

## **Handbook to the natural history of Carmarthenshire / by T.W. Barker.**

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### **Publication/Creation**

Carmarthen : Printed by W. Spurrell, [1905?]

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NATURAL HISTORY  
OF  
CARMARTHENSHIRE  
—  
BARKER



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NATURAL HISTORY  
OF  
CARMARTHENSHIRE



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HANDBOOK  
TO THE  
NATURAL HISTORY OF  
CARMARTHENSHIRE

By  
T. W. BARKER



Carmarthen:  
Printed by W. Spurrell & Son



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## PREFACE.



It might well be expected that Carmarthenshire, with its variety of geological strata, its fine rivers and beautiful woodlands, its extensive sea front, and its lofty hills, rising in the Van to a height of about 2600 feet, would afford a rich field for naturalists, and yet there is hardly any county in England or Wales where the study of Natural History has received less attention than in this.

For instance, no one has, I believe, so far attempted to publish a list of the birds of the county, and although in recent years we have had some entomologists of high standing among us, no detailed account of the Carmarthenshire Lepidoptera has yet appeared.

Again, two or three years ago, when I first took up the study of Land and Freshwater Mollusca, the records of distribution authenticated by the Conchological Society's referees only gave 24 species as occurring in the county. It is no wonder that under the circumstances Mid-Wales has been classed by a leading conchologist as among the uninvestigated and 'dark' corners of the Kingdom.

There is some hope that in these respects there may be an improvement in the immediate future. Natural History is yearly taking a more prominent place in the educational code, and there seems just now to be greater interest taken in these matters.

There is, however, a drawback connected with this increase of interest—the danger lest some new-fledged naturalists, in their zeal to obtain specimens of some rare species, may perhaps unwittingly succeed in completely exterminating it. Owing to the popularity of Botany and the fact that plants are specially liable to this danger, I have carefully avoided giving the exact habitats of the rarer flowers of the county. One can easily understand the dread with which some naturalists view the visit of a Field Club to some favoured locality. In many parts of England there would be ample scope for a Wild Plants' Protection Society.



So far, however, in this county we have not had much trouble with the greedy collector, and the very fact that Carmarthenshire is, comparatively speaking, a *terra incognita* so far as Natural History is concerned, ought to make it all the more interesting.

It is astonishing what a number of species a restricted area will be found to afford on being carefully searched. At Oaklands, with its adjacent fields, comprising altogether about thirty acres, we have seen at various times 15 different species of wild Mammals, 57 species of Birds, 30 kinds of Butterflies, about 150 Moths (Sphinges Bombyces, Noctuae, and Geometrae), and 26 Land and Freshwater Snails and Slugs.

The lists which I have given in the following pages are in all cases incomplete, and in some instances lamentably so. I have sometimes merely attempted to give a sketch for others to fill in, and I shall be glad to receive any well-authenticated records of additional species.

With all one's care some mistakes will occur in a work of this kind, but I can only say that I have done my best to be as accurate as possible, and when any reasonable doubt existed in my mind as to the reliability of a record I have not given the animal or plant concerned the benefit of the doubt, but have expunged it relentlessly from the list.

In compiling the records I am indebted to many friends, whose kind assistance I have acknowledged later on.

I may say in conclusion that my task has been a pleasant one, and has recalled to mind many an enjoyable ramble, sometimes with gun or fishing rod in hand, in various parts of the county.

Oaklands,  
October, 1905.

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## CORRECTIONS.



Page 27, line 19, and page 28, line 10, for '*Lapidoptera*' read '*Lepidoptera*.'

Page 48, line 16, for '*Violariae*' read '*Violarieae*.'

Page 86, line 6, for '*Functus*' read '*Juncus*.'

## ADDITIONS.



Page 26, after '*Acronycta megacephala*: Poplar Gray' add—

*Acronycta alni*: Alder. Caterpillar of this rare moth found on oak tree in parish of Llandefeilog in August, 1905.

Page 72, add—

†\*1098 *Gentiana baltica*. Mr. Knight informs me that a Gentian which he has found in the county has just been identified as belonging to this rare species, which has only been recorded for six botanical districts.



# NATURAL HISTORY OF CARMARTHENSHIRE.

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## THE MAMMALIA OF CARMARTHENSHIRE.

As far as I know, the County cannot lay claim to any rare Mammal, for the Pine Marten, which used to be found in its wilder parts, has, I believe, ceased to exist there, the last specimen having been shot near Kidwelly some years ago.

The Polecat Badger and Otter are still fairly common even in the neighbourhood of Carmarthen; and we have most, if not all, of the commoner land Mammals, such as the Hedgehog, Mole, Shrew, Fox, Stoat, Weasel, Squirrel, House Mouse, Brown Rat, Wood Mouse, Field Vole, Water Rat, Hare, and Rabbit.

The Dormouse appears to be rather local in the County. I found a colony of these pretty little animals two or three years ago in one of our fields at Oaklands.

The Water Shrew probably occurs, but I have never seen one here myself, although I have come across it more than once in Breconshire.

I only know of two species of Bats—the Long-eared Bat and the Pipistrelle.

With regard to the Cetacea, the Porpoise is seen not uncommonly in Carmarthen Bay; and some years back a Whale, of what species I cannot say, came ashore near Ferryside.

## THE BIRDS OF CARMARTHENSHIRE.

THERE is perhaps no branch of Natural History so interesting as the study of bird life, but there are some special difficulties connected with it. So many birds are migratory in their habits and only occasional visitors, that no one observer, however diligent he may be, can expect to meet with anything like all the birds of a County. Then again there is the problem of



identification, often a very difficult one. The young Ornithologist may well exclaim, in imitation of an old rhyme—

‘ The Ducks and Gulls they puzzle me,  
The Waders drive me mad.’

And even among those orders, the species of which are more easily discriminated, we often find some birds whose shy and wary ways render it almost impossible to be quite sure to what species they belong.

One shrinks from shooting a bird merely to see what kind it is, and the law rightly protects many with very satisfactory results. The Goldfinch for instance is now once again a fairly common bird in many places, where, a few years back, it had almost ceased to exist.

The late Mr. R. Browne, Solicitor, of Carmarthen, was one of the most careful and scientific of our County Ornithologists. He died before he was able to fulfil his promise of revising my bird list, but through the kindness of his executor, Mr. C. E. Morris, I have been permitted to make use of his notes.

I am much indebted too to Mr. L. Powell, of Carreg Cennen, for his kind help and for lending me a manuscript list of East Carmarthenshire Birds, compiled by Mr. G. D. Davidson, and to Dr. Salter of Aberystwyth, and Mr. Davidson for kindly revising my list.

Without these aids and the valuable assistance of Mr. Jeffreys, King Street, Carmarthen, the following list would have been but a meagre one.

Those marked on it with an asterisk are the birds which I have not myself seen wild in the County. The letter B is placed against those on Mr. Browne's list, and J denotes records given me by Mr. Jeffreys.

### LIST OF CARMARTHENSHIRE BIRDS.

B Missel Thrush: *Turdus viscivorus*. Not uncommon. In 1904 I found two nests of this bird at Oaklands, one of them in a Scotch fir tree, in which the Long-eared Owl also had a nest.

B Song Thrush: *Turdus musicus*. Common.



- B Redwing: *Turdus iliacus*. A common winter visitor.
- B Fieldfare: *Turdus Pilaris*. A winter visitor.
- B Blackbird: *Merula vulgaris*. Very common.
- \* B Ring Ouzel: *Merula torquata*. One has been seen lately near Carmarthen. Mr. Davidson mentions one having been seen. Dr. Salter tells me that it breeds on the Black Mountains near the Van Pool.
- B Wheatear: *Saxicola Cœnanthe*. Pendine Burrows and elsewhere.
- B Whinchat: *Pratincola rubetra*. On Heaths.
- B Stonechat: *Pratincola rubicola*. Not uncommon.
- B Redstart: *Ruticilla Phœnicurus*. Not very common near Carmarthen; but I understand from Dr. Salter that it is very abundant in the upper Towy valley.
- \* B Black Redstart or Blackstart: *Ruticilla Titys*.  
 Note by Mr. Browne: '1875, December 28th. Whilst in Barker's Office, Carmarthen, saw two Blackstarts on the roof of a house close to the office window: one was rather darker than the other. I fancy I saw one some years ago at Kidwelly about this season of the year.—R. B.' This was at the office in Quay Street, now used by Mr. Walters. I remember my father telling me that evening that Mr. Browne had seen some rare birds from the office window. It was, I think, then that I first knew that Mr. Browne was interested in ornithology.
- B Robin: *Erithacus Rubecula*. Very common.
- B Whitethroat: *Sylvia cinerea*. Not uncommon.
- \* Lesser Whitethroat: *Sylvia curruca*. On Mr. Davidson's list.



- B Blackcap: *Sylvia atricapilla*. Occasionally.  
One seen at Oaklands in 1904. Possibly the house owes its old name of Llwynyreos (Nightingale's Grove) to this bird, or perhaps Nightingales were formerly found in Wales. The constant occurrence of 'eos' in place names would seem to point to the latter solution. The Welsh name for Blackcap is given in Spurrell's Dictionary as 'penlöyn' or 'lleian.'
- \* B Garden Warbler: *Sylvia hortensis*.
- \* Dartford Warbler: *Melizophilus undatus*. Seen by Mr. Davidson at Bettws in 1901.
- B Gold-crested Wren: *Regulus cristatus*. Fairly common.
- B Chiffchaff: *Phylloscopus rufus*. Fairly common. One nested in 1903 by the side of our drive.
- B Willow Wren: *Phylloscopus trochilus*. Common.
- \* Wood Wren or Wood Warbler: *Phylloscopus sibilatrix*. On Mr. Davidson's list. Dr. Salter tells me that it occurs abundantly in oak woods in the upper Towy valley, &c.
- \* B Reed Warbler: *Aerocephalus streperus*.
- \* Sedge Warbler: *Aerocephalus phragmitis*. On Mr. Davidson's list.
- \* B Grasshopper Warbler: *Locustella naevia*. Mr. Browne told me that he had frequently heard this bird at Kidwelly, but had seldom seen it owing to its shy habits. On Mr. Davidson's list.
- B Hedge Sparrow: *Accentor modularis*. Common.
- B Dipper or Water Ouzel: *Cinclus aquaticus*. Fairly common. I have seen two or three nests by the streamside near Cwmffrwd.

- \* Bearded Tit: *Panurus biarmicus*. Recorded in Matthew's Birds of Pembrokeshire as having occurred near St. Clears in 1891 (Mr. Davidson's list).
- B British Long-tailed Tit: *Acredula rosea*. Common.
- B Great Tit: *Parus major*. Common.
- B Coal (or Cole) Tit: *Parus Britannicus*. Fairly common.
- B Marsh Tit: *Parus palustris*. Occasionally. A pair bred at Oaklands in 1905.
- B Blue Tit: *Parus coeruleus*. Very common.
- B Nuthatch: *Sitta caesia*. I have seen one at Brynmyrddin, and am told that there are several there. A note by Mr. Browne, dated 16th March, 1873, states that he saw one that day at Penbryn, the first he had ever seen or heard of in this county. Mr. Davidson records this species as occurring in Glynhir Woods and Dynevor Park, and Mr. Powell has seen it frequently near Carreg Cennen and Tregyb.
- B Wren: *Troglodytes parvulus*. Very common.
- \* B White Wagtail: *Motacilla alba*. I believe that I have seen this bird near Kidwelly.
- B Pied Wagtail: *Motacilla lugubris*. Common.
- B Grey Wagtail: *Motacilla Melanope*. Occasionally.
- B Yellow Wagtail: *Motacilla Raii*. Fairly common.
- B Meadow Pipit: *Anthus pratensis*. Common.
- \* Tree Pipit: *Anthus trivialis*. On Mr. Davidson's list. Common in suitable localities (Dr. Salter).



Rock Pipit: *Anthus obscurus*. Sea coasts.

- \* Great Grey Shrike: *Lanius excubitor*. Mr. Jeffreys has had two or three specimens sent him to be stuffed. Mr. Davidson mentions one having been seen at Ammanford.

B Redbacked Shrike: *Lanius Collurio*. Not an uncommon summer visitor. I generally see a pair every year near Carmarthen Junction, and have also come across it near Kidwelly and in other localities. I found a nest with eggs many years ago in a hedge near Penllwyn Park.

B Spotted Flycatcher: *Muscicapa grisola*. Rather local, but usually common where it is found. We have four or five nests every year at Oaklands. These birds destroy a large number of Butterflies, mostly Meadow Browns, but hardly ever touch the Cabbage Whites.

- \* Pied Flycatcher: *Muscicapa atricapilla*. Mr. Jeffreys has had several sent to him. I have seen one near Llanwrtyd, but not in this county. Mr. Powell saw one at Carreg Cennen in the spring of 1902. Very abundant among oak, alders, and birches in the upper Towy valley (Dr. Salter).

B Swallow: *Hirundo rustica*. Common.

B Martin: *Hirundo urbica*. Common.

B Sand Martin: *Hirundo riparia*. Fairly common.

B Tree Creeper: *Certhia familiaris*. Common.

B Goldfinch: *Carduelis elegans*. Much commoner now than a few years back, in consequence of being protected under the Wild Birds Acts. I have seen large flocks near Oaklands in 1904 and 1905.



- \* B Siskin: *Carduelis spinus*. Mr. Davidson records the occurrence of a small flock near Glancennen in 1892.
- B Greenfinch: *Ligurinus chloris*. A common bird, especially in the nesting season.
- \* Hawfinch: *Coccothraustes vulgaris*. There is one in Mr. Jeffreys' shop which was shot near Laugharne about twelve years ago. Mr. Davidson saw a pair at Wernoleu in 1897. Mr. Powell has also seen one at Carreg Cennen.
- B House Sparrow: *Passer domesticus*. Very common.
- \* B Tree Sparrow: *Passer montanus*. Mr. Jeffreys has had a few sent to him.
- B Chaffinch: *Fringilla coelebs*. Abundant.
- B Brambling or Mountain Finch: *Fringilla Montifringilla*. A frequent visitor in cold weather.
- B Linnet: *Linota cannabina*. Fairly common.
- \* Mealy Redpoll: *Linota linaria*. Mr. Howells (Town Porter) has caught these occasionally in the county.
- \* Lesser Redpoll: *Linota rufescens*. Mr. Howells has also taken this species in Carmarthenshire. Also on Mr. Davidson's list.
- B Bullfinch: *Pyrrhula Europæa*. Fairly common.
- \* Crossbill: *Loxia curvirostra*. One shot in the county about five years ago (J). A pair with a young one seen by Mr. Davidson at Wernoleu in July, 1904.
- B Reed Bunting: *Emberiza schoeniculus*. Not uncommon.

- \* B Corn Bunting: *Emberiza miliaria*. On Mr. Davidson's list.
- B Yellow Bunting or Yellow Hammer: *Emberiza citrinella*. Common.
- B Snow Bunting: *Plectrophanes nivalis*. One or two (J). I am told that one was caught alive in 1903, and exhibited at the Carmarthen Show. Mr. Davidson records the occurrence of flocks on Bettws mountain in 1896 and 1901.
- B Starling: *Sturnus vulgaris*. Common.
- B Jay: *Garrulus glandarius*. Fairly common.
- B Magpie: *Pica rustica*. Common. I have sometimes seen this bird in flocks varying from 12 to 20 in number.
- B Jackdaw: *Corvus monedula*. Common near towns and on rocks on the coast.
- B Carrion Crow: *Corvus corone*. Common in the country districts, where it plays havoc with the ducklings.
- \* B Hooded Crow: *Corvus cornix*.
- B Rook: *Corvus frugilegus*. Common.
- B Raven: *Corvus corax*. Still found in several parts of the county, although rarer than it used to be. I saw two near Pendine in June, 1904.
- B Skylark: *Alauda arvensis*. Common in the upland districts.
- \* B Woodlark: *Alauda arborea*. Occasionally (J). Resident in very small numbers in many parts of the county (Dr. Salter).
- B Swift: *Cypselus apus*. Common.



B Nightjar: *Caprimulgus Europæus*. Not an uncommon summer visitor, sometimes staying as late as the middle of September. I have found two nests, one with eggs and the other with young birds in it.

\* Great Spotted Woodpecker: *Picus major*. Seen by Mr. Davidson in Glynhir woods and at Wernoleu.

Lesser Spotted Woodpecker: *Picus minor*. Occasionally (J). I saw one near Golden Grove in October, 1902.

B Green Woodpecker: *Gecinus viridis*. Not uncommon.

\* B Wryneck: *Iynx torquilla*. Seen by Mr. Davidson nearly every spring near Wernoleu.

B Kingfisher: *Alcedo ispida*. Occasionally seen, but much rarer than it was a few years ago.

\* B Hoopoe: *Upupa Epops*.

B Cuckoo: *Cuculus Canorus*. Fairly common.

B Barn Owl: *Strix flammea*. Fairly common.

B Long-eared Owl: *Asio Otus*. Not uncommon I believe. A pair nests regularly every year at Oaklands.

Short-eared Owl: *Asio accipitrinus*. Not uncommon in the county. It does not appear on Mr. Browne's list, but we have one which was shot on Beaule farm, Llangunnor, in October, 1901, in mistake for a Curlew, and I have heard of several others.

B Tawny Owl: *Syrnium Aluco*. Not uncommon.

Snowy Owl: *Nyctea scandiaca*. A fine specimen of this rare bird frequented the neighbourhood



of Oaklands for some months in 1902 and 1903, and was constantly seen by myself and others. It used to hawk along the hedges in the evenings, and sometimes in broad daylight. I have heard of another having been seen in the county.

\* B Marsh Harrier: *Circus aeruginosus*. Mr. Browne writes in October, 1859, as follows: 'The Marsh Harrier is not, I think, common here, as I have only known of one specimen, which was shot by my father about seven or eight years ago on Pembrey Burrows.' Mr. Jeffreys remembers one being sent to him some years ago.

\* B Hen Harrier: *Circus cyaneus*. Mr. Browne saw one on the 30th November, 1857, flying over the Marsh at Kidwelly. One was sent some years ago to Mr. Jeffreys, and Mr. C. E. Morris has also, I believe, seen one in the county.

\* B Montagu's Harrier: *Circus cineraceus*. Note by Mr. Browne: '1880, June. A Montagu's Harrier shot by the Elkington's keeper near Pembrey, and stuffed by Jeffreys. I saw the stuffed bird on the 5th July, 1880, at Jeffreys. It was evidently a male in excellent plumage, but not arrived at the full adult colouring.' From what Mr. Browne told me, I understood that he had seen one or two of these birds in recent years near Kidwelly.

Buzzard: *Buteo vulgaris*. Occurs in the hilly districts. One was shot on Merlin's Hill some years ago.

B Sparrow Hawk: *Accipitor nisus*. Fairly common. The hen bird has an insatiable appetite for chickens. A farmer from the neighbourhood of Oaklands tells me that one day when he and some others were at work in a field near here, they saw a hawk (probably one of this species) seize something on the ground, soar up with it, and then suddenly fall. On running up to the bird they found it quite dead



with a weasel lying by it. They inferred that the bird had taken up the weasel, which had bitten through the hawk's throat, and so killed it.

