NATUR CYMRU

A Review of WILDLIFE in Wales

Rhif/Number 8 ▪ Hydref/Autumn 2003

- Yr afal Enlli/The Bardsey apple
- Llên y llysiau – llysiau'r wennol
- An artist's view of Ynys Enlli
- Roads and wildlife – a perspective
- Mary Edith Morris' diary
- Welsh islands round-up
- Mapping seabed habitats around Wales
- Avocets 'on the level'
- Gwenynen y glannau
- Farming for biodiversity/rural communities
- At home on the reserve
- Hysbysfwrdd/NoticeBoard

NATUR CYMRU
A Review of WILDLIFE in Wales

Golygydd/ Editor:
James Robertson
Tel: 01248 385602
j.robertson@naturcymru.org.uk

Golygydd Cynorthwyol/Assistant Editor:
Mandy Marsh
Tel: 01248 385574
m.marsh@naturcymru.org.uk

Tanysgrifiadau/Subscriptions:
£12.50 y flwyddyn/per year

A fyddech gystal ag anfon sieciau yn daladwy i:
Please send cheques payable to ***Natur Cymru*** to:

Natur Cymru
Maes y Ffynnon
Penrhos Garnedd
Bangor
Gwynedd
LL57 2DW

Cyhoeddir erthyglau yn yr iaith wreiddiol. Mae crynodeb yn yr iaith arall yn dilyn pob erthygl. Ceir rhai colofnau arferol yn y ddwy iaith. Os dymunwch gael cyfieithiad o unrhyw erthygl, cysylltwch â'r golygydd.

Articles are published in the language in which they are submitted. They are followed by summaries in the other language, and some regular columns appear in both languages. If you would like to receive a translation of any article, please contact the editor.

Cyhoeddir *Natur Cymru* bedair gwaith y flwyddyn, mis Mawrth, mis Mehefin, mis Medi a mis Rhagfyr. Cefnogir y cylchgrawn gan aelodau o Bartneriaeth Bioamrywiaeth Cymru. Y rhain yw: Cyngor Cefn Gwlad Cymru, Asiantaeth yr Amgylchedd Cymru, y Comisiwn Coedwigaeth, Llywodraeth Cynulliad Cymru, Amgueddfeydd ac Orielau Cenedlaethol Cymru, Cymdeithas Frenhinol er Gwarchod Adar, Ymddiriedolaethau Bywyd Gwyllt Cymru a WWF Cymru.

Bwriedir i *Natur Cymru* hyrwyddo a chyfnewid gwybodaeth am fioamrywiaeth a hyrwyddo dadl. Nid yw'r farn a fynegir yn y cylchgrawn hwn o anghenraid yn farn y noddwyr. Os oes gennych wybodaeth, erthyglau neu waith celf y credwch a allai fod o ddiddordeb i'r darllenwyr, cysylltwch â'r Golygydd os gwelwch yn dda.

Natur Cymru is published four times per year, in March, June, September and December. It is supported by members of the Wales Biodiversity Partnership. They are: Countryside Council for Wales, Environment Agency Wales, Forestry Commission, Welsh Assembly Government, National Museums and Galleries of Wales, Royal Society for the Protection of Birds, Wildlife Trusts, Wales and WWF Cymru.

Natur Cymru is intended to promote the exchange of information about biodiversity and encourage debate. The views expressed in this magazine are not necessarily those of the sponsors. If you have information, ideas for articles or artwork which you think might be of interest to readers, please contact the Editor.

Mae ***Natur Cymru*** wedi'i argraffu ar bapur di-glorin/***Natur Cymru*** is printed on chlorine-free paper.
Llun y clawr/Cover image: *Philip Brennan captures the special qualities of Enlli. Photo: Jen Walley.*

ISBN: 1 86169 120 3

Cynhyrchwyd gan/produced by: Hughes Design Limited, dew@hughesdesign.co.uk Argraffwyd gan/Printed by: Powtons Limited, Colwyn Bay

Golygyddol/Editorial ..... 2 – 3
▪ James Robertson

Yr afal Enlli/The Bardsey apple ..... 4 – 6
▪ Ian Sturrock

Llên y llysiau – llysiau'r wennol ..... 7 – 8
▪ Twm Elias

An artist's view of Ynys Enlli ..... 9 – 11
▪ Philip Brennan

Roads and wildlife: a perspective ..... 12 – 13
▪ Len Wyatt

Mary Edith Morris' diary ..... 14 – 16
▪ James Robertson

Avocets 'on the level' ..... 17 – 20
▪ Tony Pickup

Mapping seabed habitats around Wales ..... 21 – 23
▪ Andy Mackie

Welsh islands round-up ..... 24 – 27
▪ Geoff Gibbs, Richard Farmer & Steve Sutcliffe

Gwenynen y glannau ..... 28 – 30
▪ Elinor Gwynn

Farming for biodiversity and rural communities ..... 31 – 34
▪ Sarah Hetherington

A fluctuating pied flycatcher population ..... 35 – 36
▪ Tony Jenkins

At home on the reserve ..... 37 – 40
▪ David and Liz Woolley

Nodweddion **arferol/Regular** features:

Nodiadau o'r Cynulliad/Assembly notebook ▪ Gethyn Williams 41
Biodiversity news/*Newyddion bioamrywiaeth* ▪ Michael Clark, Tony Jenkins *et al* 42
Green bookshelf/*Silff lyfrau amgylcheddol* ▪ James Robertson 43
Nature at large ▪ Frances Cattannach 44
Marine matters ▪ Ivor Rees 45
Natur mewn gwarchodfeydd/*Nature in reserve* ▪ Wil Sandison ..... 46 – 47
Hysbysfwrdd/NoticeBoard ▪ Mandy Marsh 48

Golygyddol

Roedd pawb mewn hwyliau da yn Sioe Frenhinol Cymru eleni, a hynny'n rhannol mae'n debyg oherwydd bod prisiau defaid a gwartheg wedi gwella. Gwelais ddau aelod o'r teulu Brenhinol, dau Weinidog, a llawer o wynebau cyfarwydd. Ymhlith y rhain roedd nifer o danysgrifwyr presennol *Natur Cymru*, ac roeddwn wrth fy modd yn cael croesawu rhai newydd.

Mae sgwrs hir, ddiddorol gyda ffermwr yn aros yn y cof. Cefais f'atgoffa o faint sydd gan ffermio a chadwraeth i ddysgu oddi wrth ei gilydd. Tra gellwch chi ddisgrifio ffermio mewn termau cyffredinol fel diwydiant, mae'n cynnwys llawer math gwahanol o fusnes, ac yn cyflawni llawer pwrpas gwahanol. Mae hyn yn cynnwys darparu manteision i'r cyhoedd, fel cefn gwlad ddymunol, llawn bywyd gwyllt, a chefnogi cymunedau gwledig a ffordd o fyw.

Mae gan ffermydd ddylanwad unigryw ar y tirlun, ac mae ffermwyr yn dod i gymryd mwy o ddiddordeb mewn gofalu am eu tir gan ystyried bywyd gwyllt yr un pryd. Gallent fod llawn cystal am droi glaswellt rhyg yn gae gwair llawn o bysen y ceirw, ag y byddent am gynhyrchu cnwd o ŵyn tewion ar gyfer marchnadoedd yr Hydref. Wrth i'r fframwaith ariannol ddod yn fwy ffafriol, mae arnom angen atebion ymarferol i sicrhau bod busnesau ffermio a natur yn gallu ffynnu gyda'i gilydd. Gobeithio y bydd y genhedlaeth nesaf o gynlluniau amaeth-amgylcheddol yn gwobrwyo ffermwyr am ganlyniadau, yn hytrach na dibynnu ar argymhellion fydd yn cynnwys pawb.

Un thema sy'n cysylltu llawer o erthyglau yn y rhifyn hwn yw'r arfordir a'r môr. Beth bynnag fydd dan sylw – gwaith arloesol yn mapio gwely'r môr, gohebu â rhai o'n hynysoedd pell o'r lan, neu fywyd saerwenynen brin ar greigiau meddal Penrhyn Llŷn, nid yw'r môr byth ymhell.

Ffoto: Joanna M. Robertson.

Y golygydd a Trevor Dines yn y Sioe Amaethyddol.

Mae gan y môr dynfa gref, sydd yn emosiynol ac yn drosiadol yn ogystal â bod yn gysylltiedig â'r llanw. Mae'r ynys ysbrydol honno, Enlli, wedi bod yn ysbrydoliaeth i ymgais delynegol arlunydd i ddal ei hud arall-fydol, ac i stori afal prinnaf y byd, ffrwyth sy'n addas Feiblaidd. Ond os mai arwyddion rydych yn dymuno eu cael, dydw i ddim yn meddwl y byddai'n bosibl curo dyfodiad cywion cambig cyntaf Cymru i'r byd.

Mae hon yn bluen enfawr yn het y warchodfa sydd newydd gael ei chreu ar Wastadeddau Gwent. Wrth droi'r cloc yn ôl, mae'n dod â bywyd newydd i'r Gwastadeddau. Ar un ystyr, y gorffennol yw'r dyfodol; mae canlyniadau'r cydweithio rhwng cadwraeth a ffermio yn cyfoethogi llawer mwy yn gyffredinol na'r rhai a geir drwy gadw cynhyrchu a chadwraeth ar wahân.

James Robertson

Editorial

There was a buoyant mood at the Royal Welsh Show this year, no doubt helped by better sheep and beef prices. I saw a pair of Royals, a couple of Ministers, and many familiar faces. Among these were a number of existing *Natur Cymru* subscribers, and I was delighted to welcome some new ones.

A long, enjoyable conversation with a farmer stands out in my memory. It reminded me how much farming and conservation have to learn from each other. While you can describe farming in generic terms as an industry, it consists of many different kinds of business, and fulfils many different purposes. These include providing public benefits, such as an attractive, wildlife-rich countryside, and supporting rural communities and a way of life.

Farms have a unique influence on the landscape, and farmers are becoming more interested in managing their land with wildlife in mind. They could be just as good at transforming a rye grass sward into a hay meadow filled with bird's-foot trefoil, as they are at producing a crop of fat lambs for the autumn sales. As the financial framework becomes more favourable, we need practical solutions to ensure that farm businesses and nature can thrive together. I hope that the next generation of agri-environment schemes will reward farmers by results, rather than relying on catch-all prescriptions.

One thread that connects many articles in this issue is the coast and sea. Whether it is pioneering work mapping the seabed, reporting from some of our offshore islands, or the life of a rare mason bee on the soft cliffs of the Llŷn peninsula, the sea is never far away.

The sea exerts a powerful pull which is not only tidal, it is emotional and metaphorical. That island of the spiritual, Bardsey, is the inspiration for a painter's lyrical attempt to capture its other-worldly charms, and for the story of the world's rarest apple, a suitably biblical fruit. But if you want emblems, I don't think it would be possible to beat the arrival of Wales' first avocet chicks.

This is a huge feather in the cap of the newly created Gwent Levels reserve. In turning the clock back, it is bringing new life to the Levels. In a sense, the past is the future; the results of conservation and farming working in harness are much more generally enriching than those of production or preservation alone.

James Robertson

Photo: Joanna M. Robertson.

Derek Moore, Wildlife Trusts, and giant otter at the Show.

Yr afal Enlli
The Bardsey apple

Carefully pruning the world's rarest tree.

Photo: Ian Sturrock.

A chance encounter between a bird watcher on Bardsey and a tasty apple led to the discovery of the world's rarest tree, and instant celebrity for our correspondent. ***Ian Sturrock*** *tells the story.*

Photo: Mandy Marsh.

Ian Sturrock, with apple scions successfully grafted onto rootstock.

For centuries pilgrims, Celtic and later Christian, followed the setting sun to visit and often die on the remote island of Bardsey at the end of the Llŷn Peninsula. Indeed, three trips to Bardsey were considered the equivalent of a pilgrimage to Rome. Not too bad if, like me, you lived in Bangor. Four or five days there and back by horse, and you were guaranteed eternal salvation. There must be a lot of medieval Bangor lads in heaven, reminiscing about past nights in the Three Crowns, or the Glanrafon.

These days most pilgrims to Bardsey are tourists; popping over for a quick picnic and to take photos of the ruined medieval abbey, the seals and mainly, of course, themselves.

Our feathered friends also visit the island – thousands of Manx Shearwaters nest there every year. Birds passing up and down the north Wales coast also use it as a handy stop over. With the birds come the twitchers. Bardsey has the oldest bird observatory in the UK. Of particular interest to the twitchers are the vagrants – birds that are occasionally blown across the Atlantic from North America. Many are attracted, like moths, to the lighthouse beam. And, like moths, they spiral to their doom. Lost, starved and exhausted they eventually head-butt the lighthouse and flutter to the ground to die a small but saintly death. If the bird is not dead on arrival but merely concussed, then the twitchers can add it to their list.

My mate Andy Clarke is a twitcher and a regular visitor to the island. In the autumn of 1999 he was setting up a funnel-shaped net to catch some birds for ringing. He needed some bait for the trap and decided to use some half-rotten windfall apples he found under an ancient gnarled tree that was growing up the side of one of the island's houses. It is apparently a well-known fact that the twitchers that inhabit Bardsey Island subsist mainly on Fray Bentos tinned steak and kidney pies. Not very conducive to Andy – a vegetarian. Whilst fiddling with his nets the underfed Andy tried one of the apples. They were delicious, crisp and juicy with a tantalizing lemon aroma. Soon Andy was feasting up the tree – the birds could have some Fray Bentos pie crusts later.

Andy, back in the real world of the mainland, is a keen gardener. He noticed that the fruit and the tree itself were disease free. This is a rare occurrence in north Wales since all the fruit trees grown in the area have originally been imported from England or some other foreign country. As a consequence of this they are unsuited to our damp, sun-less Celtic climate.

Andy popped the last two apples into his pocket, and eventually brought them back to the mainland for me to identify. As soon as I opened the plastic bag containing Andy's fruit I was taken aback by the aroma. I instantly knew that they were a variety that I was unfamiliar with. After two days ploughing through my books and ID keys, I still hadn't a clue what variety the apples were. By now one was starting to rot.

The tree on the island is very old; it is lashed by gales most of the year, and often loses its leaves to salt and windburn. Consequently fruit is only produced occasionally. It might be years before it fruited again. It can be extremely difficult to get to the island in the autumn. It could therefore be years before I received another delivery of the apple. There was only one thing for it – I had to take the remaining one and a half apples to the National Fruit Collection in Kent. It was there that Dr Joan Morgan, the country's foremost fruit historian, failed to recognize the apples as a previously known variety. The lone tree on the island was unique.

Photo: Mandy Marsh.

2003 sees the first new crop of apples to be grown on the mainland.

"The rarest tree in the world" heralded the local and national media. Which of course is true – you can't get much rarer than one.

Suddenly your humble narrator was on the radio and in the papers. The Bardsey Island apple discovery was a nice cuddly good news story that the media loves. I was fêted as the discoverer and potential saviour of this unique tree. I did think it rather strange, at the time, that someone could discover a tree that had perhaps been around for a hundred years. And from which presumably hundreds of people had picked fruit. I had never been happy with the fact that Christopher Columbus 'discovered' America – what about the two million Indians who already lived there? But, dear reader, let us talk about something more interesting than the philosophy of discovery or of apples on little-known islands. Let's discuss sex.

Most people know that sexual reproduction was invented not for fun, but to create diversity in the next generation. You are different from both your mother and your father. Indeed, you are also different from your brothers and sisters. I'm sure you are more modest, better looking, more intelligent and altogether nicer than your siblings.

If you plant some apple pips, all will grow into different trees. And these will eventually bear different fruit. To keep a variety true it must be propagated vegetatively. Fruit trees are propagated by grafting a small piece of wood (the scion) onto a rootstock. Different rootstocks will result in trees of different sizes e.g. wood grafted onto an M25 stock results in a tree about 26 feet high. A tree grafted onto an M27 stock will produce a tree about 5 foot high. The former is used to create standard trees in traditional orchards, whilst the latter will produce a stunted little runt to adorn one's patio.

I have grafted several hundred cuttings onto a number of different rootstocks and they are now for sale. They're grown in poly pots so they can be planted at any time of the year. What is needed now is a number of people to plant and observe the tree and the fruit it bears. On the island the tree is completely free of the diseases that flourish in the damper conditions of the mainland – particularly scab on the fruit, and canker in the wood. As yet nobody knows when the tree flowers and whether or not the blossoms are frost tolerant – the island is frost free. Does the tree produce a regular crop? The mother tree crops irregularly because salt-laden gales often kill the blossom. As yet nobody knows the best time to harvest the fruit or how long it should be kept before eating. It would be interesting to know how long the ripe fruit can be kept in storage. These and many other questions as yet remain unanswered.

I am keen to supply the trees to people who live in a wide variety of locations, to give us the maximum amount of information in the minimum amount of time. Included on the tree's website is a bulletin board, so that owners of trees can disseminate their observations as quickly and widely as possible.

If the ever so nice editor of this august magazine can manage to squeeze in this humble article, I shall consider myself very fortunate. This is because, dear reader, you may only be a twitcher, a bat nut, or a collector of otter spraints, but it means you have an eye. You have powers of observation. Sadly, I feel people like yourselves are getting harder and harder to find. Even people with real gardens are becoming rare, as more and more backyards are covered in paving or decking. With much of the population becoming slouches on their couches, how can the "rarest apple tree in the world" compete with Big Brother?

Ian Sturrock is a leading organic fruit consultant who has taken a special interest in traditional apple varieties. He has a nursery near Bangor, Gwynedd, where he produces and sells disease resistant trees as well as tending to and repairing existing orchards.

Photo: Mandy Marsh.

