References

In this reference list the arrangement is alphabetical by author surname for works by sole authors and dual authors. Where there are references that include the first-named author with others, the sole-author works are listed chronologically first, followed by the dual author references (alphabetically) followed by the references with three or more authors listed *chronologically*. Chronological order is used within each group of identical authors.

Aldridge, R.J., Siveter, David J., Siveter, Derek J., Lane, P.D., Palmer, D. and Woodcock, N.H. (2000) *British Silurian Stratigraphy*, Geological Conservation Review Series, No. 19, Joint Nature Conservation Committee, Peterborough, 542 pp.

Allen, J.R.L. (1961) The highest Lower Old Red Sandstone of Brown Clee Hill, Shropshire. *Proceedings of the Geologists' Association*, 72, 205–19.

Allen, J.R.L. (1962) Intraformational conglomerates and scoured surfaces in the Lower Old Red Sandstone of the Anglo-Welsh cuvette. *Geological Journal*, 3, 1–20.

Allen, J.R.L. (1963a) The classification of cross-stratified units, with notes on their origin. Sedimentology, 2, 93–114.

Allen, J.R.L. (1963b) Depositional features of Dittonian rocks: Pembrokeshire compared with the Welsh Borderland. *Geological Magazine*, 100, 385–400.

Allen, J.R.L. (1964a) Studies in fluviatile sedimentation: six cyclothems from the Lower Old Red Sandstone, Anglo-Welsh Basin. *Sedimentology*, 3, 163–98.

Allen, J.R.L. (1964b) Primary current lineation in the Lower Old Red Sandstone (Devonian), Anglo-Welsh Basin. *Sedimentology*, 3, 89–108.

Allen, J.R.L. (1965a) The sedimentation and palaeogeography of the Old Red Sandstone of Anglesey, North Wales. *Proceedings of the Yorkshire Geological Society*, 35, 139–85.

Allen, J.R.L. (1965b) Upper Old Red Sandstone (Farlovian) paleogeography in South Wales and the Welsh Borderland. *Journal of Sedimentary Petrology*, 35, 167–95.

Allen, J.R.L. (1970) Studies in fluviatile sedimentation: a comparison of fining-upwards cyclothems, with special reference to coarse-member composition and interpretation. *Journal of Sedimentary Petrology*, 40, 298–323.

Allen, J.R.L. (1971) The sedimentation of the Old Red Sandstone in the Forest of Dean. In *Geological Excursions in South Wales and the Forest of Dean* (eds D.A. Bassett and M.G. Bassett), Geologists' Association South Wales Group, Cardiff; pp. 9–19.

Allen, J.R.L. (1973a) A new find of bivalve molluscs in the uppermost Downtonian (Lower Old Red Sandstone) of Lydney, Gloucestershire. *Proceedings of the Geologists' Association*, 84, 27–9.

Allen, J.R.L. (1973b) Compressional structures (patterned ground) in Devonian pedogenic limestones. *Nature Physical Science*, 243, 84–6.

Allen, J.R.L. (1974a) The Devonian rocks of Wales and the Welsh Borderland. In *The Upper Palaeozoic and post-Palaeozoic Rocks of Wales* (ed. T.R. Owen), University of Wales Press, Cardiff pp. 47–84.

Allen, J.R.L. (1974b) Source rocks of the Lower Old Red Sandstone: exotic pebbles from the Brownstones, Ross-on-Wye, Hereford and Worcester. *Proceedings of the Geologists' Association*, 85, 493–510.

Allen, J.R.L. (1974c) Sedimentology of the Old Red Sandstone (Siluro-Devonian) in the Clee Hills area, Shropshire, England. *Sedimentary Geology*, 12, 73–167.

Allen, J.R.L. (1974d) Studies in fluviatile sedimentation: implications of pedogenic carbonate units, Lower Old Red Sandstone, Anglo-Welsh outcrop. *Geological Journal*, 9, 181–208.

Allen, J.R.L. (1974e) Studies in fluviatile sedimentation: lateral variation in some fining-upwards cyclothems from the Red Marls, Pembrokeshire. *Geological Magazine*, 9, 1–16.

Allen, J.R.L. (1975) Source rocks of the Lower Old Red Sandstone: Llanishen Conglomerate of the Cardiff area, South Wales. *Proceedings of the Geologists' Association*, 86, 63–76.

Allen, J.R.L. (1977) Wales and the Welsh Borders. In A *Correlation of Devonian Rocks in the British Isles* (eds M.R. House, J.B. Richardson, W.G. Chaloner, J.R.L. Allen, C.H. Holland and T.S. Weston), *Geological Society of London Special Report*, No. 8, Scottish Academic Press, Edinburgh, pp. 40–54.

Allen, J.R.L. (1978a) Locality B2. Ross-on-Wye, Hereford and Worcester. In A *Field Guide to Selected Outcrop Areas of the Devonian of Scotland, the Welsh Borderland and South Wales: International Symposium on the Devonian System (P.A.D.S. 78)* (eds P.F. Friend and B.P.J. Williams), Palaeontological Association, London, p. 63.

Allen, J.R.L. (1978b) Locality Bl. Lydney, Gloucestershire. In A Field Guide to Selected Outcrop Areas of the Devonian of Scotland, the Welsh Borderland and South Wales: International Symposium on the Devonian System (P.A.D.S. 78)(eds P.F. Friend and B.P.J. Williams), Palaeontological Association, London, pp. 61–3.

Allen, J.R.L (1978c) Locality B11. Llanstephan, Dyfed. In A *Field Guide to Selected Outcrop Areas of the Devonian of Scotland, the Welsh Borderland and South Wales: International Symposium on the Devonian System* (P.A.D.S. 78) (eds P.F. Friend and B.P.J. Williams), Palaeontological Association, London, pp. 79–82.

Allen, J.R.L. (1979) Old Red Sandstone facies in external basins, with particular reference to southern Britain. In *The Devonian System: A Palaeontological Association International Symposium* (eds M.R. House, C.R. Scrutton and M.G. Bassett), *Special Papers in Paleontology*, No. 23, Palaeontological Association, London, pp. 65–80.

Allen, J.R.L. (1980) Institute of Geological Sciences field seminar on the Lower Old Red Sandstone in South Wales and the Welsh Borders, unpublished.

Allen, J.R.L. (1983a) Studies in fluviatile sedimentation: bars, bar-complexes and sandstone sheets (low sinuosity braided streams) in the Brownstones (L. Devonian), Welsh borders. *Sedimentary Geology*, 33, 237–93.

Allen, J.R.L. (1983b) Gravel overpassing on humpback bars supplied with mixed sediment: examples from the Lower Old Red Sandstone, southern Britain. *Sedimentology*, 30, 285–94.

Allen, J.R.L. (1985) Marine to freshwater: the sedimentology of the interrupted environmental transition (Ludlow-Siegenian) in the Anglo-Welsh region. *Philosophical Transactions of the Royal Society of London*, B309, 85–104.

Allen, J.R.L. (1986) Pedogenic calcretes in the Old Red Sandstone fades (late Silurian-early Carboniferous) of the Anglo Welsh area, southern Britain. In *Palaeosols: Their Recognition and Interpretation* (ed. V.P. Wright), Blackwell Scientific Publications, Oxford, pp. 58–86.

Allen, J.R.L. and Crowley, S.F. (1983) Lower Old Red Sandstone fluvial dispersal systems in the British Isles. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 74, 61–8.

Allen, J.R.L. and Tarlo, L.B. (1963) The Downtonian and Dittonian fades of the Welsh Borderland. *Geological Magazine*, 100, 129–55.

- Allen, J.R.L. and Williams, B.P.J. (1978) The sequence of the earlier Lower Old Red Sandstone (Siluro-Devonian), north of Milford Haven, southwest Dyfed Wales. *Geological Journal*, 13, 113–36.
- Allen, J.R.L. and Williams, B.P.J. (1979a) Old Red Sandstone fades and Wenlock stratigraphy and palaeogeography in Wales and the Welsh Borderland. *Proceedings of the Geologists' Association*, 90, 229–30.
- Allen, J.R.L. and Williams, B.P.J. (1979b) Interfluvial drainage on Siluro-Devonian alluvial plains in Wales and the Welsh Borders. *Journal of the Geological Society of London*, 136, 361–6.
- Allen, J.R.L. and Williams, B.P.J. (1981a) Sedimentology and stratigraphy of the Townsend Tuff Bed (Lower Old Red Sandstone) in South Wales and the Welsh Borders. *Journal of the Geological Society of London*, 138, 15–29.
- Allen, J.R.L. and Williams, B.P.J. (1981b) *Beaconites antarcticus:* a giant channel-associated trace fossil from the Lower Old Red Sandstone of South Wales and the Welsh Borders. *Geological Journal*, 16, 255–69.
- Allen, J.R.L. and Williams, B.P.J. (1982) The architecture of an alluvial suite: rocks between the Townsend Tuff and Pickard Bay Tuff Beds (early Devonian) southwest Wales. *Philosophical Transactions of the Royal Society of London*, B297, 51–89.
- Allen, J.R.L., Dineley, D.L. and Friend, P.F. (1967) Old Red Sandstone basins of North America and Northwest Europe. In *Proceedings of the International Symposium on the Devonian System* (ed. D.H. Oswald), Alberta Association of Petroleum Geologists, Calgary, 1, pp. 69–98.
- Allen, J.R.L., Halstead, L.B. and Turner, S. (1968) Dittonian ostracoderm fauna from the Brownstones of Wilderness Quarry, Mitcheldean, Gloucestershire. *Proceedings of the Geological Society of London*, No. 1649, 141–53.
- Allen, J.R.L., Bassett, M.G., Hancock, P.L., Walmsley, V.G. and Williams, B.P.J. (1976) Stratigraphy and structure of the Winsle Inlier, southwest Dyfed, Wales. *Proceedings of the Geologists' Association*, 87, 221–9.
- Allen, J.R.L., Thomas, R.G. and Williams, B.P.J. (1981a) Field Meeting: the facies of the Lower Old Red Sandstone, north of Milford Haven, southwest Dyfed, Wales. *Proceedings of the Geologists' Association*, 92, 251–67.
- Allen, J.R.L., Elliott, T and Williams, B.P.J. (1981b) Old Red Sandstone and Carboniferous fluvial sediments in South Wales. In Field Guides to Modern and Ancient Fluvial Systems in Britain and Spain. Proceedings of the Second International Conference on Fluvial Sediments: Modern and Ancient Fluvial Systems: Sedimentology and Processes, University of Keele, 21–25 September 1981 (ed. T. Elliott), University of Keele, Keele, pp. 1.1–1.39.
- Allen, J.R.L., Thomas, R.G. and Williams, B.P.J. (1982) The Old Red Sandstone north of Milford Haven. In *Geological Excursions in Dyfed, South-west Wales* (ed. M.G. Bassett), National Museum of Wales, Cardiff, for the Geologists' Association South Wales Group, pp. 123–49.
- Allen, P.A. (1981a) Sediments and processes on a small stream-flow dominated, Devonian alluvial fan, Shetland Islands. *Sedimentary Geology*, 29, 31–66.
- Allen, P.A. (1981b) Devonian lake margin environments and processes, SE Shetland, Scotland. *Journal of the Geological Society of London*, 138, 1–14.
- Allen, P.A. and Marshall, J.E.A. (1981) Depositional environments and palynology of the Devonian south-east Shetland Basin. *Scottish Journal of Geology*, 17, 257–73.
- Almond, J. (1983) The sedimentology of the earliest Lower Old Red Sandstone, south central Wales. Unpublished PhD thesis, University of Bristol.
- Almond, J., Williams, B.P.J. and Woodcock, N.H. (1993) The Old Red Sandstone of the Brecon Beacons to Black Mountain area. In *Geological Excursions in Powys*, *Central Wales* (eds N.H. Woodcock and M.G. Bassett), National

Museum of Wales and University of Wales Press, Cardiff; for the Geologists' Association South Wales Group, pp. 311–30.

Anderson, J.G.C. (1944) The Dalradian rocks of Arran. Transactions of the Geological Society of Glasgow, 20, 274.

Anderson, J.G.C. (1954) "Hutton's Unconformity". Geological Magazine, 91, 85-6

Anderson, L.I. and Trewin, N.H. (2003) An Early Devonian arthropod fauna from the Windyfield cherts, Aberdeenshire, Scotland. *Palaeontology*, 46, 467–509.

Anderson, L.I., Crighton, W.R.B. and Hass, H. (2004) A new crustacean with 'cladoceran' affinities from the early Devonian (Pragian) Rhynie chert hot-spring complex. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 94, 355–69.

Anderton, R., Bridges, RH., Leeder, M.R. and Selwood, B.W. (1979) A *Dynamic Stratigraphy of the British Isles*, Allen and Unwin, London, 301 pp.

Andrews, J.E., Turner, M.S., Nabi, G. and Spiro, B. (1991) The anatomy of an early Dinantian floodplain: palaeoenvironment and early diagenesis. *Sedimentology*, 38, 271–87.

Archer, R. (1978) The Old Red Sandstone outliers of Gamrie and Rhynie, Aberdeenshire. Unpublished PhD thesis, University of Newcastle-upon-Tyne.

Armstrong, H.A. and Owen, A.W. (2000) Age and provenance of limestone clasts in Lower Old Red Sandstone conglomerates: implications for the geological history of the Midland Valley Terrane. In *New Perspectives on the Old Red Sandstone* (eds P.F. Friend and B.J.P. Williams), *Geological Society Special Publication*, No. 180, Geological Society London, pp. 459–71.

Armstrong, M. (1977) The Old Red Sandstone of Easter Ross and the Black Isle. In *The Moray Firth Area — Geological Studies* (ed. G. Gill), Inverness Field Club, Inverness, pp. 25–34.

Armstrong, M. and Paterson, I.B. (1970) The Lower Old Red Sandstone of the Strathmore Region. *Report of the Institute of Geological Sciences*, 70/12, 24 pp.

Armstrong, M., Donovan, R.N. and Mykura, W. (1978a) Western Moray Firth and Caithness. In A *Field Guide to Selected Outcrop Areas of the Devonian of Scotland, the Welsh Borderland and South Wales: International Symposium on the Devonian System (PA.D.S. 78)* (eds P.F. Friend and B.P.J. Williams), Palaeontological Association, London, pp. 32–7.

Armstrong, M., Donovan, R.N. and Paterson, I.B. (1978b) Angus and Kincardine. In A *Field Guide to Selected Outcrop Areas of the Devonian of Scotland, the Welsh Borderland and South Wales: International Symposium on the Devonian System (P.A.D.S. 78)* (eds Friend and B.P.J. Williams), Palaeontological Association, London, pp. 13–22.

Armstrong, M., Paterson, I.B. and Browne, M.A.E. (1985) *Geology of the Perth and Dundee District,* Memoir of the British Geological Survey, sheets 48W, 48E and 49 (Scotland), HMSO, London, 108 pp.

Arthurton, R.S. and Wadge, A.J. (1981) *Geology of the Country Around Penrith,* Memoir of the Geological Survey of Great Britain, Sheet 24 (England and Wales), HMSO, London, 177 pp.

Astin, T.R. (1982) The Devonian geology of the Walls Peninsula, Shetland. Unpublished PhD thesis, University of Cambridge.

Astin, T.R. (1985) The palaeogeography of the Middle Devonian Lower Eday Sandstone, Orkney. *Scottish Journal of Geology*, 21, 353–75.

Astin, T.R. (1990) The Devonian lacustrine sediments of Orkney, Scotland; implications for climatic cyclicity, basin structure and maturation history. *Journal of the Geological Society of London*, 147, 141–51.

Astin, T.R. and Rogers, D.A. (1991) "Subaqueous shrinkage cracks" in the Devonian of Scotland reinterpreted. *Journal of Sedimentary Petrology*, 61, 850–9.

Astin, T.R. and Rogers, D.A. (1992) "Subaqueous shrinkage cracks" in the Devonian of Scotland reinterpreted. Discussion. *Journal of Sedimentary Petrology*, 62, 923–4.

Astin, T.R. and Rogers, D.A. (1993) "Subaqueous shrinkage cracks" in the Devonian of Scotland reinterpreted. Discussion. *Journal of Sedimentary Petrology*, 63, 566–7.

Balin, D.F. (1993) Upper Old Red Sandstone sedimentation in the eastern Midland area, Scotland. Unpublished PhD thesis, University of Cambridge.

Balin, D.F. (2000) Calcrete morphology and karst development in the Upper Old Red Sandstone at Milton Ness, Scotland. In *New perspectives on the Old Red Sandstone* (eds P.F. Friend and B.P.J. Williams), *Geological Society Special Publication*, No. 180, Geological Society London, pp. 485–501.

Ball, W.H. and Dineley, D.L. (1961) The Old Red Sandstone of Brown Clee Hill and the adjacent area. I. Stratigraphy. *Bulletin of the British Museum (Natural History)*, A5, 177–242.

Banks, H. (1980) Floral assemblages in the Siluro-Devonian. In *Biostratigraphy of Fossil Plants: Successional and Paleoecological Analyses* (eds D.L. Dilcher and T.N. Taylor), Dowden, Hutchinson and Ross, Stroudsberg, pp. 1–24.

Barclay, W.J. (1975) Annual Report for 1974. Institute of Geological Sciences, London, p. 21.

