wales, are also included.

All museum material included in this paper has been re-identified, dissections of male and female genitalia being carried out where necessary.

SPECIES AND LOCALITIES.

Meligethes subrugosus (Gyllenhal, 1808)

On light sandy soils and limestone, rough grassland, rocky hills and sea cliffs. Very local, on *Campanula glomerata* L. and *Jasione montana* L. A western coastal species, in Wales also occurring in Pembroke, Merioneth, Caernarvon and Anglesey. Wales is the main stronghold for this species.

MATERIAL EXAMINED: 1♂ & 3♀♀ Verwig, 22/185495, 15.viii.1951, *Jasione montana* L., (A.M. EASTON); 8♂♂ & 5♀♀ Towyn Warren, 22/164501, 15.viii.1951, *Jasione montana* L., (A.M. EASTON); 1♂ Towyn Warren, 22/164501, 15.viii.1951, *Thymus praecox*

Opiz, (A.M. EASTON); 2 Cwm Soden, 22/363583, *Jasione montana* L., 1988, (D.C. BOYCE) (see Boyce, 1989: 17).

***Meligethes flavimanus* Stephens , 1830**

Woodland margins, roadsides etc., fairly common, on *Rosa* spp. In Wales also occurring in Glamorgan, Brecon, Montgomery, Merioneth, Caernarvon and Flint. Occurring broadly over much of England.

MATERIAL EXAMINED: I♂ No. 14087, Llanbadarn, garden, 22/598810, 27.v.1930, (J.H. SALTER); 1♀ No. 13042, Llanbadarn, garden, 22/598810, 5.vi.1936, (J.H. SALTER); 2♂♂ & 1♀ No. 8644, Ynyslas, saltings, 22/6193, 15.V.1928, (J.H. SALTER); 1♂ No. 14198, wood above Crosswood Road, at rotting Boleti, 22/6673, 23.vii.1938, (J.H. SALTER); I♂ No. 7732, Capel Bangor Way, swept birches and willows, 22/6580, 24.V.1926, (J.H. SALTER); 1♂ No. 12037, Tanybwch, foreshore, 22/5880, 25.vi.1934, (J.H. SALTER); 1♀ No. 13603, across the river, [Afon Rheidol, Llanbadarn], 22/6080, 14.vi.1937, (J.H. SALTER); I♂ No. 14040, Arth, below Pennant, 22/5063, 3.v.1938, (J.H. SALTER); 1♀ Rhöstie Bog, near Llanilar, 22/6172, 28.vi.1986, (P.M. MILES).

***Meligethes atratus* (Olivier, 1790)**

Woodland margins, roadsides etc., common, on *Rosa* spp. In Wales also occurring in Glamorgan, Brecon, Radnor, Montgomery, Merioneth, Caernarvon, Denbigh, Flint and Anglesey. Very broadly distributed in England. Our largest British species.

MATERIAL EXAMINED: I♂ No. 13565, across the river, [Afon Rheidol, Llanbadarn], 22/6080, 5.vi.1937, (J.H. SALTER); 1♀ No. 10804, Mynachty, Arth, 22/5062, 26.v.1932, (J.H. SALTER); 2♂♂ & 1♀ No. 6683, Llanddewi Brefi, 22/6655, in knapweed flowers, 2.ix.1924, (J.H. SALTER); I♂ No. 8644, Ynyslas, saltings, 22/6193, 15.v.1928, (J.H. SALTER); 1♀ No. 14041, Arth, below Pennant, 22/5063, 3.v.1938, (J.H. SALTER); I♂ No. 9711, Nantyrnnon, 22/6778, 22.v.1930, (J.H. SALTER); 1♀ Cnwch-Coch, 22/6775, 12.v.1981, (P.M. MILES).

