

WALES

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Wales

1. Orange, A. (1991) *A Lichen and Bryophyte Survey of RSPB Woodlands in the Wye-Elan Area*. [Department of Botany, National Museum of Wales: Report to Royal Society for the Protection of Birds.]
Brecknockshire & Radnorshire: VC 42, 43, hectad 22/96. Elan Valley, Allt Ddu, Crwnallt, Gwynllyn Wood. Lichens, bryophytes, on trees, rocks.
2. Orange, A. (1992) *Lichen Monitoring in Wales: Inland Sites*. [Department of Botany, National Museum of Wales: Report to Countryside Council for Wales.]
Brecknockshire & Radnorshire: VC 42, 43, hectads 22/81, 22/85, 32/25. Stanner Rocks NNR, Nant Irfon NNR, Ogof Ffynnon Ddu NNR. Lichens, permanent quadrats.
3. Orange, A. (1994) *A Survey of the Lichens and Bryophytes of Four Hydro-power Schemes*. [Department of Biodiversity and Systematic Biology, National Museum and Gallery, Cardiff: Report to Shawater Ltd.]
Merionethshire & Caernarvonshire: VC 48, 49, hectads 23/55, 23/62, 23/63, 23/65. Afon Prysor, Afon Hwch, Afon Glaslyn, Afon Cwmnantcol, lichens, bryophytes, rivers, zonation.
4. Orange, A. (1994) *Survey of Lichens and Bryophytes of Three Streams in North Wales*. [Department of Biodiversity and Systematic Biology, National Museum and Gallery, Cardiff: Report to Shawater Ltd.]
Merionethshire & Caernarvonshire: VC 48, 49, hectads 23/64, 23/72, 23/74. Afon Gamlan, Afon Croesor, Afon Gamallt, lichens, bryophytes, rivers.
5. Orange, A. (1996) *A Survey of Lichens in Welsh Parklands*. [Department of Botany, National Museum and Gallery, Cardiff: Report to Countryside Council for Wales. CCW Contract Science Report No. 138.]
Monmouthshire, Glamorgan, Radnorshire, Carmarthenshire, Cardiganshire, Montgomeryshire, Merionethshire, Caernarvonshire, Denbighshire & Anglesey: VC 35, 41, 43, 44, 46, 47, 48, 49, 50, 52. 22 sites, with VC and hectads listed: Llanover Park (VC 35, 32/30), Wyelands (VC 35, 31/59), Piercefield Park (VC 35, 31/59), Penrice Castle (VC 41, 21/48, 21/58), St Fagans (VC 41, 31/17), Coedcae-bach (Cefn Mably; VC 41, 31/28), Maesllwch Castle (VC 43, 32/13, 32/14), Dinefwr Park (VC 44, 22/62), Parc Nanteos (VC 46, 22/67), Old Cilgwyn (VC 46, 22/34), Vaynor Park (VC 47, 32/19, 33/10), Llanerchydol Hall (VC 47, 33/20), Gregynog: The Warren (VC 47, 32/09), Rug (VC 48, 33/04), Rhagatt Hall (VC 48, 33/04), Dolmelynlyn (VC 48, 23/72), Dologwen (VC 49, 23/67), Plas Heaton (VC 50, 33/06), Chirk Castle (VC 50, 33/23), Erddig (VC 50, 33/34), Baron Hill (VC 52, 23/67), Plas Newydd (VC 52, 23/56, 23/57).

