



The Lesser Butterfly-orchid/ Tegeirian llydanwyrdd , *Platanthera bifolia*, in Pembrokeshire (v.c.45)

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Old records

Dr.R.W. Falconer was first to report *Platanthera bifolia* (Lesser Butterfly-orchid) from Pembrokeshire in his 1848 publication 'Contributions towards a catalogue of plants indigenous to the neighbourhood of Tenby'. He described it as "Not common. Near Water Winch. –Near Step-Aside". In the c. 1868 5th edition of Mason's 'Guide to Tenby and its Neighbourhood', *Platanthera bifolia* is mentioned as being in "Waterwinch, a sequestered glen, three quarters of a mile from Tenby. The sloping banks on each side abound in wild flowers. Among them are several kinds of heath, the Lesser Butterfly Orchis, (*Habenaria bifolia*,) and the pretty little Bog Pimpernel, (*Anagallis tenella*,) etc." There are two other early records from the Tenby area. On 2nd July 1900, it was found near Folly Bridge, Knightston by E.H. Edwards, of Tenby, and in June 1904 Eleanor Vachell, of Cardiff, collected a specimen from Tenby, which is held at Amgueddfa Cymru- National Museum Wales.

Bertram Lloyd, who made many visits to Pembrokeshire, described it in his diary on 15th June 1927, as "Common in bogs below Rosebush -many in meadow near Mynachlogddu" and in June 1937, he found one on a moor at Kilgetty. Miss L. Abell found it here again at

Kingsmoor, Kilgetty, in 1945. Also in the 1930's, E. Cicely Howells, of Haverfordwest, found it behind the school at Ludchurch on a "furze moor no grazing" and at Lamber Moor, west of Haverfordwest, and at Plumstone Mountain.

In Lillian Rees' 1950 'List of Pembrokeshire Plants' she describes *P. bifolia* as "In profusion, together with the Yellow Star of the Moors (*Narthecium ossifragum*), on Dowrog Moor. Treveithan Moor. Parc Rolfe near Tenby (since ploughed). Fields near Waterwynch, Tenby (since ploughed). Under the bracken on the hill slope behind Stepside."

Not only do these early records give us an idea of the scattered distribution of *P. bifolia* in Pembrokeshire but they also suggest it favoured heathy fields and unenclosed moorland where it was sometimes locally abundant. Moreover, the records provide sufficient information to suggest that by 1950 a decline had begun at its sites near Tenby. Lillian Rees' report of it having been lost to ploughing; most likely during the drive to maximise food production during the Second World War, is most revealing.

More Recent Records

Post World War Two records were, with one interesting exception, confined to the north of the county. Most were from the scattered, lowland heathland commons between St. David's and Fishguard – where it persists to this day on the large heathland commons immediately east and north-east of St. David's.

The other scattered sites in the north seem to have lost their populations. The last records from small, unimproved fields around Mynydd Prescelly at Tycanol and at Fagwr Goch were in the mid 1950's. It was last found at Trerhos Common in 1968 where there was a large colony and a single flowering spike was found at Ambleston Common in 1979. About 40 spikes were found, at Rhos Lleow common, near Fishguard in 1980 but since then this common has neither been grazed nor burnt and it has become overgrown by scrub. There have also been two unconfirmed records, one from wet fields at Good Hope Farm near Strumble Head in 1993 and another at Foulbridge near Lamber Moor in 2003.

The one site in the south of the county, where it survived until 1972, was on the tiny Freestone Common, on the edge of the Pembrokeshire coalfield, just north of Carew. Anne Conolly found it there in 1963 and Tommie Warren Davis and Jack Donovan found 'four very large and showy' plants on 4th July 1972. One plant had 2 flowering spikes. Other plants present that year included *Genista anglica* (Petty Whin), *Briza media* (Quaking-grass), *Listera ovata* (Twayblade), *Dactyrorhiza maculata* (Heath Spotted-orchid), *D. praetermissa* (Southern Marsh-orchid) and *D. purpurella* (Northern Marsh-orchid). At a much earlier time, this same common had *Gentianella amarella* (Autumn Gentian) in September 1880 when visited by Charles G. Barrett. Unfortunately lack of management since 1972 has resulted in Freestone Common becoming completely overgrown by secondary woodland.

So by the 1980's this orchid was only surviving on the North-west Pembrokeshire Commons on places such as Dowrog Common where efforts were being made by the Wildlife Trust to restore the heathland vegetation through grazing and controlled winter burns. Elsewhere in Pembrokeshire wartime agricultural reclamation continued apace fuelled by generous grants to drain, fertilise and reseed so called unimproved land. In the uplands, sheep numbers had increased dramatically and the most difficult land, both enclosed and unenclosed, which could not be reclaimed or grazed by sheep, was often left un-grazed and slowly became colonised by scrub and ultimately woodland.