Barclay, W.J. (1989) *Geology of the South Wales Coalfield: Part II: The Country Around Abergavenny,* 3rd edn, Memoir of the British Geological Survey, Sheet 232 (England and Wales), HMSO, London, 147 pp.

Barclay, W.J. and Wilby, P.R. (2003) *Geology of the Talgarth District — A Brief Explanation of the Geological Map,* Sheet Explanation of the British Geological Survey, Sheet 214 (England and Wales), British Geological Survey, Keyworth, 22 pp.

Barclay, W.J., Taylor, K. and Thomas, L.P. (1988) *Geology of the South Wales Coalfield: Itsrt The Country Around Merthyr Tydfil*, Memoir of the British Geological Survey, Sheet 231 (England and Wales), 3rd edn, HMSO, London, 52 pp.

Barclay, W.J., Glover, B.W. and Mendum, J.R. (1993) "Sub-aqueous shrinkage cracks" in the Devonian of Scotland reinterpreted. Discussion. Journal *of Sedimentary Petrology*, 63, 564–5.

Barclay, W.J., Rathbone, P.A., White, D.E. and Richardson, J.B. (1994) Brackish water faunas from the St. Maughans Formation: the Old Red Sandstone section at Ammons Hill, Hereford and Worcester, UK, re-examined. *Geological Journal*, 29, 369–79.

Barclay, WJ., Davies, J.R., Humpage, A., Waters, R.A., Wilby, P.R., Williams, M. and Wilson, D. (in press) *Geology of the Country Around Brecon,* Sheet Explanation of the British Geological Survey, Sheet 213 (England and Wales), British Geological Survey, Keyworth.

Bassett, M.G. (1974) Review of the stratigraphy of the Wenlock Series in the Welsh Borderland and South Wales. *Palaeontology*, 17, 745–77.

Bassett, M.G. (1982a) Ordovician and Silurian sections in the Llangadog-Llandilo area. In *Geological Excursions in Dyfed, South-west Wales* (ed. M.G. Bassett), National Museum of Wales, Cardiff, for the Geologists' Association South Wales Group, pp. 271–87.

Bassett, M.G. (1982b) Silurian rocks of the Marloes and Pembroke peninsulas. In *Geological Excursions in Dyfed, South-west Wales* (ed. M.G. Bassett), National Museum of Wales, Cardiff, for the Geologists' Association South Wales Group, pp. 103–22.

Bassett, M.G. and Jenkins, T.B.H. (1977) Tournaisian conodont and spore data from the uppermost Skrinkle Sandstones of Pembrokeshire, South Wales. *Geologica et Palaeontologica*, 11, 121–34.

Bassett, M.G., Lawson, J.D. and White, D.E. (1982) The Downton Series as the fourth Series of the Silurian System. Lethaia, 15, 1–24.

Bassett, M.G., Bluck, B.J., Cave, R., Holland, C.H. and Lawson, J.D. (1992) Silurian. In *Atlas of Palaeogeography and Lithofacies* (eds J.C.W. Cope, J.K. Ingram and P.F. Rawson), *Geological Society Memoir*, No. 13, Geological Society, London, pp. 37–56.

Benton, M.J., Cook, E. and Ulmer, P. (2002) *Permian and Trassic Red Beds and the Penarth Group of Great Britain,* Geological Conservation Review Series, No. 24, Joint Nature Conservation Committee, Peterborough, 337 pp.

Blieck, A. (1981) Le genre *Protopteraspis* Leriche (Vertébrés, Hetérostracés) du Dévonien inférieur nord Atlantique. *Palaeontographica, Abteilung A,* 173, 141–59.

Blieck, A. (1984) Les Hetérostracés Pteraspidiformes, Agnathans du Silurien Devonien du Continent Nord-Atlantique et des Blocs Avoisines: Revision Systematique, Phylogenie, Biostratigraphie, Biogeographie, Cahiers de Paléontologie: Section vertébrés, Editions du CNRS, Paris, 200 pp.

Blieck, A. (1985) Paléoenvironments des Hetérostracés Vertébrés agnathes Ordoviciens à Devoniens. *Bulletin du Muséum National d'Histoire Naturelle, Itiris: Science de la Terre*, 7, 143–55.

Blieck, A. and Janvier, P. (1989) Vertébré Agnathes du Devonien inférieur de l'Artois (Pas-de-Calais, France): implications biostratigraphiques. *Ann Paléont.* (*Vert-Invert*), 75(3), 125–67.

Blieck, A. and Cloutier, R. (2000) Biostratigaphical correlations of Early Devonian vertebrate assemblages of the Old Red Sandstone Continent. *Courier Forschungsinstitut Senckenberg*, 223, 223–69.

Bluck, B.J. (1967). Deposition of some Upper Old Red Sandstone conglomerates in the Clyde area: A study in the significance of bedding. *Scottish Journal of Geology*, 3, 139–67.

Bluck, B.J. (1978) Sedimentation in a late orogenic basin: the Old Red Sandstone of the Midland Valley of Scotland. In *Crustal Evolution in Northwestern Britain and Adjacent Regions: Proceedings of an International Conference held in Glasgow University, 5–8 April 1977* (eds D.R. Bowes and B.E. Leake), *Geological Journal Special Issue*, No. 10, Seel House Press, Liverpool, pp. 249–78.

Bluck, B.J. (1980a) Evolution of a strike-slip fault-controlled basin, Upper Old Red Sandstone, Scotland. In *Sedimentation in Oblique-slip Mobile Zones* (eds P.F. Ballance and H.G. Reading), *International Association of Sedimentologists Special Publication*, No. 4, Blackwell Scientific Publications, Oxford, pp. 63–78.

Bluck, B.J. (1980b) Structure, generation and preservation of upward fining, braided stream cycles in the Old Red Sandstone of Scotland. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 71, 29–46.

Bluck, B.J. (1984) Pre-Carboniferous history of the Midland Valley of Scotland. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 75, 275–95.

Bluck, B.J. (1986) Upward coarsening sedimentation units and facies lineages, Old Red Sandstone, Scotland. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 77, 251–64.

Bluck, B.J. (1992) Upper Old Red Sandstone of the Firth of Clyde. In *Geological Excursions around Glasgow and Girvan* (eds J.D. Lawson and D.S. Weedon), Geological Society of Glasgow, Glasgow, pp. 220–9.

Bluck, B.J. (2000) Old Red Sandstone basins and alluvial systems of Midland Scotland. In *New Perspectives on the Old Red Sandstone* (eds P.F. Friend and B.P.J. Williams), *Geological Society Special Publication*, No. 180, Geological Society, London, pp. 417–37.

Bluck, B.J. (2001) Caledonian and related events in Scotland. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 91, 375–404.

Bluck, B.J. (2002) The Midland Valley terrane. In *The Geology of Scotland*, 4th edn (ed. N.H. Trewin), The Geological Society, London, pp. 149–66.

Bluck, B.J., Cope, J.C.W. and Scrutton, C.T. (1992) Devonian. In *Atlas of Palaeeography and Lithofacies* (eds J.C.W. Cope, J.K. Ingham and P.F. Rawson), *Geological Society Memoir*, No. 13, Geological Society, London, pp. 57–66.

Braddy, S.J. (2000) Eurypterids from the Early Devonian of the Midland Valley of Scotland. *Scottish Journal of Geology*, 36, 115–22.

Brandon, A. (1989) *Geology of the Country Between Hereford and Leominster,* Memoir of the British Geological Survey, Sheet 198 (England and Wales), HMSO, London, 62 pp.

Brandon, A. and Haim, B.A. (1979) Geology of Hereford City and its environs. *Institute of Geological Sciences, Open File Report*, 1979/1.

Bridge, J.S. and Diemer, J.A. (1983) Quantitative interpretation of an evolving ancient river system. *Sedimentology*, 30, 599–623.

British Geological Survey (1987) Arran. Scotland Special Sheet. Solid. 1:50 000, Ordnance Survey, Southampton, for the British Geological Survey.

British Geological Survey (1990) Greenock. Scotland Sheet 30. Solid. 1:50 000, British Geological Survey, Keyworth.

British Geological Survey (1993) Alford. Scotland Sheet 76W. Solid. 1:50 000, British Geological Survey, Keyworth.

British Geological Survey (1996) Foyers. Scotland Sheet 7SE. Solid. 1:50 000, British Geological Survey, Keyworth.

British Geological Survey (1999) *Orkney Islands. Scotland Special Sheet. Solid and Drift. 1:100 000,* British Geological Survey, Keyworth.

British Geological Survey (2003) *Appleby. England and Wales Sheet 30. Solid. 1:50 000,* British Geological Survey, Keyworth.

British Geological Survey (in press) *Brecon. England and Wales Sheet 213. 1:50 000*, British Geological Survey, Keyworth.

Brooks, M., Trayner, P.K. and Trimble, T.J. (1988) Mesozoic reactivation of Variscan thrusting in the Bristol Channel area, UK. *Journal of the Geological Society of London*, 145, 439–45.

Browne, M.A.E. (1999) Balmerino to Wormit, Sheriffinuir Road to Menstrie Burn; Craig Rossie; Tillicoultry. In *Caledonian Igneous Rocks of Great Britain* (D. Stephenson, R.E. Bevins, D. Millward, A.J. Highton, I. Parsons, P. Stone and W.J. Wadsworth), Geological Conservation Review Series, No. 17, Joint Nature Conservation Committee, Peterborough, pp. 531–42.

Browne, M., Hargreaves, R. and Smith, I. (1985) *The Upper Palaeozoic Basins of the Midland Valley of Scotland, Investigation of the Geothermal Potential of the UK*, British Geological Survey, Keyworth, 48 pp.

Browne, M.A.E., Dean, M.T., Hall, I.H.S., McAdam, A.D., Munro, S.K. and Chisholm, J.I. (1999) A lithostratigraphical framework for the Carboniferous rocks of the Midland Valley of Scotland. Version 2. *British Geological Survey, Research Report, RR/99/07.*

Browne, M.A.E., Smith, R.A. and Aitken, A.M. (2002) Stratigraphical framework for the Devonian (Old Red Sandstone) rocks of Scotland south of a line from Fort William to Aberdeen. *British Geological Survey, Research Report*, RR/01/04.

Bucheit, A.K, Hargrove, U.S. and Donovan, R.N. (1997) Hutton's first unconformity revisited, Newton Point, Arran, Scotland. *American Association of Petroleum Geologists Bulletin*, 81, 1347.

Burchette, T.P. (1981) The Lower Limestone Shales. In A *Field Guide to the Carboniferous Limestone Around Abergavenny* (eds V.P. Wright, M. Raven and T.P. Burchette), Department of Geology, University of Wales, Cardiff, pp. 13–27.

Burgess, I.C. (1961) Fossil soils of the Upper Old Red Sandstone of South Ayrshire. *Transactions of the Geological Society of Glasgow*, 24, 138–53.

Burgess, I.C. and Wadge, A.J. (1974) Classical Areas of British Geology: The Geology of the Cross Fell Inner: Explanation of 1:25 000 Geological Special Sheet Comprising Parts of Sheets NY53, 62, 63, 64, 71, 72, 73, HMSO, London, 92 pp.

Burgess, N.D. and Richardson, J.B. (1995) Late Wenlock to early P**■**ídolí cryptospores and miospores from south and southwest Wales, Great Britain. *Palaeontographica, Abteilungen B,* 236, 1–44.

Butler, M., Williams, B.P.J. and Bradshaw, R. (1972) A new exposure of the Old Red Sandstone-Lower Limestone Shale transition at Portishead, Somerset. *Proceedings of the Bristol Naturalists' Society*, 32, 151–5.

Cameron, I.B. and Stephenson, D. (1985) *British Regional Geology: The Midland Valley of Scotland,* 3rd edn, HMSO, London, 172 pp.

Campbell, R. (1913) The geology of southeastern Kincardineshire. *Transactions of the Royal Society of Edinburgh,* 48, 923–60.

Cantrill, T.C., Dixon, E.E.L., Thomas, H.H. and Jones, O.T. (1916) *The Geology of the South Wales Coalfield: Part XII: The Country Around Milford*, Memoir of the Geological Survey of Great Britain, Sheet 227, HMSO, London, 185 pp.

Capewell, J.G. (1954) The basic intrusions and an associated vent near Little Mell Fell, Cumberland. *Transactions of the Leeds Geological Association*, 6, 243–8.

Capewell, J.G. (1955) The post-Silurian pre-marine Carboniferous sedimentary rocks of the eastern side of the English Lake District. *Quarterly Journal of the Geological Society of London*, 111, 23–46.

Carroll, S. (1991) Terrestrial, fluvial and marginal lacustrine ecosystems in the Old Red Sandstone of the Orcadian basin. Unpublished PhD thesis, University of Aberdeen.

Carroll, S. (1995a) Geology of the Stonehaven District, 1:10 000 sheets NO88NW, NO88NE, NO88SW and NO88SE (South of the Highland Boundary Fault). *British Geological Survey, Onshore Geology Series, Technical Report,* WA/94/19.

Carroll, S. (1995b) Geology of the Inverbervie and Catterline District, 1:10 000 sheets NO87NW, NO87NE and NO87SW. *British Geological Survey, Onshore Geology Series, Technical Report*, WA/94/20. Carroll, S. (1995c) Geology of the Fettercairn District, 1:10 000 sheets NO67NW, NO67NE, NO67SW, NO67SE and NO68SE (South of the Highland Boundary Fault). *British Geological Survey, Onshore Geology Series, Technical Report,* WA/95/91.

Carroll, S. and Trewin, N.H. (1995) *Cornulatichnus:* a new trace fossil from the Old Red Sandstone of Orkney. *Scottish Journal of Geology*, 31, 37–41.

Channell, J.E.T., McCabe, C. and Woodcock, N.H. (1992) Early Devonian (pre-Acadian) magnetization directions in Lower Old Red Sandstone of south Wales (UK). *Geophysical Journal International*, 108, 883–94.

Cherns, L. (1988) Faunal and facies dynamics in the Upper Silurian of the Anglo-Welsh Basin. *Palaeontology*, 31, 451–502.

Chisholm, J.I. and Dean, J.M. (1974) The Upper Old Red Sandstone of Fife and Kinross: a fluviatile sequence with evidence of marine incursion. *Scottish Journal of Geology*, 10, 1–30.

Christie-Blick, N. and Biddle, K.T. (1985) Deformation and basin formation along strike-slip faults. In strike-slip Deformation and Sedimentation (eds N. Christie-Blick and K.T. Biddle), Society of Economic Paleontologists and Mineralogists Special Publication, No. 37, SEPM, Tulsa, pp. 1–34.

Clarke, B.B. (1952) A note on the geology of the Deepwell tufa at Moccas and Brobury Scar. *Transactions of the Woolhope Naturalists' Field Club*, 33, 48.

Clarke, B.B. (1955) The Old Red Sandstone of the Merbach Ridge, with an account of the Middlewood Sandstone, a new fossiliferous horizon 500 feet below the Psammosteus Limestone. *Pansactions of the Woolhope Naturalists' Field Club*, 34, 195–218.

Clarke, P. (1990) Sedimentological studies in Lower Old Red Sandstone basins, Northern Scotland. Unpublished PhD thesis, University of Queens, Belfast.

Clarkson, E.N.K. (1986) Pease Bay to Cove. In *Lothian Geology: An Excursion Guide* (eds A.D. McAdam and E.N.K. Clarkson), Scottish Academic Press, Edinburgh, pp. 140–5.

Cleal, C.J. and Thomas, B.A. (1995) *Palaeozoic Palaeobotany of Great Britain,* Geological Conservation Review Series, No. 9, Chapman and Hall, London, 295 pp.

Cleal, C.J., Thomas, B.A., Bevins, R.E. and Wimbledon, W.A. (2001) Deciding on a new world order. *Earth Heritage*, 16, 10–13.

Collins, A.G. and Donovan, R.N. (1977) The age of two Old Red Sandstone sequences in southern Caithness. *Scottish Journal of Geology*, 13, 53–7.

Collinson, J.D. (1978) Alluvial sediments. In *Sedimentary Environments and Facies*, 2nd edn (ed. H.G. Reading), Blackwell Scientific Publications, Oxford, pp. 15–60.

Conybeare, W.D. and Phillips, W. (1822) Outlines of the Geology of England and Wales, W Phillips, London.

Cope, J.C.W. (1979) Early history of the southern margin of the Towy Anticline in the Carmarthen area, South Wales. In *The Caledonides of the British Isles, Reviewed* (eds A.L. Harris, C.H. Holland and B.E. Leake), *Geological Society of London Special Publication*, No. 8, Scottish Academic Press, Edinburgh, pp. 527–32.

Cope, J.C.W. (1981) The Swansea Valley Fault, Wales. Geological Magazine, 118, 309-10.

Cope, J.C.W. (1982) The geology of the Llanstephan peninsula. In *Geological Excursions in Dyfed, South-west Wales* (ed. M.G. Bassett), National Museum of Wales, Cardiff for the Geologists' Association South Wales Group, pp. 259–69.

Cope, J.C.W. and Bassett, M.G. (1987) Sediment sources and Palaeozoic history of the Bristol Channel area. *Proceedings of the Geologists' Association*, 98, 315–30.

