Truncatellina Cylindrica (Férussac), the Cylindrical Whorl Snail in North Bedfordshire

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15/11/2005

The Ivel and Ouse Countryside Project is an environmental service of the Bedfordshire Rural Communities Charity.

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Contents

Introduction

Truncatellina Cylindrica has been known from the Potton Road V?erge Nature Reserve in Bedfordshire since the late 1960's. The species is currently only known from two other locations in Great Britain, and is sparsely distributed throughout the rest of Europe. The species is under threat at the Potton site due to wall maintenance work and its status at the other two sites is uncertain.

A study was undertaken in 2003 to ascertain if the species was present in the east of Bedfordshire that unfortunately turned up no new sites or probable likely sites.

It is the purpose of this study to ascertain if the species is present at any sites in the north of Bedfordshire.

Methods

Possible locations

The Phase 1 habitat maps for the north of the county of Bedfordshire (within the Ivel and Ouse Countryside Project area) were examined for sites with the same characteristics as the known population, these were:

- Unimproved Neutral Grassland;
- Other exposure (i.e. a wall).

The search was then broadened to include:

- Semi improved Neutral Grassland

A list of all sites (including grid reference) meeting the criteria was made, see table 1 and Map 1.

Each site was visited and given a visual inspection for similarities to the known site, diversity of vegetation, shading, aspect and type of wall construction.

Sites with a southerly aspect and good vegetation diversity (especially mixed with patches of bare soil) were considered for detailed investigation and soil sieving.

Detailed site survey

At each site that fitted all of the selection criteria, five samples of approximately 50ml of soil were taken and sieved using 2mm and 0.71mm wire mesh sieves. The particles held back by the 0.71mm sieve were tipped onto an aluminium tray and examined by eye and using x10 magnification for *T. cylindrica*. Any other mollusc species found were also identified. All soil and living molluscs were immediately returned to the location of origin after examination.

The surface of any south (or approximately south) facing wall or structure on each site was examined by eye and using x10 magnification. A selection of cracks, if present in such structures, were examined using an auroscope.

Monitoring at known site

50ml soil samples were taken at 6 intervals along the Churchyard retaining wall at Potton road verge nature reserve (TL228494). These were all from within 10cm of the base of the wall and at a depth of no greater then 10cm. These were then sieved using 2mm and 0.71mm wire mesh sieves. The particles held back by the 0.71mm sieve were tipped onto an aluminium tray and examined by eye and using x10 magnification for *T. cylindrica*. Other mollusc species found were also noted. All soil and living molluscs were immediately returned to the location of origin after examination.

Each specimen of *T. cylindrica* found was examined to establish:

- **Living or dead.**

- **Age of shell**
  - very old: white crumbly shell
  - old: white or pale brown shell, perhaps with some outer coating still intact
  - fresh: pale or dark brown shell with outer coating intact.

- **Age** adult or juvenile depending on size and number of whorls.

Results

Possible locations

A total of 47 sites were found to fit the Phase 1 habitat criteria, these are listed in Table 1. Of these sites none fitted all of the first set of criteria (unimproved neutral grassland) all were semi-improved neutral grassland. One site considered had "Other exposure, refuse pit" instead of "Other exposure" but was considered worthy of investigation as no other exposure types were identified in the area.

One of the sites (Hillands Plantation, Melchbourne (ID 9)) was in a County Wildlife Site. Eighteen of the sites were either in, or adjacent to churchyards or graveyards. The other sites were other types of wall, one site (ID 6) was a refuse tip.

Not all of the sites could be visited due to lack of access permission or failure to find the sites or health and safety reasons, this eliminated 19 sites from the survey.

Visual inspection eliminated 20 sites due to lack of vegetation or too much shading or other factors.

Four of the sites were outside the survey area boundary when the boundary was re-checked.