***Meligethes viridescens* (Fabricius, 1787)**

Anywhere where yellow Cruciferae are abundant, common and widely distributed over all of Wales, England, most of Scotland and parts of Ireland. Mainly on *Sinapis arvensis* L., but also a pest of cultivated oilseed rape (*Brassica napus* L.).

MATERIAL EXAMINED: 2 No. 13437, Nant Berwyn, 22/75, 29.iii.1937, in moss, (J.H. SALTER); 1 No. 12433, [probably] garden Llanbadarn, 22/598810, 19.iv.1935, (J.H. SALTER); 2 No. 8884, Llanbadarn, garden, 22/598810, 26.viii.1928, (J.H. SALTER); 2 [data illegible], (J.H. SALTER); 3 No. 13722, pool below Bontgoch, 22/6886, 2.viii.1937, (J.H. SALTER); 2 No. 9112, Rheidol Pools, 22/667787 or 22/620810, 30.V.1929, (J.H. SALTER); 1 No. 11610, Crosswood Pool, 22/6673, 29.vii.1933, (J.H. SALTER); 2♂ Towyn Warren, 22/164501, 15.viii.1951, *Ononis repens* L., (A.M. EASTON); I♂ & 4♀♀ Towyn Warren, 22/164501, 15.viii.1951, *Rubus fruticosus* sens. lat., (A.M. EASTON); 3♀♀ Towyn Warren, 22/164501, 15.viii.1951, *Galeopsis tetrahit* L., (A.M. EASTON); 1♀ Glanpwllafon, near Cardigan, 22/170439, 15. viii.1951, (A.M. EASTON); I♂ near Lampeter, 22/54, 7.X.1962, *Heracleum sphondylium* L., (A.M. EASTON); 1♀ Tresaith to Aberporth, 22/2651, 7.X.1962, *Centaurea nigra* L., (A.M. EASTON).

***Meligethes aeneus* (Fabricius, 1775)**

Anywhere where yellow Cruciferae are abundant, our commonest and most widely distributed British species. Occurring over all of Wales, England, most of Scotland and parts

of Ireland. Mainly on *Sinapis arvensis* L., but also a serious pest of cultivated oilseed rape (*Brassica napus* L.).

