

Wildlife along the Coton Footpath

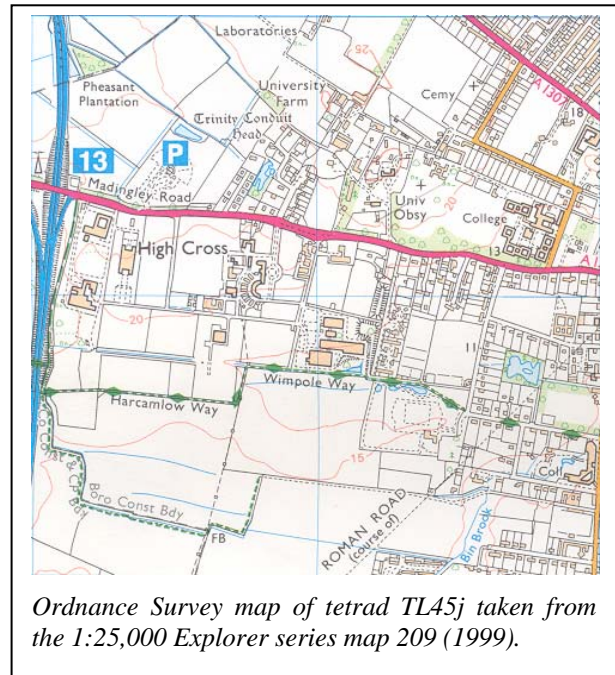
Jonathan Shanklin

The Cambridge Natural History Society decided in 2002 to embark on a local project to study wildlife along the Coton Footpath. The aim of this was in part to study local wildlife and in part to get beginners involved in identifying flora and fauna. The scope of the project was extended because we discovered that the footpath is located in the grid tetrad that the Botanical Society of the British Isles is surveying as part of their Local Change project and the results will contribute to this project. A surprisingly wide range of flora has been found.

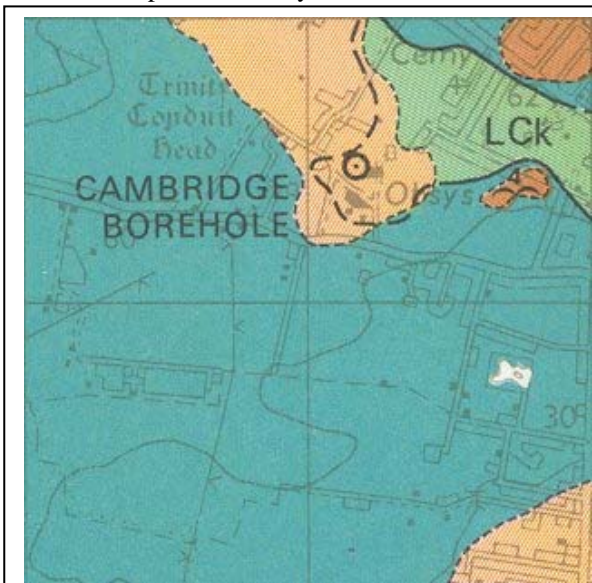
Introduction

The footpath begins at the junction of Wilberforce Road with Adams Road, adjacent to the new Cambridge University sports ground. It runs west along level ground to the M11 motorway, which it crosses by a footbridge, before continuing on to Coton village. The footpath is designated in the local plan as one of the green environmental routes running out of Cambridge. The footpath runs through the middle of grid tetrad TL45j, which is being surveyed by the Botanical Society of the British Isles (BSBI) as part of their Local Change project. The M11 marks the western boundary of the tetrad and return routes are possible via a footpath leading past the University rugby ground on Grange Road, via Charles Babbage Road and the Cavendish Laboratory or via Madingley Road. Several other walks through the tetrad are possible, particularly through the University Observatories to the Huntingdon Road and back via St Giles cemetery and Storey's Way. The Cambridge Bird Sanctuary lies near the eastern edge of the tetrad, which is marked by Grange Road.

The Cambridge Preservation Society (CPS) owns land west of the M11 motorway, and a section of the easternmost part of the tetrad, though this is still farmed by the University tenants. Independent surveys of the flora and fauna of this area are being carried out as part of the preparatory work for the planned Coton Countryside Reserve, which will cover about 300 acres. Over the next decade they hope to convert parts of their land into habitats more amenable to wildlife and to provide better public access. Further details of this project are available on the CPS web site at <http://www.cpswandlebury.demon.co.uk/page12.html>



Ordnance Survey map of tetrad TL45j taken from the 1:25,000 Explorer series map 209 (1999).



