

The type Ludlow Series: Biostratigraphy - conodonts

The Ludlow conodont zonation presented by Aldridge & Schönlaub (1989) was based on central European studies (Walliser 1964). It comprises four biozones. In upwards succession, these are the *Ancoradella ploeckensis* Biozone, the *Polygnathoides siluricus* Biozone, the *Ozarkodina snajdri* Biozone and the *Ozarkodina crispa* Biozone. In addition, the mainly Wenlock *Ozarkodina bohémica bohémica* Biozone overlaps with the lower part of the *nilssoni* Graptolite Biozone in Bohemia, and so embraces the lowermost Ludlow Series (see: [Ludlow conodont zonation](#)). Aldridge & Schönlaub (1989) noted, however, that a standard biozonation of general applicability was not available. It remains the case that no zonation scheme has been applied to the type Ludlow succession, although Aldridge (1975) reported conodonts to be abundant through much of the Ludlow Series in the type area and other sections in the shelf facies of the Welsh Borderland.

British Ludlow conodont faunas are dominated by long-ranging forms, including *Ozarkodina confluens* (Branson & Mehl), *O. excavata* (Branson & Mehl) and species of *Panderodus*. Aldridge (1975) noted that species with a limited stratigraphical range were rare, but that some forms were an aid to correlation.

See '[Distribution of conodont species in the type Ludlow Series](#)' for a tabulation of species' occurrences by formation.

Aldridge, R.J. 1975. The stratigraphic distribution of conodonts in the British Silurian. *Journal of the Geological Society, London*, **131**, 607-618.

Aldridge, R.J. & Schönlaub, H.P. 1989. Conodonts. In Holland, C.H. & Bassett, M.G. (eds) *A global standard for the Silurian System*. National Museum of Wales, Geological Series No. **9**, Cardiff. 274-279.

Walliser, O.H. 1964. Conodonten des Silurs. *Abhandlungen des Hessischen Landesamtes für Bodenforschung*, **41**, 1-106, pls 1-32.

See: [Gorstian conodont faunas](#), [Ludfordian conodont faunas](#), [Ludlow conodont zonation](#)
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Gorstian conodont faunas

Conodont faunas from the lower part of the Ludlow succession (**Lower Elton Formation, Middle Elton Formation, Upper Elton Formation, Lower Bringewood Formation**) are generally sparse and of low diversity, with *Ozarkodina excavata* (Branson & Mehl), *Panderodus equicostatus* (Rhodes), *Panderodus* sp. and, from the Lower Bringewood Formation, *Kockelella*. More abundant and diverse conodont faunas occur in the **Upper Bringewood Formation**, where collections contain *Ozarkodina confluens* (Branson & Mehl), *O. excavata*, *Panderodus unicastatus* (Branson & Mehl), *P. recurvatus* (Rhodes), and *Panderodus* sp., with rarer *Kockelella variabilis* Walliser and *Oulodus* sp.

See '[Distribution of conodont species in the type Ludlow Series](#)' for a tabulation of species' occurrences by formation.

See: [Conodonts from the Much Wenlock Limestone and Lower Elton formations, Pitch Coppice Quarry](#)

[Conodonts from the Middle Elton and Upper Elton formations](#)

[Conodonts from the Lower Bringewood Formation](#)

[Conodonts from the Upper Bringewood Formation](#)

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Conodonts from the Much Wenlock Limestone and Lower Elton formations, Pitch Coppice Quarry

Conodonts are sparse in both the Much Wenlock Limestone Formation and the Lower Elton Formation at Pitch Coppice Quarry. Faunas comprise *Ozarkodina excavata* (Branson & Mehl) and *Panderodus equicostatus* (Rhodes) (Aldridge & Smith 1985; Siveter *et al.* 1989, loc. 3.3c).

Aldridge, R.J. & Smith, M.P. 1985. Lower Palaeozoic succession of the Welsh Borderland. Fourth European Conodont Symposium (ECOS IV) Field Excursion B Guidebook, 39 pp.

Siveter, D.J., Owens, R.M. & Thomas, A.T. 1989. *Silurian field excursions: a geotraverse across Wales and the Welsh Borderland*. National Museum of Wales, Geological Series No. **10**, Cardiff. 133pp.

