

Potato Houses

Sean Adcock

A large chunk of my formative years as a self-employed dry stone waller were spent on the Ysbyty Ifan estate. In those days I had a workforce, and a number of early projects were at Ty'n y Coed Uchaf (near Penmachno) in the run up to it being partly opened to the public. One project included the removal of several years, decades possibly, of deposits in the pig sty. I adopted a supervisory role, there were times when having a workforce was actually worth it. Between the house and the pig sty was (still is) what appeared to be a dry stone tunnel, above ground. I was to discover that this was a potato house or 'clamp', and that there was another one not far away at Ty Mawr Eidda.



Potato Clamp, Ty'n y Coed Uchaf, Penmachno © Sean Adcock

These potato houses are sometimes known as root cellars, are used to store root crops over winter, protecting them from frost. They are quite popular in North America (USA & Canada) for storing all sorts of root vegetables, although they are rarely dry stone. As the name cellar suggests they were frequently part of the house rather than standing alone in a field. The preponderance of those that were actually cellars probably explains the generic use of 'cellar' for virtually all root storage buildings in North America. They are rarer in Britain than many parts of North America primarily because of the relatively mild climate here. In Britain roots were often kept in attics, or even just left to overwinter in the ground (where grown as a feedstuff for stock).

Generally the structures are thick walled (or buried - again "cellars" rather than above ground "houses") staying cool during hot weather as well as protecting from frost in winter. Andrew Roberts of the National Trust tells me that the Ysbyty Ifan clamps originally had soil piled up over them to keep the frost out, and that they were always built on a bank so that the potatoes rolled to the front to save crawling in to get them, with a slab at the top end removed in order to fill them. As such they represent some intermediate form between 'houses' and 'cellars'.

By and large it seems that at least in Wales clamps were more commonly pits which were dug, the vegetables were then mounded in the pit and subsequently covered with straw and then the excavated soil. Naturally the same 'pits' would be used over and over again, becoming very well defined 'U' shapes. A trawl of the Coflein¹ website un-earthed (sorry) a number of Welsh root cellars, with a particular concentration of around 30 pit types around Troed yn Rhiw in Ceredigion (between Lampeter and Aberaeron). Several images of the pits are available at <http://www.coflein.gov.uk/en/site/405553/images/FRONGOCH+ROOT+VEGETABLE+CLAMPS%2C+TROED+Y+RHIW%3BTROED-Y-RHIW/>. There are two main concentrations of 14 (SN7663566710) and 12 (SN7647066342) with other scattered examples in the area. Both are quite extensive, set out in lines of around 59 and 43 metres respectively and varying from around 4.5-6m by c.1.5m each. The Coflein interpretation is that varying alignments, and/or the fact that they seem to overlie each other at points, means that they are not necessarily contemporaneous.

An obvious upgrade to a simple pit would be a stone lining and my 'trawl' revealed a few. The Coflein site can at times be compared to needles in haystacks. Separate searches for "root" and "clamp" probably covers all they have. Stone structures are perhaps not surprisingly apparently much rarer, although neither of the fine Ysbyty Ifan candidates appear to be listed on Coflein, so who knows what's out there?

The Coflein results are not always clear as to whether or not stone is involved. The list below comprises those that obviously do, and if you're passing photos would be appreciated! Unlike many of the plain earth mounds, there are no photos of these on the site. I reproduce most of the Coflein entry for each, more or less verbatim appending grid refs taken from the site. The date at the end is the record date. The web address for each record is correct as of 13.08.2012

Gwenlas, Powys. SO11438039

Semi-subterranean stone-built chamber set into the bank above Gwenlas farmhouse. Largely destroyed (noted 1990). (2002).

<http://www.coflein.gov.uk/en/site/97697/details/GWENLAS+POTATO+CLAMP/>

Cornel, Nantmel, Powys. SN98226365

Stone-lined and slab-roofed chamber for potato storage covered with an earth mound. 2001.

<http://www.coflein.gov.uk/en/site/97578/details/CORNEL+POTATO+CLAMP/>

Egryn Abbey, Dyffryn Ardudwy, Gwynedd. SH59582029

Semi-subterranean potato clamp on the SE. side of the farmstead. The chamber is about 20 feet in length, but partially ruined. (2003)

The potato clamp was restored by the National Trust in 2007 with the addition of a metal bar to strengthen the roof slabs, and a wooden door. (2008)

<http://www.coflein.gov.uk/en/site/308408/details/EGRYN+ABBEY+POTATO+CLAMP/>

Gylfach y Rhiw, St Harmon, Powys. SN97407199

Permanent semi-subterranean potato store built into an earth bank. The narrow rectangular chamber inside the mound is stone-lined and measures 11 feet long, 3 feet wide and almost 5 feet high, giving a storage capacity of nearly one ton (noted 1989). (2005) <http://www.coflein.gov.uk/en/site/22805/details/GILFACH-Y-RHIW+POTATO+CLAMP/>

Sunnybank, Llanbadarn Fynydd, Powys. SO07807881

Stone-lined dug-out potato clamp, covered by zinc sheeting. A late example. Noted in 1990. (2001)

<http://www.coflein.gov.uk/en/site/98424/details/SUNNYBANK+POTATO+CLAMP/>

Home Farm, Leighton, Powys. (SJ2430505229).