MATERIAL EXAMINED: 1 No. 7683, Llyfnant, 22/79, 10.v.1926, hawthorn blossom, (J.H. SALTER); 2 No. 16106, Llangwryfon Way, 22/57, 24.i.1942, (J.H. SALTER); 1 No. 9047, Borth Bog, 22/6291, 3.v.1929, (J.H. SALTER); 1 No. 15267, Borth Dunes and foreshore, 22/6092, 13.vii.1940, (J.H. SALTER); 1 No. 15164, Rheidol Pools, 22/667787 or 22/620810, 11.vi.1940, (J.H. SALTER); 1 No. 5778, Cwm Cafan, [probably 22/67], 26.i.1924, (J.H. SALTER); 1 No. 6811, Maesfron, near Llangwryfon, 22/57, 26.xii.1924, (J.H. SALTER); 2 No. 9040, Arth Valley, at blackthorn blossom, 22/4862, 28.iv.1929, (J.H. SALTER); 1 No. 14740, Glandyfi Bog, 22/6997, 18.vii.1939, (J.H. SALTER); 2 No. 5907, Cwm Wood, 22/5983, 21.ii.1924, in moss, (J.H. SALTER); 2 No. 9276, Pentre Briwnant, 22/7974, 23.vii.1929, (J.H. SALTER); 1 No. 8644, Ynyslas, saltings, 22/6193, 15.v.1928, (J.H. SALTER); 1 No. 14610, Dorglwyd Woods, 22/6182, 23.v.1939, (J.H. SALTER); 1 No. 15719, Mynachty, Arth, 22/5062, 16.v.1941, (J.H. SALTER); 30 Verwig, 22/185495, 15.viii.1951, *Jasione montana* L., (A.M. EASTON); 3 Towyn Warren, 22/164501, 15.viii.1951, *Rubus fruticosus* sens. lat., (A.M. EASTON); 4 Towyn Warren, 22/164501, 15.viii.1951, *Galeopsis tetrahit* L., (A.M. EASTON); 5 Coed Newydd, 22/198443, 15.viii.1951, *Teucrium scorodonia* L., (A.M. EASTON); 19 Coed Newydd, 22/198443, 15.viii.1951, *Stachys officinalis* L. (Trev.), (A.M. EASTON); 4 Glanpwllafon, near Cardigan, 22/170439, 15.viii.1951, *Stachys officinalis* L. (Trev.), (A.M. EASTON); 1 Tresaith to Aberporth, 22/2651, 7.x.1962, *Serratula tinctoria* L., (A.M. EASTON); 10 Aberporth, 22/2651, 7.x.1962, *Sinapis arvensis* L., (A.M. EASTON); 26 Tresaith to Aberporth, 22/2651, 7.x.1962, yellow Compositae, (A.M. EASTON); 2 Cors Llyn Farch a Llyn Fanod, 22/599688, valley mire, 23.vii.1987, yellow pan trap sample, N.C.C. Welsh Peatland Invertebrate Survey; 1 Rhos Rydd, 22/572738, *Molinia* bog, 30.vii.1987, yellow pan trap sample, N.C.C. Welsh Peatland Invertebrate Survey; 1 Rhos Rydd, 22/572738, humid heath, 3.ix.1986, pitfall trap, N.C.C. Welsh Peatland Invertebrate Survey; 1 Cors Gorsgoch, 22/482504, basin mire, 6.x.1987, yellow pan trap sample, N.C.C. Welsh Peatland Invertebrate Survey; 1 Cors Caron, 22/712664, degraded grazed fen, 5.x.1987, yellow pan trap sample, N.C.C. Welsh Peatland Invertebrate Survey; 1♂ Rhos Llawr Cwrt, 22/412498, Pingo fen, 21.viii.1987, litter sample, N.C.C. Welsh Peatland Invertebrate Survey; 1 Cors Caranod, 22/565647, yellow pan trap sample, N.C.C. Welsh Peatland Invertebrate Survey; 1 Trawscoed, near Aberystwyth, 22/6773, 19.v.1957, (P.M. MILES); Coed Allt Ddel, 22/626840, 3.iv.1991, woodland edge, on willow blossom, (A.P. FOWLES).

***Meligethes viduatus* (Heer, 1841)**

Open woods, etc. A local species, on *Galeopsis tetrahit* L. With a patchy distribution within the British Isles. In Wales also occurring in Brecon, Montgomery, Merioneth and Caernarvon

MATERIAL EXAMINED: 1♂ & 1♀ No. 14592, Lovesgrove Lane, 22/6281, 7.v.1939, (J.H. SALTER); 1♀ No. 15847, Llanbadarn Bog, 22/604801, 12.vii.1941, (J.H. SALTER); 1♂ No. 13617, Pwll Clai Lane, 22/68, 20.vi.1937, (J.H. SALTER); 1♂ & 4♀♀ Towyn Warren, 22/164501, 15.viii.1951, *Galeopsis tetrahit* L., (A.M. EASTON); 1♂ Gwaun Garthenor, 22/638558, herb rich meadow, 10.vii.1987, pitfall trap, N.C.C. Welsh Peatland Invertebrate Survey.

***Meligethes brunnicornis* Sturm, 1845**

Shaded deciduous woodlands, hedgerows, etc. A common British species, on *Stachys sylvatica* L. In Wales also occurring in Glamorgan, Brecon, Radnor, Pembroke, Montgomery, Caernarvon, and Flint. Over much of England.

MATERIAL EXAMINED: 1 Glanpwllafon, near Cardigan, 22/170439, 15.viii.1951, *Stachys sylvatica* L., (AM. EASTON).

