Notes on *Vertigo alpestris* and *Vertigo pusilla* in Watsonian Yorkshire

David J. Lindley

[Following a great deal of fieldwork by David Lindley this article was almost ready for publication when, very sadly, he died suddenly in July 2015. David was an outstanding field naturalist and he is greatly missed by his fellow Yorkshire conchologists. His article is based on many years of meticulous observation and recording, hence we have made only minor amendments and additions to the text in order to bring it fully up to date. These are placed in square brackets. Please address any correspondence to adrianxnorris@aol.com]

Mountain Whorl Snail *Vertigo alpestris* Alder 1838 and Wall Whorl Snail *V. pusilla* Müller 1774 are two species of minute land snail (Plate 4). They have been known to occur in Yorkshire for over 100 years and I feel that it is time that their status is looked at in more detail. One of the reasons for their being considered together is the often-held view that they usually occur in the same locality; this is not the norm in Yorkshire yet they do favour similar conditions. In order to determine their current status it is necessary to have an overview of the historical records within Watsonian Yorkshire. Both have been placed within the Yorkshire Red Data Book as 'vulnerable' (Norris, 1998). Tables 1 and 2 show brief details of the known Yorkshire sites in date order. Both are also known as fossils in Watsonian Yorkshire but records for these are not included in this article.

Mountain Whorl Snail *Vertigo alpestris*

1. Cottingley Bridge

This is the first record in Yorkshire and dates from 1887 (Booth, 1909) with numerous specimens taken from the site over a period of time. The site no longer exists, the old bridge being demolished some years ago to assist with road improvements. The area has been searched many times in recent years but this snail has not been re-found. Booth (loc.cit) gives a garden wall as the site and it may be that there is still a population extant in such a locality. There are no other records for VC63.

2. Farfield, Addingham

Whilst working on the William Nelson collection in Leeds City Museum I came across specimens from this site. They were simply labelled 'Farfield Addingham'. There was no date, which is not unusual for Nelson. They are in very good condition and were obviously collected alive, yet I can find no published reference to the site. There are two areas marked Farfield on the Ordnance Survey map of the area, Farfield House and Farfield Hall, both north of the village. I have searched suitable walls in the area of both but have not found specimens. I consider this site at Addingham to be the second record for the county as Nelson died three years prior to the discovery of the Beezley site; yet for some reason he did not publish the Addingham record, which he would have known was of great interest. I can only suppose it was found just prior to his illness.

3. Beezley Falls
This record by J.W. Taylor was published as the second for the county and the first for VC64 (Booth, loc.cit.) but I believe this to be erroneous. The locality at Beezley Falls is given as the top of a mossy wall. The falls are near the top of a steep-sided wooded valley which has walled boundaries. This record has not been re-confirmed though I have found this snail further down the valley in a similar locality (see Site 12).

4. Swilla Glen, Ingleton
This valley runs parallel to site 3 and is of a very similar nature. The exact location is not given (Taylor & Roebuck, 1885-1919) but see Site 21. There are specimens in Liverpool Museum collected by Robert Cairnes but just labelled as 'Ingleton'.

5. Apedale Beck, Castle Bolton (SE043920)
This site, recorded by Ralph Lowe in 1952, was the first site for VC65 and also the first record for the county since 1908. It is a small stretch of wall on the east side of the beck. A single specimen was found by Adrian Norris and myself on 20.10.2003.

6. Low Bolton (SE040909)
This site is under Ivy *Hedera helix* on the top of a ruined limestone wall where Mountain Whorl Snail was found on 17.09.1972 in some numbers (there are about 20 specimens in the Leeds Museum collection). It was re-found here in 2003 and again on 08.05.2006 along with Wall Whorl Snail.

7. Keld
On a mossy wall on the north bank of the River Swale just over a footbridge. The site may or may not be shaded. At an altitude of c.310m this is the second highest record for Mountain Whorl Snail in Yorkshire. During visits in August 2000 and on 17.10.2006 I was unable to re-find it. [This description of the site as the wall immediately to the north of the river suggests a grid reference of NY895010 rather than that given in Table 1].

8. Aysgarth
The top of a mossy limestone wall which has some very straggly Ivy in parts. It is on the northern boundary of a wood and is shaded in the main by Ash *Fraxinus excelsior* and Blackthorn *Prunus spinosa*. There are several Ivy-covered walls on the road close by which appear to be suitable for Mountain Whorl Snail but which have to date failed to produce specimens. It was re-found here at SE01348913 on 05.05.2006.

