CAREER OF A STONE CRAFTSMAN

Elsewhere on www.eastcombearchive.org.uk Paul Beer has described his early years in 'The Lost World of Eastcombe.' Here he continues his story, taking us through the traditional training of a stonemason and his transition to being an expert Cotswold stone roofer (another world in danger of being lost totally). Before describing his career, however, in his Introduction Paul gives us a necessary short lecture explaining the geology, history, and qualities that make Cotswold stone a unique and inimitable building material – the proper working of which needs the skills developed by craftsmen through the ages. [MB May 2025.]

INTRODUCTION

Famous for their natural beauty, the Cotswolds are known around the world. It is not the appearance of the hills, however, that makes the region so distinct from other parts of the country but what lies 'beneath their skin.' There is a Jurassic limestone belt, 190 million years old, that stretches diagonally across England from the Dorset coast up to Yorkshire and its stone has been quarried as a building material all through known history. Churches, cathedrals, mills, colleges, town halls, barns, universities – and Cotswold cottages – stand for centuries, the natural colour of the stone blending with their surroundings and pleasing the eye.

Distinctive in appearance, this stone is known as 'oolite' from the egg-like fine grains that form it. There are two basic layers of oolite, with 'Inferior Oolite' lying below 'Great Oolite'. Although it is the older stone, and despite its name, Inferior Oolite is not a stone of lesser quality. Containing mainly 'ragstone' with some 'freestone' (more fossils are found in this older layer), the strength and durability of Inferior Oolite make it suitable for many jobs – dry stonewalling, for example.

We know that the world was covered by seas before lands reached the forms we recognize today. Tides and shifting silts and sands laid down the sea bed over millions of years, and gradually the calcium-rich remains of little creatures were compressed in layers, strata, that became the limestone we know. This explains why the colours and textures of the stone vary through the Cotswolds, and why many fossils are caught in it. Cotswold stone strata are not even in depth or consistency. While the rock dried out as the seas retreated, some cracks formed which create natural joints that quarrymen can exploit as they extract the stone. All the beds are roughly horizontal, but climatic changes made the whole region tilt upwards to the west. Change continued through the ice age – for that matter is still continuing infinitesimally slowly. In places, for example, whole wedges of stone slipped downhill and ended side by side with much older clay beds.

Some kinds of limestone are more workable than others, and where the stone has a high crystalline content it is best for dry stonewalling. In other parts elsewhere, a softer type of limestone is easier to work, to shape into stone blocks for building work, or carve for decorative sculpture. This is freestone. Masons use beechwood or applewood mallets while working freestone: taps with a metal tool sends vibrations through the whole block and can cause fractures or flaws.

In parts of the Cotswolds, soft clay remains between hard strata, and this easily permeable layer is where springs of water occur – the so-called spring lines. This soft material became known as 'Fullers Earth' from its use in the wool industry, the process known as fulling taking place in a slurry of clay which removed natural oils from the wool fleeces, making them soft and workable. In opposition to this usefulness, where fullers earth occurs close to the surface it makes the ground too unstable to be built on.

Great Oolite provides the type of stone, freestone, that can be seen for example in the handsome buildings of the city of Bath. This layer also has what is known as 'the Pendle' which is extracted in boulders – in effect enormous slabs of stone. These can be split deliberately by workmen adding force to the natural fissures made as the water content freezes in cold weather.

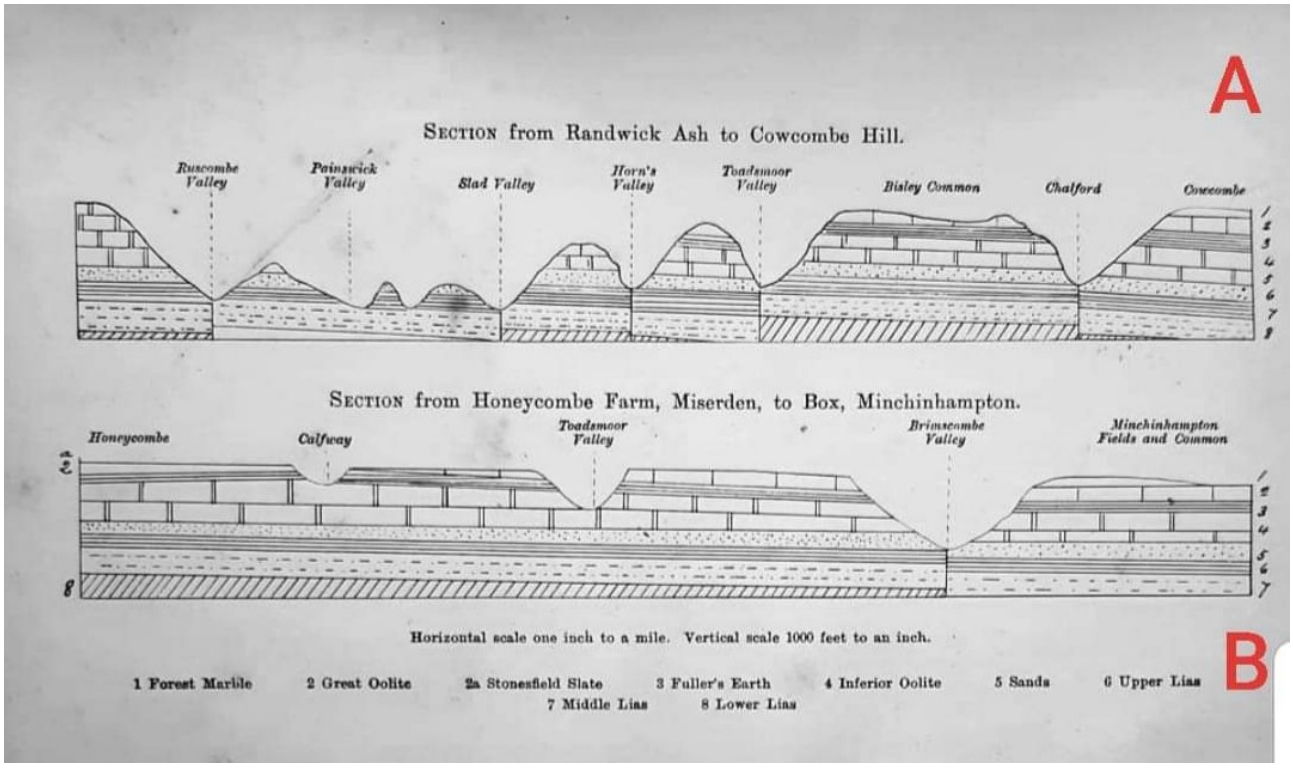
There is an Oxfordshire village called Stonefield so the sort of limestone found there is called 'Stonefield Slate'. This stone exists not far from Eastcombe in the ground near the Calfway. The frosting method reaches back at least to the Roman era in Britain. Extracted stone slabs were laid out on the ground and watered constantly because it was vital not to lose the inner dampness known as 'quarry sap'. The water seeped between the natural layers in the stone and when it froze in very cold weather the expanding ice would split the stones. After frosting a few taps with a cleaving hammer would make the stone separate along its 'veins.' All that remained then was to shape and dress the slates, and add the hole needed for pegging the slate to a roof.

Across the Cotswolds it is not uncommon to see a grassy field that has a scattering of tumps (hillocks) across it. These are not necessarily a sign of prehistoric barrows, far from it – the mounds are more likely to be an indication that there was a quarry nearby and discarded shards of stone accumulated as tilers shaped their slates. Clearing them away would have been too big a task.