- \* B Kite: *Milvus ictinus*. I am told on good authority that a pair or two still exist in the upper Towy Valley. Mr. Jeffreys has had some sent to him occasionally, but they are becoming rarer every year. The following notes by Mr. Browne as to its former distribution in the county are interesting: '1859. The Kite used to breed many years ago regularly in the Iscoed woods near the Ferry, as I have been told by some of the old inhabitants: it is now very rarely seen and it never breeds. Two were seen about two years since—one a farmer shot at and wounded, but did not succeed in killing it.' 'September 28, 1859. John Wilkin told me that he saw a Kite near his forge on this day.'

- \* B Peregrine Falcon: *Falco peregrinus*. This bird is, I am told, still to be seen on the coast between Llanstephan and Laugharne. It has also been seen near Carreg Cennen by Mr. Davidson and Mr. Powell. Mr. Browne mentions in 1859 that one was shot by his father many years ago as it was flying into a wood on the banks of the Towy, between Ferryside and Carmarthen. And see note under head of 'Merlin.'

- B Merlin: *Falco Aesalon*. In November, 1896, I was out shooting, and standing at the top of Cwmlladron wood, Llangunnor, when two hawks, one much larger than the other, flew over towards me from the wood, and began fighting high up in the air. I fired at both of them, and brought down the smaller one, together with a dead chaffinch, which was evidently what they were fighting over. The other bird got away, although hard hit. My gun was loaded with No. 7 shot cartridges, as I was expecting a Woodcock. I gave the hawk which I had shot to Mr. Browne, who told me that it was a Merlin, and said that the



larger bird was probably a Peregrine Falcon, as it was most unlikely that either a Kestrel or Sparrow Hawk would attack a Merlin in mid-air in that way. Mr. Browne has recorded having seen a pair of Merlins on the Kidwelly Burrows in August, 1879. Mr. Jeffreys tells me that they are rare in the county.

B Kestrel: *Falco tinnunculus*. Fairly common.

B Cormorant: *Phalacrocorax carbo*. Not uncommon.

\* B Shag or Green Cormorant: *Phalacrocorax graculus*. Mr. Jeffreys has had one sent to him.

\* B Gannet: *Sula Bassana*. Occasionally shot here (J). I am told that it is sometimes seen at Pendine. There are two in Jeffreys' shop now (March, 1905).

B Heron: *Ardea cinerea*. Fairly common.

\* B Little Bittern: *Ardetta minuta*. Mr. Browne, in a note dated 6th June, 1882, mentions having seen in Mr. Jeffreys' shop a Little Bittern, which had been shot in the marsh near Johnstown. Mr. Jeffreys confirms this, and has told me who the man who shot it is. He also says that another specimen was shot on the banks of the Towy about thirty years ago.

\* B Night Heron: *Nycticorax griseus*. Mr. Jeffreys tells me that a pair of these birds were seen near Kidwelly about twenty years ago, and that the cock bird was shot and stuffed, and was sold at a recent sale at the Post Office there. The hen bird escaped.

\* B Bittern: *Botaurus stellaris*. Several shot in the county at Llandilo, Laugharne, &c. (J). I am told that on one occasion a man shot a pair right and left.



- \* B Spoonbill: *Platalea leucordia*. Mr. Browne told me that many years ago it was occasionally shot near Kidwelly. Mr. Jeffreys says that he has had one or two sent to him.
- \* B Glossy Ibis: *Ibis falcinellus*. Note by Mr. Browne: '1900, February 22nd. Jeffreys asked me into his shop to see the skin of a bird that he did not know. The bird had been brought to him recently, and had been shot near Llangendeirne, and was now in course of being stuffed. It proved to be a Glossy Ibis in immature plumage, the first I have ever heard of in this part of the country.'
- \* B Grey Lag Goose: *Anser cinereus*. Occasionally (J).
- \* B Bean Goose: *Anser segetum*. Occasionally (J).
- \* Pink-footed Goose: *Anser brachyrhynchus*. Occasionally (J).
- \* B White-fronted Goose: *Anser albifrons*. Fairly common (J).
- \* B Brent Goose: *Bernicla brenta*. Occasionally (J).
- \* Canada Goose: *Bernicla canadensis*. A few shot—one on the river Towy (J).
- \* B Hooper Swan: *Cygnus musicus*. A rare bird in the county (J).
- B Sheld Duck or Sheldrake: *Tadorna cornuta*. Common on the coast.
- \* Ruddy Sheld Duck: *Tadorna casarca*. One shot at Laugharne (J).
- B Mallard or Wild Duck: *Anas boschas*. Fairly common.

- \* B Shoveller: *Spatula clypeata*. Note by Mr. Browne: '1897, May 24th. Saw a Drake Shoveller in the Slade on the Kidwelly Burrows. I should say from its movements that it was possibly breeding there.' Several shot in the county (J).
- \* B Pintail: *Dafila acuta*. Not uncommon (J).
- B Teal: *Querquedula crecca*. Fairly common.
- \* Garganey: *Querquedula circia*. One shot lately near Conwil (J). I have also heard of another having been shot in the county.
- B Wigeon: *Mareca Penelope*. Fairly common.
- \* B Pochard: *Fuligula ferina*. Occasionally (J).
- \* White-eyed or Ferruginous Duck: *Fuligula nyroca*. One or two (J).
- \* B Tufted Duck: *Fuligula cristata*.
- \* B Scaup: *Fuligula marila*.
- \* B Golden Eye: *Clangula Glancion*. Several (J).
- \* Long-tailed Duck: *Harolda glacialis*. There was one lately in Mr. Jeffreys' shop. It was shot near Ferryside.
- \* B Scoter: *Ædemia nigra*. Sometimes seen at Pendine.
- \* Velvet Scoter: *Ædemia fusca*. Occasionally (J).
- \* B Goosander: *Mergus merganser*. Several (J). I saw one in his shop in June, 1904.
- \* Red-breasted Merganser: *Mergulus serrator*. Occasionally (J).
- \* B Smew: *Mergulus albellus*. Occasionally (J).
- B Ring Dove: *Columba palumbus*. Common.



- Stock Dove: *Columba Œnas*. Occasionally.
- B Rock Dove: *Columba livia*. Sea cliffs at Pendine and near Llanstephan.
- \* Turtle Dove: *Turtur communis*. Occasionally (J).
- \* Black Grouse: *Tetrao Tetrix*. In the eastern part of the county.
- B Red Grouse: *Tetrao Scoticus*. Near Pencader, Pantglas, Van, &c.
- B Pheasant: *Phasianus Colchicus*. Common.
- B Partridge: *Perdix cinerea*. Common.
- \* B Quail: *Coturnix communis*. In some years.
- B Corncrake: *Crex pratensis*. Common.
- \* B Spotted Crake: *Crex maruetta*. One or twice (J). Mr. Browne had one stuffed which had been shot in the county. Mr. Davidson records the occurrence of one at Glanbrydan in 1887.
- B Water Rail: *Rallus aquaticus*. Not uncommon.
- B Moorhen: *Gallinula Chloropus*. Common.
- B Coot: *Fulica atra*. Not uncommon.
- \* B Hyacinthine, or Purple Gallinule: *Porphyrus hyacinthus*. Note by Mr. Browne: '1893, September. Saw in Jeffreys' shop, Carmarthen, a stuffed specimen of the Hyacinthine, or Purple Gallinule—*Porphyrus hyacinthus*—which had been shot by the tenant of the farm of Llandilo Talybont in the parish of Llandilo Abercowin, Carmarthenshire. Jeffreys told me that the farmer informed him that it had been seen on the farm for several days before it was shot.' Mr. Jeffreys confirms this note.



- \* B Great Bustard: *Otis tarda*. Note by Mr. Browne: 'Bustard—one killed at Alltycadno in January, 1891.' Four or five shot in the last three or four years, some near Ferryside (J).
- \* B Little Bustard: *Otis tetrax*. Note by Mr. Browne: '1901, December 6. Saw in Jeffreys' shop a stuffed Little Bustard which had been shot on Laugharne Marsh by Mr. Broadwood's keeper last month. It was a female in beautiful plumage.' I have also seen this specimen.
- B Golden Plover: *Charadrius pluvialis*. Not uncommon.
- B Ringed Plover: *Ægialitis hiaticula*. Kidwelly, &c.
- B Lapwing: *Vanellus cristatus*. Common.
- B Oyster Catcher: *Haemœtopus ostralegus*. Common on sea shores.
- \* B Avocet: *Recurvirostra avocetta*. One sent to be stuffed (J).
- \* B Grey Phalarope: *Phalaropus fulicarius*. Mr. Jeffreys thinks that one of these birds has been shot near Johnstown.
- B Woodcock: *Scolopax rusticola*. Not uncommon. The Woodcock probably breeds occasionally in the county, as one was shot in the Conwil Valley on an August Bank Holiday, and another was seen near St. Clears in June.
- \* B Great Snipe: *Gallinago major*. Mr. Browne had one which Mr. Webb Jones had shot in the county many years ago. I have seen two or three stuffed specimens. Mr. Jeffreys once saw one alive on Llanstephan beach.
- B Snipe: *Gallinago coelestis*. Common.

- B Jacksnipe: *Gallinago gallinula*. Fairly common. More abundant than usual last winter, 1904-5. Constantly occurring in small flocks of five or six.
- B Dunlin: *Tringa alpina*. Common on the coast.
- Little Stint: *Tringa minuta*. I once shot one near Pencader.
- \* B Sanderling: *Calidris arenaria*. Occasionally on coasts and sandy flats (Mr. Davidson's list).
- B Sandpiper: *Totanus hypoleucus*. River Banks. Common in summer.
- \* B Green Sandpiper: *Totanus Ochropus*.
- \* B Redshank: *Totanus calidris*. Occasionally (J).
- \* B Greenshank: *Totanus canesceus*. Two or three (J).
- \* B Bar-tailed Godwit: *Limosa Lapponica*.
- \* B Black-tailed Godwit: *Limosa Belgica*.
- B Curlew: *Numenius aequatus*. Fairly common.
- \* B Whimbrel: *Numenius phæopus*.
- \* B Tern: *Sterna fluviatilis*. Note by Mr. Browne: 'September 3rd, 1859. I saw eleven Terns on the sands, the first I have seen this season and the first I have ever seen on the ground.' Occasionally at mouth of river (J).
- B Black-headed Gull: *Larus ridibundus*. Occasionally before cold or stormy weather.
- Gull: *Larus canus*. Common.



- B Herring Gull: *Larus argentatus*. Sea coast.
- \* B Lesser Black-backed Gull: *Larus fuscus*. A few specimens (J).
- B Great Black-backed Gull: *Larus marinus*. Occasionally (J). I saw one or two near Pendine in June, 1904.
- B Kittiwake: *Rissa tridactyla*. Not uncommon.
- \* B Pomatorrhine Skua: *Stercorarius pomatorhinus*. Mr. Browne had a stuffed specimen, which he told me had been shot in the county.
- \* Richardson's Skua: *Stercorarius crepidatus*. Mr. Jeffreys tells me that one was shot at Ferryside about 25 years ago.
- \* B Razorbill: *Alca torda*. Occasionally on river Towy (J).
- \* B Guillemot: *Uria troile*. Two or three shot on the Towy (J).
- \* B Black Guillemot: *Uria grylle*.
- \* B Little Auk: *Mergulus alle*. One or two (J).
- B Puffin: *Fratercula arctica*. Occasionally on Towy (J). I have seen some near Pendine.
- \* B Great Northern Diver: *Colymbus glacialis*. Occasionally shot on the Towy, but much rarer of late years.
- \* Black-throated Diver: *Colymbus arcticus*. Sometimes near mouth of river Gwendraeth (J).
- \* B Red-throated Diver: *Colymbus septentrionalis*. Very rare: one or two only some years ago (J).

- \* B Great-crested Grebe: *Podiceps cristatus*. A rare bird in the county. One was shot near Carmarthen in January, 1905, and I know of two others.
- B Little Grebe or Dabchick: *Podiceps fluviatilis*. Rather uncommon. I saw one once on the Towy between the Town Bridge and the Railway Bridge.
- \* Manx Shearwater: *Puffinus Anglorum*. Fairly common on coast (Mr. Davidson's list).
- \* B Stormy Petrel: *Procellaria pelagica*. I saw one once at Aberystwyth, but never in this county.

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## THE REPTILES, AMPHIBIA, AND FISHES OF CARMARTHENSHIRE.

There is not much to say about the Reptiles and Amphibia of the county. The Slow Worm, Viviparous Lizard, Ringed Snake, Viper, Common Frog, Common Toad, Crested Newt, and Smooth Newt are all to be found, more or less commonly, in the neighbourhood of Carmarthen, and I have more than once caught specimens of the somewhat local Webbed Newt (*Triton palmatus*) in the parish of Llandefeilog.

Our rivers are noted for their Salmon and Sewin, the former running up in weight to 35 pounds and the latter to 23 pounds.

Although the county does not afford many varieties of coarse fish, we have the Pike, Perch, and Tench, while a few Gudgeon are to be found near Llanarthney.

A Sturgeon makes its way up the Towy at rare intervals, much to the detriment of the nets of the coraclemen, and Eels are abundant, and Flounders not uncommon, while Lampreys are sometimes taken on the river flats.

Of the smaller fry we have the Minnow Loach, Miller's Thumb, and Three-spined and Nine-spined Sticklebats.

I am quite unable to give any list of the sea fish to be found in Carmarthen Bay.



## THE INSECTS OF CARMARTHENSHIRE.

## COLEOPTERA.

It is often very difficult to distinguish the various species of Beetles, and I am only able to give a few notes with regard to some which I have found in the county.

**Geodephaga.** The Common Tiger Beetle (*Cicindela campestris*) is not uncommon near Carmarthen, and *Cicindela hybrida* var *maritima* is to be found on the Pendine sandhills. Among other carnivorous land beetles are *Carabus violaceus*, *Notiophilus biguttatus*, *Nebria brevicollis*, *Pterostichus cupraeus*, *Pterostichus niger*, and *Pterostichus madidus*.

**Hydradephaga.** The water beetles are represented by *Hyphydrus ovatus*, *Ilybius fuliginosus*, *Agabus bipustulatus*, *Agabus guttatus*, *Agabus didymus*, *Colymbetes fuscus*, *Dytiscus marginalis*, *Dytiscus punctulatus* (which frequents a small pond near Oaklands), *Acilius sulcatus* and the Whirligig (*Gyrinus natator*) and others.

**Clavicornia.** *Helephorus aquaticus* occurs commonly in ditches, and *Silpha atrata* and *Silpha rugosa* are often seen. So are also two of the Lady Birds *Coccinella bipunctata* and *Coccinella septempunctata* and *Hister bimaculatus*.

**Lamellicornia.** *Phyllopertha horticola* and two of the Dor Beetles, *Geotrupes stercorarius* and *Geotrupes mutator* are common, and the Cockchafer (*Melolonthus vulgaris*) only too abundant. I have taken two specimens of the rare *Trichius fasciatus* in a garden on the Parade.

**Gerricornia.** The Glow Worm (*Lamphyris Noctiluca*) occurs not uncommonly in our country lanes.

**Longicornia.** *Rhagium inquisitor* is occasionally found, and *Strangalis armata* is frequently to be seen.



Monilicornia. *Timarcha laevigata*, *Cassida viridis*, and others of that genus are all more or less common.

Heteromera. *Ædemera nobilis* and the Oil Beetle (*Meloe violaceus*) are often seen.

#### LEPIDOPTERA.

Thirty-eight at least out of the seventy-one species of British Butterflies are to be found in the county, and there may be some additions, although probably not more than three or four.

The small Blue (*Lycaena alsus*) is reported from Pembroke-shire, and should also be found here, and it is possible that the Duke of Burgundy (*Nemeobius lucina*), the Large Tortoiseshell (*Vanessa Polychloros*), the Pale-clouded Yellow (*Colias hyale*), and one or two others may be added to our county list.

My moth collecting in the county has been confined almost entirely to the immediate neighbourhood of Carmarthen and Oaklands, and although Mr. H. S. Holmes and Mr. S. T. Hoole have kindly helped me, and I have obtained some additional records from various books, my list of moths is still very incomplete.

I have given the authority in the case of all species not seen by me (those marked \*).

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#### LIST OF CARMARTHENSHIRE BUTTERFLIES.

*Pieris Brassicae*: Large White. Common.

*Pieris Rapae*: Small White. Very common.

*Pieris Napi*: Green-veined White. Very common.

*Euchloe Cardamines*: Orange Tip. Common.

*Leucophasia sinapis*: Wood White. Occasionally near Oaklands and in lanes between Kidwelly and Pontyeates.



*Colias Edusa*: Clouded Yellow. In most years rather scarce and confined to the sea coast, but abundant in clover fields during the summer of 1900.

*Gonepteryx Rhammi*: Brimstone. Not often seen owing, no doubt, to the scarcity of Buckthorn in the county.

*Argynnis Paphia*: Silver-washed Fritillary. Fairly common.

*Argynnis aglaia*: Dark Green Fritillary. In several places near Carmarthen.

*Argynnis adippe*: High Brown Fritillary. Near Oaklands and elsewhere.

*Argynnis selene*: Small Pearl-bordered Fritillary. Not uncommon.

*Argynnis euphrosyne*: Pearl-bordered Fritillary. Generally distributed.

*Melitoea artemis*: Greasy Fritillary. Local but abundant where it occurs—marshy fields near Oaklands, banks of river Gwendraeth, near Pencader, &c.

*Polygonia C Album*: Comma. One seen by me some years ago in Pibwrwen drive. The late Dr. Hearder told me that he had seen one in the county, and I have heard of others. Recorded in Colonel Owen Wilson's book as a Carmarthenshire species.

*Vanessa Urticae*: Small Tortoiseshell. Common.

*Vanessa Io*: Peacock. Common.

*Pyrameis atalanta*: Red Admiral. Common.

*Pyrameis Cardui*: Painted Lady. Rather local.

*Melanargia galatea*: Marbled White. Somewhat local but abundant in places.

*Epinephele janira*: Meadow Brown. Very common.

*Epinephele Tithonus*: Large Heath. Very common.

*Hipparche semele*: Grayling. Not uncommon but local.

*Hipparche hyperanthus*: Ringlet. Common.

*Coenonympha pamphilus*: Small Heath. Common.

*Satyrus Megoera*: Wall Brown. Common.

*Pararge Egerides*: Speckled Wood. Fairly common.

*Thecla Betulae*: Brown Hairstreak. One caught near Oaklands by Eira Barker 17th September, 1904. Another seen by me 1st October, 1904. Recorded by Colonel Owen Wilson as occurring in the county.

*Thecla Quercus*: Purple Hairstreak. Generally distributed.

*Thecla Rubi*: Green Hairstreak. Not common in the County. One seen in Oaklands Drive 19th May, 1901. Two caught near Pendine, June, 1904.

\* *Lycaena Aegon*: Silver Studded Blue. Taken by Mr. H. S. Holmes near Laugharne.

*Lycaena agestis*: Brown Argus. Near Pendine, June, 1904.

*Lycaena icarus*: Common Blue. Common.

*Lycaena argiolus*: Azure Blue. Generally distributed.

*Polyommatus Phlaeas*: Small Copper. Common.

*Syrichthus malvae*: Grizzled Skipper. Near Pendine 1904, and near Oaklands 1905.



*Thanaos tages*: Dingy Skipper. Generally distributed.

*Hesperia thaumas*: Small Skipper. Common.

