

CARMARTHENSHIRE MOTH & BUTTERFLY GROUP

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Winter 2012

Editor: Ian Morgan

INTRODUCTION

What a year 2012 was! There could not have been a worse year, in terms of the prolonged wet conditions, to discourage the recording of butterflies and moths. It was certainly not a classic year, with generally low numbers of moths in our traps and hardly any noteworthy migration to report. Chris Handoll's comments that not only was his trapping down on 2011, but there were many species that he did not even record this year, could apply to most of us. The day-flying butterflies probably suffered even more and the adverse conditions will be likely to have a negative knock-on effect with some species next year. You will note that `Butterflies` has been restored into the title of the our group, as one or two butterfly recorders have mentioned to me that it would be good to share interesting Carmarthenshire records. Butterfly enthusiasts often develop an interest in moths and they might be enticed to record this latter group too! I put the suggestion to Dave Bannister and he was agreeable, so there are some brief butterfly notes after the section on the moth recording highlights of 2012.

New recorders are always welcome and perhaps we ought to make a special effort to encourage others to participate in moth recording next season. To this end, I would urge `lapsed recorders` to consider doing at least some recording and let us hope that the weather next year will be more benign, with some good migration to bring some excitement to our traps!

It is hoped to get a newsletter out, `to rally the troops`, before next year's main trapping season, probably in March. This present newsletter is atypically large due to the material in the main article: the next one will be smaller! If you have any interesting records, articles, short notes or photos, they will be gratefully received.

Moth Highlights of 2012

- I K Morgan

NB. Grid references are only given for the first mention of a locality and recorders' names are likewise only given in full initially; thereafter initials are often used.

Likewise, scientific names are only given at the first mention of the species concerned. Any non- attributed records were made by the writer of this report.

Demonstrating that winter is not an excuse for avoiding recording, Mat Ridley ventured into some caves in the limestone ridge near his Carmel home on 29/1. These caves, at Garn farm SN592163, held 9 **herald moths** *Scoliopteryx libatrix* and, more interestingly, 6 **tissues** *Triphosa dubitata*. A more orthodox record perhaps, was a **grey shoulder-knot** *Lithophane ornitopus lactipennis* at his home trap at nearby Bryn Llinos SN589164 on 2/3, where he also had two **white-marked** moths *Cerastis leucographa* on 3/4. After a dry late winter, the spring began with optimism, with unseasonably warm and sunny weather in late March. It was this sultry weather that tempted **orange underwings** *Archieras parthenias* to emerge at Mynydd Mawr Woodland Park, Tumble SN541124 (on 23/3) and at Pembrey Forest SN385025 (26/3), where they were typically seen flying atop birches. Sam Bosanquet (SDSB) and Alison Heath also recorded one flying around birches at Allt y Darren SN534289

on 27/3. Sam also noted a larval case of *Luffia ferchaultella* (new to Carmarthenshire) on a lichen-covered oak trunk at Dinefwr Park, Llandeilo SN608226 on 23/3.

Two local moths turned up at SDSB's MV trap at Cnwc y Llwyn, Brechfa SN515311 on 25/5 - a **dark brocade** *Blepharita adjusta* and an **alder kitten** *Furcula bicuspis*, whilst Isabel Macho recorded a **great prominent** *Peridea anceps* at her home at Hafan, Cilycwm SN753400 on the same night; this species was also recorded by one or two other recorders. Sadly, Isabel had technical problems with her trap for much of the season, although she is optimistic about doing more recording in 2013.

I personally was very late in starting to trap this year, but on 26/5, I was rewarded by **lime hawk-moth** *Mimas tiliae*, a **grass rivulet** *Perizoma albulata* and a **rustic shoulder-knot** *Apamea sordens* at my trap at Tyrwaun, Pwll SN469013. There was some evidence of migration too, with a **diamond-backed moth** *Plutella xylostella* and several **silver y's** *Autographa gamma* present.



Lime hawk-moth, Tyrwaun, Pwll 26/5/12.

Dave and Jan Bannister had some good results the next night (27/6) at Glanrhyd, Brechfa SN503302, when they noted **Devon carpet** *Lamproteryx otregiata*, **lead belle** *Scotopteryx mucronata umbrifera* and, best of all, an **alder kitten**, followed by a **red-necked footman** *Atolmis rubricollis* on 14/6.

My first `away-from-home` trapping this year was on 13/6 at Dyfatty marsh SN457009, a reedbed/fen/carr site on the eastern edge of Burry Port and, here I recorded an **obscure wainscot** *Mythimna obsoleta*, two **silky wainscots** *Chilodes maritimus* and a wandering **nutmeg** *Dicestria trifolii* from wasteground across the road. Richard Pryce photographed (on 17/6) a caterpillar at Waun las (SN527181, a meadow at the National Botanic Garden of Wales, Llanarthne), that was subsequently identified by Barry Stewart as that of a **red sword-grass** *Xylena vetusta*.

Grass rivulets were caught at the Afon Dulais SN484007 and at Tyrwaun, Pwll on 17/6, with also a **four-dotted footman** *Cybosia mesomella* (possibly a wanderer from the Gower heaths) at the last-named locality. A **figure of 80** *Tethea ocellaris octogesimea* was trapped beneath a mature aspen (its larval food plant) at Denham Avenue, Llanelli SN495013, on the same date. Dave and Jan Bannister at Brechfa provided some useful late June records such as a **double line** *Mythimna turca*, a **Brussels lace** *Cleorodes lichenaria* on 22/6 and a **beautiful snout** *Hypena crassalis* on the next night; a **Brussels lace** was additionally caught at Tyrwaun, Pwll on 23/6.

Additionally, the Brechfa trap of the Bannisters had a **coronet** *Craniophora ligustri* and a **triple-spotted pug** *Eupithecia trisignaria* on 25/6.

A real highlight was Mat Ridley's capture of a **lead-coloured pug** *Eupithecia plumbeolata* on that date (25/6), at Bryn Llinos, Carmel – providing absolute confirmation that this species occurs in the county. It has also been recorded in the coalfield `cwms` of the adjacent part of Glamorgan and this moth is likely to also occur in our coalfield woodlands where there is a strong field layer of its food-plant, cow-wheat, such as those in and around the Aman Valley. Keith Williams, trapping at Gelli Aur Country Park had a **Brussels lace** and **red-necked footman** there on 26/6, with a **double line** on 5/7. Gelli Aur is sadly to close in March, after being open some 30 years or so, a site that has been irregularly surveyed for moths since Andrew Lucas started trapping there in the early 1990s.

On 26/6, I went up to the gritstone ridge SE of Garn-big, Carmel, taking the path up to the top, and keeping a general eye out for the very attractive and distinctive pyralid moth *Anania funebris*. I had forgotten how small this species is –it's the size of, and with a similar flitting flight to, the more familiar *Pyrausta purpuralis* that can be often seen at marjoram on the nearby limestone ridge and sometimes in gardens. The impression I initially got, of the (only) individual that I saw, was of a quick moving, black and white little moth amongst stands of goldenrod (its food plant, which grows on the path edge) and brambles. Of course, when it alighted, it was absolutely distinctive –see Jon Baker's superb photo of one from this same site in the *Carmarthenshire Moth & Butterfly Group Newsletter* No 8 (July 2007). Apart from this locality, there is only one other site in the county where it has been recorded – a disused coalmine at Betws, where Barry Stewart recorded it in 2005. My Tyrwaun trap attracted a **dog's-tooth** *Lacanobia suasia* (a reflection of my proximity to the coast), a **round-winged muslin** and an **obscure wainscot** (again, proximity to marshes and fens) and another **lime hawk-moth** on 27/6.

A daytime bird watching `jolly` for Colin Jones and Julian Friese resulted in a sighting of a **scarlet tiger** moth *Callimorpha dominula* at Cennen Tower SN669211 on 1/7. Another individual was seen at Pwllau, Talley SN665295 by Alan Clarke on 5/7. On the same date, and not far away on Mynydd Figyn SN589300, a much rarer `tiger` was seen by Sam Bosanquet – a **wood tiger** *Parasemia plantaginis*, a real highlight of 2012, and not seen in the county since Julian Friese's records in the 1990s. He also noted *Pleurota bicostella* (3rd VC site) and a **mother shipton** moth *Callistege mi*. Other useful early July records include a **silky wainscot** at Machynys Ponds, Llanelli SS514980 (4/7) and a **cloaked carpet** *Euphyia biangulata*, caught on 4/7 and 14/7 by Chris Handoll at Maenol, north of Pencader SN449382. This is the third year in a row that Chris has recorded this nationally notable species and Sally Hall also had this scarce moth at her home at Nant y Garreg, Saron SN372365 on 21/7.

In spite of the inclement weather (and noting the absence of some species), Chris had several species new to his trap in 2012. They include an **emperor moth** *Saturnia pavonia* on 20/4, an **alder kitten** on 26/5, a **four-dotted footman** on 5/7 and others. Late in the season, he also had a **Blair's shoulder-knot** *Lithophane leautieri* (18/10) and an **oak nycteoline** *Nycteola revayana* (22/10), both also new to his home trap. A new trapping site for me is the out-of-sight, far corner of a playing field near the entrance to Pembrey Country Park, which abuts rank sandy grassland and reedbed/fen habitat at SN417006. This `soccer pitch site` yielded some useful records in 2012, including a **double line** on 8/7.

In sunny weather on 11/7, the high ridge, immediately south of Brechfa was visited by Julian Friese and myself, the aim being to enjoy the general natural history of the area rather than just recording moths. In this area, small areas of common remain (though sadly, some are now ungrazed and rank), but trying to widen my remit and enthused by the excellent and new British Wildlife Publishing micro book by Sterling & Parsons, I collected some micros from swathes of bilberry at Mynydd Ystyfflau-carn SN467268 and Mynydd Figyn SN588300, which proved to be (thanks to Jon here, for his i/d help) the common **bilberry tortrix** *Aphelia viburnana*. I also collected and saw another micro that was known to me – the grass moth *Catopteria margaritella*, which often occurs in acidic, boggy situations in our county. I had it at Mynydd Figyn and SE of Pantycelyn SN498265. Unfortunately, I did not see the superb wood tiger noted a few days earlier by SDSB *et al.*

Staying with micros, other species of interest were the pyralids *Hypochalcia ahenella*, *Homoesoma sinuella* and *Pyrausta dispicata* on 8/7 at another new trapping site, on the *northern* arm of Pembrey Burrows SN418002, a trap site hidden from the nearby cycle track by dunes but visible across the saltings ie a good `moth visual catchment`; a double line and 6 **round-winged muslins** *Thumata senex* were amongst those caught.