The surface geology of tetrad TL45j from the Geological Survey map of Cambridge (1981).

The surface geology of most of the area is the Gault clay, laid down in near continental seas some 100 million years ago in the Cretaceous period. The clay provides a significant deterrent to walking on arable field margins in wet weather as it builds up in heavy deposits on walking boots. Outwash gravels laid down some 400,000 years ago in glacial times form the rising ground on which the University Observatories are built. East of these gravels and in part overlain by them, is an area of lower chalk, laid down in warm shallow seas some 90 million years ago, and on which St Giles cemetery and Trinity Hall Wychfield are located. In this area and in the south east corner of the tetrad are small patches of terrace gravels from the river Cam dating from between 120,000 and 10,000 years ago. During some interglacial periods the climate was warmer than today, and

remains of deer, elephant, hippos, and rhinoceros have been found in the Cambridge area. Occasionally fossils can be found whilst out walking, particularly fragments of belemnites, ammonites and devil's toe nail (an oyster, *Gryphaea sp.*).

There is limited variation in topography over the area and the majority of the landscape has been sculpted since the last glaciation some 10,000 years ago. The land is highest in the north at a little over 25 metres and generally slopes towards the south, with the lowest ground just below 10 metres. The major drainage feature is the Bin Brook, which runs across the southeast corner of the tetrad. This stream is prone to flash floods and there is a balancing pond adjacent to the footpath, although recent drainage improvements on the University West Cambridge site mean that there is rarely much water in it. Several 'drains' run west to east in shallow valleys in the southern part of the tetrad.

Major archaeological excavations took place during site clearance of the Vicars Farm area for the construction of the Computer Laboratory, William Gates Building and Park & Cycle facility. There are traces of Mesolithic or Neolithic activity in the area in the form of flint scatter. There was then a hiatus until the late Iron Age and this was followed by extensive Roman occupation, with a settlement and fields. A lovely statuette of Minerva, goddess of wisdom, was found in a shrine. The settlement was abandoned in the 5th century and the present field outlines probably arose in the 14th century. The area was little used apart from agriculture until the early 19th century when the University Observatories were constructed in what was open countryside. Full details of the archaeological work in the West Cambridge site are at <http://www-building.arct.cam.ac.uk/westc/archaeology/archaeology.html>. An aircraft factory was in the south western part of the tetrad during the second world war, and this is marked on the geological map. The University rifle range was also in this area prior to the move to its present site near Barton.



Statuette of Minerva

Whilst the low rolling landscape is not as flat as the fens, it does provide spectacular cloudscapes and there are good views of Cambridge, particularly from the footpath leading to the rugby ground. Light pollution is an increasing problem for city astronomers, and severely curtails what can be done from the University Observatories. The old rifle range area is darker than any others within easy reach of the city centre as most of the area to the west is rural, however even here the night sky does not get truly dark.

The flora is in part governed by land use, whether it is agriculture or building, in part by the underlying geology, and in part by the drainage. With much building work going on at present and over the last sixty years, there are many areas of 'brownfield', which supports a wide variety of species, many of them aliens, particularly where topsoil has been brought in from other areas. There are a few areas of grassland, but most of the arable agriculture is a rotation of wheat, rape or beans. The crops are heavily sprayed, but this does not completely exterminate a range of arable weeds.

In order to get as complete a picture as possible of the flora and fauna the Cambridge Natural History Society (CNHS) has been conducting monthly walks along the footpath, and I have been supplementing these with exploratory forays to discover the most interesting routes for the time of year. It also helps that I work in the tetrad, at the British Antarctic Survey (BAS). One key point in favour of doing group surveys is that the many eyes tend to be more productive at locating specimens. Attendance on the walks has varied from a dozen or so on some, to only myself on the hottest UK day on record!