In parts of this area it is also possible to find a type of limestone known as Forest Marble, an unexpected name which originates from the old Forest of Wychwood in Oxfordshire though deposits exist through this region (including at Tetbury and Naunton). This is a shelly sort of limestone which can be polished, so it is useful for flagstones for instance. It also provides 'presents' – a thicker type of

stone tile that can be used for roofing. Many of the earliest stone tiles are likely to have been this kind and this term, presents, is only used in the Cotswolds. Workmen saw them as nature's gifts as they were ready to use. Quarries that yielded them were seldom more than 10 feet deep. Knowing the weight of stone tiles (see Appendix 3 on p39), and allowing for it, is of overwhelming importance during construction work. The pitch of a stone-tiled roof was never below 45 degrees, and between 48 and 52 degrees was better. There was a question of mechanics – the flatter the roof slope the stronger the underlying beams and rafters had to be. Also, a low pitch when exposed to wind and weather was vulnerable. Rain and snow could drive under the butt end of the tiles, leading to later problems of damp penetration. In recent years there have been examples around Eastcombe of architects having designed too low a pitch for the timbers to be able to support the weight of stone tiles – and the solution unfortunately was to change the specification to slate or reconstituted stone tiles, rather than correct the pitch of the roof.

Other strata that should be mentioned are sands: Upper Lias which is predominantly clay with some stone intrusions; Middle Lias is clay; and Lower Lias which is mostly clay.



This illustration of local relevance is taken from a Victorian publication produced in the days when there was increasing interest in history revealed through geology. It can be seen that that the strata are consistent vertically, but upper layers have been worn away as river valleys have formed through the ages.

When considering stonemasons, incidentally, there are some useful terms to know. A 'master mason' can undertake skilled decorative work such as the vaulted ceilings that had to be repaired at King's College Cambridge. A 'monumental mason' can make carvings such as stone figure heads. A 'banker mason' works on fine details such as stone mullions and cornices. The term 'banker' relates to the great baulk of solid timber used for this specialist work. The stone being worked is often too large and heavy for a conventional work bench. Instead it is placed on a solid banker which the mason moves round as he develops his carving. A stone banker would be too resistant to the shock of blows from tools, perhaps causing cracks in the stone being worked – whereas a wooden banker has a certain amount of give so that the stone is not damaged.

MY CAREER

Having grown up at Eastcombe near Bisley near Stroud in Gloucestershire [*see* 'The Lost World', *www.eastcombearchive.org.uk*] it was natural that I should seek work fairly close to home. While still at school I had gained training and experience in a foundry where I learned pattern-making and the use of lathes and other metal-working tools... The work at the foundry could be hot and uncomfortable, so I did not argue when my mother got me an interview in the Stroud office of the long-established stone-working company Freemans. I knew many local men already working for them. Freemans, and Orchard & Peer, were the two surviving large stonework businesses in the Stroud area, and both employed hundreds of local men in a big variety of trades. Stone-tiling in this region was a very extensive industry. Before the First World War the output was tens of thousands of stone tiles per week, and hundreds of men were employed. It must be remembered that in those days men worked in the quarries during the winter when the weather made it hard to work on roofing – and when frost split the stone ready for shaping. During the spring and summer building work was done, with workers being needed either to add a roof to a new building, or a new roof to an old building. I estimate that 20 per cent of men working with stone would have been roofers. Nowadays, of course, tilers are required to work on roofs all year round.Freemans' base was in a quarry at The Camp, a hamlet on the Cheltenham road a couple of miles north of Bisley. The quarry, on the left just past the crossroads as one heads north, is filled now with a little close of new houses that were built about 30 years ago. As well as that and the Stroud office at Imperial House, the firm owned three working quarries. The nearest of these was at Througham and it was then already well over 100 years old. It produced a stone which was used for what were locally known as 'split stone tiles,' made by a frosting process in winter from limestone slabs up to five inches thick. The extracted stone was laid out uncovered, and rainwater penetrated fissures in the strata. When this froze the expanding ice broke the layers apart and tiles could then be shaped.

Freemans' yard at The Camp was sunk below road level in a former quarry

When I began work at Freemans in 1973 there were four apprentice tilers starting together. Two of them lasted less than a year, leaving me and one other - and we each worked with different groups of stone tilers. The local men in my group were Jim Stevens of Bisley, Ivor Gardiner of The Camp, Patrick Driscoll of Eastcombe, Cyril Dean of Bournes Green, Jack West of France Lynch, and Colin Webb. It was not uncommon to find dads and sons, or perhaps brothers, working together. Other families involved around here that I can call to mind were Hales, Hunts, Drinkwaters, Robbinses, and Chews, for example. Stone-workers at Freemans came from Bisley, Bussage, Eastcombe, Chalford, France Lynch, Oakridge, Sheepscombe (as they had done for centuries). In 1973 Freemans' contracts manager was Derek Shergold. He was an ex-plumber who lived next to Chalford Hill School.

My first job was making stone tiles by dressing them into shape from the split stones. Every day at 7am I was picked up at the Eastcombe crossroads by Jack West. We went on to Bisley to pick up more tradesmen, including two stonemasons from the same family – Mike and George Hale. With them were

Jim Brunston, Roger Stevens and Paul Hemmings. I got to know Mike better later. Freemans always had many projects going on at the same time.

My first stone roof was at Holy Trinity Church in Minchinhampton and I worked there with Ivor Gardiner, Patrick Driscoll, Colin Webb, and Jim Stevens. I was also on block release, meaning I caught the train to Birmingham Roofing Centre once every two weeks. I stayed in Solihull, near the training centre which was for all sorts of roof coverings. Its area covered many acres of land with different shaped roofs taking different coverings. At 1.30pm on Fridays I would do the return journey from Birmingham to Gloucester, then on to Stroud, where I had to catch the 421 bus to Chalford bottom. A walk up Rack Hill took me to Westcot, my grandparents' house at Randalls Green – where I could be sure of a meal after that long journey. It was good to catch up on the week's news.

As time went on, after good training and experience on differing jobs, I moved on to working on contracts that Freemans had annually with Oxford University. I was involved with three colleges: St John's, Jesus, and Brasenose. Brasenose had the largest roof I ever worked on. It took more than 250 tons of stone. The roof itself can only be described as being like an upturned saw. It had many gables and swept stone valleys. All sets for these were cut on the ground before being hoisted up and laid on the roofs.

The largest local stone roof I worked on was at Painswick. The Gyde Orphanage there used 140 tons of Cotswold stone. It was enormous. The stone tiles were piled in graded stacks shoulder-high on the football pitch. Again, all the sets for the swept stone valleys were cut and laid on the ground, as were the gable end verges. These were laid out in preparation for being bedded on mortar afterwards, tile to tile.

This bedding of the tiles was most important, and it was the traditional way. In earlier times the mortar, 'lime torching', had animal hair mixed in it to strengthen and bind it together. Smoothed underneath afterwards, this torching kept draughts out of the buildings. Not doing the task like this, with mortar between each edge stone tile, can lead to weakness – and a stone tile roof is very heavy. On average a cottage roof can weigh a ton per 100sq ft, and considerably more than that if the tiles are presents. These days roofing felt is used under the tiles. Some workmen today put the tiles in position and then push mortar into the spaces. Done like this the mortar will shrink and crack, making the roof vulnerable in high winds. On the contrary, when the tiles are bedded properly the whole verge edge is bound together. A stone tiler who knows his trade will always bed the verges before he tiles the roof. A good tradesman will also always set out all the battens on the roof, having worked out the cover using the random

sized stacks – so that tile fixing becomes one process. In the process of laying stone tiles we needed to set up 'cripples' or proper scaffolding, with a one-plank-wide walkway. This was the only way to lay tiles accurately – and to stay safe. If reroofing is done in strips, copying part of the old roof, it will most likely be set out wrong. Those without experience copy what went before because they have never been trained to work out gauges (to measure accurately before starting work). A leaky roof will most probably be the result, but the customer only learns this when the felt underlay rots. Another giveaway sign was when an untrained roofer put up a batten and then a row of tiles instead of first battening the slope entirely. Freemans were quick to identify those who were not skilled tradesmen.

