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Front cover, image 1: *Sedum dasyphyllum* (Thick-leaved Stonecrop) on a south-facing wall by the old A55, Anglesey. © Hugh Knott. See page 23.

2: Yellow flag markers indicating the locations of *Nitella tenuissima* patches in an artificial peat pool at Cors Bodeilio NNR (v.c.52). © Peter Jones. See page 37.

3 (inset): Photo micrograph of *Nitella tenuissima* from the Cors Bodeilio peat pool, August 2021. © Peter Jones. See page 37.

4: *Hypericum elodes-Potamogeton polygonifolius* soakway (M29) at Trannon Moor, 1 August 2021. © Gill and Peter Foulkes. See page 21.

5 (inset): Utricles of *C. pauciflora* (Few-flowered Sedge); straw-coloured and tapered to a beak-like apex with a persistent protruding style. Taken at Trannon Moor, 1 August 2021. © Gill and Peter Foulkes. See page 21.

Items for inclusion in the next Welsh Bulletin should be sent to Richard Pryce by May 2022. Editors: *Richard D. Pryce*, Trevethin, School Road, Pwll, Llanelli, Carmarthenshire, SA15 4AL PryceEco@aol.com. *Sally Whyman* (sally.whyman@museumwales.ac.uk) and *Katherine Slade* (katherine.slade@museumwales.ac.uk), Dept. Natural Sciences, Amgueddfa Cymru-National Museum Wales, Cathays Park, Cardiff, CF10 3NP. See bsbi.org.uk/wales for back issues. Printed versions of some back issues are still available on request.

Editorial

Richard Pryce

As I write, there is hope that an improvement in the Covid situation may allow us to get back to normal after our field meeting programme was severely disrupted over the past two years. Whilst we have missed getting together in person, it has necessitated the Committee for Wales meeting remotely which, however, has had the advantage of saving a lot of travelling. Zoom meetings have also allowed BSBI members as well as members of other national societies to attend lectures held centrally that they would never have contemplated in the past. Also local groups such as the Llanelli Naturalists have been able to follow suit, when recent remote evening meetings have been 'attended' by members living in Cambridge, London and elsewhere. However, we should also be aware that some members are not able to easily access a remote meeting.

The conifer workshop, the first Welsh meeting of 2022, was very successful and we hope that the programme for the rest of the season will go ahead without interruption. I expect that it will be possible to hold single-day meetings without much problem but the Welsh AGM in Bangor and the Glynhir and Caeduon recording meetings are all residential so may be susceptible to cancellation or curtailment at short notice. Please keep an eye on the BSBI website just in case!

My co-editors and I hope you enjoy the range of articles in this issue of the Bulletin. We have been promised a couple of items for the next number, but we are always anxious to receive reports, accounts, histories, short notes, etc, in other words, any subject that would be of topical interest to other members. The next issue will also include Welsh Plant Records, so if you have any records that you have not yet sent to your Vice-County Recorder, please do so without delay.

I'm sure you will join me in hoping for a complete and uninterrupted field meeting season and I look forward to meeting you or seeing you again at some time during the year.

BSBI Wales Annual Meeting and AGM, Bangor (v.c. 49)

Friday 10th - Sunday 12th June 2022

The 2022 BSBI Wales Annual Meeting, exhibition and AGM together with the associated field excursions will be based at the Reichel Hall, Bangor University, Ffriddoedd Rd, Bangor LL57 2TW. Accommodation will be in *en suite* single-occupancy rooms.

A preliminary programme has been prepared which will include:

- Field visits to local sites of botanical interest on Friday afternoon, Saturday and Sunday.
- Talks on local botany and other topics of interest on Friday and Saturday evening.
- Workshop on producing vice-county floras.
- The BSBI Wales AGM on Saturday morning.
- Display of books for sale.
- Exhibits and posters prepared by members.
- Help table: you are invited to bring specimens that you would like experts to identify.

The programme will include a range of field visits to reflect this diverse and spectacular part of North Wales. Preliminary plans include Treborth Botanic Gardens and Carboniferous Limestone grassland of the Great Orme together with options such as the coastal reserve, Morfa Aber, at Abergwyngregyn, Eithinog (Brewery Fields), wet grasslands at Moelyci community farm at Treborth and upland around Cwm Idwal.

We have provisionally booked the following evening talks at the meeting:

Conserving Wales Rarest Plants - Robert Blackhall-Miles FLS: Robbie is based in Caernarvonshire and through his BGCI accredited 'backyard' botanic garden and his role as Plantlife's Vascular plants officer for the 'Natur am Byth' project he will talk about his mission to protect Wales' threatened plant species.

Producing Vice County Floras: This will be an interactive session considering the production of Vice County Floras. Colin French, who recently produced a flora of Cornwall, will share his experiences. It will be an opportunity for budding flora producers to consider the 'dos and don'ts' of flora production and also for potential flora users to have some input into what they would like to see in 21st Century floras.

We are also hoping that we will be able to stream the talks by Stuart Smith on Grassland plants of the British and Irish lowlands and Barbara Jones on

Conserving upland plants which were presented by Zoom at the 2021 online meeting.

An important part of the meeting will be the exhibition of posters prepared by members and we are encouraging as many people as possible to contribute.

Online payment via the Wales AGM webpage is preferred. A booking form has also been included in the January BSBI News.

Accommodation is limited so please book as soon as possible and by 15th May 2022 at the latest. Organiser: John Palmer, jpp@totalise.co.uk.

BSBI Wales AGM 2021 minutes

Remote electronic meeting on Saturday 3rd July 2021 at 9.30am

Minutes of the 59th AGM of the BSBI in Wales

18 people were in attendance of whom 5 were not resident in Wales. All were BSBI members.

1. Welcome: The Chairman, Stephanie Tyler welcomed everyone to this electronic meeting.
2. Apologies for Absence: Lynne Farrell, Steve Chambers, Gail Quartley-Bishop, Jo Clarke and Julian Woodman.
3. Minutes of 2020 AGM: The minutes of the 58th Annual General Meeting held by email which were printed in Welsh Bulletin No.107, were agreed by all present and signed by the Chairman as a true record of the proceedings.
4. There were no Matters Arising.
5. Chairman's report: Steph Tyler gave the following report:-

Croeso/Welcome to all BSBI members in Wales and from across the border. A particularly warm welcome to Julia Hanmer, the BSBI's new Chief Executive. She has been in post for three months now and will give a brief introduction about herself and her work after the AGM at 10.30.

This will be a brief report as thanks to Covid, activities were restricted with few if any field meetings. However, members in Wales managed to record many new tetrad, hectad and county records at first within a few kilometres of home and then later when restrictions eased further afield. Many of the highlights have been or will be published in the Welsh Bulletin or in the Wales section of Country Round-ups in BSBI News. The annual New Year Plant Hunt was very well

supported in Wales with 132 lists submitted by individuals and small groups. Well done if you submitted a list.

There were the usual two interesting issues of the Welsh Bulletin thanks to Richard Pryce and also Sally Whyman and Katherine Slade at the National Museum of Wales. A lot of work goes on behind the scenes into securing articles and photos and editing the issues. Thanks also to Steve Coker who formats and puts all the various records from all the VCs together for the Bulletin.

John Palmer deserves a special vote of thanks. He with Wendy McArthy and Delyth Williams organised the AGM meeting and talks and field meetings for July 2020 but sadly that all had to be cancelled. He also this year had hoped that the AGM might take place in Bangor but sadly that wasn't to be. John did a huge amount of work organising things and then returning money for bookings to members. He also largely organised this Zoom meeting. Many thanks John – the committee will be in safe hands when my term as Chair finishes and you take over.

As you know we have been without a Welsh Officer all year although Julian Woodman has tried his best to secure funding from NRW. Julia Hanmer will mention an update on this in her introduction.

During Covid restrictions some vc recorders worked on validation of Atlas records and some on new Floras and others updated their Rare Plant Registers. Well done to John Crellin for securing funding from the Brecon Beacons National Park to print some hard copies of the new Brecknock RPR.

Finally I thank all members of the committee whether voting or non-voting and especially our secretary Elsa Wood for keeping the show on the road so to speak. Elsa would like to step down so that she can spend less time on administration and more on fieldwork but we will come onto that in a minute. Kath Pryce continues to make exemplary minutes of our meetings so thanks to her too. I must also express my gratitude to one member who is stepping down from the Committee. That is Ray Woods. Ray has been on the committee one way or another for about 40 years and we have all benefitted from his vast knowledge and his words of wisdom. Thank you Ray.

- Steph Tyler

6. Welsh Bulletin: Richard Pryce echoed the Chair's thanks to Katherine Slade and Sally Whyman and said that the current issue will be out soon. Richard went on to thank all the contributors and the VCRs for supplying their qualifying records for Welsh Plant Records for publication and all agreed that Stephen Coker deserved a great deal of thanks for assembling and formatting all the data. Richard said that

the next issue deadline is end of November 2021, and appealed for articles which could include anything of botanical interest in Wales.

7. Election of Officers:

The following continue in their posts as officers of the Committee for Wales: Stephanie Tyler as Chairman, Elsa Wood as Hon. Secretary, Andy Jones as Meetings Secretary and Liz Dean as Treasurer (nominal but necessary to produce the Welsh Budget). No vote for election of Officers was required. Elsa Wood expressed her wish to retire as Hon. Secretary, but will continue at present.

8. Election of Committee Members:

Steve Chambers and Ray Woods were due to retire but Steve Chambers wished to remain as a non-voting observer. Ray Woods did not wish to remain on the Committee. No nominations for their replacements were received. It was proposed that the Committee members be re-elected en-bloc. This was proposed by Richard Pryce and seconded by Jim McIntosh.

The Committee now comprises:

Chairman:	Stephanie Tyler
Vice Chairman:	John Palmer
Secretary:	Elsa Wood
Treasurer:	Liz Dean
Meetings:	Andy Jones
Welsh Bulletin editor:	Richard Pryce
Voting Members:	Gail Quartly-Bishop, Chloe Griffiths, Delyth Williams

The following are NON-VOTING observers:

Steve Chambers, John Crellin, Stephen Evans, Kate Thorne and Kath Pryce (minuting secretary)

Bulletin Co-editors: Katherine Slade, Sally Whyman (corresponding members)

CCW Observer: Julian Woodman

Plantlife Representative: Plantlife currently do not have a Welsh Officer

Corresponding Members: Dr Natasha De Vere.

10. Any Other Business:

Richard Pryce told the meeting that Dr Natasha De Vere will be moving to a new post in Denmark so a new member from NBGW will be needed.

The Chairman, Stephanie Tyler, wound-up the proceedings by thanking all the Officers and Committee members for their work, those in attendance and the organisers of the meeting: John Palmer and Jim McIntosh.

The meeting concluded at 10:00am.

Wyndrush Pastures SSSI Fieldtrip

Yusef Samari with contributions from Kath Pryce and Richard Pryce

Trip to Wyndrush Pastures SSSI, Redberth, Pembrokeshire (v.c.45), 19th June 2021

It was a sweltering summer's day when the three of us (Richard Pryce, Kath Pryce, Yusef Samari) joined Matt Sutton who was to lead the tour of Wyndrush Pastures. The habitats of this 35ha (87 acres) SSSI defy simple categorisation. Meadow and marshy grassland blend seamlessly into scrub, which grades into diversely structured woodland. In addition to many of the characteristic species which we become rather blasé about in west Wales grasslands such as *Salix repens* (Creeping Willow), *Carex hostiana* (Tawny Sedge), *C. pulicaris* (Flea Sedge) and *C. pallescens* (Pale Sedge), more notable species (as far as Richard was concerned) were *Trisetum flavescens* (Yellow Oat-grass) and *Hypericum undulatum* (Wavy St. John's-wort), the latter not uncommon in Pembs but absent from Carms only a few miles to the east.

It is a gloriously messy landscape, maintained by the small free roaming Hereford cross Welsh Black cattle herd and the occasional 'tickling around the edges' by Matt. No 10m square patch looks quite the same as any other, and one gets a strong sensation of experiencing nature as it 'should be'.

The small group size provided ample opportunity for discussion of recording, conservation, plant genetics, land management, seed harvesting and plenty more. Excitement was also provided when we were gently moved on from our lunch spot by the inquisitive herd. Overall, a memorable day in a unique and special location.

Reference: Sutton, M.D. (2018). Botanical comings and goings on a Pembrokeshire farm, 1999 – 2018. BSBI Welsh Bull. 102, 5-9 (July 2018).

Highlights of the 2021 season in Monmouthshire

Steph J. Tyler and Elsa Wood

A species new to Monmouthshire was found by Lee Gregory, growing in a plant pot with a large dying conifer at Garnteg Primary School, Garndiffaith, SO2660 0472 on 8th August. The plants were quite small but on 1st September they had flowered although one plant was dying. Lee had seen *Laphangium luteoalbum* (Jersey Cudweed) on the Isles of Scilly whilst on holiday and he noted that these were obviously the same! (see image 17 on inside back cover). Lee had also previously seen the species growing in profusion at Dungeness, Kent, and at a site

in Norfolk. *L. luteoalbum* has had a population explosion in the last decade having been on the verge of UK extinction in the 1980s and is now becoming a regular pavement weed including recently colonising Cardiff Bay.