Trees can be obtained from **Ian Sturrock** at £15 if collected from Bangor, or can be delivered in the dormant season anywhere in the UK with an additional £10 p&p. Phone 01248 371573 or visit www.bardseyapple.co.uk

Ynys Afallen

Cafodd Ian Sturrock syndod pan ddaeth ffrind yn ôl o wylio adar ar Ynys Enlli gydag afal nad oedd ef – na phobl y Casgliad Ffrwythau Cenedlaethol – erioed wedi'i weld o'r blaen. Mewn gwirionedd, roedd yn fath unigryw o afal oddi ar un goeden ar yr ynys – 'coeden brinna'r byd', yn ôl papurau newydd. Bellach, mae Ian Sturrock wedi grafftio cannoedd o ddarnau bychain ar wahanol wreiddgyffion ac mae'n chwilio am gartrefi amrywiol i'r coed newydd, a hynny gyda phobl a fydd yn sylwi arnyn nhw ac yn casglu gwybodaeth am ble, sut a phryd y maen nhw'n ffynnu orau.

Llên y llysiau – **llysiau'r wennol**

Llysiau'r wennol, y ffisig at bron bob anhwylder! Mae ***Twm Elias*** *yn disgrifio sut y defnyddiwyd hwn yn feddyginiaethol dros y canrifoedd ac yn nodi ei fod, erbyn heddiw, yn destun ymchwil ffarmacolegol.*

Chelidonium majus. Ffoto: Ray Woods.

Enw gwyddonol

Chelidonium majus (L.): *chelidonium* o'r gair Groegaidd chelidon am wennol oherwydd, mae'n debyg, y daw'r planhigyn i'w flodau pan gyrhaedda'r aderyn, a gorffen pan ymado; majus – yn fwy na, i'w wahaniaethu oddi wrth y lesser celandine (*Ranunculus ficaria*) (Stevens, 1973).

Disgrifiad

Llysieuyn cymhedrol ei faint gyda dail melynwyrdd. Blodyn melyn pedwar-petalog o Ebrill hyd ddiwedd yr haf. Un o'i nodweddion amlycaf yw'r sudd melyn tywyll sy'n diferu ohono pan y'i torrir. Mae'n aelod o deulu'r pabi (*Papaveraceae*).

Cynefin a dosbarthiad

Yn tyfu mewn gwrychoedd – fel arfer nid nepell o hen dai neu furddunod. Mae'n bosib iddo ddod yma o dde Ewrop yn wreiddiol oherwydd ei ddefnyddiau meddyginiaethol (Ellis, 1983).

Enwau Cymraeg eraill

Llysiau lladd defaid (Llŷn), sudd y defaid, llygadlys, llygadlym, llym y llygad, llysiau'r llygad, llysiau'r clefyd melyn, llysiau'r llaw, llysiau'r llew, llysiau'r wennol, melynllys, gwell na'r aur, selidon, dilwydd, dilwydd felen, y ddiwlith (Davies & Jones, 1995) (Jones, 1688).

Tarddiad yr enwau

Mae amryw o'r enwau yn cyfeirio at ei ddefnyddiau meddyginiaethol yn arbennig at ddefaid ar y croen ac ar gyfer y llygaid. Llysiau'r wennol a selidon (sydd yn lygriad o chelidon) yn cyfeirio at goel gwerin; melynllys at liw'r sudd a dilwydd (Jones, 1688) yn hen enw ansicr ei darddiad. Ansicr hefyd yw tarddiad yr enwau llysiau'r llaw (Jones, 1688) a llysiau'r llew (Davies & Jones, 1995) – y 'llew' diweddarach o bosib yn gam-drawsgrifiad o 'llaw'?

Llên gwerin

1. Yn ôl un hanesyn gan Pliny, yr athronydd Groegaidd, dechreuwyd defnyddio'r planhigyn i drin y golwg oherwydd i'r wennol ei ddefnyddio i roi'r golwg i'w chywion dall! (Williams, 1998). Tybir mai atgof a geir yma at ddefnydd o'r planhigyn mewn defodau shamanistaidd o gyfnod cynharach na'r diwylliant Groegaidd, gyda'r 'golwg' yn cynrychioli gweledigaethau o'r byd hudol (Barker, 2001).
2. Pan fyddai plant yn ardal Clynnog yn yr hen Sir Gaernarfon yn chwarae cowbois ac Indiaid yn hafau'r 1950au – 60au (atgofion yr awdur), byddai'r Indiaid weithiau yn paentio patrymau ar eu cyrff â sudd y melynllys. Roedd y lliw yn drawiadol iawn ar y cychwyn ond yn tueddu i dywyllu a dylu ymhen ychydig funudau. Cafodd y plant eu rhybuddio fwy nag unwaith i beidio â gwneud hyn rhag ofn i'r sudd godi crachod ar y croen, ond ni chafodd neb ei effeithio felly chwaith. Byddai'r plant hefyd yn ei ddefnyddio i ysgrifennu negeseuon ar bapur.

Defnyddiau meddyginiaethol

Ceir cyfeiriadau niferus at ei ddefnyddiau meddyginiaethol:

1 "Mae'r llyfrau llysiau i gyd yn nodi mai'r sug yma, yn syth o'r planhigyn byw, oedd y feddyginiaeth fwyaf poblogaidd i ddifa defaid ar ddwylo." (Williams, 1998).
2 Yn y lawysgrif Gymraeg ganol-oesol a elwir A Welsh Leech Book (Lewis, 1914) ceir y rysait ganlynol: "Rhag llawer o glwyfau or llygaid. Kymer sugun yr eidrol a sugyn gwraidd y ffannygl, a sugun y Selidonia, a sugun llysse=r=wennol, a bloneg hwch, a mêl, ac ychydic vinegr, a gwaed llyswen a bustul Keilioc, ai roi ef mewn llestr oni gotto blodeu arno ne lwydo (oni goda llwydni arno) Ac ef a ddoytwyd am yr eli hwnw, wneuthur o honno ddynion i weled wedi bod yn ddeillion."
3 Sonnir yn Llysieulyfr Meddyginiaethol William Salesbury (mae'r llawysgrif wreiddiol yn dyddio o'r 16g) ei fod yn dda rhag "twllwc llygaid" (tywyllwch y llygaid), a bod gwin ohono yn dda "rhag clwy y brenhin", ac "ef a lacha y crygdardd a vacco yn color melyn" (iachau'r crawn melyn o friwiau llidus), "ai gnoi a wna les rhag y ddannoedd." (Roberts, 1916).
4 Dywed Dafydd Jones neu 'hen ddoctor bach y mynydd', Llanllyfni (Jones, 1881) yn ei gyfieithiad o weithiau Culpepper: "Y mae(nt) (llym y llygaid) dan lywodraeth yr Haul, ac yn arwydd y Llew…yn un o'r dail mwyaf rhinweddol at y llygaid o unrhyw ddail sydd yn tyfu, ond byddent yn fwy rhinweddol os heliwch hwynt pan ag y b'o yr Haul yn yr arwydd dywydedig…gwnewch hwynt yn eli i iro y llygadau, neu y ffordd oreu, yn fy marn i, ydyw eu cnocio a gwasgu eu sug, a'i gymysgu â mêl neu siwgr double refined, a'i roddi ynddynt amrywiol weithiau yn y dydd. Gallaf brofi ei fod wedi iacháu llygadau anghyffredinol o ddrwg…Pan ag y b'och yn iwsio eu sug at y llygadau, cofiwch gymusgu ychydig o laeth brest am ei ben rhag iddo losgi gormod…" Dywed hefyd: "…hwy a'ch gwellhant nid yn unig o'r clefyd melyn, ond hefyd ffaeledd yr iau a'r bustl…yn erbyn y dropsi: ac…yn rhagorol o dda i yfed peth o'r sug yn y bore yn erbyn y pla, neu pan ag y b'o clefyd yn yr ardal;…yn iachau hen friwiau crachlyd,…a phob rhyw bimples ac anharddwch fo ar y gwyneb…cymerwch eu gwraidd a'u gwneud yn llwch, a'i roddi ar ddant rhydd, neu ddant a phoen ynddo, y tyn efe i ffordd heb boen…Sylwch eto, rhowch blastr neu bowltis o'r dail ar frest merch pan ag y b'o y cyrsiau misol yn cerdded yn rhy helaeth, i'r dyben i'w harafu…Yn erbyn yr ymgrafu, cymerwch eu sug, a brwmstan wedi ei falu yn llwch, a'i iro âg ef yn y nos a'i gwellha."
5 Yn ychwanegol: "Mae ei sudd yn gwella y ddarwden (ringworm)" (Price & Griffiths, 1890).
6 Parhaodd diddordeb yn ei rinweddau meddyginiaethol i'n dyddiau ni. Cydnabyddir ei effeithiolrwydd ar gyfer cerrig y bustl, defaid a pharaseitiaid y croen a.y.y.b., ac mae amryw o'i gyfansoddion yn destunau ymchwil ffarmacolegol (Barker, 2001).

Mathau garddwriaethol

Ceir sawl math garddwriaethol o lysiau'r wennol a daethpwyd ag amrywiad â blodyn dwbwl iddo i Brydain o dde Ewrop cyn gynhared a 1771 (Campbell-Culver, 2001).

Mae **Twm Elias** yn ddarlithydd a threfnydd cyrsiau ym Mhlas Tan y Bwlch, Canolfan Astudio Parc Cenedlaethol Eryri.

Greater celandine, the universal medicine?

Chelidonium majus, a hedgerow plant of the poppy family, is a yellow flower which exudes a dark yellow fluid when cut. Its numerous Welsh names all tend to indicate that it has great medicinal properties and the earliest reference points to its use by the Greeks in the treatment of eye disorders. Several more recent reports confirm its use in treating the eye. Others describe its use in clearing warts and various other skin blemishes, healing infected wounds and treating liver and gall bladder diseases. It is also said to have pain killing properties and was good for relieving toothache. The plant was probably introduced from southern Europe for such medicinal use. These claims that it had a range of healing powers are possibly what have encouraged contemporary scientists to conduct pharmacological investigations on several of its constituents in the search for new drugs.

An artist's view of *Ynys Enlli*

Looking towards the lighthouse on Enlli. Photo: Jeremy Moore.

***Philip Brennan** combines his love of nature with his skill as an artist. In 2001 he ventured from his native Ireland and took part in the Artist-in-Residence scheme on Ynys Enlli/ Bardsey. Here he recalls some of the pleasures and problems of capturing the ever-changing natural world with pencil and brush.*

Photo: Jen Walley.

Artist at work.

The dead gannet that I was sketching bobbed at the tide's edge on the west shore of Ynys Enlli. It was probably a wanderer from one of the Irish Sea colonies, perhaps from Ailsa Craig in Ayrshire, Grassholm in Pembrokeshire or Great Saltee in Wexford. Disease or old age were the most likely culprits in its end. The gales we'd experienced that July certainly weren't enough to hinder a healthy gannet, but perhaps were sufficient to finish off a sick bird.

I too was a wanderer well off my usual course. I come from County Clare in the west of Ireland, and at the time was half-way through a three-year painting and writing project.* Yet, here I was on this special island off the Llŷn Peninsula, drawn back for the second time by Enlli's allure. Since the 1970s I had been aware of the island through the work of the Bardsey bird observatory. In recent years, a reading of Brenda Chamberlain's classic *Tide Race* revealed an island world that echoed that of the Great Blasket Island writers of County Kerry.

For a painter, any island is a great task-master, and Enlli is particularly so. You have nowhere else to go, no worldly distraction, no excuse not to draw. The day's concerns become linked to weather, tide, light and the island's small comings and goings. I made a lazy start on the day of arrival with a quick pastel sketch of rock and sea, but the cobwebs of tiredness were soon blown away the following day when a fine gale blew in from the west. It came in bright sunshine and the only rain was in the distant squalls that swept the skies to the south. The spume flew, the oystercatchers

High seas on Enlli. Picture: courtesy Jen Walley.

cried and fluttered in the gusts and I was gifted with a useful watercolour as I sat in a sheltered nook in the rocks.

I had no specific agenda for my time on Enlli. I sketched and painted as much as I could and took my opportunities as they arose. I had hoped for a good gale – I have a fondness for violent seas as long as I'm not on them! I wasn't disappointed. After the westerly came a wet southerly that made the watercolouring very interesting as I sketched the high seas breaking on Maen Du, the Black Rock. Despite the wind and heavy swell, the lighthouse supply ship stood at anchor off the coast and its helicopter buzzed back and forth.

The third gale was the most inconsiderate. This one came from the north and I perched at the northerly tip of the island looking back over the sound, barely managing to keep a grip on the sketch-pad as the now cold wind tried to pull it away. I'd had my share of gales by then! Oddly, as I look through the paintings of my stay, there's no drawing of a Manx shearwater. There should be! Oh wonderful hindsight! The nights there are dominated by their cries and calls and are only occasionally matched by the lighthouse's own high fog-horn or by an occasional crescendo of moans from the seals in the Cafn. I have drawn shearwaters before and perhaps I was a bit reluctant to interfere with these birds that can be picked up as they sit by the side of the island's only track. The adult that I found brooding its ridiculously fluffy chick under planks in the boathouse would certainly make a good picture. But the memory of this little scene is clear and a picture may yet emerge!

July is something of a wicked month, blowing hot and cold, sweeping away many a fond plan. So it was in 2001. Still, I lost only a little time to the weather – one day was a wash-out and another was used in helping David, the warden, to ferry visitors' baggage to and from the boat on his tractor. Even on the poor days it was possible to work from the field-sketches in the cosy loft at Nant. On the warmer days I sketched the local oystercatchers among the sheep or settled for calmer seascapes. The 178 grey seals I counted in the Cafn were most obliging models, but hard rocks make for a sore rear after hours of sketching through the telescope. The seals spent the days happily lazing on the rocks, moved only by the tide and comically batting 'Go away' flippers at potential usurpers for their perches.

Apart from the shearwaters, there is little bird activity on Enlli in July. There were a few strays about – a solitary young cuckoo, a buzzard, a forlorn singing blackcap and a few passing common sandpipers and whimbrel. July is a far cry from the heady days of a 'fall'

Watercolours capture a wren in fine detail.

of spring or autumn migrants, when every bush and briar sways with temporarily grounded birds. Despite the lack of birds in July, Enlli still has more to reveal. As the days go by the layers of its history, its people, past and present and its legends all begin to reveal themselves and present more and more artistic opportunity, whether in word, paint, music or form. This place of ancient saints or black-garbed Enlli men who rowed the seas, of viking and hermit, of men and women who struggled for a living with the sea or soil, of present poet and appreciative visitor – all tumble in on the imagination and stir the soul.

In a few weeks I painted the lighthouse framed by the rocks of a quiet bay, storm and gales and flying rain, Welsh Black cattle, sheep and sentinel oystercatchers, grey seals swimming and basking, the vista of the Cafn from the Mountain, Tŷ Bach and Tŷ Pellaf farmhouses, the unfortunate gannet in the red and brown seaweeds and a Mediterranean blue sky. Ynys Enlli's shearwaters may yet call me back for more!

Philip Brennan is a painter, naturalist, teacher, singer and writer and lives in Stonehall, County Clare.

* Philip's book, *Philip Brennan's Clare – Unique images of the artist's native County Clare* is reviewed on page 43.

Arlunydd yn Enlli

O fewn ychydig wythnosau ym mis Gorffennaf 2001, paentiodd yr arlunydd, Philip Brennan, lwyth o luniau o Ynys Enlli … o eithafion y tywydd i forloi'n torheulo yn y Cafn, o'r goleudy i gorff mulfran wen ar fin y tonnau, o ddefaid i biod y môr yn cadw gwyliadwraeth. Yr un peth yr anghofiodd eu darlunio oedd adar drycin Manaw er bod eu lleisiau'n llenwi'r nos. Er mai ychydig o adar sydd yn Enlli yng Ngorffennaf, datgelodd yr ynys haenau ei hanes a'i hetifeddiaeth gan gynhyrfu'r dychymyg a'r enaid.

Grey seals haul up on the rocks. Photo: Tony Oliver.

Roads and wildlife: *a perspective*

A combination of barricade and culvert provides safe passage for wildlife. Photo: Len Wyatt.

Most environmentalists think that roads and wildlife go together about as well as oil and water. The mixture is not always a lethal one, as ***Len Wyatt*** *points out, and offers opportunities for improvement.*

What are roads?

The answer to this question may seem obvious. To quote, slightly altered, part of Douglas Adams' *Hitch Hikers Guide to the Galaxy*: "Roads are devices which allow some people to get from A to B, and others from B to A." Roads have been around since prehistoric times, doing just that – arteries for the movement of materials and people along tracks, ceremonial paths, military routes and boundaries. Their characteristics can vary hugely according to function and location – consider the differences between a drovers' road and a paved Roman street, or a typical rural lane in Pembrokeshire and the motorway system.

Photo: N. Greensill.

Roadsides can be refuges for orchids and other wildflowers.

Road verges can include rock outcrops, short mown grass, natural grassland, shrubs and trees, all depending on the way the road was built and is managed, and the way it has adapted to natural conditions. You can travel on some roads and see only rough grassland and on others find tidy grassland interspersed with formal beds of colourful but non-native flowers and shrubs.

What effects do roads have on wildlife?

For many species the effects of roads on wildlife are unknown. Research is adding to our knowledge, for example by noting the number of otter road casualties against what is known of the otter population. Habitats are more easy to survey, although to survey the whole network would be a huge task. Partial surveys are underway in Wales and across the UK. The issues raised by this knowledge are not straightforward. Here are two examples:

Barn owls – populations of barn owls continue to decline. Collisions with vehicles resulting in injury or death are known to be a factor in this. However, some road verges are becoming recognised as important for small mammals, which can be critical to the diet of barn owls. Should some road verges be managed to increase the potential for barn owl feeding, or be managed to reduce the risk of road casualties?

Disturbed soil – a number of plant species (eg: Scurvy grasses and crop brassicas) are growing on soil disturbed by engineering works, or vehicles running into the verge. Species such Tower Mustard and Deptford Pink are restricted in their distribution and are believed to need disturbed soil near to existing populations. Would people accept road verges which look unkempt and 'weedy' for the benefit of this type of species?

Are roads important for wildlife?

Roads can be both a barrier and an aid; they fragment territory and remove habitats and yet the verges, as mentioned above, can provide refuges for many plants and small mammals, serving as corridors for their movements to other areas.

The importance of these linear features is mentioned in many local Biodiversity Action Plans. The range of actions required is wide: conducting surveys, advising road managers and designers, research and awareness programmes – and of course, work on the ground.