See: [Distribution of conodont species in the type Ludlow Series, Pitch Coppice Quarry](#).

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Conodonts from the Middle Elton and Upper Elton formations

Aldridge & Smith (1985, loc. 4.3) recorded fragmentary *Panderodus* elements from the **Middle Elton Formation** close to locality 3.3d of Siveter *et al.* (1989) [SO 4777 7320]. Graptolites were reported to include *Neodiversograptus nilssoni* (Barrande) and *Saetograptus colonus* (Barrande), indicating the *nilssoni* Biozone.

Conodont faunas from the **Upper Elton Formation** were reported by Aldridge & Smith (1985, p. 31) to comprise sparse, broken specimens of *Ozarkodina excavata* (Branson & Mehl) and *Panderodus* sp.

Aldridge, R.J. & Smith, M.P. 1985. Lower Palaeozoic succession of the Welsh Borderland. Fourth European Conodont Symposium (ECOS IV) Field Excursion B Guidebook, 39 pp.

Siveter, D.J., Owens, R.M. & Thomas, A.T. 1989. *Silurian field excursions: a geotraverse across Wales and the Welsh Borderland*. National Museum of Wales, Geological Series No. **10**, Cardiff. 133pp.

See: [Distribution of conodont species in the type Ludlow Series](#).

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Conodonts from the Lower Bringewood Formation

Calcareous nodules from the Lower Bringewood Formation were reported by Aldridge & Smith (1985, p. 33) to have yielded sparse, fragmented specimens of *Ozarkodina*, *Panderodus* and *Kockelella* (e.g. from their locality 4.6 [SO 4827 7377] on the Wigmore Road, about 3 km WSW of Ludlow). Aldridge (1975, p. 615) reported *Kockelella variabilis* Walliser to appear in the Lower Bringewood Formation.

Aldridge, R.J. 1975. The stratigraphic distribution of conodonts in the British Silurian. *Journal of the Geological Society, London*, **131**, 607-618.

Aldridge, R.J. & Smith, M.P. 1985. Lower Palaeozoic succession of the Welsh Borderland. Fourth European Conodont Symposium (ECOS IV) Field Excursion B Guidebook, 39 pp.

See: [Distribution of conodont species in the type Ludlow Series, Holostratigraphical chart, *Kockelella variabilis*.](#)

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Conodonts from the Upper Bringewood Formation

Two localities were listed by Aldridge & Smith (1985). At Sunnyhill Quarry, the Upper Bringewood Formation yielded reasonable numbers of conodonts, with collections dominated by *Ozarkodina confluens* (Branson & Mehl), *O. excavata* (Branson & Mehl) and species of *Panderodus* (see also Siveter *et al.* 1989, loc. 3.6a). There is no precise indication of where the conodonts occur in the succession.

The second locality (locality 4.7 of Aldridge & Smith 1985; locality 3.3g of Siveter *et al.* 1989, [SO 4873 7389]) yielded abundant conodonts from the more calcareous lithologies of the Upper Bringewood Formation, with common *Ozarkodina confluens*, *O. excavata*, *Panderodus unicostatus* (Branson & Mehl) and *P. recurvatus* (Rhodes), and rarer *Kockelella variabilis* Walliser and *Oulodus* sp.

In addition, Aldridge (1975) reported the Upper Bringewood Formation to be marked by the appearance of *Coryssognathus* [formerly *Distomodus*] *dubius* (Rhodes) and *Pelekysgnathus dubius* Jeppsson (see also Aldridge *et al.* 1979, fig. 1), but no stratigraphical or locality details were provided.

Aldridge, R.J. 1975. The stratigraphic distribution of conodonts in the British Silurian. *Journal of the Geological Society, London*, **131**, 607-618.

Aldridge, R.J., Dorning, K.J., Hill, P.J., Richardson, J.B. & Siveter, D.J. 1979. Microfossil distribution in the Silurian of Britain and Ireland. In Harris, A.L., Holland, C.H. & Leake, B.E. (eds) *The Caledonides of the British Isles - reviewed*. Geological Society of London, Special Publication No. **8**, 433-438.

Aldridge, R.J. & Smith, M.P. 1985. Lower Palaeozoic succession of the Welsh Borderland. Fourth European Conodont Symposium (ECOS IV) Field Excursion B Guidebook, 39 pp.