Some wonderful 'new' meadows were located in vice-county 35 when we, Wendy Tyler-Batt and Sheelagh Kerry, were doing survey work for Monmouthshire Meadows Group. At least six of these meadows warrant Local Wildlife Site status if not SSSI status. In one meadow in SO4303, *Genista tinctoria* (Dyer's Greenweed) was abundant and in all, 37 good indicator species of unimproved species-rich grassland were present. The meadows must be among the very best in Monmouthshire. A large lawn meadow near Devauden (ST4998) sported a huge range of species including over 200 *Neottia ovata* (Common Twayblade) whilst a site near St Maughans in SO4517 had a small patch of *Oenanthe pimpinelloides* (Corky-fruited Water-dropwort); this is a rare species in Monmouthshire and the find was in a new hectad (SO40). The flowers are strikingly white, a character not included in the field guides. At Blaentrophy Meadows (SO3621 and SO3721), a SSSI, eleven species of sedge were found on a June visit by the Botany Group, including *Carex hostiana* (Tawny Sedge) which was new to the list.

Shelley Cross found a patch of *Dactylorhiza praetermissa* var. *junialis* (Leopard Orchid) in Caerwent quarry (ST4789) as well as adding *Anacamptis pyramidalis* (Pyramidal Orchid) as a new hectad record for ST58.

Every visit to a tetrad seems to produce extra species not recorded in the Atlas years! Concentrating on arable plants in August and September added species to many monads and tetrads. Anne Griffiths has also been concentrating on tetrads with fewer than 300 species recorded in them. Lauri MacLean (LM) and Steph Tyler (SJT) scrambled up to Tarren yr Esgob cliffs (SO2430) in the Black Mountains to re-find *Geum rivale* (Water Avens) within the Monmouthshire section; a cluster of large and young plants was successfully found but Lauri inadvertently left behind her binoculars! *G. rivale* is surprisingly rare in v.c.35 and SJT and LM failed to find it in a former haunt along the banks of the Afon Honddu in SO2828.

A Botany Group meeting to Cwmcarn Forest Park (ST2294) in August turned up 50 'new' species for the tetrad despite two previous visits for the Atlas which included *Sisymbrium orientale* (Eastern Rocket). Other botany group meetings were held at Dyffryn Farm (SO2710) on the Bloreng in June, where abundant *Valeriana dioica* (Marsh Valerian) in a wet wood was one of the highlights for many members. At King's Wood, The Hendre (SO41R), on a very hot July day hundreds of *Centaureum pulchellum* (Lesser Centaury) flowers were enjoyed by all. On saltmarsh at St Brides (ST38A) in September, one keen member who hadn't previous experience of saltmarsh plants, added 34 species to her life list.

Members were able to separate *Spergularia marina* (Lesser Sea-spurrey) from *S. media* (Greater Sea-spurrey) and *Sison segetum* (Corn Parsley) from *S. amomum* (Stone Parsley) and all saw *Bupleurum tenuissimum* (Slender Hare's-ear) in fruit and patches of Sea Barley (*Hordeum marinum*) among the commoner *H. secalinum* (Meadow Barley).

Other plants of interest included bushes of *Frangula alnus* (Alder Buckthorn) by a Monmouth car park (SO5012), noticed by Heather Colls, and by a stream at The Hendre (SO4515) by SJT. Heather also saw a plant of *Setaria pumila* (Yellow Bristle-grass) by the main street in Monmouth (SO5012) and LM found one in a layby on the A40 between Raglan and Abergavenny (SO30). (See note on page 32 of this Welsh Bulletin on arable plants in Monmouthshire). *Malva neglecta* (Dwarf Mallow) is uncommon in the vice-county so two plants found by SJT and LM at the edge of a field behind a pile of rocks near Penpergwm (SO3111) was of note especially as it was a new hectad record. One plant of *Verbascum lychnitis* (White Mullein) turned-up adjacent to a maize field on the levels near St Pierre Pill (ST5189), the only other site for it in the county being at Rogiet Country Park (ST4587).

Oxybasis glauca (Oak-leaved Goosefoot) continues to be found inland as well as at coastal sites. SJT and EW found seven plants by a muck heap near Llangovan (SO4204), one in a gateway of another farm in SO4505 near that village and many plants found by SJT on the bare mud at the edge of a lake near Raglan (SO4208) among hundreds of young plants of *O. rubra* (Red Goosefoot). These were all in SO40 but Elsa Wood (EW) and Adrian Wood found another site away from the coast in ST3889. With more than 10 records now, we are deleting it from our Rare Pant Register.

Guizotia abyssinica (Niger) has turned up at several locations – Cwmcarn Forest Park (ST2294), the edge of the A40 dual carriageway near Bryngwyn, Raglan (SO3410), a garden in Penallt (SO5209) and a garden in Abergavenny (SO3014) where Val Deisler reported that it was flowering well in October.

Protection for Tân Dinas Quarry, Anglesey

Dr Richard Birch CECOL

Back in June 2014, Ian Bonner, recorder for Anglesey v.c. 52, and I, made a visit to the disused quarry at Tân Dinas, a former limestone and cement works on the north coast of Anglesey (SH 58366 82003) which ceased working in 1954. At the time of that visit, it was a difficult trip down to the quarry along an overgrown and forgotten access track. On that first visit, we recorded 91 species in SH5882, part of a monad (SH58) with a total of 123 species at the time. That might not sound very many, but more than half the monad is in the sea. However, two of the plants were especially notable: *Juniperus communis* (Common Juniper) (a Section 7 species – see image 14 on back cover) and *Pyrola media* (Intermediate Wintergreen), both restricted to single plants. The latter species has never, to my knowledge, previously or since been recorded for Anglesey, and since there was only one flowering plant, we didn't take any for confirmation.

Alas, as part of a footpath diversion avoiding a potentially dangerous route through a farmyard, *P. media* seems to be among the first casualties of the opening up of the quarry to unbridled public access in 2020. With the prudence borne from a lack of certainty, *P. media* was never admitted to the county list: extinct before it was ever formally recognised for Anglesey!

The quarry is recorded in greater detail now: not just for its vascular plants, but also its rare invertebrates and breeding seabirds. Tân Dinas is already a SSSI for its Carboniferous Limestone geology, forming part of Arfordir Gogleddol Penmon: a 7km length of the north-east coastline of Anglesey. The abandoned quarry face is certainly spectacular, but it lacks the impressive reef formations further along at Fedw Fawr and the fossil fauna is restricted to large brachiopods and solitary corals.

The habitats in and around the site include wet heath, calcareous dry heath, neutral grassland, maritime grassland and base-rich flushes, but none of this specifically refers to Tân Dinas, and none of its most interesting plants are specifically included in the citation. In an area not much bigger than a football pitch there are two plants listed as Nationally Rare within Wales (*Juniperus communis* and *Hypericum montanum* (Pale St. John's-wort)) and several others regarded as scarce or uncommon. Most recently this includes the addition of a large colony of *Spiranthes spiralis* (Autumn Lady's-tresses) first found there in 2019 (70+ flowering plants in 2020) but not previously recorded. The list for SH 58.82 now stands at 198, having received due attention from the Anglesey Flora Group in the intervening years.

Brassica oleracea var. *oleracea* (Wild Cabbage) (see image 15 on back cover), a species formerly only common on Puffin Island is abundant on the cliffs at Tân Dinas where it may respond favourably to the fertility provided by the large Cormorant colony just around the corner. Conversely, the floor of the quarry has a thin soil over the limestone which is prone to summer drought and keeps the vegetation short. Here there is abundant *Dactylorhiza fuchsii* (Common Spotted-orchid) with smaller numbers of *Anacamptis pyramidalis* (Pyramidal Orchid) and *Neottia ovata* (Common Twayblade). *Ophrys apifera* (Bee Orchid) tends to prefer the scree slopes: there were several hundred plants in spring 2017 but in 2020 I struggled to find just two. It may resent spring drought, as might *Inula conyzae* (Ploughman's-spikenard), which was frequent on the scree in 2017, but almost absent in 2020.

Gentianella amarella (Autumn Gentian) is a plant of dunes on the south coast of the island where it is abundant at Newborough and elsewhere. It is obviously at home in the quarry, particularly in the niche provided by the old drainage ditches, intended to divert water from the working floor of the quarry when it was operating. Here, moisture lingers that bit longer in the marginally deeper soils enabling the seedlings to establish in dry summers. The few specimens of *Inula conyzae* also preferred this niche in 2020.

In 2017, Charles Aron – normally renowned locally for providing expertise on moths and fungi – spotted a single plant of *Hypericum montanum* (see image 16 on back cover) during a flora group recording session. It is still present where he found it, and recent searches have located a few more, suggesting it may be better established than originally supposed. Elsewhere on Anglesey, it occurs as singletons or as groups of a few plants on road verges. It can be found at a few locations around the Little Orme, but it is nowhere a common plant. Its rarity on Anglesey is puzzling but, as the weather on this coast generally comes from the south or west, there is a suite of species on the Great Orme, 16km away across an expanse of sea to the north-east, that is unable to colonise suitable habitat to the south.

Obviously *Juniperus communis* is an important plant, although the single specimen (which has persisted for at least five years now) appears to belong to the prostrate variety typical of native stock rather than a seedling of an ornamental non-native.

Other new species turn up at each visit. Time taken to work out the *Hieracia* (hawkweeds) resulted in putative determinations of *Hieracium* sect. *Stelligera* and *H. subcrocatum* (Dark-styled Hawkweed) and, among the *Euphrasia* (Eyebrights),

there is *E. confusa* (Confused Eyebright), but expert confirmation is required before these can be formally added.

There is a calcareous flush where, in 2014, *Pyrola media* was collected, but it exemplifies the problems that face the quarry since a route down from the Anglesey coastal path was negotiated with the owner (the Barron Hill Estate) as compensation for diverting the coastal path clear of a farmyard. Now the public has access, and that brings with it commensurate issues that weren't there before, including litter, trampling, fly-camping and dog mess.

Although the site is part of a SSSI, the threats do not affect any of the geological qualifying-features. So prescriptive is the legislation, that the Statutory Agencies simply have no professional interest in negative impacts unless they directly affect the SSSI or its features, and litter, fires or dog mess doesn't damage rock. So, it falls to volunteer action and direct contact with the Barron Hill Estate, including Sir Richard Bulkeley, who took my call at home: gratifyingly our concerns merge (if not for quite the same reasons). Instead of resorting to fencing the site off and adorning it with oppressive 'Keep Out' signs, a more educational approach was adopted. An 'information board' has been provided detailing some of the site's most significant features, presented in a way that might make casual visitors more aware of the impact of their actions. See image 6 on page 15.

The whole process of simply erecting a bespoke information board proved more complex than I ever thought possible. Access to the site was the first obstacle: it's a long way from a road and a 4x4 vehicle is needed with a quad bike to get tools and equipment to the quarry floor. Then there is the sign itself. Several quotes were obtained but these were for the laminated sign only. Sign-makers did not make the mountings by which the sign would be fixed. The costs for building and fitting were astronomical - and this was a voluntary project supported by the limited funds of the Local Biodiversity Partnership (which covered the cost of materials).

Eventually I made the sign mount myself and Ecoscope provided the works vehicle to get the materials to site and the time to do the work. The tenant farmer kindly transported the materials to the quarry floor on a quad bike and on a rainy day in October 2021, *finally* the sign was erected (see page 16).

Image 6: The design of the sign at Tân Dinas



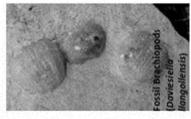
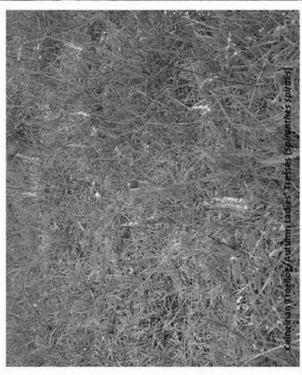
Arfordir Gogleddol Penmon Mae Safle o Ddiddordeb Gwyddonol Arbennig (SSSI) wedi'i ddynodi ar gyfer amlygiad arfordirol daeareg Carboneraidd, adar môr a chynffinoedd gan gynnwys glaswelltir calciferaen a rhostir. Mae'r hen chwarel yn Nhan Dinas yn arbennig o bwysig i'w ffiora a'i infertebratau.

Mae'r safle wedi'i ddiroddi'n hawdd, felly os gwelwch yn dda:

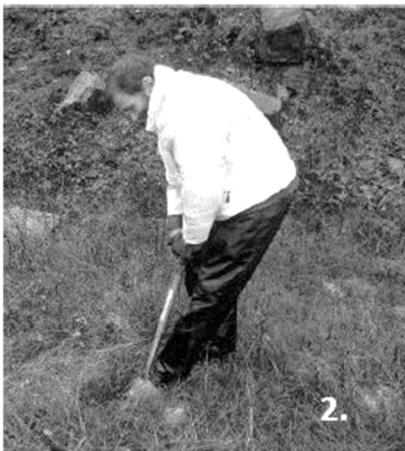
- Dim tanau
- Cadwch gwn ar demryn
- Dim gwerysilia gwylt
- Cadwch at y llwybr ffin
- Barchu'r safle'n hwn

The Arfordir Gogleddol Penmon Site of Special Scientific Interest (SSSI) is designated for coastal exposures of Carboniferous geology, seabirds and habitats including limestone grassland and heath. The former quarry at Tân Dinas is particularly important for its flora and invertebrates.