A final thought

Working in roads ecology, it is clear that people's attitudes towards roads and their effects on wildlife can vary from 'roads are bad' through to 'roads are good', with all the possible variations in between. These attitudes may be the most important single influence on the issues relating to roads and wildlife today. They may be expressed in policies, plans, resource allocations or in simple individual actions. They will ultimately decide whether roads in the future will reduce the negative impacts on wildlife and maximise positive opportunities – or not.

Len Wyatt is employed by the Welsh Assembly Government's Transport Directorate as an ecologist, having previously worked for the Highways Agency in England. The views expressed here are his own.

Photo: Len Wyatt.

Making drivers more aware.

Y ffordd ymlaen?

Mae arolygon am effaith ffyrdd ar fywyd gwyllt yn codi pynciau anodd. Er enghraifft, mae cerbydau'n lladd tylluanod brech ond mae ymylon ffyrdd yn ffynhonnell dda o fwyd i'r adar. Mae ffyrdd yn rhwystr a chymorth, yn rhannu cynefinoedd a chreu coridorau. Mae ffyrdd wedi'u crybwyll mewn Cynlluniau Gweithredu Bioamrywiaeth, gyda galw am ymchwil, cyngor a gwaith yn y maes.

Mary Edith Morris' *diary*

Mary Edith Morris, her brother and niece.

Photos: courtesy Margaret Vaughan.

For twenty-five years Mary Edith Morris kept a diary in which she recorded the birdlife she encountered at her Carmarthenshire home. These entries provide a fascinating glimpse of the changing fortunes of birds like the corncrake. They also paint a picture of a more rural, more stratified yet more intimate society, perhaps with fewer material blessings but more immaterial ones than we have today. ***James Robertson*** *delves into a countrywoman's diary.*

Mary Edith Morris was born at Bryn Myrddin, a country house in the Towy valley, in the jubilee year of 1887. Her mother had been born at neighbouring Middleton Hall, now the home of the National Botanic Garden. Although she always saw Bryn Myrddin as home, and returned whenever she could, she had an active career with the Women's Police, including a spell in Germany after the first world war. Other stations included Sheffield, and when the diary entries begin in 1936, she was living in Beddington but visiting Bryn Myrddin whenever possible. In 1940 she returned to Bryn Myrddin, and she lived there or at Ffynnonddrain, near Carmarthen, until the final entry in 1971.

Mary's brother Ryle inherited the house, and lived there all his life. He married Alicemargit, and one of their daughters, Margaret Vaughan, transcribed the handwritten diary entries from which this account is taken.

Mary had a lifelong interest in birds and nature generally, especially flowers. She taught her niece the common names of all the flowers they found in the hedgerows, and passed on her love of nature. Her diary is an evocation of a very outdoor life and a record of those things which excited her, as birdsong had a particular capacity to do. It also shows how much she talked to everyone, from her brother and his wife to the gardener, local farmers, cottagers and friends, for she is constantly noting down their records as well.

Here are a few examples of entries:

25 February 1938

At Bryn Myrddin, about 1 a.m. a hen chaffinch tried 3 times to get in at my bedroom window, a rough night. I let her in and she slept on top of the cupboard. In the morning she flew round the room and then perched. I picked her up and let her out, she flew off calling "pink pink".

22 March

Long-tailed tit under Bryn Myrddin verandah all day collecting cobwebs and flying off with them for its nest.

25 June 1939

Goldfinches nesting and green woodpeckers fledged. A young woodpecker was caught near back door and another came under verandah where it was followed by a carrion crow which I drove off. The young woodpecker's constant call is much like a jackdaw's. The mating display of pied wagtails very pretty.

13 December

Saw a fine stoat in pond field hedge near the rabbit holes. Gentian still in flower.

20 January 1940

Hardest frost since 1845. 10 inches of ice on Towy which is frozen from source to sea.

1 February

Heard wild geese flying west 2.30 p.m. past Bryn Myrddin. Ryle saw 50 the next day.

24 September 1941

Heard a sweet monotonous double note high above Wern Wuad [field below Bryn Myrddin]; saw a smallish bird flying in circles and darting about as it sang – probably a woodlark singing its lulu song.

27 September

Saw several house martins near Llanarthney. Near Tower found a large grey hawk killing a pigeon, young bird.

8 February 1942

Saw about 26 whooper swans on frozen flooded water on flat. Very long necks, black legs and dark beaks without black knobs. Very sweet musical cry while standing and flying. Also saw 10 wild duck on Towy and some peewits.

12 April

Heard willow warbler near Bryn Myrddin. Saw a cormorant on ponds. Davy Arthur [who lived at Bwlch Bach cottage, overlooking the Bishop's Ponds] says there are 20 there till 9 a.m. daily catching eels.

13 April

Larks singing near Abergwili. Saw 2 black back gulls on Towy nr. Towy Castle, oystercatchers and cormorant. Saw swallows and martins by Gwili Bridge, roadman saw them on 10th.

These entries give only a taste of the great range of observations and information contained in Mary's diaries, which run to more than eight thousand words. Frequent reference to local field names and places provide a layer of social history which runs alongside the natural history.

Mary delighted in the wildlife around her, and its changes and surprises from day to day, year to year and season to season. At the time when she was writing these entries, bombs were falling not far away, metaphorical storms were raging, and the songs of returning blackcap and willow warbler in spring must have carried a message of defiant hope. She would not have imagined that war-induced agricultural policies would banish the sound of the corncrake from Carmarthenshire.

Perhaps they were on their way out before, but either Mary heard them, or one of her network of contacts did, in most years between 1946 and 1966. There are two entries in 1946, both from the 'flat'. In 1947 Mrs Arthur Jones heard a corncrake near her house at Nantgaredig. The following year Mary heard a corncrake "by ponds and field opposite Bishop's Mill", and Mr Tims heard one by the tin works opposite Glynaur. There are reports of corncrakes in subsequent years from Penybank field, alongside a cattle track to

Cwm, on the banks of the Towy below Carmarthen bridge and at Llanegwad, as well as at previously mentioned sites.

This suggests that there was a viable corncrake population around Carmarthen, and there were sufficient suitable breeding sites available at this time, although numbers were certainly low. It also suggests that the rural community of the time was quite well attuned to the rasping sounds of a male corncrake announcing its presence. If nothing else, such entries stir one's resolve. There is no reason why the call of the corncrake should not be a familiar sound once again in post CAP reform Wales.

Bryn Myrddin.

Every now and then, there is a reminder in the diary of how the Towy valley has changed in recent decades. On 17 September 1957, she "saw about a thousand golden plover on moor about Gwythgrug", and there are reports of numbers of waders, such as peewits, and even a bittern. And yet magpies are never mentioned. There are also surprises, such as the "Manx shearwater found in wet ditch near bottom of drive" following a storm, which was released unharmed, and the two avocets seen flying over the estuary at Gwbert.

It is the common birds – she records over sixty species – which populate her diary. Most entries are brief personal mementos; she writes of "two young house martins clinging to wall under my eaves and being fed by parents every minute". This conjures up a picture not only of these youngsters and their energetic parents, but also of her own face at the window, a delighted observer.

Plants, mammals and invertebrates all put in an appearance. She notes the first dates when primroses, aconites, snowdrops and hawthorn come into bloom; records her encounters with foxes, badgers, red squirrels and rabbits, and with lime hawk and humming bird hawk moths and woolly bear caterpillars; and reports that "Herbert Vaughan counted 28 red admirals on an ivy bush at Tenby".

Her network of contacts is extensive, and suggests an energetic and sociable personality. As so often with diaries, the information she gives only whets the appetite, and invites the reader to learn more about her circumstances, the geography of the places she describes, her family and other relationships. For example, from the number of encounters she and her brother have with owls and other wildlife in various rooms, including her own bedroom, the house must have been large and very draughty!

If you had a love of birds and other wildlife and the time to observe them, rural Carmarthenshire fifty years ago must have been a rewarding place to live. I keep a wildlife diary, and I am struck by the similarities. Mary Edith Morris has reminded me how lucky I am to be able to observe so much wildlife at home and how important it is to appreciate and record it.

James Robertson is a writer with a particular interest in human relationships with the natural world.

Dyddiadur Mary Edith

Mae dyddiaduron Mary Edith Morris o Sir Gaerfyrddin yn rhoi cip ar ffawd bywyd gwyllt ac ar gymdeithas wledig glos yn y blynyddoedd hyd at 1971. Mae'n sôn am adael i asgell fraith glwydo yn ei llofft ar noson stormus, am gigfran yn ymlid cnocell y coed ac am aea' caled 1940 pan rewodd afon Tywi o'i tharddiad i'r môr. Bob blwyddyn rhwng 1946 ac 1966, fe glywodd hi neu ei ffrindiau sŵn rhegen yr ŷd ac mae cofnodion o'r fath yn ysgogiad – does dim rheswm pam na allwn glywed galwad gras rhegen yr ŷd unwaith eto yng Nghymru, wedi diwygio'r CAP. Uchafbwyntiau eraill yw'r sôn am fil o gwtiaid aur ar waun ger 'Gwythgrug', am aderyn drycin Manaw mewn ffos a dau gambig yn hedfan uwchben Gwbert.

Avocets 'on the level'

Avocets nest-building. Photo: RSPB Images.

The Gwent Levels Wetlands Reserve arose as compensation for the destruction of part of the Taff Ely SSSI during the development of Cardiff Bay. The clock is being turned back on over 400 hectares of improved farmland on the Welsh side of the Severn Estuary to re-establish the abundant birdlife that would have been found on such land in the early part of the 20th Century. This year the clock turned back a bit more than expected and a species nested which possibly hasn't bred on 'the levels' since Roman times. In fact, as ***Tony Pickup*** *reports, it is the first time that avocets have nested in Wales within recorded history!*

Spring and autumn are always exciting times for birdwatchers. They herald a change of season, the prospect of new birds to look at, and the possibility that unexpected species may turn up. Around Britain's estuaries, waders are always a source of interest. These are birds that are closely associated with wet ground – anything from tidal mud to damp soil. Many breed in northern climes, but spend the winters in warmer, more southern areas. In this way they can exploit the abundant food supplies of the sub-arctic summer for breeding, and spend the winter in less hazardous conditions nearer the equator. During their migrations between breeding and wintering sites they often stop over to 're-fuel' on estuaries, taking advantage of the huge food supplies hidden beneath the tidal muds and silts.

During April, the spring passage is usually well under way. Waders that have spent the winter living on the Severn feel an increasingly strong pull to return to their northern breeding grounds. Birds already on their northward journeys supplement their numbers, perhaps from northern Africa or Mediterranean wintering grounds. Migrating black-tailed godwits and whimbrel are now commonly found amongst the Severn's curlew, redshank and dunlin and there is always a chance that something exotic will join them. Therefore, two avocets turning up in mid April at the reserve's saline lagoons at Goldcliff, though good additions to a Welsh birdwatcher's 'year list', were not world-shatteringly important. After all they had turned up last year at the same time – only to move on after a few days. This year's birds were reported on the Welsh birdwatchers' telephone information lines, but were just one amongst a number of other interesting sightings. Interesting but not earth-shattering. All that changed about three days after they had arrived.

I was standing in my kitchen, idly watching the avocets through binoculars, (at the time, I was in the incredibly fortunate position of living in a house overlooking this part of the reserve!) when I was astounded to see one bird apparently jump down from the back of the other. Now in birds this usually only means one thing. Mating! But this couldn't be so. Avocets didn't nest in Wales – and so far as I knew, never had. And it is very unusual for birds to mate while on migration. There may be lots of display, but very rarely, if ever, mating. Despite some serious watching for the next day or so, I failed to see a repeat performance to confirm my suspicions. However, there was another very telling bit of behaviour. One bird showed a very keen interest in a bit of a shingle island, again fortunately visible from my house. I watched one of the birds 'scraping' – the process where they 'scoop' out a hollow in the ground with their breast. This creates the cup into which a nest could go. This counted as indisputable breeding behaviour. For the first time in recorded history avocets had attempted to nest in Wales. Could they go the whole way?

As April drew to a close the behaviour of the two birds became so different that we were able to use 'he' and 'she' to differentiate them. The female was very attentive to the bit of shingle she had been scraping in and the male was almost psychopathic in his defence of it. Very frequently, and often for no apparent reason, he would shoot off in violent pursuit of some hapless individual. Redshanks seemed to be a special target, but lapwings, mallard and oystercatchers all seemed to be fair game. This was very much 'attack as a means of defence' and very effective too! His territorial defence appeared very deliberate and serious, quite unlike some other birds. Oystercatchers, for example, seem just to go hysterical when their territory is threatened. Perhaps they hope to scare away intruders more by deafening them than by physical violence! But the avocet would launch itself on an intruder like a guided missile, seemingly with the intent of inflicting serious physical harm. Though I never saw it actually strike another bird it pursued them so hard that they were either chased right away from the avocets' island or they dropped to the ground for cover.

Eventually, by the end of the month they did it! For a couple of days the female had been spending quite a bit of time each day sitting in the nest scrape. But when I saw her for the first time early on the 29 April she seemed really well settled. I was still not absolutely sure whether this was a false incubation or the real thing. The confirmation came about a quarter of an hour later when she stood up and gently probed down into the nest with her long bill. She was obviously turning the eggs. Having arranged them to her satisfaction she then gently re-settled, shuffled a bit to make herself comfortable then relaxed. Every day for about four weeks I would check first thing in the morning and last thing at night, as well as innumerable times in between, and she'd be there, maybe facing to the left, or maybe to the right, but sitting tight while the first avocet embryos in Wales developed beneath her.

The Gwent levels reserve. Photo: Adam Rowlands.

The incubation period was a worrying time, though. Egg-collecting unfortunately still goes on in Britain and the rarer the breeding occurrence, the greater the attraction of the clutch of eggs to these strange people. As soon as we became aware that the avocets were nesting, we had to deal with this threat. The RSPB and the Gwent police were quickly contacted. We were particularly fortunate that a police officer, Sergeant Ian Guildford, had just been seconded to CCW in south Wales. His first week in office coincided with our big event and within 24 hours he had helped us to make arrangements with Gwent Constabulary to deal with

any illegal eventuality. We were also concerned about the possibility of the birds being disturbed by large numbers of innocent but enthusiastic bird-watchers. They were not easily visible from the normal viewing places on the reserve and there is always the possibility of someone trying a bit too hard to get a good view and disturbing the birds. The avocets were already publicly mentioned on various bird information-lines, from their arrival as scarce migrants, and we wondered if we could draw a veil over them for a week or two, at least until the eggs hatched. The Gwent Ornithological Society contacted all the bird-line operators and asked if mention of the avocets could be withdrawn until further notice and happily this was willingly done. We were particularly grateful for this as the people running these birding information services could lose quite a bit of credibility if it appears that they don't know what is happening in the local birding world. Obviously birdwatchers to the reserve could see what was happening and they might wonder why the bird lines were so slow. As a final line of defence some of the villagers in Goldcliff village were informed of the event, particularly those overlooking the site. All were very keen to look out for suspicious characters. So keen were some, that there were suggestions of decidedly illegal summary justice offered to unwelcome visitors!

In the event all passed off quietly. The female endured some shocking wet weather during incubation, sitting tight through blinding rain. But in the morning on the 24 May, a tiny chick could be seen wading along the shore of the island near the nest with the male in close attendance. It was raining and the female continued to sit on the nest. I was a little puzzled by this as all the eggs should hatch at the same time, so why weren't all the chicks out? (Avocet chicks, like all waders are able to walk from the moment of hatching.) Then when the rain stopped at 9.30am, suddenly there were four little avocets – all scurrying about the shore and pecking at the surface of the water!

Within 24 hours the brood had been moved from the island to the shore of one of the lagoons, where they stayed for the next three weeks. As they grew, and they grew surprisingly fast, they wandered further and further afield, often apparently with no parental attendance. However this was a decided misinterpretation of the facts. If a predator threatened to fly in the direction of the chicks the male would streak off like an Exocet, and turn the imposter away long before the chicks had become aware of any danger. I don't think I have ever seen a bird provide such determined and prolonged protection of their young as did these avocets.

Photo: Tony Pickup.

The first avocet chicks ever recorded in Wales.

On the 28 June, the young avocets flew for the first time. I happened to be watching the lagoons that morning and suddenly saw five avocets flying into one of the other pools. Sure enough, when their own pool was checked, there was no sign. Interestingly the avocets never went back to their natal pool again, but stayed feeding in the new one for the next four weeks. After three weeks there were suddenly only five. One of the adults disappeared, and then by the last weekend of July there were suddenly no avocets to be seen. They had all moved off somewhere; where I couldn't say.

So a momentous occasion came to an end – avocets had nested for the first recorded time in Wales. However, note the word 'recorded'. Since starting this article I have been told of avocet bones found in some archaeological remains on the Gwent Levels, so maybe this wasn't the first time. In fact it would be rather

Tidal flaps control salinity on the Goldcliff lagoons. Photo: Tony Pickup.

surprising if it was the first time ever. Typically avocets nest on areas of recent saline flooding. Over the last thousand years, there have been numerous occasions when the sea walls on the Gwent Levels have been breached. Saline lagoons could easily have been temporarily formed inland of the breaches and avocets may well have used them.

The fact that avocets are nesting in Wales is very interesting in itself, since until two years ago they were confined to the east coast of England. Recently they seem to have been expanding westwards, nesting in Lancashire and Cheshire. So maybe their colonizing the Gwent Levels was more a result of this westward expansion than anything else. What is probably beyond dispute is that avocets would not have nested here had Gwent Levels Wetlands Reserve not been created. It augurs well for the reserve that such a unique ornithological event should occur so soon after its creation.

Tony Pickup has been a warden for 31 years and is on secondment to CCW from the RSPB as the Senior Site Manager of the Gwent Levels Wetlands Reserve.