*Hesperia sylvanus*: Large Skipper. Common.

## LIST OF CARMARTHENSHIRE MOTHS.

### SPHINGES.

*Acherontia atropos*. Death's Head Hawk.

*Sphinx ligustri*: Privet Hawk.

\* *Deilephila livornica*: Striped Hawk. One taken by Mr. Hoole at Glannant, Carmarthen. Recorded in Colonel Owen Wilson's book as occurring in the county.

*Choerocampa Elpenor*: Great Elephant Hawk.

*Smerinthus ocellatus*: Eyed Hawk.

*Smerinthus populi*: Poplar Hawk.

*Macroglossa stellatarum*: Humming-bird Hawk.

*Macroglossa bombylifformis*: Narrow bordered Bee Hawk. Near Oaklands.

\* *Sesia sphegiformis*: White barred Clearwing. Abundant at Dolaucothi (Tutt's Practical Hints for the Field Lepidopterist).

*Sesia tipuliformis*: Currant Clearwing.

*Zygæna trifolii*: Five spotted Burnet. Marshy field at Oaklands.

*Zygæna filipendulæ*: Six spotted Burnet.

## BOMBYCES.

*Lithosia lurideola*: Common Footman.

*Euchelia Jacobeae*: Cinnabar.

*Arctia caja*: Tiger.

\* *Callimorpha dominula*. Taken by Mr. Holmes  
near the Carmarthen Training College.

*Phragmatobia fuliginosa*: Ruby Tiger.

*Spilosoma mendica*: Muslin.

*Spilosoma lubricipeda*: Buff Ermine.

*Spilosoma menthastri*: White Ermine.

*Hepialus humuli*: Ghost Swift.

*Hepialus sylvinus*: Wood Swift. Near Pencader.

*Hepialus lupulinus*: Common Swift.

*Cossus ligniperda*: Goat Moth.

*Dasychira pudibunda*: Pale Tussock.

\* *Poecillocampa populi*: December Moth (Tutt's  
British Moths).

*Bombyx neustri*: Lackey.

*Bombyx rubi*: Fox Moth.

*Bombyx quercus*: Oak Eggar.

*Odonestis potatoria*: Drinker

*Saturnia pavonia*: Emperor.

*Drepania falcataria*: Pebble Hook tip.

*Cilix glaucata* (spinula). Chinese Character.

*Dicranura* (Cerura) *vinula*: Puss Moth



*Lophopteryx camelina*: Coxcomb Prominent.

*Notodonta ziczac*: Pebble Prominent.

*Phalera bucephala*: Buff tip.

*Pygaera pigra*: Small Chocolate tip. Beaule-fawr,  
Llangunnor.

*Thyatira deras*: Buff tip.

*Thyatira batis*: Peach Blossom.

#### NOCTUAE.

*Bryophila perla*: Marbled Beauty.

*Acronycta psi*: Grey Dagger.

*Acronycta megacephala*: Poplar Gray.

*Acronycta rumicis*: Knot Grass.

*Leucania conigera*: Brown Line.

*Leucania lithargyria*: Clay.

*Leucania comma*: Shoulder striped Wainscot.

*Leucania impura*: Smoky striped Wainscot.

*Tapinostola fulva*: Small striped Wainscot.

*Gortyna ochracea* (flavago): Frosted Orange.

*Hydroecia nictitans*: Ear Moth.

*Hydroecia micacea*: Rosy Rustic.

*Xylophasia rurea*: Clouded Brindle.

*Xylophasia lithoxylea*: Light Arches.

*Xylophasia monoglypha* (polyodon): Dark Arches.

*Xylophasia hepatica*: Clouded Brindle.

*Neuronia popularis*: Feathered Gothic.

*Charaeas graminis*: Antler Moth.

*Luperina testacea*: Lesser flounced Rustic.

\* *Luperina Cespitis*: Hedge Rustic (O. Wilson's Larvae of the British Lepidoptera).

\* *Mamestra Albicon*: White Colon (O. Wilson's Larvae of the British Lepidoptera).

*Mamestra Brassicae*: Cabbage Moth.

*Mamestra Persicariae*: The Dot.

*Leucostigma didyma* (*oculea*): Common Rustic.

*Miana strigilis*: Marbled Minor.

*Miana fasciuncula*: Middle barred Minor.

*Grammesia trigrammica* (*trilinea*): Treble Lines.

*Caradrina Taraxaci* (*blanda*): The Rustic.

*Caradrina quadripunctata* (*cubicularis*): Mottled Rustic.

*Rusina Tenebrosa*: Brown Rustic.

\* *Agrotis vestigialis* (*valligera*): Archer's Dart (O. Wilson's Larvae of the British Lepidoptera).

*Agrotis exclamationis*: Heart and Dart.

*Noctua plecta*: Flame Shoulder.

*Noctua triangulum*: Double Spot Clay.

*Noctua festiva*: Ingrailed Clay.

*Noctua rubi*: Small Square Spot.

*Noctua xanthographa*: Square Spot Rustic.

*Triphaena ianthina*: Less Broad-bordered Under-wing.



*Triphaena fimbria*: Broad-bordered Underwing.

*Triphaena comes* (orbona): Lesser Yellow Underwing.

*Triphaena pronuba*: Yellow Underwing.

*Amphipyra pyramidea*: Copper Underwing.

*Mania maura*: The Old Lady.

*Taeniocampa Gothica*: Hebrew Character.

*Taeniocampa incerta* (stabilis): Clouded Drab.

\* *Taeniocampa opima*: Northern Drab (O. Wilson's Larvae of the British Lapidoptera).

*Taeniocampa stabilis*: The Quaker.

*Taeniocampa gracilis*: Powdered Quaker.

*Taeniocampa miniosa*: Blossom Underwing (O. Wilson's Larvae, &c.).

*Taeniocampa pulverulenta*: Small Quaker.

*Anchocelis pistacina*: Beaded Chestnut.

*Anchocelis lunosa*: Lunar Underwing.

*Xanthia flavago* (silago): Pink-barred Sallow.

*Tethea retusa*: The Double Kidney.

*Calymnia trapezina*: The Dunbar.

*Dianthoecia nana* (conspersa): Marbled Coronet.  
Oaklands.

*Dianthoecia capsincola*: Lychnis.

*Dianthoecia cucubali*: The Champion.

*Dasypolia templi*: Brindle Ochre.

\* *Aporophyla nigra*: Black Rustic (O. Wilson's Larvae, &c.).

- Miselia Oxyacanthae*: Brindled Crescent.  
*Euplexia Lucipara*: Small Angle Shades.  
*Phlogophora meticulosa*: Angle Shades.  
*Aplecta nebulosa*: The Grey Arches.  
*Aplecta advena*: Pale Shining Brown.  
*Hadena dentina*: The Grey Shears.  
*Hadena oleracea*: The Bright Line.  
*Hadena pisi*: Broom Moth.  
*Hadena contigua*: Beautiful Brocade.  
*Xylocampa lithoriza*: Early Grey.  
*Cucullia umbratica*: The Shark.  
*Gonoptera libatrix*: The Herald.  
*Habrostola triplasia*: Dark Spectacle.  
*Habrostola chryson* (*orichalcea*): Scarce Burnished  
     Brass. Oaklands.  
*Habrostola chrysis*: Burnished Brass.  
*Habrostola iota*: Golden Y.  
*Habrostola gamma*: Silver Y.  
*Heliaca tenebrata* (*arbuti*): Small Yellow Under-  
     wing.  
 \* *Micra ostrina*: Purpled Marbled. Near Pem-  
     brey (Newman's British Moths).  
*Euclidia mi*: Mother Shipton.  
*Euclidia glyphica*: Burnet Noctua.  
*Toxocampa pastinum*: Black Neck. Marshy field  
     at Oaklands.



## GEOMETRAE.

*Urapteryx sambucaria*: The Swallow Tail.

*Epione apiciaria*: Dark-bordered Beauty.

*Rumia luteolata* (*crataegata*): Brimstone.

*Metrocampa margaritaria*: Light Emerald.

*Eurymene dolobraria*: Scorched Wing.

*Pericallia syringaria*: Lilac Beauty. Once taken  
at Oaklands.

*Selenia bilunaria* (*illunaria*): Early Thorn.

\* *Selenia tetralunaria* (*illustraria*): Purple Thorn  
(O. Wilson's Larvae, &c.).

*Odonoptera bidentata*: Scalloped Hazel.

*Crocallis elinguaris*: Scalloped Oak.

*Ennomos alniaria* (*tiliaria*): Canary Shouldered  
Thorn.

*Himera pennaria*: Feathered Thorn.

*Phigalia pedaria* (*pilosaria*): Pale Brindled Beauty.

*Amphidasys betularius*: Peppered Moth.

*Hemerophila abruptaria*: Waved Umber.

*Boarmia repandata*: Mottled Beauty.

*Boarmia gemmaria* (*rhomboidaria*): Willow Beauty.

*Tephrosia crepuscularia*: Small Engrailed.

\* *Gnophos obscuraria*: The Annulet (O. Wilson's  
Larvae, &c.).

*Pseudoterpna pruinata* (*cytisaria*): Grass Emerald.

*Geometra papilionaria*: Large Emerald.

*Iodis lactearia*: Little Emerald.

*Hemithea strigata* (*thymiaria*): Common Emerald.

*Ephyra porata*: False Mocha.

*Eupisteria heparata*: Dingy Shell.

*Acidalia bisetata*: Fan-footed Wave.

*Acidalia subsericata*: Satin Wave.

\* *Acidalia immutata*: Lesser Cream Wave (O. Wilson's Larvae, &c.).

*Acidalia aversata*: Ribband Wave.

*Timandra amataria*: The Blood Vein.

*Cabera pusaria*: White Wave.

*Cabera exanthemata*: Common Wave.

\* *Macaria alternata*: Scarce Peacock (O. Wilson's Larvae, &c.).

*Halia vauaria* (*wavaria*): V Moth.

*Strenia clathrata*: Latticed Heath.

*Panagria petraria*: Brown Silver Line.

*Numeria pulveraria*: Barred Umber.

*Ematurga atomaria*: Common Heath. Near Pendine.

\* *Aspilates ochrearia* (*citraria*): Yellow Belle (O. Wilson's Larvae, &c.).

*Abraxas grossulariata*: The Magpie.

*Lomaspilis marginata*: Clouded Border.

*Hybernica rupicaprararia*: Early Moth.

*Hybernica marginaria* (*progemmaria*): Dotted Border Umber.



*Anisopteryx aescularia*: March Moth.

*Chimatobia brumata*: Winter Moth.

*Oporabia dilutata*: November Moth.

*Larentia viridaria* (*pectinitaria*): Green Carpet.

*Emmelesia affinitata*: The Rivulet.

*Emmelesia albulata*: Grass Rivulet.

*Eupithecia succenturiata*: Bordered Pug.

\* *Eupithecia virgaureata*: Golden Rod Pug (O. Wilson's Larvae, &c.).

\* *Eupithecia irriguata*: Marbled Pug (O. Wilson's Larvae, &c.).

*Eupithecia vulgata*: Common Pug.

*Eupithecia absynthiata*: Wormwood Pug.

\* *Eupithecia minutata*: Ling Pug (O. Wilson's Larvae, &c.).

*Eupithecia abbreviata*: Brindled Pug.

*Eupithecia rectangulata*: Green Pug.

*Hypsipetes trifasciata* (*impluviata*): May Highflyer.

*Hypsipetes sordidata* (*elutata*): July Highflyer.

*Melanthia bicolorata* (*marginata*): Blue-bordered Carpet.

*Melanthia albicillata*: Beautiful Carpet.

*Melanippe unangalata*: Sharp-angled Carpet.

*Melanippe sociata* (*subtristata*): Common Carpet.

*Melanippe montanata*: Silver Ground Carpet.

*Melanippe fluctuata*: Garden Carpet.

- Anticlea badiata*: Shoulder Stripe.
- Anticlea nigro fasciaria* (derivata): The Streamer.
- Coremia designata* (propugnata): Flame Carpet.
- Coremia ferrugata*: Red Twin Spot Carpet.
- Coremia unidentaria*: Dark Barred Twin Spot Carpet.
- Camptogramma bilineata*: Yellow Shell.
- Eucosmia undulata*: Scallop Shell.
- Cidaria corylata*: Broken Barred Carpet.
- Cidaria truncata* (russata): Common Marbled Carpet.
- Cidaria suffumata*: Water Carpet.
- Cidaria silaceata*: Small Phoenix.
- Cidaria prunata* (ribesiaria): Phoenix.
- Cidaria testata*: Chevron.
- Cidaria populata*: Northern Spinach.
- Cidaria fulvata*: Barred Yellow.
- Eubolia limitata* (mensuraria): Small Mallow.
- Eubolia plumbaria*: The Belle.
- Anaitis plagiata*: The Treble Bar.

## PYRALES.

- Rivula sericealis*: Straw dot.
- Zanclognatha tarsipennalis*: Fan-foot.
- Hypena probosciadalis*: Large Snout.



*Anglossa pinguinalis*: Tabby.

*Nomophila noctuella*: The Ubiquitous.

*Pyrausta purpuralis*: Crimson and Gold.

*Eurrhyncha urticata*: Small Magpie.

*Botys pandalis*: Bordered Pearl.

*Ebulea sambucalis*: Elder Pearl.

\* *Ebulea stachydalis*: Betony Pearl (Leach's British Pyralides).

*Pionea forficata*: Garden Pearl.

*Perinephele lancealis*.

\* *Diasemia literata*: Lettered China Mark (Leach's British Pyralides).

\* *Crambus pratellus* (Leach's British Pyralides).

\* *Crambus tristellus* (Leach's British Pyralides).

\* *Crambus culmellus* (Leach's British Pyralides).

\* *Crambus hortuellus* (Leach's British Pyralides).

#### PTEROPHORI.

*Acipitilia pentadactyla*.

*Alucita hexadactyla*.

#### NEUROPTERA.

I have so far only identified nine species of Dragon-flies, namely:—

*Sympetrum striolatum*. Near Oaklands, &c.

*Sympetrum scoticum*. Near Pencader.

*Libellula depressa*. Fairly common.

*Gomphus vulgatissimus*. I saw three or four specimens of this local species near Oaklands in June, 1903, and caught one of them.

*Cordulegaster annulatus*. One of the commonest dragon-flies near Carmarthen.

*Æschna juncea*. One caught by Marjory Barker on Beaule-fawr farm, Llangunnor, July, 1904.

*Calopteryx virgo*. Common.

*Pyrrhosoma nymphula*. Fairly common.

*Agrion puella*. Common.

#### HEMIPTERA HETEROPTERA.

One or two species of *Hydrometra* are common near Carmarthen, and *Velia currens* is often seen. *Limnobates stagnorum* is generally distributed, and the Water Scorpion (*Nepa cinerea*) fairly common, although rather local. The Boat-fly (*Notonecta glauca*) is abundant, and *Corixa Geoffroyi* and one or two other species of that genus are to be found in the neighbourhood.

#### ORTHOPTERA.

Mr. R. Browne, in a note dated 3rd September, 1859, mentions having been given a locust which had been caught on the burrows at Pembrey on the 1st of that month. It was probably a specimen of *Pachytylus migratorius*, which is a casual visitor to this country.

In an article in the 'Field' of April 15th, 1905, an extract is given showing that the Mole Cricket (*Gryllotalpa gryllotalpa*) was an inhabitant of the marshes near Kidwelly in the year 1693 or thereabouts. It would be interesting to know whether this insect is still to be found there. It is now a local insect in the south of England.



## THE MOLLUSCA OF CARMARTHENSHIRE.

I HAVE not had much opportunity of studying the Sea Shells of the county. The species given below were mostly found at Pendine during a stay of three weeks in June, 1904.

Those marked \* have not been found by me in the county, but have been recorded as occurring on Laugharne or Pendine sands either in a list of Mollusca by Mr. Bartlett Span or in the article on Marine Mollusca contained in Mason's guide to Tenby.

## SEA SHELLS OF CARMARTHENSHIRE.

*Nucula nucleus.*

*Mytilus edulis.*

*Ostraea edulis.*

*Cyprina islandica.*

*Tellina balthica.*

*Tellina tenuis.*

*Tellina fabula.*

*Tellina squalida.*

\* *Scrobicularia alba.*

*Scrobicularia piperata.*

*Donax vittatus.*

*Macra solida.*

*Macra subtruncata.*

*Macra stultorum.*

\* *Venus exoleta.*

\* *Venus lincta.*

*Venus gallina.*

- Lucinopsis undata.  
Cardium echinatum.  
Cardium edule.  
\* Psammobia tellinella.  
Psammobia ferroensis.  
\* Mya arenaria.  
Corbula gibba.  
Lutraria elliptica.  
Ceratisolen legumen.  
Solen ensis.  
Solen siliqua.  
Solen vagina.  
\* Pholas dactylus.  
Pholas candida.  
\* Pholas parva.  
Thracia papyracea.  
\* Dentalium tarentinum.  
Chiton (?) fascicularis.  
Patella vulgata.  
Trochus cinerarius.  
Trochus umbilicatus.  
\* Sclalaria turtonae.  
\* Sclalaria communis.  
\* Sclalaria trevelyana.



- \* *Scalaria clathratula*.  
*Natica catena*.
  - \* *Natica alderi*.  
*Littorina obtusata*.  
*Littorina littorea*.  
*Purpurea lapillus*.  
*Nassa reticulata*.  
*Nassa incrassata*.  
*Buccinium undatum*.  
*Fusus gracilis*.
  - \* *Mangelia gracilis*.  
*Actaeon tornatilis*.
  - \* *Tornatinus obtusus*.  
*Philine aperta*.
- 

I have already made mention of the Land and Freshwater Mollusca in the introduction. The following species, with the exception of those marked \*, have all been found by me in the county. I am much indebted to Mr. J. W. Taylor, one of the leading authorities on the subject, for kindly examining and identifying many of my specimens.

#### LAND AND FRESHWATER MOLLUSCA.

*Sphaerium corneum*. Common in streams.

*Sphaerium lacustre*. Near Kidwelly and elsewhere.

*Pisidium fontinale*. Near Oaklands.

*Pisidium pusillum*. Both the type and the variety obtusale occur near Oaklands.

*Unio margaritifer*. In the Towy and Teifi rivers.

\* *Anodonta cygnea*. Mr. R. Browne gave me two valves which he had obtained some years ago from the now non-existent Kidwelly canal. I do not know of any recent specimens.

*Paludestrina (Hydrobia) ventrosa*. Kidwelly mud flats and Pibwr stream.

*Planorbis albus*. River Gwendraeth, Pembrey Canal, &c.

*Planorbis spirorbis*. Common.

*Planorbis vortex*. In several localities, but not as common as the last species.

*Planorbis contortus*. Ponds near Kidwelly on leaves of Water Parsnip.

*Bullinus hypnorum*. Abundant in shallow grassy pools in the neighbourhood of Kidwelly.

*Physa fontinalis* var. *oblonga*. Stream on Abergwili common.

*Limnaea peregra*. Very common in ponds and streams. The variety *burnetii* with intorted apex is to be found in Llynfan-fach.

*Limnaea palustris*. Very common.

\* *Limnaea auricularia*. Recorded as occurring in the county.

*Limnaea truncatula*. Rather local, but abundant in some places.

*Ancylus fluviatilis*. In most rivers and quick-running streams.

*Arion ater*. Very common.