- The site is easily damaged, so please:
- No wild camping
 - No fires
 - Keep dogs on leads
 - Please keep to the footpath
 - Respect this site



28 October 2021: The sign goes up. Holes are dug for the wooden posts (1,2). Kira holds the sign in place to check levels (3). The sign is screwed into place (4) and this is what it looks like, fixed and cemented in place (5).



What it does highlight is the botanical diversity of this significant site, along with the invertebrates and geology for which it has been designated. Whether it is sufficient to stop the damaging actions that have plagued the site since open access was granted, only time will tell.

Acknowledgements

I wish to thank Jenny Towill and the Anglesey Local Biodiversity Partnership for covering the basic expenses of materials and transport; the Barron Hill Estate for their help and enthusiasm; Mr Emyr Williams for providing invaluable assistance in getting equipment to site; Miss Kira Lovatt for getting soaked to the skin on the day and Ecoscope for providing time out to do this work without fee.

Carmarthenshire *Platanthera x hybrida* (*P. chlorantha* x *P. bifolia*) in a Garden Meadow in Cardiganshire

Steve Chambers

Our house in Capel Bangor has a longish back garden by courtesy of the builders having run out of money, so the story goes, before the planned parallel rear row of houses could be started. Fortunately, they never were. This was back in the early 1960s, and, as luck would have it, the piece of grassland so enclosed from the original field was fairly species-rich and unimpacted by modern agriculture. It quickly became my botanical playground, or in modern parlance, an outdoor laboratory for growing and watching at close-quarters through the seasons all manner of things green, and not so green in respect of the soil fungi. Since 1999 the grassland has been aesthetically exploited as a mini-hay meadow operating under a strict set of rules, which permit however the introduction of both British native and non-native meadow species.

Keen to increase its contingent of orchids, in August 2005 on a stop off at the Cae Blaen-dyffryn (Plantlife) nature reserve in Carmarthenshire, I collected a single green *Platanthera* (Butterfly-orchid) capsule from an infructescence growing a short way into the main field above the road at c. SN605442. Then later the same month I sprinkled the seed onto the garden meadow post-cut, more in hope than expectation as the capsule appeared unripe. In June 2009 on one of my regular inspection strolls down the garden I was given a jolt by the sudden sight of a single flowering *Platanthera* spike standing proudly in the middle of the meadow, the moment inducing the kind of thrill known only to botanists. The following year the thrill tripled, and soon after the colony plateaued at a mean of c. 10 flowering

spikes (for the years 2010-2019) per year (see image 18 taken in 2013 on the back cover).

Not appreciating in 2005 that *Platanthera bifolia* (Lesser Butterfly-orchid) and *P. chlorantha* (Greater Butterfly-orchid) were both present at Cae Blaen-dyffryn, I assumed the garden meadow plants were *P. chlorantha* at first, but something did not seem quite right, and more detailed examinations of their flowers started to make me wonder if they were in fact crosses, i.e. *P. x hybrida*. Over the last few years I have been able to carefully compare 'reference flowers' of pure *P. chlorantha* and *P. bifolia* from single-species populations here in Cardiganshire closely with the garden meadow plants, directly side-by-side at x40 under stereo-binocular microscope. Various combinations of morphometric floral characters have been used to support diagnosis of hybrids (Bateman & Sexton 2008), but this direct comparative method has much to be recommended as an alternative way of recognising the hybrid since it minimises potential damage from repeated trampling and soil compaction around plants in natural populations when undertaking *in situ* biometric sampling, which is an important consideration for mycorrhizal species.

Direct visual comparison showed that the garden meadow plants appeared perfectly intermediate in respect of their floral structural components and that the flowers of all the plants shared identical morphologies. Accordingly, I interpret the plants in the garden colony as primary, i.e. F1, hybrids, therefore, and because they originated from a single ovary and hence almost certainly from one pollination event. If this interpretation is correct then the original 'donor plant' that produced the capsule will have been one or other of the parents and not itself a hybrid, indicating that, at least in 2005, hybridisation was active and on-going as might be expected in a large, admixed population of both parents.

Variation between the plants in the garden colony appears vegetative and restricted to slight differences in overall stature. The first plant to flower was and has remained the largest, while the smaller ones have remained the smallest over more than a 10-year period, as if early development fixes ultimate size. Degrees of intermediacy are difficult to define easily and quantitatively in terms of the highly complex three-dimensional topological surface 'landscape' of the floral structures, for example see the scanning electron microscope images in Bateman *et al.* (2012). Particularly difficult to define are the components of the column and the relative positions and shapes of the pollinaria, however direct comparative observations lead me to the conclusion that the plants are hybrids. Other botanists, including Trevor Dines and Ray Woods, visiting Cae Blaen-dyffryn have also suspected the presence of intermediates (pers. comm. Richard Pryce) and John Crellin has posted online photographs of a putative hybrid at the reserve

taken in June 2010 (see

http://www.floralimages.co.uk/page.php?taxon=platanthera_x_hybrida,1).

Perhaps one day we will be able to print waxwork-like, plastic 3D enlarged scale models of flowers of the taxa at home to have as desk ornaments for permanent visual reference.

From a science perspective in respect of the reproductive biology of the taxa the most interesting things about the garden hybrid colony are (a) the absence of the parents and (b) its isolation, a situation that could only arise in the wild by a long-distance dispersal event of hybrid seed to a new site, something perhaps unlikely to happen nowadays and made less likely by reduced habitat opportunities in the modern countryside. The nearest known extant Cardiganshire (v.c.46) population of either parent is several miles from the garden. Spatial isolation is a relative term, genetic isolation at a point in time not so, but perhaps the distance is sufficient to prevent pollinia arriving from external sources except for long distance carriage by migrating Lepidoptera. The colony is certainly an interesting resource that provides a potentially unique experimental opportunity for studying the reproductive behaviour of the hybrid in isolation from its parents.

An interesting observation is that since the initial establishment, there has been no new recruitment, i.e. all the plants in the colony appear to represent one cohort founded in 2005. Individual plants in the colony have also proved long-lived. Only one has disappeared and that was growing on the edge of the path where it may have been affected by trampling. The rest come up in the same places on their spots every year, sometimes taking a year off flowering and then producing just a leaf. Why, if the hybrid is said to be fertile, might this be the case? I have data on the number of flowering spikes/year and for some years the numbers of capsules/ovaries per infructescence. Some capsules develop on some plants and contain some seed, probably set by facultative autogamy, but F1 seed from self-pollinated plants is perhaps not viable, which would explain the lack of recruitment. It would be interesting to test this more scientifically. My hypothesis is that F1 plants are only fertile in the presence of one or the other or both parents, which enables them to backcross in either direction or to eventually build introgressed populations as have been identified at some sites in England, e.g. in Oxfordshire (Bateman & Sexton 2008), as well as elsewhere in Europe, while primary hybrids in isolation are functionally sterile. At Cae Blaen-dyffryn and in other mixed populations it would be interesting to know whether directional backcrossing to one parent is more or less frequent than to the other, and if so whether this aligns with the ratio of the numbers of the parents present, i.e. if there is a numerical asymmetry in the directionality of the hybrids present.

If hybridisation events are not overly rare at Cae Blaen-dyffryn then it is perhaps a small coincidence that the capsule chosen proved to contain hybrid seed, conceived in v.c.44 but borne in v.c.46 on this occasion, strangely, though such liaisons cannot be uncommon between plants along vice county boundaries.

My thanks go to Richard Pryce for encouraging me to write this note.

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A note on refinding *Carex pauciflora* in Montgomeryshire (v.c.47)

Gill and Peter Foulkes (GF is BSBI v.c.47 Joint Recorder)

Rather late in Summer 2021, we decided to look for a record from 2000 of *Carex pauciflora* (Few-flowered Sedge) on Trannon Moor, near Carno. This rather inconspicuous species is found in acid raised and blanket bog often growing on and around old *Sphagnum* (Peat Moss) hummocks (NVC M2 *Sphagnum cuspidatum* (Feathery Bog-moss)/*recurvum* (Recurved Sphagnum) bog pool community) (Averis *et al.*, 2004). It occurs throughout the Highlands and Outer Isles, Northern Scotland, the Lake District and North Pennines. The only records in Wales are from Montgomeryshire (v.c.47) and Caernarfonshire (v.c.49). In *A Vascular Plant Red Data List for Wales* (Dines, 2005) it is listed as CR (Critically Endangered), with less than 50 individual plants and reaching the southern edge of its British distribution.

We found it growing in two small depressions, on *Sphagnum*, in peaty mire (probably with less than 20 plants in total) at almost identical grid refs to the records from 2000. Associates included: *Andromeda polifolia* (Bog-rosemary), *C. magellanica* (Tall Bog-sedge), *Drosera rotundifolia* (Round-leaved Sundew), *Eriophorum angustifolium* (Common Cottongrass), *Narthecium ossifragum* (Bog Asphodel) and *Erica tetralix* (Cross-leaved Heath).

The inflorescence consists of a single, terminal spike with few flowers, male above and females below and no bracts. The utricles are distinctive: straw-coloured, subfusiform, tapering to a beak-like apex with a persistent protruding style in seed, and strongly reflexed (Jermy et al., 2007). It resembles a pale-fruited version of the commoner *C. pulicaris* (Flea Sedge), but the latter has dark brown utricles, no persistent style and is found in quite different habitat.

Although it was 'well past its best' we were hopeful that we had refound *C. pauciflora* and Mike Porter (BSBI Sedge Referee) confirmed identification very quickly. Sadly, none of our habitat photos of the sedge are in focus and our only useful photo of *C. pauciflora* is of a couple of utricles placed on our field notebook (see image 5 on page 2). (It was 1st August, and the utricles were dropping off as soon we touched a specimen: evidently best looked for in June/July).

Finding our target species was great, but we were just as pleased to see a very healthy population of *A. polifolia* and a wonderful *Hypericum elodes-Potamogeton polygonifolius* (Marsh St John's-wort - Bog Pondweed) soakway (NVC M29) (see image 4 on page 2) with *Menyanthes trifoliata* (Bogbean), *C. dioica* (Dioecious Sedge) and *C. limosa* (Bog Sedge). It was notable that of the two bog sedges, *C. limosa* could cope with the wetter soakway.

So why is *C. pauciflora* growing here and apparently not found in other suitable blanket mires in Wales? It is very inconspicuous and could easily be overlooked so perhaps that is at least part of the reason. Or is this a remnant of a wider distribution in the past? At Carno Wind Farm (part of Trannon Moor), we found it growing in two very small, water-logged areas within the blanket bog. Has suitable habitat been destroyed by drainage, coniferisation etc? It is growing at about 450m in Montgomeryshire and the Caernarvonshire sites are at a similar height (430-470m). The BSBI website gives a maximum altitude for this species in the UK of 650m (v.c.88, Scotland) although higher elevations are quoted in other literature (up to 820m in Scotland). Ellenberg values and meteorological data (from the Online Atlas of British and Irish Flora) are:

- 9 (out of 12) for moisture - water-saturated, badly aerated soils.
- 1 (out of 9) for reaction - extreme acidity.
- January mean temperature of 1.7°C.
- July mean temperature 12.1°C.
- Annual precipitation 1789mm/year.

In *Mountain Flowers*, Scott suggests that although this species is circumpolar, its absence from Iceland and Greenland could suggest vulnerability to lower temperatures. The Ellenberg values and meteorological data above, plus the

moderate elevation of Trannon Moor, combined with the topography and deep peat all help to explain why it persists here. Carno Wind Farm is situated on a lightly grazed, *Molinia* (Purple Moor-grass) dominated plateau at about 450m,; not an obvious location for a good botanical outing. However, there are pockets of more interesting habitat to be found and this is almost certainly true of other similar, semi-improved upland plateaux in Wales.

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Anglesey (v.c. 52) - 2021 – Botanical Review of the Year

Nigel Brown and Ian Bonner

Covid determined that botanical effort on the island was less than normal and there were no formal gatherings of the Anglesey Flora Group. Nevertheless, 8 new taxa were added to the island's species list and there were 37 new hectad records. One taxon, *Sison amomum* (Stone Parsley) was confirmed for the first time since the 19th century.

Of the 8 new taxa for Anglesey, only two are considered native. The hybrid willowherb, *Epilobium x limosum* (*E. parviflorum* x *E. montanum*) was found in small quantity on Parys Mountain (SH4390). *Orobanche minor* ssp. *minor* (Common Broomrape) was determined to sub-species level for the first time, the location being disturbed ground at the landward end of the breakwater at Holyhead (SH2383).