On 18/7, Barry Stewart undertook his annual trapping session during the BSBI recording week at Glynhir Mansion near Llandybie and, as always (he`s been trapping here every year since 2003), furnished some useful records such as **double line**, **dusky brocade** *Apamea remissa* and the local (but spreading) tortricid **Pandemis cinnanomeana**. Late June saw a **four-spotted footman** *Lithosia quadra* at Colin Jones` trap at his home at the southern end of Troserch Woods, Llangennech SN553033. I recorded **Hypochalcia ahenella** (a local pyralid of dry habitats) at Pembrey Burrows on 19/7, whilst Sam Bosanquet at Cnwc y Llwyn had a nice micro on 21/7 – *Yslopha mucronella* (a species which feeds on spindle and of which there are few Carmarthenshire records).



Hypochalcia ahenella at Pembrey Burrows (N),19/7/12.

Bad weather deterred trapping until later that month, but at Tyrwaun, Pwll on 8/8, a **small rivulet** *Perizoma alchemillata*, **lesser cream wave** *Scopula immutata*, and a **slender brindle** *Apamea scolopacina* were reasonably noteworthy. In a year of poor catches, 67 macros and 3 pyralids was quite a good catch that night.

On 10/8, SDSB had a **dotted carpet** *Alcis jubata* at Cnwc y Llwyn (only known recently from the Brechfa woodland complex and with older records at

Rhandirmwyn), and the next day he disturbed *Agonopterix conterminella* from a willow at the adjacent Cnwc y Llwyn wood. Two other micros recorded by SDSB from Cnwc y Llwyn were *Eulamprotes atrella* (to MV) on 13/8 and *Ephestia parasitella*, a female of which was caught indoors on 16/8. The earlier-mentioned `soccer pitch site` at Pembrey was also trapped on 10/8, with resulting **white-line darts** *Euxoa tricità* x9, **crescent** *Celaena leucostigma*, **small wainscots** *Chotodes pygmina* and - a nice surprise - the usually `trap-shy` **old lady** *Mormo maura*. Apparently, the old-time moth`ers had more success with `sugar` in attracting this latter species. Another actinic left at Pembrey Burrows (N) yielded 15 **scarce footmen** *Eilema complana* and 12 **white-line darts**.

Trapping at Tyrwaun four days later (14/8), produced my first **four-spotted footmen** (x2) of the year and a wandering **antler moth** *Cerapteryx graminis* (common on damp pastures elsewhere, but rare with me). On 18/8, no less than 36 **yellow-tails** *Euproctis similis*, 19 **black arches** *Lymantria monarcha*, 3 **four-spotted footmen** and an **oak nycteoline** *Nycteola revayana* were in the same Tyrwaun trap. Two actinics set out that night produced a **brown-veined wainscot** *Archanara dissoluta* and several **round-winged muslins** at Dyfatty marsh and, nearby at a shingle beach east of Burry Port SN461003, a **toadflax pug** *Eupithecia linariata*, **white-line darts** and **Archer`s darts** *Agrotis vestigialis* were caught. Several of us were trapping on that date, with Sally Hall having an **oblique carpet** *Orthonama vittata* and **sharp-angle carpet** *Euphyia unangulata* at Nant y Garreg; Colin Jones recording **oak hook-tip** *Watsonalla binaria*, **orange swift** *Hepialus sylvina* and **marbled beauty** *Cryphia domestica* at Troserch, whilst Sam Bosanquet had no less than 98 species in his Cnwc y Llwyn trap. He too had an **oblique carpet**, but also a **marsh oblique-barred** *Hypenodes humidalis*, a **double kidney** *Ipimorpha retusa*, **small rufous** *Coenobia rufa* (x2) and the grass moth *Agriphila latistria*.



Four-spotted footmen, Tyrwaun, Pwll, 18/8/12.

As the weather, in this poor year, was good, the writer also trapped the next night (19/8) - at Pembrey Burrows (N), with one trap at the northern edge SN418002 of the saltmarsh, and the other left amongst the younger dunes to the south SS412995. The northern (SN40) trap yielded **yellow belle** *Semiaspilates ochrearia* x3, **dark spinach** *Pelurga comitata* and several **white-line** and **Archer`s darts**, whilst the southern trap (SS49) held a **grass egger** *Lasiocampa trifolii*, **small waved umber** *Horisme*

vitalbata, **bordered beauty** *Epione repandaria*, **southern wainscot** *Mythimna straminea*, as well as the two darts mentioned above and commoner species. Mike Bailey from Somerset spent a short holiday at Gilfach, SN365368, in the north of the county near Saron (which, coincidentally, is not far from Sally Hall`s home!) and trapped on 11-13/8, making some useful records. These include **oblique carpet**, **small rivulet**, **golden-rod pug** *Eupithecia virgaureata*, **Brussels lace**, **black arches**, **coronet**, **old lady**, **double kidney**, **slender brindle** and an **uncertain** *Hyploclidris alsines*. He also recorded the local pyralid *Eudonia delunella*. A **hoary footman** *Eilema caniola* that turned up at my home at Tyrwaun, Pwll on 23/8 was probably a wanderer from more appropriate habitat on the Gower cliffs opposite, though this moth has apparently recently taken to living in urban habitats (tall buildings being `quasi-cliffs`) in London and elsewhere where cleaner air is allowing more lichens to flourish. A bonus micro in my actinic trap left overnight at Pembrey Burrows (N) on 31/8 was the 15 individuals of *Acleris permutata*. This was only a third county record, with Jon Baker having recorded it on the southern arm of the same dunes on 29/8 and 11/9 back in 2001. Its larvae feed on burnet roses *Rosa pimpinellifolia*, which are frequent on these dunes.



The tortricid moth *Acleris permutata*, caught at Pembrey Burrows, 31/8/12.

Early September daytime visits to Pembrey Burrows showed **silver y`**s to be abundant on 2/9 (35+) with 50+ also seen in an equally brief (c10 minute) counting period at Pwll on 5/9.

Trapping then went into its autumnal phase with a succession of typical seasonal species appearing in our traps. Sam Bosanquet suggests that a **large ranunculus** *Polymixis flavicineta*, with different-sized wings at Tyrwaun, Pwll on 22/9, may have been a `bilateral gynandromorph`, being male on one side and female on the other.



Large ranunculus with asymmetric wings – a putative `bilateral gynandromorph`, Tyrwaun, Pwll, 22/9/12.

Sally Hall recorded **brown-spot pinion** *Agrochola litura* on three dates (22/9, 20/10 and 26/10) at Nant y Garreg, Saron –this is a seemingly scarce and localised species in Carmarthenshire, with the few of our more recent records coming from the northern part of the county. An overlooked record of this species, made by Chris Handoll last year (on 1/10/11) at Maenol, Pencader has also recently come to our attention.

A late attempt at trapping at Pembrey Burrows on 8/10 resulted in 28 **feathered ranunculus** *Polymixis lichenea* in my actinic, together with commoner species (in lesser numbers) and a single **l-album wainscot** *Mythimna l-album*. The last-named moth also turned up again at Tyrwaun, Pwll on 22/10, when a singleton was present. It was only recorded for the first time in Wales in 2004, when a Liverpool University survey recorded it at Horton on Gower but on 23/9/06, SDSB discovered it to be present at Telpyn Point, right at the westernmost point of coastal Carmarthenshire. On subsequent nights, Jon Baker had it at Llansteffan and Sam at Pendine. It is virtually certain that we now have a breeding population, not only at these western cliffs, but also along the Llanelli-Pembrey coast.

SDSB had a micro new to the county on 10/10 at Cnwc y Llwyn, when ***Ypsolopha vittella*** came to MV. What was perhaps the highlight of the year was Colin Jones` capture of a **cypress carpet** *Thea cupressata*, new to Carmarthenshire, at his Troserch Woods trap on 22/10 (see photo below). This species has been colonising Britain since its first record in Sussex in 1984 and it was first recorded in neighbouring Glamorgan at Cwm Ivy, Gower in October 2006. Cwm Ivy is literally directly opposite my house and I`d been hoping for this moth for some time, but obviously failed. So, well-done Colin!

Late in the season, on 29/11, Nigel Stringer and I ventured down a cave at Capel Dyddgen SN467128 near Crwbin to look for **tissue** moths, but had no luck. As compensation though, we saw 5 **heralds** *Scoliopteryx libatrix* and 5 greater horseshoe bats. I passed on the records of the latter to Steve Lucas (who is very active in bat recording and conservation –and who used to be Moth Recorder for Carmarthenshire) and he told me that he`d had a **tissue** (as well as **heralds**) in the old gold mine adits at Dolaucothi SN664403 on 1/12!

May I thank all who have submitted records for this report and apologies for any errors or records inadvertently left out, with thanks to Sam Bosanquet and Barry Stewart for `i/d` assistance and in particular.....

I'm sure that we will all wish to offer thanks to Jon Baker for his valued help with determination, confirmation and correction of specimens, including many of those in the summary above.



The cypress carpet recorded at Troserch by Colin Jones on 22/10/12

Some Very Brief Notes on Butterflies Recorded in 2012

It is hoped that we can expand this section in future newsletters, if readers send in noteworthy records. This wet year may be best summarised as one of absences in that certain species were either not seen or only in reduced numbers. The early spring, with its hot, sunny weather in late March unfortunately did not presage a continuation of such benign conditions and rain became the norm. As is often the case, **brimstones** *Gonepteryx rhamni* provided the earliest butterfly records of the year, with sightings at WWT Penclacwydd SS532987 on 16/3 (Wendell Thomas); `Ffordd y Wagen`, Pwll SN473012 on 17/3 (Clive Jones) and Ashpits Pond, Burry Port SN463011 on 19/3 (Rob Hunt).

A **brimstone** (male) was also at my garden at Tyrwaun, Pwll SN469013 on 25/3, preceded by small tortoiseshells *Aglais urticae* and a **comma** *Polygonia c-album* a few days earlier. Sam Bosanquet and Alison Heath also saw a **brimstone**, `flying in midday sunshine in a clearing by the Afon Cothi, Penfarch Wood SN535285 on 27/3`.