Croeso i'r cambig

Bwriad Gwarchodfa Wlyptir Gwastadeddau Gwent yw ail-greu'r math o fywyd gwyllt a fyddai yno ganrif yn ôl. Eleni, aeth ymhellach – daeth y cambig i nythu, am y tro cynta' o bosib ers dyddiau'r Rhufeiniaid. Doedd gweld dau gambig ar lannau Hafren ddim yn syndod – roedden nhw yno'r llynedd hefyd ac mae llawer o rydwyr yn galw heibio wrth fudo. Ond ymhen tridiau, roedden nhw'n paru ac, yna, roedd un yn creu lle i nyth ar ynys o gerrig mân. Erbyn diwedd Ebrill, roedd yr iâr yn cadw'n glos at y nyth a'r ceiliog yn ei amddiffyn yn ffyrnig. Ar Ebrill 29 y daeth cadarnhad fod wyau yno a'r cywion cambig cynta' i'w cofnodi yng Nghymru ar y ffordd. Cafwyd cymorth yr heddlu, llinellau gwylio adar a phobl leol i warchod rhag lladron wyau a gwylwyr gor-frwdfrydig. Er gwaetha' tywydd dychrynllyd, ymddangosodd pedwar cyw ar 24 Mai ac, am fis, fe fu'r rhieni'n eu gwarchod nes iddyn nhw hedfan gynta' ar Fehefin 28. Ymhen tair wythnos, roedden nhw wedi mynd. Efallai bod cambig wedi bod yma o'r blaen, heb eu cofnodi, ond mae eu presenoldeb yn cadarnhau symudiad yr adar tua'r gorllewin ac yn argoeli'n dda am ddyfodol gwarchodfa'r Gwastadeddau.

Mapping seabed habitats *around Wales*

Sieving the sediments; Paddle-worm, head and proboscis.

Photos: NMGW.

Seabed habitats are inaccessible places and, if we think about them at all, we probably limit our thoughts to spectacular coral reefs in remote places. Yet life on the seabed is rich, exciting and important for the health of whole marine ecosystems. We need to know what's there and where the most important places are around the Welsh coast. Thanks to new collaborative research, seabed life is giving up its secrets, as ***Andy Mackie*** *reports.*

"Protection needed for 'marine Serengetis' " read a recent headline on the BBC News website. The interestingly named Dr Boris Worm (Institute of Marine Science, Kiel University) coined this eye-catching phrase when publicising his recent research on rich, but localised, congregations of oceanic fish. These and other 'biodiversity hotspots' – another topical phrase – are extremely useful in focusing public attention on marine conservation and human impact issues. However, they also highlight a major problem with our understanding and appreciation of the marine environment; we actually know very little about much of it!

On land, it is easy to recognise, study and categorise forests, moors, marshes and the like. When we turn to the seas around us this is more difficult. Often, they are not directly visible to us, and the animals and plants are not so familiar. The result is that the information we have is mostly restricted to the more accessible marine habitats close to shore. Beyond the range of normal diving the seabed is largely unexplored. The deeper one goes, the less knowledge we have.

Yes, we recognise biodiversity hotspots such as coral reefs and the deep-sea sediments – the latter reportedly having the most diverse, though sparsely populated, seabed fauna anywhere. These assessments are undoubtedly due to their photogenic appearance or to the excitement

generated by high-profile and technologically impressive exploration programmes, or both. But what of marine life closer to home? Welsh sea life is certainly not unattractive. The accomplished photography of Paul Kay in last summer's issue of this magazine is testament to that. Perhaps surprisingly, however, new species remain to be discovered amongst the smaller organisms – the worms, crustaceans and molluscs – living on or unseen within the sediments of offshore Wales.

Photo: NMGW

The new research vessel Prince Madog.

The identification and quantification of these tiny creatures, most much less than a centimetre or so long, is important. As noted last October by Lord May, the President of the Royal Society: "A lot of money is spent on research into mammals and birds, but we need to know what is most important for the continuance of the ecosystem on which we depend. Arguably it's the little things that run the world." Recognising the deficiency in our understanding of Welsh biodiversity, the Marine Biodiversity section of the National Museums & Galleries of Wales was set up in the mid 1980s to explore, map and describe the seabed (benthic) habitats, communities and species. By the early 1990s the Museum had embarked on a series of large-scale collaborative surveys in partnership with other Welsh and Irish institutions. The results, which are being published as a series of major reports[1, 2], represent a leap in our knowledge of what lies beneath the waves.

From the surveys completed so far we are compiling maps for the major part of the southern Irish Sea and these illustrate the rich diversity of habitats and animal communities in our seas. The invertebrate communities living on and in the rougher, sandy gravel sediments are especially rich and over 200 species can be found in an area of one fifth of a square metre. The total number of species found so far in our surveys exceeds 1,100; many have not been recorded from Welsh waters before and at least 20 are new to science.

The maiden voyage of the Welsh National Research Vessel, the Prince Madog, in 2001, marked the start of a new joint survey involving the Countryside Council for Wales (CCW), the Museum and the University of Wales Bangor (UWB). This provided the first comprehensive quantitative data of the invertebrate life associated with Welsh sandbanks – from Conwy Bay to the Helwick sands off the Gower. Such work is vital in helping support the ratification of the proposed marine Special Areas of Conservation (SACs) that the UK Government has placed before the European Commission.

Although the biodiversity of the sandbanks themselves was lower (generally less than 50 species) than that recorded from the coarser sediments nearby, the animals associated with the sandbanks themselves often formed groupings distinct from those recognised in the broader-scale Irish Sea surveys.

A resource for all

More than ever before, the seas around our coasts are multi-use environments. As such, everyone from recreational users to the fishing, power and mineral industries – as well as the local populations living around our coasts – have a stake in ensuring the conservation and sustainable use of all its resources. In a major new initiative, the Museum and the British Geological Survey have joined together to carry out an integrated evaluation of the bio– and geodiversity of the outer Bristol Channel seabed. Supported by the Welsh Assembly Government and the Office of the Deputy Prime Minister through the Aggregates Levy Sustainability Fund, the project will provide independent, broad-scale baseline information for government, conservation agencies and industry alike. An exciting aspect of the work programme is the close linking of the scientific outputs with those of education and interpretation – leading, in the third year, to a Museum exhibition and direct interaction with the public and specific interest groups.

The underwater photography taken by Ivor Rees, UWB and the collections made during all these surveys are, in themselves, scientific and cultural resources. Natural history collections are ultimately reservoirs of biological information, whereby specimens represent snapshots of biological life in time and space. From these we can infer distributions and species richness at specific locations, make comparisons with the present and projections for the future. Further, recent technological advances in, for example, DNA analysis are both enhancing the value of historical collections and encouraging museums to expand the scope of their collections and storage facilities. Our investigations have revealed an unexpected richness in the Welsh offshore seabed – our own biodiversity 'hotspot'. In addition, we have found working in partnership with colleagues and institutions within and beyond Wales highly beneficial. Large-scale survey work is expensive, and technical and taxonomic expertise is in short supply. Our new partnership with the British Geological Survey promises to take our interpretations and mapping of Welsh marine life to a higher level.

Dr Andy Mackie, Head of Marine Biodiversity at the National Museum of Wales in Cardiff, is an expert in identification and research on the polychaete worms ('bristleworms'). He has carried out a number of studies of the seabed life around Wales, collaborating with scientists from the University of Wales, Bangor and Swansea – as well as those from Ireland. These studies are being published in the Museum's BIOMÔR Reports series.

References

1 Mackie, A. S. Y., Oliver, P. G. & Rees, E. I. S. (1995). *Benthic biodiversity in the southern Irish Sea.* Studies in Marine Biodiversity and Systematics from the National Museum of Wales. BIOMÔR Reports 1: 263 pp.

2 Wilson, J. G., Mackie, A. S.Y., O'Connor, B. D. S., Rees, E. I. S. & Darbyshire, T. (2001). *Benthic biodiversity in the southern Irish Sea area 2.* The South-West Irish Sea Survey (SWISS). BIOMÔR Reports 2(1): 1-143.

Photo: Ivor Rees.

Ar y gwely

Ychydig iawn a wyddon ni am rannau helaeth o wely'r môr. Mae rhywogaethau newydd i'w darganfod ymhlith mwydod, crustacea a physgod cregyn yng ngwaddodion moroedd Cymru. Mae gwybod rhagor am y creaduriaid bychain hyn yn hanfodol er mwyn deall ein hecosystemau. Wrth archwilio a mapio de Môr Iwerddon daeth Amgueddfa Genedlaethol Cymru o hyd i 1100 rhywogaeth – rhai'n newydd yng Nghymru a rhai heb eu cofnodi yn unman o'r blaen. Mae gwaith gyda Phrifysgol Bangor ar welyau tywod hefyd wedi datgelu rhywogaethau arbennig ac, mewn partneriaeth gyda'r Arolwg Daearyddol Prydeinig, mae arolwg cyfansawdd ar droed o fio a geoamrywiaeth rhan o wely aber Hafren. Mae lluniau ac enghreifftiau a gasglwyd yn ystod yr arolygon yn adnoddau gwerthfawr a'r bartneriaeth gyda'r ADP yn addo cynyddu ein gwybodaeth yn sylweddol.

Welsh islands *round-up*

Gannets carpet Grassholm. Photo: RSPB Images.

Edited by ***Geoff Gibbs*** *from text supplied by* ***Richard Farmer*** *(Grassholm) and by* ***Steve Sutcliffe*** *(Caldey).*

Grassholm

A boat trip round Grassholm is without doubt the most exciting wildlife spectacle in Wales. The island is first seen surrounded by a cloud of gannets departing, returning or just hanging in the air above the colony. Closer in, the gannets plunge-dive spectacularly around the boat. The sound and smell from the closely-packed birds is unforgettable.

There are 23 gannet colonies in Great Britain and Ireland, all on islands with two exceptions, one being Bempton Cliffs in Yorkshire. Grassholm is the only colony in Wales and was one of the RSPB's first purchases, in 1948. There were 20 pairs recorded in 1860, rising to 200 in 1890. The latest count (1999) of 30,688 breeding pairs represents 18% of the British population and approximately 12% of the world population of this species.

The island is 14 kilometres from the Pembrokeshire coast and consists of 22 acres of volcanic basalt. There is currently very little vegetation left on the island, destroyed by the successive activities of birds. In the 1800s it was well-known as a puffin breeding colony and it is estimated that there were 200,000 pairs breeding at the end of the 19th century. By 1934 however, puffins had crashed to 130 pairs and probably ceased breeding altogether by 1970.

The busy gannet colony on Grassholm.
Photo: RSPB Images.

Gannets launching out to sea.
Photo: RSPB Images.

No landing, but still facing threats

In the past, landing on the island gave a unique opportunity to visitors, as it was possible to get close to the nesting birds and take photographs without causing disturbance. As the colony expanded, it became more difficult to land without causing stampedes of disturbed birds, which trampled through the middle of the colony as they attempted to become airborne, causing considerable damage in the process.

The primary threat facing a colonial species is the danger of a single catastrophic event, which could have a severe effect on its total population. Grassholm occupies a vulnerable location on the approaches to Milford Haven, with its daily traffic of oil tankers. The wreck of the *Sea Empress* in 1996 made this only too obvious. Fortunately the disaster happened in February, when the gannets were away from the island. It is estimated that 72,000 tonnes of oil were released. At a different time of year, such a spillage could be catastrophic. In addition to the tanker traffic there are dangers from illegal washing out of oil tanks, causing slicks, and from oil and gas exploration.

Gannets build their nests from seaweed, which they collect from the surface of the sea. Unfortunately they also collect floating plastic waste and nylon fishing line. These are built into the nests and every year chicks become entangled, unable to leave when ready to fledge. At this time RSPB wardens and local naturalists make an annual trip to the island. Although some chicks can be released, others have starved, and it is distressing to see these birds trapped in man's discarded rubbish.

Gannets feed on shoaling species of fish and on discarded fish and offal. They therefore share their food supply with commercial interests and although the present expanding population suggests that they are not currently limited by food supply, this is a subject which conservationists will continue to monitor. The RSPB works to influence policies in the marine environment to ensure that the island and its amazing gannet colony can continue to flourish.

Boat trips to Grassholm

Dale Sailing runs daily boat trips around the island, a two-hour trip which is advertised on their website www.dale-sailing.co.uk

Photo: Paul Kay.

Sea Empress *oil spill at Tenby.*

Caldey and St Margaret's Islands

Caldey is the most populated and most visited island off the Welsh coast. It is only 640 acres but has a large monastery, built for over 100 monks and seminaries but occupied today by only around 20 or so monks, and a complex of 'village' cottages, a number of larger houses and a substantial farm. The southern part is geologically old red sandstone whilst the north and eastern parts are carboniferous limestone which has been extensively quarried in the past.

The wildlife habitat has been modified a great deal by farming activities, by tree planting in the last century or so and by the infrastructure supporting the thousands of day visitors. As a result Caldey is a mosaic of woodland (mainly sycamore but some conifers), open fields (luckily hardly affected by fertilizers or herbicides and consequently quite herb rich), gardens and mainly natural but rank coastal slope vegetation. Grazing of the cliff tops is by cattle, about 90 on 400 acres, with sheep as well in winter sometimes.

No rabbits, mice or voles

The island's only large mammals are grey seals, frequently seen on the south side near the lighthouse, but only a few breed. Interestingly, there are no small mammals other than rats and recently introduced hedgehogs. In the past rabbits were abundant but were greatly reduced by the first myxomatosis outbreaks in the early 1950s. Brother James then poisoned the remainder, quite a feat given Caldey's size and complexity! The arrival of rats eliminated the puffin colonies on the southern slopes (a few souls still claim to remember the last pairs breeding there) but the colonies of herring gulls are the largest in Wales – currently just over 2,000 pairs. Other seabirds include a slowly expanding lesser black-backed gull colony (but still only around 600 pairs), a few great black-backed gulls, a very small and new kittiwake colony, around 20 guillemots, 70 razorbills, 10 pairs of shags and 120 pairs of fulmars.

Around the coast there are some 20 pairs of oystercatchers, and several pairs of shelduck breed each year under the dense gorse on the southern slopes. The cliffs support ravens and an occasional pair of peregrine and chough. The big difference in the avifauna is the greater variety of breeding land birds than on the other Welsh islands – chaffinches abound, there are blue and great tits, robins and house sparrows, magpies and swifts. Sparrowhawks coast through the woodland glades and try their luck with greenfinches and abundant chiffchaffs, blackcaps and whitethroats. It's all very different to the wilder islands, but nonetheless a marvellous place to browse in – the orchids can be fantastic in spring and the bluebells actually grow in the woodland!

In total contrast, across a low tide (terribly dangerous) reef at the western tip of Caldey, is the tiny island of St Margaret's. It is a Wildlife Trust reserve with thriving seabird colonies. Despite a huge rat population, it holds one of the largest Welsh colonies of cormorants (up to 300 pairs but mostly around 150 pairs) and even a gannet which has taken residence in the last few years. There are up to 800 guillemots (decimated to 180 by the *Sea Empress* oil spill but recovering well), 300 razorbills, 200 pairs of herring gulls and 70 of great black-backed, plus a few kittiwakes, puffins and shags.

Visiting

St Margaret's is best seen from one of the boats which regularly go around both islands from Tenby, as landing here is generally not allowed. Caldey is a 'must visit' place – the best place for migrants is the common, near the lighthouse and around the farm; anything can turn up on this underwatched island. Steve Sutcliffe's list includes hoopoe, wryneck, red-backed shrike, yellow-browed warbler, firecrest, alpine swift, and Dalmatian pelican!

O amgylch yr ynysoedd

Gwales

Erbyn 1999, roedd 30,688 pâr o fulfrain llwyd yn magu ar Ynys Gwales – 18% o'r boblogaeth Brydeinig a 12% o boblogaeth y byd. Mae cymdeithas yr RSPB yn cadw llygad rhag nifer o fygythiadau – olew, gorbysgota a'r plastig a llinellau neilon sydd ynghanol y gwymon y mae'r adar yn ei ddefnyddio i nythu.

Ynys Bŷr a St Margaret

Er gwaetha' effaith ffermio a thwristiaeth, ar Ynys Bŷr y mae casgliad mwya' Cymru o wylanod penwaig yn magu (2000 o barau) ynghyd â 600 pâr o wylanod cefnddu, ac ychydig adar môr eraill. Mae St Margaret's gerllaw'n warchodfa gyda rhwng 150 a 300 pâr o filidowcar, 300 llurs a phoblogaeth dda o wylog, sy'n adennill tir ar ôl trychnieb y *Sea Empress*.

Gwenynen *y glannau*

Y wenynen durio Osmia xanthomelana. Ffoto: Mike Hammett.

Gan mai hoff gynefin creadur arbennig yw arfordir meddal sy'n debygol o ddisgyn i'r môr, yna pa obaith sydd yna iddo oroesi? Dyma erthygl gan ***Elinor Gwynn*** *yn trafod hynt a helynt gwenynen durio fechan sydd, yn llythrennol, bron â disgyn dros y dibyn.*

Ffoto: Elinor Gwynn.

Carped o flodau pys y ceirw ar ben y clogwyni – prif blanhigyn bwyd Osmia xanthomelana *ym Mhorth Neigwl.*

Os oes yna greadur sy'n haeddu'r teitl heddiw o fod yn un 'Cymreig', gwenynen fach euraid sy'n nythu ym mhen draw Penrhyn Llŷn ydy hwnnw!

Gwenynen durio yw hon, *Osmia xanthomelana*, un o nifer o fathau gwahanol o wenyn turio ym Mhrydain. Mae'r math yma o wenyn yn gweithio ar eu pennau eu hunain i adeiladu nythod unigol bychain mewn tyllau, yn hytrach na chydweithio yn un haid neu dylwyth mawr, fel y wenynen fêl, i adeiladu nythod cymdeithasol. Ond o'r holl wenyn turio sydd i'w cael ym Mhrydain, *Osmia xanthomelana* yw'r brinnaf. Hyd y gwyddom, dim ond mewn dau le y mae hon i'w chanfod bellach trwy Brydain gyfan, ac mae'r ddau safle hwnnw yng nghyffiniau Porth Neigwl, i'r gorllewin o Abersoch ym Mhenrhyn Llŷn.

Mae'r elfen 'xantho' yn yr enw Lladin yn disgrifio lliw oren-felyn llachar y blew hir sy'n gorchuddio cefn, neu thoracs, y wenynen. Tywyll yw gweddill y corff blewog, ar y cyfan, ond mae'r twffyn bach yma o flew euraid yn fflachio'n danbaid ac yn amlwg fel darn o gopor yn erbyn y tywod llwydaidd wrth i'r wenynen hedfan yn brysur ar hyd y clogwyni.