The other 6 new taxa are all introductions. Two of these are monocotyledons – *Alstroemeria aurea* (Peruvian Lily) and the grass, *Digitaria sanguinalis* (Hairy Finger-grass) reported by Richard Birch as forming a dense sward on the hard shoulder of parts of the A55, the main trunk road which traverses the island from east to west. This neophyte from Southern Europe and South-west Asia, first recorded in UK in the 17th century, has spread mainly as a weed of cultivation, but Richard's record indicates that it is also an opportunistic halophyte, exploiting the salty roadside conditions of our major roads.

The four introduced dicotyledons new for Anglesey this year are all from different families. *Sedum dasyphyllum* (Thick-leaved Stonecrop) (see image 1 on front cover) was located by Hugh Knott between Menai Bridge and Llanfair P.G. on a south-facing wall by the old A55 (SH5471). This is typical habitat for this southern European xerophyte which has been known in the wild in UK since 1724 but has not expanded greatly from its strongholds of central southern England in the last 50 years or so. In Wales it is largely restricted to parts of the north coast and immediate hinterland.

Potentilla indica (Yellow-flowered Strawberry) (see image 10 on inside back cover) was located by Gwen Vaughan just a few miles away, also on a roadside wall, this time on a minor road between Llandegfan and Beaumaris (SH5874). This charming species is native to the region between Afghanistan and the Russian Far East, usually at altitude, and has become naturalised in shady places in scattered localities throughout Britain.

Vitis vinifera (Grape-vine) was found for the first time in not one but two locations – Soldiers Point, Holyhead (SH2383) and the old port area of Amlwch (SH4493), both coastal, with a mature plant in each site competing vigorously in bramble scrub. The final new neophyte was *Aconitum napellus* ssp. *vulgare* (Monk's-hood), determined to subspecies for the first time and forming a small colony in disturbed ground at the Range, South Stack (SH2180).

The new hectad records include 18 introduced species of which *Trifolium incarnatum* ssp. *incarnatum* (Crimson Clover) is the most eye-catching. It flowered splendidly in August by the shore at the east end of Red Wharf Bay (SH5780) with two other casuals, *Phacelia tanacetifolia* (Phacelia) and *Fagopyrum esculentum* (Buckwheat), the presence of all three no doubt the result of horse stable waste.

Erigeron floribundus (*Conyza floribunda*) (Bilbao's Fleabane) continues to spread. It was first recorded on Anglesey in 2019 in Llangefni (4675), then the following year a mile or so to the south (SH4772) and this year, a strong population was discovered in disturbed ground at Soldier's Point, Holyhead (SH2383). It will be interesting to monitor this species' performance on the island and be watchful for

other species of *Erigeron* such as *E. sumatrensis* (Guernsey Fleabane) which is common in parts of Southern England and with which *E. floribundus* competes successfully in South-east England.

Gunnera manicata (Brazilian Giant-rhubarb) turned up in a new hectad just above high tide level at Beddmanarch Bay near Holyhead (SH2980) and *Pratia pedunculata* (Blue Lawn-lobelia) was found established in a close-cut meadow/lawn at Llanelian just east of Amlwch (SH4693). These two southern hemisphere neophytes have now been recorded in 12 and 4 hectads on Anglesey respectively.

Of the new hectad records for native species, three coastal finds stand out. In early April, Robbie Blackhall-Miles found *Pinguicula vulgaris* (Common Butterwort) in a gully just above high-water mark at Porth Dafarch on the far west coast near Trearddur Bay (SH2379) representing the first record for the Holy Island part of Anglesey. In September *Carex punctata* (Dotted Sedge) was found in small quantity at the base of moderately high Pre-Cambrian seacliffs at Amlwch (SH4493). This is only the 5th monad for the island and the first record for the north coast of Anglesey. *C. punctata* is largely confined to south and south-west facing coasts of southern and western districts of the British Isles reflecting its thermophilic tendencies in Europe as a whole. The third significant coastal find was *Ammophila arenaria* (Marram), widely distributed around much of the low-lying shorelines on the island but, like *C. punctata*, never before recorded on the north coast of Anglesey, until this year. A small clump was located 100m from the sea in gravelly ground on the old derelict chemical processing works west of Amlwch Port (SH4493) just a few hundred metres from the Dotted Sedge site.

The appearance of *Pilularia globulifera* (Pillwort) in an artificially deepened and extended pond just east of Amlwch (SH4693) is another interesting new hectad record, taking the total to 19 monads for this Berne Convention species (though in 7 of those we have no post-2000 records and one of the important sites, historically, the pool on Mynydd Bodafon (SH4685) is now heavily infested with *Crassula helmsii* (New Zealand Pygmyweed) and is increasingly unsuitable for *Pilularia*.

Seven of the new hectad records are hybrid taxa and include two orchid hybrids, both involving *Dactylorhiza incarnata* (Early Marsh-orchid) hybridising with 'Spotted Orchids'. *Dactylorhiza x kerneriorum* (*D. incarnata* x *D. fuchsii*) was found in a wide clearing in Newborough Forest (SH3965) and *D. x carnea* (*D. incarnata* x *D. maculata*) was found at Cors Bodeilio (SH5077). The hybrid Centaury, *Centaureum x klattii* was noted at a derelict industrial site at Amlwch (SH4493)

where its parents are thriving (the scarce *C. littorale* (Seaside Centaury) and *C. erythraea* (Common Centaury)).

Nitella tenuissima (Dwarf Stonewort) is a rare charophyte in the British Isles being confined to Anglesey, Cambridgeshire and a few sites in Central and Western Ireland. It is Red-listed in Wales and there are records from just three fens on Anglesey, namely Cors Erddreiniog, Cors Goch and Cors Bodeilio (Stewart & Hatton-Ellis, 2020). The populations at each of these sites are small and very vulnerable to competition and succession. Pro-active management by Natural Resources Wales (NRW) involves excavating pools and peat cuttings at these sites and maintaining open water conditions for charophytes such as *N. tenuissima*. Despite this, it had not been formally verified from Cors Bodeilio since 2003. It is therefore very pleasing to report that Peter Jones, lead Specialist Adviser for Peatlands with NRW, re-found it in a recent peat cutting at Cors Bodeilio (SH5077) in early September this year, and its identity has been confirmed by Nick Stewart (Jones, 2021).

The Anglesey populations of another spore-bearing species, *Osmunda regalis* (Royal Fern) number about 12 and most contain only single figure numbers of crowns or rootstocks. The notable exception is a small mire in the north of the island where over 400 crowns, some 1.5m tall, were counted this year, with fronds reaching 2m in length. This Site of Special Scientific Interest (SH3491) is also home to Anglesey's only population of *Vaccinium oxycoccos* (Cranberry) which was producing abundant fruit in July. Happily, *Osmunda* was re-found this autumn in Holyhead Breakwater Country Park (SH2283), some 30 years after its original discovery there, and the modest-sized colony is increasing.

It is also pleasing to report that Robbie Blackhall-Miles has located another specimen of the rare endemic *Sorbus arvonensis* (Menai Strait Whitebeam), above the Belgian Promenade in Menai Bridge (SH5571). Note that there is currently some confusion over the scientific name of this species and *S. arvonicola* seems equally acceptable. Close by, Robbie noted a new specimen of *Arbutus unedo* (Strawberry-tree) as well as several 'groves' of *Arbutus* on one of the islands in the Menai Strait while kayaking near Cadnant (SH5672). It is generally assumed that *Arbutus* is widely naturalised in western districts of Britain, but Robbie is keen to consider the idea that some of these individuals and populations may be native, as they are considered to be in south-west Ireland. We look forward to further developments of this intriguing line of thinking.

Robbie has been monitoring select rare and scarce species on some of the island's National Nature Reserves this year. Among his many finds it is pleasing to hear that *Epipactis dunensis* (Dune Helleborine) had a good season with over 400 stems

in flower and a further 300 sterile shoots in an area of 50 sq.m. of Newborough Forest (SH3963). This high density was repeated in other Forest locations especially in clearings close to the sea. Interestingly, Robbie found three achlorophyllous shoots which were presumably surviving entirely on their mycorrhizal symbiont. His other nice finds at Newborough included a new site for *Pyrola minor* (Common Wintergreen), in the far western section of the Forest (SH3864), and both *Gentianella amarella* (Autumn Gentian) and *G. campestris* (Field Gentian) on slightly raised ground on the Warren next to great swathes of *Parnassia palustris* (Grass of Parnassus). *Utricularia australis* (Bladderwort) was a good find in one of the pools in the Forest (SH4065) and a new hectad record for an aquatic with only 10 monads to its name on Anglesey. Notable by their absence at Newborough in 2021, however, were *Hypochaeris glabra* (Smooth Cat's-ear) and *Hypopitys monotropa* (Yellow Bird's-nest). The only record for the latter species this year was a single flowering shoot at a known site near Church Island, Menai Bridge (SH5571), reported by John Bratton.

The nearby peninsula of Llanddwyn (SH3963 and SH3863) proved rewarding for *Asplenium obovatum* (Lanceolate Spleenwort) with 7 populations detected, including several new sites. Also, Robbie and Gwen Vaughan found a new population of *Dianthus deltoides* (Maiden Pink) (see image 9 on inside back cover), located close to the main path by the cross opposite the ruins of St. Dwynwen's Church (SH3862). This species appears to be increasing at Llanddwyn following its rediscovery on the headland in 2017 after an absence of about 40 years.

Penhesgyn Landfill Site near Four Crosses, Menai Bridge (SH5374) may not seem a likely place to find scarce plants, but Richard Birch located *Rorippa sylvestris* (Creeping Yellow-cress) there in July, only the second post 2000 record for this native perennial crucifer. With only three monads to its name on the island, *R. sylvestris* is puzzlingly scarce, it is far more widespread in many parts of lowland England in both damp and semi-dry habitats. Richard also found *Ervum tetraspermum* (Smooth Tare) at the same site, which is only the 4th record for Anglesey. Penhesgyn is the subject of a major land reclamation/re-wilding project covering almost 50 hectares on which it is planned to create 20 hectares of wildflower meadow and plant 12,500 trees on improved grassland. It will be interesting to monitor its botany over the coming years. It already supports some moderately species-rich grasslands including dry open areas with *Ophrys apifera* (Bee Orchid) as well as wetlands and scrub woodland and it is to be hoped that these naturally developing communities are encouraged alongside any targeted planting.

Jane Stevens has continued to survey her local monads around Llangristiolus (SH4373) and among other species added *Butomus umbellatus* (Flowering Rush)

and *Cicorbita macrophylla* (Common Blue-sowthistle) to SH 4370. The latter is a perennial neophyte which is quite striking in flower and was introduced into gardens from the Ural region in the early 19th century. It was first recorded in the wild in the Lake District in 1915 and has since established itself, usually clonally, across many parts of Britain and Ireland. On Anglesey it is presently known from just 7 monads, all in the south and east. Jane counted 18 plants of *Daphne laureola* (Spurge-laurel) in April at its most westerly locality on Anglesey, near Trefdraeth Church, SH 435.702. Jane had already made a very prompt start to recording using the 'bike-botany' technique which proved very effective at locating colonies of *Galanthus nivalis* (Snowdrop) in no fewer than 32 new monads.

Another part of Anglesey which is closely monitored by resident botanists is Menai Bridge (SH5572). Hugh Knott reports that *Epipactis helleborine* (Broad-leaved Helleborine) once again dared to flower beneath amenity birch trees planted some years ago outside Waitrose. He was also interested to note that the annual umbellifer, *Aethusa cynapium* (Fool's Parsley) re-appeared by the reservoir after a few years absence. This is another example of a plant which, despite being widespread in many lowland parts of England, is decidedly local on Anglesey (and North-west Wales generally). It has been recorded from 20 monads on the island, rather scattered in distribution, and in 7 of those it has not been seen since 2000.

Another umbellifer, the biennial *Sison amomum* (Stone Parsley) is even more local in North-west Wales reflecting its largely southern and eastern distribution in Britain. This coincides with its sub-Mediterranean – sub-Atlantic European biogeographical distribution in Europe. Only one previous record of *S. amomum* exists on Anglesey which was made by Griffith in the late 19th century who listed it from Llanidan in the south of the island. It is therefore a thrill to report that it has been found at Penmon Point (SH6381) by Charles Aron who suspected its identity last year, but had it confirmed this year. It is forming a small colony of some 30 plants in a rough verge on the south side of the toll road some 200m south-west of the Coastguard Station.

Barbarea verna (American Winter-cress) also has a southern distribution in Britain but one with a more pronounced western component than the previous species. However, unlike *Sison*, it is a neophyte. It was once widely grown as a substitute for water-cress and has persisted in the wild. There is sign of a recent increase on Anglesey with this year's new finds taking the number of monads into double figures.

The shade-loving neophyte *Lysimachia nummularia* (Creeping-jenny) now has 6 monads to its name following its discovery near Llanddona (SH5779) by Hugh

Knott this summer. It has steadily expanded its range since it was first noted on Anglesey in 2002, though it is still restricted to the south-east quadrant.