One of the most interesting stone roofs I came across was on Winchester College War Cloisters. Every regiment of the British army is represented there. I worked there through the record hot summer of 1976. We stayed in a transport café in Winchester. I shared a room with Jeff Pearce. The chargehand on the job was Bob Fern of Oakridge. He had been a 'desert rat' in World War 2 and I recall a funny story. He was a poor driver, always going up the grass verges along the roads, and one day Jack West said 'Watch it, Bob!' Bob replied, 'Don't tell me how to drive, Jack, I drove in the desert in the war.' Jack retorted 'There's more room in the desert, Bob.' We all burst out laughing – it was such a great reply and funny at the time. Well, the stone tiles used for that Winchester job were the largest I had ever seen. Many were the size of table tops, and it took two men – and sometimes four – to lift each on to the roof. The stone tiles were 'presents', not 'frost split.' They came from the stratum known as 'Forest Marble.'

The last major job I worked on for Freemans, however, was at the Rural Museum at Glastonbury in Somerset. Freemans got the job because they were the only firm with experience of using rendered oak laths. We were put up in a hotel, which was a luxury, and we worked 12-hour days. The roof was on a 200-year-old tithe barn which was being converted to use as a museum, and it was on the side of Glastonbury nearest to the Tor. Our team was Jack West of France Lynch, Jeff Pearce of Minchinhampton, Jim Stevens of Bisley, Colin Webb of Nailsworth, and A Pope of Stroud. The roof was made from 138 tons of stone brought down from Freemans – so much that along with Freemans' own trucks Wiggles Transport Company (a firm based between Dudbridge and Cashes Green) had to be used as well. It was while we were working on this job that David Freeman decided to retire and sell up the stone business which had endured for about 200 years. In 1977 he let it go to Elmers, a London company that had already bought a plant-hire business based in Bristol Road, Gloucester. Specialists in cranes and elevators, they were not the firm to keep going the very last of the older type of stone tile company. Freemans' sale to Elmers was to

prove a hugely bad decision. The first mistake was closing the offices of Freemans in Imperial House, Stroud, laying off the estimators and the contracts manager. These men were all ex-tradesmen who were very valuable to the company, with their connections and long experience. The expertise lost was priceless and irreplaceable. Two weeks later Elmers closed the yard and the yard office at Camp. They brought in time-and-motion people from London. One was placed with me. He had absolutely no understanding of stone tiling. He used timings based on concrete tiling as his standard – and it was crazy to apply that to stone. They also upset Oxford University, putting London bricklayers on work that needed stonemasons. Why not consult the people who know the job, whatever the context? I could see no future in these sorts of decisions, so when Elmers asked for voluntary redundancies I added my name to the list. This was an uncertain time but fate was to play its hand. I was told that the stone-roofing chargehand at Freemans' rival, Orchard & Peer, was due to retire in the next year or two. I went to an interview with the boss's son, Richard Orchard, and the contract manager on the 'tradition' side of the company, Don Butt. He was an ex-tradesman who had worked his way up. I liked this, and it was similar to Freemans' established practice. First I had to show certificates that proved I had passed my training, and then I was asked many questions – from what I knew to whether I could drive – but it was the ability to do stone swept valleys that helped me get the job.

I was sorry to leave Freemans, a traditional stone company doing work that I trained for and was used to. Interestingly, most of the work force there were veterans of World War 2 so were getting on in age. Still, the Monday after my interview I started my new job. There I met Oliver Hunt. I discovered his father was a retired stone tiler who at that time was 100 years old. According to Oliver his father lived at St Mary's in Chalford. Seven months after I changed jobs, the firm that had beenFreemans closed down in 1977. Many of the tradesmen came to Orchard & Peer to ask for a job, but there was no work for them. There were no other large stone companies for, certainly none like Freemans, established for centuries. I think if I had not acted when I did, my story would have been very different. At that time Orchard & Peer had become the last whose origins could be traced back to the early 1900s and I had an invaluable chance to be involved in traditional work. I learned that Orchard & Peer owned over 100 properties, rented out separately from the limited company. The business was divided into two. New building work – for example on housing estates – was run under contract manager Stanley Turner who lived in France Lynch next to the old post office... His wife was a Skinner before they married... The second part of the business undertook traditional building work and employed stonemasons, stone tilers, carpenters, and lead plumbers. The contracts manager was Donald Butt who lived at Fairview in Chalford. Both managers had come up through the business and knew it thoroughly.

Orchard & Peer had their works at Bowbridge to the left and right of the road up to The Bear at Rodborough - this shows the main building, which was formerly a fulling mill

To give an idea of the scale of this company: Orchard & Peer was sited at Bowbridge Mill in the Frome valley at Bowbridge. The yard, half a mile long, ran below the old British Oak – now the Bowbridge Arms – in both directions from the road that leads up to The Bear at Rodborough. To the right were workshops for cutting stone with a separate joinery where window frames and staircases were made. To the left was a large mill building and then several hangars full of scaffolding and plant such as cranes, dumpers, trucks, excavators – there was nothing this company did not have, it was the largest such business in the county. The site foreman was Bob Newman of Minchinhampton.

For the first few months I was put on property repairs – with a Morris van to travel around in. Mostly this refused to start, but luckily there was a starting handle with which to crank the engine. It was around this time that I worked with Archie Verender for the first time. He was older than me and had been at Dunkirk in 1940. The job was to replace lead gutters. He did the lead work and I removed the eaves stone tiles and refixed them after each lead bay (length) was

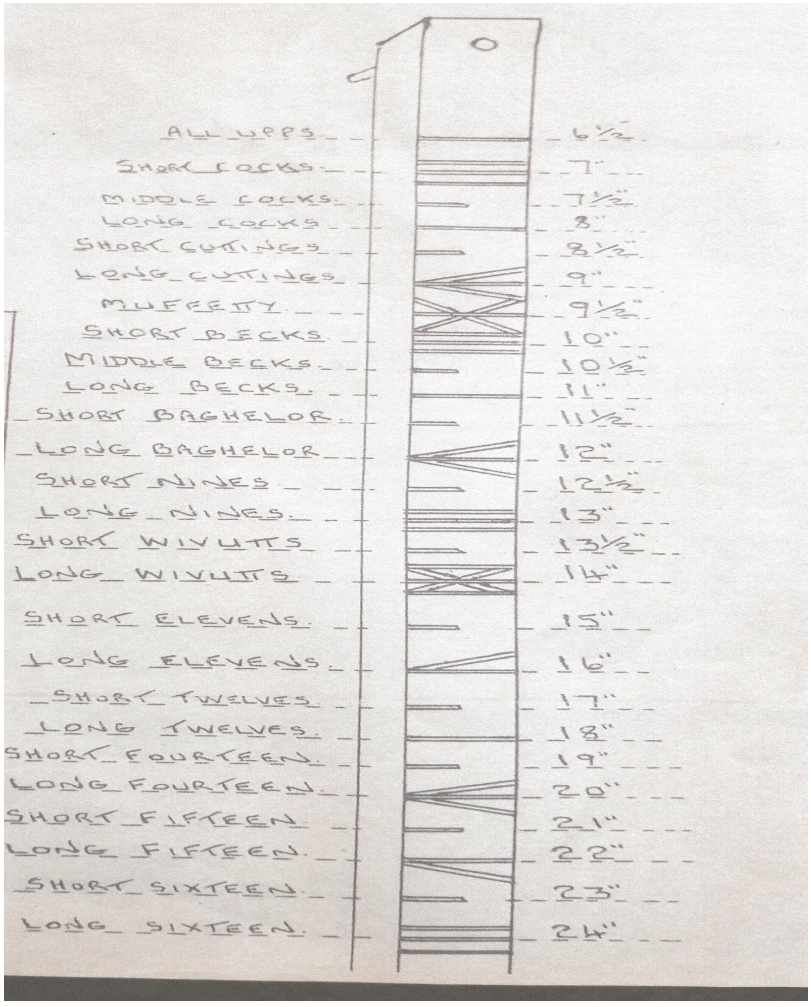
replaced. I worked alongside Archie a good few times – and he was a character one could never forget.