6. Orange, A. (1996) *A465 Abergavenny to Hirwaun Dualling: Lichen Survey and Assessment*. [Department of Botany, National Museum and Gallery, Cardiff: Report SGS Environment]. **Glamorgan & Brecknockshire:** VC 41, 42, , hectads 22/90, 32/00, 32/11, 32/21. Cwm Clydach, Cwm Ffrwd, Carno Reservoir and others. Contact: SGS Environment, Ivor House, Bridge Street, Cardiff CF1 2EE.
7. Orange, A. (1997) *A Baseline Survey of Rare Lichen Species in South Area*. [Department of Botany, National Museum and Gallery, Cardiff: Report to Countryside Council for Wales]. **Monmouthshire & Glamorgan:** VC 35, 41, hectads 21/48, 21/58, 21/97, 31/06, 31/16, 31/17, 31/59, status of *Bacidia incompta*, *Caloplaca granulosa*, *Collema fragile*, *Endocarpon adscendens*, *E. pusillum*, *Lecanactis amylacea*, *Staurothele rufa*, *Zamenhofia rosei*.
8. Orange, A. (1998) *Monitoring Effects of Run-of-River Hydro Schemes: Preliminary Assessment of Suitability of Five Sites*. [Department of Biodiversity and Systematic Biology, National Museum and Gallery, Cardiff: Report to Shawater Ltd]. **Merionethshire, Caernarvonshire and Denbighshire:** VC 48, 49, 50, hectads 23/65, 23/81, 23/82, 23/83, 33/12. Afon Harnog, Cwm-Illan, Afon Tryweryn, Afon Iwrch, Nant y Graig-wen, lichens, bryophytes, freshwater. Contact: Shawater Ltd., Ston Easton, Bath, BA3 4DN.

Brecknockshire

- 1a. Coppins, A.M. & Coppins, B.J. (2001). *Nant Irfon NNR*, Brecknockshire (VC 42): Lichen Survey and Monitoring. [Report to the Countryside Council for Wales]. 169 pp.
Upland oakwood and moorland rocks. Survey and site condition monitoring, and detailed management proposals. Total lichen taxa 275, 133 epiphytic, 145 saxicolous; RIEC 35, EUOCIEC 13 = 4.
Lichenicolous fungi 12.
- 1b. Coppins, A.M. & Fryday, A.M. (1997). *Nant Irfon NNR - Resurvey of lichen of lichen quadrats*. [Report to Countryside Council for Wales, Order no. MS01051]. 75 pp.
Review of 36 permanent quadrats for saxicolous lichen communities.
- 1c. Fryday, A.M. & Coppins, A.M. (1997). *Nant Irfon NNR - Lichen Survey*. [Report to Countryside Council for Wales, Project no. NNR014/RF54/02]. 37 pp. (woodland section).
Upland oak woods. Total lichen taxa (epiphytes) 106; RIEC 30; EUOCIEC 14. Lichenicolous fungi 4.
- 1d. Woods, R.G. (1978) *The Lichen-dominated epiphytic communities of Nant Irfon NNR*. [Report to Nature Conservancy Council, Dyfed-Powys Region]. 12 pp.
- 1e. Woods, R.G. (1984?) *An Annotated Check List of the Lichens of Nant Irfon NNR*. [Unpublished A5 handbook, copy held by the Countryside Council for Wales Warden]. 76 pp.
2. Orange, A. (2002). *A Survey of the Saxicolous Lichen and Bryophyte Communities of the Brecon Beacons cSAC*. National Museums and Galleries of Wales: Report to Countryside Council for Wales.
[94 relevés on lichen or bryophyte dominated rock surfaces (Old Red Sandstone) were grouped into 17 provisional noda. V.C. 42, hectads 22/92, 32/02]

Caernarvonshire

- 1a. Fryday, A. M. (1994). *Lichen Survey of High Ground in Snowdonia, North Wales*. [Report to the Countryside Council for Wales, Bangor].

