

## The Limekilns of Clevedon

Gwyneth M Yeates

### Introduction

Limekilns have been constructed from Roman and earlier times to provide mortar for building purposes. Large-scale medieval building projects often allowed for the provision of a kiln near the site. The cylindrical cavity of the structure would be piled with layers of broken limestone and fuel which was usually brush wood, then covered with tunves and left to burn out in an intermittent or batch, operation. By the late thirteenth century small coal started to be used and a more complicated inverted-cone-shaped cavity was introduced. It is thought that coal was being used locally for lime burning from this early date but, by the mid-fifteenth century, there is no doubt. Numerous references to its use appear and small coal started to be sold as **lime coal** at a cheaper rate. The value of lime gradually came to be recognised as a dressing for soured farming land and it was the practice for farmers to 'go to Mendip for coals' to burn their own lime for the purpose. Nearer Bristol, there are references from at least the early 1600s to kilns, or 'lime kills' which were established on either side of the Avon Gorge in Clifton and Rownham, doubtless supplying builders, and later farmers, and possibly using the continuous method of operation which became more usual with the use of coal fuel and a greater demand. John Billingsley commented on the use of lime in agriculture in his **General View of the Agriculture of Somerset** in 1795, estimating that a kiln 17 ft high with a diameter of 12 ft at its broadest point, would cost £10.0.0 to build, could supply 480 bushels of lime per week, and use 120 bushels of refuse coal at twopence per bushel at the pit-head or threepence with carriage to the kiln site.

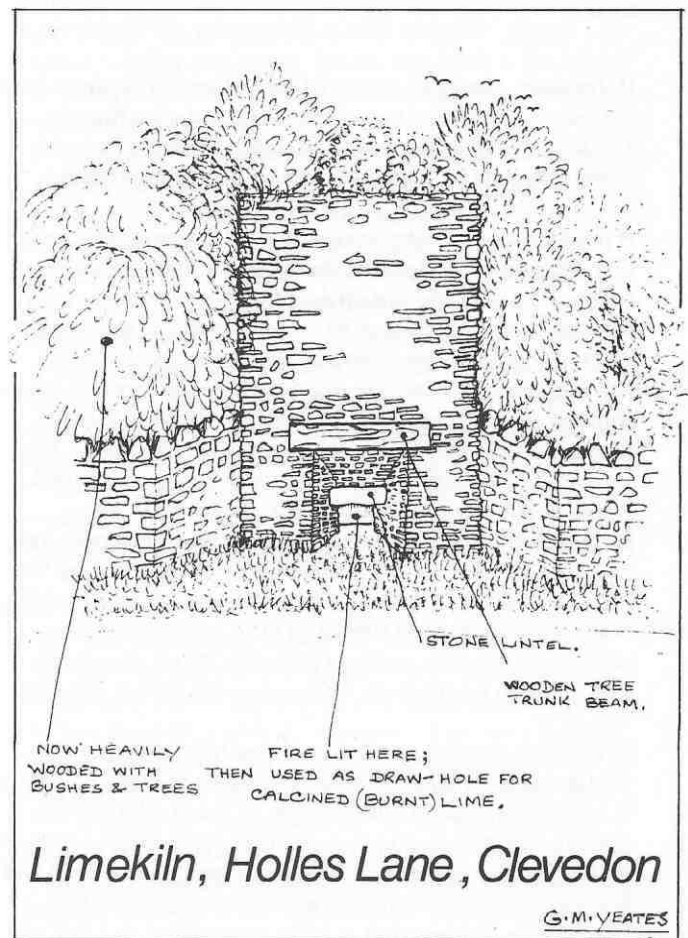
The traditional stone-built continuous limekiln could still be seen locally in operation until quite recent years. A Keynsham kiln used for producing hydraulic lime (builders' lime or brown lime, capable of setting in wet conditions) from blue lias limestone was photographed working less than ten years ago. BIAS members are collating information on the industry and its sites in a survey which will continue over a long period because of the extent of the information. Mrs Yeates, a local historian in Clevedon has independently been recording the remains of kilns in her neighbourhood and has sought out elderly inhabitants with memories of their operation. She found that brushwood and timber was largely used to fuel the local kilns because it was so easily available, and she returned recently to her informants to confirm this particular method of working the limekilns of the Clevedon area. JMD

In the siting of a limekiln at Clevedon there were usually two main requirements. One was the suitable limestone for burning, the other was the close proximity of woods to fire the kiln. The kiln, of stone from the quarry in which it was situated, was built into the side of the hill, so that the raw material and wood for fuel could be taken on level ground to the top of the kiln, and the calcined lime, when removed from

the draw-hole, could be taken to the road, also on more or less level ground, and so to the fields, farms, cottages and builders where it was to be used.