9. Downholme Park
Mountain Whorl Snail was first found here during a YNU meeting on 25th July 1987 by Lloyd Lloyd-Evans and Tony Wardhaugh (Lee, 1988). The site is the top of a limestone wall on the east side of the River Swale and is shaded by Ash, Sycamore *Acer pseudoplatanus* and Hazel *Corylus avellana*. There is some Ivy on the wall but Mountain Whorl Snail was not under it (A.A. Wardhaugh, pers. comm.). It was re-found here on 23.06.2006 along a stretch of c.625m of wall (SE11239952 to NZ11260008).

10. Ling Gill National Nature Reserve
At 330m this is the highest site in the county for Mountain Whorl Snail. It is found on limestone walls near the bridge at the top of the gill and on the grass banking at the top of the crags leading into this very steep-sided gill. As far as I am aware this is the only known ground habitat for it in England. There are two specimens in the Leeds Museum collection

dated 08.08.1987. Another individual was found on 09.05.2006 at SD80303.78854 when close examination revealed that the ground level site contains a totally collapsed wall which had become covered with vegetation.

11. Arncliffe

Mountain Whorl Snail is plentiful on the church boundary wall under straggly Ivy. It is also found under more robust Ivy growth on the opposite side of the river to the church and on several other garden walls around the village. Re-found in several places on 11.06.2006.

12. Beezley Valley

In 1994 whilst attempting to rediscover J.W.Taylor's record (see Site 3) I found a single specimen on the top of a wall much lower down the valley than the falls (see Site 3). This was under very straggly Ivy shaded by Blackthorn. In 1998 I found it in small numbers a short distance away from this spot on the top of a mossy wall on the east side of the footpath which was well shaded by Ash. It was again found in good numbers during a field meeting of the Conchological Society of Great Britain and Ireland (CSGBI) in May 2000 and subsequently on 17.10.2006. I do not consider this site to be that of Taylor as the distance is too great from Beezley Falls and is actually lower down than a second set of falls known as Snow Falls.

13. Sedburgh Cemetery

Found on the top of the surrounding wall under fruiting Ivy. Re-found 16.10.2006 on various parts of the wall.

14. East Banks Farm, Dent

Originally found by Barry Colville on 29.08.1994, it was fairly abundant on a limestone wall under fruiting Ivy on the south side of the road by a track (SD710865). This site was lost when the wall was rebuilt. On 16.10.2006 both Mountain Whorl Snail and Wall Whorl Snail were found on the wall on the north side of the road between SD71258642 and SD71348636.

15. Peas Gill House, Gawthrop

On a limestone wall shaded by Blackthorn on the east side of the road. There is some moss on this wall and Mountain Whorl Snail can be found easily under the capping stones. Re-found at SD68638687 on 16.10.2006 along with Striated Whorl Snail *Vertigo substriata*, a snail associated (but not exclusively) with damp old woodland, which would indicate that the wall remains in a fairly damp condition at all times.

16. Whernside Manor

Originally two specimens were found at this site which is a shaded limestone wall with some moss on the north side of the road. The trees shading this wall are on the opposite side of the road but the wall on the side having the trees, which has good Ivy cover, does not contain Mountain Whorl Snail at all. A single live adult was found after a lengthy search on 16.10.2006 at SD72488592.

17. Gate Manor

Two specimens were found on an Ivy-covered wall at the south side of a road in 1994 at SD66780.89640. Just a single worn shell was found here on 16.10.2006 but Mountain Whorl Snail was located nearby on an Ivy-clad wall at SD66808973.

18. Cray Gill
Under the capping stones on limestone walls with some moss on both sides of the gill, on the west shaded by Hazel and on the east by Ash. There are several shaded Ivy-covered walls on the nearby road but it appears to be found only on a very short section by the road bridge. Re-found at this site on 29.09.2006.

19. Crook Gill
This is really a dog-leg extension from Cray Gill but the moss cover is far greater and the shading, by Hazel, more dense. Mountain Whorl Snail is found on the south edge of the gill and at a slightly higher altitude. Again it is more readily found under the capping stones.