- Arion hortensis*. Common in gardens.
- Limax marginatus*. On trees at Oaklands.
- Limax maximus*. Occasionally found.
- Succinea putris*. Fairly common in damp places.
- \* *Succinea elegans*. Recorded as occurring in the county.
- Vitrina pellucida*. Fairly common.
- Hyalinia (zonites) lucida*. Gardens at Carmarthen and at Oaklands.
- Hyalinia (zonites) cellaria*. Common.
- Hyalinia (zonites) alliaria*. Oaklands, &c.
- Hyalinia (zonites) crystallina*. Not uncommon.
- Hyalinia (zonites) fulva*. Once found at Oaklands.
- \* *Hyalinia (zonites) helvetica*. Recorded as occurring in the county.
- \* *Hyalinia (zonites) nitidula*. Recorded as occurring in the county.
- Helix aculeata*. Two found at Oaklands.
- Helix aspersa*. Very common.
- Helix nemoralis*. Common.
- Helix hortensis*. Common.
- Helix arbustorum*. Not uncommon but local.
- Helix rufescens*. Limestone rocks.
- Helix hispida*. Fairly common.
- Helix granulata*. Cliffs at Pendine.
- Helix virgata*. Common on limestone and occasionally found on other soils.

*Helix caperata*. Generally distributed.

*Helix itala*. Pendine and Marros, and on limestone rocks in Llangendeirne parish.

*Helix rotundata*. Very Common.

*Helix rupestris*. Dryslwyn Castle, Dynevor Park, and near Pendine.

*Helix pulchella*. Pendine cliffs.

*Helix acuta*. Ferryside, Kidwelly, and Pendine.

*Buliminus obscurus*. Rather local but generally distributed.

*Pupa cylindracea*. Common on walls and rocks.

*Clausilia bidentata*. Very common.

*Cochlicopa lubrica*. Not uncommon.

*Caeciliodes acicula*. Several specimens found in old excavated Roman wall on East Parade, Carmarthen, about four feet below the level of the ground. I have also found one specimen at Kidwelly Castle and some on Pendine cliffs.

*Carychium minimum*. Woods, &c., Oaklands, and elsewhere.

*Cyclostoma elegans*. Pendine Cliffs.

#### CRUSTACEA ECHINODERMATA, &c.

I cannot give details with regard to the lower forms of animal life, but I may mention that the Long-armed or Masked Crab (*Corystes cassivelaunus*), the Short Crab (*Portumnus variegatus*), the Butthorn Starfish (*Asterias aurantiacas*), and the Sand Starfish (*Ophiura texturata*) are all to be found on Pendine sands, and that the freshwater Crayfish (*Astacus fluviatilis*) occurs, I am told, in a stream near Llanarthney.



## THE FLOWERING PLANTS OF CARMARTHENSHIRE.

To attempt to make out anything like a complete list of the flora of a county is rather a formidable matter, and I must begin by recording my thanks to Dr. H. Lewis Jones, of Harley Street, who has given me great assistance. Without the help of his list of Carmarthenshire plants and the loan of his copy of Watson's *Topographical Botany* (2nd edition, 1883), I should never have undertaken the task. I am much indebted, too, to Mr. H. H. Knight, of Llandovery College, for the addition of several interesting species from East Carmarthenshire.

I have myself seen growing in the county all the plants on the following list except those marked with an asterisk. Where no locality is given the plant has been found by me within a three mile radius of Carmarthen.

Those marked † are new records for the county, *i.e.* not recorded as Carmarthenshire plants in '*Topographical Botany*.'

'W' after the name denotes plants not seen by me, but recorded for the county in Watson's book, and any remarks following are copied from that work, and show the authority for the record; *e.g.* 'Motley Cat.' refers to a manuscript flora of some portion of the county, chiefly the Llanelly district made by Mr. James Motley. I have also added the names of a few additional species recorded in Mr. Arthur Bennett's '*Supplement to Topographical Botany*,' now appearing in *The Journal of Botany*. These are marked 'Supp. to W.'

The numbers and Latin names are taken from the ninth and latest edition of the London Catalogue of British Plants published in 1895, the English names from Sowerby's *English Botany*. In some cases I have added synonyms in brackets for the sake of identification.

The only drawback to the use of the London Catalogue is, that it is often in advance of the text books, which makes it difficult to identify the species, especially in a genus which has been much altered and split up.

The Bramble family will illustrate this well. The seventh edition of the London Catalogue gives 44 species of *Rubus*, the eighth gives 61, and the ninth 98.

I have retained the following six species on the list as



Watson gives them with a query, but they are very doubtful records:—7 *Thalictrum flavum*; 188 *Polygala calcarea*; 612 *Ribes alpinum*; 805 *Inula crithmoides*; 859 *Carduus eriophorus*; and 867 *Onopordon Acanthium*.

# 1.—RANUNCULACEAE.

- 1 *Clematis vitalba*: Common Traveller's Joy.  
Ferry-side.
- \* 3 *Thalictrum dunense*: Sea Lesser Meadow  
Rue. W. On authority of Dr. H. L. Jones.
- † 4 *Thalictrum collinum*: Mountain Lesser Mea-  
dow Rue. Near Llyn-fan-fach, Llangadock.
- \* 7 *Thalictrum flavum*: Common Meadow Rue.  
W. ' ? once seen.' A doubtful record.
- 9 *Anemone nemorosa*: Wood Anemone.
- † 14 *Ranunculus circinatus*: Rigid-leaved Water  
Crowfoot. Near Kidwelly.
- 15 *Ranunculus fluitans*: River Water Crowfoot.
- 20 *Ranunculus peltatus*: Common Water Crow-  
foot.
- † 21 *Ranunculus Baudotii*: Baudot's Water Crow-  
foot. Near Kidwelly.
- 23 *Ranunculus Lenormandi*: Lenormand's Water  
Crowfoot.
- 24 *Ranunculus hederaceus*: Ivy-leaved Water  
Crowfoot.
- 25 *Ranunculus sceleratus*: Celery-leaved Water  
Crowfoot.
- 27 *Ranunculus Flammula*: Lesser Spearwort.



- 32 *Ranunculus acris*: Upright Meadow Crowfoot.
- 33 *Ranunculus repens*: Creeping Crowfoot.
- 34 *Ranunculus bulbosus*: Bulbous Crowfoot.
- \*35 *Ranunculus sardous* (*hirsutus*): Hairy Crowfoot. W. 'Motley Cat.'
- 36 *Ranunculus parviflorus*: Small-flowered Crowfoot. Pendine.
- \*37 *Ranunculus arvensis*: Corn Crowfoot. W. 'Motley Cat.'
- 39 *Ranunculus Ficaria*: Lesser Celandine.
- 40 *Caltha palustris*: Common Marsh Marigold.
- † 42 *Trollius europaeus*: Mountain Globe Flower. Near Llangadock.
- †\*43 *Helleborus viridis*: Green Hellebore. Found by Mr. Browne near Kidwelly, and identified by me.
- 46 *Aquilegia vulgaris*: Common Columbine.

## 2.—BERBERIDEAE.

- †\*51 *Berberis vulgaris*: Common Barberry. Found by Dr. H. L. Jones. Also seen by Mr. Knight near Pumpsaint.

## 3.—NYMPHÆACEÆ.

- 53 *Nymphaea lutea*: White Water Lily. Llynllechowen near Gorslas.
- 55 *Castalia speciosa*: Common Yellow Water Lily. Ponds near Towy, &c.

## 4.—PAPAVERACEAE.

- \*57 *Papaver Rhoeas*: Common Red Poppy. W.
- 58 *Papaver dubium*: Long smooth-headed Poppy.
- 59 *Papaver argemone*: Long Prickly-headed Poppy. Ferryside.
- †\*61 *Meconopsis cambrica*. Yellow Welsh Poppy.  
Found by Mr. Knight near Llandovery. Probably an escape.
- 62 *Glaucium flavum*: Yellow Horn Poppy. Kidwelly.
- 65 *Chelidonium majus*: Celandine.

## 5.—FUMARIACEAE.

- 67 *Neckeria lutea*: Yellow Fumitory. Occurring as an escape at Llangendeirne, &c.
- 68 *Neckeria claviculata*: White Climbing Fumitory.
- \*70 *Fumaria Boraiei*: Boreau's Rampant Fumitory.  
W. Received from Dr. H. L. Jones. Also found by Mr. Knight near Llandovery.
- † 71 *Fumaria confusa*: Bastard's Rampant Fumitory. Near Ferryside.
- 74 *Fumaria Officinalis*. Common Fumitory.

## 6.—CRUCIFERAE.

- 79 *Cheiranthus Cheiri*: Wallflower. Old walls but not native.
- 80 *Nasturtium officinale*: Water Cress.



- 81 *Nasturtium sylvestre*: Creeping Yellow Cress.  
Marsh opposite Volunteer range.
- 82 *Nasturtium palustre*: Marsh Yellow Cress.  
Banks of Towy.
- 84 *Barbarea vulgaris*: Common Yellow Rocket.
- 88 *Barbarea praecox*: American Cress. Occurs  
as an escape.
- 93 *Arabis hirsuta* (*sagittata*): Hairy Rock Cress.  
Carregcennen.
- 97 *Cardamine pratensis*: Meadow Lady's Smock.
- 98 *Cardamine hirsuta*: Common Hairy Lady's  
Smock.
- 99 *Cardamine flexuosa*: Wood Hairy Lady's  
Smock.
- 109 *Erophila vulgaris* (*Draba verna*): Common  
Whitlow Grass.
- 112 *Cochlearia officinalis*: Common Scurvy Grass.  
Banks of Towy.
- 115 *Cochlearia danica*: Hastate-leaved Scurvy  
Grass.
- \*117 *Cochlearia anglica*: Long-leaved Scurvy  
Grass. W. 'Motley Cat.' Also found by Dr. H.  
L. Jones.
- 118 *Cochlearia armoracia*: Horse Radish. Occurs  
as an escape.
- 119 *Hesperis matronalis*: Dame's Rocket. Occurs  
as an escape.
- 120 *Sisymbrium Thalianum* (*Arabis thaliana*):  
Thale Cress. Ferryside, Kidwelly, &c.

- 121 *Sisymbrium officinale*: Common Hedge Mustard.
- \*123 *Sisymbrium Sophia*: Flix Weed. W. 'Motley Cat.'
- 126 *Sisymbrium alliaria*: Garlic Hedge Mustard.
- \*127 *Erysimum cheiranthoides*: Treacle Hedge Mustard. W. 'Motley Cat.'
- † 130 *Subularia aquatica*: Water Awlwort. Llan-yfan-fach. Also recorded in Supp. to W. on authority of 'Riddelsdell.'
- 132 *Brassica Napus*: Rape. Occurs as an escape.
- 139 *Brassica Sinapistrum*: Wild Mustard.
- \*140 *Brassica alba*: White Mustard. W. 'Motley Cat.'
- 142 *Diplotaxis tenuifolia*: Wall Rocket.
- 143 *Diplotaxis muralis*: Common Sand Rocket. Ferryside, Kidwelly, &c.
- 144 *Bursa bursa pastoris*: Shepherd's Purse.
- 145 *Coronopus didymus*: Lesser Swine's Cress. Ferryside, Kidwelly, and Pendine.
- 146 *Coronopus ruelii* (*Senebiera Coronopus*): Common Swine's Cress.
- \*148 *Lepidium ruderae*: Narrow-leaved Pepperwort. W. 'Motley Ms.'
- 149 *Lepidium sativum*: Garden Cress. Occurs as an escape.
- \*150 *Lepidium campestre*: Common Mithridate Pepperwort. W. 'Motley Cat.'
- 151 *Lepidium hirtum*: Hairy Mithridate Pepperwort.



- 161 *Cakile maritima*: Sea Rocket. Llanstephan, Ferryside, and Pendine.
- \*162 *Raphanus Raphanistrum*: Wild Radish. W. Also found by Dr. H. L. Jones.
- 163 *Raphanus maritimus*: Sea Radish. Ferryside.

## 7.—RESEDAECÆ.

- \*165 *Reseda lutea*: Wild Mignonette. W. 'Motley Cat.' Also found by Mr. Knight at Brynamman, just inside the county boundary.
- 166 *Reseda luteola*: Weld. Pendine and Llanelly.

## 8.—CISTINEÆ.

- 170 *Helianthemum Chamaecistus*: Common Rock Rose. Carreg Cennen.

## 9.—VIOLARIÆ.

- 172 *Viola palustris*: Marsh Violet.
- 173 *Viola odorata*: Sweet Violet
- \*174 *Viola hirta*: Hairy Violet. W. 'Motley Cat.' Also found by Dr. H. L. Jones.
- †\*175 *Viola silvestris* (Reichenbachiana): Reichenbach's Dog Violet. Supp. to W., on authority of 'Marshall.'
- 176 *Viola riviniana*: Dog Violet.
- 178 *Viola ericetorum*: Heath Violet. Ferryside, Llangunnock, &c.
- 181 *Viola Tricolor*: Large-flowered Field Pansy. Conwil, &c.

- 182 *Viola arvensis*: Small-flowered Pansy.  
 183 *Viola Curtisii*: Sea Pansy. Ferryside, Pendine, and Kidwelly.  
 \*184 *Viola lutea*: Mountain Pansy. W. Mr. Knight tells me that it occurs frequently near Llandovery.

## 10.—POLYGALEAE.

- 185 *Polygala vulgaris*: Common Milkwort.  
 †\*186 *Polygala oxyptera*. Found by Mr. Knight near Llandovery.  
 † 187 *Polygala serpyllacea*: Lesser Common Milkwort. Pendine.  
 \*188 *Polygala calcarea*: Chalk Milkwort. W. ' ? Motley Ms.' A doubtful record.

## 12.—CARYOPHYLLEAE.

- \*193 *Dianthus armeria*: Deptford Pink. W. 'Mrs. Oakeshott rec.' Also found by Dr. H. L. Jones.  
 \*194 *Dianthus deltoides*: Maiden Pink. W. 'Mrs. Oakeshott rec.'  
 200 *Saponaria officinalis*: Common Soapwort. Occasionally as an escape.  
 201 *Silene Cucubalus*: Common Bladder Campion.  
 † 202 *Silene maritima*: Sea Bladder Campion. Near Llynfan-fach, Llangadock. Also found by Mr. Knight near Llandovery. Recorded in Supp. to W. on authority of 'Ley 1896.'  
 205 *Silene anglica*: English Catchfly. Near the Carmarthen Tinworks.



- 213 *Lychnis Alba*: White Campion.
- 214 *Lychnis dioica*: Red Campion.
- 215 *Lychnis Flos Cuculi*: Ragged Robin.
- 218 *Lychnis Githago*: Corn Cockle. Not common.
- †\*220 *Cerastium quaternellum*: Upright Moenchia.  
Found by Mr. Knight at Llandovery and Llangadock.
- 221 *Cerastium tetrandum*: Dark Green Mouse Ear Chickweed. Pendine.
- 224 *Cerastium glomeratum*: Broad-leaved Mouse Ear Chickweed.
- 225 *Cerastium triviale*: Narrow-leaved Mouse Ear Chickweed.
- \*230 *Stellaria aquatica*: Water Chickweed. W.  
'Motley Cat.'
- †\*231 *Stellaria nemorum*: Wood Chickweed.  
Found near Llandovery by Mr. Knight.
- 232 *Stellaria media*: Common Chickweed.
- 234 *Stellaria Holostea*: Greater Stitchwort.
- 236 *Stellaria graminea*: Lesser Stitchwort.
- 237 *Stellaria uliginosa*: Bog Stitchwort.
- 242 *Arenaria trinervis*: Three-nerved Sandwort.
- 243 *Arenaria serpyllifolia*: Thyme-leaved Sandwort.
- 247 *Arenaria peploides*: Sea Purslane. Common on sea shores.
- 249 *Sagina maritima*: Sea Pearlwort. Kidwelly Burrows.

- 250 *Sagina apetala*: Common Small-flowered Pearlwort.
- 253 *Sagina procumbens*: Procumbent Pearlwort.
- †\*257 *Sagina subulata*: Awl-shaped Pearlwort.  
Found by Mr. Knight near Llandovery.
- 258 *Sagina nodosa*: Knotted Spurrey. Ferryside and Kidwelly.
- 259 *Spergula arvensis*: Corn Spurrey.
- \*260 *Buda rubra*: Field Sandwort-Spurrey. W.
- † 261 *Buda marina*: Lesser Sea Sandwort-Spurrey.  
Banks of Towy.
- 262 *Buda media*: Greater Sea Sandwort-Spurrey.
- \*263 *Buda rupestris*: Rock Sea Sandwort-Spurrey.  
W. Received Dr. H. L. Jones.

## 13.—PORTULACEAE.

- 267 *Montia fontana*: Water Blinks.

## 15.—ELATINEAE.

- †\*269 *Elatine hexandra*: Hexandrous Waterwort.  
Recorded in Supp. to W. on authority of 'Griffith J. Bot 1892, 281.'

## 16.—HYPERICINEAE.

- 271 *Hypericum Androsaemum*: Tutsan.
- 274 *Hypericum calycinum*: Large-flowered St. John's Wort. As an escape.
- 275 *Hypericum perforatum*: Dotted-leaved St. John's Wort.



- 276 *Hypericum dubium*: Imperforate St. John's Wort.
- 277 *Hypericum quadratum*: Square-stemmed St. John's Wort.
- 279 *Hypericum humifusum*: Trailing St. John's Wort.
- 281 *Hypericum pulchrum*: Small Upright St. John's Wort.
- \*283 *Hypericum montanum*: Mountain St. John's Wort. W. Also found by Dr. H. L. Jones.
- 284 *Hypericum elodes*: Marsh St. John's Wort. Gorsgoch and near Pencader.

## 17.—MALVACEAE.

- \*285 *Althaea officinalis*: Marsh Mallow. W. 'Moggridge sp.' Also found by Dr. H. L. Jones.
- 287 *Lavatera arborea*: Tree Mallow. Pendine cliffs.
- 289 *Malva moschata*: Musk Mallow.
- 290 *Malva sylvestris*: Common Mallow.
- 291 *Malva rotundifolia*: Dwarf Mallow. Nant-garedig, Ferryside, &c.

## 19.—LINEAE.

- 299 *Linum Catharticum*: Purging Flax.
- \*301 *Linum angustifolium*: Narrow-leaved Flax. W. 'Motley Cat.'
- 302 *Linum usitatissimum*: Common Flax.

## 20.—GERANIACEAE.

- \*303 *Geranium sanguineum*: Bloody Crane's Bill.  
W. 'Motley Cat.'
- 306 *Geranium phœum*: Dusky Crane's Bill.  
Johnstown. As an escape.
- †\*308 *Geranium pratense*: Blue Meadow Crane's  
Bill. Found by Mr. Knight near Llandovery and  
Golden Grove.
- \*309 *Geranium pyrenaicum*: Mountain Crane's  
Bill. W. '?' A doubtful record.
- 310 *Geranium molle*: Soft Crane's Bill.
- 311 *Geranium pusillum*: Small-flowered Crane's  
Bill. Pendine and Kidwelly.
- 313 *Geranium dissectum*: Jagged-leaved Crane's  
Bill.
- 314 *Geranium columbinum*: Long-stalked Crane's  
Bill.
- 315 *Geranium lucidum*: Shining Crane's Bill.
- 316 *Geranium Robertianum*: Herb Robert.
- 317 *Erodium cicutarium*: Common Stork's Bill.  
All along the coast.
- †\*318 *Erodium moschatum*: Musk Stork's Bill.  
Found by Dr. H. L. Jones.
- † 319 *Erodium maritimum*: Sea Stork's Bill.  
Pendine Cliffs.
- 320 *Oxalis acetosella*: Wood Sorrel.