Cope, J.C.W., Ingham, J.K. and Rawson, P.F. (1992) *Atlas of Palaeogeography and Lithofacies, Geological Society Memoir,* No. 13, Geological Society, London, 153 pp.

Cossey, P.J., Adams, A.E., Purnell, MA., Whiteley, M.J., Whyte, M.A. and Wright, V.P. (2004) *British Lower Carboniferous Stratigraphy,* Geological Conservation Review Series, No. 29, Joint Nature Conservation Committee, Peterborough, 617 pp.

Craig, G.Y. (1960). Grantshouse, Siccar Point, Catcraig. In *Edinburgh Geology: An Excursion Guide* (eds G.H. Mitchell, E.K. Walton and D. Grant), Oliver and Boyd, Edinburgh, pp. 89–101.

Craig, G.Y. (1986). Siccar Point: Hutton's classic unconformity. In *Lothian Geology: An Excursion Guide* (eds A.D. McAdam and E.N.K. Clarkson), Scottish Academic Press, Edinburgh, pp. 146–51.

Craig, G.Y. (1991) Geology of Scotland, 3rd edn, The Geological Society of London, London, 612 pp.

Craig, G.Y., McIntyre, D.B. and Waterston, C.D. (1978) *James Hutton's Theory of the Earth: the Lost Drawings,* Scottish Academic Press in association with the Royal Society of Edinburgh and the Geological Society of London, Edinburgh, 67 pp.

Crampton, C.B. and Carruthers, R.G. (1914) *The Geology of Caithness,* Memoir of the Geological Survey of Great Britain, sheets 110, 116 with parts of 109, 115 and 117 (Scotland), HMSO, Edinburgh, 194 pp.

Croft, W.N. (1953) Breconian: a stage name of the Old Red Sandstone. Geological Magazine, 90, 429–32.

Croft, W.N. and George, E.A. (1959) Blue-green algae from the Middle Devonian of Rhynie, Aberdeenshire. *Bulletin of the British Museum (Natural History) Geology,* 3, 341–53.

Dakyns, J.R., Tiddeman, R.H. and Goodchild, J.G. (1897) *The Geology of the Country between Appleby, Ullswater and Haweswater*, Memoir of the Geological Survey of Great Britain, Quarter-sheet 102SW (England and Wales), HMSO, London, 102 pp.

Dare-Edwards, A.J. (1984) Aeolian clay deposits of south-eastern Australia; parna or loessic clay? *Transactions of the Institute of British Geographers*, 9, 337–44.

Davidson, R.G. and Trewin, N.H. (1999) Unusual soft tissue preservation in Middle Devonian fish-bearing nodule beds. *Palaeontological Association 43rd Annual Meeting, University of Manchester, Abstracts.*

Davidson, R.G. and Trewin, N.H. (2002) Guts and gizzard stones; unusual preservation in Scottish Middle Devonian fishes. *Palaeontological Association 46th Annual Meeting, University of Manchester, Abstracts.*

Davies, A., McAdam, A.D. and Cameron, I.B. (1986) *Geology of the Dunbar District,* Memoir of the British Geological Survey, Sheet 33E and part of Sheet 41 (Scotland), HMSO, London, 69 pp.

Dean, M.T. (2001) Faunas from and biostratigraphy of various exposures in the Appleby district. *British Geological Survey Report*, *IR*/01/143.

De la Beche, H.T. (1846) On the Formation of the Rocks of South Wales and South Western England, Memoir of the Geological Survey of the United Kingdom, 1, HMSO, London, 296 pp.

De Souza, H.A.F. (1982) Abstract NDS 165. In *Numerical Dating in Stratigraphy* (ed. G.S. Odin), John Wiley and Sons, Chichester, pp. 847–8.

Denison, R.H. (1956) A review of the habitat of the earliest vertebrates. Fieldiana: Geology, 16, 359–457.

Dewey, J.F. (1982) Plate tectonics and the evolution of the British Isles. *Journal of the Geological Society of London*, 139, 371–414.

Dewey, J.F. and Strachan, R.A. (2003) Changing Silurian-Devonian relative plate motion in the Caledonides: sinistral transpression to sinistral transtension. *Journal of the Geological Society of London*, 160, 219–29.

Dineley, D.L. (1999a) Mid-Devonian fossil fishes sites of Scotland. In *Fossil Fishes of Great Britain* (D.L. Dineley and S.J. Metcalf), Geological Conservation Review Series, No. 16, Joint Nature Conservation Committee, Peterborough, pp. 167–222.

Dineley, D.L. (1999b) Silurian fossil fishes sites of Scotland. In *Fossil Fishes of Great Britain* (D.L. Dineley and S.J. Metcalf), Geological Conservation Review Series, No. 16, Joint Nature Conservation Committee, Peterborough, pp. 31–62.

Dineley, D.L. (1999c) Early Devonian fossil fishes sites of Scotland. In *Fossil Fishes of Great Britain* (D.L. Dineley and S.J. Metcalf), Geological Conservation Review Series, No. 16, Joint Nature Conservation Committee, Peterborough, pp. 142–4.

Dineley, D.L. (1999d) Late Devonian fossil fishes sites of Scotland. In *Fossil Fishes of Great Britain* (D.L. Dineley and S.J. Metcalf), Geological Conservation Review Series, No. 16, Joint Nature Conservation Committee, Peterborough, pp. 241–62.

Dineley, D.L. (1999e) Late Silurian fossil fishes sites of the Welsh Borders. In *Fossil Fishes of Great Britain* (D.L. Dineley and SJ. Metcalf), Geological Conservation Review Series, No. 16, Joint Nature Conservation Committee, Peterborough, pp. 63–106.

Dineley, D.L. (1999f) Early Devonian fossil fishes sites of the Welsh Borders. In *Fossil Fishes of Great Britain* (D.L. Dineley and SJ. Metcalf), Geological Conservation Review Series, No. 16, Joint Nature Conservation Committee, Peterborough, pp. 107–44.

Dineley, D.L. (1999g) Mid- and Late Devonian fossil fishes sites of England and Wales. In *Fossil Fishes of Great Britain* (D.L. Dineley and S.J. Metcalf), Geological Conservation Review Series, No. 16, Joint Nature Conservation Committee, Peterborough, pp. 223–39.

Dineley, D.L. and Metcalf, S.J. (1999) *Fossil Fishes of Great Britain*, Geological Conservation Review Series, No. 16, Joint Nature Conservation Committee, Peterborough, 675 pp.

Dixon, E.E.L. (1921) *Geology of the South Wales Coalfield: Part XIII: The Count?*), *Around Pembroke and Tenby, Memoir of the Geological Survey of Great Britain, sheets 244 and 245, HMSO, London, 220 pp.*

Dixon, E.E.L. (1933a) Some recent stratigraphical work and its bearing on south Pembrokeshire problems. *Proceedings of the Geologists' Association*, 44, 217–25.

Dixon, E.E.L. (1933b) Notes on the geological succession in south Pembrokeshire. *Proceedings of the Geologists' Association*, 44, 402–11.

Dodd, C. (1986) The sedimentology of fluvio–aeolian interactions with geological examples from the British Isles. Unpublished PhD thesis, Plymouth Polytechnic.

Dolby, G. (1971) Spore assemblages from the Devonian-Carboniferous transition measures in south-west Britain and southern Eire. In *Colloque sur la Stratigraphie du Carbonifère* (eds M. Streel and R.H. Wagner), *Les Congrès et Colloques de l'Université de Liège*, No. 55, University de Liège, Liège, pp. 267–74.

Donovan, R.N. (1970) The geology of the coastal tract near Wick, Caithness. Unpublished PhD thesis, University of Newcastle-upon-Tyne.

Donovan, R.N. (1975) Devonian lacustrine limestones at the margin of the Orcadian Basin, Scotland. *Journal of the Geological Society of London*, 131, 489–510.

Donovan, R.N. (1978) Caithness. In A Field Guide to Selected Outcrop Areas of the Devonian of Scotland, the Welsh Borderland and South Wales: International Symposium on the Devonian System (RA.D.S. 78) (eds P.F. Friend and B.P.J. Williams), Palaeontological Association, London, pp. 37–53.

Donovan, R.N. (1980) Lacustrine cycles, fish ecology and stratigraphic zonation in the Middle Devonian of Caithness. *Scottish Journal of Geology*, 16, 35–50.

Donovan, R.N. and Foster, R.J. (1972) Subaqueous shrinkage cracks from the Caithness Flagstone Series (Middle Devonian) of Northeast Scotland. *Journal of Sedimentary Petrology*, 42, 309–17.

Donovan, R.N., Foster, R.J. and Westoll, T.S. (1974) A stratigraphical revision of the Old Red Sandstone of north-eastern Caithness. *Transactions of the Royal Society of Edinburgh*, 69, 167–201.

Donovan, R.N., Peacock, J.D. and Mykura, W (1978) South of the Moray Firth. In A *Field Guide to Selected Outcrop Areas of the Devonian of Scotland, the Welsh Borderland and South Wales: International Symposium on the Devonian System (RA.D.S. 78)*(eds P.F. Friend and B.P.J. Williams), Palaeontological Association, London, pp. 22–7.

Donovan, R.N., Bucheit, A.K. and Hargrove, U.S. (1998) Carbonate pedogenesis at Newton Point, Isle of Arran, Scotland; Hutton's first unconformity revisited. *Abstracts with Programs* — *Geological Society of America*, 30, part 3, p. 5.

Dubinin, V.B. (1962) Class Acaromorpha: mites or gnathosomic chelicerate arthropods. In *Fundamentals of Palaeontology* (ed. B.B. Rodendorf), Academy of Science USSR, Moscow, pp. 447–73.

Dunlop, J.A., Anderson, L.I., Kerp, H. and Hass, H. (2003) Preserved organs of Devonian harvestmen. Nature, 425, 916.

Dunlop, J.A., Anderson, L.I., Kerp, H. and Hass, H. (2004) A harvestman (Arachnida: Opiliones) from the Early Devonian Rhynie cherts, Aberdeenshire, Scotland. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 94, 341–54.

Dunne, W.M. (1983) Tectonic evolution of SW Wales during the Upper Palaeozoic *Journal of the Geological Society of London*, 140, 257–65.

Durant, G. (1999a). Port Schuchan to Dunure Castle; Culzean Harbour; Tumberry Lighthouse to Port Murray. In *Caledonian Igneous Rocks of Great Britain* (D. Stephenson, R.E. Bevins, D. Millward, A.J. Highton, I. Parsons, P. Stone and WJ. Wadsworth), Geological Conservation Review Series, No. 17, Joint Nature Conservation Committee, Peterborough, pp. 542–52.

Durant, G. (1999b). South Kerrera. In *Caledonian Igneous Rocks of Great Britain* (D. Stephenson, R.E. Bevins, D. Millward, A.J. Highton, I. Parsons, P. Stone and W.J. Wadsworth), Geological Conservation Review Series, No. 17, Joint Nature Conservation Committee, Peterborough, pp. 489–92.

Edmonds, E.A., Mckeown, M.C. and Williams, M. (1975) *British Regional Geology: Southwest England,* 4th edn, HMSO, London, 136 pp.

Edmonds, E.A., Whittaker, A. and Williams, B.J. (1985) *Geology of the Country Around Ilfracombe and Barnstaple,* Memoir of the British Geological Survey, sheets 277 and 293 (England and Wales), HMSO, London, 96 pp.

Edwards, D. (1979a) The early history of vascular plants based on late Silurian and early Devonian floras of the British Isles. In *The Caledonides of the British Isles, Reviewed* (eds A.L. Harris, C.H. Holland and B.E. Leake), *Geological Society of London Special Publication*, No. 8, Scottish Academic Press, Edinburgh, pp. 405–10.

Edwards, D. (1979b) A late Silurian flora from the Lower Old Red Sandstone of south-west Dyfed. *Palaeontology*, 22, 23–52.

Edwards, D. (1980) Early land floras. In *The Terrestrial Environment and the Origin of Land Vertebrates* (ed. A.L. Panchen), *Systematics Association Special Volume*, 15, Academic Press, London, pp. 55–85.

Edwards, D. and Fanning, U. (1985) Evolution and environment in the late Silurian to early Devonian: the rise of the pteridophytes. *Philosophical Transactions of the Royal Society of London*, B309, 147–65.

Edwards, D. and Richardson, J.B. (1978) Brecon Beacons Quarry (Storey Arms), Powys. In A *Field Guide to Selected Outcrop Areas of the Devonian of Scotland, the Welsh Borderland and South Wales: International Symposium on the Devonian System (PA.D.S. 78*)(eds P.F. Friend and B.P.J. Williams), Palaeontological Association, London, p. 75.

Edwards, D. and Richardson, J.B. (2004) Silurian and Lower Devonian plant assemblages from the Anglo-Welsh Basin: a palaeobotanical and palynological synthesis. *Geological Journal*, 39, 375–402.

Edwards, D., Richardson, J.B. and Thomas, R.G. (1978) Heol Senni Quarry, Powys. In A *Field Guide to Selected Outcrop Areas of the Devonian of Scotland, the Welsh Borderland and South Wales: International Symposium on the Devonian System (PA.D.S.* 78) (eds P.F. Friend and B.P.J. Williams), Palaeontological Association, London, pp. 77–8.

Edwards, D.S. (1986) *Aglaophyton major*, a non-vascular land-plant from the Devonian Rhynie chert. *Botanical Journal of the Linnean Society*, 93, 173–204.

Edwards, D.S. and Lyon, A.G. (1983) Algae from the Rhynie chert. *Botanical Journal of the Linnean Society*, 86, 37–55.

Edwards, R.A. (1996) Selected geological locality details for the Minehead district. *British Geological Survey, Onshore Geology Series, Technical Report*, WA/96/32.

Edwards, R.A. (1999) *The Minehead District — a Concise Account of the Geology, Memoir* of the British Geological Survey, Sheet 278 and part of Sheet 294 (England and Wales), The Stationery Office, London, 128 pp.

Ekes, C. (1993) Bedload-transported pedogenic mud aggregates in the Lower Old Red Sandstone in southwest Wales. *Journal of the Geological Society of London,* 150, 469–71.

El Saadawy, W. and Lacey, W.S. (1979a) The sporangia of *Horneophyton lignieri* (Kidston and Lang) Barghoom and Darrah. *Review of Palaeobotany and Palynology*, 28, 137–44.

El Saadawy, W. and Lacey, W.S. (1979b) Observations on *Nothia aphylla* Lyon ex Hoeg. *Review of Palaeobotany and Palynology*, 27, 119–47.

Ellis, N.V. (ed.), Bowen, D.Q., Campbell, S., Knill, J.L., McKirdy, A.P., Prosser, C.D., Vincent, M.A. and Wilson, R.C.L. (1996) An *Introduction to the Geological Conservation Review*, Geological Conservation Review Series, No. 1, Joint Nature Conservation Committee, Peterborough, 131 pp.

Engel, M.S. and Grimaldi, D.A. (2004) New light shed on the oldest insect. Nature, 427, 627-30.

Evans, J.W. (1922) The geological structure of the country round Combe Martin, north Devon. *Proceedings of the Geologists' Association*, 33, 201–28.

Evans, K.M. (1983) Note on the age and fauna of the Lynton Beds (Lower Devonian) of north Devon. *Geological Journal*, 18, 297–305.

Eyles, V.A. (1953) West Midlands. Summary of Progress for the Geological Survey of Great Britain, for 1952, 25-6.

Fannin, N.G.T. (1969) Stromatolites from the Middle Old Red Sandstone of Western Orkney. *Geological Magazine*, 106, 77–88.

Fannin, N.G.T. (1970) The sedimentary environment of the Old Red Sandstone of Western Orkney. Unpublished PhD thesis, University of Reading.

Payers, N.S. and Trewin, N.H. (2003) A new crustacean from the Early Devonian Rhynie chert, Aberdeenshire, Scotland. *Tkansactions of the Royal Society of Edinburgh: Earth Sciences*, 93, 355–82

Payers, N.S. and Trewin, N.H. (2004) A review of the palaeoenvironments and biota of the Windyfield chert. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 94, 325–39.

Payers, N.S. and Trewin, N.H. (in press) A hexapod from the Early Devonian Windyfield chert, Rhynie, Scotland. *Palaeontology.*

Payers, N.S., Dunlop, J.A. and Trewin, N.H. (in press) A new early Devonian trigonotarbid arachnid from the Windyfield chert, Rhynie, Scotland *Journal of Systematic Palaeontology*.

Fletcher, T.R, Auton, CA, Highton, A.J., Merritt, J.W., Robertson, S. and Rollin, K.E. (1996) *Geology of Fortrose and Eastern Inverness District*, Memoir of the British Geological Survey, Sheet 84W (Scotland), HMSO, London, 137 pp.

Foster, R.J. (1972) The solid geology of northeast Caithness. Unpublished PhD thesis, University of Newcastle-upon-Tyne.

Francis, E.H., Forsyth, I.H., Read, WA., and Armstrong, M. (1970) *The Geology of the Stirling District,* Memoir of the Geological Survey of Great Britain, Sheet 39 (Scotland), HMSO, Edinburgh, 357 pp.

Friend, P.F. and Williams, B.P.J. (1978) A Field Guide to Selected Outcrop Areas of the Devonian of Scotland, the Welsh Borderland and South Wales: International Symposium on the Devonian System (PA.D.S. 78), Palaeontological Association, London, pp. 106.

