

## COLLYWESTON SLATE MAKING IN 1875

Collyweston Slates from Lincolnshire and Stonesfield Slates from Oxfordshire (Taynton Stone) are different from most other stone slates because they are split by frost action. In 1875 Judd<sup>1</sup> provided a first-hand account of the manufacture and use of Collyweston slate. The version of Judd's report quoted here is from Woodward<sup>2</sup> 1894 and includes some of his additional notes.

... the Collyweston Slates have been dug over a considerable area, old pits being traceable from Wothorpe near Stamford to the western side of Collyweston, a distance of more than three miles. The valuable fissile character of the beds is merely a local accident; and in some locations the bed of stone has been followed and found to become non-fissile and in consequence worthless for roofing purposes. There is only a single bed of stone (the lowest limestone of the series) which is used for making roofing-slates. This varies greatly in thickness, being often not more than 6 inches thick, but sometimes swelling out to 18 inches, and in rare cases to 3 feet; while, not unfrequently, the bed is altogether absent and its place represented by sand (or sandstone). Rounded mammillated surfaces, like the 'pot-lids' of Stonesfield, abound in these beds.

The slates are worked either in open quarries or by drifts (locally called 'fox-holes') carried for a great distance under ground, in which the men work by the light of candles. The upper beds of rock are removed by means of blasting, but the slate-rock itself cannot be thus worked, for though the blocks of slate-rock when so removed appear to be quite uninjured, yet, when weathered, they are found to be completely shivered and consequently rapidly fall into fragments. The slate-rock is therefore entirely quarried by means of wedges and picks, which, on account of the confined spaces in which they have to be used, are made single sided. The quarrying of the rock is facilitated by the very marked jointing of the beds, a set of master-joints traversing the rocks with a strike 40 degrees W. of N. (magnetic), while another set of joints, less pronounced, intersect the beds nearly at right angles.

During the spring of the year the water in the pits rises so rapidly that it is impossible to get the slates out. The slates are usually dug during about six or eight weeks in December and January. The blocks of stone are laid out on the grass, preferably in a horizontal position. It is necessary that the water of the quarry shall not evaporate before the blocks are frosted, and they are constantly kept watered, if necessary, until as late as March. The weather most favourable to the production of the slates is a rapid succession of sharp frosts and thaws. If the blocks are once allowed to become dry they lose their fissile qualities, and are said to be 'stocked'. Such blocks are broken up for road-metal, for which they afford a very good material. The limestone beds above the slate-rock are burnt for lime

After the blocks are split, the slates are stacked on edge in circular piles or heaps. Subsequently they are shaped, and again stacked on edge according to size.

The slates are cleaved at any time after they are frosted. Three kinds of tools are used by the Collyweston slaters. The 'cliving hammer,' a heavy hammer with broad chisel-edge for splitting up the frosted blocks. The 'batting hammer' or 'dressing-hammer,' a lighter tool for trimming the surfaces of the slates and chipping them to the required form and size. The 'bill and helve,' the former consisting of an old file sharpened and inserted into the latter in a very primitive manner. This tool is used for making the holes in the slates for the passage of the wooden pegs, by means of which the slates are fastened to the rafters of the roof. These holes are made by resting the slate on the batting hammer and cutting the hole with the bill.

The slates are sold by the 'thousand,' which is a stack usually containing about 700 slates of various sizes, the larger ones being usually placed on the outside of the stack. The slates when sold on the spot fetch from 23s. to 45s. per thousand. Many of the Collyweston slaters accept contracts for slating, and go to various parts of England for the purpose of executing their contracts.

The land at Collyweston is generally held by slaters by copyhold, the slaters paying 6s. 8d. per pit' to the lord of the manor (a 'pit' is 16 square yards) with an extra charge of 1s. 6d. per pit to the measurer. A few workings are rented of the lord of the manor, the slaters paying 30s. per pit with an additional 1s. 6d. for the measurer. These payments are made every year at the annual 'slaters' feast' held in January. The manner in which the slates are placed on the roof is as follows. The largest are laid on nearest the wall plate, and the size of the slates is made gradually to diminish in approaching the ridge. The ridge itself is covered by tiles of a yellowish white tint, made at Whittlesea, and harmonising well in colour with the slates themselves. The larger slates are, in the ordinary way, fixed to the rafters of the roof by means of

wooden pegs driven through a hole in the upper part of each slate. But roofs are often covered with small slates which are fixed by mortar. ....

The slates of Collyweston are worked with more or less vigour at the present time [1889], although in many new houses built in the neighbourhood of the quarries, and at Stamford, brick and Welsh slates or red clay-tiles are employed, in place of the freestone and Collyweston slate.

In colour the rock is a buff and blue-hearted stone, so that some of the slates are blue, others yellow, and many are parti-coloured. The pale coloured slates when put up, are said to darken on exposure. The slates are usually cemented as well as pegged on to the roofs, hence they do not fall away if cracked. The blocks that are raised from the open quarries and galleries are of irregular shape.

The slate-pits at Kirby are now almost entirely abandoned, and they are only occasionally worked near Dene Lodge.

1 Judd J W, The Geology of Rutland and Parts of Lincoln, Leicester, Huntingdon and Cambridge, Memoir of the Geological Survey, London, HMSO 1875.

2 Woodward H B, The Jurassic Rocks of Britain Vol IV The Lower Oolitic Rocks of England (Yorkshire excepted), Memoir of the Geological Survey, London, HMSO, pp483--4 1894