Orange tips *Anthocharis cardamines* and **speckled woods** *Pararge aegeria* were hot on the heels of my garden brimstone, appearing on 28/3, but a more unusual visitor to my garden (for the second year running) was a **dingy skipper** *Erynnis tages* on 13/5. The **ringlet** *Aphantopus hyperanthus* seemed to cope with the wet summer –indeed, this species is known to be adapted to cope with damp, overcast conditions (it is known as the `rain butterfly`, `iar fach y glaw` in Welsh). I personally saw only one **grayling** *Hipparchia semele*, on 23/7 at Pembrey Harbour SN436003, where normally many would be seen; though Clive Jones saw them at the North Dock, Llanelli SS498992. Another species that has certainly become scarce over the last few years is the **wall butterfly** *Lasiommata megera*, and this summer would not have helped it and **small coppers** *Lycaena phlaeas* were also hardly seen. A good record though, was that of a **white-letter hairstreak** *Strymonia w-album*, spotted at `Ffordd y Wagen`, Pwll SN472012 by Clive Jones on 19/7/12. This species has been known from this disused mineral line with its elms, for approaching 40 years (being first

recorded nearby in 1976). Indeed, one surprised me last summer when it descended from nearby elms to presumably feed on salts on a duvet that I *had* washed (!) and left out to dry. (Perhaps I have a great future as a hairstreak attractant?).

There was quite a resurgence of **small tortoiseshells**, with a few **peacocks** *Inachis io*, **red admirals** *Vanessa atalanta* and the odd **painted lady** *Cynthia cardui* in late August, with many feasting on butterfly-friendly plants. A late **brimstone** was sighted near Penybanc, Llandeilo SN616241 on 21/10, by Julian Friese.



Vanessid butterflies feasting at `Joe-Pye weed` *Eupatorium purpureum* at Tyrwaun, Pwll, late August 2012.

MOTH RECORDING IN CARMARTHENSHIRE: A HISTORICAL OVERVIEW – I K Morgan

It might be useful for moth recorders in the county, both current and future, if a summary of what is known of historical moth recording in the county is given. Much of the material contained in this review relating to the 1800s and the last century, has been taken from two earlier articles that I wrote in the *Dyfed Invertebrate Newsletter* in 1989 and 1990; these in turn were based on information contained in various periodicals or archive material which list in the References section at the end of this paper. Many of these sources were originally provided to me by Rosie Key who was based at the then Nature Conservancy Council's headquarters at Peterborough, whilst others were extracted by myself from a card index held at the Department of Zoology at the National Museum at Cardiff. These sources often related to papers in the older entomological literature, of which I obtained copies and since 1990, some other information has come to light, and this too, is included. The original papers were given to the current County Moth Recorder, Jon Baker for his safekeeping so that future researchers can view them.

I am sure that there may be other sources, unknown to me, of old records of moths in Carmarthenshire, and I suspect that there likewise remain old papers that I am not aware of. It is a shame too, that the collections once held at Carmarthen Museum are apparently in a bad state or even discarded (though this needs confirmation) and I wonder if other private collections survive, such as the small collection that was held

at Aman Valley Comprehensive School in the mid-1980s. The latter, possibly made by an old schoolteacher and inherited from one of the pre-comprehensive schools, included, for example wood white butterflies *Leptidea sinapsis*, and interesting moths may have been also present. Finally, as there exists a good series of specific *Carmarthenshire Moth and Butterfly Group Newsletters* for much of the post-2006 period, I have dealt less thoroughly with that period, as the contents are easily accessible to the present readership.

In the following account, when quoting old papers, please note that old scientific names may sometimes be given.

The first evidence I have of moth recording in Carmarthenshire relates to records made by William Baker at Cross Inn (the old name for Ammanford – a public house in the town centre still bears that name), in 1856. These appeared in the *Entomological Weekly Intelligencer* and they were records of poplar hawk moth and buff arches. It is interesting that an apparently *weekly* entomological publication appeared at that early date!

The first really good record came two years later, when in 1858, Sir John Dillwyn-Llewellyn, a member of a family who significantly contributed to natural history in the 18th and 19th Centuries and who resided at the Penllergaer Estate in Glamorgan, visited the extensive dune system at Pembrey. Here he collected a very noteworthy migrant, the purple marbled *Eublemna ostrina* (reported in Barrett, 1900). The sand-dune complex in those days was a very different place, with no forestry (which was first planted in the 1920s) and little native woody growth, but consisting of extensive mobile dunes with large wet slacks, all grazed heavily by sheep and horses.

The focus for moths then moves to Carmarthen when, in the early days of the formation of Carmarthen Museum, there is reference to the employment of a Mr Bodkin in 1867 to classify the various collections of minerals but also, in the same account, as to the efforts of Mr Edward William Shackell, a stationer of Guildhall Square. Shackell reports (reassuringly after *our* bad summer of 2012), that '1866 was in the highest degree unfavourable to the pursuit of entomology', but that he had caught 31 species of butterfly in the county and 69 species of moths. I wonder if any of these survive at the museum which is now housed at Bishop's Palace, Abergwili? Certainly, when I visited the museum in the late 1980s and requested to see the collections, most were damaged and decaying and most without locality or provenance labels and I do not recall seeing any with Shackell's name. No moth specimens of note came to my attention –indeed the only significant ones were of some wood white butterflies, fortunately with details of localities in the county (Morgan, 1987). The late 1860s also witnessed what was perhaps the first lecture on lepidoptera in Carmarthenshire, when a geologist, J.W. Salter, F.R.G.S. (not to be confused with the later J.H.Salter, the Ceredigion botanist), talked about the pleasures of collecting butterflies and moths (Dale-Jones, 2005).

1869 saw the publication of a paper in the *Entomologists Monthly Magazine* by Dr George Hearder, who was employed at what was then known as the Joint Counties Asylum, subsequently St David's Hospital, at Johnstown, Carmarthen. He evidently did not confine his mothing to that locality as he obtained 'a good series' of sand darts' *Agrotis ripae* at Pembrey (where it still occurs) and his record of brindled ochre *Dasyptolia templi* would also have been coastal, perhaps at the Llansteffan cliffs (a contender species for re-discovery!). Hearder also recorded the since-declined deep-brown dart *Aporophyla lutulenta*, and in another note (1884), he relates that 'one evening at dusk last September, one of my boys noticed a large, noisy moth hovering

over a bed of Petunias` at Carmarthen, which when captured `proved to be a worn specimen of *Sphinx convolvuli*` [convolvulus hawk-moth]. In his subsequent book (see later) about the larvae of British lepidoptera, which was published in 1880, O.S. Wilson offers his thanks to George Hearder and they must surely have met, or even gone looking for moths together, as both were living in Carmarthen at that time. Other sources give the date of Hearder`s death as 1894, at Carmarthen.

The *Entomologists Monthly Magazine* also provides the next batch of interesting records, this time (1871) quite a substantial bounty by E. Kaye at Laugharne. Before we consider and marvel at some of his pioneer captures, we have to recall that there were no light traps in those days- rather `sugar` (a mix of molasses or other sugars, perhaps augmented by rum) was the attractant, augmented by lucky discoveries at household lamps or breeding from carefully collected and by raising larvae. Even without our modern-day light traps, they did very well and deserve our praise. Amongst Kaye`s `goodies` he notes that in 1870, the death`s-head hawk-moth *Acherontia atropos* was `very common`, the hummingbird hawk-moth *Macroglossum stellatarum* was `very abundant` and that he had been given a specimen of a striped hawk-moth *Hyles lineata livicornia* – clearly a good year for migrants! Indeed, South (1960) remarked that 1870 had been a good year for records of the last-named species, and the 1870 Carmarthenshire occurrence is also cited in Matheson (1957). Other significant listings by Kaye were: Devonshire wainscot *Mythimna putrescens* - `two specimens at sugar`; white colon *Sideris albicolon* - `common`; pearly underwing *Peridroma saucia* - `very abundant`; crescent dart *Agrotis trux*- `common`; northern rustic *Standfussiana lucerneae*- `scarce`; Portland moth *Ochropleura praecox* - `one at sugar`; feathered ranunculus *Eumichtis lichenea lichenea* - `very common`; deep-brown dart *Aporophyla lutulenta* - `scarce`; red sword grass *Xylena vetusta* - `rare`; tawny pinion *Lithophane semibrunnea* - `common`; small purple-barred *Phytometra viridaria* - `scarce` and shore wainscot *Mythimna litoralis*- `one specimen at light`.

A decent haul indeed! – Laugharne`s coastal position, with its low Old Red Sandstone cliffs, saltmarshes and sand dunes, all contributed to this score.

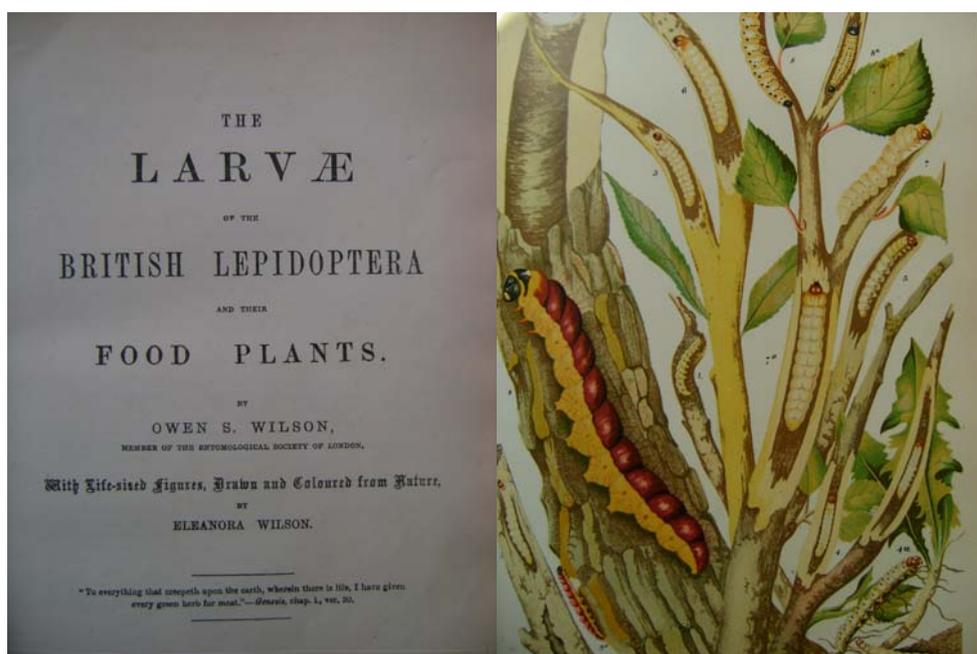
Kaye also recorded the migrant *Diasemiopsis ramburialis*, as well as the now even rarer *Diasemia reticularis* (= *litterata*). Barrett, the famous pioneering lepidopterist, discovered established breeding colonies of the latter in Pembrokeshire, including near the county boundary at Amroth, and it is quite possible that the same applied to the rocky coastline of SW Carmarthenshire, which is essentially an ecological extension of similar habitats. It was also established in SW England in the 19th Century.