The first major stone tile roof I worked on for my new company was Whaddon church, in a team with Oliver Hunt, Derek Coates, and Leslie Rice – with Oliver as chargehand. I got to work, grading and sorting the stone tiles before setting out the roof gauges for battens. The roof was not huge. About 12 tons. It was followed by the stone roof of the church at Upton St Leonards, which I took over from Oliver as he was unwell. He had an ear infection that was upsetting his balance. It took some time for the doctors to get on top of this and Oliver suffered from it repeatedly till he retired. The last job that Oliver undertook was a very large roof in Gloucester. St Mary de Crypt was the home of one of the first Sunday schools, a new idea encouraged by Robert Raikes. Its roof was made of stone slates called Rags and Queens – three-foot slates. Oliver retired in 1979, having been at Orchard & Peer all his working life. In 1995 many who had worked with him went to his funeral.

In the winter of 1979-80 I was sent to reroof Horton church. On the first day I went there with Edward Evans (from Cashes Green) – and we couldn't find the church. This was very strange so we decided to ask a local where it was. The answer was a surprise. He told us the church was nearly a mile away, the village having been depopulated during the 14th century Black Death. The church and nearby manor house had become isolated. The scaffolding was up and I expect those men too may have had trouble finding the church. Edward and I had first to estimate and list all essential materials. A wooden shed went up. As well as replacement tiles there was a long parapet behind which new lead guttering was needed. The stonemason with us was David Horn of Nailsworth. The roof had 24 tons of stone on the outer elevations, but savings were made by using concrete tiles where they could not be seen.

After removing the old stone tiles we sorted through them and those that could be reused were placed in a pile. Another heap was made of those that needed holing, and another of rejected tiles. It was normal to deal first with the stones that needed dressing, and once done they were put on the good pile ready for grading and sorting into random lengths. The sizes were measured from the bottom of the peg hole in the tile, never from the top – the size was thus guaranteed and no attempt was made to stretch it. Using the hole to hang the tile means that the top of the hole is now the point of contact and this ensures that the overlap is always more not less than the estimate. When using the tile rule stick the same principle applies. If the tile measured falls between two sizes then it should always be placed in the shorter tile stack – not in the one that it did not quite measure up to.

Paul on wooden prop scaffold on Horton church in 1980. Measuring stick below



For my work on any stone roofing job I used a measuring stick that was graded according to the 'Bisley and Miserden' scale, which divided tiles into 26 different lengths. (See Appendix 3 on p39.) When stacking the tiles every one was counted and recorded in a written log. Lengths ranged from 6.5 inches to 24 inches, and each gradation had a different name (as can be seen in the illustration). The gaps between sizes as they grow smaller is one inch, Long Sixteen (24in) down to Long Wivutts (14in). Then on there are half-inch gaps down to All Ups at 6.5in. Largest tiles lie over the eaves, and the smallest are ranged below the ridge at the top of a roof slope. This is necessary because the battens across the roof lie closer together up towards the ridge, and therefore greater accuracy is needed in placing the tiles.

Looking at this picture of a stone-dressing pole hammer, you can see a sharp end and a flatter end. The flat end is for starting to cut, the sharp for finishing. When making a stone tile it is placed on a large pole stone that is upright – and usually one of the thickest and largest stone tiles is used for this. The tile stone, placed flat over the solid bearing of the pole stone, is struck with the hammer and the curve you can see on the hammer gives the spalled edge that is characteristic of Cotswold stone tiles. An experienced tiler can make half a ton of tiles in a day.

Pole hammer

Once all the stone tiles have been graded and sorted into their respective sizes, they can be counted to work out how many courses of each size you have. Once you know this, good practice is to mark gauges (the spacing) on to a batten rod the length of the rafter. This way any error is made on the rod, not the roof, and can be adjusted. On traditional stone roofs it is important to have the correct tilt (or 'kick') at the bottom – if the tilt is not enough then the stone tiles will 'cock off' the tile course below. The stone tile would not be sitting down properly and the tails would be exposed to driving rain or snow. The tilt off the base of the rafter should never be less than five inches and this insures that the tile is slightly further out than the head, with the tile lying flat and no pockets or cocking of stone tiles.

In 1981 we were doing a complicated stone roof at Forwood House, Minchinhampton. Trees were covered with their fresh growth of leaves, so when during 25-26 April there was a late blizzard the weight of snow brought down not only electricity cables but also some trees. One enormous branch fell on the war memorial at the bottom of Old Neighbourhood, Chalford, which made it difficult to get to the job. This was the conversion by Orchard & Peer of a row of cottages into a large house. Sir Robert Ricketts intended to move there from Forwood House itself. His wife Theresa was the daughter of wartime Chancellor Sir Stafford Cripps. She once said to me, 'Paul, I lived under a stone roof all my life and will end under one.'

Forwood

Architect Richard Faulkner designed the building and roofs. Some of the dormer positions were extremely tight to abutment walls, with many levels. I had been on this job less than a week when I suggested to Don Butt, the contracts manager, that I should list the stone swept valleys and cut the tiles for them at Orchard & Peer yard where there was a greater supply of stone tiles. This left Les Rice grading and sorting stone. For this job the stone tiles filled a 3-ton lorry. Orchard & Peer also had to find wider stone tiles for hips – which was difficult due to irregular shapes of the heads, the width of the tail needing to be greater in order to do the cut retaining the fixing.

After we finished at Minchinhampton we were to work at Selsley. One of the firm's farmhouses – Park Farm, Selsley – caught fire and sadly the tenant was killed. The house was lived in separately from the farm, and it was an artist named Simmons who died upstairs. I was one of the first to go to Park Farm after the fire and I saw Eastcombe booklets on the ground floor. There was an Eastcombe connection: through the 60s and 70s into the 80s Mr Simmons designed the covers for the newsletter edited by Beryl Freebury (as she recently confirmed). Stonemasons and carpenters were employed to restore the building and before they started I was taken by Don Butt to see what could be done to keep the rain out. Later that summer we renewed the stone roof.

After that, late in November 1981, we started on the stone roof at the disused chapel in the old cemetery at the top of Stroud. The Clerk of Works for Stroud Council, Ken Worsley, came to look at the job, banned the use of mortar and set up a temperature gauge. He said he would be back next day, little knowing... As the month ended the weather grew much colder. Significant amounts of snow fell three times through December and most days the temperature was zero or below. Orchard & Peer laid off a third of the workforce. It was the coldest winter for decades and a week before Christmas even the Queen got stranded on her way back to Windsor: she had to take refuge overnight in the Cross Hands at Old Sodbury! The weather seemed to be improving but two days into 1982 it turned colder than before Christmas. Ken Worsley called in to check his temperature gauge as usual. It stood at 14 degrees below zero. On 5 January Don Butt came to see us at work and he mentioned that snow was forecast again for our area. We were to cover what needed protecting. He had brought a bottle gas heater and told us to warm ourselves up every couple of hours. Trevor Gardiner, Dave Crachley and I set about putting a tarpaulin on the inside elevation. In those days covers were made of very heavy canvas. Ice was already a problem. Trevor said frozen stone would be impossible to work, so between us we moved 15 tons of stone into the chapel. A day and a half later blizzards hit us on 7 January 1982 and lasted for 35 hours – but longer at Eastcombe. Most places in the Cotswolds were cut off, and the roads were

impassable. I did not see my car in Eastcombe for a week. I tried to walk from home to Stroud but the drifts were too high and the snow was too soft. After another week it froze solid – so I could walk to Stroud. Trevor could get to work more easily as he lived in the town. We cleared the entrance of the chapel and could then bring out the stone tiles to dress and hole them, and grade and sort them into different sizes. A day later Don Butt walked up to the cemetery from Bowbridge offices. He told us most men had been laid off and asked what I could do. 'Carry on as normal,' I said . 'Really?' he queried. 'Yes, we got the stone in the church.' 'You boys just saved being laid off, carry on.' Well, we did carry on but freezing fog continued for another two weeks, the snow didn't melt, and although we did try to get on the rear roof the tarpaulin was like a slab of slippery concrete. Ken Worsley came and read the temperature, showing us it was 18 or 19 degrees below zero. Eventually we did remove the tarpaulin and work on the slope. I slipped on the ice halfway up and slid down, hurting my back. Had the kick boards not been in place I would have fallen right to the ground, but I was lucky. After the snow and ice came floods – we got the job done, but a lot of tradesmen did not get back on the company.