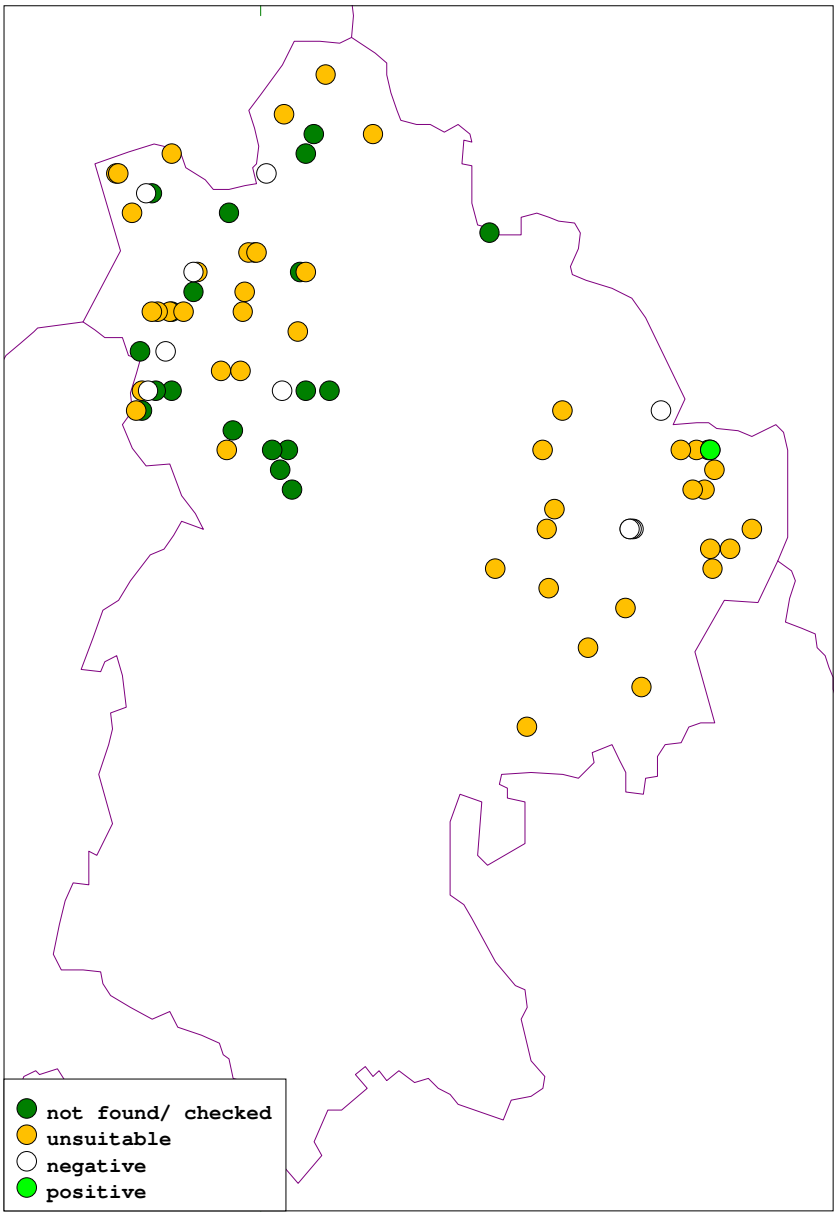
An additional location in Swineshead (ID 48) was identified for checking from a survey carried out in the early 1950s (Verdecort, 1953)

An additional 2 sites (ID 49 and ID 50) were added that were noticed during the initial site check.

This left 7 sites that were surveyed for the Cylindrical Whorl Snail in addition to the known location; these are listed in Table 2 along with some habitat information.

No specimens of Cylindrical Whorl Snail were found at any of the sites surveyed. Other species of snail found at the sites are listed in Table 3, none of the species found were of particular note.

Map 1 shows all sites that have been investigated for the occurrence of *T. cylindrica* including the sites from previous years (Lawrence, 2002 and Lawrence, 2003).



Map 1. Sites investigated for the occurrence of *T. cylindrica* (inc. previous years)

Table 1. Sites considered during this survey. (Key, SI = Semi improved grass, U = Unimproved grass, ? = Unclassified habitat, E = Exposure, R = Refuse Pit)