Carmarthen returns to the spotlight, with the publication in 1880 of Colonel Owen S. Wilson`s monumental *Larvae of the British Lepidoptera and their Foodplants*.

Wilson was living at Cwmffrwd at the time, occupying the large property known as `Oaklands` that still stands amongst mature trees at the junction of the A484 and B4309. Interestingly, another significant Carmarthenshire naturalist - T.W.Barker - who was author of the *Handbook to the Natural History of Carmarthenshire*, also lived there when he published the latter book (see later notes) in 1905. It is known that Thomas Barker had connections with the church (he gives his profession as `Solicitor, Diocesan Registrar and Author`), and I suspect it was the same with Wilson, with Barker occupying the property on Wilson`s departure.

I have recently borrowed a copy of Wilson`s book from the British Library and re-checked any records sourced in Carmarthenshire, but I also went through this

publication in the late 1980s, using a copy that was then held at Bishop`s Palace, Abergwili. Upon checking by telephone last year (2011), I was told that the book was now housed in the Reference Section at the main library at Carmarthen. A further call to that library confirmed this, so it is available there for any Carmarthen-based naturalists to view this attractive book. In the book, there is but scanty locational details of species, but various species are listed for the county. These include yellow belle *Semiaspilates ochrearia*, goldenrod pug *Eupithecia virgaureata*, marbled pug *E. irriguata*, ling pug *E. absinthiata* f. *goossensiata*, white colon *Sideris albicolon*, Archer`s dart *Agrotis vestigialis*, northern drab *Orthosia opima*, blossom underwing *O. miniosa*, double kidney *Ipimorpha retusa* and purple marbled *Eublemna ostrina* (the latter referring to the 1858 record mentioned above). In 1883, Wilson also published a paper in which he noted death`s-head hawk-moth in the Carmarthen area.



The title page and an illustration from `Wilson`s Larvae....`

The end of the nineteenth century saw TB Jeffreys actively recording moths at Llansteffan and Laugharne (though again he was based at Carmarthen), publishing notes on the status of mainly common species, but also mentioning a convolvulus hawk-moth being brought to him at Laugharne on 18th September 1895. In another note (1898), he records the occurrence of `a nice black variety` of the small engrailed *Ectropis crepuscularia* at Laugharne and remarked that December moths *Poecilocampa populi* `were infested by ichneumons` that year. Thomas Jeffreys had a taxidermy shop in King Street, Carmarthen and, as well as moths he, not unexpectedly, also made a noteworthy contribution to Carmarthenshire ornithology by recording specimens of scarce or rare birds brought in to be preserved.

In 1888 there is a modest list of species from Llwyn Celyn, Llandovery [22/722329] by M.Graske, where he lists some local species such as alder kitten *Furcula bicuspis*; a great prominent *Peridea anceps* and some alder moths *Acronicta alni*, a species that was regarded as scarce in those days.

The new century saw the appearance of a slim but interesting first attempt to list and comment upon the wildlife of our county – *A Handbook to the Natural History of Carmarthenshire* (1905). I have a copy here at home, and it is wide-ranging, dealing

with flowering plants and ferns, birds and mammals and, of course butterflies and moths. For most species, they are simply listed with brief comments, the longer remarks left to those deemed rare or 'interesting'. I list them below, with Barker's comments italicised, exactly as I listed them in my 1989 article, and sometimes with the old scientific names. The grid refs given below are mine:

Death's-head hawk-moth *Acherontia atropos* – no data given.

Striped hawk-moth *Hyles lineata livicornica* - 'one taken by Mr Hoole at Glannant, Carmarthen [SN42]. Recorded by Col. Owen Wilson as occurring in the county'.

Narrow-bordered bee hawk-moth *Hemaris tityus* – 'near Oaklands' [Barker's home, SN42-16-]. Most, if not all flower-rich pastures near Barker's home – as in much of the county- are now agriculturally improved and consequently unsuitable for this moth. It must have been, like the marsh fritillary which also depends on devil's-bit scabious, once a relatively frequent species in the countryside].

White-barred clearwing *Synanthedon sphecoformis* - 'abundant at Dolaucothi' SN66-40- [record extracted by Barker from 'Tutt's Practical Hints for the Field Lepidopterist', 1908].

Currant clearwing *S. tipuliformis* – just listed, no data given.

Scarlet tiger *Callimorpha dominula*- 'taken by Mr Holmes* near the Carmarthen Training College' [Trinity College, SN39-20-].

(* John Brunner (see below) later referred to him as 'the late HS Holmes, an old tutor of mine at Trinity College').

Small chocolate-tip *Clostera pigra* - 'Beule-fawr, Llangunnor' [SN439181].

White colon *Sideridis albicolon* - 'O. Wilson's 'Larvae of the British Lepidoptera'.

Brindled ochre *Dasypolia templi* – listed, no data.

Scarce burnished brass *Diachrysia chryson* - 'Oaklands' [SN42-16-].

Blackneck *Lygephila pastinum*- 'marshy fields at Oaklands' [SN42-16-...a curious habitat for this species].

Yellow belle *Aspitates ochrearia* - 'O. Wilson's Larvae etc'.

Marbled pug *E. irriguata* – ditto.

Again, Carmarthen essentially remained the centre for moth recording in the county in the early 1900s, in the sense that a series of popular articles appeared in the 'Carmarthen Journal', the local newspaper of the area, written by a 'J.B.' (John Brunner - of whom, more later) and a 'G.M.H.'. (not George Hearder, who had died in 1894). To give a taste of these short notes, I offer some examples.

For Friday, 23 July 1909, they remarked that 'in and around Carmarthen' they had caught the dusky thorn' (in September 1908); and on other dates, caught the forester 'near Abergwili and Llanllwch'; and, interestingly, the cream-spot tiger (though no locality given). They caught a vapourer at Llangunnor in 1908 - 'infests the London parks, but a first record for Carmarthenshire' and a 'death's-head caterpillar' was found (no locality given) but 'squeaking as [it was] attacked by ants'. They also noted that they sometimes came across goat moth caterpillars.

On 30 July 1909, they stated that five and six-spot burnets could be seen in the Llanllwch area, as well as foresters and cream-spot tigers. The latter is particularly interesting as there are no modern records –perhaps it occurred in areas of marginal fen pasture that once skirted the current bog of Cors Goch Llanllwch, much of which would have been drained or improved subsequently. A huge area of bog and other habitat was also lost as late as the 1970s when the current showground/mart area was infilled – the local authority wanted to do the same with the whole bog but were only

stopped by a local conservationist (Margaret Dunn), aided by the Wildlife Trust and Stephen Evans of NCC, thus saving a marvellous moth and wildlife habitat.

John Brunker also subsequently had cream-spot tigers along the Tywi valley (see later notes) and I doubt whether a naturalist of his calibre would have mis-identified such a distinctive moth, particularly as he was familiar with the other tiger moth species in our county. Other records in the *Carmarthen Journal* include purple thorn, caught in a spider's web on a town lamp post, and an old lady moth that had taken up residence, for hibernation purposes, 'in one house in town' (houses were even colder those days!).

At a meeting of the Lancashire and Cheshire Entomological Society, held in Liverpool on 17 October 1910, a Mr R Tait exhibited a specimen of a scarce footman *Eilema complana*, a sand dart *Agrotis ripae* and, best of all, a Devonshire wainscot, all taken that season at Pendine [SN23-07- etc]. The latter, of course, was rediscovered as a Carmarthenshire species in 2010 (see *Carmarthenshire Moth Group Newsletter*, no.13).

During my researches in the late 1980s, I was directed to a manuscript document, held at the Carmarthen Records Office, which I copied and still possess. This was written by John Brunker and entitled '*Llanegwad Parish: Natural History*', within which he lists and comments on the range of wildlife found in that area. He actually lived at Llanegwad village, alongside the Tywi, taught at its local primary school before he ultimately moved to teach at Gelli Aur (Golden Grove). Brunker was buried in an unmarked grave at Llanegwad Church and he was a good all-round naturalist in the 'old tradition'. I remember discussing him with the late Dafydd Davies (of Rhandirmwyn, himself a noteworthy naturalist), who had actually met Brunker and seen his insect collections- Dafydd vouched for Brunker's identification abilities. Perhaps the most interesting (or contentious) moth record in his listings was that of the water ermine *Spilosoma urticae*, a species now confined to SE England, though there is an outlying population in Devon. It would be prudent and correct to have it on a pending or provisional list unless there is some verification – this is always a problem with old records, especially if habitats have changed or been lost. The rest of his list mostly refers to some local records of note, such as caterpillars and pupae of death's-head hawk-moth being brought in by schoolchildren after finding them amongst potato crops and with himself finding larvae of goat moths. An interesting comment of his refers to Carmarthenshire's meadows 'with their burnet moths and foresters' - a rare or absent sight on today's nitrogen-soaked bland pastures, and it is worth remembering that, as late as the 1930s, farmers along the Tywi welcomed the annual floods (provided that they were not too excessive or unseasonal), for the fertilising effects of its alluvial deposits.

Apart from John Brunker's rather limited efforts, which continued into the 1950s, the period from the early to the middle years of the century seemingly saw little activity – or at least little trace of it remains. I suspect that there was some casual collecting taking place. A Glamorgan lepidopterist, Terence Parsons, who was gathering data on the butterflies of Wales, was in contact with Brunker and also with the local naturalist brothers D.L. and B.R. Thomas, who recorded butterflies (including pearl-bordered fritillaries *Boloria euphrosyne*) and moths in the Cynwyl Elfed area (c SN38-26-). Amongst their few published records (in the *Entomologist*, 1952 and 1953), he noted sharp-angled peacock *Semiothisa alternata* (13.7.1951), alder *Acrionictaalni* (6.8.51-caterpillar), beautiful snout *Hypena crassilis* (27.7.52), beautiful carpet *Mesoleuca albicillata* (no date) and a migrant, a bordered straw *Heliothis peltigera* - 'a perfect male...netted at Conwil Waterworks', 5.7.1952.