Basement entry to root store in northwest corner of complex, from the south

Crown Copyright: Royal Commission on the Ancient and Historical Monuments of Wales

http://www.coflein.gov.uk/images/l/DS2008_425_001/

random rubble basement wall beneath, are openings to six brick-vaulted tunnels (one now concealed by an inserted door).

Internally is a row of central posts, between which has been infilled with concrete blocks at a later date, dividing the interior into two units. The west range has a roof with king and queen posts and raking struts. The east range is said to have a sloping cartway, while the west range has a modern concrete floor but the shafts through which the roots were passed can be seen in the vaulted tunnels of the basement. (source; Cadw listing database). (2008).

<http://www.coflein.gov.uk/en/site/85872/details/ROOTHOUSE%2C+HOME+FARM%2C+LEIGHTON+ESTATE%2C+LEIGHTON/>

Having graduated to houses I should mention an interesting little booklet “An Illustrated Guide to Stone Antiquities on The North Yorkshire Moors” by Elizabeth Ogilvy which I acquired many years ago and includes an entry on “Potato Houses”. I have still to actually get to these, however I dispatched our North Yorkshire (formerly Ireland) correspondent. Okay sometime contributor David Perry kindly agreed to visit the houses noted by Ogilvie and send some photos and comments.



Potato House Ash Farm, Glaisdale.
Photo © David Perry

Ogilvie shows one potato house near mountain Ash Farm, Glaisdale “*thought to have been built around 1839*”.² David noted that internally it was 13 feet by 10 feet and much as Ogilvie described, having an internal dividing wall of nicely worked sandstone blocks, which supports a stone slab roof. The floor is



Inside Ash Farm potato house.
Photo © David Perry

stone flagged. Ogilvie also states that “*At the rear of the potato house are two openings where the potatoes were tipped in*”³ which is as you would expect but David could find no evidence of these – which you would expect to be visible in the internal shot.

The second house is at Yew Grange Farm is not shown by Ogilvie, but David thought it was of more interest. Ogilvie notes that it is the larger of the two with four compartments, which is apparently an error.



Potato House Yew Grange Farm, Glaisdale.
Photo © David Perry

David noted that it is of similar depth to the Ash Farm house but was three bays wide, and around 15 ft wide inside in total . David couldn't actually measure this as the house is still in use, although it is now full of roofing slates rather than tatties. When the current owner acquired the farm in



Tipping holes, Yew grange Farm.
Photo © David Perry

1953 it was roofed over, with pantiles laid on the loose earth which was placed on top of the slabs. These were in danger of getting smashed up by his stock, so he removed them and placed them inside the structure! Here they have sat ever since and of course the house has not been subsequently used for its original purpose. Internally it was similar in design to the Mountain Ash one in that the subdivisions were equal, with the internal walls being built of finely tooled stone, with a larger width stone capping which the large roof slabs rested on. Here each bay had at the opposite end to the door there was a horizontal slot through which to pour in the potatoes. Each bay has a flagstone floor and the stones around the door were rebated to accommodate it. (Ogilvie notes wooden doors at both, but at Ash farm this has long gone

David also noted that the structure had been changed, with around 2-3 feet added to the side walls. This has partially collapsed on the other side at one corner. David wonders if this addition was to aid insulation.

The original structure's roof had carefully bevelled/sloping gable ends to suit the original pitch of the roof. This is much degraded but you can still see a couple of these gable stones at the rear and one on the front at the left hand side. Noting the pantiles David wondered if perhaps the Ash Farm house was similarly roofed in some way – it does appear to have a profile with a slight apex - to prevent water from dripping in and spoiling the potatoes?

David also wondered how these structures would be rat proof. As far as I've been able to work out this isn't really a concern as most root crops in their raw state either contain toxins, or failing that nitrates, which disagree with the rats digestive systems.