Current Sites

Today *P. bifolia* is limited to the managed wet lowland heathlands of St David's Airfield Heaths, Waun Fawr Common and Dowrog Common where it is largely confined to the National Vegetation Classification type M24 *Molinia – Cirsium dissectum* (Purple Moor-grass /Meadow Thistle) fen-meadow, in particular the *Juncus acutiflorus-Erica tetralix* (Sharp-flowered Rush/Cross-leaved Heath) sub-community and to transitions to M23a *Juncus acutiformis – Galium palustre* (Sharp-flowered Rush/Common Marsh Bedstraw) rush-pasture. It also strays into M25 *Molinia caerulea –Potentilla erecta* (Purple Moorgrass/Tormentil) mire.

In 2012, 339 flowering spikes were counted at these three locations. 310 of these were on Dowrog Common and the others were on the St. David's Airfield Heaths. None were found at Waun Fawr Common where there had been two in 2009 and one in 2010.

Since 1993, some populations of flowering spikes of *P. bifolia* at Dowrog Common have been counted systematically. Holly Harries and Bridget Thurston started the project at the behest of the Management Committee for this Wildlife Trust Nature Reserve. Its aim was 'to monitor the abundance of Lesser Butterfly-orchids in response to existing management types and treatments.' Initially the study area was confined to roadside firebreaks and the adjoining heath alongside a minor road where various cutting, burning and grazing regimes were practised. The hope was that this would clarify which management treatments helped the orchid to flourish. The first five years showed that the combination of cutting in the winter months, occasional winter burns and some grazing were beneficial. The unmanaged wet heath within the study area has had no orchids over the last 20 years so growth of tall, dense closed heath is clearly unfavourable.

In 1999, Stephen and Ann Evans continued and extended the study to include other populations on Dowrog. From 2001, counts were also undertaken on St. David's Airfield and Waun Fawr so from that year all flowering *P. bifolia* spikes in Pembrokeshire have been recorded. Total numbers have fluctuated from a start of 299 in 2001, to a low of 54 in 2007 to a maximum of 359 in 2010 with a mean count of 262 over the 12 years. In 2007, every Pembrokeshire colony counted had far fewer flowering spikes irrespective of its management. An exceptionally hot dry April could, perhaps, have been responsible for this

poor show. In that year, it was noticed in one place that there were six non-flowering plants where there had been a similar number of flowering spikes the previous year. The total count had been 260 the year before and numbers recovered to 187 in 2008, 308 in 2009 and peaked at 359 in 2010.

It has become clear from the 20 years of observations that numbers of flowering *P. bifolia* on actively managed wet heathland will experience natural population fluctuations but that these broad, life cycle or climatic population trends, can be modified by management practices. Where there is no grazing, winter burning can be beneficial to the orchid but there has been very little controlled winter burning in the last 10 years. Cutting outside the growing season, which continues until end of September, may be a partial alternative to burning. Grazing by cattle or ponies, without burning or cutting, can allow the orchid to flourish as it creates hummocky vegetation with variable patches of short open turf with occasional bare ground. Perhaps the right sort of small patches of bare soil is critical for recruitment of young plants.

Peak flowering time is usually in mid or late June but sometimes extends into early July. In 1996, a first count was made on 3rd of July and the second as late as 15th July. In contrast in 2011 the severe drought during the early months of the year meant that the count date was brought forward to 11th June. On that date, many of the flowers had wilted and were bent over half way up the spike and others had browned off because of the drought.

The strongest population on Dowrog Common in 2012 was in an area where there had been several years of moderately heavy grazing by beef cattle which ceased three years earlier. Their legacy has been a more varied vegetation structure with many small species-rich hummocks and shorter vegetation, which seems to suit the orchid. Here in 2012 as in 2011 and 2010, there have been numerous clumps of robust flowering spikes often in close proximity and growing on the sides of the hummocks. Interestingly, but not unsurprisingly, there were very low counts in this location 2006-2008 when the cattle were still grazing heavily at a time when the orchids were in flower.

We have also learnt from the last 12 years of observations that *P. bifolia* is not a rapid coloniser, at least not in Pembrokeshire. In this period there has been no extension of its range within any of the three sites near St. David's, nor has there been colonisation of other nearby heathlands. This has been a disappointment as a lot of resources have gone into restoring and extending the heathland habitats in this part of Pembrokeshire. Other notable plant species such as *Pilularia globulifera* (Pillwort), *Cicendia filiformis* (Yellow Centaury) and *Ranunculus tripartitus* (Three-lobed Crowfoot) have, however, expanded their populations as a consequence of all the heathland management by voluntary and statutory nature conservation organisations which started on Dowrog Common at the beginning of the 1980's.

References

Falconer, Dr.R.W. (1848) *Contributions towards a Catalogue of Plants indigenous to the Neighbourhood of Tenby*. Longmans, London.

Mason, R, (ca.1868) *Guide to Tenby and its Neighbourhood*. 5th edition, R. Mason, Tenby.

Rees, F.Lillian. (1950) *List of Pembrokeshire Plants* Tenby Museum and West Wales Field Society, Tenby.



Habitat of Lesser Butterfly-orchid, either side of the minor road through Dowrog Common , 11th June 2011.