I first came across the name of Terence Parsons when, after correspondence with FC Best (just before the latter died in 1987). Mr Best had lent me various letters from a very few naturalists (such as John Brunker) who were associated with Carmarthenshire, and with whom he himself had contacted regarding his own research into the distribution of lepidoptera in Wales. FC Best (perhaps appropriately given his initials!) worked for the Forestry Commission and was interested in butterfly recording – see his article in the then infant journal *Nature in Wales* (1956). Amongst his correspondence, which he allowed me to copy, were letters from Terence Parsons to Brunker. For those interested, copies of this correspondence were in the paper files given to the current Carmarthenshire Moth Recorder (JSB) in c2001 and have also been deposited at the National Museum at Cardiff. I attempted to trace Parsons both in the late 1980s and again in the late 1990s, but failed. Amongst the records of Carmarthenshire provenence, there were also interesting records from neighbouring Glamorgan and I past these on to Richard Smith of Butterfly Conservation, and he kindly offered to have another attempt at locating Terence Parsons. We already knew that his childhood home was in the Ogmere Valley (and had his past address), and we also knew that he was about to submit a PhD at University College Cardiff in May 1955. To cut a long story short, Richard Smith traced him to Rumney, Cardiff and both Richard and I were then able to write to him with various lepidopteran queries, which he kindly answered in 2008, shortly before he himself passed away.

In the 2008 exchange of letters between myself and Terence Parsons he kindly compiled a list of records sent to him by B.R. Thomas, of Springfield Road, Carmarthen, the more interesting of which are listed here:

Tissue *Triphosia dubitata* – Carmarthen 23.7.1952, one taken by D.L. Thomas (brother of B.R.Thomas..

Orange moth *Angerona prunaria* – Cwm Tawel Reservoir [for grid ref, see below under `scarlet tiger`] near Cynwyl Elfed, end of June 1951, three taken of this distinctive and difficult to misidentify species.

Convolvulus hawk-moth *Agrius convolvuli* – `two specimens in the Walton Collection`. [The latter collection was kept at Carmarthen Museum –see my earlier comments].

Death`s-head hawk-moth *Acherontia atropos* – Carmarthen, 27.5.1951, one given by a friend [to B.R. Thomas] who had picked it up on `The Parade`.

Privet hawk-moth *Sphinx ligustri*- Carmarthen 1951, a single specimen and one larvae on 29.9.1951.

Scarlet tiger *Callimorpha dominula*- Cwm Tawel Reservoir, near Cynwyl Elfed, end of June 1951, `one or two seen`. [I visited this site at SN384257 in the 1990s, utilising the public footpath that goes past it, but it is now much overgrown with scrub]

Bordered Straw *Heliothis peltigera* – in the list he clarifies the `Conwil Waterworks` site as Cwm Tawel Reservoir, near Cynwyl Elfed, 5.7.1952...`one perfect male taken by D.L. Thomas. He (B.R. Thomas) also added that the only other Carmarthenshire record known to him was one taken at light [no locality given] by Dr G.J.Hearder on 18.9.1884. The latter is interesting, as there may have been a paper written by Header –or a specimen possibly at Carmarthen Museum - that I have not seen.

Beautiful snout *Hypena crassilis* – Cwm Tawel Reservoir, 24.5.1952.

Terence Parsons also supplied some records and comments from correspondence with John Brunker:

Forester *Adscita staitices* - 'I have found it in localities frequented by the marsh fritillary' [sadly, actual localities not given].

Hummingbird hawk-moth *Macroglossum stellatarum* - 'Llanegwad, 20/6/1949, one flying around my garden at 8.30 am and watched for about three minutes feeding at 'Spur Valerian' [presumably *Centranthus ruber*]. Have seen some half-dozen in my garden at different times'. Also, 'seen at Pibwrlwyd Farm Institute garden, 1950'.

Scarlet Tiger *Callimorpha dominula* - 'Llanegwad, early July 1950, a fine specimen seen in my garden; this is quite a local insect'.

Alder moth *Acronycta alni* - 'Llanegwad, 1948, a larva found feeding on blackcurrant leaves in my garden...I have only seen three specimens in my lifetime'.

There appeared a handful of published records by others in the *Entomologists Record* such as that by Fairclough (1959)- relating to a Devon carpet at Pencader; Lea-Wilson (1953) - an alder moth at Laugharne; Miles (1960 and 1965, in *Nature in Wales*) - various common species at Ferryside and a hummingbird hawk-moth at Carmarthen; and Symes (1965) - larvae of goat moth found at Llandovery. Slightly later, in 1970, Cynthia Roberts (a biology teacher at a Llanelli secondary school), reported the rare yellow aberration *lutescens* of the ruby tiger *Phragmatopia fuliginosa* at Talley, in the 'Field Notes' section of *Nature in Wales* - the erstwhile journal of the West Wales Wildlife Trust.

The distribution maps in *Moths and Butterflies of Great Britain and Ireland* show a very thin scattering of pre-1970 10km square dots for Carmarthenshire. When I enquired about these in the late 1980s, I was told (Paul Harding, pers.comm.) that they probably originated from correspondence to John Heath, one of the early editors of the series and who had compiled the maps. The extremely few record cards that survived or were obtainable showed meagre data, often just the 10km square, even without locality and with a date class (eg 1960-70) and little else. Those that bore names were attributed to Dafydd Davies (who acted as County Lepidoptera Recorder for a period) and those of the contemporaneous BSBI Recorder, Ronald F. May of Ferryside. Examples of their records include a crescent-striped *Apamea oblonga* reported at Tywyn Burrows (RAF Pembrey Sands, SN30) and a plain golden y *Plusia jota* at the same site in 1969. The former is best treated as unconfirmed as a county species, though the habitat is correct (saltmarsh); perhaps further recording may re-instate it to the county list. R.F. May reported a cream-spot tiger *Arctia villica brittanica* from Tywyn Burrows and whilst it is possible, like the others elsewhere in the county, it could have been a misidentified scarlet tiger *Callimorpha dominula*. However, May also recorded the latter species, so he knew both of these tiger moth species. Tommie Warren-Davis, the Pembrokeshire botanist, made some records of Archer's darts, again at Tywyn Burrows, in the period 1961-68.

By the 1970s, Dafydd Davies of Ty'r Ysgol, Rhandirmwyn was listed as the County Recorder, for both butterflies and moths, by the West Wales Naturalists' Trust (the precursor of the present-day Wildlife Trust). Dafydd was a native of Cwm Tawe (Swansea Valley), who had come to live in the then remote village of Rhandirmwyn. He was headmaster of the local primary school and his home, 'Ty'r Ysgol' SN782440, was in the same grounds as the tiny school itself. Dafydd Davies was a much-respected naturalist, heavily involved in the conservation of the red kite (which survived in the Rhandirmwyn area during its nadir in the early part of the last century). He also served on the Advisory Committee for Wales of the Nature Conservancy Council and was a founder member of the Welsh Natural History Society, 'Cymdeithas Edward Llwyd'. Dafydd would later (in the 1980s) describe to me how he would take his schoolchildren to look for brown hairstreak *Thecla betulae*

eggs along the hedgerows around Rhandirmwyn, as well as telling me the locations of locally rare plants and other wildlife. Dafydd also remembered going to visit John Brunner at his home at Llanegwad (and viewing his insect collections, sadly later destroyed), and he also showed me a very small collection of insects he himself had made, which included a white-barred clearwing *Synanthedon sphecoformis*, taken by the Afon Bran near Llandovery SN808403 on 4th July 1977. I actually had the latter in my collection until it was, very recently (2012), destroyed by 'museum beetle' larvae! Behind his house at Ty'r Ysgol, he cultivated a 'wild garden', with plantings of various conifers to provide some greenery in winter, whilst upslope it merged into one of the famous 'hanging oakwoods', enlivened with redstarts, pied flycatchers and wood warblers in spring, all overlooking the Upper Tywi Valley below. It was here that he ran a Rothampsted trap, the dead contents being sent off for identification; this trap was operated for 34 years (from October 1976 to 2010), until serious illness meant that he was no longer able to do so. The newsletters of the Rothampsted Survey frequently drew attention to the richness of the Ty'r Ysgol 'catch'. Dafydd passed away in March 2012.

I had first met Dafydd on a Naturalists' Trust field meeting at Tywyn Burrows ('RAF Pembrey Sands') in July 1971 and, it was the first time that I had been to this site. The purpose of our trip was to try to re-find the fen orchid *Liparis loeselii*, but we failed (successional change has probably put paid to this species here), though we saw an immature goshawk, here at one of its first Welsh breeding sites, chasing a kestrel, and noted many sand dune and saltmarsh plants that were new to me. But what really struck me was the sheer abundance of insects – dark green fritillaries *Argynnis aglaja* and marbled whites *Melanargia galathea* were both conspicuous and frequent (and again new to me!) on the RAF Bombing Range, and also along the rides of the adjacent Corsican pine plantations at Pembrey Forest, together with my first sighting of day-flying bordered white moths *Bupalis pinaria*. It was really a day to remember! Subsequently, I would have the occasional day out in the field with Dafydd, including another memorable occasion many years later (on 26th June 1986), when we saw several uncommon species of longhorn beetles and clouded buff *Diacrisia sannio* moths on the upper fringes of the Nant Rhaeadr and Mynydd Mallaen, above Cilycwm.

In those days, 'county recorders' were appointed by the West Wales Naturalists' Trust and their roles varied, depending how energetic various recording schemes were or how popular the group being recorded. Birds (because of the various BTO initiatives and the annual bird reports) and plants (due to the very organised nature of plant recording under the BSBI) were active, but moth recording seemed to be very 'low key', the recorder just having to be custodian of records or perhaps offering advice with identification. As there were hardly any moth recorders in the county (sometimes even none!), this was not an onerous role in Carmarthenshire. Indeed, in the 1980s, I recall there was not even an ongoing national recording scheme for moths.

Also in the 1970s, the RSPB undertook surveys and welcomed others to do so at its Gwenffrwd and Dinas reserves that were quite close to Dafydd's home at Rhandirmwyn. This led to a number of important records such as (to give one example) that of dotted carpet *Alcis jubata* by Bernard Skinner in 1984 and many more (see below). The records are summarised in my paper of June 1990 in the *Dyfed Invertebrate Group Newsletter* but they include the following:

Light knot-grass *Acronicta menyanthoides*, sprawler *Brachionycha sphinx* (all the records of the latter in November, showing how important winter trapping can be), lesser spotted pinion *Cosmia affinis*, barred chestnut *Diarsia dahlii*, beech hook

tip *Drepana binaria*, wood tiger *Parasemia plantaginis*, smoky wave *Scopula ternata*, scarce silver-y *Syngrapha interrogationas*, Welsh wave *Venusia cambrica*, heath rustic *Xestia agathina* and barred sallow *Xanthia aurago*.