***Meligethes pedicularius* (Gyllenhal, 1808)**

On permanent grassland, heaths, banks etc. Common on *Stachys officinalis* (L.) Trev. In Wales also occurring in Glamorgan, Brecon, Radnor, Carmarthen, Pembroke, Montgomery, Denbigh and Flint. Common over much of England.

MATERIAL EXAMINED: 4♂♂ & 7♀♀ Bryngobaith, 22/269438, 7.x.1962, *Stachys officinalis* L. (Trev.), (A.M. EASTON); 1♂ Tresaith to Aberporth, 22/2651, 7.x.1962, *Centaurea nigra* L., (A.M. EASTON); 4♂♂ & ♀♀ Tresaith to Aberporth, 22/2651, 7.x.1962, yellow Compositae, (A.M. EASTON); 4♂♂ & 1♀ Gweunydd, Pen Dinas, 22/584807, general sweeping, 5.ix.1989, (D.C. BOYCE); 1♂ & 1♀ Mwnt, 22/195519, 8.vii.1989, (D.C. BOYCE).

***Meligethes nigrescens* Stephens, 1830**

Meadows and pastures etc. Very common, on *Trifolium repens* L. In Wales also occurring in Glamorgan, Brecon, Radnor, Carmarthen, Pembroke, Montgomery, Caernarvon, Denbigh, and Anglesey. Common over most of England.

MATERIAL EXAMINED: 1♂ No. 12563, Llanbadarn, garden, 22/598810, 6.vii.1935, (J.H. SALTER); 1♂ [data illegible], (J.H. SALTER); 1♂ No. 9021, Leri, below Talybont at blackthorn blossom, 22/6688, 16.iv.1929, (J.H. SALTER); 1♂ No. 14003, Llanayron Woods, 22/478604, 8.iv.1938, cherry laurel, or blackthorn blossom, (J.H. SALTER); 3♂♂ & 1♀ Towyn Warren, 22/164501, 15.viii.1951, *Galeopsis tetrahit* L., (A.M. EASTON); 1♀ Coed Newydd, 22/198443, 15.viii.1951, (A.M. EASTON).

***Meligethes exilis* Sturm, 1845**

Coastal cliffs, limestone grassland and sand-dunes, on *Thymus praecox* Opiz sub. *arcticus* (E. Durand) & Jalas. A western coastal species, particularly abundant in the Welsh coastal vice counties. In Wales also occurring in Glamorgan, Carmarthen, Pembroke, Montgomery, Merioneth, Caernarvon, Denbigh, Flint and Anglesey. Occurring in a few other western vice counties.

MATERIAL EXAMINED: 1 Ynyslas Sand-dunes, 22/6092, 12.ix.1982, N.C.C. Survey.

***Meligethes obscurus* Erichson, 1845**

Open woods, sand-dunes etc. common on *Teucrium scorodonia* L. Occurring over the whole of Wales and most of England.

MATERIAL EXAMINED: 1♂ No. 14748, Lluest Lane, 22/6081, 23.vii.1939, (J.H. SALTER); 1♂ & 1♀ No. 9852, Llanbadarn, garden, 22/598810, 15.vii.1930, (J.H. SALTER); 1♂ No. 13656, Llanbadarn, garden, 22/598810, 6.vii.1937, (J.H. SALTER); 1♀ No. 13681, swept, Cwm, 22/5983, 17.vii.1937, (J.H. SALTER); 1♀ No. 12036, Tanybwllch, foreshore, 22/5880, 25.vi.1934, (J.H. SALTER); 1♂ Coed Newydd, 22/198443, 15.viii.1951, *Teucrium scorodonia* L., (A.M. EASTON); 1♂ & 2♀♀ Bryngobaith, 22/269438, 7.x.1962, *Centaurea nigra* L., (A.M. EASTON); 5♂♂ & 5♀♀ Tresaith to Aberporth, 22/2651, 7.x.1962, yellow Compositae, (A.M. EASTON); 1♂ & 1♀ Gweunydd, Pen Dinas, 22/584807, general sweeping, 5.ix.1989, (D.C. BOYCE); 3♂♂ Gweunydd, Pen Dinas, 22/584807, *Campanula rotundifolia* L., 5.ix.1989, (D.C. BOYCE); 1♂ Cwm Soden, 22/363383, *Jasione montana* L., 1988, (D.C. BOYCE); 1♂ Glandwr, 22/6080, 1.vii.1990, (J. COOTER).