A snowy job at Stroud Cemetery in December 1981

In March 1982 I got married at Selsley church, and a lot of people from Orchard & Peer came to the wedding. I continued working for them, putting in 60 hours a week, doing many jobs; but the last large stone roof was in 1984. Film director David Puttnam had a stone mill that he wanted renovated and extended. This proved to be the longest project I worked on for Orchard & Peer. It lasted for more than a year. We were down to one tiling group, the rest having never returned after the 1981-82 winter. Orchard & Peer had scaled down men on the books and were using more subcontractors.

Somerford Mill

It seemed a pity. People had worked well together and going to work could provide some amusement. One funny memory I have from the mill at Somerford involved a plumber from Minchinhampton deciding he could take home some light fittings, so he filled a bag with some of them. Trevor Gardiner who worked with me decided to play a joke, so swapped all the bulbs for duds. We did not get to see the outcome, but the plumber did complain later that when he got home all the bulbs were *duff*. He never found an explanation...

In 1986 Orchard & Peer were involved on a project with another company, building on the River Avon. The main company went broke and brought down Orchard & Peer, or so I was told though not by anyone high up. The old firm went into liquidation. We were told to go to the offices at 2.30pm and a friend, Arthur Stark of Cainscross who was a carpenter, told me to take my tools with me. 'I have been through this before and we won't be back.' We went to the meeting and he was right. The receivers told us all to leave. Everything was locked and many tradesmen could no longer retrieve their the tools.

As it happened fate was to play its hand. In 1984 for Orchard & Peer we were working at Stinchcombe Manor – 116 tons of roof with many slopes, parapet walls, and lead gutters. We were working on a bonus system. The given time was 52 man-hours per 100 sq ft super (100ft x 100ft). For every hour saved we would get that hour as a bonus – so our gang went flat out for weeks to achieve this. Bear in mind that each ton of stone tiles had to be removed from the roof to the ground, graded, and replaced on the roof. Thus each ton entailed three

moves, along with installing felt counter laths and battens. This was a lot of work, and difficult to achieve in less than 52 hours.

Fatigue was catching up with us, but we could still have some fun. The whole of Stinchcombe Manor was empty so it made sense for foreman Bob Newman to use a wing for his site office. He warmed it with a coal fire, and one day Trevor and I put a sack over the chimney pot. Unknown to us a site meeting was taking place and to our surprise we smoked out not only Bob but also Don Butt – and boss Richard Orchard – and also the architect. We knew Bob could take a joke, but we had to meet Don for a warning. Then he smiled, said he had been on tools in his day and knew these little jokes – and said Richard found it rather funny anyway...

It so happened that Orchard & Peer had to do a concrete tile roof on London Road near to Thrupp. No one was available to set it out so Don Butt asked whether Trevor and I could work weekends. The rest of our group were tired and had had enough, so although we felt worn out ourselves Trevor and I agreed to do it. One Saturday, I was working there but not Trevor, he had overslept. I should have gone home myself, but decided – wrongly – to put up a steel ladder on site alone. As I neared the top, the ladder slipped out from under me. I fell, striking a stuck pole that turned me from landing on my back to hitting the road on my side. I had fallen 26 feet from a building, shattering my right leg, with my knee up by my crotch and the femur was left sticking outwards. I had help from a lady who tried to stop the bleeding, I was taken to hospital, and ended up with an 8.5in steel plate in my leg.

I was off work for five months. While going regularly to Stroud hospital to aid my recovery through physiotherapy, I was asked by Robert of Wheatleys to join them. Their yard was in Bisley Road and I had met Rob a few times. He knew I worked in stone and used to ask if I would join Wheatleys but I always had turned it down because I was happy at Orchard & Peer, but after I had been out of work for some time I was surprised to have a call from him. He said there was no reason why I could not join them then, so the following week I did. By then I had got behind on my mortgage, necessitating weekend work for many years to come.

To begin with the work was all with slate, or asbestos fake slates. I had cut hundreds of these and suppliers had always said they were safe – but then later removed them from the market. Only time would tell whether or not I had been affected. Robert wanted to get into stone roofing. He had been asked to price work for English Heritage but did not know how to estimate stone and asked if I could help. I agreed I would, and did it in the evenings. I worked out quantities and times and handed my estimate to him. I never knew what rates he charged,

but I was hoping this was a route to more interesting work. From this Robert got work on stone roofs for the next six months at Charlton Kings church, Whittington Cottage and Downfield House. A 16-year-old boy was trained in setting out roofs, and I found another tiler, Les, who had worked for Orchard & Peer. Robert then had to estimate for work at St Briavels Castle for English Heritage. We went to the castle the following Saturday and I went up as far as I could reach. The turret was nearly 70 feet high. I had done round roofs before so I knew the wastage on cutting was high. For example, if the area was 100 square feet then the cutting wastage would be 100 per cent due to many cuts. A lot could be worked out by measuring the base of the turret and using an angle finder for the pitch – that would be enough to work out the area. Wheatleys did get the job but there was not a penny for me. I was discovering Robert was tight. This was confirmed when he said later that if I worked hard he would pay me for every day saved. I had worked out the price for three men working for six weeks. We saved four days by starting at 5.30am, getting back at 7pm – but Robert made every excuse he could think of not to pay for the time saved. His gain was even greater because he also used us for four days on another job. I stopped doing stone estimates after that, and he never got another stone roof job.

Andrew Beer was born in 1984, and two years later we had boy and girl twins – Chris and Sally. My marriage broke up not long after that and I moved back to Eastcombe for a while. We divorced in 1987. At the time I had been building a 300-foot wall for a friend at weekends, and before that I did two more large roofs. Another thing that happened in 1987 was the death of my Nan Webb. In October she had moved from the house that meant so much to me as I grew up – Westcot at Randalls Green in Chalford Hill – to a rented place that was much more modern. After she spent her whole life with an outside toilet, no hot water on tap, and no bathroom, it seemed a great shame to me that she did not live to enjoy her new amenities. After such a hard life it would have been good to know a little comfort.

Soon afterwards, in 1988, the family could celebrate my sister Debra's marriage to Martin Stevens. The ceremony was in All Saints' Church, Bisley, and the reception was in the skittle alley of The Stirrup Cup. The Stevens family is large, and long-established in Bisley, so 150 people were there. A good few came from Bisley, and a lot from Wales including Nan Beer (who was born a Morgan). Sadly, she died in 1990. I was away climbing, tackling Napes Needle on Great Gable at the time and was told when I got back.

Reverting to the two big jobs tackled in 1987, one was on Holy Trinity church and the other was on Acre Street church rooms, both in Stroud. After those I started my own company, Bisley Roofing, but went back to Wheatleys in order to amend a swept stone valley project they were doing for a customer. By then

Les had also left the firm, and the 16-year-old had been laid off. Later I gave him a job with me.

The time had come to work for myself, and I registered Bisley Roofing Birmingham as a company in 1991. By then I had taken up a spare time activity with friends and we went hiking and climbing – 'scrambling' – and there is a brief account of our adventures in Appendix 4. At work, however, I had to learn how to run my own business. The first step towards gaining a job – producing estimates – would not be a problem as I knew the trade as well as anyone. I had kept records of times taken for jobs. The basis was 100 square feet multiplied by 100 square feet, known as a 100ft super. This could be broken down very easily, as one per cent of this area is one sq ft. This leads to accuracy, especially when pricing, for example, small dormers. Square metres are too big whereas square feet break down very nicely. All timings were based on this. If the job included areas such as valleys then time had to be added according to how much cutting would be required. Eyebrow roofs also needed extra cutting time, and round roofs too. If the job was a large one then setting up and clearing away time had to be calculated and added. Work with lead, such as step flashings, would be on the 'foot run,' ridging also. In that case, for example, I allowed 20 minutes per foot and that included mixing the mortar and erecting ladders – and the charge for pointing verges was calculated in the same way.