20. Duncombe Park
This is the only record for VC62 and is the most easterly site for Mountain Whorl Snail not only in Yorkshire but in the whole country. The site is a derelict oolitic limestone wall (Plate 4b) in mixed woodland with some Ivy. [First recorded 22.10.1997 at SE59408357 when several individuals were found in moss and litter on the wall top, not always under Ivy (A.A. Wardhaugh). Most recently found at this site on 30.10.2014 during a Yorkshire Conchological Society (YCS) visit. One live individual found to the east on the same wall at SE599835 on 31.10.2009 (A.A. Wardhaugh).]

21.Swilla Glen, Ingleton
Found by B. Colville on a mossy wall shaded by trees on the east side of the River Twiss just outside the SSSI during a field meeting of the CSGBI in May 2000. Once more I believe that the original site (see Sites 3 and 4) would have been higher up the valley.

22. Chapel-le-Dale
Abundant on shaded mossy walls on both sides of the road just north of the road bridge. Re-found here on 16.10.2006 between SD73817717 and SD73867718 on the north side of the road and also from the entrance to the church car park to SD73887716 on the south side.

23. Brae Pasture Yorkshire Wildlife Trust Nature Reserve
Found on a shaded mossy wall under Ash and hawthorn. Re-found at SD78937421 on 17.10.2006.

24. Scoska Wood National Nature Reserve, Littondale
Found on a collapsed mossy wall shaded by Ash on 06.09.2003 during a YCS visit. Re-found on 11.06.2006 at SD91307277.

25. Coverham Bridge
Found on a moss- and Ivy-covered wall under Ash, April 2005 at SE10518619. This wall was rebuilt, albeit sympathetically, during 2005 to 2006. It was revisited on 10.10.2006 when, regrettably, no specimens were found. Hopefully some individuals will have survived the rebuild and the wall will be recolonized.

26. Horton-in-Ribblesdale
The site is a 4-5m stretch of half-collapsed wall bordering a car park on the west side of the road to New Houses from Horton-in-Ribblesdale (SD80737281). The wall is moss-covered and shaded by Ash and Alder *Alnus glutinosa*. Two specimens were found on 09.05.2006.

27. Oddies Lane, Ingleton
The site is a collapsed wall on the eastern edge of Lenny Wood, which is the eastern side of Swilla Glen (see Sites 4 and 21), Ingleton. The wall is shaded by Ash, Hazel and Crab Apple *Malus sylvestris* with a thick moss covering. Mountain Whorl Snail was found here along with Wall Whorl Snail on 17.10.2006. [Mountain Whorl Snail was re-found here on 11.08.2012 by myself as follows: SD69617364 (one adult and one juvenile), SD69707365 (one adult), SD69477351 (nine adults/subadults and four juveniles).]

Only five (Sites 1-4 and Site 25) of the 27 sites listed above are not known to be extant at this time, though Beezley Falls has a site further down the valley (Site 12) and the Swilla Glen site is possibly the same as Site 21.

Wall Whorl Snail *Vertigo pusilla*
1. Went Vale
Located by Charles Ashford in 1854 and described as 'among fine debris on magnesian limestone' (Taylor & Roebuck, loc.cit.).

2. Guisborough
Described as 'very scarce' by Hey (1879), the exact locality not being given.

3. Spofforth/Wetherby
Described as under Ivy on the top of a limestone wall (YCS Record Book).

4. Malham
Despite a great deal of molluscan survey work carried out at Malham, in the 1950s by L.W. Stratton, in the 1970s by Michael Kerney and Robert Cameron and an extensive survey of the estate by Adrian Norris in the 1990s, Wall Whorl Snail has not been seen in the area since the original record by William West, who found two specimens (Taylor & Roebuck, loc.cit.). [These may be the two reported by Soppitt & Carter (1888).]

5. Cantley Park Woods
Recorded by J.W. Taylor 14.05.1883 (Taylor & Roebuck, loc.cit.). There are also specimens in Doncaster Museum labelled 'Cantley Hall area 1902'.

6. Ackworth
There have been no records since the original discovery in September 1885 by J. Hardy (Taylor & Roebuck, loc.cit.). [Ashford (1874) included Wall Whorl Snail and recorded it as very common in Went Vale in the list of the molluscs of the Ackworth area but extensive examination of the area has since failed to reveal any specimens.]