Yellow vetchling (Lathyrus aphaca)

Full species lists and highlights of some of the walks are available on the CNHS web page at <http://www.cnhs.org.uk>. After we started the regular walks we discovered that the footpath ran through grid tetrad TL45j, which is one of those in the Vice County being surveyed as part of the BSBI Local Change project. In total we have found over 450 species of flowering plants, seemingly a great increase since the first BSBI survey of the tetrad that was carried out in 1987, which recorded 240. Of these, around 200 are in common and it is likely that some more of the 1987 plants will be recovered on future walks. Graham Easy (1988) describes some visits to the area that he made during the 1987-88 survey and these notes have been helpful. Whilst some of the apparent increase may be partly due to the increased amount of disturbed ground that has appeared since 1987, some of the species must have been present

during 1987, suggesting that this survey was not complete. Easy notes that there had been an earlier survey in 1950-54. Further background resources for the flora of the area are Gigi Crompton's 'Cambridge Flora Records since 1538' and the BSBI Local Change Species List (1988). Extensive comments on the ecology of the area are also given by Max Wade (2002?) in his report on the University West Cambridge site.

Whilst we have been noting other plants and fauna, this recording has been rather less systematic. Nevertheless, the list includes over 100 lower plants and fungi, 80 invertebrates, over 60 birds and 16 other (wild) vertebrates. Most notable are 13 species of dragonflies and damselflies and 17 species of butterfly. Roesel's bush cricket (*Metrioptera roeselii*) has become noticeably more common in the past few years, with one stridulating every ten metres along some fences in 2003. Green spotted woodpecker (*Picus viridis*) and magpie (*Pica pica*) have also become more common in recent years. The cessation of grazing on parts of the West Cambridge site prior to development has seen colonisation by creeping thistle (*Cirsium arvense*), burdock (*Arctium* sp) and teasel (*Dipsacus fullonum*) and large flocks (40+) of goldfinch (*Carduelis carduelis*) have been seen. Water vole (*Arvicola terrestris*) have been reported from Bin Brook, however we only noted signs of burrows and some droppings. Here I will describe only some of the more interesting floral species that have been noted.

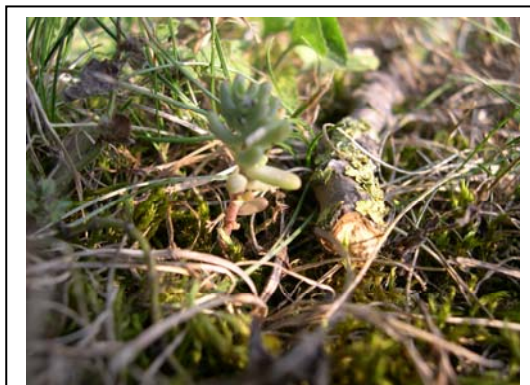
Highlights of the area

A ditch adjacent to a small copse in the middle section of the footpath hosts two regionally rare species: Yellow vetchling (*Lathyrus aphaca*) and slender tare (*Vicia parviflora*), although the vetchling is also found further north along the footpath and the tare around the largest of the ponds in the Wilberforce Road sports ground. Marsh marigold (*Caltha palustris*) also grows in the ditch. In the adjacent hedge are clumps of stinking iris (*Iris foetidissima*), which flowers in June, with the seed pods bursting in December to reveal the bright orange seeds. Ditching work carried out in conjunction with developments to the University West Cambridge site introduced several new species, including branched bur reed (*Sparganium erectum*), lesser spearwort (*Ranunculus flammula*) and purple loosestrife (*Lythrum salicaria*). Identification of these species was made easier by printed labels from the garden centre from which the University purchased them!



Round-leaved fluellen (*Kickxia spuria*)

Behind the copse is the balancing pond, which provided a good habitat for arable weeds in 2002, but has since become very overgrown with prickly ox-tongue (*Picris echioides*), which is ubiquitous in the area. Typical weeds included both sharp and round leaved fluellen (*Kickxia elatine* and *spuria*), scarlet pimpernel (*Anagallis arvensis*), black bindweed (*Fallopia convolvulus*) and swinecress (*Coronopus squamatus*), many of which are also found in the arable fields. Broad-leaved spurge (*Euphorbia platyphyllos*) was recorded growing in arable fields south of the footpath.



Stonecrop (*Sedum album*)

The area around the University Observatory includes many plants not seen elsewhere. Adjacent to Madingley Road is an area of unimproved meadow where field scabious (*Knautia arvensis*), ladies bedstraw (*Galium verum*), wild carrot (*Daucus carota*), smooth tare (*Vicia tetrasperma*) and meadow vetchling (*Lathyrus pratensis*) grow. On sandy ground adjacent to the drive up to Madingley Rise there is a clump of Atlantic poppy (*Papaver atlanticum*), a patch of thyme-leaved sandwort (*Arenaria serpyllifolia*) and a few plants of what is provisionally identified as white stonecrop (*Sedum album*). Greater knapweed (*Centaurea scabiosa*) grows on a bank behind the University Farm.