Running my own business was hard in the beginning. I had always worked for companies, and it was they who had gained what reputation was to be had. I was starting from scratch to make a name for myself. Knowing the trade was one thing but book-keeping was something to learn. And I made mistakes with advertising. 'Yellow Pages' brought me more inquiries from people who wanted to sell to me than people who had a job for me. Others wanted me just to look at a house they wanted to buy, using my free estimate to drive down the price. I found it better to stick to advertising in local parish newsletters.

In the early 1990s the country was hard-hit by recession, and construction work halved. A great many people had no work. In 1992 I was doing a stone roof and it rained for four weeks. I tried working in a waterproof plastic suit and this proved a mistake. I slipped on the wet roof and fell 20ft, landing on a pile of wood. I was hospitalized with a head injury but in two days I was back at work.

Among jobs tackled close to home was work on The Triangle, a big Victorian house that has been home to local doctors for much of the twentieth century. From the middle of the 1990s Dr Tim Crouch and his wife Sue have paid a lot of attention to the fabric of the building, and the roof has been replaced in stages. At one time between jobs the prominent weather vane was in danger of collapsing and the wooden fixing down the gable wall needed replacing. The

weather vane was take down and painted by Dr Tim while I put in place hard wood fixing capped with lead.

Another big Victorian house in Eastcombe, not far from The Triangle, is St Elizabeth's. This was divided into two private homes long ago, but in 1878 was purpose-built to be an orphanage, a private enterprise for a Miss Isabel Newton. The building does not bring to mind an institution but rather a 'gentleman's residence.' In 1992 we rebuilt part of a chimney for Caroline Driscoll who lived in the west wing of the house at that time. On a smaller scale across the way is another Victorian property, Hill Top, which was originally built to house the handyman working at St Elizabeth's. The present occupants, Gerry and Gill Moutrey, employ many trades to maintain the house in good repair. We replaced the stone oversale, and did many other repairs including pointing the south gable. Gerry is someone who works tirelessly for the community.

Round the corner at 22 Bracelands we did repairs from time to time for Olive and Dick Turner. Their house, built in the 1960s, came between the two phases of development, being the last Bracelands house with a steep pitched roof and at that time it lay alongside the remaining area of field. Dick worked on aviation projects at Filton. Olive, a retired teacher, appears in many village photographs as she has always taken part in many community activities.

In Brockley Acres we did many repairs for cartoonist Leo Baxendale. He is famous for having created the Bash Street Kids, and drew a lot of cartoons for the *Beano*. In fact, after his death in 2017 – having been in 2013 the second person to be inducted into the British Comic Awards Hall of Fame – the obituaries made plain how highly influential his work had been. Mr and Mrs Baxendale lived very quietly in the Eastcombe cul-de-sac for many years, and we helped keep their bungalow there in good repair.

2010 stays in my mind as the year my mother Pat lost her battle with cancer. Obviously work had to go on and late in November we worked on a project down in Bismore, in the valley below Eastcombe. The then owner of Bismore Cottage, Simon Boden, was generally working away but his neighbours at Honeyhill, Bob and Muriel Brooks, had the keys to the house. Bob opened the cottage every morning. Just about as soon as we began the weather turned extremely cold. It was many years since the frost had been so severe. Perhaps not everyone knows Bismore Cottage, which is a fine stone late seventeenth-century property placed high up the bank. There are lovely views from there, but reaching it is a workman's nightmare. There is no drive, just access on foot up a single steep and long flight of steps. At first we could drive down the Old Hill from Eastcombe, and up again without too much difficulty, but on 3 December snow fell and iced over. Deep in the valley temperatures stayed far

below zero: it is a different world from Eastcombe. We ended by walking down the steep path from the Lamb Inn, past the old WI hut and through the wood below where there are now steps cut into what has become known locally as 'Death Slide.' Bob and Muriel were brilliant, making cups of tea in the morning. With temperatures below freezing all day, and ice on the extremely steep lane, no wonder they had a Land Rover.

P Beer, R Grindley, A Beer, A Powell and C Beer
working for Bisley Roofing

I had arranged with farmer Fred and Joy Woolls to take to Tunley all the useless old tiles which we had removed. Then the huge lorry-load of new reconstituted stone tiles arrived at the bottom of Eastcombe green. On that day I had hired extra help with the steps up to the cottage in mind. The tiles were unloaded on to the green by crane and inevitably along came a lady, who she was I do not know, who said we had no right to do that and she would report us to the council. I did try to explain they were going to be moved that day, but that fell on deaf ears. Ray Grindley said 'Paul, thought she was going to *handbag* you' – and smiled. We did move the tiles. Ray and I stayed in Eastcombe while Andrew Beer drove a dumper down to Bismore, and up, repeatedly. Moving the tiles up the bank to the cottage were Chris Beer, Chris Wood, Tony Powell, and Mick Jones. This proved a long day but the job was done. On 20 December snow fell and stayed on the ground right over Christmas, though none fell on Christmas Day itself.

Eastcombe Baptist Chapel in the 1980s

Over time we did a lot of work in Eastcombe, on more than 40 buildings in total. One emergency I remember was for Dr Malcolm Lambert at The Yews. A big section of cottage wall, having been nudged by a passing large vehicle, had collapsed into the garden of The Old Bakehouse next door – leaving a gaping hole in the side of the Lamberts' house! I rebuilt the wall, and Joyce Lambert had us enclose a millennium time capsule in it. Malcolm also took charge when the clapper fell away from the bell of the chapel clock. The pivot rail had worn away after more than 100 years of use. To my surprise Malcolm came right up the ladders where we were repairing the roof and bell turret. It was then that he noticed the date 1747 on the bell, showing that it was older than the chapel itself which was built at the beginning of the nineteenth century. The turret was added when the chapel was greatly enlarged later, and it is thought that the bell was a redundant one from Bisley All Saints' Church when that was renovated. Bisley Roofing has done projects for Daniels who have many properties. Three stone-roofed cottages, a section of Hazle Manor's stone roof (at The Camp), Westonbirt School, cottages at Duntisbourne, Steanbridge at Slad... The company also was subcontracted to do a roof and the partnership employing us went broke. They did not pay any of the subcontracted trades people, and this nearly broke us too. I had to borrow thousands to pay for the materials and scaffolding, and I therefore changed our mode of working in order never to be so exposed again. As a result of coming close to financial ruin I wrote in to my future contracts that interim payments would be charged at agreed stages.

In 2016 we did two stone roofs in Eastcombe. One was to replace a slope at Brotherstones, facing towards Beam Ends. It was done in split stone tiles to match the original. Later, in June, we replaced a slope at the row known as Jasmine Cottages. Before this we had done in stone the rear slope of a cottage in Bisley High Street – and earlier we worked on a large stone barn at Stringers' Farm near Rodborough...

For nine years I did jobs at Througham Slad Manor for a senior lawyer who worked in London. One Saturday morning in 1997 he, keeping me on tenterhooks while we had coffee, told me he was taking me out, and I was to bring my tape measure and notebook. The mystery tour ended at The Bathurst Arms in North Cerney where, with pints in front of us, he pointed out the enormous stone fireplace. He asked me to study it – the mystery was over: he wanted me to build one exactly like it in the large barn and cottage he was planning to renovate at the Manor. I had to sketch it, measure it, and work out what materials were needed to build its twin in the barn – which I did. He liked to work like that. When we first met I did projects such as building stone steps, sills, thousands of yards of walls (both solid and drystone): many times I had trouble finding time to do his work, but then he suggested I set aside every weekend, and this I did whenever possible.

Interestingly, the immediately previous owner of Througham Slad Manor was Mike Oldfield. The barn was his recording studio. I was once shown a nearby smaller stable barn which had strong bars like a cage. 'That fellow Mike Oldfield kept a lion here, bloody crazy man. What do you think the people of Bisley would have thought if they had known that, Paul?' [I expect they heard it through the grapevine. Ed.]