Illustrating how important proper management is in redeeming plant populations, Tim Blackstock reports that several plants of *Filipendula vulgaris* (Dropwort) flowered at Mariandyrys Reserve (SH6081) this year after gorse control by the North Wales Wildlife Trust (NWWT) two years ago. This is very welcome news as there have been no flowering records for this species on the Penmon peninsula since 1999 when it was declared 'at risk from scrub invasion'. As far as we can tell Dropwort is currently restricted to this single site having been more widespread on the limestone in the south-east of the island in the past but extirpated partly through scrub overgrowth, as at Mariandyrys, where R.H. Roberts described it as 'abundant' in the 1980s. It needs open calcareous grassland to thrive.

The same is true for *Viola hirta* (Hairy Violet) - 10 plants were reported flowering at Mariandyrys by Hugh Knott this year, again in recently cleared ground.

The NWWT's tip-top habitat management extends to its Cors Goch Reserve (SH5081), where *Orchis morio* (Green-winged Orchid) (see image 11 on inside back cover) had an excellent flowering season this year, benefiting from targeted grazing and cutting of heath and calcareous grassland. Ivor and Jane Rees and Peter Jones counted 647 flowering stems in early May, one of the highest counts ever made on Anglesey. Similar good flower shows by this species in other parts of Britain indicate that climate/weather may have influenced performance but there is no doubting that grazing and the varied surrogate techniques employed by experienced wildlife agencies, including cutting, burning and ground disturbance, all contribute to creating and maintaining optimal conditions for our rarest species which now rely increasingly on designated nature reserves for their survival in Wales and the rest of Britain.

Such benefits to wild flora can be experienced at a range of scales, from landscape to back-garden. An excellent example of the latter presented itself in June at Borthwen, Rhoscolyn (SH2775), where a generous sized garden sweeps down to the bay encompassing shapely outcrops of deeply folded Pre-Cambrian rock and moist hollows of springy turf. The owners are happy to watch nature create a species-rich plant community within their bounds commencing with drifts of *Scilla verna* (Spring Squill) in April and May, culminating in fine shows of *Ulex gallii* (Western Gorse), *Calluna vulgaris* (Heather) and *Erica cinerea* (Bell Heather) in late summer and early Autumn. In between, in June, they leave the meadows unmown, and this year enjoyed a stupendous display of *Dactylorhiza maculata* (Heath-spotted Orchid). Over 7000 flowering shoots appeared in an area of moist meadow spanning just 130 square metres! Even where the turf is kept short by

mowing and walking there are gems to be found, including *Ornithopus perpusillus* (Bird's-foot). Sward height is key, as well as the removal of mowings.

Sometimes it is a single specimen that attracts attention, and this may come with familiarity with a locality. For a number of years, Ivor and Jane Rees have admired a particular birch on private land close by one of their favourite public footpaths at the top of the Plas Cadnant estate near Menai Bridge (SH5573). This year Ivor decided to take a closer look at this fine mature individual and collect material which was duly sent to the BSBI referee for *Betula*, Dr Hugh McAllister, as well as Andy Amphlett who published a paper on the taxonomy and identification of British birches earlier in the year (Amphlett, 2021). They concluded that Ivor and Jane's tree was *Betula pubescens* ssp. *pubescens*, which appears to be the most widespread subspecies of birch in northern and western Britain, but this is the first time an Anglesey birch has been subject to such close scrutiny and determined to subspecies level. Spurred on to find out more about this particular specimen, which is roughly 16 metres tall and multi-trunked, Ivor tracked-down some fascinating images of the estate from the early part of the last century which clearly show this tree in its infancy, placing its age at over 100 years. In the intervening time its immediate surrounds have become far more thickly wooded but the birch has competed well at the woodland margin. It is so rewarding to reveal the life stories and true nature of our flora whether it be individual veteran trees or ephemeral eye-catching communities. The former take us back in time and paint a picture of changing attitudes to land management, the latter are exciting in the present. Both deserve to be conserved.

Understanding historic changes in habitat and species relies heavily on accurate records. We are lucky that we have three systematic and comprehensive earlier Floras which provide 200 years' worth of definitive and comparable data for Anglesey (Davies, 1813; Griffith, c.1895; Roberts, 1982.) Present recording effort aims at mapping the distribution of both native and alien species at monad level and the MapMate database managed by Ian Bonner now contain over 155,000 records. These data underpin the production and updating of a Rare Plant Register and list of Axiophytes (taxa of ecological and conservation significance) for the island which have both received major revision this year.

Ivor Rees produced a very interesting note for BSBI News about the extraordinary natural concretions shown by *Limonium procerum* (Tall Sea-lavender) on the west coast of Anglesey, a previously undescribed phenomenon in this taxon and indeed a rare feature in any British plant, being more associated with arid zone species and situations. Ivor suggests that the Anglesey examples involve microbially induced calcareous precipitation and contribute to the survival of sea-lavenders to a great age even in extreme environments prone to storm events (Rees, 2021).

James Robertson continues to contribute regularly to *British Wildlife* magazine with topical and thought-provoking reviews on Welsh botany and the Welsh natural environment, often using Anglesey to illustrate his arguments and provide highlights of the Principality's changing flora. He also wrote two major papers for the same periodical in 2021, one of which is a masterly and fascinating review of the evidence for the status of *Mibora minima* (Early Sand-grass) on Anglesey and its small number of other British localities (Robertson, 2021). In this paper he presents a strong and novel argument for the world's smallest grass being an historic introduction but one which we should embrace for the fascinating interaction between human and natural history which its presence in these islands reveals. Plenty of food for thought and discussion! It should be added that James does not spend all his time writing! He keeps a very close eye on botanical changes on his own small holding, a splendidly diverse landscape of species-rich pastures, dense hedgerows, scrub woodland and wood-pasture in the south of the island. This year he noted the natural arrival of *Carpinus betulus* (Hornbeam) and the appearance of two new aquatics, *Ranunculus aquatilis* (Common Water Crowfoot) and *Potamogeton berchtoldii* (Small Pondweed) in recent shallow scrapes.

A number of local professional ecologists including John Ratcliffe have contributed to a valuable recent review of plans to restore dynamism to Welsh Dunes including Newborough (Litt, E., *et al*, 2021). This is a hot topic in environmental and conservation management, not just here on Anglesey, but much further afield, and it is pleasing to see pioneering research being undertaken around our local shores.

Debbie Evans co-authored the 5th volume in the series covering phytoparasitic microfungi produced by the Welsh Microfungi Group (Chater, *et al*, 2021.) This attractive publication reveals the true identity of many commonly encountered mycological infections of wild and cultivated plants and is available in both hard copy and free-download form.

Several members of the Anglesey Flora Group are involved with Plantlife Cymru's Anglesey Meadows Group which has been very successfully and ably organised by Tamsin Fretwell, Magnificent Meadows Outreach Officer for Plantlife Cymru. This involvement has had benefit all round with botanists gaining welcome access to private sites and in return being able to offer identification and management advice. Members have also been involved with the very successful North Wales Habitats and Meadows Group, Kate Gibbs having organised a number of visits to Anglesey for landowners, resulting in records such as that of *Pratia pedunculata* referred to above.

Finally, it is very pleasing to announce that Robbie Blackhall-Miles has recently been appointed Natur am Byth – Vascular Plants Officer for Plantlife Cymru. He will be planning and co-ordinating species-focused conservation projects in North-west Wales, including Anglesey. We look forward to working with Robbie in his new role and continuing to enjoy his company and contribution to the Anglesey Flora Group generally.

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Arable plants autumn 2021 in Monmouthshire

Steph J. Tyler and Elsa Wood

Arable plants have suffered huge declines because of intensive farming but occasionally, where strips at field edges have been left unsprayed, there can be rewards.

This autumn we have concentrated on weeds of arable fields and have found several rarities among the usual common chenopods (*Chenopodium* spp.), oraches (*Atriplex* spp.) and other common arable plants (see table 1 on page 35). We surveyed 76 fields including fields of *Zea mays* (Maize) (see image 12 on inside back cover), standing *Avena sativa* (Cultivated Oat), *Triticum aestivum* (Wheat) or *Hordeum vulgare* (Barley) or stubble, a crop of *Borago officinalis* (Borage) and root crops. The time spent in each field was variable and depended on access. For example, some maize fields were planted right up to nettles at the edge of hedges so access to these was more difficult. Where possible, we walked along the edges or out into the crop or stubble.

The most widespread species, occurring in more than 50% of the fields, are shown in table 1 on page 35 but the most common and widespread species were not included in our lists. These include *Matricaria discoidea* (Pineappleweed), *Cerastium glomeratum* (Sticky Mouse-ear), *Urtica dioica* (Common Nettle), *Poa annua* (Annual Meadow-grass) and *Anisantha sterilis* (Barren Brome).

Many other species were quite frequent, occurring in 25-49% of fields, whilst 39 species were only recorded in one to six fields.

A real bonus was the find of about eight plants of *Lamium amplexicaule* (Henbit Dead-nettle) (see image 8 on page 34) in a beet field on Cwmcarvan Hill near Trellech in SO4905 on 18th August. There is only one other post 2020 record – from the M4 Services at Magor! It seems always to have been rare in Monmouthshire as Wade (1970) gave only four sites for the vice-county and Evans (2007) noted it as being present at just five sites during the 1980s and 1990s.

Then on 26th August two plants of *Euphorbia exigua* (Dwarf Spurge) (see image 13 on inside back cover) were found by the side of a wheat field near Caerwent in ST4591. Evans (2007) noted that *E. exigua* was close to extinction in v.c.35. He said that all sites in the south of the county had been lost to maize replacing root crops, the increasing use of herbicide and arable land being converted to sheep pasture. He did list nine sites where the species was found in the 1990s. The only other post 2020 records came from arable land at Treowen (SO4611) and

Dingestow Court (SO4409). At Treowen it was seen by SJT in October 2010 and then again by Heather Colls in 2012. The last record that we had for the species at Dingestow Court was of more than 20 plants recorded by Sam Bosanquet in 2004 and then occasional plants from 2016 to 2019 but not since then. Wade (1970) noted that it was frequent to locally common in all districts so there has been a huge decline in the vice-county in the last 50 years.

The alien grass *Bromus secalinus* (Rye Brome) was found in 33% of fields, in one, almost as common as the planted Cultivated Oat. Evans (2007) refers to this archaeophyte as rare in the county, but it has certainly made a dramatic resurgence this year and had been increasing in distribution over the last three or four years. Other alien grasses included occasional *Setaria verticillata* (Rough Bristle-grass) in four maize crops and widespread *Echinochloa crus-galli* (Cockspur). *Setaria pumila* (Yellow Bristle-grass) was abundant in a maize field near St. Pierre Pill (ST5189); the same field had a few plants of *Galinsoga parviflora* (Gallant-soldier) amongst the *Setaria*. *Panicum capillare* (Witch-grass) was found in two maize fields near Llanvapley (SO3714) and also found by Julian Woodman in another field further south.

Seven plants of *Oxybasis glauca* (Oak-leaved Goosefoot) were found growing near an old muck heap inland in SO40 where there are five previous records of this species. The same species was also found in a wheat field in ST38. The only three sightings of *Kickxia elatine* (Sharp-leaved Fluellen) were in a root crop east of Raglan (SO4208), in a stubble field to the north of Penrhos (SO4412) and one plant in three large wheat stubble fields near Monkswood, west of Usk (SO3602). *Ranunculus sardous* (Hairy Buttercup) was also found at the first two of these sites: that area forms its stronghold in the vice-county. Lauri MacLean however, noted *Kickxia elatine* along the verge of a layby on the A40 near Raglan in SO3908 where she also saw *Galinsoga quadriradiata* (Shaggy Soldier) and, in another layby, *Setaria pumila*. *S. pumila* was also found in the pavement in Monnow Street in Monmouth (SO5012) by Heather Colls.

The A40 verges support many other arable plants such as goosefoots, oraches, *Senecio vulgaris* (Groundsel), *Lysimachia arvensis* (Scarlet Pimpernel) in red, pink and blue forms, *Euphorbia helioscopia* (Sun Spurge) and abundant *Echinochloa crus-galli* as well as some interesting halophytes.

The only two sightings of *Stachys arvensis* (Field Woundwort) in arable fields were seven plants sheltered by a few rocks seen by SJT and Lauri MacLean near Penpergwrm (SO3111) at the very outer edge of a field, which was otherwise brown with herbicide and two plants seen at the edge of a large maize field near Penallt in SO5108. Six or seven plants were found in a gateway to a pasture near

Ponthir Reservoir but not in an arable crop there. A few plants of *Amaranthus hybridus* (Green Amaranth) (see image 7 below) were present in the Penallt maize fields. This species was also seen by a muck heap at the edge of a ploughed field in SO3514. *Amaranthus retroflexus* (Common Amaranth) turned up in a maize crop near Chepstow (ST5193). *Spergula arvensis* (Corn Spurrey) was abundant in a field at Penallt (SO5108) that looked fallow or had a failed barley crop and it was found in a few other sites; *Aphanes arvensis* (Parsley-piert) was also in this field. *Mentha arvensis* (Corn Mint), a common species in the vice-county in woods and along tracks as well as in arable fields, was locally abundant in a few maize fields but only found in four fields in total, as was *Fallopia convolvulus* (Black-bindweed) in 15 maize fields.

We did not find *Briza minor* (Lesser Quaking-grass), but this was seen by Julian Woodman in a maize field near Gobion (SO3409). The last Monmouthshire record of this species was of a few plants found by Heather Colls near Wonastow (SO4513) in 2002.