ID	Grid ref	Habitat	Check	Survey	Nearest town	Site type	Site notes
1.	TL 023 584	SI + E	)	X	Bletsoe	Limestone wall	Church, wall is either too shaded or there is not much veg.
2.	TL 020 581	SI + E	X	X	Bletsoe	-	Not found
3.	TL 019 558	SI + E	)	X	Milton Ernest	Limestone wall	Louis Park + field above, roadside wall, shaded and no veg.
4.	TL 011 529	SI + E	)	)	Oakley	Limestone wall	Church, good veg. Good habitat
5.	TL 035 525	SI + E	X	X	Clapham	-	Not found (Church wall not suitable)
6.	TL 023 521	SI + R	X	X	Bromham	Refuse Tip	Refuse Pit, not checked.
7.	TL 033 688	SI + E	)	X	Shelton	Limestone wall	Church wall next to road, adjacent to ditch or road so no veg.
8.	TL 012 667	SI + E	)	X	Yeldon	Limestone wall	Church, lots of veg. Very shaded
9.	TL 027 652	SI + E	X	X	Melchbourne	-	Not checked
10.	TL 003 635	SI + E	)	)	Knotting	Limestone wall	Church Wall to the S. of Church, lacks veg, possible
11.	TL 023 648	SI + E	X	X	Woodleys	-	Not checked
12.	TL 014 499	SI + E	X	X	Biddenham	-	Outside survey area boundary
13.	TL 006 491	SI + E	X	X	Biddenham	-	Outside survey area boundary
14.	TL 010 485	SI + E	X	X	Biddenham	-	Outside survey area boundary
15.	TL 016 473	SI + E	X	X	Kempston	-	Outside survey area boundary
16.	SP 955 644	SI + E	)	X	Wymington	Limestone wall	Church Off Church Lane, base of wall kept clear of veg.
17.	SP 984 617	SI + E	X	x	Souldrop	-	W of Road W of Church Farm. Not found
18.	SP 927 635	SI + E	)	X	Farndish	Limestone wall	E of Irchester Road, Manor Farm, close grazed so little veg.
19.	SP 928 637	SI + E	)	X	Farndish	Limestone wall	Church wall is heavily shded on both sides
20.	SP 942 627	SI + E	)	)	Podington	Limestone wall	Church wall, with good veg, but recently mown grass, Ok habitat
21.	SP 945 627	SI + E	X	X	Podington	-	S. Parallel to road to Glebe Farm N of Pit (dis), not found
22.	SP 935 616	SI + E	)	X	Hinwick	Limestone wall	Very little in the way of veg.
23.	SP 952 548	SI + E	)	)	Carlton	Limestone wall	Veg. a bit sparse and managed, but possibility
24.	SP 980 537	SI + E	)	X	West End	Limestone wall	Hart Farm all nettles shading wall.
25.	SP 990 535	SI + E	)	X	Stevington	Limestone wall	Church wall partly shaded but good veg.

Table 1. Sites considered during this survey. (Key, SI = Semi improved grass, U = Unimproved grass, ? = Unclassified habitat, E = Exposure, R = Refuse Pit)

ID	Grid ref	Habitat	Check	Survey	Nearest town	Site type	Site notes
26.	SP 955 522	SI + E	X	X	Turvey	-	S of Bedford Road S of Priory Farm, not checked
27.	SP 986 500	SI + E	X	X	Wick End	-	Wick End farm - behind buildings, not checked
28.	SP 939 548	SI + E	X	X	Harrold	-	Wall perpendicular to track leading to river (near "w"), Not found
29.	SP 943 529	SI + E	)	)	Turvey	Limestone wall	GraveyardGood veg but may be too shaded, possibility
30.	SP 940 525	SI + E	)	X	Turvey	Limestone wall	Church, too well maintained, no veg.
31.	SP 947 523	SI + E	X	)	Turvey	-	Turvey Abbey, not checked
32.	SP 937 515	SI + E	)	X	Turvey	Limestone wall	Next to track E. of river good wall and veg.
33.	SP 940 516	SI + E	X	X	Turvey	-	W of Turvey Cottage, not found
34.	SP 997 598	SI + E	)	X	Sharnbrook	Limestone wall	Manor Farm S. of Park Lane, ok veg, habitat looks good very shaded
35.	SP 994 595	SI + E	)	X	Sharnbrook	Limestone wall	Church, no veg or adjacent to pavement.
36.	SP 998 594	SI + E	)	X	Sharnbrook	Limestone wall	The Old Mill < at Road Junction, Heavily shaded, no veg.
37.	SP 966 580	SI + E	)	)	Odell	Limestone wall	Church unshaded parts of the wall are heavily vegetated, possibility.
38.	SP 968 581	SI + E	)	X	Odell	Limestone wall	Odell Manor, base of wall kept clear of veg.
39.	SP 992 578	SI + E	)	X	Felmersham	Limestone wall	Church, no veg. on unshaded side
40.	SP 954 567	SI + E	)	X	Harrold	Limestone wall	Church, close mown grass.
41.	SP 961 563	SI + E	)	X	Harrold	Limestone wall	Church St. Nicholas' s Church, veg. A bit sparse but possibility, in shade
42.	SP 663 566	SI + E	)	X	Harrold	Limestone wall	Wall off Carlton Road, close mown grass.
43.	SP 991 560	SI + E	)	X	Pavenham	Limestone wall	Church, new wall little vegetation..
44.	SP 948 569	SI + E	)	X	Harrold	Limestone wall	Church, close mown grass
45.	SP 945 565	SI + E	)	X	Harrold	Limestone wall	N of High Street at Priory Farm, heavily shaded.
46.	SP 983 491	SI + E	X	X	Stagsden	Limestone wall	Church, not checked
47.	TL 116 607	SI + E	X	X	Bushmead		Part of Bushmead Priory not checked
48.	TL 057 658	?	)	X	Swineshead	Limestone wall	Very shaded, although habitat good otherwise.
49.	SP 966 579	?	)	X	Harrold	Causeway	Good looking habitat but in shade and hazardous to survey
50.	SP 955 563	?	)	X	Odell	Limestone wall	Wall, good looking habitat and good veg.