Nythu mewn deunydd meddal tywodlyd y mae *Osmia xanthomelana*. Yn y gorffennol, cofnodwyd presenoldeb y wenynen mewn sawl ardal ym Mhrydain – ar hyd y darnau o arfordiroedd meddal yn bennaf (gweler map 1). Fel yr awgryma'r map dosbarthiad, nid yw'r rhywogaeth yma

erioed wedi bod yn un gyffredin. Yng Nghymru, cofnodwyd *Osmia xanthomelana* yng Nghricieth, Nefyn a Phwllheli rhwng 1898 a 1921. Er 1990, prinhau'n ddifrifol ar hyd a lled Prydain wnaeth y wenynen hon a bellach mae cryn bryder am ei dyfodol hi yng Nghymru, ac o ganlyniad ym Mhrydain gyfan, ac yng ngweddill Ewrop. Nid yw'r rhesymau am ei phrinhad wedi cael eu cofnodi yn dda ond mae'n debyg eu bod yn cynnwys diflaniad cynefin addas ar glogwyni meddal o ganlyniad i erydiad neu ddiffyg rheolaeth, ynghyd â diflaniad y blodau gwyllt sy'n brif ffynhonnell o fwyd iddi.

Dosbarthiad y wenynen durio *Osmia xanthomelana* yn y DU

Er bod dosbarthiad y wenynen hon wedi bod yn fwy eang yn y gorffennol mae hi bellach wedi ei chyfyngu i gloguyni meddal ar Benrhyn Llŷn ac efallai i safle ar Ynys Wyth, er nad yw hi wedi cael ei chofnodi yno ers 1994. Daw'r map yma o Howe (2003).

Tua 100km o glogwyni meddal sydd yma yng Nghymru. Mae'r rhan fwyaf ohonynt ym Mhenrhyn Llŷn, Bro Gŵyr ac ar hyd arfordir Ceredigion (Howe 2003). Dyma gynefin sy'n hynod o bwysig i greaduriaid di-asgwrn-cefn ac mae'r enghreifftiau ym Mhenrhyn Llŷn ymhlith y gorau oll. Ar y penrhyn hwn ceir darnau helaeth o glogwyni meddal mewn lleoedd fel Porth Dinllaen, Nefyn, Porth Pistyll, Porthoer a Phorth Neigwl. Deunydd a adawyd gan rewlifiau sydd yn ffurfio'r clogwyni hyn – cymysgedd o glai, tywod a cherigos yn bennaf. Mae Porth Neigwl yn arddangos yr amrywiaeth ardderchog o fân-gynefinoedd sydd i'w gweld weithiau ar y math hwn o glogwyn. Yma, er enghraifft, fe welir ardaloedd o 'bridd' noeth, llystyfiant newydd sy'n llawn blodau gwyllt, hen dywarchen a hefyd ffrydiau bach o ddŵr yn trylifo i lawr dros rannau o'r llethr. Y gymysgfa yma sy'n gwneud y safleoedd hyn yn rhai mor arbennig ar gyfer trychfilod.

Ac mae dau lecyn bach ar hyd y clogwyni yma, ar ochr ddeheuol Penrhyn Llŷn, yn sicr yn cynnig pob dim sydd ei angen ar *Osmia xanthomelana* – ar hyn o bryd beth bynnag. Tywod noeth, gwledd o flodau pys y ceirw *Lotus corniculatus* a thrylifiadau bach lleidiog – dyma rai o elfennau mwyaf allweddol y cynefin o safbwynt anghenion y wenynen fach hon. Cyn ei hailddarganfod ar Benrhyn Llŷn yn 1998, roedd y wenynen hon wedi bod yn absennol o'i hunig safleoedd Prydeinig (ar Ynys Wyth) ers pum mlynedd wedi i ran o glogwyn ddisgyn. Dychmygwch y cyffro ymysg y gweithwyr o Amgueddfa Lerpwl pan welsant ddwy wenynen fenywaidd yn hedfan ar y clogwyni ger Abersoch yn ôl yn 1998 – y cofnod cyntaf yng Nghymru er 1921, a thystiolaeth bendant nad oedd *Osmia xanthomelana* wedi mynd ar ddifancoll, fel yr oedd pawb wedi ofni!

Yn ystod y pedair blynedd ddiwethaf, gwnaethpwyd mwy o arolygon mewn sawl ardal ym Mhrydain er mwyn ceisio darganfod poblogaethau eraill o *Osmia xanthomelana*. Ond ofer fu'r chwilio ac y mae'r gwaith arolwg wedi cadarnhau fod y wenynen fach hon, mae'n debyg, yn gyfyngedig bellach i'r ddau leoliad yma ar Benrhyn Llŷn. Yn y naill le a'r llall mae'r gwenyn yn creu eu tyllau nythu mewn banciau bychain o dywod agored. Yn aml byddant yn cychwyn turio wrth fôn gweiriau fel yr amdowellt *Lymus arenarius* a'r hesgen arfor *Carex arenaria* lle mae'r gwynt wedi gwneud i'r planhigion chwyrlïo a chreu pant bychan lle caiff y gwenyn wedyn fan cychwyn i dyllu ymhellach i'r pridd tywodlyd ac at y gwreiddiau.

Yn y prif safle, mae'r gwenyn yn nythu gerllaw rhannau o glogwyn sydd â thrylifiadau bach lleidiog yn llifo o'r tir ac i lawr ar hyd yr wyneb i'r traeth islaw. Yn y llecynnau gwlyb yma bydd y gwenyn yn hel pellenni bach o fwd – weithiau'n fwd sych ac weithiau'n fwd gwlyb, ac yn eu cario yn ôl i'r twll rhwng y malwyr (mandiblau) ar eu genau. Gyda'r pellenni bach yma fe fyddant yn adeiladu waliau'r celloedd o fewn y nyth.

Bydd clwstwr o'r rhain yn cael eu hadeiladu ac o fewn pob un ohonynt bydd un ŵy yn cael ei ddodwy, gyda storfa fach o 'fara gwenyn'. Mae'r 'bara' yn gymysgedd o baill a neithdar wedi ei hel o flodau pys y ceirw ac weithiau, gan y gwrywod, o flodau'r gwalchlys garw *Crepis biennis* (Clee & Green 2002). Bydd gwreiddiau'r planhigion cyfagos yn aml yn cael eu cynnwys o fewn waliau mwd y celloedd wyau er mwyn eu cryfhau a'u dal yn eu lle.

Nifer fechan iawn o'r gwenyn sydd yn y ddau leoliad yma ym Mhenrhyn Llŷn. Er mai yn unigol ac yn annibynnol y bydd gwenyn turio fel rheol yn adeiladu ac yn defnyddio'u nythod, fe all nifer ohonynt weithiau fod yn defnyddio'r un ardal ar gyfer nythu a bwydo, gan greu'r argraff eu bod yn tyrru'n gymdeithasol fel y gwenyn mêl. O bryd i'w gilydd gwelir mwy nag un wenynen *Osmia xanthomelana* yn defnyddio'r un twll nythu, sy'n cryfhau'r argraff hon.

Ffoto: Elinor Gwynn.

Clogwyni meddal Porth Neigwl.

Am ba hyd tybed y bydd y lleoliadau yma yng ngogledd orllewin Cymru yn parhau i fod yn addas ar gyfer y wenynen brin hon? Er bod rhywfaint o erydiad yn hanfodol er mwyn creu llecynnau addas ar gyfer nythu, mae erydiad rhannau helaeth o glogwyni yn fygythiad i ddyfodol *Osmia xanthomelana*. Roedd rhai o'r nythod a ddarganfuwyd y llynedd o fewn darn o dir arfordirol a oedd wedi syrthio rhan o'r ffordd i lawr wyneb y clogwyn yn ystod stormydd y gaeaf blaenorol – un gaeaf arall ac efallai y bydd y ddaear yma wedi diflannu yn gyfan gwbl! Mae angen cadw'r llystyfiant yn agored hefyd, trwy bori fel rheol, er mwyn creu banciau agored o dywod lle gall y gwenyn yma nythu.

Hawdd yw gweld felly bod y perygl o golli cynefin, trwy or-dyfiant, neu trwy gwymp y clogwyni i lawr i'r môr, yn rhywbeth sy'n wynebu'r creadur hwn yn feunyddiol. Mae'r gwenyn yma hefyd i'w gweld yn gyndyn i symud i ardaloedd newydd cyfagos sydd yn ymddangos, i ni beth bynnag, yn addas ar eu cyfer. Yr her 'nawr yw ceisio sicrhau y bydd digon o gynefin addas, a chyflyrau angenrheidiol eraill, yn parhau i fod ar gael ar gyfer y creadur bach hwn yn agos at ei safleoedd nythu presennol, fel y gall wynebu dyfodol mwy sicr na'r un sydd o'i flaen ar hyn o bryd.

Mae **Elinor Gwynn** yn gweithio yn rhan amser fel Uwch Swyddog i'r Cyngor Cefn Gwlad yng Ngogledd Orllewin Cymru.

Cyfeiriadau a ffynonellau:

Clee C & Green T, *The status and ecology of the mason bee* Osmia xanthomelana Kirby *at coastal soft cliff sites on the Llŷn peninsula*, Adroddiad Gwyddonol trwy Gytundeb, Rhif 524, CCGC 2002. Dosbarthiad cyfyngedig

Howe M, *Coastal Soft Cliffs and their Importance for Invertebrates*, British Wildlife Cyf.14 Rhif 5, Mehefin 2003 (tud 323-332)

Living on the edge

On the soft coastal cliffs of the Llŷn peninsula are possibly Britain's last two populations of a mason bee, *Osmia xanthomelana*. It was thought extinct in Britain after the collapse of its last known population on the Isle of Wight in 1993 but two females, with their bright golden backs, were spotted with much excitement near Abersoch five years later – the first recorded sighting in Wales since 1921. The bees need sites with sandy banks, a feast of common bird's-foot trefoil and muddy seepages. From here the bees collect tiny pellets of mud and use them to build solitary nests in bare sand on soft cliffs, often at the base of plants so the roots are incorporated into the nest walls. An egg is laid into each cell, along with a store of 'bee's bread' – a mixture of pollen and nectar from the nearby trefoil. It's uncertain how long the bees can remain here. Some erosion is necessary to create the right habitat conditions, but too much could lead to the colonies collapsing into the sea. The vegetation needs to be kept open by grazing. The current challenge is to maintain sufficient suitable habitat nearby, should this tiny creature need it.

Farming for biodiversity *and rural communities*

Ancient woodland at Tycanol. *Photo: ADAS.*

Once nature was seen as the enemy of the farmer. But it is only in particular places that wildlife habitats are constantly battling to re-assert themselves. If those areas are targeted for special management, they could bring major biodiversity gains; but they could also be restored to nature at no cost, and often at a benefit to farmers and rural communities, as ***Sarah Hetherington*** *explains.*

Wales is blessed with some remarkable wildlife sites that have escaped the worst ravages of intensive land use. Take the almost pristine ancient woodland at Tycanol in Pembrokeshire for example, or the Dyfi Estuary – an internationally important wetland reserve – or Cors Caron near Tregaron, one of the finest examples of a raised bog anywhere in Europe. These are priceless natural assets in a landscape where the intensification of both agriculture and forestry and the trend towards monocultures have resulted in a general decline and loss of traditional wildlife and habitats.

Forestry and agriculture in Wales are increasingly influenced by global market forces and stand on the threshold of radical change. Are we at a point where there might be real opportunities for enhancing our national biodiversity as well as reversing the long decline in rural populations?

Agriculture has recently faced acute problems such as the Foot and Mouth crisis, and these have raised searching questions about farming practices and their impact on the Welsh landscape. There is a new recognition that environmental conservation policies can bring social and economic benefits to a working landscape and provide greater sustainability. Research has shown that programmes like Tir Cymen – the pilot scheme that preceded Tir Gofal – create new jobs and stimulate the wider rural economy.

There are always choices and questions of priority. The key issue is whether to concentrate environmental management on the protection of

Photo: Archie Miles.

Cutting hedges the traditional way …

Photo: CCW.

… provides shelter for wildlife.

top wildlife sites – which could add to the already highly fragmented pattern of habitats – or to try to integrate environmental management into a wider working landscape with the aim of having small, but widespread, biodiversity gains.

A targeting approach

In the past, conservation management has been targeted onto a suite of the best conservation sites. This needs to continue, but management practices which increase the wildlife value of areas currently less rich in wildlife could give the best results for biodiversity in the longer term.

Such areas fall into three categories. Transitional zones such as the moorland edge, which acts as a buffer zone between intensively farmed lowlands and more extensive moorland, can be managed to help the top sites withstand the pressures of change. Restoration areas already have some species of value, such as remnants of heather on moorland, and can be managed to encourage these. New locations can be targeted to enable habitats and species to respond to change, for example by moving to higher locations in response to global warming.

The guiding principle should be to identify places which are constantly trying to become the wildlife-rich habitats they once were, and which can only be agriculturally productive through the constant input of fertilizers, energy and money, often through subsidies. Such areas, often on thin or acid soils, at high altitudes or on steep slopes, are the most practicable, cost-effective and easy areas to target.

Socio-economic impacts

Changes in land management will also have socio-economic impacts on rural communities. There are a series of approaches which are likely to have positive benefits.

- Increase the use of skills like hedge-laying and coppicing and use materials and equipment produced within the rural community (eg fence posts and wooden gates).
- Direct conservation activities to those areas of previously intensively managed land that sustain the greatest loss within the farming system.
- Select sites which will not adversely affect the rural community's social and economic activities.
- Encourage diversification of rural enterprises, for example promoting increased tourism opportunities within forestry areas. Coed y Brenin in north Wales provides a model for this.

Tir Cymen farmland.

Photo: Jeremy Moore.

Win-win situations

To what extent are social and economic benefits compatible with enhanced biodiversity? Are areas with potential for greater environmental gain the same as those in which management changes would have a positive, or at least no negative, social and economic impact?

In some cases it seems possible. Limiting agricultural inputs and management onto the most productive areas on farms could result in gains for biodiversity at the same time as reducing costs and therefore increasing profit. But how widely applicable is this, and would it apply equally to arable, grass and horticultural systems?

Consider wetland on all-grassland farms. Fencing out these areas for environmental conservation could reduce fluke problems for livestock and eliminate the diminishing returns of using fertiliser on agriculturally marginal land. These fenced out areas could provide good habitat for snipe and other wetland birds. However, it may not be that simple. To achieve the best biodiversity gains, some wetter areas of grassland may require targeted summer cattle grazing. Stock would then still be vulnerable to fluke and, in non-organic systems, would need drenching with a flukicide, which could lessen the positive impacts of changing management in relation to economic activity.

Broadening river corridors and field boundaries as part of linked farm trails, fenced off from livestock, can provide additional gains for biodiversity. It allows tourists and other visitors, such as parties of school children, to enjoy the attractions of the enclosed conservation areas without interfering with ongoing farming activities. For example, Tynyrhelyg in Llanrhystud, an organic farm with a Tir Gofal agreement, has a farm trail including streamside and hedgerow corridors and fenced-out woodland which approximates to ten percent of the farmland area.

This approach can have additional benefits especially when river corridors and boundaries along the farm trail have a high proportion of mature trees such as oak and laburnum, which produce material poisonous to farm livestock. Every autumn when there is a rich harvest of acorns, farmers can lose lambs that feed on them and, although the threat of laburnum and ivy is often over-stated, seeds and berries can pose a threat to vulnerable stock.

Where arable or fruit and vegetable crops are grown, hedgerows rich in flora provide habitats for natural crop pest predators, as well as attracting pollinating insects. For example, 15 flowering plants attract anthrocorid, a wide-ranging predator that attacks pests such as pear sucker nymphs *Psyllid*. Corn marigold, cornflower, corn camomile and Phaecelia (Bee's friend) attract predators like ladybirds (both the beetle and larvae eat aphids) and lacewings (the larva of green lacewing feed on aphids). Beneficial parasitoid wasps

are particularly attracted by umbelliferae such as hogweed and whorled caraway. Windbreak trees are also valuable – especially alder, which attracts the black-kneed capsid.

For field vegetables, flower mixtures can be sown in the field margins, along the headlands or in strips across the field to attract beneficial insects. When the usual 'herbicide strip' was replaced with an undersowing of a flower mixture during pest control trials at the East Malling orchards, researchers found that pest populations were reduced by approximately 50%. This could have positive economic benefits.

With their characteristically awkward shapes, occasional rocky outcrops and sinuous undulations, the variety in the shapes and sizes of arable and horticultural fields in Wales provides an opportunity which may not be present in the intensively cropped areas of England. Parts of cultivated fields that are heavily shaded or suffer drought caused by large trees, or which are naturally poorly drained or steeply sloped, can provide valuable sites for biodiversity. In these situations it is unlikely that the whole field would be planted with an arable or vegetable crop since it would not be economically viable. More sensitive management of these uncropped areas could provide real gains for biodiversity without affecting the economic activity of the farm holding.

There seems to be great potential in linking areas of possible economic loss to management for greater biodiversity gain. With the right targeting we would find ourselves in a win-win situation – maximising gains for biodiversity in addition to social and economic benefits. Potentially this could result in systems of Welsh farming that are economically, socially and environmentally sustainable.

Dr Sarah Hetherington is currently leading the environmental research programme at Pwllpeiran for ADAS Wales. She would like to thank David Frost for his comments on the manuscript.

Photo: Joanna M. Robertson.

Whorled caraway.