Sites 1, 2, 3, 5, and 6 are all located either on or close to the Magnesian Limestone; those which are 'close to' are certainly within the area where the limestone has been used as a building medium. There are numerous walls which appear suitable for Wall Whorl Snail throughout this Natural Area yet none of these sites is known to have populations. The area of Wentvale has been visited innumerable times by conchologists for a different reason, yet at no time has Wall Whorl Snail been re-found. Certainly there are areas of limestone cliff which have Ivy-covered ledges but which are very inaccessible. These ledges would be an ideal site for it. The area of Spofforth and Wetherby has been extensively searched by both A. Norris and myself in attempts to discover Wall Whorl Snail but without success. It is more

than probable that it has been lost from this area in the same way as has the Lapidary Snail *Helicigona lapicida*. The area has had to contend with large amounts of pollutant emissions both from the large numbers of power stations around the Doncaster, Castleford and Selby areas and the A1 road which more or less follows the limestone for most of its length. This can only have had a detrimental effect on its habitat.

7. Grassington
Once again there have been no records since the original discovery by W. Webster in June 1885 (Taylor & Roebuck, loc.cit.). Although 'Grassington' covers a large area, many conchologists have, and still do, visit this locality regularly and it is therefore surprising that Wall Whorl Snail has not been re-found.

8. Clapham
One specimen was found by W. West in April 1887 (Taylor & Roebuck, loc.cit.). No modern records exist in the area. I have spent a considerable amount of time checking walls both in the village itself and to the north without result. The station is some distance to the south of the village and it may be that the locality is somewhere between the two.

9. & 11. Helks Wood and Swilla Glen, Ingleton.
Helks Wood occupies the high ground on the west side of Swilla Glen and Wall Whorl Snail was said to be plentiful under stones and moss (Collier, 1889). At Swilla Glen it was described as very common (Booth, 1921). A meeting of the CSGBI at the site in May 2000 failed to find any specimens in either area. Several museums hold large sets of specimens collected from the Ingleton area.

10. & 14. Old Hall and Castle, Ayton
Recorded some 33 years apart, at Old Hall on 04.04.1890 (Hargreaves, 1890; Taylor & Roebuck, loc.cit.) and Ayton Castle in 1923 by W. Gyngell (Wallis & Wallis, 1956). At Ayton Castle it was 'on a wall'. Successive conchologists have spent a great deal of time searching in the area without success. [The castle has been on the Historic England Sites at Risk Register for many years and access is very restricted.]

12. Darley District
First found by W.C. Clarkson on 18.01.1898 (Taylor & Roebuck, loc.cit.). This is a large area south of the River Nidd, where there are no modern records for Wall Whorl Snail. There would appear to be many suitable walls in the area and a concerted effort may reveal sites.

13. Martin Beck Wood
There are specimens in Doncaster Museum from this site marked 19.06.1920.

15. Aysgarth Station
Recorded by Ralph Lowe (1944) from 'a wall near Aysgarth Station'. There are many suitable stretches of wall both around the village and in the area of Freeholders Wood where Mountain Whorl Snail is found. It was re-found by A. Norris in 1970 but a thorough survey of the station area in 1995 failed to produce any Wall Whorl Snail.

16. Jervaulx Abbey
Known originally from a single live specimen found at the base of a wall by L. Lloyd-Evans in 1969 (Dearing 1970). The site should be a safe one provided that weed control spraying does

not take place. [Re-found during a YNU meeting on 16.6.2007, three specimens on a low wall at SE17138577, D. Lindley, A. Norris, A.A. Wardhaugh.]

17. Low Bolton, Redmire
Very common under Ivy on an old broken-down wall by a road junction. Re-found 20.10.2003. [I revisited the site on 08.05.2006 and readily found it on roadside walls from the road junction to a joining wall at SE03923.90827 and regarded it, at that time, as probably the best site in Yorkshire for Wall Whorl Snail.]

18. Delves
Plentiful on a shaded wall under Ivy (Norris, 1977). [Re-found 27.8.1998 at the original site which is on the south side of the road (NZ79410469) when five individuals were present in a litter sample taken by A.A. Wardhaugh.]

19. East Banks Farm, Dent
First recorded here by B. Colville on 29.08.1994 when it was abundant. See Mountain Whorl Snail Site 14 for details of the locality.