## 21.—ILICINEAE.

- 326 *Ilex Aquifolium*: Common Holly.



## 22.—CELASTRINEAE.

- 327 *Euonymus europaeus*: Spindle Tree. Near Cwmffrwd, Pendine, &c.

## 23.—RHAMNEAE.

- †\*328 *Rhamnus catharticus*: Purging Buckthorn. Supp. to W. on authority of 'Record Club Reports, 1883.'
- 329 *Rhamnus Frangula*: Berry-bearing Alder. Near Brechfa.

## 24.—SAPINDACEAE.

- 330 *Acer Pseudo-platanus*: Sycamore.
- 331 *Acer campestre*: Maple.

## 25.—LEGUMINOSAE.

- 333 *Genista anglica*: Needle Furze.
- 335 *Genista tinctoria*: Dyer's Green Weed. Near Oaklands.
- 336 *Ulex europaeus*: Common Furze.
- \*337 *Ulex Galii*: Planchon's Furze. W. Received from Dr. H. L. Jones. Found by Mr. Knight near Llandovery.
- 339 *Cytisus scoparius*: Common Broom.
- 340 *Ononis repens*: Procumbent Rest Harrow.
- \*344 *Medicago sativa*: Common Lucerne. Found by Dr. H. L. Jones. An escape.
- 347 *Medicago lupulina*: Black Medick.

- † 351 *Melilotus officinalis*: Common Melilot.  
Near Kidwelly.
- \*352 *Melilotus alba*: White Melilot. W.
- † 355 *Trifolium subterraneum*: Subterranean Trefoil. Pendine.
- 356 *Trifolium pratense*: Red Clover.
- 357 *Trifolium medium*: Zigzag Trefoil.
- 363 *Trifolium arvense*: Hare's Foot Trefoil.  
Ferryside and Kidwelly.
- 366 *Trifolium scabrum*: Rough Rigid Trefoil.  
Pendine.
- † 370 *Trifolium hybridum*: Alsike Clover. Once  
near Cwmffrwd. An escape.
- 371 *Trifolium repens*: White Clover.
- 372 *Trifolium fragiferum*: Strawberry-headed  
Trefoil. Near Kidwelly.
- 375 *Trifolium procumbens*: Hop Trefoil.
- 376 *Trifolium dubium*: Lesser Yellow Trefoil.
- 377 *Trifolium filiforme*: Least Yellow Trefoil.  
Pendine.
- 378 *Anthyllis Vulneraria*: Common Kidney  
Vetch. Llanstephan, Pendine, and Kidwelly.
- 379 *Lotus corniculatus*: Common Bird's Foot  
Trefoil.
- 380 *Lotus tenuis*: Slender Bird's Foot Trefoil.
- 381 *Lotus uliginosus*: Marsh Foot Bird's Trefoil.
- 389 *Ornithopus perpusillus*: Least Bird's Foot.
- 393 *Vicia hirsuta*: Hairy Tare.



- \*394 *Vicia gemella* (tetrasperma): Four-seeded  
Slender Tare. W. 'Motley Cat.'
- 396 *Vicia cracca*: Tufted Vetch.
- 397 *Vicia Orobus*: Wood Bitter Vetch. Near  
Blaenau farm, Llangadock. Found by Mr. Knight  
near Llandovery.
- 399 *Vicia sepium*: Bush Vetch.
- 403 *Vicia sativa*: Cultivated Vetch. As an  
escape.
- 404 *Vicia angustifolia*: Common Wild Vetch.
- † 405 *Vicia lathyroides*: Spring Vetch. Ferryside  
Sand Hills.
- 411 *Lathyrus pratensis*: Meadow Vetchling.
- 414 *Lathyrus sylvestris*: Narrow-leaved Ever-  
lasting Pea. Ferryside and Llanstephan.
- 417 *Lathyrus montanus*: Tuberous Bitter Vetch.

## 26.—ROSACEAE.

- 419 *Prunus spinosa*: Blackthorn.
- 420 *Prunus insititia*: Bullace.
- 422 *Prunus Avium*: Wild Cherry.
- †\*424 *Prunus Padus*: Bird Cherry. Found by Mr.  
Knight.
- †\*425 *Spiraea salicifolia*: Willow-leaved Spiraea.  
Found by Dr. H. L. Jones. An escape.
- 426 *Spiraea Ulmaria*: Meadow sweet.
- † 427 *Spiraea Filipendula*: Dropwort. Once near  
Nantybwl, Carmarthen.

- 428 *Rubus idæus*: Raspberry.
- 523 *Rubus corylifolius*: Hazel-leaved Bramble.
- 525 *Rubus caesius*: Dewberry. Pendine.
- †\*526 *Rubus Saxatilis*: Stone Bramble. Found by Mr. Knight near Gwynfe.
- 529 *Geum Urbanum*: Wood Avens.
- †\*530 *Geum rivale*: Water Avens. Found by Mr. Knight on banks of River Sawdde, &c. The hybrid form intermedium also occurs there, Mr. Knight tells me. Also recorded in Supp. to W. on authority of 'Record Club, 1883.'
- 531 *Fragaria vesca*: Wild Strawberry.
- 532 *Fragaria elatior*: Hautbois Strawberry.
- 535 *Potentilla Fragariastrum*: Barren Strawberry.
- 538 *Potentilla silvestris*: Common Tormentil.
- 539 *Potentilla procumbens*: Creeping Tormentil.
- 540 *Potentilla reptans*: Creeping Cinquefoil.
- 541 *Potentilla Anserina*: Silver Weed.
- 545 *Potentilla palustris*: Marsh Cinquefoil.
- 547 *Alchemilla arvensis*: Parsley Piert.
- 548 *Alchemilla vulgaris*: Common Lady's Mantle.  
Llangadock and Llandoverly.
- 551 *Agrimonia Eupatoria*: Common Agrimony.
- 553 *Poterium Sanguisorba*: Common Salad Burnet. Pendine, Carreg Cennen, and on limestone rocks in Llangendeirne parish.
- 555 *Poterium officinale*: Great Burnet.



- 556 *Rosa pimpinellifolia*: Common Burnet Rose.  
Pendine.
- \*559 *Rosa mollis*: Soft-leaved Rose. W. 'Ley  
rec.' Also found by Dr. H. L. Jones.
- 560 *Rosa tomentosa*: Downy-leaved Rose.
- \*561 *Rosa rubiginosa*: Common Sweet Briar.  
W. Found by Dr. H. L. Jones.
- \*562 *Rosa micrantha*: Small-flowered Briar. W.  
'Motley Cat.'
- 565 *Rosa canina*: Common Dog Rose.
- \*567 *Rosa stylosa*: Columnar-styled Rose. W.  
Also found by Dr. H. L. Jones.
- 568 *Rosa arvensis*: White-flowered Trailing Rose.
- \*576 *Pyrus torminalis*: Wild Service Tree. W.  
'Motley Cat.'
- †\*577 *Pyrus Aria*: Common White Beam. Supp.  
to W. on authority of 'Ley.'
- 583 *Pyrus Aucuparia*: Mountain-ash.
- \*584 *Pyrus communis*: Wild Pear. W. Also  
found by Dr. H. L. Jones.
- 586 *Pyrus Malus*: Crab Apple.
- 588 *Crataegus Oxyacantha*: Common White  
Thorn.

## 27.—SAXIFRAGEAE.

- 598 *Saxifraga tridactylites*: Rue-leaved Saxifrage.
- † 601 *Saxifraga granulata*: White Meadow Saxi-  
frage. Towy Valley near Llanegwad and Gwen-  
draeth Valley. Found by Mr. Knight near Llan-  
dover.

- †\*607 *Saxifraga hypnoides*: Mossy Saxifrage.  
Found by Mr. Knight near Llynnyfan-fach, Llangadock. Also recorded in Supp. to W. on authority of 'Record Club, 1883.'
- 608 *Chrysosplenium oppositifolium*: Opposite leaved Golden-Saxifrage.
- †\*609 *Chrysosplenium alternifolium*: Alternate-leaved Golden Saxifrage. Found by Mr. Knight near Llandovery and Llangadock.
- 611 *Ribes Grossularia*: Gooseberry.
- \*612 *Ribes alpinum*: Tasteless Mountain Currant. W. 'Milne.' A doubtful record.
- 613 *Ribes rubrum*: Red Currant.

## 28.—CRASSULACEAE.

- 616 *Cotyledon Umbilicus*: Common Navelwort.
- † 617 *Sedum roseum* (*rhodiola*): Rose Root.  
Near Llynnyfan-fach, Llangadock. Also recorded in Supp. to W. on authority of 'Ley 1896.'
- 618 *Sedum Telephium*: Orpine.
- 620 *Sedum album*: White Stonecrop.
- 622 *Sedum anglicum*: English Stonecrop.
- 623 *Sedum acre*: Biting Stonecrop.
- † 626 *Sedum rupestre*: Rock Stonecrop. Rocks and Walls near Danygraig, &c.
- †\*627 *Sedum Forsterianum*: Forster's Stonecrop.  
Found by Mr. Knight near Llynnyfan-fach.
- 628 *Sempervivum tectorum*: Common House Leek.



## 29.—DROSERACEAE.

- 629 *Drosera rotundifolia*: Round-leaved Sundew.  
 631 *Drosera intermedia*: Lesser Long-leaved  
 Sundew. Gorsgoch. Found by Mr. Knight near  
 Carmel, Llandilo.

## 30.—HALORAGAEAE.

- \*632 *Hippuris vulgaris*: Common Mare's Tail.  
 W. 'Motley Cat.'  
 †\*635 *Myriophyllum alternifolium*: Alternate-  
 flowered Water Milfoil. Found by Mr. Knight  
 near Llandovery. Also recorded in Supp. to W.  
 on authority of 'Marshall.'  
 636 *Callitriche verna*: Vernal Water Starwort.  
 639 *Callitriche hamulata*: Hooked Starwort.  
 Near Abergwili.  
 †\*640 *Callitriche obtusangula*. Supp. to W. on  
 authority of 'Ley.'

## 31.—LYTHRARIEAE.

- 643 *Peplis Portula*: Water Purslane. Near  
 Pencader.  
 644 *Lythrum Salicaria*: Purple Loostrike.

## 32.—ONAGRARICAE.

- 646 *Epilobium angustifolium*: French Willow.  
 647 *Epilobium hirsutum*: Great Hairy Willow  
 Herb.  
 648 *Epilobium parviflorum*: Small-flowered Hairy  
 Herb.

- 649 *Epilobium montanum*: Broad-leaved Willow herb.
- †\*652 *Epilobium adnatum*: Long-podded Square stalked herb. Found by Dr. H. L. Jones.
- 653 *Epilobium obscurum*: Short-podded square stalked herb.
- 655 *Epilobium palustre*: Narrow-leaved Marsh herb.
- 659 *Oenothera biennis*: Common Evening Primrose. Ferryside and Kidwelly. Escape.
- 661 *Circaea lutetiana*: Common Enchanter's nightshade.
- †\*662 *Circaea alpina*: Alpine Enchanter's Nightshade. Mr. Knight has found this species and the variety *intermedia* at Ystradffin.

## 34.—UMBELLIFERAE.

- 664 *Hydrocotyle vulgaris*: Marsh Pennywort.
- 665 *Eryngium maritimum*: Sea Holly. Ferry-side, Pendine, &c.
- 668 *Sanicula europaea*: Wood Sanicle.
- \*670 *Conium maculatum*: Common Hemlock. W. Also found by Dr. H. L. Jones.
- 671 *Smyrniolus olusatrum*: Common Alexanders.
- 677 *Apium graveolens*: Wild Celery.
- 678 *Apium nodiflorum*: Procumbent Water-parsnip.
- 679 *Apium inundatum*: Least Water-parsnip. Penlan Pond, &c.



- 682 *Carum verticillatum*: Whorled Caraway.  
Not uncommon in damp meadows.
- 685 *Carum carui*: Common Caraway. Escape.
- \*687 *Sison Amomum*: Hedge Stonewort. W.  
'Motley Cat.'
- † 690 *Sium erectum*: Water Parsnip. Near  
bridge over Whityer stream near Laugharne.
- 691 *Ægopodium Podagraria*: Common Gout-  
weed.
- 692 *Pimpinella Saxifraga*: Common Burnet Saxi-  
frage.
- †\*693 *Pimpinella major*: Greater Burnet Saxifrage.  
Found by Dr. H. L. Jones.
- 694 *Conopodium denudatum*: Common Earth-  
nut.
- †\*695 *Myrrhis odorata*: Sweet Cicely. Found by  
Mr. Knight near Myddfai.
- 696 *Chaerophyllum temulum*: Rough Chervil.
- \*697 *Scandix Pecten-Veneris*: Common Venus'  
Comb. W. Said by Mr. Knight to be found occa-  
sionally near Llandovery.
- \*698 *Anthriscus vulgaris*: Common Chervil. W.  
'Motley Cat.'
- 699 *Anthriscus sylvestris*: Wild Chervil.
- 700 *Anthriscus Cerefolium*: Garden Chervil.  
Escape.
- \*702 *Foeniculum vulgare*: Common Fennel. W.  
'Motley Cat.' Also found by Dr. H. L. Jones.
- 703 *Crithmum maritimum*: Rock Samphire.  
Llanstephan and Pendine.

- 707 *Œnanthe Lachenalii*: Parsley Water Dropwort.
- 708 *Œnanthe crocata*: Hemlock Dropwort.
- 711 *Æthusa Cynapium*: Common Fool's Parsley.
- 717 *Angelica sylvestris*: Wild Angelica.
- \*722 *Peucedanum sativum*: Common Parsley. W.
- 723 *Heracleum Sphondylium*: Common Cow Parsnip.
- 726 *Daucus Carota*: Wild Carrot.
- 727 *Daucus gummifer*: Sea Carrot. Pendine Cliffs.
- \*728 *Caucalis latifolia*: Great Bur-Parsley. W.  
'Three specimens.'
- \*730 *Caucalis arvensis*: Field Hedge Parsley. W.
- 731 *Caucalis Anthriscus*: Upright Parsley.
- 732 *Caucalis nodosa*: Knotted Parsley.

## 35.—ARALIACEAE.

- 733 *Hedera Helix*: Common Ivy.

## 36.—CORNACEAE.

- 735 *Cornus sanguinea*: Common Dogwood.  
Laugharne, Llanybri, and Pendine.

## 37.—CAPRIFOLIACEAE.

- 736 *Adoxa Moschatellina*: Tuberous Moschatel.
- 737 *Sambucus nigra*: Common Elder.



- †\*738 *Sambucus Ebulus*: Danewort. Found by Mr. Knight near Rhandirmwyn. An escape.
- 739 *Viburnum Opulus*: Common Guelder Rose.
- \*740 *Viburnum Lantana*: Wayfaring Tree. W. 'Motley Cat.'
- 743 *Lonicera Periclymenum*: Common Woodbine.

## 38.—RUBIACEAE.

- 745 *Rubia peregrina*: Wild Madder. Ferryside and Pendine.
- † 746 *Galium boreale*: Cross-leaved Bedstraw. Near Llynfan-fach, Llangadock. Also recorded in Supp. to W. on authority of 'J. Bot. 1901, 344.'
- 747 *Galium Cruciata*: Mugwort or Crosswort.
- 748 *Galium verum*: Yellow Bedstraw. Ferryside, Pendine, Kidwelly, &c.
- 750 *Galium Mollugo*: Common Great Bedstraw. Pembrey Canal, near Kidwelly.
- 751 *Galium saxatile*: Heath Bedstraw.
- 753 *Galium palustre*: Marsh Bedstraw.
- 757 *Galium Aparine*: Goosegrass.
- 759 *Asperula odorata*: Sweet Woodruff.
- 761 *Asperula cynanchica*: Squinancy Wort. Pendine Burrows.
- 763 *Sherardia arvensis*: Blue Field Madder.

## 39.—VALERIANEAE.

- 764 *Valeriana dioica*: Small Marsh Valerian. Beaule-fawr Farm. Mr. Knight says that it is a common plant about Llandoverly, Llangadock, and Llandilo.

- 766 *Valeriana sambucifolia*: Great Wild Valerian.  
 768 *Centranthus ruber*: Red Wild Valerian.  
 Kidwelly and Pendine.  
 770 *Valerianella olitoria*: Common Lamb's Lettuce.  
 \*773 *Valerianella rimosa*: Sharp-fruited Lettuce.  
 'W. Motley Cat.'  
 774 *Valerianella dentata*: Narrow-fruited Lettuce.

## 40.—DIPSACEAE.

- 775 *Dipsacus sylvestris*: Wild Teasel.  
 777 *Scabiosa succisa*: Devil's-bit Scabious.  
 \*778 *Scabiosa Columbaria*: Small Scabious. W.  
 'Motley Cat.'  
 779 *Scabiosa arvensis*: Field Scabious.

## 41.—COMPOSITAE.

- 781 *Eupatorium cannabinum*: Common Hemp-Agrimony.  
 782 *Solidago Virgo Aurea*: Common Golden-rod.  
 783 *Bellis perennis*: Common Daisy.  
 785 *Aster Tripolium*: Seaside Aster.  
 788 *Erigeron acre*: Blue Fleabane. Near Kidwelly, and on limestone rocks in parish of Llangendeirne. Found by Mr. Knight near Brynamman.  
 790 *Filago germanica*: Common Cudweed. Pendine.  
 \*793 *Filago minima*: Slender Cudweed. W.  
 Found by Mr. Knight near Llangadock.



- 795 *Antennaria dioica*: Mountain Everlasting.  
Near Llandovery.
- 797 *Gnaphalium uliginosum*: Marsh Cudweed.
- †\*799 *Gnaphalium sylvaticum*: Upright Cudweed.  
Found by Mr. Knight near Llandovery.
- \*802 *Inula Helenium*: Elecampane. Found by  
Dr. H. L. Jones. An escape.
- \*803 *Inula Conyza*: Ploughman's Spikenard. W.  
'Motley Cat.' Also found by Dr. H. L. Jones.
- \*805 *Inula crithmoides*: Golden Samphire. W.  
'? One plant.' A doubtful record.
- 806 *Pulicaria dysenterica*: Greater Fleabane.
- 810 *Bidens cernua*: Nodding Bur-Marigold.  
Near Carmarthen Tinworks.
- 811 *Bidens tripartita*: Tripartite Marigold.
- 813 *Achillea Millefolium*: Common Yarrow.
- 814 *Achillea Ptarmica*: Sneezewort Yarrow.
- \*817 *Anthemis Cotula*: Stinking Mayweed. W.  
'Motley Cat.'
- \*819 *Anthemis nobilis*: Common Chamomile. W.  
'Motley Cat.' Also found by Dr. H. L. Jones.
- 820 *Chrysanthemum segetum*: Corn Marigold.
- 821 *Chrysanthemum Leucanthemum*: Great  
White Ox Eye.
- 822 *Chrysanthemum Parthenium*: Common  
Feverfew. An escape.
- 823 *Matricaria inodora*: Scentless Mayweed.
- 827 *Tanacetum vulgare*: Common Tansy.