There are many derelict areas on the University West Cambridge Site, which host a varied flora including many aliens. On an area next to the Cavendish Laboratory that was set aside for a Marconi

laboratory we have found common toadflax (*Linaria vulgaris*), snapdragon (*Antirrhinum majus*), field pansy (*Viola arvensis*), hemp nettle (*Galeopsis tetrahit*), water chickweed (*Myosoton aquaticum*) and myrtle spurge (*Euphorbia myrsinites*) amongst others. On a spoil tip from the new University Nursery buildings we found annual nettle (*Urtica urens*), annual mercury (*Mercurialis annua*), autumn crocus (*Crocus nudiflorus*) and nasturtium (*Tropaeolium majus*). On what was an overflow car-park for the High Cross site, but is now rather more a dumping ground we have found

pokeberry (*Phytolacca americana*), opium poppy (*Papaver somniferum*), rest harrow (*Ononis repens*), evening primrose (*Oenothera glazioviana*), caper spurge (*Euphorbia lathryis*) and cotton thistle (*Onopordum acanthium*).

Although not particularly rare, bee orchid (*Ophrys apifera*) grows in several places in the area, with leaves or flowers found near the start of the footpath on the verge of the University Sports ground entrance, on lawns at the Cavendish Laboratory and the BAS and on the approach ramp to the M11 bridge. Just north of the bridge is an area with common spotted orchid (*Dactylorhiza fuchsii*). In the past common twayblade (*Listera ovata*) has been recorded at the BAS. Both this and early marsh orchid (*Dactylorhiza incarnata*) grow in the margins of the Cavendish (Payne's) pond.



Bee orchid (*Ophrys apifera*)

St Giles cemetery provides a very different habitat as it lies on the chalk and is little developed. It was first visited in the autumn of 2003, by which time flowering was over and many species remain to be identified. Prominent was a clump of deadly nightshade (*Atropa belladonna*) growing by the chapel. Hart's tongue fern (*Phyllitis scolopendrium*) grows on a stone wall dividing two sections of the cemetery.



Wrinkled peach fungus (*Rhodatus palmatus*)

Perhaps the highlight of the records is the 'Red Listed' wrinkled peach fungus (*Rhodatus palmatus*). This grows on elm logs, and became commoner following Dutch elm disease, though is now becoming rare again. Two specimens were found in December 2003 on elm logs in a small copse adjacent to the footpath where it crosses the M11 motorway. Many other fungi were also found on this visit, including lemon discs (*Bisporella citrina*), tripe fungus (*Auricularia mesenterica*), jew's ear (*Auricularia auricula-judae*), wood blewett (*Lepista nuda*), crystal brain (*Exidia nucleata*) and velvet shank (*Flammulina velutipes*). We were also lucky enough to see a sparrowhawk with prey in its talons flying through the wood.

We have found many more than the 50 – 100 species that I had expected, particularly as I have cycled along the footpath on an almost daily basis for the last 30 years. In part this has been because many eyes have been looking, and in part because once you start looking objectively you quickly learn to be more discerning in what you view. On occasion it has been surprising what you miss, for example as a group we found annual wall rocket (*Diplotaxis muralis*) growing in close proximity to specimens of annual mercury (*Mercurialis annua*) that I had found on an exploratory visit the day before. It has been fascinating to watch the succession of species as the seasons progress. Easy (1988) noted previous claims that 'a more varied flora exists in this 10 km square [TL45] than in any other in the British Isles!' when the BSBI recorded 918 species in 1988.

The University has long term plans to develop much of the West Cambridge site and this will inevitably lead to changes in the wildlife of the area, probably with a reduction in the native flora. There will be some compensating developments, for example a lake is planned near the location of the balancing pond, and the improvements planned by the CPS will also increase the diversity of the area. The BAS has plans for some biodiversity improvements on their site, mostly through management changes and perhaps a small pond. If predictions of climate change prove accurate our climate will warm and this will lead to changes in the balance of species. It will be interesting to see how the floral list in fifteen years time compares to the present one.

References

- BSBI Local Change project: <http://www.bsbi-projects.org/localchange.html>
 BSBI Local Change Species List (1988). <http://www.bsbi-projects.org/lcspecies?bsbiTetrad=TL45J&bsbiVC=Cambridgeshire%20VC29&oldvc=Cambridgeshire%20VC29>
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