Siveter, D.J., Owens, R.M. & Thomas, A.T. 1989. *Silurian field excursions: a geotraverse across Wales and the Welsh Borderland*. National Museum of Wales, Geological Series No. **10**, Cardiff. 133pp.

See: [Coryssognathus dubius and Pelekysgnathus dubius, Distribution of conodont species in the type Ludlow Series, Holostratigraphical chart, Sunnyhill Quarry.](#)

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Ludfordian conodont faunas

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[Conodonts from the Upper Leintwardine Formation](#)
[Conodonts from the Lower Whitcliffe Formation](#)
[Conodonts from the Upper Whitcliffe Formation](#)

See also [‘Distribution of conodont species in the type Ludlow Series’](#) for a tabulation of species’ occurrences by formation.

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Conodonts from the Lower Leintwardine Formation

Conodont faunas from the Lower Leintwardine Formation include *Ozarkodina confluens* (Branson & Mehl), *O. excavata* (Branson & Mehl), *Panderodus unicostatus* (Branson & Mehl), *P. equicostatus* (Rhodes), *P. recurvatus* (Rhodes), *Panderodus* sp., *Coryssognathus dubius* (Rhodes), *Pelekysgnathus dubius* Jeppsson, *Oulodus* sp., *Decoriconus* sp., *Pseudooneotodus beckmanni* (Bischoff & Sannemann) and *Dapsilodus obliquicostatus* (Branson & Mehl). The Lower Leintwardine Formation thus has a number of taxa in common with the Upper Bringewood Formation (see [‘Conodonts from the Upper Bringewood Formation’](#) and [‘Distribution of conodont species in the type Ludlow Series’](#)).

At Sunnyhill Quarry, the lowest metre of the Lower Leintwardine Formation yielded abundant conodonts in a fauna dominated by *Ozarkodina confluens*, *O. excavata* and *Panderodus*. Bed F of Holland *et al.* (1963; collection C11 of White & Lawson 1978), approximately 0.5 to 0.9 m above the base of the Lower Leintwardine Formation, also yielded *Kockelella variabilis* Walliser and *Coryssognathus dubius* (Aldridge & Smith 1985, p. 31; Siveter *et al.* 1989, p. 56; Lawson & White 1989, p. 86). This represents the highest occurrence of *Kockelella variabilis* in the type area.

At a second locality (Aldridge & Smith 1985, loc. 4.8 [SO 4887 7392]), conodonts are abundant in limestones of the Lower Leintwardine Formation, *Ozarkodina confluens*, *O. excavata*, *Panderodus unicostatus*, *P. equicostatus*, *P. recurvatus* and *Coryssognathus dubius* being common, and *Pelekysgnathus dubius*, *Oulodus* sp., *Decoriconus* sp., *Pseudooneotodus beckmanni* and *Dapsilodus obliquicostatus* occurring in fewer numbers.

- Aldridge, R.J. & Smith, M.P. 1985. Lower Palaeozoic succession of the Welsh Borderland. Fourth European Conodont Symposium (ECOS IV) Field Excursion B Guidebook, 39 pp.
- Holland, C.H., Lawson, J.D & Walmsley, V.G. 1963. The Silurian rocks of the Ludlow district, Shropshire. *Bulletin of the British Museum (Natural History)*, Geology, **8**, 95-171, pls 1-7.
- Lawson, J.D. & White, D.E. 1989. The Ludlow Series in the Ludlow area. In Holland, C.H. & Bassett, M.G. (eds) *A global standard for the Silurian System*. National Museum of Wales, Geological Series No. **9**, Cardiff. 73-90.
- Siveter, D.J., Owens, R.M. & Thomas, A.T. 1989. *Silurian field excursions: a geotraverse across Wales and the Welsh Borderland*. National Museum of Wales, Geological Series No. **10**, Cardiff. 133pp.
- White, D.E. & Lawson, J.D. 1978. The stratigraphy of new sections in the Ludlow Series of the type area, Ludlow, Salop, England. *Report of the Institute of Geological Sciences*, No. **78/30**, 1-10.