20. Cray Gill
A single live specimen found on the east side of the gill in moss on a wall shaded by Ash. The site was revisited in 1998 by eight naturalists who spent a total of 24 person-hours in the gill looking for Mollusca but no further specimens were found. It was eventually re-found on 29.09.2006.

21. Colt Park Wood/Shaw Pasture
The National Biodiversity Network Gateway has a record for this site. Whilst it is possible that it occurs here, the record has not been verified, is known to neither the national nor Yorkshire Molluscan recorders, nor has any published record been found.

22. Near Egton Bridge
Plentiful, on a partly shaded wall under Ivy [in a litter sample which contained 21 individuals, 27.08.1998. A.A.Wardhaugh.]

23. Keld
The site is a partially collapsed wall beside an old gateway (NY89540105), heavily shaded by Hazel with a thick moss covering when located on 17.10.2006. There was an accumulation of litter among the stones on the top of the wall and Wall Whorl Snail was found under a capping stone. This is the most north-westerly known site for it in the county.

24. Oddies Lane, Ingleton
Found together with Mountain Whorl Snail on a stretch of wall c.10-12m long on 17.10.2006. See Mountain Whorl Snail Site 27 for details of the locality. [Both snails were re-found here by myself on 11.08.2012 at SD69707365; fifteen Wall Whorl Snail and one Mountain Whorl Snail.]

25. Kettlewell
[Six specimens, including two juveniles, were found on 04.07.2009 in litter build-up on a short section of north-east facing limestone crag. This is probably the only wild site for this snail in Yorkshire (Norris & Lindley, 2010).]

26. Duncombe Park
[First found as two live individuals in a litter sample at SE599835 from under horizontal stones on the top of a dry stone wall partly shaded by Ash and Hazel along the northern edge of Blackdale Howl Wood, A.A. Wardhaugh, 31.10.2009. Several individuals found during a YCS meeting on 30.10.2014 from SE600835 to SE596836.]

27. Rievaulx Terrace
[A single empty shell found in a litter sample of grass, moss, Hawthorn *Crataegus monogyna*, Ash and Field Maple *Acer campestris* from the partly shaded retaining wall at SE57848464 on 16.10.2010. A.A. Wardhaugh.]

28. Fairburn
[First recorded by Terry Crawford 19.05.2012 from New Field Lane, near Fairburn Ings, under twigs and stones lying on an Ivy-covered bank adjacent to an old collapsed wall (Plate 4b). Found by T.J. Crawford, D. Lindley and A. Norris 31.10.2013 to be common at the following Grid References: SE453279; SE45398.28309; SE45379.28270; SE45332.28059.

Discussion
The British distribution of Mountain Whorl Snail is centred on north-western England with some sites in Scotland and Wales. The Yorkshire distribution is primarily north-western excepting the outlying site at Duncombe Park (Kerney, 1999). At all these sites it is found on walls shaded with either Ash, Hazel or Blackthorn. Dean & Kendall (1908) discuss the distribution of both whorl snails in North Lancashire and Westmoreland. At the time Mountain Whorl Snail was known from only one Yorkshire site. Two comments made in this paper are of interest. Firstly when describing the walls on which the snails were found they refer to them being covered in parts by small-leaved Ivy. Boycott (1934) also makes reference to Ivy, stating that both snails 'particularly like walls with Ivy on them'. Of the 27 known sites for Mountain Whorl Snail only eight have Ivy cover on the walls while 15 do not (and four in which this is unknown). In some circumstances the Ivy cover consists of only a few strands but in others large clumps of fruiting Ivy are present. The association with Ivy does not therefore necessarily follow in Yorkshire. It may be that earlier conchologists have directed themselves towards Ivy-covered walls and, finding specimens, concluded it was the preferred site. It may also be the case that a particular stretch of wall has at some time in the past had Ivy cover which has since been lost. Where there is no Ivy or it is straggly then there is moss cover on the coping stones, though not overly thick, with leaf debris from the tree cover. In these circumstances Mountain Whorl Snail is normally found on leaf debris or moss at the side of, or under, these coping stones. I have not provided figures but this snail can be just as abundant on walls without Ivy as those with it. Its small size makes it much more difficult to find by eye without sieving but it is often the case that specimens can be easily located crawling on the wall or debris after rain. Of all these sites the exception is Ling Gill (Site 10), where Mountain Whorl Snail is found on the ground among grass, one possibility being that it has been blown from the nearby wall where it also occurs. However, as noted above, the site appears to have the remains of a wall, long since collapsed, where Mountain Whorl Snail could have persisted. It does occur in similar conditions in continental Europe. In Austria I have found it after heavy rain crawling on the wooden cross members of a fence situated in a field with grass at least 45cm tall.