I saw lead guttering at Througham Slad Manor, a type that is very rare now. Many large houses had a stone parapet at the foot of the roof, and behind it was placed a gutter with the lowest course of tiles hanging over it. This is how rainwater was caught and drained away. Metal called 'code lead' was used – up to code 6 – and it was very thick indeed. In 2012 we saw and replaced lead gutters of this kind at Hazle Manor, near The Camp. Such gutters have to have timber supports topped by horizontal boards to distribute the weight of the lead. It is very difficult to work with thick lead in cold weather: it is hard to dress, being rigid it will not bend easily. Used in six to seven foot lengths that we call 'bays', the work is done in stages. Each length overlaps the previous one slightly (by a one-and-a-half-inch minimum, enough to allow expansion and contraction as the ambient temperature changes). If fixed firmly it would be liable to split. I was taught this technique by a lead plumber – Geoffrey Neil from Minchinhampton – while working for Orchard & Peer.

I also did stone work at the other manor in Througham, originally on being called out on Christmas Eve because a section of stone tiles had been stolen. I had to get Bill, my late father, to come out with me as other workers had already broken up for Christmas. It was extremely late, and dangerous work in the dark. My father was not good on heights, but I needed someone to pass things up to me. (The owner never went up ladders...) This sort of crime is becoming more common – householders near Toadsmoor came back from holiday and found their whole roof has been stripped. Stone tiles today cost more than £2000 per ton. Similarly, some of the Victorian capping stones of the wall around Eastcombe graveyard were stolen (presumably to order) a few years ago. I went to a quarry near Winchcombe with the manor's owner, an unfortunate outing as it resulted in damage to his new car – but that is a separate story.

My last Cotswold stone roof was at Sheepscombe. We worked from December 2017 to March 2018. This was a job I had priced for Dr Delhanty on behalf of his mother Kate, who was a gifted artist. She lived in a 15th century stone farmhouse on a hill overlooking Sheepscombe – the most characterful historic farmhouse I can remember seeing ever.

In the coldest winter since 1981-82 we had snow falls around Christmas 2017, with frost most days. We were fortunate in that Dr Delhanty was a kind person. I think that, because of the age and condition of his mother, he was trusting us to look out for her. Because the conditions were so bad he suggested we should not have our lunch in the van but should sit in the kitchen of the farmhouse. He showed us where the kettle was and gave us a key to the house as his mother was never up early. She was 90, so a home help came in every other day – and her doctor visited every three days to make sure that all was OK. Dr Delhanty told us to have a hot drink mid-morning and afternoon, and to make one for Kate at the same time. Even during the day the temperature lingered around zero. At that time it was just our trainee Chris Wood and I who were working there: Andrew Beer was doing repairs full-time and was really suffering being outside – highlighting how fortunate we were to be working at the farmhouse for the thoughtful doctor.

For the job I had worked out that the stone reclaimed from two slopes, combined, would be enough to do one elevation. I worked out the random size for the second elevation, on discussion with the doctor, and he sent in our order to a quarry. He wanted new Cotswold stone 'presents' so the slope on the lane side was done in reclaimed split stone tiles and on the back elevation we were to use the new, thicker, presents (from the Forest Marble vein near Tetbury).

New stone tile 'presents' *Reclaimed split tiles*

Stripping the roof off revealed that it was very old, with tons of lime torching under the slates, dating back 150-200 years. For this Sheepscombe stone roof in the winter of 2017-18, Dr Delhanty had his own idea about roof insulation and was against fibre glass. From his own experience he did not want it in the Sheepscombe roof. He asked me about quantities and ordered his own sheep wool insulation instead. His reasons made good sense and we complied though it would be our very first experience of using wool. We replaced many rotten rafters, with new oak rafters sourced by the doctor. On 22 February 2018 we were working in extremely cold conditions and we had to inform the doctor that his mother was seriously unwell. He came at lunchtime and got her into hospital. Around 3.30pm that day snow started falling. Chris Wood and I had heard the forecast and we set about fixing tarpaulins over the front roof elevation. Stone tiling was in progress at the time – we had completed the rear elevation the previous week – and it was important to cover the laid stone tiles and also the courses as yet unlaid. That day we both left Sheepscombe with difficulty: the village lies in a sort of basin and all the lanes leading up out of it are very narrow. We could not return for a week though Chris attempted twice. He said that all snowploughed roads were single-track – and no clearing had been done in Sheepscombe.

Sheepscombe 2018

Road near Bisley 2018

A week later, however, we were back at the farmhouse and a day later Kate came home. Dr Delhanty said it was lucky that Kate had gone to hospital when she did, but now he and she were glad to get back to how things had been before. That job was finished by the end of March 2018 and, although I did not know it at the time, this would be my last Cotswold stone roof.

A few months later I lost 70 per cent of my eyesight and was no longer safe on heights. If my career had to end it was appropriate that it should be on a Cotswold stone roof using both types of stone tiles. I was lucky to have been in the right place at the right time, both in gaining experience in the old stone companies and in setting up independently. Fortunately before having to retire I was able to show my son Andrew how to do step lead flashing into vertical walls. This style looks so much better than 'chase cut.' Chased lead flashing entails cutting a one-inch-deep slot in a stone wall so that lead can be folded into the slot and hang down to cover the upper edges of lead soakers and the upward sections of lead.

In 2012, incidentally, we were working for James Chamberlain who owns a lot of Nailsworth property, and gave us a lot of jobs. We did five roofs for him, including one on his own house. Doing a stone roof – and a slate roof at the Olive Tree restaurant – I met a young Chris Wood who was a carpark attendant

and unhappy with his job. We chatted over a few days, and I decided he had the right attitude. On the last day, after talking with my son Andrew, we offered him a job as a trainee. His first job was to do the rear roof of Reform Cottage for Derrick and Beryl Freebury. The result of that training is that Bisley Roofing is now run by Andrew Beer with Chris Wood as his right-hand man. The link with centuries of tradition now depends on them.

GLOSSARY: THE TERMINOLOGY OF MATERIALS AND METHODS

Ashlar
This is another term for freestone, the high-quality building stone that comes from the Great Oolite layer of limestone.

Banker (mason)
Stonemasons fall into three categories and some are qualified to shape stone that rests on a banker – a big and firm baulk of timber, from a tree trunk maybe.

Batten
A batten is a narrow and long piece of wood. (See *Roof battens.)*

Bay
When constructing a gutter out of thick lead, lengths of six to seven feet were used, and each length was called a 'bay.'

Bisley and Miserden Scale
This was the system of measuring the dimensions of stone tiles used particularly in this locality.

Cocking
If tiles are laid with an insufficient tilt, then tiles above 'cock' off the course beneath, creating a gap into which rain or snow can blow. It is not unknown for lofts to fill with snow, and its weight which eventually brings down the ceiling on which it has been piling unheard and unseen.

Course
As used to describe a line of bricks or stones in a wall, this term refers to a horizontal row of tiles on a roof.

Cramp
The huge stone blocks used to construct a stone chimney are freestone, sometimes called ashlar, close-set in a tight bed with lime putty. Masons have long been aware that over time this mortar erodes. The four corners of the bed joint therefore would have small slots and holes carved into them. When the stones were in position, molten lead would be poured in which, when set, ensured the stones would stay securely in position no matter if the mortar decayed. This bonding metal was called a lead cramp. These days the metal is stainless steel and we had ours made at Tetbury Forge. The metal looks like a staple before the ends are folded in. (See chimney stacks on p50.)

Cripple(s)
These triangular blocks of wood sit on the slope of a roof to support the single plank – walkway and safety measure – that is secured by strong cord to the horizontal battens. See *Prop scaffold*.

Downspout
The vertical piping that leads rainwater down from the roof and gutter to a drain. This used to be of cast iron, and is now usually made of plastic.

Dressing
Shaping and trimming a piece of stone with tools is referred to as 'dressing.'

Dry stonewalling
See the the first appendix after this glossary.

Eaves
The part of the roof that overhangs the top of the wall below is called the eaves. Below the eaves, gutters drain rainwater to downspouts.

Flashing
In stonework, the term 'flashing' is used to cover sections of lead tucked into the vertical walls of, for example, a chimney or parapet such as you see on churches

or large houses such as Hazle Manor near The Camp. An example in Eastcombe is the sloping parapet and roof slope abutment leading to the bell turret on the Baptist Chapel. Code 4 lead flashing is chased (tucked) into this masonry on the roof side.