See: [Distribution of conodont species in the type Ludlow Series, Holostratigraphical chart, Sunnyhill Quarry.](#)

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Conodonts from the Upper Leintwardine Formation

The upper 1.5 m of the Upper Leintwardine Formation on The Whitcliffe, in the vicinity of localities 3.1b and 3.1c of Siveter *et al.* (1989) [SO 5071 7429 - 5071 7428], have yielded rich faunas, similar to those of the Lower Leintwardine Formation, dominated by *Ozarkodina excavata* (Branson & Mehl), *O. confluens* (Branson & Mehl), *Panderodus unicostatus* (Branson & Mehl) and *Coryssognathus dubius* (Rhodes), with *Pelekysgnathus dubius* Jeppsson, *Decoriconus* sp. and *Oulodus* sp. (Aldridge & Smith 1985, p. 35).

Aldridge, R.J. & Smith, M.P. 1985. Lower Palaeozoic succession of the Welsh Borderland. Fourth European Conodont Symposium (ECOS IV) Field Excursion B Guidebook, 39 pp.

Siveter, D.J., Owens, R.M. & Thomas, A.T. 1989. *Silurian field excursions: a geotraverse across Wales and the Welsh Borderland*. National Museum of Wales, Geological Series No. **10**, Cardiff. 133pp.

See: [Distribution of conodont species in the type Ludlow Series, The Whitcliffe.](#)

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Conodonts from the Lower Whitcliffe Formation

Aldridge & Smith (1985, p. 35) reported that conodonts had not been found in the Lower Whitcliffe Formation on The Whitcliffe, but Miller (1995) subsequently recorded conodonts from three samples close to the top of the formation. The fauna is dominated by *Ozarkodina excavata* (Branson & Mehl), with common *Coryssognathus dubius* (Rhodes) and fewer specimens of *Ozarkodina confluens* (Branson & Mehl) and *Panderodus serratus* (Rexroad) (Miller 1995, p. 348, text-figs 5, 7). *C. dubius* becomes relatively more common towards the top of the formation, while *Ozarkodina remscheidensis eosteinhornensis* (Walliser), *O. snajdri* (Walliser) and *O. wimani* (Jeppsson) appear less than 1 m below the top of the formation.

The most abundant material (specimens/kg) is from sample 15d/1, collected about 3 m below the top of the formation, 470 m west of Ludford Bridge [SO 5089 7416] (and about 220 m west of loc. 3.1f of Siveter *et al.* 1989; Miller 1995, loc. 15d). The fauna is dominated by *Ozarkodina excavata*, with common *Coryssognathus dubius* and fewer specimens of *Ozarkodina confluens* and *Panderodus serratus* (Miller 1995, p. 348, text-figs 5, 7).

The other two samples, 15c/1 and 74/1, are both from a coquinoid shell bed, considered to be less than a metre below the top of the formation (Miller 1995, p. 348, text-fig. 4), and about 350 m west of Ludford Bridge [SO 5092 7415] (about 100 m west of loc. 3.1f of Siveter *et al.* 1989; Miller 1995, loc. 15c). The fauna is similar to that from sample 15d/1, still dominated by *O. excavata*, although *C. dubius* is relatively more common. *Ozarkodina wimani* is restricted to sample 74/1 of Miller's dataset (but also occurs 5 m above the base of the Upper Whitcliffe Formation; see [Conodonts from the Upper Whitcliffe Formation](#)), while *O. remscheidensis eosteinhornensis* and *O. snajdri* appear in sample 74/1 (Miller 1995, text-fig. 7).

Aldridge, R.J. & Smith, M.P. 1985. Lower Palaeozoic succession of the Welsh Borderland. Fourth European Conodont Symposium (ECOS IV) Field Excursion B Guidebook, 39 pp.

Miller, C.G. 1995. Ostracode and conodont distribution across the Ludlow/Pridoli boundary of Wales and the Welsh Borderland. *Palaeontology*, **38**, 341-384.