The second statement from Dean & Kendall (loc.cit.) concerns altitude records for Mountain Whorl Snail which, they state, "is generally a low one" but suggest a site for it at Hutton Roof to be "comparatively high at 300ft (90m)". Three of the Yorkshire sites are over 300m, twelve are over 200m and twenty are over 150m, with just two below 100m. The mean for all sites is c.190m. I would therefore not consider the known Yorkshire sites to be 'low'. In Scotland it has been found in moss on stable limestone screes at c.400m (Marriott & Marriott 1984).

The distribution of Wall Whorl Snail is similar in that there is a large number of sites centred around Cumbria. Additionally, a band of sites runs from the Bristol Channel to the Norfolk coast with scattered sites in Wales and Scotland. Wall Whorl Snail is much more catholic in its choice of habitats in the rest of Britain. It can be found on dry banks, sand dune systems and occasionally on trees (Kerney, loc.cit.). In south-west England it is often found in woodland with moss-covered stones. Descriptions of two old sites in Yorkshire, at Helks Wood, Ingleton (Collier, 1889) and at Clapham (Taylor & Roebuck, loc.cit.) describe it as living in such localities. The number of known extant sites in Yorkshire (12) is much fewer than for Mountain Whorl Snail (22). It is definitely the more scarce of the two, mainly due to the loss of the Magnesian Limestone sites but also because of the apparent low density populations at some sites. It would appear to be doing well at only four sites (17, 18, 22 and 28). It is true that on some occasions it occurs with Mountain Whorl Snail. Of the known extant localities, they can be found in close proximity at Cray Gill, Duncombe Park, Low Bolton, Oddies Lane and East Banks Farm. At the last of these it is of interest to note that there are patches of hedgerow which encroach upon the wall and it was found that Wall Whorl Snail favoured these areas. Mountain Whorl Snail was found on those parts of the wall with a more open aspect. Of the older sites only the Helks Wood/Swilla Glen area holds, or has held, both whorl snails, yet in no published record is there mention of them being found together.

Conclusion

Whilst it is true that both snails are difficult to locate due to their small size and that a newer awareness by conchologists to check sites without Ivy has produced more sites in recent years, both still appear to be in a vulnerable position. During the period 1969 to the present there have been 22 new sites located for Mountain Whorl Snail but only 13 for Wall Whorl Snail.

Owing to their small size, range extension for these snails is difficult, especially at sites with low population density. However, both are known to be aphallic and able to self-fertilize, which will obviously assist where population numbers are low. Research in Poland on Wall Whorl Snail has shown aphallic populations to be viable for several generations without any adverse effect on reproductive ability (Pokryszko, 1987). It is also probable that wind distribution is a factor to consider; the small size of these animals means they can easily be blown some distance. With this in mind I believe every effort should be made to ensure walls in the immediate vicinity of known sites are maintained at an 'acceptable standard' for these snails. However, at the current time this is very difficult to assess as no research has been carried out into their exact habitat requirements, especially concerning humidity. If it is ensured that the walls upon which the two snails occur are maintained without cementing and that there is some native tree shading, this may suffice.