Friend, P.F. and Williams, B.P.J. (2000) New perspectives on the Old Red Sandstone, Geological Society Special Publication, No. 180, Geological Society, London, 623 pp.

Friend, R.E., Williams, B.P.J., Ford, M. and Williams, E.A. (2000) Kinematics and dynamics of Old Red Sandstone basins. In *New perspectives on the Old Red Sandstone* (eds Friend and B.P.J. Williams), *Geological Society Special Publication*, No. 180, Geological Society, London, pp. 29–60.

Fyfe, J.A. (1985) The sedimentology of the Old Red Sandstone section from Pease Bay to Horse Roads Rock, Berwickshire. Unpublished thesis, University of St Andrews.

Gatliff, R.W., Richards, P.C., Smith, K., Graham, C.C., McCormac, M., Smith, N.J.P., Long, D., Cameron, T.D.J., Evans, D., Stevenson, A.G., Bulat, J. and Ritchie, J.D. (1994) *United Kingdom Offshore Regional Report: The Geology of the Central North Sea*, HMSO, London, for the British Geological Survey, 118 pp.

Geikie, A. (1879) On the Old Red Sandstone of Western Europe. Part 1. *Transactions of the Royal Society of Edinburgh*, 28, 345–453.

Geikie, A. (1897) The Ancient Volcanoes of Great Britain, Macmillan, London.

George, T.N. (1970) British Regional Geology: South Wales, 3rd edn, HMSO, London, 152 pp.

Gibling, M.R., Nanson, G.C. and Maroulis, J.C. (1998) Anastomosing river sedimentation in the Channel Country of central Australia. *Sedimentology*, 45, 595–619.

Gillen, C. (1987). Huntly, Elgin and Lossiemouth. In *Excursion Guide to the Geology of the Aberdeen Area* (eds N.H. Trewin, B.C. Kneller and C. Gillen), Scottish Academic Press, Edinburgh, pp. 149–60.

Gillen, C. and Trewin, N.H. (1987) Dunnottar to Stonehaven and the Highland Boundary Fault. In *Excursion Guide to the Geology of the Aberdeen Area* (eds N.H. Trewin, B.C. Kneller and C. Gillen), Scottish Academic Press, Edinburgh, pp. 265–73.

Goldring, R., Tunbridge, I.P., Whittaker, A. and Williams, B.J. (1978) 2: North Devon. In A *Field Guide to Selected Areas* of the Devonian of South-west England: International Symposium on the Devonian System (RA.D.S. 78)(ed. C.T. Scrutton), Paleontological Association, London, pp. 8–27.

Gould, D. (1997) *Geology of the Country Around Inverurie and Alford,* Memoir of the British Geological Survey, sheets 76E and 76W (Scotland), The Stationery Office, London, 116 pp.

Green, G.W. (1992) British Regional Geology: Bristol and Gloucester Region, 3rd edn, HMSO, London.

Green, J.F.N. (1918) The Mell Fell Conglomerate. Proceedings of the Geologists' Association. 29, 117–25.

Greenly, E. (1919) The Geology of Anglesey, Memoir of the Geological Survey of Great Britain, HMSO, London.

Greig, D.C. (1988) *Geology of the Eyemouth District,* Memoir of the British Geological Survey, Sheet 34 (Scotland), HMSO, London, 78 pp.

Greig, D.C. and Davies, A. (1978) Berwickshire Coast. In A *Field Guide to Selected Outcrop Areas of the Devonian of Scotland, the Welsh Borderland and South Wales: International Symposium on the Devonian System* (*RA.D.S.* 78) (eds P.F. Friend and B.P.J. Williams), Palaeontological Association, London, pp. 6–12.

Greig, D.C., Wright, J.E., Hains, B.A. and Mitchell, G.H. (1968) *Geology of the Country Around Church Stretton, Craven Arms, Wenlock Edge and Brown Clee*, Memoir of the Geological Survey of Great Britain, Sheet 166 (England and Wales), HMSO, London, 378 pp.

Gunn, W. (1903) In *The Geology of North Arran, South Bute and the Cumbraes with parts of Ayrshire and Kintyre* (W Gunn, A. Geikie, B.N. Peach and A. Harker), Memoir of the Geological Survey of Great Britain, Sheet 21 (Scotland), HMSO, Edinburgh, pp. 51–3.

Habgood, K.S. (2000) Integrated approaches to the cycling of primary productivity in early terrestrial ecosystems. Unpublished PhD thesis, Cardiff University.

Hall, A.J. and Donovan, R.N. (1978) Origin of complex sulphide nodules related to diagenesis of lacustrine sediments of Middle Devonian age from the Shetland Islands. *Scottish Journal of Geology*, 14, 289–99.

Hall, I.H.S. and Chisholm, J.I. (1987) Aeolian sediments in the late Devonian of the Scottish Midland Valley. *Scottish Journal of Geology*, 23, 203–8.

Hall, I.H.S., Taylor, K. and Thomas, L.P. (1973) The stratigraphy of the Upper Old Red Sandstone in South Breconshire. *Bulletin of the Geological Survey of Great Britain*, No. 44, 45–62.

Hall, I.H.S., Browne, M.A.E. and Forsyth, I.H. (1998) *Geology of the Glasgow District*, Memoir of the British Geological Survey, Sheet 30E (Scotland), The Stationery Office, London, 117 pp.

Hallam, A.D. (1934) The geology of the Hangman Grits of the Quantock Hills. *Geological Magazine*, 71, 433–46.

Halliday, A.N., McAlpine, A. and Mitchell, J.G. (1982) ⁴⁰Ar/³⁹Ar age of the Hoy lavas, Orkney. In *Numerical Dating in Stratigraphy* (ed. G.S. Odin), John Wiley and Sons, Chichester, pp. 928–30.

Halstead, L.B. (1985) The vertebrate invasion of fresh water. *Philosophical Transactions of the Royal Society,* B309, 243–58.

Hamilton, R.F.M. and Trewin, N.H. (1988) Environmental controls on fish faunas of the Middle Devonian Orcadian Basin. In *Devonian of the World: Proceedings of the Second International Symposium on the Devonian, Calgary, Canada* (eds N.J. McMillan, A.F. Embry and D.J. Glass), Canadian Society of Petroleum Geologists, Calgary, 3, pp. 589–600.

Hancock, P.L. (1973) Structural zones in Variscan Pembrokeshire. Proceedings of the Ussher Society, 2, 509–20.

Hancock, F.L., Dunne, W.M. and Tringham, M.E. (1982) Variscan structures in south-west Dyfed. In *Geological Excursions in Dyfed, South-west Wales* (ed. M.G. Bassett), National Museum of Wales, Cardiff, for the Geologists' Association South Wales Group, pp. 215–48.

Hanken, N.M. and Stormer, L. (1975) The trail of a large Silurian eurypterid. Fossils and strata, 4, 255–70.

Harker, A. and Marr, J.E. (1891) The Shap Granite and the associated igneous and metamorphic rocks. *Quarterly Journal of the Geological Society of London*, 47, 266–328.

Harper, J.C. and Hartley, J.J. (1938) The Silurian killer of Lisbellow, Co. Fermanagh, with a note on the age of the Fintona Beds. *Proceedings of the Royal Irish Academy*, 45B, 73–87.

Hassan, A.M. (1982) Palynology, stratigraphy and provenance of the Lower Old Red Sandstone of the Brecon Beacons (Powys) and Black Mountains (Gwent and Powys), South Wales. Unpublished PhD thesis, University of London.

Hassan, T.H. (1966) The petrology of the Skrinkle Sandstone and contiguous deposits of south Pembrokeshire. Unpublished PhD thesis, Chelsea College of Science and Technology.

Haughton, P.D.W. (1988) A cryptic Caledonian flysch terrane in Scotland. *Journal of the Geological Society of London*, 145, 685–703.

Haughton, P.D.W. (1989) Structure of some Lower Old Red Sandstone conglomerates, Kincardineshire, Scotland: deposition from late-orogenic antecedent streams? Journal *of the Geological Society of London*, 146, 509–25.

Haughton, P.D.W. and Bluck, B.J. (1988) Diverse alluvial sequences from the Lower Old Red Sandstone of the Strathmore region, Scotland — implications for the relationship between late Caledonian tectonics and sedimentation. In *Devonian of the World: Proceedings of the Second International Symposium on the Devonian, Calgary, Canada* (eds N.J. McMillan, A.F. Embry and D.J. Glass), Canadian Society of Petroleum Geologists, Calgary, 2, pp. 269–93.

Haughton, P.D.W. and Farrow, C.M. (1989) Compositional variation in Lower Old Red Sandstone detrital garnets from the Midland Valley of Scotland and the Anglo-Welsh Basin. *Geological Magazine*, 126, 373–96.

Haughton, P.D.W, Rogers, G. and Halliday, A.N. (1990) Provenance of Lower Old Red Sandstone conglomerates, SE Kincardineshire: evidence of the timing of Caledonian terrane accretion in central Scotland. *Journal of the Geological Society of London*, 147, 105–20.

Hawley, D. (1991) Pwll-Y-Wrach Nature Reserve Geology Rail, Brecknock Wildlife Trust, Brecon.

Heard, A. (1926) *Psilophyton breconensis. Report of the British Association for the Advancement of Science,* Southampton, 311–12.

Heard, A. (1927) On the Old Red Sandstone plants showing structure from Brecon (South Wales). *Quarterly Journal of the Geological Society of London*, 83, 195–207.

Hickling, G. (1908) The Old Red Sandstone of Forfarshire. *Geological Magazine, New Series*, 5, 396–408.

Hickling, G. (1912) On the geology and palaeontology of Forfarshire. *Proceedings of the Geologists' Association*, 23, 302–11.

Higgs, K.T. (2004) An early Devonian (Lochkovian) microflora from the Freshwater West Formation, Lower Old Red Sandstone, southwest Wales. *Geological Journal*, 39, 359–74.

Hillier, R.D. (2000) Silurian marginal marine sedimentation and the anatomy of the marine—Old Red Sandstone transition in Pembrokeshire, SW Wales. In *New Perspectives on the Old Red Sandstone* (eds RE Friend and B.P.J. Williams), *Geological Society Special Publication*, No. 180, Geological Society, London, pp. 343–54.

Hillier, R.D. and Williams, B.P.J. (2004) Sedimentation and tectonics: the marine Silurian-basal Old Red Sandstone transition in southwest Wales. *Geological Journal*, 39, 237–56.

Hillier, R.D. and Williams, B.P.J. (in press) Chapter 5. The alluvial Old Red Sandstone basins. In *The Geology of England and Wales* (eds P.J. Brenchley and P.F. Rawson).

Hirst, S. (1923) On some arachnid remains from the Old Red Sandstone (Rhynie chert bed, Aberdeenshire). *Annals and Magazine of Natural History* (*Series* 9), 12, 455–74.

Hirst, S. and Maulik, S. (1926a) On some arthropod remains from the Rhynie chert (Old Red Sandstone). *Geological Magazine*, 63, 69–71.

Hirst, S. and Maulik, S. (1926b) (Untitled contribution to Announcements and Inquiries' section). *Geological Magazine*, 63, 288.

Holland, C.H. and Lawson, J.D. (1963) Fades patterns in the Ludlovian of Wales and the Welsh Borderland. *Liverpool and Manchester Geological Journal*, 3, 269–88.

Holwill, F.J.W. (1962) The succession of limestones within the Ilfracombe Beds (Devonian) of north Devon. *Proceedings of the Geologists' Association*, 73, 281–93.

Holwill, F.J.W., House, M.R., Gauss, G.A., Hendriks, E.M.L. and Dearman, W.R. (1969) Summer (1966) field meeting in Devon and Cornwall, report of the directors. *Proceedings of the Geologists' Association*, 80, 43–62.

Horne, J. (1923) The *Geology of the Lower Findhorn and Lower Strath Nairn*, Memoir of the Geological Survey of Great Britain, Sheet 84 and part of 94 (Scotland), HMSO, Edinburgh, 128 pp.

Horne, J. and Hinxman, L.W. (1914) *The Geology of the Country Around Beauty and Inverness: Including a Part of the Black Isle*, Memoir of the Geological Survey of Great Britain, Sheet 83 (Scotland), HMSO, Edinburgh, 108 pp.

House, M.R. (1975) Facies and time in Devonian tropical areas. *Proceedings of the Yorkshire Geological Society*, 40, 233–88.

House, M.R. (1977) Subdivision of the marine Devonian. In A *Correlation of Devonian Rocks in the British Isles* (eds M.R. House, J.B. Richardson, W.G. Chaloner, J.R.L. Allen, C.H. Holland and T.S. Westoll), *Geological Society of London Special Report*, No. 8, Scottish Academic Press, Edinburgh, pp. 4–10.

House, M.R. and Kirchgasser, W.T. (1993) Devonian goniatite biostratigraphy and timing of facies movements in the Frasnian of eastern North America. In *High Resolution Stratigraphy* (eds E.A. Hailwood and R.B. Kidd), *Geological Society Special Publication*, No. 70, The Geological Society, London, pp. 267–92.

House, M.R., Richardson, J.B., Chaloner, W.G., Allen, J.R.L., Holland, C.H. and Westoll, T.S. (1977) A *Correlation of Devonian Rocks in the British Isles, Geological Society of London Special Report,* No. 8, Scottish Academic Press, Edinburgh, 110 pp.

Hurst, J.M., Hancock N.J. and McKerrow, W.S. (1978) Wenlock stratigraphy and palaeogeography in Wales and the Welsh Borderland. *Proceedings of the Geologists' Association*, 89, 197–226.

Hurst, J.M., Hancock, N.J. and McKerrow, WS. (1979) Old Red Sandstone facies and Wenlock stratigraphy and palaeogeography in Wales and the Welsh Borderland; reply by the authors. *Proceedings of the Geologists' Association*, 90, 231–2.

Hutton, J. (1795) Theory of the Earth with proofs and illustrations, 1, 429–30.

Hutton, J. (1899) Theory of the Earth with proofs and illustrations (ed. Sir A. Geikie), 3, 235–37, 262–3.

Institute of Geological Sciences (1973) *Cromarty. Scotland Sheet 94. Solid. 1:50 000,* Ordnance Survey, Southampton, for the Institute of Geological Sciences.

Institute of Geological Sciences (1977) *Ammanford. England and Wales Sheet 230. Solid. 1:50 000,* Ordnance Survey, Southampton, for the Institute of Geological Sciences.

Institute of Geological Sciences (1979) *Merthyr Tydfil. England and Wales Sheet 231. Solid. 1:50 000,* Ordnance Survey, Southampton, for the Institute of Geological Sciences.

James, D.M.D. (1987) Tectonics and sedimentation in the Lower Palaeozoic back-arc basin of South Wales, UK. Some quantitative aspects of basin development. *Norsk Geologisk Tidsskrift*, 67, 419–26.

Jameson, R. (1800) Mineralogy of the Scottish Isles, 1, 77-9.

Jameson, R. (1805) A Mineralogical Description of the County of Dumfries, Bell and Bradgate, Edinburgh.

Jameson, R. (1821) Manual of Mineralogy, A. Constable and Co., Edinburgh, 491 pp.

Janaway, T.M. and Parnell, J. (1989) Carbonate production within the Orcadian Basin, Northern Scotland: a petrographic and geochemical study. *Palaeogeography, Palaeoclimatology and Palaeoecology*, 70, 89–105.

Jenkins, G. (1998) An investigation into marine influence during deposition of the Lower Old Red Sandstone, Anglo-Welsh Basin, UK. Unpublished PhD thesis, University of Wales, Cardiff.

Johnstone, G.S. and Mykura, W. (1989) *British Regional Geology: The Northern Highlands of Scotland,* 4th edn, HMSO, London, 219 pp.

Jones, N.S. (1995) The sedimentology of the Devonian Hangman Sandstone Formation and Permo-Triassic strata from the Minehead sheet 278. *British Geological Survey, Technical Report, WH/95/119R.*

Kellaway, G.A. and Welch, F.B.A. (1948) *British Regional Geology: Bristol and Gloucester District,* 2nd edn, HMSO, London.

Kellaway, G.A and Welch, F.B.A. (1955) The Upper Old Red Sandstone and Lower Carboniferous rocks of Bristol and the Mendips compared with those of Chepstow and the Forest of Dean. *Bulletin of the Geological Survey of Great Britain*, 9, 1–21.

Kellaway, G.A. and Welch, F.B.A. (1993) *Geology of the Bristol District,* Memoir of the British Geological Survey, Bristol Special Sheet (England and Wales), HMSO, London, 199 pp.

Kelling, G. and Williams, B.P.J. (1966) Deformation structures of sedimentary origin in the Lower Limestone Shales (basal Carboniferous) of south Pembrokeshire, Wales. *Journal of Sedimentary Petrology*, 36, 927–39.

Kellock, E. (1969) Alkaline basic igneous rocks in the Orkneys. Scottish Journal of Geology, 5, 140–53.

Kelman, R., Feist, M., Trewin, N.H. and Hass, H. (2004) Charophyte Algae from the Rhynie Chert. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 94, 443–53.

Kerp, H., Hass, H. and Mosbrugger, V. (2001) New data on *Nothia aphylla* Lyon, 1964 ex El Saadawy et Lacey, 1979: a poorly known plant from the Lower Devonian Rhynie chert. In *Plants Invade the Land: Evolutionary and Environmental Perspectives* (eds P.G. Gensel and D. Edwards), Columbia University Press, New York, pp. 52–82.