See: [Distribution of conodont species in the type Ludlow Series, Holostratigraphical chart, *Ozarkodina remscheidensis eosteinhornensis*, *Ozarkodina snajdri*, *Ozarkodina wimani*, The Whitcliffe.](#)

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Conodonts from the Upper Whitcliffe Formation

Conodont faunas from the lowest 5 m of the Upper Whitcliffe Formation are generally dominated by *Ozarkodina excavata* (Branson & Mehl). *Coryssognathus dubius* (Rhodes) is also common, and *Ozarkodina confluens* (Branson & Mehl), *O. remscheidensis eosteinhornensis* (Walliser), *O. remscheidensis* subsp., *O. snajdri* (Walliser), *O. wimani* (Jeppsson), *Pelekysgnathus dubius* Jeppsson, *Panderodus serratus* (Rexroad) and *Panderodus* occur (Miller 1995, p. 348, text-figs 4, 5, 7; Aldridge & Smith 1985; see also Siveter *et al.* 1989, p. 44, loc. 3.1f).

Details (lower part of the Upper Whitcliffe Formation)

- Aldridge & Smith (1985) reported conodonts to be abundant in limestone lenses of the Upper Whitcliffe Formation at Whitcliffe Quarry, on The Whitcliffe [SO 5094 7414], with *Ozarkodina excavata*, *O. confluens*, *Coryssognathus dubius*, *Pelekysgnathus dubius* and *Panderodus*. A sample collected 5 m above the base of the formation also yielded *Ozarkodina remscheidensis eosteinhornensis*, *O. snajdri* and *O. wimani* (Aldridge & Smith 1985; see also Siveter *et al.* 1989, p. 44, loc. 3.1f).
- Also from The Whitcliffe, Miller (1995, p. 348, text-figs 4, 5, 7) reported conodonts to occur in the lowest 5 m of the formation, in his sections 15a [SO 5098 7414], 15b [SO 5096 7414], 15c [SO 5092 7415] and 15d [SO 5089 7416]. The faunas from these sections are generally dominated by *Ozarkodina excavata*, but *Coryssognathus dubius* is also common. The range chart (Miller 1995, text-fig. 7) indicates that *Ozarkodina remscheidensis eosteinhornensis*, *O. remscheidensis* subsp., *O. snajdri* and *Panderodus serratus* occur at this level.

A change in the composition of conodont faunas through the Upper Whitcliffe Formation was documented by Miller (1995). Faunas from the top of the Upper Whitcliffe Formation are dominated by *Coryssognathus dubius* and *Ozarkodina snajdri*, accompanied by *Pelekysgnathus dubius*, *Ozarkodina remscheidensis* subsp. (notably *O. r. eosteinhornensis*) and *O. cf. crispa* (Walliser), the last only in strata 0.15-0.3 m below the top of the formation. *Ozarkodina excavata* is much less abundant in the highest 0.3 m of the formation than at lower levels, but the abundance of *O. confluens* increases. *Panderodus serratus* is no longer present.

(continued...)

Details (upper part of the Upper Whitcliffe Formation)

- A fauna dominated by *Coryssognathus dubius* was collected about 22 m above the base of the formation, close to Ludford Bridge [SO 5116 7416] (Miller 1995, text-fig. 7, sample 76/1*; see [‘The Whitcliffe’](#)). *Ozarkodina excavata* is also common, but not dominant as in lower samples. *Ozarkodina confluens* is an important component of the fauna. *Panderodus serratus* is present.
- Faunas from samples 77/2* and 18/1, both from the top of the Upper Whitcliffe Formation, are dominated by *Coryssognathus dubius*, accompanied by species of *Ozarkodina* (Miller 1995). *Ozarkodina snajdri* is the dominant species of the latter genus, with fewer specimens of *O. remscheidensis* subsp. (notably *O. r. eosteinhornensis*) and *O. cf. crispa*. *O. cf. crispa* is restricted to these samples. *Ozarkodina excavata* is rare, and *Panderodus serratus* is absent. Sample 77/2*, was collected about 0.3 m below the top of the formation at Ludford Lane (section 17a of Miller 1995 [SO 5116 7413]), and sample 18/1 about 0.1-0.15 m below the top of the formation at Ludford Corner (locality 18 of Miller 1995 [SO 5124 7413]). See [‘Whitcliffe Road’](#).
- Aldridge & Smith (1985, p. 37) reported the uppermost Upper Whitcliffe Formation in the vicinity of Ludford Corner to have yielded a fauna comprising *Coryssognathus dubius*, *Ozarkodina cf. crispa*, *O. remscheidensis eosteinhornensis*, *O. snajdri* and *Pelekyognathus dubius*.