For the article I investigated the limekiln at Brown Rock Quarry, Walton-in-Gordano or Old Walton. (I am very much indebted to Mr Watts, the farmer at Down Farm for his guidance and to Sir William Miles, landowner, for permission to enter the land). All except the top part of the quarry is completely hidden by a green sea of trees and bushes which have taken over the quarry and kiln. Armed with a slasher, Mr Watts literally carved a path under and through the trees and bushes to the quarry, then to the top of the kiln and then down to the bottom of it in order to see the complete lay-out.

Mr Watts later interviewed for me a man who, when he was a boy, used to help the last man to work the quarry, and found from him the answers to my questions concerning the method of working the kiln and how the lime was used on the land. The last man to work this quarry was Bill Kitchen; he died forty to forty-five years ago and is buried in Old Walton Churchyard. There was no one to follow him in this lime-burning work and so the limekiln has not been used since.



As far as it is possible to judge from their various remains, local limekilns were built on the same principle and to the same measurements. The shape was an inverted cone; the top completely open and the bottom narrowing in to the draw-hole, with a drop below the draw-hole to the ground of approximately two feet six inches; (it is difficult to be precise because of the debris there). There is, however, a difference in the kiln at Old Walton and the others I found, in that it had another kiln at the side of it. This one was obviously much older and evidently had been discarded for some reason or other, and a second one built adjoining it. The older one had not been used in living memory.

The method of working the kiln was as follows. From the top, small dry branches were dropped down, and then larger ones and still larger ones, until a good deep bed of fuel was made. On to this was tipped several cartloads of limestone. Then another bed of fuel was laid and then more limestone until the top was reached. Next the fire was lit from below at the draw-hole and started to burn fiercely as the heat spread through it. Indeed, at the Old Walton Brown Rock Quarry the stones of the wall of the kiln, as we peered in from the top, showed all the signs of having been pitted by the fierce heat. The fire went on for many hours and even days until all the fuel had been consumed and was allowed to burn itself out.

The man who kept watch on it while it burnt had two tools. One was a long-handled shovel, with which he frequently shovelled back the wood-ash and the burnt, or calcined, lime into heaps ready to be carted away when cooled. The other tool was a very long rod of iron, which was poked down from the top to release the limestone if it jammed in the draw-hole. This was the process for one burning at a time.

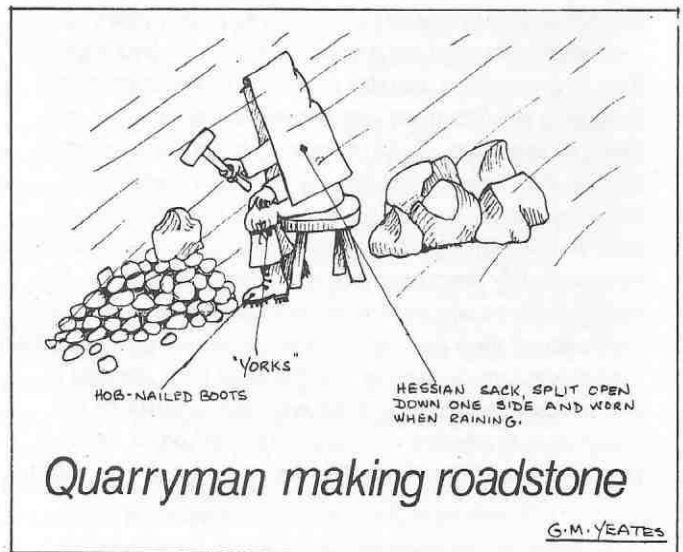
If, however, they had plenty of orders for the calcined lime, the burning was continuous for weeks and even months. The kiln was topped up with alternate layers of fuel and limestone, as it burned lower and could accommodate it.