Kerp, H., Trewin, N.H. and Hass, H. (2004) New gametophytes from the Early Devonian Rhynie chert. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 94, 409–26.

Kidston, R. and Lang, W.H. (1917) On Old Red Sandstone plants showing structure, from the Rhynie chert bed, Aberdeenshire. Part I. *Rhynia gwynne-vaugbanii* Kidston and Lang. *Transactions of the Royal Society of Edinburgh*, 51(24), 761–84.

Kidston, R. and Lang, W.H. (1920a) On Old Red Sandstone plants showing structure, from the Rhynie chert bed, Aberdeenshire. Part II. Additional notes *on Rhynia Gwynne-vaughanii* Kidston and Lang; with descriptions of *Rhynie major*, n.sp., and *Hornia lignieri*, n.g., n.sp. *Transactions of the Royal Society of Edinburgh*, 52(24), 603–27.

Kidston, R. and Lang, W.H. (1920b) On Old Red Sandstone plants showing structure, from the Rhynie chert bed, Aberdeenshire. Part III. *Asteroxylon mackiei*, Kidston and Lang. *Transactions of the Royal Society of Edinburgh*, 52(26), 643–80.

Kidston, R. and Lang, W.H. (1921) On Old Red Sandstone plants showing structure, from the Rhynie chert bed, Aberdeenshire. Part V. The Thallophyta occurring in the peat-bed; the succession of the plants throughout a vertical section of the bed, and the conditions of accumulation and preservation of the deposit. *Transactions of the Royal Society of Edinburgh*, 52(33), 855–902.

Kimber, R.N. and Johnson, GAL. (1984) Lake District highlands and islands during the Upper Palaeozoic. *Proceedings of the Cumberland Geological Society*, 4, 377–90.

King, L.M. (1994) Subsidence analysis of Eastern Avalonian sequences: implications for lapetus closure. *Journal of the Geological Society of London,* 151, 647–57.

King, W.W. (1934) The Downtonian and Dittonian strata of Great Britain and northwestern Europe. *Quarterly Journal of the Geological Society of London*, 90, 526–67.

Knight, R.R.W. (1990) The Devonian of north Devon — a palynologist's (or 'conodontologist's') dream or nightmare? *Proceedings of the Ussher Society*, 7, 306.

Kokelaar, B.P. (1982) Fluidization of wet sediments during the emplacement and cooling of various igneous bodies. *Journal of the Geological Society of London*, 139, 21–34.

Knudsen, T.L. (2000) The provenance of Devonian sandstones from Shetland: a Sm-Nd and trace element study. *Scottish Journal of Geology*, 36, 61–72.

Lagios, E. (1983) A gravity study of the eastern Berwickshire Devonian basins, SE Scotland. *Scottish Journal of Geology*, 19, 189–203.

Lamont, A. (1952) Ecology and correlations of the Pentlandian, a new division of the Silurian System in Scotland. *Report XVIII, International Geological Congress, London, Part X, 27–32.*

Lane, P.D. (2000a) The P∎ídolí Series. In *British Silurian Stratigraphy* (R.J. Aldridge, David J. Siveter, Derek J. Siveter, P.D. Lane, D. Palmer and N.H. Woodcock), Geological Conservation Review Series, No. 19, Joint Nature Conservation Committee, Peterborough, pp. 427–58.

Lane, P.D. (2000b) Capel Horeb Quarry. In *British Silurian Stratigraphy* (R J. Aldridge, David J. Siveter, Derek J. Siveter, P.D. Lane, D. Palmer and N.H. Woodcock), Geological Conservation Review Series, No. 19, Joint Nature Conservation Committee, Peterborough, pp. 440–4.

Lane, P.D. (2000c) Albion Sands and Gateholm Island. In *British Silurian Stratigraphy* (R.J. Aldridge, David J. Siveter, Derek J. Siveter, P.D. Lane, D. Palmer and N.H. Woodcock), Geological Conservation Review Series, No. 19, Joint Nature Conservation Committee, Peterborough, pp. 447–51.

Lane, P.D. (2000d) Little Castle Head. In *British Silurian Stratigraphy* (R.J. Aldridge, David J. Siveter, Derek J. Siveter, P.D. Lane, D. Palmer and N.H. Woodcock), Geological Conservation Review Series, No. 19, Joint Nature Conservation Committee, Peterborough, pp. 446–7.

Lane, R. (1965) The Hangman Grits — an introduction and stratigraphy. *Proceedings of the Ussher Society*, 1, 166–7.

Lang, W.H. (1927) Contributions to the study of the Old Red Sandstone flora of Scotland. VI. *Transactions of the Royal Society of Edinburgh*, 55, 443–52.

Le Maitre, R.W. (1989) A Classification of Igneous Rocks and Glossary of Terms: Recommendations of the International Union of Geological Sciences Subcommission on the Systematics of Igneous Rocks, Blackwell Scientific Publications, Oxford, 193 pp.

Leeder, M.R. (1973) Sedimentology and palaeogeography of the Upper Old Red Sandstone in the Scottish Border Basin. *Scottish Journal of Geology*, 9, 117–44.

Leeder, M.R. (1974) Origin of the Northumberland Basin. Scottish Journal of Geology, 10, 283-96.

Leeder, M.R. (1975) Pedogenic carbonates and flood sediment accumulation rates: a quantitative model for alluvial arid-zone lithofacies. *Geological Magazine*, 112, 257–70.

Leeder, M.R. (1976) Palaeogeographic significance of pedogenic carbonates in the topmost Upper Old Red Sandstone of the Scottish Border Basin. *Geological Journal*, 11, 21–8.

Leeder, M.R. and Bridges, P.H. (1978) Upper Old Red Sandstone near Kirkbean, Dumfries and Galloway. *Scottish Journal of Geology*, 14, 267–72.

Loeffler, E.J. and Thomas, R.G. (1980) A new pteraspid ostracoderm from the Devonian Senni Beds Formation of South Wales and its stratigraphical significance. *Palaeontology*, 23, 287–96.

Love, S.E. (1993) Floodplain deposits as indicators of sandbody geometry and reservoir architecture. Unpublished PhD thesis, University of Aberdeen.

Love, S.E. and Williams, B.P.J. (2000) Sedimen-tology, cyclicity and floodplain architecture in the Lower Old Red Sandstone of SW Wales. In *New Perspectives on the Old Red Sandstone* (eds P.F. Friend and B.P.J. Williams), *Geological Society Special Publication*, No. 180, Geological Society, London, pp. 371–88.

Love, S.E., Davies, S. and Gould, S. (2004) Inter-tuff correlation and architecture within the Moor Cliffs Formation, Lower Old Red Sandstone, southwest Wales: a multidisciplinary approach for reservoir characterisation. *Geological Journal*, 39, 299–314.

Lovell, R.W.W. (1978a) The sedimentology and stratigraphy of the Upper Old Red Sandstone and Lower Limestone Shales of the South Wales Coalfield. Unpublished PhD thesis, University of Bristol.

Lovell, R.W.W. (1978b) Abercriban, Powys. In *A Field Guide to Selected Outcrop Areas of the Devonian of Scotland, the Welsh Borderland and South Wales: International Symposium on the Devonian System* (*PA.D.S.* 78) (eds P.F. Friend and B.P.J. Williams), Palaeontological Association, London, pp. 72–3.

Lumsden, G.I., Tulloch, W, Howells, M.P. and Davies, A. (1967) *The Geology of the Neighbourhood of Langholm,* Memoir of the Geological Survey of Great Britain, Sheet 11 (Scotland), HMSO, Edinburgh, 255 pp.

Lyon, A.G. (1962) On the fragmentary remains of an organism referable to the nematophytales, from the Rhynie chert, "Nematoplexus rhyniensis" gen. et. sp. nov. Transactions of the Royal Society of Edinburgh, 65, 79–87.

Lyon, A.G. (1964) Probable fertile region of Asteroxylon mackiei Kidston and Lang. Nature, 203, 1082–3.

Lyon, A.G. and Edwards, D. (1991) The first zosterophyll from the Lower Devonian Rhynie Chert, Aberdeenshire. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 82, 323–32.

Machette, M.N. (1985) Calcic soils of the south-western United States. In *Soils and Quaternary Geology of the South West United States* (ed. D.L. Weide), *Geological Society of America Special Paper*, No. 203, Geological Society of America, Boulder, pp. 363–81.

MacDonald, R. and Walker, B.H. (1985) Geochemistry and tectonic significance of the Lower Carboniferous Cockermouth lavas, Cumbria. *Proceedings of the Yorkshire Geological Society*, 45, 141–6.

MacGregor, A.G. and Eckford, R.J.A. (1946) The Upper Old Red and Lower Carboniferous sediments of Teviotdale and Tweedside, and the stones of the abbeys of the Scottish Borderland. *Transactions of the Edinburgh Geological Society*, 14, 230–52.

MacGregor, A.R. (1968) Edzell and Glen Esk. In *Fife and Angus Geology: An Excursion Guide* (ed. A.R. MacGregor), Scottish Academic Press, Edinburgh, pp. 85–97.

MacGregor, A.R. (1996a) Excursion 1. Arbroath, Crawton and Stonehaven. In *Fife and Angus Geology: An Excursion Guide,* 3rd edn (ed. A.R. MacGregor), Pentland Press, Edinburgh, pp. 79–92.

MacGregor, A.R. (1996b) Excursion 2. Edzell and Glen Esk. In *Fife and Angus Geology: An Excursion Guide,* 3rd edn (ed. A.R. MacGregor), Pentland Press, Edinburgh, pp. 93–108.

Macintyre, R.M., Clift R.A. and Chapman, N.A. (1981) Geochronological evidence for phased volcanic activity in Fife and Caithness vents, Scotland. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 72, 1–7.

Mackie, A. (1980) Sandstone quarrying in Angus — some thoughts on an old craft. The Edinburgh Geologist, 8, 14–25.

Mader, D. and Yardley, M.J. (1985) Migration, modification and merging in aeolian systems and the significance of depositional mechanisms in Permian and Triassic dune sands of Europe and North America. *Sedimentary Geology*, 43, 85–218.

Malcolmson, J. (1859) On the relations of the different parts of the Old Red Sandstone in which organic remains have been discovered in the counties of Moray, Banft Nairn and Inverness. *Quarterly Journal of the Geological Society of London*, 15, 336–51.

Marr, J. (1899) Note on a conglomerate at Melmerby. Quarterly Journal of the Geological Society of London, 55, 11–15.

Marriott, S.B. and Wright, V.P. (1993) Palaeosols as indicators of geomorphic stability in two Old Red Sandstone alluvial suites, South Wales. *Journal of the Geological Society of London,* 150, 1109–20.

Marriott, S.B. and Wright, V.P. (1996) Sediment recycling on Siluro-Devonian floodplains. *Journal of the Geological Society of London*, 153, 661–4.

Marriott, S.B. and Wright, VP. (2004) Mudrock deposition in an ancient dryland system: Moor Cliffs Formation, Lower Old Red Sandstone of southwest Wales, UK. *Geological Journal*, 39, 277–98.

Marriott, S.B., Wright, V.P. and Williams, B.P.J. (2005) A new evaluation of fining upward sequences in a mud-rock dominated succession of the Lower Old Red Sandstone of South Wales, UK. In *Fluvial Sedimentology VII* (eds M.D. Blum, S.B. Marriott and S. LeClair), *International Association of Sedimentologists Special Publication*, No. 35, Blackwell, London, pp. 517–29.

Marshall, J.D. (1977) Sedimentology of the Skrinkle Sandstones Group (Devonian-Carboniferous), south-west Dyfed. Unpublished PhD thesis, University of Bristol.

Marshall, J.D. (1978) West Angle Bay, Dyfed. In A Field Guide to Selected Outcrop Areas of the Devonian of Scotland, the Welsh Borderland and South Wales: International Symposium on the Devonian System (PA.D.S. 78)(eds P.F. Friend and B.P.J. Williams), Palaeontological Association, London, pp. 99–101.

Marshall, J.D. (2000a) Sedimentology of a Devonian fault-bounded braidplain and lacustrine fill in the lower part of the Skrinkle Sandstones, Dyfed, Wales. *Sedimentology*, 47, 325–42.

Marshall, J.D. (2000b) Fault-bounded basin-fill: fluvial response to tectonic controls in the Skrinkle Sandstones of SW Pembrokeshire, Wales. In *New Perspectives on the Old Red Sandstone* (eds P.F. Friend and B.P.J. Williams), *Geological Society Special Publication*, No. 180, Geological Society, London, pp. 401–16.

Marshall, J.E.A. (1991) Palynology of the Stonehaven Group, Scotland: evidence for a mid Silurian age and its geological implications. *Geological Magazine*, 128, 283–6.

Marshall, J.E.A. (2000) Devonian (Givetian) miospores from the Walls Group, Shetland. In *New Perspectives on the Old Red Sandstone* (eds P.F. Friend and B.P.J. Williams), *Geological Society Special Publication*, No. 180, Geological Society, London, pp. 473–83.

Marshall, J.E.A. and Hewett, A.J. (2003) Chapter 6. Devonian. In *The Millennium Atlas: Petroleum Geology of the Central and Northern North Sea* (eds and co-ordinators D. Evans, C. Graham, A. Armour and P Bathurst), Geological Society of London, London, pp. 65–81.

Marshall, J.E.A. and House, M.R. (2000) Devonian stage boundaries in England, Wales and Scotland. *Courier Forschungsinstitut Senckenberg*, 225, 83–90.

Marshall, J.E.A., Haughton, P.D.W. and Hillier, S.J. (1994) Vitrinite reflectivity and the structure and burial history of the Old Red Sandstone of the Midland Valley of Scotland. *Journal of the Geological Society of London*, 151, 425–38.

Marshall, J.E.A., Rogers, D.A. and Whiteley, M.J. (1996) Devonian marine incursions into the Orcadian Basin. *Journal of the Geological Society of London*, 153, 451–66.

Marston, R.J. (1971) The Foyers granitic complex, Inverness-shire, Scotland. *Quarterly Journal of the Geological Society of London*, 126, 331–68.

M'Caw, L.S. (1936) The Black Mountains: A physical, agricultural and geographical survey 1932–1936. Unpublished MA thesis, University of Manchester.

McAdam, A.D. and Clarkson, E.N.K. (1986) Lothian Geology: An Excursion Guide, Scottish Academic Press, Edinburgh.

McAlpine, A. (1978) The Upper Old Red Sandstone of Orkney, Caithness and neighbouring areas. Unpublished PhD thesis, University of Newcastle-upon Tyne.

McCormac, M. (2001) The Upper Palaeozoic rocks and Quaternary deposits of the Shap and Penrith district, Cumbria. *British Geological Survey Report*, RR/01/10.

McGarvie, D.W. (1999a) Ben Nevis and Allt AMhuilinn. In *Caledonian Igneous Rocks* (D. Stephenson, R.E. Bevins, D. Millward, A.J. Highton, I. Parsons, P. Stone and W.J. Wadsworth), Geological Conservation Review Series, No. 17, Joint

Nature Conservation Committee, Peterborough, pp. 492–7.

McGarvie, D.W. (1999b) Stob Dearg and Cam Ghleann. In *Caledonian Igneous Rocks* (D. Stephenson, R.E. Bevins, D. Millward, A.J. Highton, I. Parsons, P. Stone and W.J. Wadsworth), Geological Conservation Review Series, No. 17, Joint Nature Conservation Committee, Peterborough, pp. 510–13.

McKerrow, W.S., Dewey, J.F. and Scotese, C.R. (1991) The Ordovician and Silurian development of the Iapetus Ocean. In *The Murchison Symposium: Proceedings of an International Conference on the Silurian* System (eds M.G. Bassett, P.D. Lane and D. Edwards), *Special Papers in Palaeontology*, No. 44, Palaeontological Association, London, pp. 165–78.

Mechie, J. and Brooks, J. (1984) A seismic study of deep geological structure in the Bristol Channel area, SW Britain. *Geophysical Journal of the Royal Astronomical Society*, 78, 661–89.

Melvin, J. (1976) Sedimentological studies in Upper Palaeozoic sandstones near Bude, Cornwall and Walls, Shetland. Unpublished PhD thesis, University of Edinburgh.

Melvin, J. (1985) Walls Formation, Western Shetland: distal alluvial plain deposits within a tectonically active Devonian basin. *Scottish Journal of Geology*, 21, 23–40.

Miall, A.D. (1996) *The Geology of Fluvial Deposits: Sedimentary Fades, Basin Analysis and Petroleum Geology,* Springer-Verlag, Berlin, 582 pp.

Miles, R.S. (1968) The Old Red Sandstone antiarchs of Scotland: Family Bothriolepidae. *Monograph of the Palaeontographical Society*, 122, No. 552, 1–130.

Miller, H. (1841) The Old Red Sandstone; On New Walks in an Old Field, J. Johnstone, Edinburgh.

Millward, D. (2003) Little Mell Fell Quarry. In *Carboniferous and Permian Igneous Rocks of Great Britain* (D. Stephenson, S.C. Loughlin, D. Millward, C.N. Waters and I.T. Williamson), Geological Conservation Review Series, No. 27, Joint Nature Conservation Committee, Peterborough, pp. 122–5.