***Meligethes erythropus* (Marsham, 1802)**

Short grassy habitats. Very common on *Lotus corniculatus* L. In Wales also occurring in Glamorgan, Brecon, Carmarthen, Pembroke, Montgomery, Caernarvon, Denbigh, Flint and Anglesey, Common over much of England.

MATERIAL EXAMINED: 1♂ & 1♀ Towyn Warren, 22/164501, 15.viii.1951, *Lotus corniculatus* L., (A.M. EASTON); 1♂ Gwaun Garthenor, 22/638558, herb rich meadow, 2.X.1987, yellow pan trap sample, N.C.C. Welsh Peatland Invertebrate Survey; 1♂ Coedmor, 22/195435, 2-16.ix.1990, water trap, (N. THOMAS); 1♂ & 1♀ Creigiau Ffos-las, 22/557750, 6.iv.1990, (D.C. BOYCE).

***Meligethes ovatus* Sturm, 1845**

Woodlands, coppices etc. fairly common, on *Glechoma hederacea* L. In Wales also occurring in Glamorgan, Brecon, Radnor, Carmarthen, Pembroke, Montgomery, Merioneth, Caernarvon, Denbigh, Flint and Anglesey. Distributed over much of England.

MATERIAL EXAMINED: 1♂ No. 11294, Taliesin or Talybont, 22/68, or 22/69, 28.ii.1933, (J.H. SALTER); 1♂ & 3♀♀ Towyn Warren, 22/164501, 15.viii.1951, *Galeopsis tetrahit* L., (A.M. EASTON); 2♀♀ Glanpwllafon, near Cardigan, 22/170439, 15.viii.1951, (A.M. EASTON); 1♂ Pwllpeiran [experimental farm], near Aberystwyth, 22/7774, 12.v.1959, (P.M. MILES); 3 Clogfryn, 22/445623, 22.iv.1990, coastal scrub, amongst *Glechoma hederacea* L., (A.P. FOWLES)

***Pria dulcamarae* Scopoli, 1763**

This species is very closely related to *Meligethes*. In a variety of habitats, including ditches, woodland edges and waste land. Common on *Solanum dulcamara* L. and *S. nigrum* L. Distributional data is incomplete at present.

MATERIAL EXAMINED: 1♂ No. 15224, Hen Hafod, ditch, 22/6694, 28.vi.1940, (J.H. SALTER).

***Kateretes (Pulion) rufilabris* (Latreille, 1807)**

The commonest of our three British species. In wetland areas on *Carex* and *Juncus*. Distributional data is incomplete at present, but so far known in Wales from Glamorgan, Carmarthen Pembroke, Merioneth, Caernarvon, Denbigh and Anglesey. Widely distributed over much of England.