A maize field on the levels (ST4087) had an understorey of *Persicaria amphibia* (Amphibious Bistort) showing just how wet it had been! Other fields that had been damp earlier in the year supported species such as *Persicaria hydropiper* (Water-pepper) and *Juncus bufonius* (Toad Rush). There were also a few plants of *Nicandra physalodes* (Apple-of-Peru) amongst the crop on the levels.

Although it can be depressing seeing wheat or maize fields that have been sprayed to the very edges with virtually nothing growing, there are those where herbicide has not reached the margins or the gateways and these are well worth visiting. We have boosted the records in many tetrads this year by recording arable species.



Image 7: *Amaranthus hybridus* (Green Amaranth) and 8: *Lamium alexicaule* (Henbit Dead Nettle)

Table 1: Frequency of occurrence of arable species at 76 sites

The order shown in each column reflects the frequency of occurrence e.g. in the >60% column, Fat-hen was the most frequent in that category and Redshank the least frequent.

>60%	50-59%	25-49%	10-24%
<i>Chenopodium album</i> Fat-hen	<i>Geranium dissectum</i> Cut-leaved Crane's-bill	<i>Tripleurospermum inodorum</i> Scentless Mayweed	<i>Fumaria muralis</i> Common Ramping-fumitory
<i>Veronica persica</i> Field Speedwell	<i>Capsella bursa-pastoris</i> Shepherd's-purse	<i>Atriplex patula</i> Common Orache	<i>Echinochloa crus-gallii</i> Cockspur
<i>Polygonum aviculare</i> agg. Knotgrass agg.	<i>Polygonum aviculare</i> Knotgrass	<i>Chenopodium ficifolium</i> Fig-leaved Goosefoot	<i>Fallopia convolvulus</i> Black-bindweed
<i>Persicaria maculosa</i> Redshank	<i>Matricaria chamomilla</i> Scented Mayweed	<i>Lamium purpureum</i> Red Dead-nettle	<i>Myosotis arvensis</i> Field Forget-me-not
	<i>Stellaria media</i> Common Chickweed	<i>Lysimachia arvensis</i> Scarlet Pimpernel	<i>Veronica arvensis</i> Wall Speedwell
	<i>Solanum nigrum</i> Black Nightshade	<i>Gnaphalium uliginosum</i> Marsh Cudweed	<i>Sisymbrium officinale</i> Hedge Mustard
	<i>Senecio vulgaris</i> Groundsel	<i>Sonchus asper</i> Prickly Sowthistle	<i>Avena sativa</i> Cultivated Oat
		<i>Lepidium didymus</i> Lesser Swine-cress	<i>Sonchus oleraceus</i> Smooth Sowthistle
		<i>Atriplex prostrata</i> Spear-leaved Orache	<i>Juncus bufonius</i> Toad Rush
		<i>Lipandra polysperma</i> Many-seeded Goosefoot	<i>Papaver rhoeas</i> Common Poppy
		<i>Polygonum depressum</i> Equal-leaved Knotgrass	<i>Erythraea hirsuta</i> Hairy Tare
		<i>Viola arvensis</i> Field Pansy	<i>Sinapis arvensis</i> Charlock
		<i>Bromus secalinus</i> Rye Brome	
		<i>Persicaria lapathifolia</i> Pale Persicaria	
		<i>Avena fatua</i> Wild-oat	
		<i>Euphorbia helioscopia</i> Sun Spurge	
		<i>Oxybasis rubra</i> Red Goosefoot	
		<i>Lepidium coronopus</i> Swine-cress	

Species recorded in fewer than 10% of fields were as follows.

From 6 fields: *Raphanus raphanistrum* ssp. *raphanistrum* (Wild Radish), *Veronica serpyllifolia* (Thyme-leaved Speedwell) and *Alopecurus myosuroides* (Black-grass).

From 5 fields: Corn Spurrey.

From 4 fields: *Aethusa cynapium* (Fool's Parsley), *Euphorbia peplus* (Petty Spurge), *Mentha arvensis*, *Setaria verticillata*.

From 3 fields: *Panicum capillare*, *Kickxia elatine*, *Sherardia arvensis* (Field Madder).

From 2 fields: *Ranunculus sardous*, *Ballota nigra* (Black Horehound), *Stachys arvensis*, *Amaranthus hybridus*, *Linum usitatissimum* (Cultivated Flax) and *Fumaria officinalis* (Common Fumitory).

Only recorded from one field: *Amaranthus retroflexus*, *Anthemis cotula* (Stinking Chamomile), *Aphanes arvensis* (Parsley Piert), *Chenopodium glaucum*, *Euphorbia exigua*, *Lamium amplexicaule*, *Polygonum rurivagum* (Cornfield Knotgrass), *Rorippa sylvestris* (Creeping Yellow-cress), *R. palustris* (Marsh Yellow-cress), *Setaria pumila*, *Brassica napus* var. *oleifolia* (Rape), *Galinsoga parviflora*, *Nicandra physalodes*, *Thlaspi arvense* (Field Penny-cress), *Urtica urens* (Small Nettle), *Ambrosia artemisiifolia* (Ragweed), *Fagopyrum esculentum* (Buckwheat) and *Veronica agrestis* (Green Field Speedwell).

Acknowledgements

Thanks go too to Heather Colls, Lauri MacLean and Anne Griffiths for their records and to Julian Woodman for alerting us to *Briza minor* in a maize field.

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***Nitella tenuissima* (Desv.) Kütz.) (Dwarf Stonewort) at Cors Bodeilio National Nature Reserve, Anglesey**

Peter S. Jones

During August 2021 a significant new population of *Nitella tenuissima* was noted in an artificial peat pool at Cors Bodeilio National Nature Reserve – one of the three rich-fen NNRs which make up the core of the Anglesey and Lleyn Fens SAC.

The pool (SH 501774) had been constructed four years previously in August 2017 with the support of funding from the Freshwater Habitats Trust (FHT) as a joint Natural Resources Wales/FHT project to increase the availability of early seral conditions suitable for colonisation by a range of uncommon and declining rich-fen plant and invertebrate species. The pool (see image 2 on page 2) is of rectangular form and measures 9.7 x 3.2 m with much of the cutting excavated to an approximate depth of 45 cm below the surrounding peat surface. This excavation depth resulted in the exposure in the base of the scrape of the unlaminated silty-clay which underlies much of the shallow topogenous peat at the site. This depth is sufficient to ensure the persistence of open water for much of the year, with a range of flooding depths from 8 to 57 cm noted between 31 July and 31 October in 2021. The rectangular shape of the peat pool was designed to mimic the appearance of historical peat cuttings which are quite widespread at the site and which may explain the unusual thinness of the peat profile.

A total of 15 more-or-less discrete patches of *Nitella* were noted in the peat pool during a survey on 11 September 2021, amounting to a total area of 0.14 m² with an average estimated patch size of 94 cm² (range 25 – 225 cm²). Patches of *Nitella* were noted along the length of the pool. Image 3 (page 2) is a photomicrograph showing a single shoot of *N. tenuissima*.

The vegetation of the pool is a pioneer community dominated by *Juncus bulbosus* (Bulbous Rush) with frequent *Ranunculus flammula* (Lesser Spearwort) and *Samolus valerandi* (Brookweed) with a number of notable rich-fen species, including *Carex lepidocarpa* (Long-stalked Yellow-sedge), *C. elata* (Tufted-sedge), *Potamogeton coloratus* (Fen Pondweed) and *Baldellia ranunculoides* (Lesser Water-plantain). See Table 2 on page 38 for a full list of the associated species. The pool was excavated within an area of fen dominated by *Juncus subnodulosus* (Blunt-flowered Rush) and referable to the M22a *Juncus subnodulosus* – *Cirsium palustre* fen meadow plant community of the British National Vegetation Classification (Rodwell, 1991; Jones *et al.*, 2021).

The last formal record for *Nitella tenuissima* at Cors Bodeilio dates from 2003 (Stewart, 2014), with the recent review by Stewart & Hatton-Ellis (2020) concluding the species had probably been lost from the site. However, material assigned to *N. tenuissima* was recorded from a different but nearby Bodeilio peat scrape in 2017, with this feature also having been excavated four years previously in 2013. The 2003 record is from another separate artificial peat scrape located approximately 85m to the NNE of the location described here and roughly midway between the 2021 and 2017 locations.

The peat pool which forms the subject of this note is one of 28 pools and more shallow scrapes excavated for conservation purposes at Cors Bodeilio between the 1990s and 2018, with the Anglesey & Llyn Fens LIFE project creating 14 such features between 2012 and 2013. All scrapes and pools at Bodeilio were checked for the presence of *Nitella tenuissima* in 2021 but no other records were forthcoming, suggesting that *N. tenuissima* is genuinely restricted in its distribution. All recent records for *N. tenuissima* at Bodeilio have been from artificial peat scrapes and pools, with none from apparently natural substrates despite the availability at the site of open marl and peat surfaces irrigated by generally year-round groundwater discharge (Jones, P.S., unpublished data).

The propensity of *Nitella tenuissima* to colonise new or recently disturbed contexts is well known (Stewart & Church, 1992; Caffrey & Monahan, 1994), with the peat pools at Wicken Fen (Cambridgeshire, v.c.29) well documented (Walters, 1958) and apparently analogous to those noted here for Cors Bodeilio. The lack of persistent populations of *N. tenuissima* in artificial peat scrapes is reported as reflecting its inability to compete with other vegetation (Stewart & Church, 1992) and periodic deliberate disturbance or peat scrape/pond creation is likely to be required to ensure the persistence of suitable habitat conditions. The peat pools and scrapes at Bodeilio support significant populations of other notable rich-fen species, including *Carex lasiocarpa* (Slender Sedge), *Baldellia ranunculoides*, *Utricularia australis* (Bladderwort) and *Potamogeton coloratus* and will be the subject of a separate future account.

Table 2. Species list and subjective scores for abundance for the *Nitella tenuissima* peat scrape at Cors Bodeilio NNR, Anglesey (v.c.52) during July and August 2021. Abundance is scored using the DAFOR scale: D Dominant, A Abundant, F Frequent, O Occasional, and R Rare.

<i>Species</i>	<i>DAFOR score</i>	<i>Species</i>	<i>DAFOR score</i>
<i>Juncus bulbosus</i>	D	<i>Mentha aquatica</i>	O
<i>Chara sp.</i>	A	<i>Myosotis laxa</i>	O
<i>Ranunculus flammula</i>	F	<i>Lythrum salicaria</i>	O
<i>Samolus valerandi</i>	F	<i>Galium palustre</i>	O
<i>Carex lepidocarpa</i>	F	<i>Potamogeton coloratus</i>	O
<i>Juncus subnodulosus</i>	F	<i>Baldellia ranunculoides</i>	O
<i>Equisetum fluviatile</i>	O	<i>Hydrocotyle vulgaris</i>	O
<i>Equisetum palustre</i>	O	<i>Carex elata</i>	R

Acknowledgements

I thank Nick Stewart for confirming the 2021 record for *Nitella tenuissima*, and Ian Bonner and Nigel Brown (joint BSBI recorders for v.c.52) for information on past records and discussions concerning the 2021 record. I also wish to thank Emyr Humphries, NRW's Senior Reserve Manager for the Anglesey & Llyn Fens, for enthusiastically supporting and enabling the creation of the peat pools described here, and also Les Colley (the first warden for the site) and Justin Hanson (formerly of the Anglesey & Llyn Fens LIFE project) for undertaking earlier phases of pond and scrape creation. The Freshwater Habitats Trust funded the creation of the pool described here and their support, and that of Hannah Shaw in particular, is gratefully acknowledged.

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Plant recording in Carmarthenshire in 2021

Kath and Richard Pryce

The year started by Kath (KAP) and me (RDP) doing the BSBI New Year Plant Hunt in our garden here in Llanelli (SN476011) (seems we were the only contributors from Carms!). As usual, we would have recorded many plants had they been in bloom, but the general dampness seems to deter most species from flowering even if the weather remains mild. The only species of particular interest in flower was *Kickxia elatine* (Sharp-leaved Fluellen) which often appears after soil disturbance here.

As in previous years, Ian Morgan (IKM) provided a series of new and interesting records from January right through to the end of November, many of which (particularly those of most interest) were accompanied by very good photos. On 5th March, he found a well-naturalised, broad, and shiny bright-green-leaved snowdrop growing with the usual *Galanthus nivalis* (Snowdrop) naturalized on a laneside bank at Pencoed, Bynea (SS561997). RDP consulted Bob and Rannvieg Wallis, confirmed galanthophiles living at Porthyrhyd, Carmarthen, who are confident that Ian's plants are *G. woronowii* Losinsk. (Voronov's Snowdrop). They had discovered a few plants of the same species naturalised, presumably a garden throw-out, on a lane bank near Pontyberem (SN516128) some five or six years previously. Bob says it is a native of Georgia and adjacent north-eastern Turkey which has been widely introduced in the bulb trade into this country. The important characters are the supervolute vernation (ie the two leaves are wrapped around each other as they emerge from the soil), broad shiny bright green leaves, the single green mark on the inner tepals that occupies less than half of the segment and a sinus (notch) is present at the tip of the inner tepals. Many thanks to Bob and Rannvieg for this information – it is obviously a species to be aware of and look out for!