Millward, D., McCormac, M., Hughes, R.A., Entwisle, D.C., Butcher, A. and Raines, M.G. (2003) *Geology of the Appleby District — A Brief Explanation of the Geological Map*, Sheet Explanation of the British Geological Survey, Sheet 30 (England and Wales), British Geological Survey, Keyworth, 30 pp.

Milne, D. (1843) Geological Account of Roxburghshire. Transactions of the Royal Society of Edinburgh, 15, 433–502.

Morrissey, L.B. and Braddy, S.J. (2004) Terrestrial trace fossils from the Lower Old Red Sandstone southwest Wales. *Geological Journal*, 39, 315–36.

Morrissey, L.B., Braddy, S.J., Bennett, J.P., Marriott, S.B. and Tarrant, P.R. (2004) Fish trails from the Lower Old Red Sandstone of Tredomen Quarry, Powys, southeast Wales. *Geological Journal*, 39, 337–58.

Morton, D.J. (1976) Lower Old Red Sandstone sedimentation in the north-west Midland Valley and north Argyll areas of Scotland. Unpublished PhD thesis, University of Glasgow.

Mould, D.D.C.P. (1946) The geology of the Foyers 'granite' and the surrounding country. *Geological Magazine*, 83, 249–65.

Muir, R.O. and Ridgway, J.M. (1975) Sulphide mineralization of the continental Devonian sediments of Orkney (Scotland). *Minerallum Deposita*, 10, 205–15.

Murchison, R.I. (1834) *Field Notebook, Volume* 13, *1834 June*. Murchison papers, LDGSL 839, M/N 69, Geological Society archives, London, 27–28.

Murchison, R.I. (1839) The Silurian System, John Murray, London.

Mykura, W. (1976) British Regional Geology: Orkney and Shetland, HMSO, Edinburgh, 149 pp.

Mykura, W. (1982) The Old Red Sandstone east of Loch Ness, Inverness-shire. *Report of the Institute of Geological Sciences*, 82/13, 26 pp.

Mykura, W (1991) Old Red Sandstone. In *Geology of Scotland*, 3rd edn (ed. G.Y. Craig), The Geological Society of London, London, pp. 297–346.

Mykura, W and Phemister, J. (1976) *The Geology of Western Shetland,* Memoir of the Geological Survey of Great Britain, Sheet 127 and parts of 125, 126 and 128 (Scotland), HMSO, Edinburgh, 304 pp.

Neves, R. and Dolby, G. (1967) Assemblage of miospores from the Portishead Beds (Upper Old Red Sandstone) of the Mendip Hills, England. *Pollen et Spores*, 9, 607–14.

Nicol, J. (1847) On the geology of Roxburghshire. *Transactions of the Highland and Agricultural Society of Scotland*, 10, 35–83.

Oldham, R.D. (1900) The Basal (Carboniferous) Conglomerate of Ullswater and its mode of origin. *Geological Magazine*, 7, 564.

Owen, G. (1995) Senni Formation of the Devonian Old Red Sandstone, Dyfed, Wales: anatomy of a semi-arid floodplain. *Sedimentary Geology*, 95, 221–35.

Owen, G. and Hawley, D. (2000) Depositional setting of the Lower Old Red Sandstone at Pantymaes Quarry central South Wales: new perspectives on the significance and occurrence of 'Senni Beds' facies. In *New Perspectives on the Old Red Sandstone* (eds BF. Friend and B.P.J. Williams), *Geological Society Special Publication*, No. 180, Geological Society, London, pp. 389–400.

Owen, T.R., Bloxham, T.W., Jones, D.G., Walmsley, V.G. and Williams, B.Y.J. (1971) Summer (1968) field meeting in Pembrokeshire, South Wale's. *Proceedings of the Geologists' Association*, 82, 17–60.

Parker, A., Allen, J.R.L. and Williams, B.P.J. (1983) Clay mineral assemblages of the Townsend Tuff Bed (Lower Old Red Sandstone), South Wales and the Welsh Borders. *Journal of the Geological Society of London*, 140, 769–79.

Parnell, J. (1987) Mineralized magadi-type cherts in the Devonian of Scotland: support for a model of sulfide deposition in low-temperature alkaline conditions. *Economic Geology*, 82, 1053–6.

Parnell, J., Marshall, J. and Astin, T.R. (1990) Field Guide to Lacustrine Deposits of the Orcadian Basin, Scotland, British Sedimentological Research Group, Cambridge, 45 pp.

Parry, S.F. (2004) Age and underlying cause of hot-spring activity at Rhynie, Aberdeenshire, Scotland. Unpublished PhD thesis, University of Aberdeen.

Paterson, I.B. and Hall, I.H.S. (1986) Lithostratigraphy of the late Devonian and early Carboniferous rocks in the Midland Valley of Scotland. *Report of the British Geological Survey,* 18/3, 14 pp.

Paterson, I.B., Browne, M.A.E. and Armstrong, M. (1976) Letters to the Editors: Upper Old Red Sandstone palaeogeography. *Scottish Journal of Geology*, 12, 89–91.

Paterson, I.B., Hall, I.H.S. and Stephenson, D. (1990) *Geology of the Greenock District*, Memoir of the British Geological Survey, Sheet 30W and part of Sheet 29E (Scotland), HMSO, London, 69 pp.

Paton, R.L. (1981) A Catalogue of Fossil Vertebrates in the Royal Scottish Museum, Part 6, Placodermi, Royal Scottish Museum Information Series: Geology, No. 9, Royal Scottish Museum, Edinburgh, 70 pp.

Peach, B.N. and Horne, J. (1903) The Canonbie Coalfield: its geological structure and relations to the Carboniferous rocks of the north of England and central Scotland. *Transactions of the Royal Society of Edinburgh*, 40, 835–77.

Peach, C.W. (1868) On fossil fishes of the Old Red Sandstone of Caithness and Sutherland, with notices of some new to these comments. *Report of the British Association for the Advancement of Science,* Dundee, 37, 72.

Peacock, D.P.S. (1961) The Old Red Sandstone rocks of the Edzell District. Unpublished honours thesis, University of St Andrews.

Peacock, J.D., Berridge, N.G., Harris, A.L. and May, F. (1968) *The Geology of the Elgin District,* Memoir of the Geological Survey of Great Britain, Sheet 95 (Scotland), HMSO, Edinburgh, 165 pp.

Pennington, J.J. (1975) The geology of the Argyll Field. In *Petroleum and the Continental Shelf of North-west Europe* (ed. A.W. Woodland), Applied Science Publishers, Barking, pp. 285–91.

Phillips, E.R. and Aitken, A.M. (1998) The petrology and composition of the Lower Old Red Sandstone exposed in the Aberfoyle area (Sheet 38E), Central Scotland. *British Geological Survey, Mineralogy and Petrology Series, Technical Report*, WG/98/10.

Phillips, E.R. and Carroll, S. (1995) The petrology and provenance of the basal Lower Old Red Sandstone exposed between Ruthery Head and Dunnicaer, Stonehaven, Scotland. *British Geological Survey, Technical Report* WG/95/21.

Phillips, E.R., Smith, R.A. and Carroll, S. (1998) Strike-slip, terrane accretion and the pre-Carboniferous evolution of Midland Valley of Scotland. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 89, 209–24.

Phillips, W (1818) Geology of England and Wales, London.

Pick, M.C. (1964a) The stratigraphy and sedimentary features of the Old Red Sandstone, Portishead coastal section, N.E. Somerset. *Proceedings of the Geologists' Association*, 75, 199–221.

Pick, M.C. (1964b) The Triassic Dolomitic Conglomerate and structure of the Old Red Sandstone, Portishead coastal section, N.E. Somerset. *Proceedings of the Bristol Naturalists' Society,* 30, 445–50.

Playfair, J. (1805) Biographical account of the late Dr James Hutton, FRS. Edin. *Transactions of the Royal Society of Edinburgh*, 5 (Part 3), 39–99.

Plummer, P.S. and Gostin, V.A. (1981) Shrinkage cracks: desiccation or synaeresis? *Journal of Sedimentary Petrology*, 51, 1147–56.

Potter, J.F. and Price, J.H. (1965) Comparative sections through rocks of Ludlovian–Downtonian age in the Llandovery and Llandeilo districts. *Proceedings of the Geologists' Association*, 76, 379–401.

Powell, C.L., Edwards, D. and Trewin, N.H. (2000a) A new vascular plant from the Lower Devonian Windyfield chert, Rhynie, NE Scotland. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 90, 331–49.

Powell, C.L., Trewin, N.H. and Edwards, D. (2000b) Palaeocology and plant succession in a borehole through the Rhynie cherts, Lower Old Red Sandstone, Scotland. In *New Perspectives on the Old Red Sandstone* (eds P.F. Friend and B.P.J. Williams), *Geological Society Special Publication*, No. 180. Geological Society, London, pp. 439–57.

Powell, C.M. (1987) Inversion tectonics in S.W. Dyfed. Proceedings of the Geologists' Association, 98, 193–203.

Powell, C.M. (1989) Structural controls on Palaeozoic basin evolution and inversion in southwest Wales. *Journal of the Geological Society of London*, 146, 439–46.

Powrie, J. (1861) Cephalaspids of Forfar. The Geologist, 4, 137–90.

Powrie, J. (1864) The Scottish Pteraspis. The Geologist, 7, 172.

Powrie, J. (1870) On the connection of the Lower, Middle and Upper Old Red Sandstones of Scotland. *Transactions of the Edinburgh Geological Society*, 1, 115–32.

Ramos, A. and Friend, P.F. (1982) Upper Old Red Sandstone sedimentation near the unconformity at Arbroath. *Scottish Journal of Geology*, 18, 297–315.

Rayner, D.H. (1963) The Achanarras Limestone of the Middle Old Red Sandstone, Caithness, Scotland. *Proceedings of the Yorkshire Geological Society*, 34, 1–44.

Rayner, D.H. (1983) New observations on *Sawdonia ornata* from Scotland. *Transactions of the Royal Society of Edinburgh*, 74, 79–93.

Rayner, D.H. (1984) New finds of *Drepanhycus spinaeformis* Goppert from the Lower Devonian of Scotland. *Transactions of the Royal Society of Edinburgh*, 75, 353–63.

Rayner, R.J. (1995) Auchensail Quarry In *Palaeozoic Palaeobotany of Great Britain* (C.J. Cleal and B.A. Thomas), Geological Conservation Review Series, No. 9, Chapman and Hall, London, pp. 78–80.

Read, H.H. (1923) *The Geology of the Country Around Banff Huntly and Turriff,* Memoir of the Geological Survey of Scotland, sheets 86 and 96, HMSO, Edinburgh, 240 pp.

Remy, W. and Hass, H. (1991a) *Langiophyton mackiei nov. gen., nov. spec.,* ein Gametophyt mit Archegoniophoren aus dem Chert von Rhynie (Unterdevon Schottland) . *Argumenta Palaeobotanica,* 8, 69–117.

Remy, W. and Hass, H. (1991b) Erganzende Beobachtungen an *Lyonophyton rhyniensis. Argumenta Palaeobotanica*, 8, 1–27.

Remy, W. and Hass, H. (1991c) *Kidstonophyton discoides nov. gen. nov. spec.*, an Gametophyt aus dem Chert von Rhynie (Unterdevon, Schottland). *Argumenta Palaeobotanica*, 8, 29–45.

Remy, W. and Remy, R. (1980) *Lyonophyton Rhyniensis n. gen. et nov. spec.*, ein Gametophyt aus dem Chert von Rhynie (Unterdevon, Schottland). *Argumenta Palaeobotanica*, 6, 37–72.

Remy, W., Gensel, P.G. and Hass, H. (1993) The gametophyte generation of some early Devonian land plants. *International Journal of Plant Science*, 154, 35–58.

Remy, W., Taylor, T.N. and Hass, H. (1994) Early Devonian fungi: A blastocladalean fungus with sexual reproduction. *American Journal of Botany*, 81, 690–702.

Repcheck, J. (2003) The Man Who Found Time: James Hutton and the Discovery of the Earth's Antiquity, Simon & Schuster, London, 247 pp.

Retallack, G.J. (1990) Soils of the Past: An Introduction to Paleopedology, Unwin Hyman, Boston, 520 pp.

Reynolds, S.H. (1921) A Geological Excursion Handbook for the Bristol District, 2nd edn, Arrowsmith, Bristol, 224 pp.

Reynolds, S.H. and Greenly, E. (1923) The Old Red Sandstone and Carboniferous Limestone of the Portishead–Clevedon area. *Proceedings of the Bristol Naturalists' Society,* 6, 92–7.

Reynolds, S.H. and Greenly, E. (1924) The geological structure of the Portishead–Clevedon area. *Quarterly Journal of the Geological Society of London*, 80, 447–67.

Rice, C.M. and Ashcroft, W.A. (2004) The geology of the northern half of the Rhynie Basin, Aberdeenshire, Scotland. *Transactions of the Royal Society of Edinburgh*, 94, 299–308.

Rice, C.M. and Trewin, N.H. (1988) Lower Devonian gold-bearing hot spring system near Rhynie, Scotland. *Transactions of the Institution of Mining and Metallurgy,* 97, B141–144.

Rice, C.M., Ashcroft, W.A., Batten, D.J., Boyce, A.J., Caulfield, J.B.D., Fallick, A.E., Hole, M.J., Jones, E., Pearson, M.J., Rogers, G., Saxton, J.M., Stuart, E.M., Trewin, N.H. and Turner, G.A. (1995) A Devonian auriferous hot spring system, Rhynie, Scotland. *Journal of the Geological Society of London*, 152, 229–50.

Rice, C.M., Trewin, N.H. and Anderson, L.I. (2002) Geological setting of the Early Devonian Rhynie cherts, Aberdeenshire, Scotland: an early terrestrial hot spring system. *Journal of the Geological Society of London,* 159, 203–14.

Richardson, J.B. (1967) Some British Lower Devonian spore assemblages and their stratigraphic significance. *Review of Palaeobotany and Palynology*, 1, 111–29.

Richardson, J.B. and Lister, T.R. (1969) Upper Silurian and Lower Devonian spore assemblages from the Welsh Borderlands and south Wales. *Palaeontology*, 12, 201–52.

Richardson, J.B. and MacGregor, D.C. (1986) Silurian and Devonian Spore Zones of the Old Red Sandstone Continent and Adjacent Regions, Geological Survey of Canada Bulletin, No. 364, Geological Survey of Canada, Ottawa, 79 pp.

Richardson, J.B., Rasul, S.M. and Al-Ameri, T. (1981) Acritarchs, miospores and correlation of the Ludlovian–Downtonian and Silurian-Devonian boundaries. *Review of Palaeobotany and Palynology*, 34, 209–24.

Richardson, J.B., Ford, J.H., and Parker, J. (1984) Miospores, correlation and age of some Scottish Lower Old Red Sandstone sediments from the Strathmore region (Fife and Angus). *Journal of Micropalaeontology*, 3, 109–24.

Richardson, J.B., Rodriguez, R.M. and Sutherland, S.J.E. (2000) Palynology and recognition of the Silurian/Devonian boundary in some British terrestrial sediments by correlation with Cantabrian and other European marine sequences — a progress report. *Courier Forschungsinstitut Senckenberg*, 220, 1–7.

Richmond, L.K. and Williams, B.P.J. (2000) A new terrane in the Old Red Sandstone of the Dingle Peninsula, SW Ireland. In *New Perspectives on the Old Red Sandstone* (eds P.F. Friend and B.P.J. Williams), *Geological Society Special Publication*, No. 180, Geological Society London, pp. 147–83.

Ridgway, J.M. (1974) Sedimentology and palaeogeography of the Eday Group, Middle Old Red Standstone, Orkney. Unpublished PhD thesis, University of London.

Ritchie, A. (1975) Groenlandaspis in Antarctica, Australia and Europe. Nature, 254, 569-73.

Robertson, J.D. (1957) The habitat of the early vertebrates. *Biological Reviews, Cambridge*, 32, 256–87.

Robertson, S. (1987) Early sinistral transpression in the Lower Old Red Sandstone of Kincardineshire, Scotland. *Scottish Journal of Geology*, 23, 261–8.

Robertson, T. (1927) *The Geology of the South Wales Coalfield: Part II: The Country Around Abergavenny,* 2nd edn, Memoir of the Geological Survey of Great Britain, Sheet 232 (England and Wales), HMSO, London, 145 pp.

Robertson, T (1932) The *Geology of the South Wales Coalfield: Part V The Country Around Merthyr Tydfil,* 2nd edn, Memoir of the Geological Survey of Great Britain, Sheet 231 (England and Wales), HMSO, London, 283 pp.

Robinson, R.A.J., Rennie, C.A. and Oliver, G.J.H. (1998) Palaeocurrent data, source terrains and palaeogeographic setting of the Dalradian block: the Stonehaven-Dunnottar Groups revisited. *Tectonic Studies Group Annual General Meeting* (St Andrews).

Rock, N.M.S. and Rundle, C.C. (1986) Lower Devonian age for the 'Great (basal) Conglomerate', Scottish Borders. *Scottish Journal of Geology*, 22, 285–8.

Rogers, D.A. (1987) Devonian correlations, environments and tectonics across the Great Glen Fault. Unpublished PhD thesis, University of Cambridge.