- 1b. Fryday, A. M. (1995). *A Further Lichen Survey of High Ground in Snowdonia, North Wales*. Report to the Countryside Council for Wales, Bangor].
- 1c. Fryday, A. M. (1996). *Lichen survey of selected high-level sites in Snowdonia, North Wales*. [Report to the Countryside Council for Wales, Bangor].
2. Orange, A. (1998) *Lichens and Bryophytes Recorded at the Afon Llafar, Bethesda, May-June 1998*. [Department of Biodiversity and Systematic Biology, National Museum and Gallery, Cardiff.]
Wales, VC 49, hectad 23/66. Lichens, bryophytes, rivers, zonation. Contact: author.
3. Orange, A. & Fryday, A. (1998) *A Survey of the Saxicolous Lichen and Bryophyte Communities of Eryri cSAC and Moel Hebog SSSI*. [Department of Biodiversity and Systematic Biology, National Museum and Gallery, Cardiff: Report to Countryside Council for Wales. CCW Contract Science Report No. 312.] 74 pp
VC 49, hectads 23/54, 23/55, 23/65, 23/66, 23/76. Eryri (Snowdonia), Yr Wyddfa SSSI, Glydeiriau and Cwm Idwal SSSI, Carneddau SSSI, Moel Hebog SSSI, upland saxicolous lichens and bryophytes, communities, phytosociology.
4. Sanderson, N. A. (1999). *Coedydd Aber Lichen Survey 1998*. [Report to the Countryside Council for Wales]. 81 pp., incl. maps, species lists, photographs and database printout.
Upland pasture woodland, old oak & ancient ash, tagged trees and species distributions mapped. Total lichen taxa 111; RIEC 90; NIEC 28; EOCIEC 6.

Cardiganshire

1. Fryday, A. M. (1989). *A preliminary survey of the lichen flora of disused metal mines in Mid-Wales*. [Nature Conservancy Council, Aberystwyth].
Notes on 33 disused mine sites in Cardiganshire and one in Montgomeryshire.
2. Orange, A. (1998) *A Bryophyte and Lichen Survey of the Proposed Hydropower Scheme at the Mynach falls, Devil's Bridge*. [Department of Biodiversity and Systematic Biology, National Museum and Gallery, Cardiff: Report to Hyder Environmental].
VC 46, hectad 22/77. Lichens, bryophytes, all substrata.
3. Wolseley, P. & Orange, A. (1998) *Lichen Survey of Coed Rheidol NNR*. [Report to Countryside Council for Wales].
VC 46, hectad 22/77. Lichens on rocks, trees, permanent quadrats on trees.
4. Senior, M. (1994). *Lichens on slate at the Welsh Wildlife Centre, Aberteifl, Nr Cardigan*. (SN185459 - SN195444). [Report to the Welsh Wildlife Centre].
Species lists from the six abandoned slate quarries which form part of the Centre. Lists for the individual quarries, the spoil tip and the whole site are presented, together with photographs and a map of the site. Only lichens occurring directly on the slate were recorded. Lichens from other habitats were recorded by P. A. Wolseley (B.M.N.H.).

Carmarthenshire

- 1a. Coppins, A.M. & Coppins, B.J. (2001). *Allt Rhyd y Groes NNR*, Carmarthenshire (VC 44): Lichen Survey and Monitoring. [Report to the Countryside Council for Wales]. 162 pp. Upland oakwood and rock outcrops. Survey and site condition monitoring, and detailed management proposals. Total lichen taxa 274, 176 epiphytic, 105 saxicolous; RIEC 70, EUOCIEC 15 + 6. Lichenicolous fungi 3.
- 1b. Fryday, A.M. & Coppins, A.M. (1997). *Allt Rhyd y Groes NNR - Lichen Survey*. [Report to the Countryside Council for Wales, Project no. NNR031/RF54/02]. 39 pp. (woodland section). Upland oak woods. Total lichen taxa (epiphytes) 154; RIEC 60; EUOCIEC 16.
- 1c. Woods, R.G. (1980) *The lichen dominated epiphyte communities of Allt Rhydygroes NNR*. [Report to Countryside Council for Wales]. 21 pp.
2. Orange, A. (1985) *The Epiphytic Lichens of Dynevor Deer Park*. [Report to Nature Conservancy Council].
VC 44, hectad 22/62. Dinefwr Park, lichens on trees and wood.
3. Orange, A. (1988) *The Lichens of Dinefwr*. [Department of Botany, National Museum of Wales: Report to National Trust and Nature Conservancy Council].
VC 44, hectad 22/62. Dinefwr Deer Park, lichens on trees and wood.]
4. Orange, A. (1994) *A Survey of the Lichens of Castle Woods, Llandeilo*. [Department of Botany, National Museum of Wales: Report to Countryside Council for Wales].
VC 44, hectad 22/62. Lichens on trees and wood.
5. Orange, A. (1997) *A Lichen Survey of the National Botanic Garden of Wales*. [Department of Biodiversity and Systematic Biology, National Museum and Gallery, Cardiff].
VC 44, hectad 22/51. Contact: author.