Aldridge, R.J. & Smith, M.P. 1985. Lower Palaeozoic succession of the Welsh Borderland. Fourth European Conodont Symposium (ECOS IV) Field Excursion B Guidebook, 39 pp.

Miller, C.G. 1995. Ostracode and conodont distribution across the Ludlow/Prídolí boundary of Wales and the Welsh Borderland. *Palaeontology*, **38**, 341-384.

Siveter, D.J., Owens, R.M. & Thomas, A.T. 1989. *Silurian field excursions: a geotraverse across Wales and the Welsh Borderland*. National Museum of Wales, Geological Series No. **10**, Cardiff. 133pp.

See: [Distribution of conodont species in the type Ludlow Series, *Ozarkodina remscheidensis eosteinhornensis*, *Ozarkodina snajdri*, *Ozarkodina wimani*, *Ozarkodina crispa*, The Whitcliffe, Whitcliffe Road.](#)

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[Author: SGM]

Stratigraphically important Ludlow conodont species

Aldridge (1975) noted that some Ludlow conodont species constituted aids to correlation. The following is a list of conodont species from the Ludlow Series of the U.K. that are potentially useful.

Kockelella variabilis Walliser

The earliest record of *Kockelella variabilis* in Britain may be from the upper Gorstian Stage, as Aldridge (1975, p. 615) reported it to appear in the Lower Bringewood Formation. He gave no stratigraphical or locality details (see also Aldridge *et al.* 1979, fig. 1), however, although Aldridge & Smith (1985) recorded the genus *Kockelella* from the Lower Bringewood Formation in a roadside quarry [Grid Reference SO 4827 7377], about 3 km WSW of Ludlow. In Ireland, *K. variabilis* may appear in the highest Wenlock or lowest Ludlow (Aldridge 1980, 1985, p. 74).

Aldridge (1985) noted *K. variabilis* to be a rare but characteristic component of conodont faunas from the Upper Bringewood Formation of the Welsh Borderland. Aldridge & Smith (1985), for example, recorded the species from the Upper Bringewood Formation in a roadside quarry [Grid Reference SO 4873 7389], about 2.5 km WSW of Ludlow.

The highest record of *Kockelella variabilis* is between 0.5 and 0.9 m above the base of the Ludfordian Stage in the stratotype section at Sunnyhill Quarry.

- Aldridge, R.J. 1975. The stratigraphic distribution of conodonts in the British Silurian. *Journal of the Geological Society, London*, **131**, 607-618.
- Aldridge, R.J. 1980. Notes on some Silurian conodonts from Ireland. *Journal of Earth Sciences, Royal Dublin Society*, **3**, 127-132.
- Aldridge, R.J. 1985. Conodonts of the Silurian System from the British Isles. In Higgins, A.C. & Austin, R.L. (eds) *A stratigraphical index of conodonts*. Ellis Horwood, Chichester, 68-92.
- Aldridge, R.J., Dorning, K.J., Hill, P.J., Richardson, J.B. & Siveter, D.J. 1979. Microfossil distribution in the Silurian of Britain and Ireland. In Harris, A.L., Holland, C.H. & Leake, B.E. (eds) *The Caledonides of the British Isles - reviewed*. Geological Society of London, Special Publication No. **8**, 433-438.
- Aldridge, R.J. & Smith, M.P. 1985. Lower Palaeozoic succession of the Welsh Borderland. Fourth European Conodont Symposium (ECOS IV) Field Excursion B Guidebook, 39 pp.

See: [Conodonts from the Lower Bringewood Formation](#), [Conodonts from the Upper Bringewood Formation](#), [Conodonts from the Lower Leintwardine Formation](#), [Sunnyhill Quarry](#).

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***Coryssognathus dubius* (Rhodes) and *Pelekysgnathus dubius* Jeppsson**

According to Aldridge (1975), the Upper Bringewood Formation is marked by the appearance of *Coryssognathus* [formerly *Distomodus*] *dubius* and *Pelekysgnathus dubius* (see also Aldridge *et al.* 1979, fig. 1). No stratigraphical or locality details were provided. Neither species was listed by Aldridge & Smith (1985) in faunas from the Upper Bringewood Formation, although both occur in faunas from the base of the Lower Leintwardine Formation at Sunnyhill Quarry, *Coryssognathus dubius* being common and *Pelekysgnathus dubius* occurring in fewer numbers. Both species persist to the top of the Ludlow.