Rogers, D.A. and Astin, T.R. (1991) Ephemeral lakes, mud pellet dunes and wind-blown sand and silt: reinterpretations of Devonian lacustrine cycles in north Scotland. In *Lacustrine Facies Analysis* (eds P. Anadon, Ll. Cabrera and K. Kelts), *International Association of Sedimentologists Special Publication*, No. 13, Blackwell Scientific Publications, Oxford, pp. 201–23.

Sallomey, J.T. and Piper, J.D.A. (1973) Palaeomagnetic studies in the British Caledonides IV Lower Devonian lavas of the Strathmore region. *Geophysical Journal of the Royal Astronomical Society*, 58, 47–68.

Salter, J.W. (1863) On the Upper Old Red Sandstone and Upper Devonian rocks. *Quarterly Journal of the Geological Society of London*, 19, 474–96.

Salter, T.M. (1992) Facies, geometrical and palaeocurrent analysis of well-exposed alluvial reservoir analogues and applications to subsurface studies. Unpublished PhD thesis, University of Leeds.

Sanderson, D.J. and Dearman, W.R. (1973) Structural zones of the Variscan fold belt in SW England, their location and development. *Journal of the Geological Society of London*, 129, 527–36.

Sanzen-Baker, I. (1972) Stratigraphical relationships and sedimentary environments of the Silurian-early Old Red Sandstone of Pembrokeshire. *Proceedings of the Geologists' Association*, 83, 139–64.

Scotese, C.R. (2001) Atlas of Earth History, PALEOMAP Project, Arlington, Texas, 52 pp.

Scott, A.C., Edwards, D. and Rolfe, W.D.I. (1976) Fossiliferous Lower Old Red Sandstone near Cardross, Dunbartonshire. *Proceedings of the Geological Society of Glasgow*, 117, 4–5.

Scourfield, D.J. (1926) On a new type of crustacean from the Old Red Sandstone (Rhynie chert bed, Aberdeenshire) — *Lepidocaris rhyniensis*, gen. et sp. nov. *Philosophical Transactions of the Royal Society, London* (Series B), 214, 153–87.

Scourfield, D.J. (1940) Two new and nearly complete specimens of young stages of the Devonian fossil crustacean *Lepidocaris rhyniensis*. *Proceedings of the Linnean Society*, 152, 290–8.

Sedgwick, A. and Murchison, R.I. (1839) On the classification of the older rocks of Devon and Cornwall. *Proceedings of the Geological Society of London*, 3, 121–3.

Selden, P.A., Shear, W.A. and Bonamo, P.M. (1991) A spider and other arachnids from the Devonian of New York and reinterpretations of Devonian Araneae. *Palaeontology*, 34, 241–81.

Serrane, M. (1992) Devonian extensional tectonics versus Carboniferous inversion in the northern Orcadian basin. *Journal of the Geological Society of London*, 149, 27–37.

Shear, W.A., Selden, P.A., Rolfe, W.D.I., Bonamo, P.M. and Grierson, J.D. (1987) New terrestrial arachnids from the Devonian of Gilboa, New York (Arachnida, Trigonotarbida). *American Museum Novitates*, 2901, 1–74.

Shear, W.A., Jeram, A.J. and Selden, P.A. (1998) Centipede legs (Arthropoda, Chilopoda, Scutigeromorpha) from the Silurian and Devonian of Britain and the Devonian of North America. *American Museum Novitates*, 3232, 1–16.

Shearman, D.J. (1967) On Tertiary fault movements in north Devonshire. *Proceedings of the Geologists' Association,* 78, 555–66.

Sherlock, S.A., Jones, K.A. and Kelley, S.P. (2002) Fingerprinting polyorogenic detritus using the ⁴⁰Ar/³⁹Ar ultraviolet laser microprobe. *Geology*, 30, 515–18.

Shotton, F.W. (1935) The stratigraphy and tectonics of the Cross Fell Inlier. *Quarterly Journal of the Geological Society of London*, 91, 639–701.

Simon, J.B. and Bluck, B.J. (1982) Palaeodrainage of the southern margin of the Caledonian mountain chain in the northern British Isles. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 73, 11–15.

Simpson, B. (1971) The Palaeozoic succession in the Black Mountains between Pontardawe and Llandeilo. In *Geological Excursions in South Wales and The Forest of Dean* (eds D.A. Bassett and M.G. Bassett), The Geologists' Association South Wales Group, Cardiff, pp. 143–54.

Simpson, S. (1951) A new eurypterid from the Upper Old Red Sandstone of Portishead. *The Annals and Magazine of Natural History*, 4, 849–61.

Simpson, S. (1959) Fascicule 3aVI — Devonian. *Lexique Stratigraphique International. Volume 1: Europe* (eds WE Whittard and S. Simpson), Congrès Géologique International. Centre National De La Recherche Scientifique, Paris, 131 pp.

Simpson, S. (1964) The Lynton Beds of north Devon. Proceedings of the Ussher Society, 1, 121-2.

Siveter, D.J. (2000) Sawdde Gorge. In *British Silurian Stratigraphy* (R J. Aldridge, David J. Siveter, Derek J. Siveter, P.D. Lane, D. Palmer and N.H. Woodcock), Geological Conservation Review Series, No. 19, Joint Nature Conservation Committee, Peterborough, pp. 403–7.

Siveter, D.J., Owens, R.M. and Thomas, A.T. (1989) Silurian Field Excursions: A Geotraverse across Wales and the Welsh Borderlands, National Museum of Wales Geological Series, No. 10, National Museum of Wales in conjunction with The Geologists' Association, Cardiff, 133 pp.

Smith, A., Braddy, S.J., Marriott, S.B. and Briggs, D.E.G. (2003). Arthropod trackways from the Early Devonian of South Wales: a functional analysis of producers and their behaviour. *Geological Magazine*, 140, 63–72.

Smith, D.B. (1980) Summary of Geology. Ross-on-Wye Special 1:10, 000 Sheet, British Geological Survey, Keyworth.

Smith, R.A. (1995) The Siluro-Devonian evolution of the southern Midland Valley of Scotland. *Geological Magazine*, 132, 503–13.

Smith, R.A. (1996) Geology of the Gass Water area, explanation of 1:10 000 Sheet NS62SE. *British Geological Survey, Onshore Geology Series, Technical Report*, WA/96/22.

Smith, R.A. (1999a) Scurdie Ness to Usan Harbour; Black Rock to East Comb. In *Caledonian Igneous Rocks of Great Britain* (D. Stephenson, R.E. Bevins, D. Millward, A.J. Highton, I. Parsons, P. Stone and W.J. Wadsworth), Geological Conservation Review Series, No. 17, Joint Nature Conservation Committee, Peterborough, pp. 525–31.

Smith, R.A. (1999b) Crawton Bay. In *Caledonian Igneous Rocks of Great Britain* (D. Stephenson, R.E. Bevins, D. Millward, A.J. Highton, I. Parsons, P. Stone and W.J. Wadsworth). Geological Conservation Review Series, No. 17, Joint Nature Conservation Committee, Peterborough, pp. 522–5.

Smith, T.E. (1967) A preliminary study of sandstone sedimentation in the Lower Carboniferous of the Tweed Basin. *Scottish Journal of Geology,* 3, 282–305.

Smith, T.E. (1968) The Upper Old Red Sandstone–Carboniferous junction at Burnmouth, Berwickshire. *Scottish Journal of Geology*, 4, 349–54.

Soper, N.J. and Woodcock, N.H. (2003) The lost Lower Old Red Sandstone of England and Wales: a record of post-lapetan flexure or Early Devonian transtension? *Geological Magazine*, 140, 627–47.

Soper, N.J., Strachan, R.A., Holdsworth, R.E., Gayer, R.A. and Greiling, R.O. (1992) Sinistral transpression and the Silurian closure of lapetus. *Journal of the Geological Society of London*, 149, 871–80.

Squirrell, H.C. and Downing, R.A. (1969) *Geology of the South Wales Coalfield: Part I: The Country Around Newport* (*Mon.*), 3rd edn, Memoir of the Geological Survey of Great Britain, Sheet 249 (England and Wales), HMSO, London, 333 pp.

Squirrel!, H.C. and White, D.E. (1978) Stratigraphy of the Silurian and Old Red Sandstone of the Cennen Valley and adjacent areas, south-east Dyfed, Wales. *Report of the Institute of Geological Sciences*, 78/6, 45 pp.

Stamp, L.D. (1923) The base of the Devonian, with special reference to the Welsh Borderlands. *Geological Magazine*, 60, 276–82, 331–6, 367–72, 385–410.

Steel, R.J. (1974) Cornstone (fossil caliche) — its origin, stratigraphic, and sedimentological importance in the New Red Sandstone, Western Scotland. *Journal of Geology*, 82, 351–69.

Stephenson, D. (1972) Middle Old Red Sandstone alluvial fan and talus deposits at Foyers, Inverness-shire. *Scottish Journal of Geology*, 8, 121–7.

Stephenson, D. (1977) Intermontane basin deposits associated with an early Great Glen feature in the Old Red Sandstone of Inverness-shire. In *The Moray Firth Area Geological Studies* (ed. G. Gill), Inverness Field Club, Inverness, pp. 35–45.

Stephenson, D. (1999) Pettico Wick to St Abb's Harbour. In *Caledonian Igneous Rocks of Great Britain* (D. Stephenson, R.E. Bevins, D. Millward, A.J. Highton, I. Parsons, P. Stone and W.J. Wadsworth), Geological Conservation Review Series, No. 17, Joint Nature Conservation Committee, Peterborough, pp. 552–6.

Stephenson, D. and Gould, D. (1995) *British Regional Geology: The Grampian Highlands, HMSO*, London, for the British Geological Survey, 261 pp.

Stephenson, D., Bevins, R.E., Millward, D., Highton, A.J., Parsons, I., Stone, P. and Wadsworth, W.J. (1999) *Caledonian Igneous Rocks*, Geological Conservation Review Series, No. 17, Joint Nature Conservation Committee, Peterborough, 648 pp.

Stephenson, D., Loughlin, S.C., Waters, C.N. and Williamson, I.T. (2003) *Carboniferous and Permian Igneous Rocks of Great Britain north of the Variscan Front*, Geological Conservation Review Series, No. 27, Joint Nature Conservation Committee, Peterborough, 374 pp.

Strahan, A. and Gibson, W (1900) *The Geology of the South Wales Coalfield: Part H: The Country Around Abergavenny,* Memoir of the Geological Survey of Great Britain, Sheet 232 (England and Wales), HMSO, London, 145 pp.

Strahan, A.H., Gibson, W and Cantrill, T.C. (1904) *The Geology of the South Wales Coalfield: Part V: The country Around Merthyr Tydfil*, Memoir of the Geological Survey of Great Britain, Sheet 231 (England and Wales), HMSO, London, 132 pp.

Strahan, A., Cantrill, T.C., Dixon, E.E.L., and Thomas, H.H. (1907) *The Geology of the South Wales Coalfield: Part VII: The Country Around Ammanford,* Memoir of the Geological Survey of Great Britain, Sheet 230 (England and Wales), HMSO, London, 246 pp.

Strahan, A., Cantrill, T.C., Dixon, E.E.L. and Thomas, H.H. (1909) *The Geology of the South Wales Coalfield: Part X: The Country Around Carmarthen,* Memoir of the Geological Survey of Great Britain, Sheet 229 (England and Wales), HMSO, London, 177 pp.

Straw, S.H. (1930) The Siluro-Devonian boundary in south-central Wales. *Journal of the Manchester Geological Association*, 1 (for 1929), 79–102.

Street, M., Loboziak, S., Steemans, P and Bultynck, P. (2000) Devonian miospore stratigraphy and correlation with the global stratotype sections and points. *Courier Forschungsinstitut Senckenberg*, 220, 9–23.

Strong, G.E. (1995) Petrography of Permo-Triassic and Devonian rock specimens from the Minehead area, Somerset. British Geological Survey, Mineralogy and Petrology Series, Technical Report, WG/95/10

Sweet, I.P. (1985) Sedimentology of the Lower Old Red Sandstone near New Aberdour, Grampian Region. *Scottish Journal of Geology*, 21, 239–59.

Syba, E. (1989) The sedimentation and provenance of the Lower Old Red Sandstone Greywacke Conglomerate, Southern Midland Valley, Scotland. Unpublished PhD thesis, University of Glasgow.

Tarrant, P.R. (1991) The ostracoderm *Phialaspis* from the Lower Devonian of the Welsh Borderland and South Wales. *Palaeontology*, 34, 399–438.

Taylor, K. (1972) New fossiliferous localities in the Upper Old Red Sandstone of the Ystradfellte-Cwm Taff district of Breconshire. *Bulletin of the Geological Survey of Great Britain*, 38, 11–14.

Taylor, K. and Thomas, L.P. (1974) Field meeting in the Upper Old Red Sandstone of south Breconshire. *Proceedings of the Geologists' Association*, 85, 423–32.

Taylor, K. and Thomas, L.P. (1975) Geological Survey boreholes in south Breconshire and their bearing on the stratigraphy of the Upper Old Red Sandstone and the Carboniferous-Old Red Sandstone boundary east of the Mon Hepste. *Bulletin of the Geological Survey of Great Britain*, 54, 1–39.

Taylor, T.N., Remy, W and Hass, H. (1992a) Fungi from the Lower Devonian Rhynie Chert: Chytridiomycetes. *American Journal of Botany*, 79, 1233–41.

Taylor, T.N., Hass, H. and Remy, W. (1992b) Devonian fungi: interactions with the green alga *Palaeonitella*. *Mycologia*, 84, 901–10.

Taylor, T.N., Remy, W., Hass, H. and Kerp, H. (1995) Fossil arbuscular mycorrhizae from the Early Devonian. *Mycologia*, 87, 560–73.

Taylor, T.N., Hass, H. and Kerp, H. (1997) A cyano-lichen from the Lower Devonian Rhynie Chert. *American Journal of Botany*, 84, 992–1004.

Taylor, T.N., Hass, H. and Kerp, H. (1999) The oldest fossil ascomycetes. Nature (London), 399, 648.

Thirlwall, M.P. (1979) The petrochemistry of the British Old Red Sandstone volcanic province. Unpublished PhD thesis, University of Edinburgh.

Thirwall, M.F. (1981) Implications for Caledonian plate tectonic models of chemical data from volcanic rocks of the British Old Red Sandstone. *Journal of the Geological Society of London*, 138, 123–38.

Thirlwall, M.F. (1983) Isotope geochemistry and origin of calc-alkaline lavas from a Caledonian continental margin volcanic arc. *Journal of Volcanology and Geothermal Research*, 18, 589–631.

Thirlwall, M.F. (1988) Geochronology of Late Caledonian magmatism in northern Britain. *Journal of the Geological Society of London*, 145, 951–67.

Thirlwall, M.F. (1989) Movement on proposed terrane boundaries in northern Britain: constraints from Ordovician-Devonian igneous rocks. *Journal of the Geological Society of London*, 146, 373–6.

Thomas, R.G. (1978) The stratigraphy, palynology and sedimentology of the Lower Old Red Sandstone Cosheston Group, S.W. Dyfed, Wales. Unpublished PhD thesis, University of Bristol, 552 pp.

Tomkeieff, S.I. (1953) "Hutton's Unconformity", Isle of Arran. Geological Magazine, 90, 404-8.

Torsvik, T.H., Smethurst, MA., Meert, J.G., Van der Voo, R., Trench, A., Abrahamsen, N. and Halvorsen, E. (1992) Baltica: a synopsis of Vendian–Permian palaeomagnetic data and their palaeotectonic implications. *Earth Science Reviews*, 40, 133–52.

Torsvik, T.H., Smethurst, M.A., Meert, J.G., Van der Voo, R. and McKerrow, W.S. (1996) Continental break-up and collision in the Neoproterozoic and Palaeozoic — a tale of Baltica and Laurentia. *Earth Science Reviews*, 33, 133–52.

Trench, A. and Haughton, P.D.W. (1990) Palaeomagnetic and geochemical evaluation of a terrane-linking ignimbrite: evidence for the relative position of the Grampian and Midland Valley terranes in late Silurian times. *Geological Magazine*, 127, 241–357.

Trench, A. and Torsvik, T.H. (1992) The closure of the lapetus Ocean and Tornquist Sea; new palaeomagnetic constraints. *Journal of the Geological Society of London*, 149, 867–70.

Trewin, N.H. (1976) Correlation of the Achanarras and Sandwick Fish Beds, Middle Old Red Sandstone, Scotland. *Scottish Journal of Geology*, 12, 205–8.

Trewin, N.H. (1986) Palaeoecology and sedimentology of the Achanarras fish bed of the Middle Old Red Sandstone, Scotland. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 77, 21–46.

Trewin, N.H. (1987a) Pennan, unconformity within the Old Red Sandstone. In *Excursion Guide to the Geology of the Aberdeen Area* (eds N.H. Trewin, B.C. Kneller and C. Gillen), Scottish Academic Press, Edinburgh pp. 127–30.

Trewin, N.H. (1987b) Crawton: lavas and conglomerates of the Lower ORS. In *Excursion Guide to the Geology of the Aberdeen Area* (eds N.H. Trewin, B.C. Kneller and C. Gillen), Scottish Academic Press, Edinburgh, pp. 259–64.