- \*828 *Artemisia Absinthium*: Common Wormwood. W. 'Motley Cat.'
- 829 *Artemisia vulgaris*: Mugwort.
- 831 *Artemisia maritima*: Sea Wormwood. Laugharne, Kidwelly, and Llanstephan.
- 832 *Tussilago Farfara*: Common Coltsfoot.
- 833 *Petasites fragrans*: Sweet-scented Coltsfoot. An escape.
- 834 *Petasites officinalis*: Common Butter-bur.
- †\*836 *Doronicum Pardalianches*: Great Leopard's Bane. Found by Mr. Knight near Taliaris. An escape.
- 838 *Senecio vulgaris*: Common Groundsel.
- 839 *Senecio sylvaticus*: Mountain Groundsel.
- †\*840 *Senecio viscosus*: Stinking Groundsel. Found by Mr. Knight near Llandovery.
- 843 *Senecio Jacobaea*: Common Ragwort.
- 844 *Senecio aquaticus*: Marsh Ragwort.
- 850 *Carlina vulgaris*: Carline Thistle. Pendine, Kidwelly, Carreg Cennen, limestone rocks in parish of Llangendeirne, &c.
- 853 *Arctium minus*: Lesser Burdock.
- \*854 *Arctium intermedium*: Intermediate Burdock. W.
- \*855 *Carduus pycnocephalus* (*tenuiflorus*): Slender-flowered Thistle. W. 'Motley Cat.' Also found by Dr. H. L. Jones.
- 856 *Carduus nutans*: Musk Thistle.
- 857 *Carduus crispus*: Welled Thistle. Kidwelly and Pendine.



- 858 *Cnicus lanceolatus*: Spear Thistle.
- \*859 *Cnicus eriophorus*: Woolly-headed Thistle.  
W. 'Motley Cat.' But doubtful.
- 860 *Cnicus palustris*: Marsh Thistle.
- 862 *Cnicus pratensis*: Meadow Thistle. Marshy  
field at Oaklands and near Kidwelly and Llan-  
gadock.
- 866 *Cnicus avensis*: Creeping Thistle.
- \*867 *Onopordon Acanthium*: Scotch Thistle.  
W. 'Motley Cat.' Doubtful.
- 870 *Serratula tinctoria*: Common Saw-wort.
- 872 *Centaurea nigra*: Black Knapweed.
- 873 *Centaurea Scabiosa*: Greater Knapweed.
- \*874 *Centaurea Cyanus*: Blue-bottle. W. Also  
found by Dr. H. L. Jones.
- 879 *Cichorium Intybus*: Wild Succory.
- 881 *Lapsana communis*: Common Nipple-wort.
- 882 *Picris hieracioides*: Hawkweed Ox-tongue.  
Pendine.
- 883 *Picris echioides*: Bristly Ox-tongue. Kid-  
welly.
- 887 *Crepis virens*: Smooth Hawk's Beard.
- 892 *Hieracium Pilosella*: Mouse-ear Hawkweed.
- 893 *Hieracium aurantiacum*: Orange Hawkweed.  
An escape. St. Clears, &c.
- †\*946 *Hieracium hypochaeroides* (Gibsoni): Cat's  
Ear Hawkweed. Supp. to W. on authority of  
'Ley sp.'

- 967 *Hieracium vulgatum*: Wood Hawkweed.  
Near Nantgaredig.
- \*979 *Hieracium rigidum* (*tridentatum*): Three-toothed Hawkweed. W. 'Ley rec.'
- 994 *Hieracium boreale*: Broad-leaved Hawkweed. Gwili Valley, &c.
- 995 *Hieracium umbellatum*: Narrow-leaved Hawkweed.
- 997 *Hypochaeris radicata*: Long-rooted Cat's Ear.
- 999 *Leontodon hirtus*: Hairy Hawk-bit.
- 1000 *Leontodon hispidus*: Rough Hawk-bit.  
Pendine Burrows.
- 1001 *Leontodon autumnalis*: Autumnal Hawk-bit.
- 1002 *Taraxacum officinale*: Common Dandelion.  
Mr. Knight has found the variety *palustre* near Llandovery.
- 1006 *Lactuca muralis*: Ivy-leaved Lettuce.
- 1009 *Sonchus oleraceus*: Smooth Sow-thistle.
- 1010 *Sonchus asper*: Rough Sow-thistle.
- 1011 *Sonchus arvensis*: Corn Sow-thistle.
- 1013 *Tragopogon pratense*: Yellow Goat's Beard.

## 42.—CAMPANULACEAE.

- 1017 *Iasione montana*: Annual Sheep's-bit.
- 1018 *Wahlenbergia* (*Campanula*) *hederacea*: Ivy-leaved Bell Flower. Marsh at Llanllwch and near Pencader.



- \*1022 *Campanula Trachelium*: Nettle-leaved  
Bell Flower. W. 'Motley Cat.'

1025 *Campanula rotundifolia*: Hare Bell.

43.—VACCINIACEAE.

1030 *Vaccinium Vitis-Idæa*: Red Whortleberry.  
Near Llynfan-fach, Llangadock.

1032 *Vaccinium Myrtillus*: Common Bilberry.

1033 *Schollera (Vaccinium) Oxycoccus*: Marsh  
Cranberry. Gorsgoch.

44.—ERICACEAE.

\*1037 *Andromeda Polifolia*: Marsh Andromeda.  
W. One plant received from Dr. H. Lewis Jones.

1038 *Calluna Erica (vulgaris)*: Common Ling.

1040 *Erica Tetralix*: Cross-leaved Heath.

1042 *Erica cinerea*: Fine-leaved Heath.

46.—PLUMBAGINEAE.

\*1054 *Statice Limonium (Behen)*: Great Sea  
Lavender. W. 'Motley Cat.'

1056 *Statice auriculaefolia (binervosa)*: Lesser  
Sea Lavender. Pendine Cliffs.

1058 *Armeria maritima*: Common Thrift.

47.—PRIMULACEAE.

1061 *Primula acaulis (vulgaris)*: Common Prim-  
rose.

- 1062 *Primula veris* (officinalis): Cowslip.
- 1068 *Lysimachia vulgaris*: Common Loosestrife.  
Johnstown.
- 1071 *Lysimachia Nummularia*: Creeping Jenny.
- 1072 *Lysimachia nemorum*: Yellow Pimpernel.
- 1074 *Glaux maritima*: Black Saltwort.
- 1075 *Anagallis arvensis*: Scarlet Pimpernel.
- 1076 *Anagallis caerulea*: Blue Pimpernel. Oak-  
lands Garden.
- 1077 *Anagallis tenella*: Bog Pimpernel.
- 1079 *Samolus Valerandi*: Brook Weed.

## 48.—OLEACEAE.

- 1080 *Fraxinus excelsior*: Common Ash.
- 1081 *Ligustrum vulgare*: Common Privet.

## 49.—APOCYNACEAE.

- † 1082 *Vinca major*: Greater Periwinkle. Near  
White Mill. An escape.
- 1083 *Vinca minor*: Lesser Periwinkle. Allty-  
cnap, &c. An escape. Also recorded in Supp. to  
W. on authority of 'Record Club, 1883.'

## 50.—GENTIANAEAE.

- 1085 *Blacksonia* (*Chlora*) *perfoliata*: Yellow  
Centaury. Kidwelly and Pendine.



- 1086 *Erythraea Centaurium*: Common Centaury.
- † 1088 *Erythraea littoralis*: Narrow-leaved Centaury. Kidwelly Burrows.
- 1089 *Erythraea pulchella*: Slender Centaury. Kidwelly Burrows.
- \*1092 *Gentiana Pneumonanthe*: Calathian Violet. W. 'Motley Ms.'
- 1095 *Gentiana Amarella*: Autumnal Gentian. Kidwelly, Pendine, and limestone rocks in parish of Llangendeirne.
- \*1097 *Gentiana campestris*: Field Gentian. W. Motley Cat.'
- 1099 *Menyanthes trifoliata*: Common Buckbean.

## 52.—BORAGINEAE.

- 1102 *Cynoglossum officinale*: Common Hound's Tongue. Laugharne, Kidwelly, and Pendine.
- 1105 *Symphytum officinale*: Common Comfrey. Llanllwch, Johnstown, &c.
- 1107 *Borago officinalis*: Common Borage. Ferryside. An escape.
- 1110 *Lycopsis arvensis*: Small Bugloss. Ferryside, Kidwelly, and Pendine.
- † 1112 *Pulmonaria officinalis*: Common Lungwort. Near Conwil and Oaklands. An escape.
- 1114 *Myosotis caespitosa*: Tufted Water Forget-me-not.
- 1115 *Myosotis palustris*: Great Forget-me-not. Abergwili Common.
- 1116 *Myosotis repens*: Creeping Forget-me-not.

- 1119 *Myosotis arvensis*: Field Forget-me-not.
- 1120 *Myosotis collina*: Dwarf Forget-me-not.  
Pendine, Ferryside, and Kidwelly.
- 1121 *Myosotis versicolor*: Yellow and Blue Forget-me-not
- \*1123 *Lithospermum officinale*: Common Gromwell. W. 'Motley Cat.' Found by Mr. Knight at Dryslwyn.
- 1124 *Lithospermum arvense*: Corn Gromwell.  
Pendine and Laugharne.
- 1125 *Echium vulgare*: Common Viper's Bugloss.  
Pendine.

## 53.—CONVOLVULACEAE.

- 1127 *Volvulus* (*Convolvulus*) *sepium*: Great Bindweed.
- 1128 *Volvulus* (*Convolvulus*) *soldanella*: Sea Bindweed. Pendine Burrows.
- 1129 *Convolvulus arvensis*: Small Bindweed.
- †\*1133 *Cuscuta Trifolii*: Lesser Dodder. Found by Mr. Knight, near Llandovery.

## 54.—SOLANACEAE.

- 1134 *Solanum Dulcamara*: Woody Nightshade.
- \*1135 *Solanum nigrum*: Black Nightshade. W.  
'Motley Cat.' Also found by Dr. H. L. Jones.
- \*1139 *Hyoscyamus niger*: Common Henbane.  
W. 'Motley Cat.' Also found by Dr. H. L. Jones.



## 55.—SCROPHULARINAE.

- 1140 *Verbascum Thapsus* Great Mullein.
- † 1145 *Verbascum Blattaria*: Moth Mullein. Ferry-side.
- 1146 *Linaria Cymbalaria*: Ivy-leaved Toadflax.
- 1147 *Linaria elatina*: Sharp-leaved Fluellin.
- † 1149 *Linaria supina*: Decumbent Toadflax. Rail-side by Pembrey Canal. An escape.
- † 1152 *Linaria repens*: Striped Toadflax. Abergwili, Llandovery, and St. Clears. Mr. Knight tells me that a hybrid between this and *vulgaris* occurs commonly about Llandovery. Also recorded in Supp. to W. on authority of 'Mrs. Oakeshott.'
- 1153 *Linaria vulgaris*: Yellow Toadflax.
- 1154 *Linaria viscida*: Lead Toadflax.
- 1155 *Antirrhinum majus*: Common Snapdragon. On old walls. An escape.
- \*1156 *Antirrhinum Orontium*: Corn Snapdragon. W. 'Motley Cat.'
- 1157 *Scrophularia aquatica*: Common Water Betony.
- 1159 *Scrophularia nodosa*: Knotty-rooted Figwort.
- 1162 *Mimulus luteus*: Yellow Monkey flower.
- † 1163 *Limosella aquatica*: Common Mudwort. Bishop's Pond.
- 1164 *Sibthorpia europæa*: Cornish Moneywort. In two localities near Carmarthen. Found by Mr. Knight near Brechfa.

- 1165 *Digitalis purpurea*: Purple Foxglove.
- 1166 *Veronica hederæfolia*: Ivy-leaved Speedwell.
- 1167 *Veronica polita*: Grey Procumbent Speedwell.
- 1168 *Veronica agrestis*: Green Procumbent Speedwell.
- 1169 *Veronica Tournefortii* (*Buxbaumii*): Buxbaum's Speedwell.
- 1172 *Veronica arvensis*: Wall Speedwell.
- 1173 *Veronica serpyllifolia*: Perennial Smooth Speedwell.
- 1178 *Veronica officinalis*: Common Speedwell.
- 1179 *Veronica chamaedrys*: Germander Speedwell.
- 1180 *Veronica montana*: Mountain Speedwell.
- 1181 *Veronica scutellata*: Marsh Speedwell.  
Near Conwil.
- 1182 *Veronica Anagallis-aquatica*: Water Speedwell.
- 1183 *Veronica Beccabunga*: Brook Lime.
- 1184 *Euphrasia officinalis*: Common Eyebright.
- 1185 *Bartsia Odontites*: Red Bartsia.
- 1186 *Bartsia viscosa*: Yellow Bartsia. Kidwelly.
- 1188 *Pedicularis palustris*: Upright Lousewort.
- 1189 *Pedicularis sylvatica*: Procumbent Lousewort.



1190 *Rhinanthus Crista-galli*: Common Yellow Rattle.

1194 *Melampyrum pratense*: Common Cow-wheat.

56.—OROBANCHACEAE.

1199 *Orobanche major*: Greater Broom-rape.  
Near Cystanog wood. Also found by Mr. Knight near Llandovery.

1204 *Orobanche Hederae*: Ivy Broom-rape.  
Llanstephan.

57.—LENTIBULARIEAE.

†\*1208 *Utricularia vulgaris*: Greater Bladderwort.  
Found by Mr. R. Browne near Kidwelly, and identified by me.

1210 *Utricularia minor*: Lesser Bladderwort.  
Llangunnock Heath. Also found by Mr. Knight near Llandovery.

1213 *Pinguicula vulgaris*: Common Butterwort.  
Pontyberem, Blaenau Farm near Llynfan-fach, &c.

58.—VERBENACEAE.

1217 *Verbena officinalis*: Common Vervain.

59.—LABIATAE.

1218 *Mentha rotundifolia*: Round-leaved Mint.  
Pondside, Carmarthen.

\*†1220 *Mentha longifolia (sylvestris)*: Common Horse-mint. Found by Mr. Knight near Llandovery.

- 1221 *Mentha viridis*: Spear Mint. An escape.
- †\*1222 *Mentha piperita*: Garden Pepper-mint.  
Found by Dr. H. L. Jones.
- 1224 *Mentha hirsuta*: Hairy Water Mint.
- \*1225 *Mentha sativa*: Marsh Whorled Mint. W.  
Found by Dr. H. L. Jones.
- 1230 *Mentha arvensis*: Corn Mint.
- 1232 *Lycopus europæus*: Water Horehound.
- 1233 *Origanum vulgare*: Common Marjorum.
- 1234 *Thymus Serpyllum*: Creeping Wild Thyme.
- 1236 *Calamintha Clinopodium*: Wild Basil.
- \*1239 *Calamintha officinalis* (*menthifolia*): Com-  
mon Calamint. W. Also found by Dr. H. L.  
Jones.
- † 1241 *Melissa officinalis*: Common Balm. Near  
Pencader. An escape.
- \*1242 *Salvia verbenaca*: Wild English Clary. W.  
'Motley Cat.' Also found by Dr. H. L. Jones.
- 1245 *Nepeta Glechoma*: Ground Ivy.
- 1246 *Scutellaria galericulata*: Common Skull-  
cap.
- \*1247 *Scutellaria minor*: Lesser Skull-cap. W.  
'Motley Cat.' Mr. Knight says that it occurs  
frequently near Llandovery.
- 1248 *Prunella vulgaris*: Self Heal.
- \*1250 *Marrubium vulgare*: White Horehound.  
W. 'Motley Cat.'
- 1251 *Stachys Betonica*: Wood Betony.



- 1253 *Stachys palustris*: Marsh Woundwort.  
 1254 *Stachys sylvatica*: Hedge Woundwort.  
 1255 *Stachys arvensis*: Corn Woundwort.  
 \*1257 *Galeopsis Ladanum*: Narrow-leaved Hemp  
     Nettle. W. 'Motley Cat.'  
 1261 *Galeopsis Tetrahit*: Common Hemp Nettle.  
 1262 *Leonurus Cardiaca*: Motherwort. Aber-  
     cover Farm Llandefeilog and near New Quay  
     Road Station. An escape.  
 1265 *Lamium hybridum* (incisum): Cut-leaved  
     Dead Nettle.  
 1266 *Lamium purpureum*: Red Dead Nettle.  
 1267 *Lamium maculatum*: Spotted Dead Nettle.  
     An escape.  
 1268 *Lamium album*: White Dead Nettle. Kid-  
     welly, Llandilo, and Llangadock.  
 1269 *Lamium Galeobdolon*: Yellow Archangel.  
 1270 *Ballota nigra*: Black Horehound. Near  
     Kidwelly.  
 1274 *Tencrium Scorodonia*: Wood Germander.  
 1275 *Ajuga reptans*: Common Bugle.

## 60.—PLANTAGINEAE.

- 1278 *Plantago major*: Greater Plantain.  
 1279 *Plantago media*: Hoary Plantain. Fields  
     near Oaklands.  
 1280 *Plantago lanceolata*: Common Rib Grass.  
 1281 *Plantago maritima*: Sea Plantain.

1282 *Plantago Coronopus*: Buck's Horn Plantain.  
Kidwelly and Pendine.

† 1284 *Littorella juncea* (lacustris): Plantain Shore-  
weed. Kidwelly and near Marros. Also recorded  
in Supp. to W. on authority of 'J. Bot, 1901, 344.'

61.—ILLECEBRACEAE.

1290 *Scleranthus annuus*: Common Knawel.  
Pencader, &c.

63.—CHENOPODIACEAE.

\*1294 *Chenopodium polyspermum*: Many seeded  
Goosefoot. W. 'Motley Cat.'

1296 *Chenopodium album*: White Goose-foot.  
foot.

†\*1298 *Chenopodium ficifolium*: Fig-leaved Goose-  
foot. Supp. to W. on authority of 'Marshall sp.'

\*1299 *Chenopodium murale*: Nettle-leaved Goose-  
foot. W. 'Motley Cat.'

\*1302 *Chenopodium rubrum*: Red Goose-foot.  
W. 'Motley Cat.'

1305 *Chenopodium Bonus-Henricus*: All-good.

1306 *Beta maritima*: Sea Beet. Pendine.

\*1307 *Atriplex littoralis*: Grass-leaved Sea Orache.  
W. 'Motley Cat.'

1308 *Atriplex patula*: Narrow-leaved Orache.

\*1309 *Atriplex hastata*: Halband-leaved Oracle.  
W.

1311 *Atriplex Babingtonii*: Babington's Orache.



- \*1313 *Atriplex portulacioides*: Sea Purslane. W.  
'Motley Cat.'
- 1315 *Salicornia herbacea*: Common Marsh-sam-  
phire. All along the coast.
- 1319 *Suaeda maritima*: Annual Sea-blite. Sea  
coast.
- 1320 *Salsola Kali*: Prickly Saltwort. Sea Coast.