Denbighshire

1. Fryday, A. M. (1997). *Lichen survey report: Creag Bran-Banog, Clywd*. [Report to Countryside Council for Wales, Mold].
In Clocaenog Forest, 33/018.520; alternative spelling **Craig Bron-banog**.

Flintshire

1. Gilbert, O.L. (2000). *Critique of Lichen Work Carried Out at Padeswood Cement Works and an Assessment of Current Air Quality around Penyfford as Evidenced by Lichens*. [Report to Castle Cement, Padeswood, Mold]. 6 pp. incl. map and table.
Long term.

Glamorgan

1. Orange, A. (1988) *A Survey of the Bryophytes and Lichens of Cwm Clydach, West Glamorgan*. [Department of Botany, National Museum of Wales: Report to Royal Society for the Protection of Birds].
VC 41, hectad 22/60. Lichens, bryophytes, all substrata.
2. Coppins, A.M. & Coppins, B.J. (2002). *Nicholaston Burrows SSSI (VC 41 Glamorgan): Lichen Survey*. [Report to The National Trust]. 19 pp., incl. map, species list and Figs.
37 lichens: 14 corticolous or lignicolous, 23 terricolous; lichenicolous fungi 1.

Merioneth

1. Fryday, A. M. (1992). *Lichen survey of Dolmelynlyn Park, Ganllwyd, North Wales*. [Report to The National Trust, Cirencester].
2. Orange, A. (1991) *A Lichen and Bryophyte Survey of RSPB Woodlands in the Mawddach Area*. [Department of Botany, National Museum of Wales: Report to Royal Society for the Protection of Birds].
VC 48, hectads 23/61, 23/62, 23/71. Lichens, bryophytes, woodland, rock, Mawddach estuary, Coedydd Afon Gwynnant, Coed y Gribin, Coed Garth Gell, Cwm Mynach, Coed y Parc.
3. Orange, A. (1996) *A Lichen and Bryophyte Survey of the Proposed Afon Gain/Afon Mawddach Hydro-power Scheme*. [Department of Biodiversity and Systematic Biology, National Museum and Gallery, Cardiff: Report to Shawater Ltd].
VC 48, hectad 23/72. Lichens, bryophytes, rivers.
4. Orange, A. (1996) *A Lichen and Bryophyte Survey of the Proposed Afon Cwmnantcol Hydro-power Scheme*. [Department of Biodiversity and Systematic Biology, National Museum and Gallery, Cardiff: Report to Shawater Ltd.]
VC 48, hectad 23/62. Lichens, bryophytes, rivers, species on trees and rock.
5. Orange, A. (1996) *A Lichen and Bryophyte Survey of the Proposed Afon Gamlan Hydro-power Scheme*. [Department of Biodiversity and Systematic Biology, National Museum and Gallery, Cardiff: Report to Shawater Ltd.]
VC 48, hectad 23/72. Coed Ganllwyd, lichens, bryophytes, rivers.
6. Orange, A. (1996) *A Lichen and Bryophyte Survey of the Proposed Afon Ysgethin Hydro-power Scheme*. [Department of Biodiversity and Systematic Biology, National Museum and Gallery, Cardiff: Report to Shawater Ltd.]
VC 48, hectads 23/52, 23/62. Coed Cors y Gedol, lichens, bryophytes, rivers.
7. Orange, A. (1999) *Proposed Hydropower Scheme at Nant y Graig-wen: preliminary attempt to correlate distribution of riparian bryophyte and lichen communities to water levels*. [Department of Biodiversity and Systematic Biology, National Museum and Gallery, Cardiff: Report to Shawater Ltd.]
VC 48, hectad 23/81. Lichens, bryophytes, rivers, freshwater, communities.
8. Orange, A. (2003). *A Lichen Survey of the Oakwoods of Meirionnydd and Dwyfor (North Wales)*. National Museums and Galleries of Wales: Report to Countryside Council for Wales.
[Lichen survey of 50 woodland areas in V.C.s 48 and 49 in 2002, hectads 23/52, 53, 54, 61, 62, 63, 64, 65, 71, 72, 73. Surveyors Alan Orange, Bryan Edwards, Vince Giavarini. Includes epiphytic species and some on rocks. Includes brief discussion of lichen communities, including summaries of some relevé data. Bound copy of main report, with site species lists and maps provided to CCW in plastic wallets.]