Trewin, N.H. (1987c) Devonian of St Cyrus and Milton Ness. In *Excursion Guide to the Geology of the Aberdeen Area,* (eds N.H. Trewin, B.C. Kneller and C. Gillen), Scottish Academic Press, Edinburgh, pp. 251–8.

Trewin, N.H. (1992) 'Subaqueous shrinkage cracks' in the Devonian of Scotland reinterpreted — Discussion. *Journal of Sedimentary Petrology*, 62, 921–2.

Trewin, N.H. (1993) The Old Red Sandstone of Caithness. In *Excursion Guide to the Geology of East Sutherland and Caithness* (eds N.H. Trewin and A. Hurst), Scottish Academic Press, Edinburgh, pp. 123–66.

Trewin, N.H. (1994) Depositional environment and preservation of biota in the Lower Devonian hot-springs of Rhynie, Aberdeenshire, Scotland. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 84, 433–42.

Trewin, N.H. (1996) The Rhynie Cherts: an early Devonian ecosystem preserved by hydro-thermal activity. In *Evolution of Hydrothermal Ecosystems on Earth (and Mars?)*(eds G.R. Bock and J.A. Goode), Ciba Foundation Symposium, No. 202, Wiley, Chichester, pp. 131–49.

Trewin, N.H. and Davidson, R.G. (1996) An early Devonian lake and its associated biota in the Midland Valley of Scotland. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 86, 233–46.

Trewin, N.H. and Davidson, R.G. (1999) Lake-level changes, sedimentation and faunas in a Middle Devonian basin-margin fish bed. *Journal of the Geological Society of London*, 156, 535–48.

Trewin, N.H. and Kneller, B.C. (1987a) Old Red Sandstone and Dalradian of Gamrie Bay. In *Excursion Guide to the Geology of the Aberdeen Area* (eds N.H. Trewin, B.C. Kneller and C. Gillen), Scottish Academic Press, Edinburgh, pp. 113–26.

Trewin, N.H. and Kneller, B.C. (1987b) The Lower Old Red Sandstone of New Aberdour. In *Excursion Guide to the Geology of the Aberdeen Area* (eds N.H. Trewin, B.C. Kneller and C. Gillen), Scottish Academic Press, Edinburgh, pp. 131–41.

Trewin, N.H. and Kneller, B.C. (1987c) Old Red Sandstone and Dalradian of Quarry Haven. In *Excursion Guide to the Geology of the Aberdeen Area* (eds N.H. Trewin, B.C. Kneller and C. Gillen), Scottish Academic Press, Edinburgh, pp. 143–7.

Trewin, N.H. and Knoll, A.H. (1999) Preservation of Devonian chemotrophic filamentous bacteria in calcite veins. *Palaios*, 14, 288–94.

Trewin, N.H. and Rice, C.M. (1992) Stratigraphy and sedimentology of the Devonian Rhynie chert locality. *Scottish Journal of Geology*, 28, 37–47.

Trewin, N.H. and Thirlwall, M.F. (2002) Old Red Sandstone. In *The Geology of Scotland*, 4th edn (ed. N.H. Trewin), The Geological Society London, pp. 213–49.

Trewin, N.H. and Wilson, E. (2004) Correlation of the Early Devonian Rhynie chert beds between three boreholes at Rhynie, Aberdeenshire. *Scottish Journal of Geology*, 40, 73–81.

Trewin, N.H., Fayers, S.R. and Kelman, R. (2003) Subaqueous silicification of the contents of small ponds in an Early Devonian hot-spring complex, Rhynie, Scotland. *Canadian Journal of Earth Sciences*, 40, 1697–712.

Trotter, F.M. (1942) *Geology of the Forest of Dean Coal and Iron Ore Field,* Memoir of the Geological Survey of Great Britain, HMSO, London, 95 pp.

Tunbridge, I.P. (1978) The sedimentology of late Lower and early Middle Devonian rocks of the Bristol Channel region, southern England. Unpublished PhD thesis, University of Reading.

Tunbridge, I.P. (1980a) Possible Devonian uplift on the Swansea Valley Fault, Wales. Geological Magazine, 117, 497–8.

Tunbridge, I.P. (1980b) The Yes Tor Member of the Hangman Sandstone Group (north Devon). *Proceedings of the Ussher Society*, 5. 7–12.

Tunbridge, I.P. (1981a) Old Red Sandstone sedimentation — an example from the Brownstones (highest Lower Old Red Sandstone) of south central Wales. *Geological Journal*, 16, 111–24.

Tunbridge, I.P. (1981b) Sandy high-energy flood sedimentation — some criteria for recognition, with an example from the Devonian of S.W. England. *Sedimentary Geology*, 28, 79–95.

Tunbridge, I.P. (1983a) The Middle Devonian shoreline in north Devon, *England Journal of the Geological Society of London*, 140, 147–58.

Tunbridge, I.P. (1983b). The Bristol Channel landmass (abstract). *Proceedings of the Ussher Society,* 5, 490.

Tunbridge, I.P. (1984) Facies model for a sandy ephemeral stream and clay playa complex; the Middle Devonian Trentishoe Formation of north Devon, U.K. *Sedimentology*, 31, 697–715.

Tunbridge, I.P. (1986) Mid-Devonian tectonics and sedimentation in the Bristol Channel. *Journal of the Geological Society of London*, 143, 107–15.

Turner, S. (1973) Siluro-Devonian thelodonts from the Welsh Borderland. *Journal of the Geological Society of London*, 129, 557–84.

Turner, S., Vergoossen, J.M.J. and Williams, R.B. (1995) Early Devonian microvertebrates from Pwll-y-Wrach, Talgarth, South Wales. *Geobios*, 19, 377–82.

Tyrrell, G.W. (1928) *The Geology of Arran,* Memoir of the Geological Survey of Great Britain, Arran Map including parts of sheets 13 and 21 (Scotland), HMSO, Edinburgh, 292 pp.

Utting, J. and Neves, R. (1970) Palynology of the Lower Limestone Shale Group (basal Carboniferous Limestone Series) and Portishead Beds (Upper Old Red Sandstone) of the Avon Gorge, Bristol, England. In *Colloque sur la Stratigraphie du Carbonifère* (eds M. Streel and R.H. Wagner), *Les Congres et Colloques de l'Universite de Liège*, No. 55, Université de Liège, Liège, pp. 411–22.

Vergoossen, J.M.J. (2000) Acanthodian and chondrichthyan microremains in the Siluro-Devonian of the Welsh Borderland, Great Britain. *Courier Forschungsinstitut Senckenberg*, 223, 175–99.

Wadge, A.J. (1978) Devonian. In *The Geology of the Lake District* (ed. F. Moseley), *Yorkshire Geological Society Occasional Publication*, No. 3, Yorkshire Geological Society, Leeds, pp.164–7.

Walker, T.R. (1967) Formation of red beds in modern and ancient sediments. *Bulletin of the Geological Society of America*, 78, 353–68.

Wallace, T. (1880) The structural geology of Strathnairn. *Transactions of the Edinburgh Geological Society,* 3, 204–19.

Wallis, F.S. (1927) Notes on sections of Old Red Sandstone in the Bristol district. *Proceedings of the Bristol Naturalists' Society,* 6, 400–5.

Wallis, F.S. (1928) The Old Red Sandstone of the Bristol District. *Quarterly Journal of the Geological Society of London,* 83, 760–89.

Walmsley, V.G. (1962) Upper Silurian–Devonian contacts in the Welsh Borderland and South Wales. In Symposiums-Band: 2: Internationalen Arbeitstagung über die Silur/Devon-Grenze und die Stratigraphie von Silur und Devon, Bonn-Bruxelles 1960 (H.K. von Erben), E. Schweizerbart'sche, Stuttgart, pp. 288–95.

Walmsley, V.G. and Bassett, M.G. (1976) Biostratigraphy and correlation of the Coralliferous Group (Silurian) of Pembrokeshire, Wales. *Proceedings of the Geologists' Association*, 87, 191–220.

Ward, J.C. (1876) *The Geology of the Northern Part of the English Lake District,* Memoir of the Geological Survey of the United Kingdom, Quarter sheet 101SE, HMSO, London, 132 pp.

Waters, R.A. and Lawrence, D.J.D. (1987) *Geology of the South Wales Coalfield: Part III: The Country Around Cardiff,* 3rd edn, Memoir of the British Geological Survey, Sheet 263 (England and Wales), HMSO, London, 114 pp.

Watson, D.M.S. (1935) Fossil fishes of the Orcadian Old Red Sandstone. In *The Geology of the Orkneys* (G.V. Wilson, W Edwards, J. Knox, R.C.B. Jones and J.V. Stephens), Memoir of the Geological Survey of Great Britain, sheets 117 to 122 (Scotland), HMSO, Edinburgh, pp. 157–69.

Webby, B.D. (1965a) The Middle Devonian marine transgression in north Devon and west Somerset. *Geological Magazine*, 102, 478–88.

Webby, B.D. (19656) The stratigraphy and structure of the Devonian rocks in the Brendon Hills, west Somerset. *Proceedings of the Geologists' Association*, 76, 39–60.

Webby, B.D. (1966a) Middle–Upper Devonian paleogeography of north Devon and west Somerset, England. *Palaeogeography, Palaelimatology, Palaeoecology,* 2, 27–46.

Webby, B.D. (1966b) The stratigraphy and structure of the Devonian rocks in the Quantock Hills, west Somerset. *Proceedings of the Geologists' Association*, 76, 321–43.

Welch, F.B.A. and Trotter, F.M. (1961) *Geology of the Country Around Monmouth and Chepstow,* Memoir of the Geological Survey of Great Britain, sheets 233 and 250 (England and Wales), HMSO, London, 142 pp.

Wellman, C.H. (1993) A land plant microfossil assemblage of Mid Silurian age from the Stonehaven Group, Scotland. *Journal of Micropalaeontology*, 12, 47–66.

Wellman, C.H. (1994) Palynology of the 'Lower Old Red Sandstone' at Glen Coe, Scotland. *Geological Magazine*, 131, 563–6.

Wellman, C.H. (2004) Palaeoecology and palaeophytogeography of the Rhynie chert plants: evidence from integrated analysis of *in situ* and dispersed spores. *Proceedings of the Royal Society of London, Series B,* 271, 985–92.

Wellman, C.H., Thomas, R.G., Edwards, D. and Kenrick, P (1998) The Cosheston Group (Lower Old Red Sandstone) in southwest Wales: age, correlation and palaeobotanical significance. *Geological Magazine*, 135, 397–412.

Wellman, C.H., Habgood, K., Jenkins, G. and Richardson, J.B. (2000) A new plant assemblage (microfossil and megafossil) from the Lower Old Red sandstone of the Anglo-Welsh Basin: its implications for the palaeoecology of early terrestrial ecosystems. *Review of Palaeobotany and Palynology*, 109, 161–96.

Westoll, T.S. (1948) The vertebrate-bearing strata of Scotland. *18th International Geological Congress, London, Abstracts*, 18, 74–5.

Westoll, T.S. (1951) A new cephalaspid fish from the Downtonian of Scotland, with notes on the structure and classification of ostracoderms. *Transactions of the Royal Society of Edinburgh*, 61, 341–57.

Westoll, T.S. (1977) Northern Britain. In *A Correlation of Devonian Rocks of the British Isles* (eds M.R. House, J.B. Richardson, W.G. Chaloner, J.R.L. Allen, C.H. Holland, and T.S. Westoll), *Geological Society of London Special Report*, No. 8, Scottish Academic Press, Edinburgh, pp. 66–92.

White, D.E. and Lawson, J.D. (1989) The Plácolí Series in the Welsh Borderland and south-central Wales. In A *Global Standard for the Silurian System* (eds C.H. Holland and M.G. Bassett), National Museum of Wales Geological Series, No. 9, National Museum of Wales, Cardiff, pp. 131–41.

White, E.I. (1935) The ostracoderm *Pteraspis* Kner and the relationships of the agnathous vertebrates. *Philisophical Transactions of the Royal Society, London*, B225, 381–457.

White, E.I. (1938) New pteraspids from South Wales. Quarterly Journal of the Geological Society of London, 94, 85–155.

White, E.I. (1946) The Genus *Phialaspis* and the Psammosteus Limestones. *Quarterly Journal of the Geological Society of London*, 101, 207–42.

White, E.I. (1950) The vertebrate faunas of the Lower Old Red Sandstone of the Welsh Borders. *Bulletin of the British Museum (Natural History)*, AI, 57–67.

Whitehead, T.H. and Pocock, R.W. (1947) *Dudley and Bridgnorth,* Memoir of the Geological Survey of Great Britain, Sheet 167 (England and Wales), HMSO, London, 226 pp.

Williams, B.P.J. (1964) The stratigraphy, petrology and sedimentation of the Ridgeway Conglomerate and associated formations in south Pembrokeshire. Unpublished PhD thesis, University of Wales (Swansea).

Williams, B.P.J. (1971) Sedimentary features of the Old Red Sandstone and Lower Limestone Shales of south Pembrokeshire, south of the Ritec Fault. In *Geological Excursions in South Wales and the Forest of Dean* (eds D.A. Bassett and M.G. Bassett), The Geologists' Association South Wales Group, Cardiff, pp. 222–39.

Williams, B.P.J. (1978) The Old Red Sandstone of the Welsh Borderland and South Wales. In A *Field Guide to Selected Outcrop Areas of the Devonian of Scotland, the Welsh Borderland and South Wales: International Symposium on the Devonian System (PA.D.S. 78)* (eds P.F. Friend and B.P.J. Williams), Palaeontological Association, London, pp. 55–106.

Williams, B.P.J. and Hancock, P.L. (1977) The sedimentology and structure of the Upper Palaeozoic rocks at Portishead. In *Geological Excursions in the Bristol District* (ed. R.J.G. Savage), University of Bristol, Bristol, pp. 29–46.

Williams, B.P.J. and Hillier, R.D. (2004) Variable alluvial sandstone architecture within the Lower Old Red Sandstone, southwest Wales. *Geological Journal*, 39, 257–75.

Williams, B.P.J., Allen, J.R.L. and Marshall, J.D. (1982) Old Red Sandstone fades of the Pembroke Peninsula, south of the Ritec Fault. In *Geological Excursions in Dyfed, South-west Wales* (ed. M.G. Bassett), National Museum of Wales, Cardiff for the Geologists' Association South Wales Group, pp. 151–74.

Williams, E.A., Friend, P.A. and Williams, B.P.J. (2000) A review of Devonian time scales: databases, construction and new data. In *New Perspectives on the Old Red Sandstone* (eds P.F. Friend and B.P.J. Williams), *Geological Society Special Publication*, No. 180, Geological Society, London, pp. 1–21.

Wills, L.J. (1948) The Palaeogeography of the Midlands, University Press of Liverpool, Liverpool, 147 pp.

Wills, L.J. (1950) The Palaeogeography of the Midlands, 2nd edn, University Press of Liverpool, Liverpool, 147 pp.

Wills, L.J. (1952) A *Palaeogeographical Atlas of the British Isles and Adjacent Parts of Europe,* Reprint, Mackie and Son, London, 64 pp.

Wilson, H.M. and Anderson, L.I. (2004) Morphology and taxonomy of Paleozic millipedes (Diplopoda: Chilognatha: Archipolypoda) from Scotland. Journal of Palaeontology, 78, 169–84.

Wilson, G.V., Edwards, W, Knox, J., Jones, R.C.B. and Stephens, J.V. (1935) *The Geology of the Orkneys,* Memoir of the Geological Survey of Great Britain, sheets 117 to 122 (Scotland), HMSO, Edinburgh, 205 pp.

Wood, S. and Norman, D. (1991) Tynet Burn: on the trail of Orcadian fish. Earth Science Conservation, 29, 15–17.

Woodcock, N.H. (2000a) Devonian sedimentation and volcanism of the Old Red Sandstone continent. In *Geological History of Britain and Ireland* (eds N.H. Woodcock and R. Strachan), Blackwell Science, Oxford, pp. 207–23.

Woodcock, N.H. (2000b) Introduction to the Silurian. In *British Silurian Stratigraphy* (R J. Aldridge, David J. Siveter, Derek J. Siveter, P.D. Lane, D. Palmer and N.H. Woodcock), Geological Conservation Review Series, No. 19, Joint Nature Conservation Committee, Peterborough, pp. 1–22.

Woodcock, N.H. and Gibbons, W. (1988) Is the Welsh Borderlands Fault System a terrane boundary? *Journal of the Geological Society of London*, 145, 915–23.

Woodcock, N.H. and Strachan, R. (2000) Geological History of Britain and Ireland, Blackwell Science, Oxford, 423 pp.

Wright, V.P. and Marriott, S.B. (1996) A quantitative approach to soil occurrence in alluvial deposits and its application to the Old Red Sandstone of Britain. *Journal of the Geological Society of London*, 153, 907–13.

Yang, C.X. (1997) Quaternary sedimentation, parna, landforms, and soil landscapes of the Wagga Wagga 1:100 000 map sheet, southeastern Australia. *Australian Journal of Soil Research*, 35, 643–68.

Young, V.T. (1995) Micro-remains from Early and Middle Devonian acanthodian fishes from the U.K. and their biostratigraphic possibilities. *Ichthyolith Issues, Special Publication,* 1, 65–8.

References