Aldridge, R.J., Dorning, K.J., Hill, P.J., Richardson, J.B. & Siveter, D.J. 1979. Microfossil distribution in the Silurian of Britain and Ireland. In Harris, A.L., Holland, C.H. & Leake, B.E. (eds) *The Caledonides of the British Isles - reviewed*. Geological Society of London, Special Publication No. 8, 433-438.

Aldridge, R.J. & Smith, M.P. 1985. Lower Palaeozoic succession of the Welsh Borderland. Fourth European Conodont Symposium (ECOS IV) Field Excursion B Guidebook, 39 pp.

See: [Conodonts from the Upper Bringewood Formation](#), [Conodonts from the Lower Leintwardine Formation](#), [Conodonts from the Upper Leintwardine Formation](#), [Conodonts from the Lower Whitcliffe Formation](#), [Conodonts from the Upper Whitcliffe Formation](#), [Sunnyhill Quarry](#).

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***Ozarkodina remscheidensis eosteinhornensis* (Walliser)**

In the Ludlow area, *Ozarkodina remscheidensis eosteinhornensis* appears less than 1 m below the top of the Lower Whitcliffe Formation, and is present in Ludlow conodont faunas as high as the top of the Upper Whitcliffe Formation at Ludford Corner (Whitcliffe Road). It ranges into the Prídolí Series, being recorded from the Ludlow Bone Bed Member at Ludlow and the Downton Bone Bed of the Platyschisma Shale Member near Downton (Miller 1995, pp. 351, 362). Other records are from the Upper Whitcliffe Formation at Netherton near Birmingham, the Upper Perton Beds (highest Ludlow) of the Woolhope Inlier and the Whitcliffe Formation of the Tortworth Inlier (Miller 1995). Aldridge (1975) also noted its presence in the upper Whitcliffe Beds of the Malvern Hills and the May Hill Inlier. Conodonts of the *Ozarkodina remscheidensis* plexus from the upper Ludlow (Upper Whitcliffe Formation) of the Welsh Borderland were described by Miller & Aldridge (1997).

- Aldridge, R.J. 1975. The stratigraphic distribution of conodonts in the British Silurian. *Journal of the Geological Society, London*, **131**, 607-618.
- Miller, C.G. 1995. Ostracode and conodont distribution across the Ludlow/Prídolí boundary of Wales and the Welsh Borderland. *Palaeontology*, **38**, 341-384.
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See: [Conodonts from the Lower Whitcliffe Formation](#), [Conodonts from the Upper Whitcliffe Formation](#), [The Whitcliffe](#), [Whitcliffe Road](#).

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***Ozarkodina snajdri* (Walliser)**

Although *Ozarkodina snajdri* gives its name to one of the European Ludlow conodont zones, and characterizes a particular level in the upper Ludfordian of Bohemia, it has been reported to occur throughout the Ludfordian in Britain, and may range down into the Wenlock elsewhere (Aldridge 1985, p. 73; Aldridge & Schönlaub 1989). Despite this, its first documented occurrence in the type Ludlow succession is less than 1 m below the top of the Lower Whitcliffe Formation (Miller 1995).

Together with *Coryssognathus dubius* (Rhodes), *O. snajdri* dominates conodont faunas from the top of the Upper Whitcliffe Formation. It has also been recorded from the top of the Whitcliffe Formation in Corve Dale, the Upper Perton Beds (highest Ludlow) of the Woolhope Inlier, the Whitcliffe Formation of the Tortworth Inlier, and the Upper Llangibby Beds (highest Ludlow) of the Usk Inlier (Miller 1995). Aldridge & Schönlaub (1989, fig. 172) showed the highest occurrence of *O. snajdri* to be just below the top of the Ludlow. Miller (1995, p. 375), however, reported *O. snajdri* to continue into the Prídolí Series.

Aldridge, R.J. 1985. Conodonts of the Silurian System from the British Isles. In Higgins, A.C. & Austin, R.L. (eds) *A stratigraphical index of conodonts*. Ellis Horwood, Chichester, 68-92.