On 7th May IKM found a new population of c.20 plants of *Erinus alpinus* (Fairy Foxglove) growing from the old slag-wall of the backlane to Long Row, Llanelli (SN51180070), whilst on 4th July he found that the large, previously known population of this species that grows in walls mainly of Pennant Sandstone along the backlane of West End that leads off Goring Road, to be surviving well where he estimated c.200 plants to be growing. Most of the plants are on the side wall of the last house in Goring Road at SN5048400646 but a few plants are on walls bounding the back gardens of West End at SN5048700630 and also on a wall in Goring Road itself at SN5049800640.

A 10m+ tall *Sorbus croceocarpa* (Orange Whitebeam) tree was found by IKM on 4th June, growing out from the rocky bank of an ancient sunken lane near Clapper's Wood, Trimsaran (SN464043). Its identity was confirmed by Dr Tim Rich from photographs emailed to him. Apart from the several trees that grow in the Trapp area (SN4618), this is the 4th confirmed vice-county record, all being from the SN40 hectad.

Ophrys apifera (Bee Orchid) seems to have done well in 2021. On 4th June, Veronica Haines (VH) reported three *O. apifera* plants growing in the 'conservation area' of Pwll Park, Llanelli (SN473009) – a new site for the species although plants were found annually for a few years in the nearby former brickworks area up until 2012. Thirteen plants were subsequently counted at the Pwll Park site on 8th June by RDP & KAP and, later in the year on 11th July, they also discovered a large patch of *Trifolium micranthum* (Slender Trefoil) on one of the regularly mown paths, the first record for the Pwll–Burry Port area. *O. apifera* was also found in several other locations in the Llanelli area during the year, including a new site noted by Kim Bailey on the verge of the B4311 east of Burry Port (c.SN4500). The large population on the verges of the Morfa Berwig Roundabout at Bynea (SS541987) in 2021 appear to have extended into the adjacent Local Nature Reserve. On 26th August, also in the Pwll area, VH found a single plant of *Parentucellia viscosa* (Yellow Bartsia) nearly 1m tall growing by a gravel path in the Millennium Coastal Park (SN48400088) which was located between the well-established populations at Pembrey Forest 5km to the west and the Wildfowl and Wetlands Centre at Penclacwydd 7km to the east.

Dai Stacey, on 13th June, counted 27 flowering spikes of *Ophrys apifera* on the dunes at Llansteffan (SN3510) where they were accompanied by a couple of *Anacamptis pyramidalis* (Pyramidal Orchid) plants just coming to head probably with a few more to follow, both new records for the site. They were growing through a thick carpet of *Anthyllis vulneraria* (Kidney Vetch). Dai also reported that the *Orobanche rapum-genistae* (Greater Broomrape) at Wharley Point (SN3309) appears to be surviving with about a dozen spikes counted during a partial search of the area but he was concerned that the National Trust, the owners of the land, were considering a proposal to plant trees over the unimproved grassland slope outside the SSSI where the *Orobanche* grows. The site undoubtedly needs more sympathetic management but certainly wouldn't benefit from being planted-up with trees! Also, Dai reported that there were good numbers of spikes of *O. hederaceae* (Ivy Broomrape) at a couple of points on the coastal path around the castle (SN3510).

David Fisher also reported *Ophrys apifera* from Crwbin Quarry (SN475132) and on 17th June IKM recorded several plants of the species in South Llanelli, at new site

on the northern side of the hillock on which Machynys Farm once stood. He recorded three sub-sites: the first at SS5084198263 (2 plants), the second at SS5089098258 (2 plants) and the third at SS5086198335 (6 plants). This land, in the recent past, was proposed as a conservation area by Carmarthenshire County Council in mitigation of so much brownfield habitat loss resulting from redevelopment in the area but the land seems since to have been redesignated for development. Also at Machynys, on the following day, Ian came across the bronze form of *Carex comans* (New Zealand Hair-sedge) growing at the base of a recently build Pennant Sandstone-faced wall outside a garden on the Pentre Nicklaus housing estate (SS50529836). This is the second VC record of this species escaping from nearby gardens and is the first record for the SS59 hectad.

Andrew and Helen Martin sent photos on 5th June of the hybrid dactylorchids *Dactylorhiza x hallii* (Heath Spotted-orchid x Southern Marsh-orchid) and *D. x grandis* (Common Spotted-orchid x Southern Marsh-orchid) that had appeared on their land at Ffos-y-Broga near Cwrt Henry (SN549232) both of which were the first records for the SN52 hectad. Chris Maynard from Hebron (SN176274) in the north-west of the county sent numerous species lists during the year from his and his family's walks in the vicinity of his land including the first record for the SN12 hectad of *Helminthotheca echioides* (Bristly Oxtongue).

June saw two important new vice-county records of native species. The first, *Vulpia ciliata* ssp. *ambigua* (Bearded Fescue) was discovered on 11th June during surveying for the Sands of LIFE project by Matt Pickard and Matt Sutton on dunes in Pembrey Country Park (SN410001 and SS412996). Material collected was subsequently confirmed by Arthur Copping, the BSBI *Festuca* referee. This is very likely a species that we have been overlooking in the past having assumed it to be *V. fasciculata* (Dune Fescue) and we will need to visit potential mobile dune habitat elsewhere in the Carms burrows systems early in the year to search for it.

The second new vice-county record was *Juncus compressus* (Round-fruited Rush), a large population of which was found at Morfa Uchaf near Ferryside (SN370118) on 30th June by James Darke, a visiting botanist from Gloucestershire. Kath and I visited the site on 4th August and found quite a large population in the top saltmarsh *Festuca rubra* zone, which is cattle-grazed to a sward height of up to about 15cm. Nearby on the strandline we also found single plants of *Atriplex littorale* (Grass-leaved Orache) and *Chenopodium polyspermum* (Many-seeded Goosefoot) as well as many other species characteristic of this habitat.

On the same day as James Darke's record (30th June), Amy Davies reported finding *Neottia nidus-avis* (Bird's-nest Orchid) in Carmel Woods at SN604164. This was the first record from the National Nature Reserve and only the 6th site for the

species in the vice-county. The site was subsequently visited on separate occasions by both Kath and myself and the NRW warden, Jamie Bevan, when a total of 13 flowering stems were counted. There were numerous plants of *Neottia ovata* (Common Twayblade) growing in the vicinity. Interestingly, Isabel Macho reported that the *N. nidus-avis* plant that has been recorded over several years in the Upper Tywi valley south of Cilycwm (SN7537) did not appear in 2021.

Other important finds included Matt Sutton's new site for the schedule 8 *Dianthus armeria* (Deptford Pink) at Cefnmeurig, Llangynin (SN239189) on 29th August. He said there were two rosettes in the car park and nine in the courtyard, the plants all being of a similar size, about 15cm tall and the owner is very keen to conserve the population. This is only the third vice-county site for the species recorded since 1957. Records of other designated species included a large, previously unrecorded population of the Section 7 *Oenanthe fistulosa* (Tubular Water-dropwort) which was recorded on marshland by the west bank of the Afon Cynin south of St Clears (SN282158) by RDP on 26th July during a consultancy job. Extensive stands of *Carex riparia* (Greater Pond-sedge) were also a feature of the marsh as were the rafts of *Ranunculus penicillatus* ssp. *penicillatus* (Stream Water-crowfoot) growing above the upper tidal limit in the river. Also of interest was a single, self-sown flowering plant of *Helianthus annuus* (Giant Sunflower), admittedly somewhat dwarfed, growing out of the stonework half-way up the tower of the nearby parish church!

Each year, Kath and I make a trip up to Mynydd Du searching for new populations of *Antennaria dioica* (Mountain Everlasting). On 30th May we walked up the small ravine in which the Nant Cwmtawe flows which is cut through the upper beds of the Old Red Sandstone but drains the eastern extremity of the Carboniferous Limestone of Banc Wernwgan. The base-rich flushes to the west of the ravine (SN689186) had some extensive stands of *Pinguicula vulgaris* (Common Butterwort), the first tetrad record for this part of Mynydd Du. On reaching the limestone at the summit we were successful in finding two previously unrecorded *Antennaria* patches, extending the Pal-y-cwrt – Banc Wernwgan population about 75m north-eastwards (SN688185)! Five *Taraxacum* (dandelion) specimens were collected during the walk, two of which were later determined by Prof. John Richards as *T. berthae*, a new hectad and third vice-county record.

Also an upland species, RDP discovered a single small (20cm x 30cm) plant of *Empetrum nigrum* (Crowberry) whilst carrying out an ecological assessment for a future housing development. It was growing on the bare shale of the former Emlyn Colliery tip at Penygroes (SN52871333) and was the first record of the species from a brownfield site in Carms being new to the SN51 hectad and 7km from its nearest population stronghold on Mynydd Du to the east. Gillian Foulkes

emailed to say that on 11th July, she and her husband Peter had found *Lycopodium clavatum* (Stag's-horn Clubmoss) at the Nant-y-Mwyn lead-mine site near Rhandirmwyn (SN788445) during a meeting of the Cambrian Mountains Society. Previously, only detached fragments of this species have been found at this site.

Dr. Tim Rich visited the RAF Range on Tywyn Burrows (SN3604 and SN3605) on 27th August to monitor *Gentianella amarella* ssp. *occidentalis* (= *G. uliginosa*) (Dune Gentian) but was unsuccessful in finding any plants although a few *G. amarella* ssp. *amarella* (Autumn Gentian) plants were present. He provided comprehensive species lists and reported seeing two plants of *Centaureum littorale* (Seaside Centaury) as well as occasional *C. pulchellum* (Lesser Centaury).

On 21st June at Tanerdy, Carmarthen (SN42152060), IKM made a new tetrad record of *Carex muricata* ssp. *pairae* (Prickly Sedge) where he recorded c.15 plants growing at the base of the wall of the old tinplate works adjacent to the cycle-path that follows the route of the former railway to Aberystwyth. The following week, on 27th June, in the backlane between Market Street and Stepney Street, Llanelli, (SN50820037), he came across a single plant of *Geranium pusillum* (Small-flowered Crane's-bill) which was the first record for the SN50 hectad. Also along this lane *Mycelis muralis* (Wall Lettuce) grows, a species rare as a Llanelli town weed. On the outskirts of town at Hillside, Furnace (SN50170140) on 29th July, he found abundant *Ononis repens* (Restharrow) on a tiny section of a steep, south-facing grassy bank. He noted that the vegetation of similar sections of the bank nearby had been homogenized by fertilizer applications but this section, belonging to one particular property, survives as a vestige of species-rich, dry, south-facing pastures on the Pennant Sandstone.

Another interesting *Geranium* was recorded by Dr. Kevin McGinn whilst taking a walk over the restored Glyn Glas opencast site at Llandybie on 2nd May. This proved to be the first vice-county record outside a garden of *G. sylvaticum* (Wood Crane's-bill) – more than 100 plants growing over a 13m stretch of field hedgerow with a bank and ditch near the middle of the site at SN60981505. Presumably it had originally been introduced when the land was restored in the 1980s/90s and, although *G. pratense* (Meadow Crane's-bill) has been recorded naturalised in the area in the past, this is the first record of *G. sylvaticum*. The hedge included non-locally-native species typical of opencast restorations of the period that include *Acer campestre* (Field Maple) and *Prunus cerasifera* (Cherry-plum).

Lizzie Wilberforce, despite being busy as Wales Plantlife Officer and editor of Natur Cymru, also sent in many records during the year, mostly from the Aman valley (eg SN6712, SN6813, etc), including *Epipactis helleborine* (Broad-leaved Helleborine), *Lathyrus linifolius* (Bitter-vetch), *Carex otrubae* (False Fox-sedge),

Clematis vitalba (Traveller's-joy) and some useful street weed records such as *Valerianella carinata* (Keeled-fruited Cornsalad), *Erophila verna* (Common Whitlow-grass) and *Briza maxima* (Great Quaking-grass), the latter new to the SN61 hectad. She also shared data she had collected whilst surveying land near Harford (SN64) (partly with Sarah Andrews) that included numerous areas of acid grassland and sedge-rich wet flushes that support species such as *Erica cinerea* (Bell Heather), *Campanula rotundifolia* (Harebell), *Dryopteris carthusiana* (Narrow Buckler-fern), *Trocdaris verticillata* (Whorled Caraway), *Erica tetralix* (Cross-leaved Heath), *Menyanthes trifoliata* (Bogbean), *Narthecium ossifragum* (Bog Asphodel), *Potamogeton polygonifolius* (Bog Pondweed) and *Ranunculus omiophyllus* (Mountain Crowfoot).