It might be appropriate at this point to mention the lime-kiln situated at the top of Limekiln Lane (now more pretentiously called Highdale Place) and fed with lime stone from the quarry that used to be worked in the top end of what is now Highdale Avenue. This quarry ceased to be worked, and the final rock was blasted away to make a way through across Chapel Hill into Lower Linden Road at about the time that the Methodist Church was built. The year of that was 1882. My father who was born in 1864 remembered it and used to tell me about it. At this particular site there are no woods nearby which could have supplied the fuel but the location can be explained by the fact that this was a later kiln than most of the others and the fuel used was coke breeze. This is coke which is too small to be used for ordinary purposes, but it served very well in a kiln where there is a more-or-less forced draught.

In size, the limekilns were about nine feet in diameter (inside measurement) and about eighteen feet deep. Again it is difficult to be precise because of the amount of debris piled in the bottom and loss of stones from around the top, which reduces the height. But the Brown Rock kiln at Old Walton was in a remarkably good state of preservation, so that I think eighteen feet is fairly accurate.

When the Clevedon lime was burnt and ready to be carted to the customers, it was used for the following purposes:

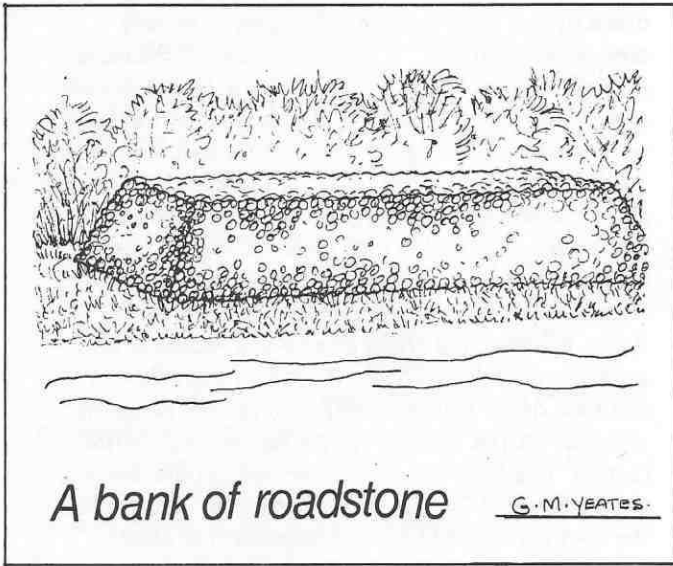
- a Spreading on the land as a sweetener. Not, of course, on grass fields where it would have burnt the grass, but on ploughed ground. The method was this. The horse and cart (filled with burnt lime) was led into the field. The carter unloaded two shovels full of lime in a little heap then moved on about five yards and unloaded another two shovelsful. This was repeated across the field; then about five yards from that row he started the next row of little heaps, and so on until he had finished all the field. It was usually done in the autumn; all winter long the rain and snow would slake the lime until the little heaps swelled together, covering all the ground. In spring the field was ready to plough and sow.
- b The burnt limestones (bigger ones) were sold to cottagers and farmers who slaked them in buckets (simply by pouring cold water on to a stone in a bucket) when they cracked and split and boiled and bubbled. Into this fluid was dipped the paddle-brush, and it was then brushed upon the inside and outside walls of cowsheds, barns, farmsheds, privvies, coalhouses, sculleries and such. It dried snow-white and acted also as a disinfectant. I used to help my father do our outbuildings sixty years ago, getting the limestones from Coles' quarry in Holles Lane.
- c Lime-putty; this was already slaked and stored in a lime-pit. The thick viscous putty-like substance was loaded in carts and sold to be watered down and used for white-washing large areas.
- d Lime-putty, the same as above but, used as it was, for making, with ashes, into mortar for building work, especially for plastering mortar.
- e Sometimes in processing hides, for de-greasing them.



As already mentioned, lime-stone for burning formed only a very small part of the quarry's production. Most of the stone was used for house and cottage building and for road making. For road-making it had to be broken down to a

fairly uniform small size. In the case of Brown Rock Quarry at Old Walton this was done on the spot. A man, usually an older or partially disabled one, would sit all day and every day breaking down the stones with a hammer. Often his eyes were protected from flying pieces by goggles and when it rained a sack, split down one side, was put over his head which kept him dry for some hours.