Table 2. Data from field survey.

ID	Site name	Grid ref.	Date	pH	Aspect	Wall type	Habitat	*T. cylindrica* present
4	Oakley	TL 011 529	11/11/04		W 180°	Limestone	Moss, Lichen and other plants on wall with medium length grass beneath.	No
10	Knotting	TL 003 635	11/11/04		SE 150°	Limestone	Moss, Lichen and Ivy on wall with medium length grass beneath.	No
20	Podington	SP 942 627	11/11/04		SE 150°	Limestone	Allot of Ivy, Moss and Lichens on wall with medium length grass beneath.	No
23	Carlton	SP 952 548	11/11/04		NW 320°	Limestone	Moss and Lichen on wall, Medium length grass beneath.	No
29	Turvey	SP 943 529	11/11/04		E 105°	Limestone	Moss and Lichen on wall with medium length grass beneath.	No
37	Odell	SP 966 580	11/11/04		NE 60°	Limestone	Lichen, Ivy and other plants on wall with medium length grass beneath.	No
50	Odell	SP 955 563	11/11/04		SW 200°	Limestone	Lichen and Ivy on wall with medium length grass beneath.	No

Table 3. Other snail species recorded during this survey.

Species	Site Number						
	4	10	20	23	29	37	50
1. *Helix aspers*	✓	✓	✓	✓	✓	✓	✓
2. *Vallonia costata*	✓	✓	✓	✓	✓	✓	✓
3. *Ena obscura*				✓		✓	
4. *Cecilioides acicula*	✓				✓		
5. *Lauria cylindracea*	✓			✓			

See table 6 for species found at Potton Road Verge nature reserve

Table 3 lists other mollusc species found at the sites sampled during this survey, this only numbered 5 other species; 2 of which were found at every site surveyed (*Helix aspersa* and *Vallonia costata*).

2 specimens of *T. cylindrica* were found at the known location in 6 50ml soil samples on 11th October 2004. This indicates that evidence of the species presence can be found at the time of year this survey was carried out. None of the specimens were alive but one still had the brown outer coating indicating it was fairly fresh.

Monitoring at known site

Table 4 details the occurrence of *T. cylindrica* at the Potton Road Verge in the 6 samples on each of the four dates that the site was checked. A total of 5 specimens were found, including 1 relatively fresh shell (in spring 2004) that showed very little wear, indicating the specimen had probably died recently.

Table 4 Results from detailed Potton Road Verge survey

Survey point	Date	Number of shells	Alive or dead	Age of shell	Age
1	18/05/2004	0	-	-	-
2	"	0	-	-	-
3	"	1	Dead	Fresh	Adult
4	"	1	Dead	Old	Adult
5	"	0	-	-	-
6	"	0	-	-	-
1	11/10/2004	0			
2	"	0			
3	"	2	Dead	Old	Adult
4	"	0			
5	"	0			
6	"	0			
1	04/05/2005	0	-	-	-
2	"	0	-	-	-
3	"	0	-	-	-
4	"	0	-	-	-
5	"	0	-	-	-
6	"	0	-	-	-
1	18/10/2005	0	-	-	-
2	"	0	-	-	-
3	"	1	Dead	Old	Juv
4	"	0	-	-	-
5	"	0	-	-	-
6	"	0	-	-	-