Montgomeryshire

1. Orange, A. (1993) *Effects of Channel Liming on the Bryophytes and Lichens of the Upper River Severn*. [Department of Botany, National Museum of Wales: Report to National Rivers Authority].
VC 47, hectad 22/88. Afon Hafren, lichens, bryophytes, freshwater, monitoring by quadrats; liming experiment failed: no results relevant to this.

Pembrokeshire

1. Coppins, A.M. & Coppins, B.J. (1997). *The Stackpole Woodlands, Pembrokeshire (VC 45): Lichen Survey*. [Report to The National Trust]. 167 pp., incl. maps, species lists & Figs. Disturbed valley woodlands, woodland carr, former aboretum, lake-side woods; tagged trees. Total lichen taxa 187; RIEC 65; NIEC 35. Lichenicolous fungi 11.
2. Coppins, A.M. & Coppins, B.J. (1997). *Little Craig-y-Borion, Colby Lodge Estate (Pembrokeshire, VC 45): Lichen Survey*. [Report to the National Trust]. 30pp., incl. map, species list & Figs. Disturbed valley woodland. Total lichen taxa 105; RIEC 40; NIEC 18. Lichenicolous fungi 4.
3. Orange, A. (1995) *Lichens recorded from Rosemoor Nature Reserve*. [Department of Botany, National Museum of Wales]. VC 45, hectad 12/81. 73 species including *Usnea articulata* and *U. esperantiana*. Contact: author.
4. Orange, A. (1997) *Monitoring of Lichen Communities at Stackpole Warren NNR*. [Department of Botany, National Museum and Gallery, Cardiff: Report Countryside Council for Wales]. VC 45, hectad 11/99. Terricolous lichens, monitoring.
5. Orange, A. (1998) *A Survey of the Lichen Communities of Carn Ingli SSSI, Pembrokeshire*. [Department of Biodiversity and Systematic Biology, National Museum and Gallery, Cardiff: Report to Countryside Council for Wales]. VC 45, hectad 22/03; saxicolous and terricolous lichen-dominated communities, phytosociology, status of *Cladonia mediterranea* (not found).
6. Orange, A. & Wolseley, P. (1996) *Survey and Monitoring of Lichens at Coedmor National Nature Reserve*. [Department of Botany, National Museum and Gallery, Cardiff: Report to Countryside Council for Wales]. VC 45, hectads 22/14, 22/24. Lichens on trees and rock, permanent quadrats.

Radnorshire

1. Coppins, A.M. & Coppins, B.J. (1997). *Stanner Rocks NNR: Resurvey of Lichen Quadrats*. [Report to Countryside Council for Wales, Order No. MS00899]. 37pp. Review of 16 permanent quadrats for saxicolous lichen communities.
2. Orange, A. (1991) *Coed yr Allt-gôch SSSI: A Short Survey of the Lichens and Bryophytes, and the Establishment of Permanent Quadrats to Monitor Vegetation Change Following Fencing*. [Department of Botany, National Museum of Wales: Report to Countryside Council for Wales]. VC 43, hectads 22/86, 22/96. Lichens, bryophytes, trees, rock, monitoring of ground vegetation including vascular plants].
3. Orange, A. (1993) *A Survey of the Lichens and Bryophytes of Cwm Coel, Elan Valley*. [Department of Botany, National Museum of Wales: Report to Countryside Council for Wales]. VC 43, hectads 22/86, 22/96. Lichens, bryophytes, on trees and rocks.