Ffermio er lles natur a chymunedau

Wrth i amaeth a choedwigaeth ddod i groesffordd, gall rheolaeth well ar ardaloedd llai cyfoethog eu bywyd gwyllt fod yn fwy buddiol na chanolbwyntio'n llwyr ar y safleoedd gorau. Mae budd economaidd yn gallu deillio o newid rheolaeth tir ac mewn rhai llefydd byddai'r enillion hyn ac enillion amgylcheddol yn cyd-daro. Byddai canolbwyntio adnoddau amaethyddol ar rannau mwya' cynhyrchiol ffermydd yn hwb i fioamrywiaeth ac yn gostwng costau. Er enghraifft, mae rhai planhigion gwyllt yn help i reoli trychfilod dinistriol ac eraill yn denu creaduriaid llesol. Mae tir gwlyb, creigiog neu serth yn anodd ei ffermio ond yn cynnig cyfle i fyd natur. Lle gallai mes ac aeron wenwyno anifeiliaid, mae'n bosib ffensio i greu llwybrau natur. Mae'r potensial mwya' i'w weld o nabod ardaloedd sy'n ddrud i'w ffermio, a'u rheoli er lles bioamrywiaeth. O dargedu'n gywir, gallwn ennill ddwyffordd.

A fluctuating **pied flycatcher** *population*

Photo: Trevor Williams.

For twenty years ***Tony Jenkins*** *has been recording the breeding success of pied flycatchers at a Camarthenshire country park. The population has fluctuated but the underlying trend is not easy to discern, as he reports.*

Over recent years there has been a reported decline in the breeding status of pied flycatcher (*Ficedula hypoleuca*) in some parts of Great Britain. Lander's long term project in the Forest of Dean (BTO, Ringer's Bulletin, Autumn, 1999) demonstrated a decline in nest box occupancy during the 1990s. Other ringers and nest recorders have recently reported similar trends from localities such as Co. Durham, the Welsh Marches and Dumfries (BTO, RAS Newsletter, March, 2001). In Wales, the RSPB Reserve at Cwm Clydach in the Swansea Valley showed a decline from circa 100 breeding pairs in the 1990s to 60 in 2000, with a further drop to about 50 pairs in 2003 (M. Humphreys, pers. comm.).

Since 1984 I have monitored a small pied flycatcher population at Golden Grove Country Park (GGCP), Carmarthenshire. Prior to 1984, breeding of this West African migrant species had not been reported in the park. GGCP consists principally of parkland habitat, being situated in the grounds of a former country house estate (40ha). An arboretum and two small alder woodlands also provide suitable sites for nestboxes.

From 1984, the original number of nestboxes (18) gradually increased to a maximum of 49 in the period 1996-2001. Boxes were installed at an average height of 3.7m and the pied flycatcher population increased rapidly from 5 pairs in 1984, to a maximum of 20 pairs in 1988. Over an eleven year period from 1987 to 1997 the population remained relatively stable,

averaging 16.6 pairs (see graph). From the onset of my nestbox scheme, inspection of the boxes on a weekly basis involved the use of a cumbersome 12 foot ladder. By 1998, at the tender age of 57, the novelty of carrying this ladder around the park for 4 hours during each visit, over a fifteen year period, had somewhat worn off ! Consequently, I re-installed all the tit boxes at an average height of 2m prior to the 1999 breeding season in order that monitoring could be undertaken with a small stepladder. From 1998, results have indicated a general decline in nestbox occupancy to only 7 pairs in 2001, the lowest number since the scheme began in 1984.

Golden Grove Country Park, Llandeilo.
Pied flycatcher nestbox occupancy 1984-2003.

In 2001, Foot and Mouth restrictions probably affected data collection from many similar long term population studies. However, I was fortunate enough to continue my recording during that period by kind permission of the owners of GGCP (Carmarthenshire County Council). I therefore have an uninterrupted data set from 1984 to 2003.

During 2002, 12 pairs bred in the park, indicating a hopefully improving situation. However, by 2003 the number of breeding pairs had fallen to 9, suggesting that the recovery in 2002 was short lived. Compared to the relatively stable population up to 1997, the following six year period has shown a mean reduction in the number of breeding pairs to 9.2. It is worth noting that although pied flycatchers generally prefer nest sites at high levels in trees, the decline in my population began before boxes were relocated at lower heights.

Photo: Trevor Williams.

Notwithstanding Foot and Mouth restrictions, I would be interested to know if other workers have recorded similar trends in pied flycatcher populations over the past 20 years.

Tony Jenkins is a consultant hydrobiologist with a longstanding interest in monitoring bird populations. Please send records to: 60 Heol Goffa, Llanelli, Carmarthenshire SA15 3LS

Gwybedog yn lleihau

Mae Tony Jenkins eisiau gwybod a oes pobl eraill wedi sylwi ar leihad yn niferoedd y gwybedog brith. Wrth wylio'r adar mewn blychau nythu ym Mharc Gwledig Gelli Aur ger Llandeilo, gwelodd gyfartaledd cymharol sefydlog o 16.6 pâr yn nythu yno bob blwyddyn rhwng 1987 ac 1997. Yn y chwe blynedd ers hynny, mae'r cyfartaledd wedi syrthio i 9.2 pâr.

At home on the reserve

All cattle photos: D & L Woolley.

'About 1,500 words, managing a reserve from the farmers viewpoint.' 'But we don't manage the reserve.' 'Well helping manage a reserve then.' 'But we're not a proper farmers.' 'The reserve doesn't know that.' 'I think the older cattle have their suspicions.' Eventually ***David*** *and* ***Liz Woolley*** *ran out of excuses.*

Twenty years ago it was just Llawrcwrt, a 230 acre farm that had been run down over the years and eventually sold to another local farmer. In the centre of the farm was about 25 hectares of what is called Rhos pasture. This is mainly tussocky damp grassland with some rushes, but at Llawrcwrt there are glacial remains called pingoes which have drier patches and there is a mosaic of several well-defined plant communities. Surrounding this area was another 25 hectares of semi-improved but very rushy grassland. Much of this had been ploughed during the 1939-45 war to grow cereal crops. On a bank to the north of the site there is an oak wood of one and a half hectares and about half a hectare of gorse and scrub. There were also 20 hectares of dry level fields around the farmstead down to fairly old permanent leys.

Not requiring another house and buildings, the new owner sold these to us together with a number of adjoining fields. When we arrived the Rhos pasture had recently been found to be home to an impressive population of marsh fritillary butterflies, and the Nature Conservancy Council (NCC) was in the process of designating the Rhos pasture as an SSSI. This was done and shortly afterwards it was purchased by them and designated as a National Nature Reserve. So we had 'The Conservation' as neighbours, and as we were interested we were asked to become voluntary wardens

of the reserve. We were provided with a rather daunting 'Wardens' Handbook', a warrant card and a badge. Dipping into the handbook the first thing I saw was instructions for action to be taken in the event of discovering a dead body on the reserve. Having thereby established that the handbook was very comprehensive, it was placed in a drawer where it remained until superseded by a slender document seven years later when CCW came into being. They did not concern themselves with the dead, but, possibly encouraged by the Health and Safety Executive, offered more useful advice on practical day-to-day matters.

Marsh fritillary butterfly. Photo: CCW.

The management of the site posed immediate problems for the NCC. The site was clearly in an appropriate condition and had a large population of butterflies. The new owner of the semi-improved land around the reserve had undertaken a certain amount of drainage and the likely effect of this on the reserve was unknown. As far as could be established the management regime for the previous twenty or thirty years had been sticking some fifty ponies on the site over the winter months. Unfortunately, due to lack of fencing they were free to graze improved and unimproved fields at will, so an assessment of past grazing levels was at best speculative. For the last couple of years the site had been lightly grazed in the summer only by suckler cows and calves. The marsh fritillary population had been high in 1984 and then suffered a crash in 1985 as the parasitic wasp had taken over. This is a quite normal cycle however and the suckler cow grazing regime continued for the next six years at a low level, and the butterfly numbers gradually recovered, reaching a new peak in 1991. Cattle farming was reasonably profitable during the late 1980s and the NCC was able to charge a rent for summer grazing, The farmer who had originally purchased the farm provided the suckler cows and calves from June to October and they did well.

1991 saw the formation of The Countryside Council for Wales and David Wheeler arrived as the new Warden for the South Ceredigion and North Pembrokeshire NNRs. It also coincided with the marsh fritillary becoming rather a fashionable butterfly. David was able to take advantage of this situation and actively promoted the purchase of the semi-improved fields and woodland around the existing reserve. The object was to provide a buffer and a testing ground for the reversion of 'improved' land to Rhos pasture. The existing grazier was phasing out his suckler herd, but was able to provide strong store cattle to graze these 'improved' fields. There were a lot of rushes and they didn't look very promising, but for two or three years the cattle did remarkably well on them. By this time we had built up a small herd of Welsh Blacks and we took over the summer grazing of the original reserve. Very satisfactory for us as it freed our own fields for conservation and enabled us to increase our herd.

Work in other parts of the country had suggested that quite high grazing levels in the order of 0.75 livestock units/ha/annum were necessary to keep marsh fritillary habitat in good condition; and much store was set on grazing by ponies. As the reserve was thought to be getting a bit too lush, some winter grazing by about 20 ponies was introduced in 1993 between November and March. After 5 years it became apparent that the ponies were rather too selective and quite sizable areas were becoming quite seriously poached by March. Pony grazing was reduced and after the winter of 1998/9 stopped except for up to four ponies owned by us and friends.

By 1994 it was apparent that the improved fields were not providing sufficient keep for the store cattle; the grazier withdrew and a replacement was not forthcoming. Cattle farming was entering a very difficult period and we were unable to expand our numbers with our existing cost structure. As CCW had an absolute requirement for grazing they waived the rent and we were able to provide some grazing over the whole reserve, but at lower levels than was thought optimum. This was not a problem unique to Llawrcwrt and CCW had several small reserves that would benefit from grazing, where it had proved impossible to find graziers. Under these circumstances it was decided that CCW would purchase a number of cattle that would be based at Llawrcwrt, but could be placed on other reserves as necessary. These would supplement the cattle provided by us. It was thought that Highland cattle would be suitable as it was likely that they could be outwintered. This allowed appropriate grazing levels to be maintained at Llawrcwrt through the Foot and Mouth disease period. Subsequent restrictions on movements have curtailed grazing on other reserves. We were contracted to manage the CCW herd.

The question of outwintering and supplementary feeding was a potential problem and in the event the cows with calves are inwintered with our herd, and only a small number of growing cattle are outwintered and fed big bale sileage on an area of hard-standing adjoining 'improved' fields. The calves are weaned round about Christmas and the aim is to calve from mid-April after the cows have been put out. At the moment our Welsh Black bull is covering the Highland cattle. The resulting calves grow reasonably well and so far all have been taken on to about 18 months before being sold as stores.

What of the butterflies over twenty years of changing ownership and grazing regimes? As indicated earlier the marsh fritillary is subject to dramatic population crashes from time to time. We count butterflies over the flight period under specified conditions and work out an annual 'index' for the population. The maximum and minimum indices over the last twenty years are: 1,957 and 28. There have been three "crashes". Under such circumstances butterfly numbers from year to year are no guide to the soundness of the management. The vegetation height and abundance of the food plant are monitored, and over the years we think we have developed an eye for what looks about right. The secret is not to make too many changes at any one time and only alter grazing levels slowly from year to year.

What have been the benefits to us? We started with quite a lot of buildings and only 30 acres. By having the use of the reserve for summer grazing we are able to make a lot of winter feed, and we are consequently able to stock at a higher level without much increase in overheads. We have a surplus of conserved feed that we can sell, and from having a few cattle that covered their costs if we were lucky, we now have a slightly profitable enterprise under somewhat artificial circumstances. This has been achieved during a dark period for farming. The other great benefit is that we have a large area of pleasant upland adjoining the farm, which we are able to enjoy, owned by good neighbours who are unlikely to bother or annoy us, and the situation is unlikely to change.

And a little agricultural footnote. The drainage that took place in the early 1980s has probably on balance been beneficial. The higher land to the south of the reserve is fairly intensively farmed, and the ditches have prevented possible nutrient run off that would have altered the nature of the reserve. So it's not always bad!

David and **Liz Woolley** have farmed at Llawrcwrt for 20 years. David has monitored the marsh fritillaries on the reserve since 1984 and has been involved in marsh fritillary site surveys in south Wales. Liz has thoroughly researched the history of the farm, which was given to Cisterian monks by King John. She has a keen interest in Welsh language and literature.

Photo: Martin Warren/Butterfly Conservation.

A 'web' of marsh fritllary caterpillars.

Photo: Caroline Bulman/Butterfly Conservation.

Devil's Bit Scabious, food plant of the marsh fritillary.

Byw gyda gwarchodfa

Er gwaetha' problemau byd ffermio, mae David a Liz Wolley wedi troi tyddyn 30 erw yn fenter weddol broffidiol … yn rhannol oherwydd eu bod yn ffinio â gwarchodfa natur. Pan symudon nhw i Lawrcwrt, roedd y Cyngor Gwarchod Natur wrthi'n prynu darn o rostir a'i ddynodi'n SoDdGA Gwarchodfa, oherwydd poblogaeth werthfawr o loyn brith y gors. Fe ddaeth y Wooleys yn wardeiniaid gwirfoddol ac, ymhen blynyddoedd, daeth eu gyrr bychan o wartheg duon Cymreig i bori'r warchodfa, gan helpu'r gloynnod a rhoi cyfle i gynyddu eu stoc. Newidiodd y drefn bori sawl tro ac, yn y diwedd, prynodd y Cyngor Cefn Gwlad nifer o wartheg Highland, gyda'r Woolleys yn cael eu talu i ofalu amdanyn nhw. Bydd niferoedd brith y gors yn cwympo'n ddramatig weithiau ond mae'r Woolleys yn ffyddiog fod eu rheolaeth o'r tir yn addas. Mae'r cyfle i bori'r warchodfa yn help i gael elw o'r tyddyn ... ac maen nhw'n hapus gyda'u cymdogion.

Nodiadau'r **Cynulliad/Assembly** *Notebook*

gan/by **Gethyn Williams**

Newid sylweddol ers yr etholiadau ar Mai 1af yw penodiad Gweinidog newydd i'r Amgylchedd – Carwyn Jones. Er nad yw byth wedi cyrraedd ei ddeugain, mae o'n hen law ar weithio yn y Cabinet, gan ei fod wedi bod yn delio â Materion Gwledig, Busnes y Cynulliad, ac yn fwyaf diweddar y Brîff Llywodraeth Agored.

Ers yr etholiad, mae seren ddisglair y Blaid Lafur bellach wrth awenau'r portffolio newydd sy'n ymwneud â'r Amgylchedd, Cynllunio a Chefn Gwlad. Yn syml, dyma agenda enfawr sy'n cynnwys dwy o'r adrannau gwasanaeth sifil mwyaf – Yr Amgylchedd a Chynllunio gydag Amaethyddiaeth a Materion Gwledig. Mae'r ehangu yma, yn ychwanegol at y ffaith fod pwyllgorau pwnc bellach yn gweithio o fewn patrwm tair wythnos yn hytrach nag o fewn patrwm pythefnos (fel yr oedden nhw cyn hyn), wedi arwain rhai i boeni y bydd materion o bwys yn dioddef oherwydd diffyg amser, ac y bydd archwilio Gweinidogol llawn yn mynd yn fwy anodd hyd yn oed. Mae'r rhan o'r brîff sy'n ymwneud â'r amgylchedd wedi lleihau braidd ers cyfnod Sue Essex. Rhaid ffarwelio â thrafnidiaeth, a chaiff ei symud i stabl Datblygu Cynaliadwy dan Andrew Davies; ac mae CADW – yr asiantaeth sy'n gorfod ysgwyddo'r baich o warchod adeiladau pwysig Cymru (neu'r 'amgylchedd hanesyddol' mewn iaith fodern) – bellach yn rhan o gylch gorchwyl Alun Pugh fel y Gweinidog dros Ddiwylliant, yr laith Gymraeg a Chwaraeon. Efallai fod rhai'n teimlo nad dyma yw gwir gartref yr agenda sy'n ymwneud â'r amgylchedd hanesyddol, er ein bod yn dal i ddisgwyl unrhyw ddataganiad pwysig o ran polisi.

Mae peth dryswch yn dal i hofran uwchben Cynllun Gofodol Cymru (WSP), sy'n parhau i fod dan adain Sue Essex fel Gweinidog dros Gyllid a Llywodraeth Leol. Yn swyddogol, mae hyn yn digwydd gan fod y Cynllun yn fater trawsbynciol, er bod yn rhaid disgwyl cyn gweld hyn ar waith yn ymarferol. Yn ogystal, mae Pwyllgor yr Amgylchedd, Cynllunio a Chefn Gwlad, sydd yn awr yn cael ei gadeirio gan Alun Ffred Jones o Blaid Cymru, wedi ei drawsnewid i adlewyrchu'r newidiadau yn y porttfolio. Ar y pwyllgor ei hun, fe welwch hen lawiau fel Rhodri Glyn Thomas o Blaid Cymru, Mick Bates o'r Blaid Ryddfrydol, a Glyn Davies o'r Blaid Geidwadol (cyn Gadeirydd y Pwyllgor Amaeth), yn ymuno â Brynle Williams, y gwrthdystiwr sydd bellach yn Aelod Cynulliad ar ran y Blaid Geidwadol, a phedwar o Aelodau Cynulliad newydd o'r Blaid Lafur.

Er gwaetha'r ffaith fod amser mor brin, fe fydd yn rhaid i'r Cynulliad ymdrin ag agenda amgylcheddol bwysig yn ystod y flwyddyn nesaf: mae Carwyn Jones eisoes wedi dechrau ar y broses o adolygu'r cynllun Datblygu Cynaliadwy; heb amheuaeth, fe fydd gweision sifil yn brysur iawn yn ceisio rhoi trefn ar y diwygiadau i'r Polisi Amaeth Cyffredin wrth geisio'u cael i weddu i gynllun Datblygu Gwledig y Cynulliad; mae'r Gweinidog a Chadeirydd y Pwyllgor fel ei gilydd wedi awgrymu y bydd y gwaith o roi'r Strategaeth Ddŵr ar waith yn hollbresennol; ac mae Cyfarwyddeb Fframwaith Dŵr yr Undeb Ewropeaidd, a fydd yn cael ei chynnwys yng nghyfraith y wlad erbyn diwedd y flwyddyn, yn sialens fawr arall.