## 64.—POLYGONACEAE.

- 1321 *Polygonum Convolvulus*: Climbing Buck-  
wheat.
- 1323 *Polygonum aviculare*: Common Knotgrass.
- 1326 *Polygonum Hydropiper*: Water Pepper.
- \*1327 *Polygonum minus*: Small Persicaria. W.  
Received from Dr. H. L. Jones.
- 1329 *Polygonum Persicaria*: Spotted Persicaria.
- 1330 *Polygonum lapathifolium*: Glandular Persi-  
caria.
- 1332 *Polygonum amphibium*: Amphibious Bis-  
tort.
- 1333 *Polygonum Bistorta*: Common Bistort.
- 1337 *Rumex conglomeratus*: Sharp Dock.
- \*1339 *Rumex sanguineus*: Bloody-Veined Dock.  
W.
- \*1342 *Rumex pulcher*: Fiddle-Veined Dock. W.  
'Motley Cat.'
- 1343 *Rumex obtusifolius*: Broad-leaved Dock.
- 1344 *Rumex crispus*: Curled Dock.

- 1346 *Rumex Hydrolapathum*: Great Water Dock. Kidwelly and Pendine.  
 1348 *Rumex acetosa*: Common Sorrel.  
 1350 *Rumex acetosella*: Sheep's Sorrel.

## 70.—EUPHORBIACEAE.

- 1359 *Euphorbia Helioscopia*: Sun Spurge.  
 1366 *Euphorbia amygdaloides*: Wood Spurge. Near Llandefeilog, Greencastle, &c.  
 1369 *Euphorbia Paralias*: Sea Spurge. Ferry-side, Pendine, and Kidwelly.  
 1370 *Euphorbia portlandica*: Portland Spurge. Pendine and Kidwelly.  
 1371 *Euphorbia Peplus*: Petty Spurge.  
 1372 *Euphorbia exigua*: Dwarf Spurge.  
 1375 *Mercurialis perennis*: Perennial Dog's Mercury.  
 \*1376 *Mercurialis annua*: Annual Dog's Mercury. W. 'Motley Cat.' Also found by Dr. H. L. Jones.

## 17.—URTICACEAE.

- \*1377 *Ulmus montana*: Broad-leaved Elm. W.  
 \* 1378 *Ulmus surculosa (suberosa)*: Common Elm. W.  
 1379 *Humulus Lupulus*: Common Hop.  
 1380 *Urtica dioica*: Common Nettle.



1382 *Urtica urens*: Small Nettle.

1383 *Parietaria officinalis*: Pellitory of the Wall.

72.—MYRICACEAE.

1384 *Myrica Gale*: Bog Myrtle. Gorsgoch and Kidwelly Burrows.

73.—CUPULIFERAE.

\*1385 *Betula verrucosa*: White Birch. W.  
'Motley Cat.' Also found by Dr. H. L. Jones.

\*1386 *Betula pubescens* (*glutinosa*): Common Birch. W. 'Motley Cat.'

1389 *Alnus glutinosa*: Common Alder.

1391 *Corylus Avellana*: Hazel.

1392 *Quercus Robur*: Common Oak.

1394 *Fagus sylvatica*: Common Beech.

74.—SALICINEAE.

\*1395 *Salix triandra*: Almond-leaved Willow.  
W.

\*1397 *Salix fragilis*: Crack-leaved Willow. W.

\*1398 *Salix alba*: White-leaved Willow. W.

1399 *Salix cinerea*: Common Sallow.

1400 *Salix aurita*: Wrinkled-leaved Sallow.

\*1401 *Salix Capraea*: Great-leaved Sallow.

1402 *Salix repens*: Dwarf Willow.

- 1405 *Salix viminalis*: Common Osier.  
 † 1412 *Populus alba*: White Poplar. Near Golden  
     Grove, &c.  
 1414 *Populus tremula*: Aspen.

## 75.—EMPETRACEAE.

- 1416 *Empetrum nigrum*: Crowberry. Near  
     Pencader. Also found by Mr. Knight near  
     Llandovery.

## 76.—CERATOPHYLLAE.

- 1417 } *Ceratophyllum aquaticum* (? demersum or  
 1418 } submersum): Hornwort.

## 77.—CONIFERAE.

- 1421 *Taxus baccata*: Common Yew.

## 78.—HYDROCHARIDEAE.

- 1424 *Elodea canadensis*: Water Thyme.  
 1425 *Hydrocharis Morsus-Ranae*: Frog-bit.  
     Pembrey Canal.

## 79.—ORCHIDEAE.

- † 1428 *Liparis Loeselii*: Fen Orchis. In one  
     locality in the county in 1898.  
 †\* 1430 *Neottia Nidus-avis*: Bird's Nest Orchid.  
     Found by Mr. Knight.  
 1432 *Listera ovata*: Common Tway-blade.



- 1433 *Spiranthes autumnalis*: Autumn Lady's  
Tresses.
- 1441 *Epipactis latifolia*: Broad-leaved Helle-  
borine.
- 1445 *Epipactis palustris*: Marsh Helleborine.  
Kidwelly Burrows.
- 1452 *Orchis Morio*: Green-winged Meadow  
Orchis.
- 1453 *Orchis Masculata*: Early Purple Orchis.
- 1455 *Orchis incarnata*: Common Marsh Orchis.
- 1456 *Orchis latifolia*: Broad-leaved Marsh Or-  
chis. Kidwelly and Pendine.
- 1457 *Orchis maculata*: Spotted Palmate Orchis.
- \*1464 *Habenaria conopsea*: Fragrant Orchis.  
Found by Mr. R. Browne at Kidwelly, and identi-  
fied by me.
- †\*1466 *Habenaria albida*: Small White Orchis.  
Found by Mr. Knight near Llandovery.
- †\*1467 *Habenaria viridis*: Frog Orchis. Found  
by Mr. Knight near Llandovery.
- 1468 *Habenaria bifolia*: Lesser Butterfly Orchis.
- 1469 *Habenaria chloroleuca*: Greater Butterfly  
Orchis. Conwil Valley, &c.

## 80.—IRIDEAE.

- 1471 *Iris foetidissima*: Foetid Iris. Kidwelly  
Burrows.
- 1472 *Iris Pseudacorus*: Yellow Water Iris.

## 81.—AMARYLLIDEAE.

- † 1481 *Narcissus Pseudo-narcissus*: Common Daffodil.  
 1486 *Galanthus nivalis*: Common Snowdrop.

## 82.—DIOSCOREAE.

- 1489 *Tamus communis*: Black Bryony.

## 83.—LILIACEAE.

- †\* 1493 *Polygonatum multiflorum*: Common Solomon's Seal. Found by Mr. Knight near Llandilo.  
 \* 1502 *Allium oleraceum*: Field Garlic. W. 'Oakeshott rec.'  
 †\* 1504 *Allium Schoenoprasum*: Garden Chives. Found by Mr. Knight near Llandilo.  
 1508 *Allium ursinum*: Ramsons.  
 1512 *Scilla festalis* (nutans): Wood Hyacinth.  
 †\* 1514 *Ornithogalum umbellatum*: Common Star of Bethel. Found by Miss Spurrell near Rhydgors, and identified by me. An escape.  
 1523 *Narthecium Ossifragum*: Lancashire Asphodel. Gorsgoch and near Pencader, &c.

## 84.—JUNCACEAE.

- 1526 *Juncus bufonius*: Toad Rush.  
 1528 *Juncus squarrosus*: Heath Rush.  
 1530 *Juncus Gerardi*: Mud Rush.



- 1534 *Juncus glaucus*: Hard Rush.  
 1535 *Juncus effusus*: Soft Rush.  
 1536 *Juncus conglomeratus*: Common Rush.  
 1537 *Juncus maritimus*: Lesser Sea Rush. Ferry-  
     side, Kidwelly, and Laugharne.  
 1538 *Junctus acutus*: Greater Sea Rush. Kid-  
     welly and Pendine.  
 1539 *Juncus supinus*: Lesser Jointed Rush.  
 † 1540 *Juncus obtusifolius*: Blunt-flowered Rush.  
     Kidwelly Burrows. Also recorded in Supp. to  
     W. on authority of 'Marshall sp.'  
 1542 *Juncus lampocarpus*: Shining-fruited Rush.  
 1544 *Juncus acutiflorus*: Sharp-flowered Rush.  
 1550 *Luzula vernalis* (*pilosa*): Broad-leaved  
     Hairy Woodrush.  
 1551 *Luzula maxima* (*sylvatica*): Great-leaved  
     Woodrush.  
 1554 *Luzula campestris*: Field-leaved Woodrush.  
 1555 *Luzula erecta* (*multiflora*): Many-headed  
     Woodrush.

## 85.—TYPHACEAE.

- 1556 *Typha latifolia*: Common Cat's Tail.  
 1558 *Sparganium ramosum*: Branched Burreed.  
 1560 *Sparganium simplex*: Unbranched Burreed.

## 86.—AROIDEAE.

- 1563 *Arum maculatum*: Common Cuckow-pint.

## 87.—LEMNACEAE.

- 1567 *Lemna minor*: Lesser Duckweed.
- \*1568 *Lemna gibba*: Gibbous Duckweed. W.  
'Motley Cat.'
- \*1569 *Lemna polyrrhiza*: Greater Duckweed. W.  
'Motley Cat.'

## 88.—ALISMACEAE.

- 1571 *Alisma Plantago-aquatica*: Greater Water Plantain.
- 1572 *Alisma ranunculoides*: Lesser Water Plantain. Near Oaklands and Kidwelly.

## 89.—NAIADACEAE.

- 1577 *Triglochin palustre*: Marsh Arrow-grass.
- 1578 *Triglochin maritimum*: Sea-side Arrow-grass.
- †\*1580 *Potamogeton natans*: Floating Pondweed.  
Recorded in Supp. to W. on authority of 'Marshall.'
- 1581 *Potamogeton polygonifolius*: Oblong-leaved Pondweed.
- †\*1584 *Potamogeton alpinus* (*rufescens*): Reddish Pondweed. Found by Mr. Knight in Llynfanfach.
- \*1587 *Potamogeton heterophyllus*: Various-leaved Pondweed. W. 'Motley Cat.'
- \*1590 *Potamogeton lucens*: Great Pondweed.  
W. 'Motley.'



- 1595 *Potamogeton perfoliatus*: Perfoliate Pondweed.
- 1596 *Potamogeton crispus*: Curled Pondweed.
- \*1597 *Potamogeton densus*: Opposite-leaved Pondweed. W. 'Motley Ms.'
- \*1602 *Potamogeton pusillus*: Small Pondweed. W. Also found by Dr. H. L. Jones.
- \*1605 *Potamogeton pectinatus*: Fennel-leaved Pondweed. W. 'Motley.'
- \*1610 *Zannichellia palustris*: Common Horned Pondweed. W. 'Motley Cat.'
- \*1614 *Zostera marina*: Common Grass-wrack. W. 'Motley Cat.'

## 91.—CYPERACEAE.

- 1623 *Eleocharis (Scirpus) palustris*: Marsh Club-rush.
- 1625 *Eleocharis (Scirpus) multicaulis*: Many-stemmed Club-rush.
- 1626 *Scirpus pauciflorus*: Chocolate-headed Club-rush. Near Llynfan-fach.
- 1627 *Scirpus caespitosus*: Scaly-stemmed Club-rush.
- †\*1629 *Scirpus fluitans*: Floating Club-rush. Found by Mr. Knight near Llandovery.
- 1630 *Scirpus cernuus (Savii)*: Savis' Club-rush. Near Pibwrwen.
- 1631 *Scirpus setaceus*: Bristle-like Club-rush.
- 1633 *Scirpus lacustris*: Common Bull-rush. Kidwelly.

- 1634 *Scirpus Tabernaemontani*: Glaucous Bull-rush.
- 1638 *Scirpus maritimus*: Sea Club-rush.
- 1639 *Scirpus sylvaticus*: Wood Club-rush.  
Banks of Towy.
- 1643 *Eriophorum vaginatum*: Hare's Tail Cotton-grass.
- 1644 *Eriophorum angustifolium*: Common Cotton-grass.
- †\*1645 *Eriophorum latifolium*: Downy-stalked Cotton-grass. Found by Dr. H. L. Jones. Also found by Mr. Knight at Pont Aber, Llangadock.
- 1648 *Rhynchospora alba*: White Beak Sedge.  
Gorsgoch. Found by Mr. Knight at Ystradffin.
- 1655 *Carex pulicaris*: Flea Sedge.
- \*1659 *Carex divisa*: Bracteated Marsh Sedge. W.  
'Motley Cat.'
- 1661 *Carex arenaria*: Sea Sedge. Ferryside  
Pendine, &c.
- 1664 *Carex paniculata*: Greater Panicked Sedge.
- 1665 *Carex vulpina*: Great Sedge.
- 1667 *Carex muricata*: Greater Prickly Sedge.
- 1669 *Carex echinata* (stellulata): Little Prickly  
Sedge.
- 1670 *Carex remota*: Distant-spiked Sedge.
- 1676 *Carex curta*: White Sedge. Gorsgoch, &c.
- 1677 *Carex ovalis*: Oval-spiked Sedge.
- \*1682 *Carex acuta*: Slender-spiked Sedge. W.  
'Motley Cat.'



- 1687 *Carex Goodenowii* (vulgaris): Common Sedge.
- 1688 *Carex flacca* (glauc): Glaucous Heath Sedge.
- 1696 *Carex pilulifera*: Round-headed Sedge.  
Ystrad and near Llynfan-fach.
- 1698 *Carex verna* (praecox): Vernal Sedge.
- 1700 *Carex pallescens*: Pale Sedge.
- 1701 *Carex panicea*: Pink-leaved Sedge.
- \*1706 *Carex pendula*: Great Pendulous Sedge.  
W. 'Motley Cat.'
- 1709 *Carex sylvatica*: Pendulous Wood Sedge.  
Oaklands, &c.
- 1710 *Carex laevigata*: Smooth-stalked Sedge.
- 1711 *Carex binervis*: Green-ribbed Sedge.
- 1712 *Carex distans*: Distant-spiked Sedge.
- 1714 *Carex fulva*: Tawny Sedge. Marshy field  
near Oaklands.
- \*1715 *Carex extensa*: Long-bracteated Sedge. W.  
'Motley Cat.'
- 1716 *Carex flava*: Yellow Sedge.
- 1718 *Carex hirta*: Hammer Sedge.
- 1720 *Carex acutiformis* (paludosa): Lesser Pond  
Sedge.
- 1722 *Carex rostrata* (ampullacea): Bottle Sedge.  
Bishop's Pond, &c.
- \*1724 *Carex vesicaria*: Bladder Sedge. W. 'Mot-  
ley Cat.' Also found by Mr. Knight near Llan-  
dover.

## 92.—GRAMINEAE.

- † 1736 *Phalaris canariensis*: Canary Grass. An escape.
- 1738 *Phalaris arundinacea*: Ribbon Grass.
- 1739 *Anthoxanthemum odoratum*: Sweet-scented Vernal Grass.
- \*1742 *Alopecurus myosuroides* (*agrestis*): Slender Fox-tail Grass. W. 'Motley Cat.' Also found by Mr. Knight near Llandovery.
- 1744 *Alopecurus geniculatus*: Bent-stemmed Fox-tail Grass.
- \*1745 *Alopecurus bulbosus*: Tuberous Fox-tail Grass. W. Received from Dr. H. L. Jones.
- 1746 *Alopecurus pratensis*: Meadow Fox-tail Grass.
- † 1748 *Milium effusum*: Wood Millet Grass. Moelfre Wood near Carmarthen. Also found by Mr. Knight near Llandovery.
- 1750 *Phleum pratense*: Common Timothy Grass.
- 1752 *Phleum arenarium*: Sand Timothy Grass. Llanstephan, Pendine, &c.
- \*1755 *Agrostis canina*: Brown Bent grass. W.
- 1756 *Agrostis palustris* (*alba*): Marsh Bent Grass.
- 1757 *Agrostis vulgaris*: Common Bent Grass.
- \*1760 *Calamagrostis epigeios*: Wood Small Reed. W. 'Motley Cat.'
- 1767 *Ammophila arundinacea* (*Psamma arenaria*): Murram. Kidwelly, Pendine, &c.
- 1770 *Aira caryophyllea*: Silvery Hair Grass.



- 1771 *Aira praecox*: Early Hair Grass.
- 1773 *Deschampsia caespitosa*: Tufted Hair Grass.
- \*1776 *Deschampsia flexuosa*: Heath Hair Grass.  
W. Also found by Dr. H. L. Jones.
- 1777 *Holcus mollis*: Creeping Soft Grass.
- 1778 *Holcus lanatus*: Yorkshire Fog.
- \*1779 *Trisetum pratense* (*Avena pratensis*): Gla-  
brous Oat Grass. Found by Dr. H. L. Jones.
- †\*1780 *Avena pubescens*: Downy Oat Grass.  
Found by Mr. Knight near Carreg Cennen.
- \*1783 *Avena fatua*: Wild Oat. W.
- 1784 *Arrhenatherum avenaceum* (*Avena elatior*):  
False Oat Grass.
- 1786 *Sieglingia* (*Triodia*) *decumbens*: Decum-  
bent Heath Grass. Near Oaklands, Pendine, and  
Pencader.
- 1787 *Phragmites communis*: Common Reed.
- 1789 *Cynosurus cristatus*: Crested Dog's-tail  
Grass.
- † 1791 *Koeleria cristata*: Crested Hair Grass.  
Pendine Cliffs.
- 1792 *Molinia varia* (*cærulea*): Purple Melic  
Grass.
- 1795 *Melica uniflora*: Wood Melic Grass.
- 1796 *Dactylis glomerata*: Rough Cock's-foot  
Grass.
- 1798 *Briza media*: Common Quaking Grass.
- 1800 *Poa annua*: Annual Meadow Grass.

- 1807 *Poa nemoralis*: Wood Meadow Grass.  
Banks of Towy opposite Green Castle.
- \*1808 *Poa compressa*: Flat-stemmed Meadow  
Grass. W. 'Motley Cat.'
- 1810 *Poa pratensis*: Smooth Meadow Grass.
- 1812 *Poa trivialis*: Rough Meadow Grass.
- 1813 *Glyceria fluitans*: Floating Meadow Grass.
- †\*1814 *Glyceria plicata*: Folded-leaved Meadow  
Grass. Found by Mr. Knight near Llandovery.
- \*1815 *Glyceria aquatica*: Reed Meadow Grass.  
W. 'Motley Cat.' Also found by Dr. H. L.  
Jones.
- 1816 *Glyceria maritima*: Creeping Sea Meadow  
Grass. Near Pibwrwen, &c.
- 1820 *Festuca rigida*: Hard Meadow Grass.
- 1821 *Festuca rottboelliodes* (loliacea): Dwarf  
Meadow Grass.
- 1822 *Festuca uniglumis*: Single-glumed Fescue  
Grass. Pendine.
- \*1824 *Festuca myuros*: Mouse-tail Fescue Grass.  
W. 'Motley Cat.'
- 1825 *Festuca sciuroides*: Barren Fescue Grass.
- 1826 *Festuca ovina*: Sheep's Fescue Grass. Kid-  
welly, &c.
- 1827 *Festuca rubra* (duriuscula): Hard Fescue  
Grass.
- 1832 *Festuca arundinacea*: Tall Fescue Grass.  
Llanstephan.
- \*1833 *Bromus giganteus*: Tall Brome Grass. W.  
Also found by Dr. H. L. Jones.