The list shows how productive is this part of Carmarthenshire for moths of uplands, unimproved pastures and woodland. For full details see:

http://yrefail.net/dig/DIG_Vol17.pdf

After Dafydd Davies, David Poulter (at Idole, south of Carmarthen) took on the role of County Recorder for a while in the 1980s and, in the mid-1980s, when the *Dyfed Invertebrate Group* was formed by Adrian Fowles and myself, I volunteered to act in a `caretaker role` and to collate any moth records made in the county. However, I was hardly active in the recording of moths and was considerably more focussed on other invertebrate groups (in particular hoverflies, soldier-flies, robberflies etc) and, like most of the recorders volunteering for this role, had a full time job to do.

Encouraged by the appearance of Adrian Fowles` *Moths of Ceredigion* (which helped guide me as to what could be expected in adjacent Carmarthenshire), and by the acquisition of my first moth trap in 1986, I embarked on rather irregular trapping at my then home at Erw-las, Llwynhendy on the coastal flats SE of Llanelli, though the first year that I (reasonably) regularly trapped was 1988.

Some 10 years earlier, I had developed a nascent interest in moths but could not afford to buy a moth trap that then cost c£60 (if my memory serves me correctly), disproportionately expensive for those days! Consequently, my moth `trapping` was confined to leaving the kitchen door open on summer nights at my parents` home in Denham Avenue, Llanelli, and seeing what came to the kitchen lights (which was not much!) and visiting the garden Buddleja with a torch! In that period, I was armed with reprints of Richard South`s two volumes of *The Moths of the British Isles* but, in 1984, on a visit to Aberystwyth, I purchased the then-new *Colour Identification Guide to Moths of the British Isles* by Bernard Skinner. Even with these, identification was often very slow business, comparing my live moth with the pinned-out, spread-winged moths in these books, and sometimes I could not even decide on the identification! I did however, have a few `good` moths, such as the first county record of a scarce bordered straw *Heliothis armigera* and an obscure wainscot *Mythimna obsoleta*, (the latter was originally misidentified as a white-speck by a more experienced Ceredigion moth`er!), The latter two were both caught at my Llwynhendy home trap.

As noted above, most of my attention at that time was focussed on a range of other invertebrate groups, which I collected with gusto in the natural history-friendly atmosphere of the old Nature Conservancy Council. Evenings identifying the daytime catches of other invertebrates sadly left little time for moths, but one consequence of wandering around, sharp-eyed, on the look-out for flies was that I did quite well with the diurnal clearwing moths, catching species such as six-belted *Bembecia ichneumoniformis*, thrift *Synansphecica muscaeformis*, red-tipped *Synanthedon formicaeformis* and yellow-legged *S. vespeformis*, all perhaps provoking jealous comments from any more nocturnal moth-trapping friends! The currant clearwing *S. tipuliformis* eluded me though, (it still does!), in spite of searching allotments; fortunately Jon Baker has more recently confirmed it to be still present in the county, at Johnstown.



Yellow-legged clearwing, collected at Stradey Woods, Llanelli, 8.6.1992. A thriving colony was on a senescent sweet chestnut (since felled) in parkland in front of the castle.

I also tried, (albeit on rather a small scale compared to my more recent activities in the mid-2000s), to trap at sites away from home. Some would be in the Llanelli area, such as the mixed woodland at Stradey Woods or the reedbeds and bulrush-swamps in the Llwynhendy-Bynea area. The shingle spit at Penrhynwyn and the nearby Machynys Ponds with its wetland moths were also trapped. There were some trips too further afield, including the limestone ashwoods at Capel Dyddgen (Crwbin), the wet meadows at Ynys Uchaf (Porthyrhyd), and a failed venture on the cliffs west of Llansteffan.

The longest distance mothing expeditions were two at the high corrie cliffs at Llyn y Fan Fach, one of these trips yielding grey mountain carpet *Entephria caesiata* (new to Carmarthenshire) but the other nothing because, as with the Llansteffan cliffs episode, I had not fully recharged the trap batteries!

Things took a turn for the better in the late 1980s when the Wildfowl and Wetland Trust established its sole Welsh reserve and centre at Penclacwydd, which was just 10 minutes walk down the road from my then home. I still recall a Sunday afternoon in mid February 1989, when I was rummaging for pseudoscorpions in a disused hay barn at Tir Morfa farm, which formed part of the WWT holding. I was so engrossed in trying to find these tiny invertebrates that I did not hear the Curator (then Tony Richardson) appear, and his arrival consequently rather took me by surprise.

Accompanying Tony was a new member of staff, and this person was introduced as having a keen interest in moth trapping. His name was Barry Stewart and he certainly gave an impetus to moth recording locally.

Barry's initial efforts were to survey the moths at his first home in Carmarthenshire - Tir Morfa farm, which is surrounded by saltmarshes, coastal grazing levels, fens, reedbeds and willow carr. He set about moth trapping with great enthusiasm in 1989, achieving great records such as rosy wave *Scopula emutaria* in late June/early July and white satin *Leucoma salicis* on 19th July. He also trapped, with again good results, at Ffrwd Fen, Pembrey and on the adjacent escarpment at Mynydd Penbre. Barry's enthusiasm and knowledge certainly gave me encouragement and he would often help with identification - it was great to have a relative expert just `down the road`. I remember certain `moth lessons` that he gave, such as how a mouse moth *Amphipyra*

tragopognis would scuttle away (this is a species that has become rare in recent years). This joint enthusiasm carried on to the next year (1990), with both of us trapping separately and, occasionally, jointly. I was also still very much 'out-and-about' with my 'day job' and this led to useful records of forester moths *Adscita staites*, chimney sweepers *Odezia atrata* and, once, small argent and sable moths *Epirrhoe tristata*. Again, these are species of which we see a lot less these days, partially because there is less active field work but primarily due to loss of habitat, either by agricultural improvement of flower-rich pastures or neglect leading to scrub woodland.

In 1991, Barry was joined by two other keen trappers: Andrew Lucas who, that year, began work with the Countryside Council for Wales in Carmarthenshire, and a young Carmarthen enthusiast, Daniel Raynor, who trapped at his home in that town.

Andrew, armed with portable traps, focussed on the old parkland at Gelli Aur Country Park (where he had previously worked), as well as at his home at Betws near Ammanford. Robin Howard, whose name regularly now appears in the respected *Atropos* journal, also made an appearance in the county, when he was contracted to survey open cast coal sites for British Coal, and during that process he recorded Blair's shoulder-knot *Lithophane leautieri hesperica*, new to the county. By 1991, Barry had moved to live at Water St, Kidwelly (though still employed at Penclacwydd) and good records were made at this locality, as well as his 'away from home' efforts at Penclacwydd, Ffrwd and the Carmel ridge.

The next year Barry again continued in providing 'quality records', such as the smoky wave *Scopula ternata* that he had at Caeo Forest when searching for nightjars in June, and both Andrew Lucas and Robin Howard were also actively productive. Their records were now augmented by a significant input from Steve Lucas who mostly then trapped at the Wildlife Trust's Dinefwr Castle Woods reserve (where he was warden). As my son was born in 1992, my trapping slumped, though I continued the casual daytime recording. I did little trapping too in 1993, a year once more dominated by Barry Stewart, again aided by Andrew Lucas and Steve Lucas. Julian Friese made a nice find of a wood tiger on Mynydd Moelfre in late June of that year, and many other diurnal moth records were submitted by the CCW 'Phase 1 and 2' Grassland Survey teams, who had been encouraged to do so. The latter led to many records of burnet moths, scarlet tigers (as well as marsh *Euphydryas aurinia* and small pearl-bordered fritillaries *Boloria selene*).

A potential disaster when Barry went off to college at Plymouth was negated when he soon changed to Swansea University and moved to live almost obliquely opposite the writer at Erw las, Llwynhendy! His recording continued in 1994, as it did with Andrew Lucas and, helped by Steve Lucas expanding his efforts, again they achieved good results.

By 1995, the author was unable to trap due to various domestic reasons (and it would remain so for the next six years or so), but Steve Lucas was very active and had taken over the reins as County Moth Recorder. He was trapping at several sites in the county and, by targeting different habitats, Steve was able to obtain some really noteworthy records such as the small chocolate tip *Clostera pigra* at Pembrey Forest and shore wainscot *Mythimna litoralis* at the adjacent Cefn Sidan (Pembrey). Barry Stewart was also energetically recording, giving attention to pugs, with records of Haworth's pug *Eupithecia haworthiata* at Pembrey Forest and shaded pug *E. subumbrata* at Pembrey Burrows. He also made a record of madder pearl *Mecynia asinalis* on the cliffs at Pendine. In 1996, Steve Lucas was much held back in his activities, as his Robinson trap had burst into flames not long into the main trapping

season, and he had to rely on other trappers to carry on with the recording. Again, this was mainly Barry Stewart (mostly trapping at Erw-las, Llwynhendy), but now with the first appearance of another very able moth recorder, Jon S Baker from Oxfordshire, who was then periodically based at his parents' home at Nantgwyn, Trawsmawr (on the edge of a deep oak-clad 'cwm' north of Carmarthen).

Jon made his mark in 1997, with a lot of useful records from Nantgwyn, including a migrant white-speck *Mythimna unipunctata* in late July - it was not a bad year for migrants with, for example, records of hummingbird and convolvulus hawk-moths elsewhere in the county. Steve Lucas's home trap at Betws on the southern flank of the Aman Valley attracted a starwort *Cucullia asteris*; indeed the Aman Valley and the southern slopes of Mynydd Du are currently very much unrecorded and remain of great moth potential. Jon's contribution (such as the notable bleached pug *Eupithecia expallida* at Nantgwyn for the second year running) continued in the next year (1998), and Steve Lucas continued his work at Betws and encouraged moth survey work at the then in development National Botanic Garden at Llanarthne. A death's-head hawk-moth was reported (via Ian Tillotson, the veteran Ceredigion moth trapper) at St Clears on 9th May 1998.