Aldridge, R.J. & Schönlaub, H.P. 1989. Conodonts. In Holland, C.H. & Bassett, M.G. (eds) *A global standard for the Silurian System*. National Museum of Wales, Geological Series No. 9, Cardiff. 274-279.

Miller, C.G. 1995. Ostracode and conodont distribution across the Ludlow/Prídolí boundary of Wales and the Welsh Borderland. *Palaeontology*, **38**, 341-384.

See: [Conodonts from the Lower Whitcliffe Formation, Conodonts from the Upper Whitcliffe Formation, The Whitcliffe, Whitcliffe Road.](#)

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***Ozarkodina wimani* (Jeppsson)**

Ozarkodina wimani appears less than 1 m below the top of the Lower Whitcliffe Formation at Ludlow (Miller 1995). The species is restricted to this level in Miller's (1995, text-fig. 7) dataset, although it has been recorded 5 m above the base of the Upper Whitcliffe Formation (Aldridge & Smith 1985; see also Siveter *et al.* 1989, p. 44, loc. 3.1f, and '[Details \(lower part of the Upper Whitcliffe Formation\)](#)').

Aldridge (1985, p. 75) listed it as a minor component of British upper Ludfordian faunas, and Aldridge & Schönlaub (1989, fig. 172) showed it as ranging through the upper Ludfordian. Other records are from the Upper Perton Beds (highest Ludlow) of the Woolhope Inlier (Miller 1995).

Aldridge, R.J. 1985. Conodonts of the Silurian System from the British Isles. In Higgins, A.C. & Austin, R.L. (eds) *A stratigraphical index of conodonts*. Ellis Horwood, Chichester, 68-92.

Aldridge, R.J. & Schönlaub, H.P. 1989. Conodonts. In Holland, C.H. & Bassett, M.G. (eds) *A global standard for the Silurian System*. National Museum of Wales, Geological Series No. 9, Cardiff. 274-279.

Miller, C.G. 1995. Ostracode and conodont distribution across the Ludlow/Prídolí boundary of Wales and the Welsh Borderland. *Palaeontology*, **38**, 341-384.

See: [Conodonts from the Lower Whitcliffe Formation](#), [Conodonts from the Upper Whitcliffe Formation](#), [The Whitcliffe](#).

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***Ozarkodina crisper* (Walliser)**

In its international boundary stratotype section at Pozáry, near Reporyje in Bohemia, the base of the Prídolí Series lies just above the last occurrence of *Ozarkodina crisper* (Kríz 1989; Aldridge & Schönlaub 1989). The range of *O. crisper* is depicted by Aldridge & Schönlaub (1989, fig. 172) as being restricted to the highest Ludfordian, within the range of *O. remscheidensis eosteinhornensis* (Walliser). Aldridge & Schönlaub (1989, p. 277) considered *O. crisper* to follow *O. snajdri* (Walliser) stratigraphically, and to be a probable direct phylogenetic descendent (see also Miller 1995, pp. 374-375).

O. crisper has not been recorded from the type Ludlow area, although *O. cf. crisper* occurs at the top of the Upper Whitcliffe Formation in an assemblage that is dominated in part by *O. snajdri*. *O. cf. crisper* also occurs in the topmost bed of the Whitcliffe Formation in Corve Dale (Miller 1995). *O. crisper* has been reported from the Upper Perton Beds (highest Ludlow) of the Woolhope Inlier, and 17 m below the top of the Whitcliffe Formation at Tortworth (Miller 1995, p. 363).

Aldridge, R.J. & Schönlaub, H.P. 1989. Conodonts. In Holland, C.H. & Bassett, M.G. (eds) *A global standard for the Silurian System*. National Museum of Wales, Geological Series No. 9, Cardiff. 274-279.

Kríz, J. 1989. The Prídolí Series in the Prague Basin (Barrandian area, Bohemia). In Holland, C.H. & Bassett, M.G. (eds) *A global standard for the Silurian System*. National Museum of Wales, Geological Series No. 9, Cardiff. 90-100.

Miller, C.G. 1995. Ostracode and conodont distribution across the Ludlow/Prídolí boundary of Wales and the Welsh Borderland. *Palaeontology*, 38, 341-384.

See: [Conodonts from the Upper Whitcliffe Formation, Whitcliffe Road.](#)

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