Fodd bynnag, yr adolygiad o'r cynllun Datblygu Cynaliadwy sydd â'r potensial mwyaf o roi ffurf a siâp i ffordd y Cynulliad o ymdrin â'i amcanion amgylcheddol, economaidd a chymdeithasol dros y pedair blynedd nesaf. Bydd y broses ymgynghori'n dechrau ym mis Medi, ac fe allwn ddisgwyl gweld cynigion gan Lywodraeth Cynulliad Cymru yn gynnar yn ystod y flwyddyn nesaf. Dyma gyfle gwych i ailgynnau agenda Datblygu Cynaliadwy, i ganolbwyntio o'r newydd ar flaenoriaethau'r Cynulliad, ac i fynd i'r afael â dull mwy cyfannol o lywodraethu yng Nghymru.

Gethyn Williams yw Swyddog Gwybodaeth y Cynulliad i Cyswllt Amgylchedd Cymru. Er eiddo ef yw'r safbwyntiau yn er erthygl, heb iddyn nhw fod o angenrheidrwydd yn farn aelodau CAC.

A significant change since the elections on May 1st has been the appointment of a new Minister for Environment – Carwyn Jones. Still the right side of 40, he is already something of a Cabinet veteran having previously handled Rural Affairs, Assembly Business and most recently the Open Government Brief.

Since the election the rising Labour star has taken charge of the all-new Environment, Planning & Countryside portfolio. This is, frankly, an enormous agenda and encompasses two of the larger civil service departments – Environment and Planning with Agriculture and Rural Affairs. This expansion, added to the fact that subject committees have switched to a three-week cycle rather than fortnightly (as it was), has led some to wonder if significant issues may suffer due to time pressures and that full Ministerial scrutiny will become even more difficult. The environmental side of the brief has shrunk slightly since its time under Sue Essex. Out goes transport, moved to the Economic Development stable under Andrew Davies; and CADW – the executive agency charged with guarding the built heritage (or in modern parlance, the historic environment) in Wales, which now falls under the remit of Alun Pugh as Minister for Culture, the Welsh Language and Sport. Some may feel this is not the natural home for the historic environment agenda, although we have yet to see any significant policy announcements.

Some confusion still hovers over the Wales Spatial Plan (WSP), which is to be retained by Sue Essex as Minister for Finance & Local Government. Officially this is because the WSP is a cross-cutting issue, although how this works in practice remains to be seen. Sue Essex's new role is indeed more central to Government. The Environment, Planning & Countryside Committee, now chaired by Plaid's Alun Ffred Jones, has also morphed to reflect the portfolio changes. On the committee itself you will find seasoned campaigners such as Plaid's Rhodri Glyn Thomas, the Lib Dem's Mick Bates and the Conservative's Glyn Davies (Former Agriculture Committee Chair) joining the fuel-protestor turned Tory AM Brynle Williams and four Labour AMs new to the Assembly.

Despite such competition for time there is still a big environmental agenda for the Assembly to address over the coming 12 months: Carwyn Jones has already begun the process of reviewing the Sustainable Development (SD) scheme; civil servants will no doubt be busy trying to square the Common Agricultural Policy reforms with the Assembly's Rural Development Plan; the Minister and Committee Chair alike have hinted implementation of the Waste Strategy will be omnipresent; the EU Water Framework Directive, to be amalgamated into domestic law by the end of the year, is another big challenge.

It is the review of the SD scheme however that has the most potential to shape the Assembly's approach to its environmental, economic and social objectives over the next 4 years. The consultation process starts in September and we can expect to see WAG's proposals early in the new year. It represents a great opportunity to rekindle the SD agenda, to re-focus the Assembly's priorities and deliver a more holistic approach to government in Wales.

Gethyn Williams is Assembly Information Officer for Wales Environment Link. The views expressed above are those of the author and not necessarily those of the members of WEL.

Biodiversity *news* – Invertebrate records

Thanks to **Michael Clarke**, **Les Colley**, **Adrian Fowles**, **Mike Howe** and **Tony Jenkins** for supplying information.

In May this year whilst walking with my wife alongside the Tennant Canal near Swansea, I noticed a specimen of the Fen raft spider *Dolomedes plantarius*, the largest spider in Britain. This is an amazing discovery, making this only the third known site in the UK for this species, the others sites being Redgrave and Lopham Fen on the Norfolk-Suffolk border and the Pevensey levels in East Sussex. This new record for Wales has excited spider experts and enthusiasts and I will be working with CCW to undertake further survey work to determine the extent of the population and establish suitable management for the site.

Michael J Clark

Tinodes pallidulus McLachlan (Trichoptera: Psychomyiidae) – a caddisfly new to Wales

On the 22 July 2002, during the course of a macroinvertebrate survey at The Hendre, 6 km west of Monmouth, larvae of a psychomyiid caddisfly were collected from a small headwater stream of the River Trothy at NGR: SO 459 142. I provisionally identified the material using the key to caseless caddis larvae of Edington, J.M. & Hildrew, A.G.(1995) (*Scient.Publs.Freshwat.Biol.Ass., 53, 1-134*) as *Tinodes pallidulus*, a species currently known from only one other locality in Britain.

Psychomyiidae are small gallery-building caddis larvae that are characteristic of streams draining sandstone and limestone strata, as well as lakes with stony shores. Galleries are generally constructed from mineral grains fastened together with silk secretion. *T. pallidulus* was originally recorded from two localities in Surrey over fifty years ago, although it no longer occurs at either of those sites. The species was rediscovered in the Woodbrook, a small stream in Charnwood Forest, Leicestershire, which at that time was the only known site for *T. pallidulus* in Britain (Greenwood & Hobday (1988), *Entomologist's mon. Mag.124, 99-102*), adults being collected in 1980-82, and larvae subsequently located in 1984-85.

At The Hendre, I collected larvae from stones in a small fast-flowing riffle, and many of the galleries were located above water level. The stream is generally slow-flowing and silty, draining Old Red Sandstone, with few stony sections present.

T. pallidulus has not previously been recorded in Wales and I am most grateful to Dr John Edington for confirming my identification, as well as comparing the larvae with voucher specimens from both Woodbrook and the original Surrey localities.

Tony Jenkins

Other significant invertebrate discoveries include the rediscovery of a BAP species, the click beetle *Synaptus filiformis*. A single specimen was swept from the banks of the river Wye at Tintern by Howard Mendal. This rare species was thought to survive only on the river Parrott in Somerset, but it was well known from Tintern for ninety years from the middle of the nineteenth century. It was last recorded in 1943, and it would appear that nobody has been to look for it there since.

The BAP mason bee *Osmia parientina* has been re-found in the grounds of Plan Tan-y-bwlch, Meirionnydd, where in was last recorded in 1976. There are reports of two Red Data Book hoverflies. Four specimens of the hoverfly *Microdon devius* were recorded at its only known Welsh locality in Meirionnydd, where it has been intermittently recorded since its discovery in 1992; and two new localities have been found for the hoverfly *Chalcosyrphus eunotus*, bringing the total number of localities to four.

Several rare beetles have been recorded, including a BAP ground beetle, *Bembidion testaceum*, in some abundance in sandy clifflets on the banks of the lower Usk. Les Colley found the ground beetle *Chlaenius tristis* on the central section of Cors Geirch NNR, half a mile away across improved land from its only previously known UK locality on the southern edge of the reserve. In Europe it occurs on lake sides, and it may be a relict from when Cors Geirch was a lake. It was reported from Crymlyn Bog in 1829 and, given its evident staying power, could perhaps still be there.

In August, Les saw a single male black-tailed skimmer *Orthetrum cancellatum* at Cors Erddreiniog NNR on Anglesey, which stayed for a couple of days. This is the nineteenth dragonfly species recorded from this reserve. Sam Bosanquet and Dave Reed have found a new site for the southern damselfly *Coenagrion murcuriale* in Pembrokeshire. The damselfly was quite common in this area half a century ago, but agricultural improvement was thought to have put paid to these populations.

Green **Bookshelf**
Silff Lyfrau *Amgylcheddol*

Philip Brennan's Clare
Philip Brennan, Ashfield Press, Dublin 2002
£25 Hardback £15 Softback
ISBN 1-901658-28-7

Heart of the Country
Jeremy Moore and William Condry, Gomer 2003
£14.95 Softback ISBN 1-84323-203-0

Pocket Guide to the Butterflies of Great Britain and Ireland
Richard Lewington, British Wildlife Publishing, 2003
£9.95 ISBN 0-9531399-1-3

The landscapes in which we dwell inhabit us; they are filled with special meanings – our personal histories, those of our families and communities. Stand among the ancient walls of Tre'r Ceiri, with the sunlight casting long shadows across the heath, and you can sense the imprint of Celtic life over the intervening two thousand years, caught in the silence and the breathing of the wind.

Words and images can awaken in us a response to and a recognition of what is often described as 'the spirit of place', as two new books perfectly illustrate. In ***Philip Brennan's Clare***, the artist's pen and paintbrush complement each other to convey his passion for the places which define his home ground.

One such is the inside of a bar, where the first song of the day is being sung. As a singer himself, Philip Brennan knows just how it feels to be singing in that bar at that time, and as you look at the figures, watching, smiling or concentrating on the tune, you join them by proxy. So it is that you do not need to be standing on a limestone rock surrounded by arctic-alpine flowers to respond to County Clare's strange beauty. Images and words, brought to life with understanding, take you there.

A map shows you the locations of all seventy-three paintings, an excellent plan, as I would be sorely tempted to visit several of these scenes on my next visit to see the botanical wonders of the Burren. One destination might be the bright pink of Corofin station, made all the more interesting by the account of its repair. Another might be the thatched cottage at Spanish Point, where New Zealand flax has naturalized itself. Some of the washes are very subtle, and I would need to see the stone circle at Caherconnell to appreciate what Philip Brennan has seen.

There is great variety in the styles and subjects he chooses for his paintings. I love the earthen ring-fort at Ballyallaban where, through the black and white of the trees, Brennan paints the colour supernatural. There are ancient battles, birds, bogs, boats and buildings. The words are embellished with songs and poems. They are expressive, informative and at times amusing. If I have a regret, it is that there are not more of them.

I would make the same comment about another wonderful combination of words and images. ***Heart of the Country*** takes a selection of sixty-one of the late Bill Condry's Guardian Country Diary columns, and illuminates them with Jeremy Moore's photographs.

The columns span nearly forty years, starting in 1958. There is a timelessness about them which reminds me that we are still reading Gilbert White's diaries, and finding them relevant to our own connections with nature. May future generations discover new meanings for themselves in William Condry's country diaries.

Jeremy Moore's introduction gives a personal account of what inspired him to put this book together, and includes an affectionate portrait of William Condry. This helps to stitch the diaries and photographs together into a seamless whole. Moore's sublime photographs take you into the landscape, and the moods they capture are a perfect accompaniment to Condry's words.

There are also some invaluable notes at the end, but these only cover a dozen of the sixty odd subjects described. I could have done with more of these, as they add much interest. Where Condry mentions a particular threat to a place he describes, or raises issues, it would be great to know what happened or how events have unfolded since the diary was first published.

This is a fine book, and should swell the growing army of people who recognise that the natural environment of Wales is a priceless asset worth fighting for.

I will finish by mentioning an excellent new butterfly identification guide, ***Pocket Guide to the Butterflies of Great Britain and Ireland***. This is a little book, and so it should be, easily slipping into the pocket; it is impractical to take many so-called pocket guides into the field. The illustrations are superb, it packs a great deal of information into a small space, and even finds room for day-flying moths.

James Robertson

Nature *at large*

Frances Cattanach provides a round-up of mammal news

In June, six bottle-nosed whales, which are dwellers of the deep and very occasional visitors to UK waters, cruised up the Irish Sea between the Isle of Man and Lancashire, Cumbria to the Solway Firth. Members of the 'Solway Shark Watch & Sea Mammal Survey' were able to keep tabs on them for over three weeks into the North Channel and later (almost certainly the same pod) into the south Clyde. More recently they have had singles well spread out, again all moving north, but it is difficult to keep tabs on them. A problem with Liverpool Bay is the lack of a sighting network along the North Wales coast. So, if you live in the Llandudno to Colwyn Bay area, and are interested, please contact me, and we can try and set up a sighting network. The skipper of the *Island Princess*, which tours round Ynys Seiriol (Puffin Island) on the east coast of Anglesey reported a pod of over 40 dolphins during July, so there may be exciting rewards.

In August a minke whale was spotted south of Newquay trailing a trawl net on its flank. Boats and planes were dispatched to search for it, with equipment to remove the net, but at the time of writing, without success. For any strandings of dead Cetaceans, leave your records with the Marine Strandings Network (01348 875000) and for live strandings, contact the RSPCA on 0990 555999.

A newly discovered dormouse population in a private nature reserve near Llanharan, between Cardiff and Bridgend, is under threat from the proposed Llanharan by-pass. The owner of the woodland has put up dormouse boxes, and the South & West Wales Wildlife Trust is advising him on site management, helping monitor the population, and will be making the case for the protection of the dormice in the woodland. In their Gelli-Hir Wood site on the Gower, the Wildlife Trust is seeking volunteers this autumn to help with a dormouse nut survey. For further information contact the Trust on 01656 724100.

Phil Morgan reports from Powys that John Messenger of Vincent Wildlife Trust recorded barbastelle bats at Aberedw (Radnorshire) in July using time expansion bat detector equipment. This is only the fourth record for barbastelle in Powys in the last fifty years. He also understands that Dr Peter Smith has recorded Leisler's bats north of Pontypool in Gwent, also using time expansion equipment. This is the first case of Leisler's being recorded in Wales (although there is a record of one at Holyhead, which it is considered came in on a ferry).

Phil has been busy carrying out radio tracking of Daubenton's bat, which has led to the discovery of tree roosts on the River Usk. If bats are a bit of a mystery to you, then the Vincent Wildlife Trust has just published an updated edition of *The Bats of Britain & Ireland*. It is a 32-page booklet written by Henry Schofield and Tony Mitchell-Jones and beautifully illustrated by wildlife artist Denys Ovenden. It is aimed particularly at non-specialists wishing to further their knowledge and understanding of bats in Britain and Ireland. You can order a copy for £3 incl. p&p from the Vincent Wildlife Trust, 85, Whitehall Court, London SW1A 2EL 020 7930 3160.

Dr Craig Shuttleworth reports that the Anglesey Red Squirrel project has just completed a genetic study of red squirrels (sample was c. 45 individuals) on Anglesey and found that the animals have a single haplotype (mitochondrial DNA) that is unique in the UK. They also examined a frozen carcass stored since the 1980s which indicated that a second unique genetic type was also on the island, but they now know this has been lost. When nuclear DNA was examined it was found that the Anglesey population contained a very low amount of variation. The project team is therefore keen to introduce additional genotypes to the island.

The Deer Initiative's new 'Deer Collisions' project aims to establish the numbers of deer and vehicle collisions in the UK in order to target problem areas to reduce collisions. It is estimated that there are 30-50,000 collisions per year which result in between ten and twenty human fatalities a year. For more information about the project, and to submit records contact Jackie Brinton, Wales Deer Initiative, PO Box 39, Brecon, LD3 8WD Tel 01874 636148, Fax 01874 636840.

Frances Cattanach is Director of the North Wales Wildlife Trust, and can be contacted on 01248 351541 or e-mailed at fcattanach@cix.co.uk

Marine *matters*

Ivor Rees sheds light on some remarkable seabed structures.

Living reefs: oases of marine biodiversity

While 'reefs' may bring to mind coral atolls rather than the tide-swept, cool and often turbid conditions of Welsh coastal seas, there are seabed structures built up by organisms here which fully meet the description. Examples include the 'reefs' formed by the honeycomb worm *Sabellaria alveolata*, which in Wales flourishes on parts of the boulder shores around the northern arc of Cardigan Bay. It cannot withstand very cold winters and like the gastropod *Osilinus lineatus* it took many years for the populations to recover after the 1962/63 winter. Both these south-western species are being targeted for monitoring under projects to study climate-induced changes in abundance.

An offshore reef-forming species is the horse mussel *Modiolus modiolus*, the beds of which can build up as mounds two metres high on the seabed. *M. modiolus* is long-lived, by the standards of most marine invertebrates, with individuals recorded of 30 or 40 years. They hang together with their byssal threads so that generations of dead shell and mud can build up under a surface of living mussels. Sometimes a wave form develops in the bed morphology as the mussels compete for the best feeding positions in the turbulent tidal current flow. By filter feeding they produce copious amounts of faecal pellets which often lodge amongst the complex matrix of shell and byssal threads. The living mussels also provide a surface to which a luxuriant fauna attaches itself.

It is particularly striking when running underwater video cameras over areas with horse mussel reefs that there are sharp transitions to the underlying lag gravels and embedded cobbles. The lag appears almost barren, due partly to sand scouring in the strong tides. What comes to mind are oases of biodiversity within an impoverished gravel 'desert'. The richness in the sea comes from the ability of the mussels to create a particularly heterogeneous habitat. In this habitat of living organisms there are ample niches for crevice-living species. Indeed, the mussel spat seem to find protection amongst the byssal threads of the adults. The fallout of faecal mud creates a habitat for sediment-living creatures of a type normally found where there is enhanced deposition of organic fines rather than in tide-swept locations.

There is some evidence to suggest that the horse mussel reefs may be very long-established features. One off the north coast of Llŷn, which was extensively surveyed by UW Bangor, CCW and North West and North Wales Sea Fisheries Committee in the late 1990s, was mentioned by Edward Forbes in the 1850s. Because they are long-lived self-sustaining features, the offshore horse mussel reefs do not have the resilience of intertidal beds of the common mussel *Mytilus edulis*. A bed of *M. modiolus* off the south of the Isle of Man was virtually eliminated by intensive scallop dredging about 25 years ago and it seems not to have re-established itself yet. A scallop dredging-gear exclusion zone was brought in by the sea fisheries committee for the relevant part of the Llŷn ar Sarnau SAC. There are other less well-known reefs off north Wales which would merit treatment in the same way. This would be of benefit for the conservation of a Biodiversity Action Plan (BAP) habitat and also could be important to the wider ecology of the Irish Sea. Reform of the Common Fisheries Policy requires future management with an ecosystem perspective, so there are practical reasons for taking more account and charting these living 'reefs'.