I have come across one book dealing specifically with root cellars: “*Root Cellars in America: Their History, Design and Construction 1609-1920*”, James E Gage, Powwow River Books, MA, USA (see PowwowRiverBooks.com). Many of those shown are mortared stone and/or brick, although many have a

white wash of lime mortar which covers dry stone covering the masonry and was added to make it easier to clean the cellar. James Gage explained to me that by and large "Brick and stone root cellars get all the attention but they are not representative of what was really going on". The book gives a comprehensive guide to their early history and development, including information from Britain. Some of the cellars are shown on http://www.stonestructures.org/html/root_cellars.html and this does show the remains of one interesting one with flat laid dry stone faces earth core about 4 feet wide. It is said this was a house cellar built specifically as a root cellar.

The website also shows a couple of dry laid root houses not covered in the book, the best being at Thompson Connecticut (<http://www.stonestructures.org/html/thompson-root-cellar.html>). The frontal facade shows some nice stone work, but most striking is the internal vaulted dry stone roof spanning an area 10'2" wide by 17'10" long. It dates back to the late 1800s.



Front facade of Thompson CT, root cellar

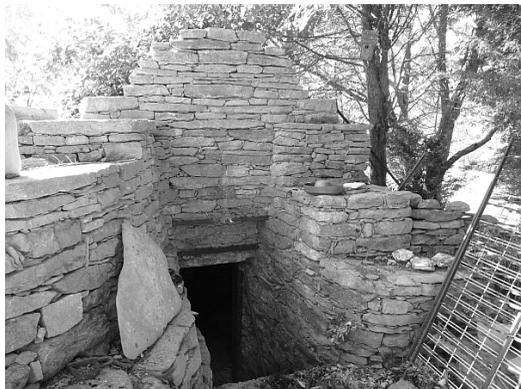


Dry stone vaulted roof Thompson CT

Both photos © James Gage

Last year I was taken to see a root house at Frankfort, Kentucky, with a nicely domed, corbelled roof. James Gage looking at roof design ignores stone roofs, beyond arches, had found only one non arched stone roof (slabs) in all his research and no corbelled roofs. I have asked him about this and the nub of his argument is that they are absent from the historical record, literature, design etc and that many buildings apparently built this way were not necessarily built as root cellars.

James explained to me that whilst there are some 500-600 stone chambers in northeastern U.S. with either corbelled or slabbed roofs. Are these structures prehistoric Native American? Historic root cellars? Or A mix of the two? There has been "vigorous" debate since the late 1930's as to their origins- prehistoric Native American or otherwise. James argues that whilst archaeologists and academics have until recently maintained that all of these structures are root cellars. When they actually knew little to nothing about root



Corbelled dome root house, Frankfort, KY

© Sean Adcock



Inside the corbelled dome

© Sean Adcock

cellar construction. So he has searched the historic record identifying designs and features – which are by and large absent from these slabbed or corbelled structures, and he has found no historic record/design pertaining to corbelling.

The owner of the Frankfort root cellar, Richard Tinsley restored the façade/entrance but says the dome is essentially as he found it 20 years ago. The property itself is quite old, originally a cabin with the root house and a nearby ice house/pit (now roofless). The cellar structure feels quite old and does have vent pipes – although how old they are I wouldn't like to guess. There are wooden beams built into the dome, and it could conceivably have been a smokehouse rather than a root cellar. Richards father's property also has a stone roofed root cellar, partly corbelled, finished with slabs, and he knows of several other stone roofed ones in the area, which he tells me has plenty of them.

Of course they could also have undergone mid and later 20th Century changes/renovations and its difficult to know whether they were originally built for storing vegetables. However I worry when the over-riding argument is a lack of written historic record – even where the history is not that long a length of time. Rarely is the vernacular that well recorded in Britain, maybe it's different elsewhere, so I did wonder and reported my suspicions to James Gage. Having reviewed the photos I sent he agrees it is historic rather than modern with a Euro-American style of stonework which is not a Native American style of stonework, concluding this is the first confirmed example of corbelling in an historic U.S. structure which we are aware of.

He adds that the terracotta vent pipes (one can just be seen in the corbelling photo) would suggest a 19th century date for the structure and consistent with a root cellar. He feels the that the wood “beams” are crude in comparison to the overall quality of workmanship in the structure and probably a later addition. Apparently some root cellars were equipped with ceiling hooks to hang vegetables or even smoked meats.

NOTES

Thanks to James gage for permission to use the Thompson photos and his comments/advice, and to Richard Tynsley for his time

¹Coflein is the online database for the National Monuments Record of Wales (NMRW), the national collection of information about the historic environment of Wales. The name is derived from the Welsh cof (memory) and lein (line).

² Ogilvie.E. *“An Illustrated Guide to Stone Antiquities on The North Yorkshire Moors”*, Muddy Boots, N.Yorkshire, (1996)

³ *ibid*