1999 saw a much more lengthy and intensive trapping effort in the county (from May to September) by Jon Baker, with him also focussing on the microlepidoptera, making very many new county records. One of the interesting records made that year was the pyralid moth *Phlyctaenia stachydalis*, recorded by Jon at Nantgwyn, in the company of another new, very proficient recorder in the county, Sam Bosanquet, who had previously trapped enthusiastically at his home county of Monmouthshire (Gwent). Steve Lucas attended a workshop on plume and pyralid moths at the National Museum of Wales at Cardiff in that year and he too developed an interest in those latter groups. A really nice moth to find in a 'home-trap', was Steve's leopard moth *Zeuzerina pyrina* which he caught at Betws on 28th July of that year. Again in 1999, Jon Baker started what became an ongoing association with the Pembrey area by trapping at Pembrey Country Park; this would later develop into his very complete and comprehensive, landmark survey of the Pembrey moth fauna - *The Moths of Pembrey Burrows and Forest* (Baker, March 2004). By this time, Jon was showing great energy and enthusiasm with regard to moth trapping, working at various sites including continuing to survey at Pembrey. For example, an email that he sent me on 6th August 2005 (at 5.01am!), gives a feel of his enthusiasm and success during that period. It simply stated, 'best night ever...one MV till 2.40am, produced over a thousand moths of nearly 200 species'. There was then a very long list of moths! By this time, Barry Stewart had moved out of the county (to Gorseinon, just over the border in Glamorgan) and, excepting limited subsequent forays to record at the Wildfowl and Wetlands Trust's reserve at Penclacwydd and annually, (currently 2003-12) producing good records at the BSBI week-long summer field meetings held at Glyn hir near Llandybie, he was now concentrating on western Glamorgan. His exceptional contribution to moth recording there, (such as -for example- finding the 'Red Data Book' silky waves *Idaea dilutaria* on Gower), and his part in the establishment and running of the successful Glamorgan Moth Recording Group are outside the scope of this article.

The present author of this article hardly did any moth trapping in the late 1990s, only restarting in 2001 (a few records) with more the next year. The few stalwarts continued to trap, occasionally aided by others such as Paul Aston at Pembrey, who was then briefly resident in the county, but Jon Baker's efforts were, by now, clearly

in the ascendancy and Jon certainly absolutely dominated moth recording in the county by 2001, the year when he took over as County Recorder.

He provided by far the lion's share of records for 2000, a year in which he noted the exceptional numbers of migrants, notably the unprecedented influx of white-specks *Mythimna unipunctata* and record-breaking numbers of *Udea ferrugalis* and dark-sword grass *Agrotis ipsilon*, along with *Nomophila noctuella*, turnip moth *A. segetum*, convolvulus hawk-moth *Agrius convolvuli*, hummingbird hawk-moth *Macroglossum stellatarum*, gem *Orthonama obstipata*, vestal *Rhodometra saccharia*, bordered straw *Heliothis peltigera* and pearly underwing *Peridroma saucia*. Jon also made a very noteworthy list of other moths, including no less than some 200 species of micros, from his 'home trap' at Nantgwyn.

It was a pity that more of us (myself included) were not recording during that good migrant year. Indeed, there was only a very small number of miscellaneous records by other recorders, one of which the find, by north Ceredigion moth enthusiast Mike Bailey (warden of Cors Fochno) and Jon Turner, of a dead lunar hornet moth *Sesia bembeciformis* near Carmel Woods during a CCW field meeting, which was shown to me literally seconds after they found it. Some years later (2007-8), I found larval workings showing the characteristics of those excavated by this moth at the base of nearby old willows *Salix cinerea*.

Soon after Jon began his stint as County Recorder, he embarked on sorting out the mass of data that existed in various formats - paper lists of records, electronic lists or miscellaneous published papers in local or national newsletters and journals. This was a substantial job and Jon deserves our gratitude for undertaking this work. As noted previously, it could be said that the county moth recorders (Dafydd Davies, David Poulter, myself and Steve Lucas) in Carmarthenshire, were acting more in a 'caretaker role' ie simply collating the records submitted, perhaps sometimes rejecting some and also summarising the annual records of note in the *Dyfed Invertebrate Newsletter* or *Llanelli Naturalists Newsletter/Bulletin*. Jon came to the county with a great deal of general moth knowledge and honed identification expertise and he put together an electronic core database of modern records which are all regarded as bona fide and correctly identified. This core of data can be recorded as 'safe'.

To deal with records of varying degrees of uncertainty, Jon (pre-2006) developed various categories of records (and I partially quote him below):

Category A1 (Green) – those species of which there is no doubt it has occurred in the last 50 years (ie. where there is a specimen, photograph or otherwise authenticated by the current County Recorder).

Category A2 (Green) – those moths that are accepted as on the county list, even though specimens or photos have not been seen by the current County Recorder.

When the latter occurs, they can be upgraded to Category A1.

Category B (Amber) – pending records, awaiting confirmation. When that is achieved then other records of the species can be reassessed and upgraded if so deserving.

Category C (Red) – records recorded in the last 50 years but not regarded as acceptable until full proof is obtained. Future records will also have to be verified, but in most (but not all) cases earlier records are unlikely to be restored.

Category D (Black) – Records made over 50 years ago.

In the 2006 Annual Moth Report, Jon produced a fuller version of the above, with lists of the species involved. Please note that several of the species will have now been upgraded following records in the subsequent recording period in that they have been recorded anew and verified by Jon.

There is always the risk, of course, of some valid records being rejected that are actually genuine, but if proof is pending, or if future recording and knowledge of moth distribution in Carmarthenshire or some other reassessment changes perceptions as far as a particular species is concerned, then such records can be reviewed (by consensus if need be) retrospectively, and restored to more appropriate category status. We also should, certainly in my opinion, after careful consideration, give far greater credence to the records made by some of the old Victorian recorders and others in the succeeding century. There are records, made by reputable lepidopterists, that logically ought to be on the county list and this is the stance taken by other counties, with records only ignored or rejected if there is real concern regarding their validity or the potential for mis-identification. A few records cited as 1st, 2nd or 3rd county records in recent years are actually most certainly not so, having been preceded by others. They are perhaps better classified as 1st, 2nd or 3rd *recent* records, in a particular time-class.

A readable summary of the moth highlights for 2001 (written by Jon Baker) appeared in the October 2002 issue of the *Llanelli Naturalists Bulletin*. The main effort in recording that year was again by Jon himself (who was by then living at his current home at Job`s Well Road, Johnstown), with some additional records from visits to the county by David Slade, Barry & Sandra Stewart and some casual records from Sam Bosanquet and myself. One highlight was a large red-belted clearwing *Synanthedon culiciformis*, attracted to a pheromone lure at Pembrey Forest set up by Barry and Sandra but there were a great many other `good records` made by Jon. In a retrospective `catch-up` summary in the May 2007 issue of the same *Bulletin*, Jon addressed new or otherwise interesting records made for three seasons – 2002-2004 (inclusive). The numbers of those contributing records were seen to be increasing through those three years; amongst those listed were regular recorders such as Sam Bosanquet, David Poulter and myself, but also some newcomers in this period who were subsequently to make more regular contributions, such as Martin Lovell and Julian Wormald. Barry and Sandra Stewart, although based `next door` in Glamorgan, continued to make regular recording visits and likewise, visits by Dave Grundy and Andrew Graham made some really noteworthy finds. Readers are referred to the various accounts cited in the listings later in this paper for the many records that are too numerous to mention here. It is also worth drawing attention to a survey (Stewart & White, 2003) that was undertaken to evaluate the moth fauna of the Butterfly Conservation reserve at Caeau Ffos-fach near Cross Hands. This site, although primarily noteworthy because of its marsh fritillary population, was also shown to support some locally significant moths, with double line, four-dotted footman *Cybosia mesomella*, dingy shell *Euchoeca nebulata*, and small chocolate-tip *Clostera pigra* amongst the 312 species recorded there. In 2005, Jon was unable to provide a summary of the year`s trapping, so as to not break an almost 20-year tradition of annual summaries, I summarised some of the highlights in south-east Carmarthenshire that were known to me in the *Llanelli Naturalists Newsletter* of November 2005 (note: both a regular *Newsletter* and an irregular *Bulletin* are published by the Llanelli Naturalists – see the `References` section below for full details). Some of the best finds of 2005 were the discovery of the `Biodiversity Action Plan` species, narrow-bordered bee hawk-moth *Hemaris tityus* by a party of dipterists at RAF Pembrey Sands (aka Tywyn Burrows), which was subsequently seen in the field by Jon and myself, and a larvae of the vapourer moth *Orgyia antiqua* found at the same site, but this time by botanists! 2005 also saw the capture of the rare waved black *Parascotia fuliginaria* by Simeon Jones at the North Dock, Llanelli and my find of a population

of wormwood *Cucullia absinthii* caterpillars at a doomed `brownfield` site at Pemberton, Llanelli (the new Scarlets stadium was subsequently built there). Barry Stewart also visited this latter site and he made further useful records and observations that were summarised in the Glamorgan Moth Recording Group Newsletter in October 2005. Jon Baker too produced a short report – *The Lepidoptera of RAF Pembrey* - in 2005. Again, for 2005, I again refer readers to the previously published accounts for the details of noteworthy records.

The year 2006 was a landmark in that there was the appearance of the first of the *Carmarthenshire Moth and Butterfly Group Newsletters*, edited and produced by Jon Baker. Thirteen issues, packed with both news of exciting or interesting finds, as well as reviews of certain moth families and hints on their identification, were to appear quite regularly until the late summer of 2009 (this last one had the name changed to *Carmarthenshire Moth Group Newsletter*, with the deletion of `butterflies` in the title). Names of some enthusiasts from that period include Bronwen & Ivy Berkshire, Melanie Collier, Anna Hobbs, Martin Lovell, Fay Sharpley, Lee Walker, and Julian Wormald. After a gap of two years, the newsletter was `re-activated` in 2012 and it is now hoped that it will appear more regularly. Such newsletters, as well as being extremely informative, also serve to bind together lepidopterists in the county and to give the deserved feedback to those who have made the effort to contribute records. The newsletters were particular regular in the early part of this period, reflecting the quite intensive recording that took place, and there were many new county records as well as occurrences of various scarce or local moths to report. An, as yet not quite complete, review of the Pyralids of Carmarthenshire was particularly informative, with photos of the species concerned (Jon is a very accomplished photographer), hints on identification and status in the county and it was very well received. Hopefully, Jon may be able to complete this short series of papers at some later date. Additionally, 2006 was a particularly notable year for immigration and the consequent records also received attention in its pages.

As well as the Newsletters referred to above, another major effort by Jon was the extremely comprehensive (and already mentioned) *Moths of Pembrey Forest and Burrows*, which appeared in March 2004, a huge undertaking in which he alone made almost 5000 records of macro and microlepidoptera during the years 2000 to 2003. To this was added the lesser number of records made by other observers, making this area the best studied (as well as one of the richest) in the county and one of the most studied in Wales. On January 5th 2006, Jon Baker gave a fascinating and much-enjoyed lecture on `Carmarthenshire Moths` to the Llanelli Naturalists Society, illustrated by his excellent photographs. In some years too, Jon produced an annual moth report, the ones issued for 2006, 2007 and 2008 being particularly detailed and informative, with useful summaries of the general county status of moths, in addition to the records made during those years. Sam Bosanquet became a major contributor to moth recording in the 2000s, particularly after his move to live at Brechfa. As with Jon, Sam`s identification skills and `moth knowledge` has been critical in the advancement of moth recording in the county and Sam has made a large number of important records, including microlepidoptera. As most of Sam`s finds are covered in the group`s newsletters, or other recent publications, readers are directed to them for more information.