MATERIAL EXAMINED: 2 No. 14676, Lluest Lane, 22/6081, 24.vi.1939, (J.H. SALTER); 1 No. 15848, Llanbadarn Bog, 22/604801, 12.vii.1941, (J.H. SALTER); 1 No. 14608, across the river, [Afon Rheidol, Llanbadarn], hawthorn blossom, 22/6080, 16.v.1939, (J.H. SALTER); 2 No. 14767, ground above Llanon, rough moor, 22/56, 2.viii.1939, (J.H. SALTER); 1 No. 15335, Lovegrove Lane, 22/6281, 25.vii.1940, (J.H. SALTER); 1 No. 12574, Lovegrove Lane, 22/6281, 7.vii.1935, (J.H. SALTER); 4 No. 6275, Rheidol Pools, swept, 22/620810 or 22/667787, 19.vi.1924, (J.H. SALTER); 3 No. 8329, Rheidol Pools, 22/620810 or 22/667787, 28.vi.1927, (J.H. SALTER); 2 No. 11476, Rheidol Pools, 22/620810 or 22/667787, 7.vi.1933, (J.H. SALTER); 1 No. 12078, Rheidol Pools, 22/620810 or 22/667787, 5.vii.1934, (J.H. SALTER); 1 No. 8296, Llanbadarn Bog way, 22/6080, 8.vi.1927, (J.H. SALTER); 1 No. 11545, Llanbadarn Bog 22/604801, 3.vii.1933, (J.H. SALTER); 1 No. 13186, Llanbadarn Bog, swept, 22/604801, 22.vii.1936, (J.H. SALTER); 1 No. 13636, Llanbadarn Bog 22/604801, 29.vi.1937, (J.H. SALTER); 1 No. 14141, Llanbadarn Bog 22/604801, 25.vi.1938, (J.H. SALTER); 1 No. 14657, Llanbadarn Bog 22/604801, 9.vi.1939, (J.H. SALTER); 1 No. 9888, Nanteos Upper Pool, 22/635783, 25.vii.1930, (J.H. SALTER); 2 No. 12572, Nanteos Upper Pool, 22/635783,

6.vii.1935, (J.H. SALTER); 1 No. 7192, Ty Issa way, swept, 22/6076, 16.vi.1925, (J.H. SALTER); 1 No. 11614, Crosswood Pool, 22/661726, 29.vi.1933, (J.H. SALTER); 1 No. 12546, Borth Bog, swept, 22/6290, 29.vi.1935, (J.H. SALTER); 1 No. 15840, Glandyfi Marsh, 22/6997, 10.vii.1941, (J.H. SALTER); 1 No. 13652, rush bog field, beyond Glanrafon, 22/6180, 3.vi.1937, (J.H. SALTER); 1 No. 14163, marshy mire, below Las Crug, 22/5881, 7.vii.1938, (J.H. SALTER); 1 No. 13165, swept from *Cakile salsosa*, Borth, 22/6092, 18.vii.1936, (J.H. SALTER); 1 No. 7854, bred [no locality data], 19.vi.1926, (J.H. SALTER); 1♂ Ynys Eidiol, 22/679957, *Myrica/Molinia* bog, 31.vii.1987, yellow pan trap sample, N.C.C. Welsh Peatland Invertebrate Survey; 1 Hen Afon Leri, 22/6092, 11.vi.1990, (A.P. FOWLES).

***Kateretes (s.str.) pedicularius* (Linnaeus, 1758)**

In wetland areas on *Carex* spp. Distributional data is incomplete at present, but so far known in Wales from Glamorgan, Carmarthen, Pembroke and Montgomery. Distribution in England as yet uncertain.

MATERIAL EXAMINED: 2♀♀ Rhos Rydd, 22/572738, *Molinia* bog, 30.vii.1987, yellow pan trap sample, N.C.C. Welsh Peatland Invertebrate Survey.

***Brachypterus urticae* (Fabricius, 1792)**

Common everywhere on *Urtica* spp. In Wales also known from Glamorgan, Brecon, Pembroke, Merioneth, Caernarvon and Anglesey.

MATERIAL EXAMINED: 1 No. 14736, Gogerddan Jungle, 22/6283, 16.vii.1939, (J.H. SALTER); 1 No. 11532, Gogerddan Jungle, 22/6283, 1.vii.1933, (J.H. SALTER); 1 No. 13703, The Plantation, 22/597811, 26.vii.1937, (J.H. SALTER); 1 No. 15171, Llanon, Arth, swept, 22/56, 12.vi.1940, (J.H. SALTER); 1 No. 13626, Peris, 22/56, 25.vi.1937, (J.H. SALTER); 1 No. 6325, Parson's Bridge, Bryn Bras, 22/7479, 26.vi.1924, (J.H. SALTER).

