

# Lime and Lime-Kilns

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The use of lime (oxide of calcium, CaO) to increase productivity of the land dates from around the mid-seventeenth century. Limestone-gravel, rotten limestone and calcareous sands were used directly on the land before this, and from evidence of the size of some of the old disused pits remaining, may have been used for 1,500 years.<sup>1</sup> The use of lime with its quicker effects was widely adopted. Gradually, where limestone was available every farm or farm cluster had their own lime-kiln.

The method of producing lime involves intense heat in an enclosed area, by which the limestone disintegrates burning and producing the lime. Much of Co. Kilkenny had suitable rock. There are many types. "The blacker the stone, the whiter it is said the lime will be, and the harder the stone, provided it is purely calcareous, or nearly so, the better the lime".<sup>2</sup>

There is also siderocalcite (found at Freestone Hill and extending westward towards the Nore river) which was used in the building of lime-kilns, as it cannot be burnt into lime. This type was called by the masons, 'Free-stone'.<sup>3</sup>

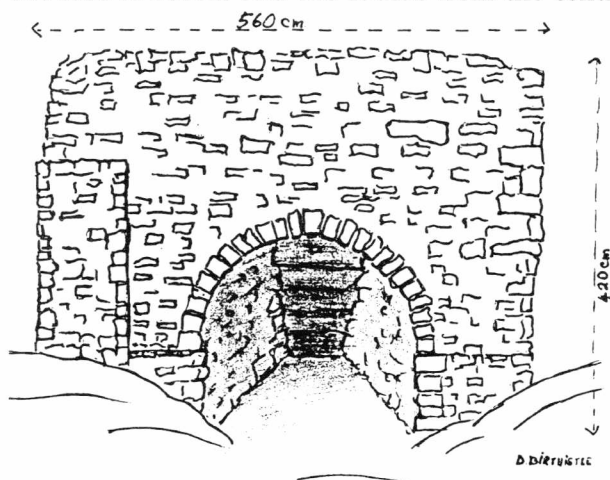
E. Estyn Evans said in *Irish Foldways* (p123), "The small lime kiln gave way to the large quarry kilns and coal replaced turf or sticks as fuel. The little pot kiln of sods and stone filled with alternate layers of turf and limestone, may be met in the west, but in general the home burning of lime did not long survive the famine".

The kiln was loaded from the top with locally available fuel, usually layered with limestone, and fired from underneath. It sometimes burned for days. The stones were changed by the intense heat into lime, which was collected from the opening at the bottom of the kiln.

In addition to agricultural use, lime slaked with water and mixed with sand and so reforming into calcium carbonate, provided mortar for stone buildings. 'Whitewash' used to brighten the houses; the main ingredient was also lime.

On the land the action of the lime, as well as providing elemental calcium, changed the pH of the soil, thus releasing and exhausting other nutrients, hence the old Irish comment "Lime enriches the father, but impoverishes the son". In this century, due to technological advances and more enlightened agricultural knowledge of the correct balance of the soil, government policy and subsidies replaced lime with crushed limestone (reverting to pre-seventeenth century ideas). This, with natural or artificial fertilisers brought the final demise of the lime-kiln, though many attractive ruins still dot the landscape. One such is at Loughnaman, in Purcells Inch near Lavistown on the Sion Road, about 4km east of Kilkenny. It is situated just west of a stream which flows south-west through a little valley with a quarry, before joining the Nore. The kiln is buried, like most of them, into a natural rise in the ground, thus facilitating access to both the top to load the stone, and the underneath to draw away the lime. It is constructed of rough dressed limestone (the proximity of the Colles Marble Works might account for the quality of the work), with odd irregular undressed stones of sandstone. The total height is 420cm, width 560cm and depth approximately 250cm (visible into the bank).

The arch is formed of twenty-five stones, twelve either side, mostly tapered, and the key stone. The diameter of the arch at the face is 260cm and the radius from the centre up



100 cm. The depth at floor level is 205cm and the centre back is 60cm wide.

The back face is raked up at an angle of approximately 45° to intersect with the roof at approximately 120cm from the face. This is formed of four large stones with some smaller fillings, the largest measuring 90cm wide and 40cm high (visible). The vertical part is formed of one large slab. Underneath the rest of the arch there are rough stones. The technique is corbelling. Lime mortar was used.

There is an open 10cm square on the vertical face at the back, running horizontally in – now blocked at about 55cm with soft infill. At the highest point there is a flat capstone supported on three horizontal stones, which were added when the kiln had fallen into disuse and was filled in for safety.

The arch rests on a narrow plinth 10cm wide, about 100 cm from the ground. There is evidence of a possible second plinth on the right hand side on the ground, one stone at the inner corner being visible. There is an anta type projection on the left side, approximately 25cm deep and extending 220cm above the plinth. The function of this is obscure.

The top stones of the kiln are not dressed on the horizontal. Both corners are uneven, a full course and the two stones at the corners of the next course could be missing. There is a large loose stone at the left hand side of the kiln which could be one of the corner stones.

The disused quarry face is 250 meters upstream on the north side, but may have been on the south side of the valley as well. This lime-kiln was very overgrown until some years ago when the owner cleaned it and added daffodils and rockery plants. It now forms an attractive feature when driving towards Kilkenny.

### **Acknowledgement**

I would like to thank all who helped in compiling this article, particularly Sinead Mahony.

### **Notes & Sources**

1. William Tighe, *Statistical Observations Relative to the County of Kilkenny*, Dublin 1802, pp443-445.
2. *Ibid.*, p91.
3. *Ibid.*, pp91-92.