Table 4a. Total specimens found

Total	adult	juvenile
living	-	-
dead	4	1
all	4	1

A total of 13 species of mollusc were recorded from Potton Road Verge Nature Reserve during this survey (see table 5) no effort was made to search for additional species (as was done in 2002) and no slugs were found. Of the 13 species recorded in total, 2 are in the Local Red Data Book (LRDB) (Rands & Nau 2001) and 1 is also in the National Red Data Book (RDB) (Bratton, 1991). These species are:

Helicodiscus singleyanus LRDB F (No action required)
Truncatellina cylindrica RDB 2 (Vulnerable) & LRDB A (Declining in Britain)

Helicella italia was not found during this survey (not even old dead shells).

Table 5. Molluscs recorded from Potton Road Verge nature reserve during the survey

Species	Status
1. Candidula intersecta	
2. Cecilioides acicula	
3. Laura cylindracea	
4. Ena obscura	
5. Helicodiscus singleyanus	LRDB F (No action required)
6. Helix aspersa	
7. Lauria cylindracea	
8. Monacha cantiana	
9. Truncatellina cylindrica	RDB 2 (Vulnerable) & LRDB A (Declining in Britain)
10. Vallonia costata	
11. Vallonia excentrica	
12. Vertigo pygmaea	
13. Oxychilus helveticus	

Discussion

Detailed site survey

No new sites for *T. cylindrica* were identified during this survey. The phase 1 habitat maps did not reveal any sites that closely matched the initial search criteria and visual inspection and other problems removed a large number of potential sites form the survey. The seven sites that were sampled in detail did not resemble the Potton site lacking both the vegetation diversity and the lime rich mortar.

Of the newly surveyed sites 4 and 29 showed the most variety in mollusc species present, both having four species present. This compares rather unfavourably with Potton Road Verge that had 13 species in total. All of the sites lacked vegetation diversity although the vegetation was not studied in any great detail.

None of the other sites visited during the course of this survey appeared suitable for the Cylindrical Whorl Snail given the current state of knowledge on this species. No

sites were found to support *Sedum* (thought to be of importance for the species) and many of the sites were heavily shaded or had heavily managed improved grassland.

Monitoring at known site

The Biting Stonecrop (*Sedum acris*) does not seem to have recovered from the wall repair works and there is no sign of the plants that were removed prior to and replaced following the works. Some plants from here have become established at a second location (where they were temporarily stored), but are still small at October 2005 and not of sufficient size to provide a donor source.

Pellitory-of-the-Wall (*Parietaria juaica*) and Ivy (*Hedera helix*) have begun to re-colonise several sections. There is a high proportion of lime mortar debris in the soil at the base of the wall.

A total of five specimens of the Cylindrical Whorl Snail were found at the site during monitoring, one of which was relatively recent, and two were found during the check to ensure the snail could be found at the time of the other survey. The presence of fresh dead snails in 2004 indicates the continued presence of the species at the site until sometime relatively close to that date. However the complete lack of any specimens at the beginning of 2005, only one old dead shell in the latter half of 2005 and no living specimens since the single individual in 2002 indicates that this species may no longer be extant at this site (pers. obs.). Future monitoring will confirm if any living specimens are still present.

Conclusions

It would appear from this survey that Potton Road Verge Nature Reserve is unique within North and East Bedfordshire both in terms of habitat and in the mollusc community that habitat supports. However given the lack of recent records of living specimens the site may no longer support the only known population of the Cylindrical Whorl Snail in Bedfordshire.

None of the other sites considered or surveyed appeared to be suitable for the target species and the highest number of mollusc species found does not compare favourably to Potton (only 4, compared to 13?).

Recommendations

The Potton Road Verge Nature Reserve should continue to be monitored bi-annually to establish if there are still living or freshly dead specimens present. The species has been put forward to the BAP Priority Species Review and has qualified for recommendation to become a BAP Priority Species.

Acknowledgements

The author would like to thank John Comont and Stephen Coleman for access to the Phase 1 habitat maps, the various landowners of the sites surveyed for their permission and co-operation. Thanks also go to English Nature, Bedfordshire County Council and the Bedfordshire Natural History Society for their financial support. Map 1 was produced using DMAP software courtesy of Dr Alan Morton.

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