Theresa Greenaway concentrated her recording in her home area of Felingwm in 2021 and again provided very useful comprehensive species-lists from several sites. She reported new records of *Trocdaris verticillata*, *Viola x bavarica* (Common x Early Dog-violet), *Platanthera chlorantha* (Greater Butterfly-orchid) and *Dactylorhiza purpurella* (Northern Marsh-orchid) from her own land (SN5164), the latter two species having been propagated from seed by her husband Frank. At Keepers in Brechfa Forest (SN523319), she recorded a new site for *Primula veris* (Cowslip) and at the Brechfa Community Garden (SN524303) made the first record for the SN53 hectad of *Ervum tetraspermum* (*Vicia tetrasperma*) (Smooth Tare).

Isabel Macho sent an interesting record of *Petasites albus* (White Butterbur) from Abercamlais near Cilycwm (SN75473887) established on the roadside next to, and opposite the adjacent house. These are undoubtedly the same plants as recorded in 1972 by J.R. Gates from which he sent material to NMW (National Museum of Wales, 1972).

In May, Helen Harrison contacted us regarding an article she is writing on mature *Araucaria araucana* (Monkey-puzzle) trees in West Wales. We were able to alert her to several of which she was not previously aware and in return she told us of a few new to us. Probably the best specimens are the three fine trees growing in the graveyard of the old, now disused but listed, Libanus Chapel, Waunclunda, west of Llansadwrn (SN682313): "2 healthy, fruiting males and one healthy, fruiting female; a large 'sprout' about 8ft high growing beneath the largest". I (RDP) recall visiting this site and finding these trees whilst tetrad recording back in July 1983 and was astonished to find that the grass beneath them was covered in newly germinated *Araucaria* seedlings. There was no sign of a recurrence of this proliferation when Kath and I visited again on 28th July. We thank Helen for adding considerably to our knowledge of this species in Carmarthenshire through her research.

Llanelli Naturalists' field meetings presented the opportunity to monitor some previously well-visited sites whilst also recording in some new ones. The visit to the Society's Ffrwd Farm Nature Reserve, Pembrey (SN418024), on 20th June found the *Lathyrus palustris* (Marsh Pea) population to be thriving and well in flower although only one or two plants of *Oenanthe fistulosa* were found. On July 4th Waunygweil, Four Roads (SN4408) was visited where Andrew Stevens has successfully reintroduced both *Genista tinctoria* (Dyer's Greenweed) and *G. anglica* (Petty-whin) in the fen-meadow. The former was in full flower and the latter in seed. Nearby, the party was shown *Valeriana dioica* (Marsh Valerian), *Carex hostiana* (Tawny Sedge) and *C. pulicaris* (Flea Sedge) indicating the NVC M24 community although no *Cirsium dissectum* (Meadow Thistle), the species most characteristic of this vegetation, was seen or has been recorded in this field in the recent past. Part of a 52-acre holding at Cynheidre (SN4907) was visited on 1st August which included woodland, scrub, horse-grazed wet pastures, an extensive fen and a lake constructed in the 1950s in connection with the development of Cynheidre Colliery (Pryce, in prep.). This site had not been visited by botanists before and two stands of *Typha latifolia* (Lesser Bullrush) (the first hectad record and 6th vice-county record), several beds of *Carex acutiformis* (Lesser Pond-sedge) and *Schoenoplectus tabernaemontani* (Grey Clubrush) were soon discovered at the lake-margin with *Myriophyllum spicatum* (Spiked Water-milfoil) and *Potamogeton pusillus* (Lesser Pondweed) being grappelled out of the water. Despite having recently been partially mown, *Trocdaris verticillata*, *Salix repens* (Creeping Willow), *Pedicularis sylvatica* (Common Lousewort) and, most significantly, several plants of *P. palustris* (Marsh Lousewort) were identified growing in the pastures. In the fen, a very extensive population of *Comarum palustris* (Marsh Cinquefoil) was found to be dominant in parts of the M23b *Juncus acutiformis* (Sharp-flowered Rush) and M27 *Filipendula ulmaria* (Meadowsweet) vegetation communities. On 5th September, the Llanelli Naturalists' meeting led by IKM to the extensive former Thyssen's site at Bynea (SS552986) confirmed the continued presence of both *Filago vulgaris* (Common Cudweed) and *Filago minima* (Small Cudweed) in good quantities.

IKM's tally of non-native plants recorded during the year in and around Llanelli was extensive. He recorded *Galega officinalis* (Goat's-rue) making a fine floristic display in a narrow ornamental shrub-bed at the bus station in Eastgate (SN50950040) on 27th June, only the 2nd vice-county record. *Triticum turgidum* (Rivet Wheat) was growing close to the *Galega*, presumably germinated from pigeon feed, the first vice-county record since that made by Ronald May at Ferryside in July 1965 (May, 1965). IKM found *T. turgidum* a second time as a

street weed opposite Capel Als on the corner of Upper William Street (SN51100039) on 22nd August, again presumably from birdseed.

An obviously planted 'wildflower' or pollinator mix recorded by IKM at Heol Dderwen, Penyfan (SS51849982) on 25th June included the first vice-county record of *Glebionis coronaria* (Crown Daisy) whilst other constituents were *Agrostemma githago* (Corncockle), *Poterium sanguisorba* ssp. *balearicum* (Fodder Burnet), *Centaurea cyanus* (Cornflower) and several plants each of *Galium album* (Hedge Bedstraw) and *G. verum* (Lady's Bedstraw). He suspects that the very tall *Daucus carota* (Carrot) growing at this site, not far short of 2m in height, is *Daucus carota* ssp. *maximus* (Desf.) Ball. and found the same taxon on 7th August in beds planted with 'wildflowers' on opposite corners of crossroads at Llanerch (SN 51370114).

Continuing with IKM's Llanelli non-native records, he found *Anethum graveolens* (Dill) growing in disturbed "humus-deficient dark urban soil" at the bottom of Penywarc Road (SN51780022) on 14th August, the first hectad record and second vice-county record, and again as a garden weed at Railway Place, Seaside (SS50089963) on 1st September. He also found *Nigella papillosa* (a species of Love-in-a-Mist) and the purple form of *Oxalis stricta* (Upright Yellow Sorrel) as weeds in the same garden but, also in Railway Place on 22nd August, he found a single plant of the former species escaped over the wall on to the pavement, probably via wind-blown seed from the adjacent neglected garden (SS50089964) which qualifies as the first vice-county record.

On 13th November towards the end of the recording season, IKM was still out noting unusual plants and came across the prolific suckering growth of *Phygelius capensis* (Cape Figwort), presumably originally planted, growing from the base of a boundary wall of the derelict forecourt area of an empty house in Robinson Street (SS50609994), the first vice-county record.

In 2020, IKM had found a non-flowering, unusual-looking grass with odd-looking ligules in a backlane off Sandy Road (SN49520062). It was growing near some *Echinochloa crus-galli* (Cock-spur), a non-native frequently found in Llanelli backlanes, so may conceivably have been of bird-seed origin. He collected a cutting and grew it on in his garden but it never flowered. He suspected from the vegetative parts only, that it could be the alien *Eleusine indica* ssp. *africana* (Yard Grass) although may just have been a species of *Glyceria* (a sweet-grass). However, the dry, urban lane where it was found was not typical *Glyceria* habitat but, historically, the Sandy Road area would have been sand dune and wet grazing levels. RDP emailed photos of the plant to Dr Oli Pescott at the UK Centre for Ecology & Hydrology but he too couldn't be certain of its identity although did agree that it could be either *Eleusine* or *Glyceria*! However, after receiving pressed

material and consulting the *Glyceria* collection (including non-British species) at the Oxford herbarium, Oli emailed in November 2021 to say that he was as sure as he could be that the plant was the native *G. notata* (Plicate Sweet-grass). He commented "an interesting location for it, but perhaps somehow connected to the history of the site." *G. notata* is the least frequent of the three similar species of *Glyceria* in Carmarthenshire and grows predominantly in the coastal lowlands and fertile river valleys, there being 60 previous records from the whole of the county, Ian's being the eighth for the SN40 hectad.

At the end of the year, Dr. Laura Moss emailed on 30th December reporting her finding, the previous day, of *Dryopteris aemula* (Hay-scented Buckler-fern) on a bank in the commercial forestry plantation at Glyn Saer east of the Sugar Loaf at SN84504269 which she supported by a series of photographs that confirmed its identity. The plant had stood out because of its winter-green nature as well as its characteristic crisped-pinnules. This is the first record for the SN84 hectad (including the part in Breconshire). Earlier in the year on 24th June, she had reported *Carduus nutans* (Musk Thistle) from a part of Carreg Sawdde Common, Llangadog (SN69932808) from which it had not previously been recorded that proved to be the first hectad record since that made in 1991 by Dr. George Hutchinson from Rhosmaen, Llandeilo.

And finally, we can report that, again in 2021, as in previous years, RDP and KAP had a number of 'dandelion days' in April and early May and later in the year we sent our collections to the BSBI referee, Prof. John Richards. John was able to determine 146 of the 178 specimens we submitted among which were first vice-county records of *Taraxacum chloroticum*, *T. semiglobosum*, *T. subheulphersianum* and *T. trilobatum* bringing the total number of *Taraxacum* taxa recorded in Carmarthenshire to 154 (out of approximately 240).

Of particular interest to John were the two specimens of what he christened as 'inland *arenastrum*'. He wrote that they both resemble *T. arenastrum* in most ways but differ in the habitat (otherwise almost always sand-dunes) and by the longer, narrower ligules with paler stripes and red tips. Also, the bracts are usually more appressed, wider and more clearly bordered. The two previous records from Carmarthenshire are of typical plants and both from sand-dunes but there is an inland record from Stanner Rocks which also looks quite typical. He went on to say that the new inland Carmarthenshire plants have a good chance of being a new species although the differences are quite trivial.

John also made special note of another specimen stating it is not a species known in Britain. It comes closest to *T. trilobatum*, but lacks the shiny, sheathing, pale violet petioles of that species, and the exterior bracts are much shorter, wider and

more spreading. Also it lacks the trilobate end-lobes of the outer leaves and has characteristic multi-dissected end-lobes to the inner leaves, like *T. acutangulum* (which has red petioles). On the Taraxacum Nederland website (taraxacumnederland.nl), it keys out as *T. effusum* HSZ, said to be a rare endemic in the Netherlands, and looks like the pictures. It also resembles '*T. effictum*' from Cheshire, a workname given by Tom Edmondson, for which there are 15 records from Denbighshire, Flintshire and Cheshire. John is looking into it further.

Our collections also included six new sites for the relatively newly described *T. chlorofrugale* which add to the five or so recorded previously (Richards, 2019) thus nearly doubling our knowledge of the taxon. One of the sites was from north of Swansea and was the first record for Glamorgan. *T. dudmanianum* was another plant of interest, collected near Llansawel (SN6336), and, whilst first collected in Carmarthen back in 1992 when John gave it the name *T. aberrans*, it has now been described as *T. dudmanianum* and is the 8th vice-county record! One of our plants (collected from Whitemill, SN4622, in 2019) was selected by John as the holotype (Richards, 2021).

There were also a few rare 'adventive' section *Taraxacum* (*Ruderalia*) species including *T. subheulphersianum* and *T. semiglobosum* to join the several species of similar status collected in previous years. As ever, we thank John profusely for again taking the trouble to so promptly and generously identify our rather daunting number of specimens together with drawing our attention to the most important highlights from which we have derived the notes above and we look forward to making more contributions to dandelion study in 2022.

Our thanks also go to all who have sent records this year, particularly Ian Morgan for his many well documented and often illustrated contributions. We again encourage you all to keep up the good work! Maybe we will see some of you at the Glynhir Recording meeting from 4th to 11th July, Covid lock-downs permitting!

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Richards, A.J. (2021). *Taraxacum doogoei* and *T. dudmanianum* (Asteraceae) - two new species from Britain and Ireland. *British & Irish Botany*, 3(3), 324-333. [includes four records of *T. dudmanianum* from Carmarthenshire including the holotype from Whitemill, Carmarthen]

Images on inside back cover:

Images from Anglesey plants in 2021, see article page 22:

9: *Dianthus deltoides* (Maiden Pink) located close to the main path by the cross opposite the ruins of St. Dwynwen's Church, Anglesey. © Hugh Knott.

10: *Potentilla indica* (Yellow-flowered Strawberry) on a roadside wall near Llandegfan. © Gwen Vaughan.

11: *Orchis morio* (Green-winged Orchid) at the NWWT's Cors Goch Reserve. © Hugh Knott.

Images from Monmouthshire Arable plants article on page 32:

12: Arable plants at edge of Maize field.

13: *Euphorbia exigua* (Dwarf Spurge) found by a wheat field near Caerwent.

Images on back cover:

Images from the article on Tân Dinas, Anglesey on page 11. © Dr Richard Birch.

14: *Juniperus communis* (Juniper) a notable find at Tân Dinas.

15: *Brassica oleracea* var. *oleracea* (Wild Cabbage) on the quarried cliffs of Tân Dinas, formerly only common on Puffin Island.

16: A single plant of *Hypericum montanum* (Pale St. John's-wort) spotted by Charles Aron.

17: *Laphangium luteoalbum* (Jersey Cudweed), a new species to Monmouthshire found by Lee Gregory. See article page 9.

18: *Platanthera x hybrida*, garden meadow plant, Capel Bangor, Cardiganshire on 19 June 2013. © S.P. Chambers. See article on page 17.