Table 1. *Vertigo alpestris* sites in Watsonian Yorkshire in chronological order

Location	NGR	VC	Altitude (m)	Recorder	Date	Ivy present	Population extant
Cottingley Bridge	SE112380	63	76	Mr Bilton	1887	?	N
Farfield, Addingham	SE0751	64	120	W. Nelson	Pre- 1906	?	?
Beezley	SD7074	64	170	J.W. Taylor	1908	N	?
Swilla Glen	SD6973	64	170	W.D. Roebuck	1908	?	?
Apedale Beck	SE043920	65	250	R.H. Lowe	1952	?	Y
Low Bolton	SE040909	65	150	A. Norris & R.H. Lowe	1972	Y	Y
Keld	NY896011	65	310	L. Lloyd-Evans	1972	N	Y
Aysgarth	SE013891	65	205	A. Norris	1985	Y	Y
Downholme Park	SE112995	65	150	L. Lloyd-Evans	1987	N	Y
Ling Gill	SD8078	64	330	A. Norris	1987	N	Y
Arncliffe	SD933720	64	220	D. Lindley	1992	Y	Y
Beezley	SD701739	64	150	D. Lindley	1994	N	Y
Sedburgh Cemetery	SD652916	65	110	B. Colville	1994	Y	Y
East Banks Farm, Dent	SD710865	65	170	B. Colville	1994	Y	Y
Gawthrop	SD687869	65	250	B.C./D.L.	1994	N	Y
Whernside Manor	SD725859	65	170	B.C./D.L.	1994	N	Y
Gate Manor	SD667896	65	130	B.C./D.L.	1994	Y	Y
Cray Gill	SD934786	64	240	D. Lindley	1996	N	Y
Crook Gill	SD935788	64	270	D. Lindley	1996	N	Y
Duncombe Park	SE594836	62	90	A. Wardhaugh	1997	Y	Y
Swilla Glen	SD694733	64	130	B. Colville	2000	N	Y
Chapel-le- Dale	SD738771	64	240	D. Lindley	2000	N	Y
Brae Pasture	SD789742	64	316	D. Lindley	2003	N	Y
Scoska Wood	SD913727	64	265	D. Lindley	2003	N	Y
Coverham Bridge	SE105861	65	145	D. Lindley	2005	Y	N
Horton-in-Ribblesdale	SD807728	64	230	D. Lindley	2006	N	Y
Oddies Lane, Ingleton	SD697738	64	180	D. Lindley	2006	N	Y

B.C. = Barry Colville, D.L. = David Lindley, L.L-E. = Lloyd Lloyd-Evans

Table 2. *Vertigo pusilla* sites in Watsonian Yorkshire in chronological order

Location	NGR	VC	Altitude (m)	Recorder	Date	Ivy present	Population extant
Wentvale*	SE5017	63	?	C. Ashford	1854	?	?
Guisborough*	NZ6116	62	?	W.C. Hey	1878	?	?
Spofforth/ Wetherby*	SE3651	64	?	Mr. Binnie	1880	Y	?
Malham*	SD9062	64	?	W. West	1882	?	?
Cantley Park Woods	SE6202	63	?	J.W. Taylor	1883	?	?
Ackworth*	SE4416	63	?	J. Hardy	1885	?	?
Grassington*	SE0064	64	?	W. Webster	1885	?	?
Clapham*	SD7469	64	?	W. West	1887	?	?
Helks Wood*	SD695743	64	200	C. Oldham & E. Collier	1888	?	?
near Old Hall, Ayton	SE9985	62	?	J.A. Hargreaves	1890	?	?
Swilla Glen, Ingleton*	SD6973	64	?	A. Hartley	1897	?	?
Darley	SE2059	64	?	W.C. Clarkson	1898	?	?
Martin Beck Wood	SK6294	63	?	Greevz-Fysher	1920	?	?
near Ayton Castle	SE9885	62	?	W. Gyngell	1923	?	?
Aysgarth	SE013889	65	200	R.H. Lowe	1944	?	?
Jervaulx Abbey	SE172857	65	107	L. Lloyd-Evans	1969	N	Y
Low Bolton, Redmire	SE040909	65	150	A. Norris & R.H. Lowe	1972	Y	Y
Delves	NZ7941	62	140	B. Colville	1975	Y	Y
East Banks Farm, Dent	SD710865	65	170	B. Colville	1994	Y	Y
Cray Gill	SD934786	64	240	D. Lindley	1996	N	Y
Colt Park Wood	SD775774	64	?	A. Fowles	1998	?	?
near Egton Bridge	NZ798049	62	50	A.A. Wardhaugh	1998	Y	Y
Keld	NY895010	65	310	D. Lindley	2006	N	Y
Oddies Lane, Ingleton	SD697738	64	180	D. Lindley	2006	N	Y
Kettlewell	SD960725	64	300	D. Lindley	2009	?	Y
Duncombe Park	SE599835	62	100	A.A. Wardhaugh	2009	Y	Y
Rievaulx	SE57841	62	160	A.A. Wardhaugh	2010	N	Y
Fairburn	SE45365	64	30	T.J. Crawford	2012	Y	Y

* Grid references for these sites are indicative only of the general area and the record may have come from an adjacent location.

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