The quarry at Black Rock, Nightingale Valley, had its own weighing machine and sold stone in quite large quantities over a wide area; but the quarry at Old Walton had no weighing machine and only sold locally. How then did they measure the stone? The stone-breaker shovelled the roadstone into long banks as he worked it, which were a yard in



height and a yard in width at the top. At the bottom, of course, it was wider as the sides usually settled themselves at an angle of 45 degrees. Then the roadstone was sold by the yard. A yard of stone weighed about twenty-five hundred-weight. And for that labour, for almost all the hours of daylight there were, taking the year all round, a man's wages were ten shillings a week. At least, that is what my great-grandfather's wages were in his later days, say about 1850, and he was a farm worker.

### The industrial archaeology

Considering how very much smaller than it is today Clevedon was a hundred years ago, it is surprising to discover that in the immediate district there were no less than seven lime-kilns. These were situated as follows:-

- 1 One at the top of **Limekiln Lane (Highdale Place)** (ST 409713), fed from the quarry in Highdale Avenue, finally blasted into a through road about the year 1882.
- 2 Two in **Holles Lane** (ST 417726), with plenty of woods both sides for fuel. One is in a fair state of preservation, on the right hand side going up and about twenty five yards past some double gates covered in corrugated iron. These gates lead into the old quarry. The front of the limekiln can easily be seen and examined from the road.

This one was a brown limestone kiln. Opposite on the other side of the road was another, but it has long been pulled down and the garden of a house sited where it once stood. A white limestone quarry this, and was the one where my father and I used to buy our limestones for slaking.

- 2 On **Dial Hill** (ST 409720). This one is completely covered in bushes, nettles and weeds. Just sufficient of it and the quarry behind can be seen to identify it, but over the years it has been almost demolished. To reach it from a point opposite Old Park House, it is necessary to climb a bank and negotiate a hedge, then thread one's way through bushes and waist-high weeds until almost reaching the Cricket Field. There the remains of the kiln can be found with the quarry behind it. There are no Woods here, although there could have been at one time, or perhaps coke breeze was used as the fuel.
- 3 In **Bennett's Ripple** (ST 414724). This example is in a fair state of preservation at the front and could be saved with a little trouble and labour. But the cone where the stones and fuel were loaded has been filled to the top and a garden or rockery made on it. It can be plainly seen from the path winding down through Bennett's Ripple to Swiss Valley, and is situated at the bottom of a bungalow called Ripple Mead, Edward Road South. There are plenty of woods for fuel here.
- 4 **Old Walton** (ST 425739). This kiln on the right hand side past the top of the village street, at the point where the golf course sweeps down to the road. Looking back from the bend of the road (where you turn in to the Back Hills) one can just see the top of the quarry on the west side of the common in a mass of green; trees, bushes, nettles and weeds. Under this cover is the best surviving lime-kiln of the locality, and as near perfect an example as is likely to be found, which deserves to be opened up and preserved before it is too late! There is even a hay shelter between the front walls made, just as a roof would have been constructed, to protect the men working it from rain and snow in the days when it was a working kiln. Ample woods for fuel stretch each side of it. So warm and sheltered is the remaining floor of the quarry, and so hidden from vandals, that a variety of plant life abounds from tiny lichens to spindleberry trees: a fine location this. From the quarry floor to the gate into the road, it is quite easy to picture how once it was a busy country quarry, producing stones for houses, cottages, farm buildings and roads as well as lime for the fields and for white-washing the homes and farms.
- 6 Up the hill along the Coast Road and then off to the right into **Nightingale Valley** (ST 452750) is the last of the local lime-kilns that I found. It is at the roadside, the bottom end of the quarry, and has been made a feature in a grassy setting. However, it is only a facade; the cone of the kiln has long been filled to the brim, and one can walk up round and stand on the top. The woods which once supplied fuel are there still and the quarry, now worked by modern methods, seems to be thriving. Perhaps an understanding owner found time to preserve a link with the early days of the small quarry in Nightingale Valley which developed into a large one.