- \*1834 *Bromus ramosus*: Rough Brome Grass.  
W. Also found by Dr. H. L. Jones.
- \*1836 *Bromus madritensis*: Upright Annual Brome  
Grass. W. 'Motley Cat.'
- 1839 *Bromus sterilis*: Barren Brome Grass.
- 1843 *Bromus mollis*: Soft Brome Grass.
- †\*1844 *Bromus arvensis*: Field Brome Grass.  
Found by Mr. Knight near Llandovery.
- 1845 *Brachypodium gracile* (*sylvaticum*): Wood  
False Brome Grass.
- 1847 *Lolium perenne*: Common Rye Grass.
- \*1850 *Agropyron* (*Triticum*) *caninum*: Wood  
Couch Grass. W. 'Motley Ms.' Also found by  
Mr. Knight near Llandovery.
- 1851 *Agropyron repens*: Common Couch Grass.
- 1854 *Agropyron junceum*: Sand Couch Grass.  
Pendine, &c.
- \*1855 *Lepturus filiformis*: Sea Hard Grass. W.  
'Motley Cat.' Also found by Dr. H. L. Jones.
- 1856 *Nardus stricta*: Mat Grass.
- 1858 *Hordeum secalinum* (*pratense*): Meadow  
Barley.
- \*1859 *Hordeum murinum*: Wall Barley. W.

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As the genus *Rubus* is such a difficult one I have only dealt with the more easily distinguishable species.

I have added a few notes on some of the rarer and more interesting plants of the county.

The London Catalogue is not only the standard list of British plants, but serves also as a guide to the comparative

rarity of the various kinds; giving the number of divisions in which a species has been found out of the total of 112 districts into which Great Britain has been divided for botanical purposes. To save space I have in the following notes often put this number in brackets after the name.

- 3 *Thalictrum dunense* (22) is an uncommon plant, with a wide range of distribution.
- 7 *Thalictrum flavum* (69). The Carmarthenshire record seems doubtful, but it may be confirmed as this species is recorded for Breconshire and Glamorganshire.
- 43 *Helleborus viridis* is one of our rarer plants, being recorded for 28 districts only.
- 130 *Subularia aquatica* (26). This is an interesting addition to our list, presenting as it does the rare phenomenon of a flower which blooms under water. It is mainly a Scotch plant, growing in the gravelly bottoms of lakes in mountainous districts. Its only English and Welsh localities are Cumberland, Westmoreland, Carnarvonshire, Denbigh, Merioneth, Anglesea, Cardiganshire, and Carmarthenshire. Our own county seems to furnish its southernmost habitat in Great Britain.
- 183 *Viola curtisii*, which grows so abundantly on our coast sand-hills, has a census number of 23 only. The flowers are generally yellow, but blue or purple-coloured forms are not uncommon.
- 263 *Buda rupestris* is found in 21 districts only.
- 269 *Elatine hexandra* also has a census number of 21.
- 285 *Althaea officinalis* (29) is also found in Glamorganshire and Pembrokeshire. I have seen it in the latter county near Saundersfoot.



- 287 *Lavatea arborea* (15) grows mainly on the west coast of England and Wales.
- 318 *Erodium moschatum* is a rare plant, recorded for 11 districts only. It is also found in Pembrokeshire and Cardiganshire.
- 617 *Sedum roseum* (42) is a northern plant, occurring in the Scotch Highlands, Yorkshire, the Lake District, Merionethshire, Carnarvonshire, Breconshire, and Carmarthenshire.
- 626 *Sedum rupestre* (12). A rare plant, found chiefly in South-west England and in Wales. It grows also in Radnorshire and Cardiganshire.
- 627 *Sedum Forsterianum* (11). Another rare species. Recorded also for the counties of Glamorgan, Brecon, Radnor, and Cardigan.
- 682 *Carum verticillatum*, which grows so abundantly in our wet meadows, has a census number of 20.
- 703 *Crithmum maritimum* is found only in 26 districts.
- 727 *Daucus gummifer* has a census number of 17.
- 728 *Caucalis latifolia* (7), of which Watson records the occurrence of three specimens in our county, is one of our rarest species, its other districts being North and South Somerset, Hertford, Cambridgeshire, Bedfordshire, and Gloucestershire.
- 745 *Rubia peregrina*, generally distributed on our coasts, is recorded for 23 districts only.
- 746 *Galium boreale* (43) is a northern plant, only found in Scotland, the North of England, Carnarvonshire, Breconshire, and our own county.
- 805 *Inula crithmoides* (19). A doubtful record for our county; is recorded for Glamorganshire and Pembrokeshire. I have seen it on sea cliffs near Tenby.



- 946 *Hieracium hypochaeroides* (9) also occurs in Breconshire.
- 1037 *Andromeda polifolia* is found in 29 districts only.
- 1056 *Statice auriculaefolia* (23) is a western country plant. Recorded also for Glamorgan and Pembroke-shire.
- 1092 *Gentiana Pneumonanthe* has a census number of 30.
- 1152 *Linaria repens* is found in 21 districts only.
- 1164 *Sibthorpia europaea* (8) is one of our rarities. It is only found in the two divisions of Cornwall, North and South Devon, South Somerset, East Sussex, Glamorganshire, and Carmarthenshire.
- 1186 *Bartsia viscosa* (19) is also on the Glamorgan-shire list.
- 1204 *Orobanche hederæ* (20) is found also in the counties of Glamorgan, Brecon, and Pembroke.
- 1298 *Chenopodium ficifolium* is found in 18 districts only.
- 1369 *Euphorbia Paralias*, though common on our sea-coasts, is only recorded for 30 districts.
- 1370 *Euphorbia portlandica* is even rarer, having a census number of 19.
- 1428 *Liparis Loeselii*. This is the rarest flower so far found in the county, having hitherto been recorded for 5 districts only; namely, East Kent, West Suffolk, East Norfolk, Cambridgeshire, and Hants. In the summer of 1897 a friend brought me, with some other wild flowers, two specimens of an insignificant-looking little Orchid. On working these out I found, to my surprise, that they were *Liparis*. He could not tell me exactly where he had picked them,



but knowing the district I was able to make a good guess; and in June, 1898, I had the pleasure of finding several plants of this rare species. I only took three or four, one of which was sent to London and identified as a true *Liparis Loeselii*. Why a plant which had until then been found only in the eastern counties, should have made its appearance in Carmarthenshire is a botanical problem not easy of solution. I regret to say that there is reason to believe that the habitat has recently been destroyed by the shifting of sand hills.

N.B.—Since I wrote this note *Liparis Loeselii* has been recorded for Glamorganshire. See 'Journal of Botany,' number for September, 1905, page 274.

- 1504 *Allium Schoenoprasum* is another very rare flower, the only other districts for which it has been recorded being West Cornwall, South and North Northumberland, Westmoreland, Herefordshire, Radnorshire, Breconshire, Pembrokeshire, Edinburgh, and East Inverness.
- 1538 *Juncus acutus* is only found in 15 districts.
- 1630 *Scirpus cernuus* has a census of 27.
- 1659 *Carex divisa* also is recorded for 27 districts only.
- 1745 *Alopecurus bulbosus* is found in 22 districts only.
- 1822 *Festuca uniglumis* occurs only in 19 districts.
- 1836 *Bromus madritensis* is recorded for 11 only, Glamorgan and Pembrokeshire being among them.

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A list of probable additions to our county flora may be found useful, and I have added it below. All the species mentioned in it have been recorded for three at least of the other counties of South Wales.



- 30 *Ranunculus lingua*: Greater Spearwort (81).  
Recorded for all the other counties of South Wales except Cardiganshire.
- 69 *Fumaria pallidiflora*: Pale-flowered Fumitory (32). Found in Glamorganshire, Breconshire, and Cardiganshire.
- 100 *Cardamine impatiens*: Impatient Lady's Smock (27). On the lists for Glamorganshire, Breconshire, and Radnorshire.
- 158 *Hutchinsia petraea*: Rock Hutchinsia (12).  
Found in Glamorganshire, Breconshire, and Pembrokeshire.
- 223 *Cerastium semidecandrum*: Little Mouse-ear Chickweed (87). Recorded for Glamorganshire, Radnorshire, and Pembrokeshire.
- 251 *Sagina ciliata*: Fries' Small-flowered Pearlwort (66). Found in all the other counties of South Wales except Glamorganshire.
- 282 *Hypericum hirsutum*: Hairy St. John's Wort (89). Recorded for all the other South Wales counties except Cardiganshire.
- 298 *Radiola linoides*: Flax Seed (84). Occurs in the counties of Glamorgan, Pembroke, and Cardigan.
- 552 *Agrimonia odorata*: Fragrant Agrimony (44).  
Recorded for all the other counties of South Wales. I believe that this species grows near Pendine, but as I have not yet seen the plant in flower or seed I could not identify it.
- 423 *Prunus Cerasus*: Dwarf Cherry (33). On the lists for Breconshire, Pembrokeshire, and Cardiganshire.
- 634 *Myriophyllum spicatum*: Spiked Water Milfoil (78). Recorded for the counties of Brecon, Radnor, and Pembroke.



- 651 *Epilobium roseum*: Small-flowered Smooth Willow Herb (46). Found in Glamorganshire, Breconshire, and Radnorshire.
- 713 *Silaus flavescens*: Meadow Sulphurwort (68). Recorded for all the other counties of South Wales except Pembrokeshire.
- 825 *Matricaria chamomilla*: Wild Chamomile (64). Occurs in the counties of Radnor, Pembroke, and Cardigan. I believe that I once found a plant of this species near Carmarthen some years ago.
- 842 *Senecio erucifolius*: Hoary Ragwort (67). On the lists for Glamorganshire, Pembrokeshire, and Cardiganshire.
- 952 *Hieracium murorum*: Wall Hawkweed (68). Grows in all the other South Wales counties except Glamorganshire.
- 1078 *Centunculus minimus*: Bastard Pimpernel (64). Recorded for the counties of Glamorgan, Pembroke, and Cardigan.
- 1260 *Galeopsis versicolor*: Large-flowered Hemp Nettle (80). Found in all the other counties of South Wales except Pembrokeshire.
- 1324 *Polygonum Raii*: Ray's Knotgrass (39). Occurs in Glamorganshire, Pembrokeshire, and Cardiganshire.
- 1501 *Allium vineale*: Crow Garlic (79). Recorded for Glamorganshire, Radnorshire, and Pembroke-shire.
- 1511 *Scilla verna*: Vernal Squill (27). Grows abundantly in some places on the coasts of Glamorgan-shire, Pembrokeshire, and Cardiganshire.
- 1576 *Butomus umbellatus*: Flowering Rush (60). May be found here, as it grows in the counties of Glamorgan, Brecon, and Pembroke.

- 1622 *Eleocharis acicularis*: Slender Club-rush (73).  
Recorded for all the other counties of South Wales  
except Pembrokeshire.
- 1650 *Schoenus nigricans*: Black Schoenus (76).  
Grows in the counties of Glamorgan, Pembroke, and  
Cardigan.
- 1651 *Cladium jamaicense* (mariscus): Fen Sedge  
(39). Found in Glamorganshire, Pembrokeshire, and  
Cardiganshire.
- 1660 *Carex disticha*: Soft Brown Sedge (81).  
Found in Glamorganshire, Breconshire, and Pem-  
brokeshire.
- 1842 *Bromus commutatus*: Confused Brome-grass  
(92). Recorded for the counties of Glamorgan,  
Radnor, and Pembroke.

As will be seen by the summary given below there are many  
other non-Carmarthenshire plants which have been recorded  
for one or more of the other counties of South Wales.

#### SUMMARY.

|   | Number of Species. |
|---|--------------------|
| Found in Carmarthenshire ...  | 799                |
| Recorded for other counties in South Wales,<br>but not yet found in Carmarthenshire ... | 156                |
|   | —                  |
| Total for South Wales ...   | 955                |

#### THE FERNS, HORSETAILS, AND CLUB MOSSES OF CARMARTHENSHIRE.

As in the case of the Flowering Plants I have in the following  
list made use of the numbers and Latin names as given in the  
London Catalogue. As before, an asterisk denotes species not  
seen by me in the county, and † a new record, *i.e.* not given  
in Watson's Topographical Botany.



## FERNS.

- †\*1862 *Hymenophyllum tunbridgense*: Tunbridge  
Filmy Fern. Found by Mr. Knight near Llandilo.
- \*1863 *Hymenophyllum unilaterale*: Wilson's  
Filmy Fern. Recorded in Watson's book on the  
authority of the 'Motley Catalogue.' Also found  
by Mr. Knight near Llandovery.
- 1866 *Pteris aquilina*: Bracken.
- 1868 *Lomaria spicant*: Hard Fern.
- 1871 *Asplenium adiantum nigrum*: Black Spleen-  
wort.
- 1872 *Asplenium marinum*: Sea Spleenwort.  
Ferryside, Pendine, and Laugharne.
- †1873 *Asplenium viride*: Green Spleenwort.  
Near Llynnyfan-fach.
- 1874 *Asplenium trichomanes*: Common Maiden-  
hair Spleenwort.
- 1875 *Asplenium ruta muraria*: Wall Rue.
- 1878 *Athyrium filia foemina*: Lady Fern.
- 1881 *Ceterach officinarum*: Scaly Spleenwort or  
Ceterach.
- 1882 *Scolopendrium vulgare*: Hart's Tongue.
- 1885 *Cystopteris fragilis*: Brittle Bladder Fern.  
Near Llangadock and rarely near Carmarthen.
- 1889 *Polystichum lobatum*: Hard Prickly Shield  
Fern.

- 1890 *Polystichum angulare*: Soft Prickly Shield Fern.
- 1892 *Lastraea Oreopteris*: Mountain Fern.
- 1893 *Lastraea filix mas*: Male Fern.
- † 1898 *Lastraea spinulosa*: Narrow Shield Fern. Gorsgoch.
- 1899 *Lastraea dilatata*: Broad Shield Fern.
- †\* 1900 *Lastraea aemula*: Hay-scented Fern. Found by Mr. Knight near Pumpsaint.
- 1901 *Polypodium vulgare*: Common Polypody.
- † 1902 *Phegopteris dryopteris*: Oak Fern. Upper Towy Valley.
- 1904 *Phegopteris polypodioides* (*Polypodium phegopteris*): Beech Fern.
- 1906 *Osmunda regalis*: Royal Fern.
- 1907 *Ophioglossum vulgatum*: Adder's Tongue.
- \* 1909 *Botrychium Lunaria*: Moonwort. Found by Dr. H. L. Jones near Coomb and by Mr. Knight near Llandovery.

## HORSETAILS.

- 1910 *Equisetum maximum*: Great Water Horsetail. Pontyeates and near Gorslas.
- 1911 *Equisetum arvense*: Field Horsetail.
- \* 1913 *Equisetum sylvaticum*: Wood Horsetail. W. 'Motley Cat.' Also found by Mr. Knight near Llandovery.



1914 *Equisetum palustre*: Marsh Horsetail.

\*1916 *Equisetum limosum*: Smooth Naked Horsetail. W. Also found by Dr. H. L. Jones.

#### CLUB MOSSES.

†\*1921 *Lycopodium Selago*: Fir Club Moss.  
Found by Mr. Knight.

† 1924 *Lycopodium clavatum*: Common Club Moss. Near Conwil.

†\*1925 *Lycopodium alpinum*: Savin-leaved Club Moss. Found by Mr. Knight.

The rarest of our county Ferns are *Hymenophyllum tunbridgense* (found in 28 districts), *Lastraea aemula* (37), *Asplenium viride* (46), and *Hymenophyllum unilaterale* (47).

The other counties in South Wales have furnished five Ferns not yet recorded for our county; namely:—1903, *Phegopteris calcarea*, the Limestone Polypody (24), recorded for Glamorganshire and Breconshire; 1867, *Cryptogramme crispa* (*Allosorus crispus*), the Parsley Fern (58), found in the counties of Glamorgan, Radnor, and Cardigan; 1865, *Adiantum Capillus-Veneris*, the true Maiden-hair (8), on the Glamorganshire list; 1870, *Asplenium lanceolatum*, Lanceolate Spleenwort (13), and 1891, *Lastraea Thelypteris*, The Marsh Buckler Fern (43), both of which are recorded for Glamorganshire and Pembrokeshire.

No. 1917, *Equisetum hyemale* (41), has been found in the county of Glamorgan.

#### SUMMARY.

|             |     | Number of species<br>found in<br>Carmarthenshire. | Number of species<br>found in<br>South Wales. |
|-------------|-----|---|---|
| Ferns       | ... | 26  | 31  |
| Horsetails  | ... | 5   | 6   |
| Club Mosses | ... | 3   | 3   |
|             |     | —   | —   |
| Total       | ... | 34  | 40  |

## THE MOSSES OF CARMARTHENSHIRE.

THE county is, I am sure, very rich in Mosses, and I hope that before long someone will be found who can devote sufficient time and trouble to make a fairly complete list. I am only able to give the names and localities of a few species which I have found in the county.

## ACROCARPI.

*Sphagnum acutifolium*. Common.

*Catharinea undulata*. Very common.

*Polytrichum aloides*. Common on dry banks.

*Polytrichum urnigerum*. Near Penymorfa and Maesteilo.

*Polytrichum juniperinum*. Conwil Valley, &c.

*Polytrichum commune*. Near Llynfan-fach, Llangadock.

*Fissidens taxifolius*. Oaklands, &c.

*Rhacomitrium aciculare*. Bronwydd Arms, Nantycaws Wood, &c.

*Rhacomitrium protensum*. Rocks near Conwil.

*Ptychomitrium polyphyllum*. Near Pontllwni Bridge.

*Funaria hygrometrica*. Generally distributed.

*Bartramia pomiformis*. Not uncommon.

*Breutelia arcuata*. Darren Hill near Brechfa.

*Bryum binum*. Oaklands and near Pencader.

*Bryum capillare*. Fairly common.



*Bryum argenteum*. Common.

*Bryum roseum*. Conwil Valley and near Mine-works.

*Minum undulatum*. Very common.

*Minum hornum*. Common.

*Minum punctatum*. Not uncommon.

#### PLEUROCARPI.

*Homalia trichomanoides*. Fairly common.

*Porotrichum alopecurum*. Not uncommon in woods.

*Thuidium tamariscinum*. Very common.

*Climacium dendroides*. Fairly common in marshy meadows.

*Pleuropus sericeus*. Conwil Valley.

*Brachythecium rutabulum*. Very common.

*Brachythecium purum*. Abundant.

*Eurhynchium piliferum*. Moelfre Wood.

*Eurhynchium praelongum*. Fairly common.

*Eurhynchium rusciforme*. Common.

*Hypnum revolvens*. Marsh on Beaule-fawr Farm, Llangunnor.

*Hypnum cupressiforme*. Fairly common.

*Hypnum cuspidatum*. In wet places.

*Hylocomium loreum*. Near Pencader.

*Hylocomium squarrosum*. Abundant.

*Hylocomium triquetrum*. Common.

HEPATICAÆ.

*Frullania dilatata*. Common on trees.

*Lophoclea bidentata*. Abundant.

*Plagiochila asplenoides*. Very common.

*Pellia calycina*. Conwil Road.

*Porotrichum alopecurum*, *Thuidium tamariscinum*, and *Hylocomium squarrosum*, three of our commonest species, are stated in the 'Student's Handbook of British Mosses' to bear fruit rarely in this country. I have, however, found a few of each in fruit, in Moelfre Wood, Conwil Valley, and near Oaklands respectively.



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