As noted above, no newsletters appeared in 2010 or 2011, so many felt that a retrospective issue was needed and it was compiled and edited by myself and Jon in Spring 2012, which offered a summary of the main highlights of recording in those two years as well as exhorting recorders to continue their good work.

As it transpired, 2012 proved to be an awful summer in terms of its persistent rain. After a dry late winter and promising early spring, the rest of the summer and autumn was consistently very wet, with mostly poor numbers of moths in our traps. Nevertheless, a few of us persevered and some useful records were made, which are summarised elsewhere in this current newsletter.

As can be seen, the tradition of moth recording in Carmarthenshire is long, albeit punctuated by periods of inactivity or by the converse spurts of energetic recording. The old Victorian and 20th Century recorders provided a basis, not only on which we can continue to elucidate which species occur in our county but also to help work out the distribution of those species of various levels of conservation concern. I certainly hope that we can continue to record as a collective *Carmarthenshire Moth and Butterfly Group*, giving encouragement and help to potential or new recorders, as well as tempting past recorders to restart –otherwise our coverage of our still habitat-rich county will be incomplete. Perhaps we ought to try to model ourselves on the successful Glamorgan Moth Recording Group (GMRG), which has been very active since the mid-1990s, holding field meetings and –importantly- ensuring the vital feedback to members with *regular* newsletters. The GMRG are, very soon, to publish (it is now at the printers) a thorough review of the Butterflies and Moths of Glamorgan, including the microlepidoptera. Perhaps we should set ourselves a similar target?

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APPENDIX

Sources of moth reports in the *Dyfed Invertebrate Group Newsletter*, *Llanelli Naturalists Newsletter* & *Llanelli Naturalists Bulletin*, arranged chronologically.

Dyfed Invertebrate Group (DIG) Newsletter.

see:<http://yrefail.net/dig/index.htm> which gives access to the early years of the DIG articles.

NB. The following reviews of records (except for 1986), mostly relate to the previous year's recording. The author of each annual review is given and precedes very brief summary notes.

- 1986 – **4**:4. D.Poulter. Hummingbird hawk-moths, scarlet tiger, forester etc
- 1988 - **9**:3-4. I.K.Morgan. Oblique-striped at Pembrey.
- 1989 – **12**:3-4. I.K.Morgan. Trapping at Llwynhendy [note erroneous record of white-speck (it was an obscure wainscot)], privet hawk-moths, scarce bordered straw etc. Thrift clearwings (Wharley Point); chimney sweepers in N. Carms.
- 1990 – **16**:4-7. I.K.Morgan. Barry Stewart trapping at several sites (Llwynhendy, Penclacwydd, Mynydd Penbre); marked increase in trapping by IKM. Many noteworthy records, including some from wetland/reedbed sites in SE Carms.

1991 – **20**:6-9. I.K.Morgan. Trapping at Llwynhendy, Pembrey Forest, Cwm Clydach, Ffrwd Fen and other coastal marshes. Clearwing records.

1992 – **24**:7-9. I.K.Morgan. Barry Stewart trapping at Kidwelly, Penclacwydd (rosy waves etc), Ffrwd Fen. Andrew Lucas starts trapping at Gelli Aur Country Park; other new recorders contribute from elsewhere.

1993 – **26**:2-8. I.K.Morgan. Continuation of Barry Stewart trapping and expansion of Andrew Lucas trapping at Cors Goch Llanllwch & Gelli Aur, with Steve Lucas at Dinefwr Castle Woods and Betws and Robin Howard at Carmel Woods.

1994 – **28**:5-9. I.K.Morgan. Barry Stewart in Lower Gwendraeth Valley and elsewhere. Much effort by Andrew Lucas (Carmel Woods and other sites) and Steve Lucas (Betws).

1995 – **30**:3-14. I.K.Morgan. Barry Stewart at Llwynhendy, Penclacwydd, Cors Carmel and Tycroes; Andrew Lucas at Tirlan (Llwyn teg, Llannon); Steve Lucas at Betws etc. Many casual diurnal records from CCW staff and others.

1996 – **32**:3-9. I.K. Morgan & S.Lucas. Major expansion in effort by new County Moth Recorder Steve Lucas, recording at Tregyb Woods, Pembrey Forest and Betws. Barry Stewart still very active, though he moved out of the county towards the end of the season.

1997 [re 1996] – **34**:9-14. S.Lucas. A good number of macrolepidoptera recorded (some 260+ spp), including some notable species. A reasonable year too for migrants – gem, pearly underwing, bordered straw etc.

[Note the 1995 record of scarce tissue at Tregyb was re-determined as tissue moth, whilst the erroneous attribution of a record of broad-bordered bee hawk-moth at Nantgwyn was due to a misunderstanding and should be deleted].

1997 [re 1997] – **34**:14-19. S. Lucas. Barry and Sandra Stewart now `out-of-county`, though making occasional mothing visits eg grass egger at Pendine. Steve Lucas still trapping at Betws - glaucous shears, light knot-grass, olive, starwort etc (and also trapping at some other sites inc Cors Goch Llanllwch – dingy shell, four-dotted footman etc) and Jon Baker starting to make his mark on visits to his parents` home at Nantgwyn (Trawsmawr).

1999 [re 1998] – **36**:4-7. S. Lucas. Reduced input by the main recorders, though Jon Baker making some visits to the county, with (eg) bleached pug and waved carpet at Nantgwyn. Grass egger at Sandy (Llanelli), alder kitten at Betws, etc. Some migrants inc a death`s-head hawk-moth at Whitland.

1999 [re 1999] – **36**:7-10. S. Lucas. Major increase of records by Jon Baker with, for example bleached pug, bilberry pug, horse chestnut and many new microlepidoptera records at Nantgwyn; JB also trapping at Pembrey & Kidwelly Quay. Some interesting records by SL, such as a leopard moth at Betws.

2001 [re 2000] – **37**:40-44. I.K.Morgan. Petty resurgence of recording by IKM, mostly daytime records, but huge increase in records by Jon Baker, with many highlights. JSB. recorded many resident species at Nantgwyn and was seemingly the only person recording the ample migration of 2000 [white-speck, gem, vestal, bordered straw etc].

(The Dyfed Invertebrate Group Newsletter ceased publication in 2002, the above being the last newsletter). Please also note that, occasionally, some of the annual reviews also appeared in the Llanelli Naturalists Newsletter or Bulletin.

For BOTH the Llanelli Naturalists Bulletins and the Newsletters below, access can be achieved via <http://www.llanellinaturalists.org.uk/> and by following the links. As many of the newsletters were scanned, and are not fully checked, `typos` may occur.

Llanelli Naturalists Bulletin

2002 [re 2001] **6**:16-20. Jon Baker. A full and informative summary of two years` recording, including new county records (NCRs) of some micros, with photographs by JSB.

2007 [re 2002, 2003 & 2004] **7**:27. Jon Baker. A substantial report, filling almost the entire issue of the Bulletin, covering three years and crammed with interest, including many new county records. Again augmented by JSB`s photographs.

Llanelli Naturalists Newsletter

2005 [re 2003 & 2004] **71**: 11-13. IK Morgan. Focussing on the author`s trapping at Tyrwaun, Pwll and elsewhere in the Llanelli area, listing the scarcer moths [eg silky wainscots, white colon, scarce burnished brass etc, and also a few migrants eg vestals.

2005 [re 2005] **72**:11-13. I.K.Morgan. As above, article mostly limited to the Llanelli area. Noteworthy moths include lime hawk-moth, chamomile shark, wormwood.

Both of the above articles were accompanied by photos by JSB.

Carmarthenshire Moth and Butterfly Group Newsletter

Note: these are obviously packed with much relevant moth-related information and are thoroughly recommended to those with an interest in the county`s lepidoptera.

No 1 (May 2006) – highlights of year so far (JSB).

No 2 (June 2006) – further highlights (much expanded, with photos). Identification tips re `white waves` by JSB.

No 3 (July 2006) – again an expanded issue with highlights and `first dates` by JSB. Report on inaugural field meeting at Gelli Aur Country Park (5.7.2006) by same author.

No 4 (Aug 2006) – report on field outing to Pembrey Burrows (23rd Aug); other highlights of recording in the county and more `first dates`, all by JSB.

No 5 (Sept 2006) – More highlights of recording and `first dates, notes on migrant moths in 2006 (all JSB); article on lepidoptera and elms by IKM.

No 6 (Oct 2006) – the last of an amazing `run` of six newsletters in a year, a testimony to the enthusiasm of JSB and other recorders in a good moth trapping year. More highlights, and early (and late) dates plus advice on targets for winter trapping by JSB; article on gardening for butterflies and moths by IKM.

No 7 (June 2007) – highlights and earliest dates (JSB) plus an article on Carmarthenshire`s Lost Butterflies and their Recorders by IKM.

No 8 (July 2007) – highlights of the year so far and a major article on the Crambids of Carmarthenshire by JSB.

No 9 (Aug 2007) - recording highlights and a continuation of JSB`s series on pyralid moths in the county.

No 10 (Sept 2007) – more highlights, a write-up of National Moth Night 2007 and continuing with the pyralids of Carmarthenshire series, all JSB.

No 11 (Oct 2007) – highlights for the latter part of the summer (JSB) and an article on the heath rustic in Carmarthenshire by IKM.

No 12 (Summer 2008) – National Moth Night (7.6.2008) and highlights of the year (JSB).

No 13 (Summer 2009) – highlights of the year (JSB).

No 14 (Summer 2012) – a `catch-up` issue, as the newsletter had not appeared for three years. Highlights of 2010, 2011 and a notice regarding National Moth Night in late June; also two articles- on moth trapping and day-flying moths in

Carmarthenshire (all IKM); moth trapping at Carmel (Mat Ridley) and a list of plume moths recorded in the county (JSB).

No 15 (Winter 2012) – recording highlights of 2012; notes on historical recording of moths in Carmarthenshire (both IKM).

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Tyrwaun, Pwll – IKM`s home trap site

The `moth catchment` & view from my trap, looking south;
Gower can be vaguely seen, now partially obscured by trees.

`Hark the Herald....` A Happy Christmas to all members of the Carmarthenshire Moth & Butterfly Group.



Hibernating herald moth: photo taken by Nigel Stringer in a cave near Crwbin 29/11/12.