Further reading

Holt, T.J., Rees, E.I.S., Hawkins, S.J., & Seed, R. 1998. *Biogenic Reefs* (volume IX). *An overview of dynamics and sensitivity characteristics for conservation and management of marine SACs*. Scottish Association for Marine Science (UK Marine SACs Project).

Moore, J. J. 2002. *An atlas of marine Biodiversity Action Plan species and habitats and Species of Conservation Concern in Wales*. CCW Contract Science Report No. 509.

Ivor Rees is a marine biologist and formerly was senior lecturer in Ocean Sciences at the University of Wales, Bangor.

Small part of a Sabellaria reef. Photo: Ivor Rees.

Natur *mewn gwarchodfeydd*

Yma, mae **Wil Sandison** yn trafod dulliau newydd o reoli'r arfer o bori yn Nhywyn Niwbwrch.

Mae SoDdGA Tywyn Niwbwrch/Ynys Llanddwyn yn gorwedd yng nghornel dde-orllewinol Ynys Môn, a dyma'r system dwyni galchaidd gyfan fwyaf ym Mhrydain. Fe gafodd y safle ei hysbysu fel Safle o Ddiddordeb Gwyddonol Arbennig (SoDdGA) yn 1955 oherwydd ei ddiddordeb daearegol, geomorffolegol a biolegol, ac yn ystod yr un flwyddyn cafodd y safle ei ddatgan fel Gwarchodfa Natur Genedlaethol. Yn fwy diweddar, mae'r safle wedi cael cydnabyddiaeth ryngwladol gan fod ei ddynodi fel Ardal Cadwraeth Arbennig (ACA) Ewropeaidd yn yr arfaeth dan Orchymyn Cynefinoedd a Rhywogaethau'r CE.

Yn y gorffennol, mae rheolwyr sy'n ymwneud â chadwraeth wedi dibynnu'n helaeth ar sgiliau, gwybodaeth ac arbenigedd y diwydiant amaethyddol o ran rheoli tir, fel arfer trwy bori tymhorol gan ddefnyddio un rhywogaeth o dda byw ar gyfradd stocio benodol. Er y gall y dull yma gyrraedd amcanion safle arbennig, dydi pethau ddim yn fêl i gyd. Rydym wedi penderfynu mynd i'r afael â dull mwy cyfannol o reoli cadwraeth ar y warchodfa, nid yn unig er lles nodweddion y safle, ond hefyd i gyfoethogi'r gwaith o ddatblygu'r bioamrywiaeth a'r ecosystem. Ein nod yw cael system "bori naturiol".

Mae pori naturiol yn seiliedig ar yr egwyddor o bori drwy gydol y flwyddyn yn hytrach na phori tymhorol. Cyfyngir ar nifer yr anifeiliaid yn ôl faint o fwyd sydd ar gael yn ystod adegau o brinder, yn enwedig yn ystod y gaeaf. Mae hyn yn golygu bod yna ormod o fwyd, mewn gwirionedd, yn ystod yr haf, sydd o fudd i blanhigion blodeuol. Mae'n dibynnu ar yr amrywiaeth o lysysorion sydd i'w cael – rhai bach, canolig, mawr, o bob rhyw, o bob oed, anifeiliaid cnoi cil ac anifeiliaid eraill sy'n pori.

Mae pedwar o egwyddorion yn arwain y ffordd yr ydym yn rheoli tua 650ha o gynefin twyni tywod. Dyma nhw:

- Pori drwy gydol y flwyddyn
- Mathau gwahanol o lysysorion – rhai bach, canolig, mawr (anifeiliaid cnoi cil/carnolion)
- Llysysorion o bob rhyw ac o bob oed
- Anghenion o ran lles anifeiliaid

Ar hyn o bryd, mae'r safle'n cael ei bori drwy gydol y flwyddyn gan ferlod mynydd Cymreig ar raddfa stocio o oddeutu un ferlen i bob tri neu bedwar hectar. Mae'r lefel yma'n ddigonol i gwrdd ag anghenion lles yr anifeiliaid ac i gynnal y diddordeb cadwraethol. Mae'n creu cymuned o laswellt byr yn ystod y gaeaf/gwanwyn, ac yn caniatáu i doreth o dyfiant dyfu yn ystod yr haf. Mae'r ceffylau'n cynnwys rhai o bob oed, ac ar hyn o bryd merlod ydyn nhw i gyd. Fodd bynnag, o aeaf 2003 ymlaen, fe fydd stalwyni sydd wedi cael fasectomi yn cael eu cyflwyno er mwyn cael gre naturiol o ferlod heb yr angen i gael gwared ag ebolion/ebolesau diangen bob blwyddyn.

Nid oes unrhyw fwyd ychwanegol yn cael ei roi i'r merlod, a dim ond 5% ohonyn nhw sydd angen cael triniaeth rhag heintiau parasitig. Yn y bôn, maen nhw bellach yn cael eu rheoli fel da byw lledwyllt, ac er mwyn bodloni anghenion lles yr anifeiliaid mae milfeddyg yn eu harchwilio unwaith y flwyddyn.

Mae'r safle hefyd yn cynnal nifer cynyddol o gwningod sydd, mewn ambell lecyn, i'w cael yn y niferoedd a welwyd cyn dyfodiad mycsamatosis. Caiff y cwningod yma eu hannog, oherwydd eu bod nhw, ynghyd â mamaliaid bach fel llygod pengrwn, yn pori'r safle fel llysysorion bach. Er mwyn cael yr amrediad llawn o lysysorion, rydym yn chwilio am ffyrdd o gyflwyno llysysorion canolig o ran maint i'r safle. Fe allai rhywogaethau cynhenid o geirw gynnig un ateb, neu fathau prin o ddefaid nad oes rhyw lawer o waith edrych ar eu hôl.

Er mwyn ail-greu'r cyfnodau o 'benllanw a thrai' sydd i'w gweld mewn poblogaeth naturiol o lysysorion, efallai y bydd yn rhaid i ni bob hyn a hyn symud rhai o'r merlod ymaith, neu eu symud oddi yno i gyd. Fe fydd yn rhoi cyfle i blanhigion sydd wedi cael eu pori gan dda byw dyfu o'r newydd unwaith eto ac ailhadu.

Mae'r dulliau yma o reoli sydd i'w gweld yn Nhywyn Niwbwrch wedi bod ar waith ers y flwyddyn 2000, a hyd yn hyn mae'r canlyniadau'n galonogol. Rydym yn parhau i fonitro'r llystyfiant, a hyd yn oed yn awr mae modd gweld patrymau pori ac ymddygiad cymdeithasol arbennig yn datblygu ymhlith y merlod.

Mae **Wil Sandison** yn Warden Ardal i'r Cyngor Cefn Gwlad yn Ardal y Gogledd Orllewin.

Nature *in reserve*

Wil Sandison looks at new grazing management at Newborough warren.

Newborough Warren/Ynys Llanddwyn SSSI lies at the south west corner of Anglesey, and is the largest intact calcareous dune system in Britain. It was notified as a Site of Special Scientific Interest (SSSI) in 1955 for its geological, geomorphological and biological interest, and in the same year it was declared a National Nature Reserve. More recently, the site has been given international recognition through its proposed designation as a European Special Area of Conservation (SAC) under the EC Habitats and Species Directive.

In the past, conservation managers have relied heavily on the skills, knowledge and expertise of the agricultural industry in managing land, which is typically by seasonal grazing using a single species of livestock at a set stocking density. Whereas this may meet a site's objectives, it does have drawbacks. We have decided to adopt a more holistic approach to conservation management on the reserve, not only to cater for site features but also to enhance biodiversity and ecosystem development. Our aim is to replicate a 'natural grazing' system.

Natural grazing is based on the principal of year-round grazing as opposed to seasonal grazing. The number of animals is limited by the availability of food at times of scarcity, especially late winter. This means that in practice there is a surplus of food in summer that benefits flowering plants. It depends on a variety of herbivore types – small, medium, large, multi sex, multi age, ruminants and other grazers.

Our management of about 650 ha of sand dune habitat is based on four guiding principles:

- All year grazing
- A variety of herbivore types – small, medium, large (ruminants/ungulates)
- Multi sex/multi age herbivores
- Animal welfare requirements

The site is currently grazed all year round by a herd of Welsh Mountain ponies at a stocking density of approximately one pony to every three or four hectares. This level is sufficient to meet animal welfare requirements and maintain the conservation interest. It creates a short sward community during the winter/spring period and allows a profusion of growth during the summer period. The pony herd is multi-aged and currently single sex (female). However, from winter 2003 stallions that have had a vasectomy will be introduced to the herd to replicate a natural pony herd, without the need to dispose of unwanted foals each year.

No additional feed is given to the pony herd and dosing for parasitic infections is required on less than 5% of the herd each year. Basically they are now managed as feral livestock and to satisfy animal welfare requirements a vet examines the herd once a year.

The site also supports an increasing number of rabbits which in some areas are reaching pre-myxomatosis levels. This is encouraged as, along with small mammals like voles, they provide the small herbivore grazing. To achieve the full range of grazing types, we are looking at ways of introducing a medium sized herbivore to the site. One option may be native deer species or rare sheep breeds that require minimal animal welfare intervention.

To replicate peaks and troughs in a 'natural herbivore population', we may have to periodically remove some or all the ponies. This will allow plants that have been selectively grazed by livestock to replenish and reseed. Rabbit populations naturally undergo peaks and troughs.

This form of management at Newborough Warren has taken place since 2000 and so far the results are encouraging. Monitoring of the vegetation is continuing and distinct patterns of grazing and social behaviour can already be seen in the pony herd.

Wil Sandison is Area Warden for CCW's North West Area.

Photo: CCW.

Mobile dunes at Newborough Warren NNR.

Hysbysfwrdd / NoticeBoard

If you would like your wildlife event to feature on this page please contact Mandy Marsh on 01248 385574 or e-mail m.marsh@naturcymru.org.uk

RSPB Cymru
25 Oct FEED THE BIRDS DAY
Call Ruth on 029 2035 3007
ruth.billingham@rspb.org.uk
for further information

Annual Lacey Lecture
IOLO WILLIAMS
Birds of Prey in Wales
28 Nov at the Civic Hall, Conwy.
Details from NWWT (01248 351541)

British Trust for Ornithology
REGIONAL CONFERENCE
Oct 18 Y Tabernacl, Machynlleth
Advance booking only:
Sue Starling 01842 750050
sue.starling@bto.org

Plas Tan y Bwlch 2003/2004
HYFFORDDIANT PROFFESIYNOL
PROFESSIONAL TRAINING
Ffôn Tel 0871 871 4004
neu or 01766 590274
www.plastanybwlch.com
All courses are taught through the medium of English
Cynnigwyd ysgoloriaethau ar gyfer unigolion sy'n gweithio yng Nghymru
Fellowships are offered to those working within Wales

Medi September 23 – 25
Rheoli Tirwedd Tir Ymylol
Landscape Management of Marginal Land £196

Hydref October 6 – 10
Dehongli Amgylcheddol
Environmental Interpretation £334

Hydref October 27 – 31
Hybu Bywyd Gwyllt mewn Gerddi hanesyddol a Pharcdiroedd
Wildlife Enhancement in Historic Gardens and Parklands £359

Tachwedd November 10 – 14
Hyfforddiant Sylfaenol ar gyfer Wardeiniaid a Gwarcheidwaid
Basic Training for Wardens and Rangers £344

Tachwedd November 17 – 21
Cynllunio Rheolaeth yng Nghefn Gwlad
Management Planning in the Countryside £355

Shared Earth Trust
THINKING OF CREATING A NEW WOODLAND?
With careful planning, woodlands can be a great asset to a holding. The Shared Earth Trust's course on **4th Sept** will help you identify what you want to get out of a new woodland as well as how to meet the needs of wildlife. You will also learn how to decide on the best location, as well as what to plant where. Contact: 01570 493358
set@denmark-farm.freeserve.co.uk
http://www.shared-earth-trust.org.uk
Other courses available:
Oct 7 Back to the Future
Oct 16 Introduction to permaculture
Nov 13 Managing for Wildlife Forum
Nov 21 & Feb 27 2004 Practical Hedgelaying & Coppicing

Gwent Ornithological Society
Cymdeithas Adaregol Gwent
REEDBEDS IN WINTER
CORSLEOEDD YN Y GAEAF
Rhagfyr 21 December
An early morning walk to see over-wintering ducks on the Uskmouth Reedbeds. Birds of prey such as hen harriers and short-eared owls may also be seen.
Taith gerdded yn y bore cynnar i weld hwyaid sy'n treulio'r gaeaf ar gorsleoedd Aber-wysg. Mae hefyd yn bosibl gweld adar ysglyfaethus, fel bodaod tinwyn a thylluanod clustiog.
Tel Ffôn: 01633 275567

Fenns Whixhall Mosses on the Wales/Cheshire border
FREE EVENTS
28 Sept Fungal Foray
19 Oct Woodcarving on the Mosses (including walk to fetch bog pine)
7 Dec Xmas Tree Task
A Year on the Mosses Slide Show by JL Daniels at:
Whixall Social Centre **28 Oct**
Town Room, Wem Town Hall, **12 Nov**
Whitchurch Civic Centre **27 Nov**
Full details from Joan Daniels on 01948 880362 (weekdays) or 07974 784799 (weekends)

Plant Science Wales
SYMPOSIUM – An opportunity for postgrads and postdocs to present their work in an informal and supportive environment.
17-18 Dec IGER, Aberystwyth.
Deadline for registration: 30 September
Deadline for abstracts for papers: 14 November
For full details contact:
liz.griffiss-white@bbsrc.ac.uk
(please use subject header: Plant Science Wales)
Tel: 01970 82 3001
Fax: 01970 82 0212
http://www.iger.bbsrc.ac.uk/igdev/PSW/index.shtml

South and West Wales Wildlife Trust INDOORS OR OUTDOORS
Here are some of the many events offered by the Trust this Autumn and Winter:
26 Sept *Seal Watch* at Worm's Head
8 Oct *Nature Photography* with David Painter, Llandeilo
20 Nov *Rainforest Wildlife in Costa Rica* slide show in Newport
7 Dec *Brown Hairstreak Egg Count*, West Williamston Nature Reserve

For full details of these and many more, contact the Trust on 01656 724100 or email information@wtsww.cix.co.uk

Back issues of *Natur Cymru* are available priced £2.50

For illustrations, thanks to/diolch am y lluniau i:
English Nature, Mandy Marsh, Alastair Robertson, RSPB Images.

£3.50

www.naturcymru.org.uk

"O na, miri'r **Nadolig** *ym mis Medi!"*
"Oh no, not **Christmas** *in September!"*

Ayw cerdded i fyny ac i lawr y Stryd Fawr yn ceisio dod o hyd i anrheg Nadolig gwerth chweil yn peri diflastod llwyr i chi? A oes gennych deulu neu ffrindiau a fyddai'n hoffi eistedd o flaen tanllwyth o dân yn darllen *Natur Cymru*? Yn awr, fe allwch ladd dau aderyn â'r un garreg. Yn sicr, mae *Natur Cymru* yn anrheg well a mwy diddorol o lawer na'r siocledi a'r 'sanau arferol, ac fe fydd y rhifyn nesaf ar gael erbyn y Nadolig. Y cwbl sydd angen i chi ei wneud yw llofnodi eich llyfr sieciau…

Do you find trudging up and down the High Street looking for Christmas presents a bore? Do you have family and friends who would really enjoy spending time sitting by a cosy fire reading *Natur Cymru*? Now you can kill two birds with one stone. *Natur Cymru* makes a far more interesting and worthwhile present than all those chocolates and socks, and the next issue is available just in time for Christmas. All you have to do is pick up a pen and find your cheque book…

Hoffwn roi'r canlynol yn anrheg / I would like to make a gift of:

- ☐ Un copi o / One copy of *Natur Cymru* at **£3.50**
- ☐ Tanysgrifiad blwyddyn / One year's subscription **£12.50**
- ☐ Tanysgrifiad dwy flynedd / Two years' subscription **£20**

At / To:
Teitl / Title ..... Enw blaen / First name .....
Cyfenw / Surname .....
Cyfeiriad / Address .....
.....
..... Côd Post / Postcode .....

Oddi wrth / From:
Fy enw / My name .....
Cyfeiriad / My Address .....
.....
..... Côd Post / Postcode .....

Rhif tanysgrifiwr / Subscriber number ..... Dyddiad / Date .....

Er mwyn gwneud yn siŵr y bydd yr anrheg yn cael ei dosbarthu cyn y Nadolig, a fyddech gystal â dychwelyd y ffurflen hon i *Natur Cymru*, Maes y Ffynnon, Penrhosgarnedd, Bangor, Gwynedd LL57 2DW, erbyn Dydd Llun 1 Rhagfyr 2003.

To guarantee delivery in time for Christmas, please return this form no later than Monday 1st December 2003, to *Natur Cymru*, Maes y Ffynnon, Penrhosgarnedd, Bangor, Gwynedd LL57 2DW

Mae **ÔL-RIFYNNAU** o *Natur Cymru* ar gael i danysgrifwyr am £2.50 yn unig. A fyddech gystal â rhoi tic ger y copïau yr ydych eu hangen – yn anffodus, does yna ddim mwy o gopïau o'r rhifyn cyntaf ar gael.

BACK ISSUES of *Natur Cymru* are available to subscribers at only £2.50 each. Please tick the copies you require – we're sorry no more copies of Issue 1 are available.

Nifer / Quantity		**Cyfanswm y gost / Total price**
	Rhif 2 / No 2 – Gaeaf / Winter 2001	
	Rhif 3 / No 3 – Gwanwyn / Spring 2002	
	Rhif 4 / No 4 – Haf / Summer 2002	
	Rhif 5 / No 5 – Gaeaf / Winter 2002	
	Rhif 6 / No 6 – Gwanwyn / Spring 2003	
	Rhif 7 / No 7 – Haf / Summer 2003	
	Anrheg – copi / tanysgrifiad / Gift copy / Subscription	
	Cyfanswm / Total	

Amgaeaf siec / archeb bost yn daladwy i *Natur Cymru* am:
I enclose a cheque / PO, made payable to *Natur Cymru*, for **£** .....