***Brachypterus glaber* (Stephens, 1832)**

Common in England and Wales, rare in Scotland, on *Urtica* spp. In Wales also known from Glamorgan, Brecon, Pembroke, Merioneth and Caernarvon.

MATERIAL EXAMINED: 1 No. 13074, garden [Llanbadarn], 22/598810, 16.vi.1936, (J.H. SALTER).

ACKNOWLEDGEMENTS

Thanks to George Hutchinson (Botany Department, National Museum of Wales), who very kindly helped with botanical names and Cardiganshire localities.

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HEMIPTERA

RECENT INTERESTING RECORDS OF HEMIPTERA FROM CARMARTHENSHIRE - IK MORGAN

In 1990 some limited collecting of Hemiptera (mostly Heteroptera) was undertaken by the author; most of the specimens were kindly determined by Peter Kirby and they included some species of local occurrence. Metatropis rufescens, for example, recorded in an ash/hazel woodland on the limestone ridge at Capel Dyddgen (22/468127) on 19 Sept has few Welsh records; both the nymphs and adults feed on enchanter's nightshade. Likewise, Scolopostethus puberulus, collected at Llansteffan (22/353101) on 23 August is uncommon in Wales. The geographically-spreading Elasmotethus tristriatus was noted on cypresses at Erw-las, Llwynhendy (21537993) on 23 Sept and again this Spring, also on cypress, at Pembrey Forest (22/30 & 22/40). E. tristriatus was originally a species of juniper thickets on the chalk outcrop of southern England but is now spreading rapidly on garden conifers. Pembrey Forest (22/406012) also held Xylocoris cursitans on 14 August, a species which lives under bark where it preys "on beetles such as Rhizophagus spp. and Bitoma crenata" (Southwood & Leston 1959) or other small invertebrates.

Uncommon coastal species recorded in 1990 were Henestaris laticeps at Telpyn Point (22/185073) on 16 July - "an insect of dry cliff faces" (ibid), where the foodplant is buck's-horn plantain. Enoplops scapha, another regular but local cliff-side inhabitant which is found on composites such as scentless mayweed, was collected at Dolwen Point, Pendine (22/233073) on 23 April. The handsome Dicranocephalus agilis was on Portland spurge at the same locality the following month and Piesma quadratum quadratum was taken on *A. triplex* at Pembrey Burrows (21/41-99-) on 9 Oct. The striking red and black Corizus hyoscyami was noted on the dunes at Pembrey (21/49 & 22/40), where it is normally associated with restharrow.

Chilacis typhae, a flattened bug adapted to living behind the stems or flowerheads of reedmace, was noted at several localities in the coastal marshes of SE Llanelli - Machynys (21/512980), Llwynhendy (21/540994) and Bynea (21/553981). The Machynys Ponds held the predatory 'water-scorpion' Nepa cinerea and the 'saucer-bug' Ilyocoris comicoideus in the early autumn. A froghopper Paralimnus phragmitis - only recently discovered in Wales by the Welsh Peatland Invertebrate Survey at a site in Glamorgan - was captured by sweeping sea club-rush at a brackish pond in Bynea (21/554089) on 23 Sept. Finally, a handsome mirid bug collected on river shingle near Llandovery (22/755331) on 18 June 1987 has recently been identified as the somewhat local Miris striatus.

Reference:

Southwood, TRE & Leston, D (1959) - Land and water bugs of the British Isles. Warne.

Note: There will be a weekend field meeting based at the Ferryside Adult Education Centre (22/367105), on 9-12 August inclusive, when the Hemiptera of several south Carmarthenshire sites will be surveyed. DIG members are cordially invited and a provisional timetable will be supplied to interested members.