Forest Marble
The name of this type of hard Cotswold limestone comes from the Forest of Wychwood.

Freestone
Sometimes called ashlar, this high-grade limestone from the Great Oolite layer can be seen in use, for example, in the handsome buildings of the city of Bath.

Fullers earth
This has many uses, but its name came from fulling, a process of cleaning wool fleeces in a clay slurry before the process of making yarn is started. (See the diagram on p 3.)

Gable end verge
The verge is the point where the courses of tiles overhang the end wall, usually a gable. Tiles here should always be set out and bedded in mortar prior to the main stone tiles being fixed. The first reason for this is the edges of a roof are the most exposed part, and need to be the strongest. If the mortar is added after fixing the tiles, by pushing it into the spaces, it will shrink on setting, and crack. The second reason is that when tiles are bedded properly, tilting inwards, water will go down to the gutter as intended, and not drip down the outer walls.

Gauge
'Gauge' refers to a measurement taken from the top of one horizontal batten to the top of the next batten down. A good tiler sets out all the battens on the ground to check measurements before transferring them to the roof. It is vital to know this distance in order to adjust the laying of the tiles as the work goes on (see *Measurements*).

Great Oolite
The layer of limestone which provides good building stone. (See the diagram on p 3.)

Gutter
This refers to a horizontal drain below the eaves of a roof, leading water to a downspout to keep it away from the fabric of a building. Gutters were formerly made of cast iron and now usually plastic. Earlier gutters were made of thick lead, box-shaped in section.

Hip
A hip roof is one where the courses of tiling are continuous over the gable end.

Inferior Oolite
A layer of rougher limestone (but not of lower quality) predating Great Oolite, very useful for jobs such as dry stonewalling. (See the diagram on p 3.)

Kick
This refers to the specific tilt – never less than five inches – of the bottom course of tiles on a roof, an angle which governs all the successive courses.

Label
This is the technical term locally for stone projecting above a window (see *Mullion*). It dates from the days before there were gutters – that is, before iron-working in the industrial revolution enabled the production of metal guttering.

Lath
A lath is similar to a batten, and is quite flexible. In roofing, laths can be used, for example, to fix roofing felt in position over the rafters before tiling begins.

Lime torching
Before the middle of the twentieth century, the old method of wind-proofing a stone roof was done with lime mortar. This 'lime torching' was done by fixing thin laths between the roof battens, and parallel to them. Each stone tile was laid with its head bedded on to lime mortar (strengthened with a binding of horse or cow hair) and the mortar was extended over the head of the tile below. The mortar was supported by the laths with the result that the roof was fully sealed – a process that dated back to Roman times. In the nineteenth century black mortar was introduced. This was the same except ash was added, and the tiles were secured by wooden pegs made of oak. In the 1930s the first roofing felt underlay was produced. It was made of hessian proofed with bitumen and did not change much till the late 1980s. Nowadays all felt underlay is breathable. With Cotswold stone tiles it is advisable to counter-lath the rafters before fixing the battens to gauges – that is to say, after laying the felt right across the rafters and battens, then fasten a thin lath, using fine wire nails, down the length of each rafter. The roof is then ready for tiling. When warmer air meets colder stone there is condensation on the underside of the tiles but counter-lathing creates a slight air gap that prevents this happening.

Master mason
A master mason is the term used for the most highly skilled worker in stone. He has the training required to do really skilled work, such as constructing a

vaulted ceiling. It used to take about 12 years to gain this qualification, a system that was totally undermined by the British government in the 1980s when it funded a training scheme that reduced the training period to six months before certification. This attitude did a great deal of damage to apprenticeships, and the quality of workmanship.

Measurements
On many Cotswold cottages the rafter lengths (the single struts of wood stretching from eaves to roof ridge) can vary, be uneven, so it is good practice to check this by measuring each in at least four places from the top down to the eaves. If the difference is large, quite a few inches, then strike a horizontal line parallel to the roof ridge and across the centre of the roof. Work to this line and adjust the tiles to be in line with the top. Each course can be closed, up to one inch per course, gaining the difference long before reaching the top of the roof. Gauge settings should never be stretched out. Rather, the longer ends are kept to gauge and the shorter tightened until over a few courses they become parallel.

Monumental mason
A monumental mason can work on decorative and other carvings that demand precision – statuary, for example. An example of this can be seen at the junction of the main road and Old Neighbourhood, where Chalford's war memorial stands. When the stone cross was damaged badly by a falling tree branch, the repair was done by monumental mason Omar Cottle, whose equally skilled grandfather produced the original.

Mullion
The better type of Cotswold stone house has stone-framed windows known as mullions – though in modern houses costs are cut to some extent by using reconstituted stone. A projected part above the mullion, technically called the 'label', was carved and made by a banker mason. This type of projection goes back to before the industrial revolution when most cottages did not have gutters along the eaves. The stone projection threw water falling from above outwards, so protecting the window itself.

Oversale
This term is used for the part of a stone chimney stack near the very top, which juts out – overhangs – the main walls of the chimney so that rainwater is thrown outwards, away from the vertical faces. This is to protect the stone blocks and mortar from erosion (see p50).

Pointing
This refers to mortar, in effect the adhesive, that fastens the stones in a wall together. There is a section on this in Appendix 1, p 37.

Pole hammer
A pole hammer is used for dressing stone tiles, having a flat end for starting and a sharp end for finishing. This work is done by placing the tile on a very large and firm upright stone known as a 'pole stone.' Hammering the edge of the tile with the tool's curved head results in 'spalling', a rather decorative chamfered finish to the edge that is characteristic of a Cotswold stone tile.

Present
A traditional Gloucestershire roofer's word for the Forest Marble stone that emerges from the ground ready-split for tiling.

Prop scaffold
This, built of wood, serves the same sort of safety purpose as cripples, but is constructed out from the main steel scaffolding as the work progresses up the slope of the roof. (See *Cripple* above.)

Rafter
Rafters are single lengths of wood (typically 3in x 3in) which run from the eaves to the roof ridge to support all the protective layers that form a finished roof. In very old buildings they can often be untrimmed tree branches.

Render
Render or rendering is a thin coat of mortar that, when dry, protects the surface to which it has been applied.

Rendered laths
(See '*Lath*' and '*Render*' above.)

Roof battens
In roofing, battens are laid horizontally to support stone tile courses laid across the roof. In modern times there are two sorts of battens, measuring in section 2in by 1in at the lower part of the roof where the longest and heaviest tiles are placed, and 1.5in by 1in higher up where the tiles are much smaller in length and weight. Before 2001, traditionally there were three types of battens, with 1in by 1in used for the very shortest stone tiles. This was to prevent the top of the previously laid course of tiles catching on the bottom of the batten above – something unique to the Cotswolds that regulators (those who write building specifications) failed to understand. This is an example of the foolishness of not consulting the people who actually know the trade.

Roofing felt, underlay
This is a membrane that is fixed to the rafters before laying the tiles on a roof. It

keeps out the draught, and is a protection against bad weather. Centuries ago this would have been done with lime and thin laths, but nowadays this fabric underlay is put on the roof before any counter laths and tile battens are secured. There are four or five types of underlay available now, all breathable – paper-based, for example, or PVC – but all form a weatherproof membrane that has replaced traditional torching.

Spalling
See *Pole hammer* above.) Spalling is also the term used to describe the flaking deterioration of a stone tile caused by harmful salts found in hard cement.

Split stone tiles
This was the local term for the sort of roofing tiles made from stone slabs that, after being exposed outdoors to winter rain and frosts, shaled into the required thickness almost of their own accord, then only needed shaping into roofing tiles.

Stone ridges
Stone ridge tiles, those that cover the apex of the roof, today are the hardest material to find. The oldest ones were carved by stonemasons. Later the V shapes were sawn out of the freestone. When bedding them nowadays it is best to lay them out on the ground first, sorting them by height (or depth). The highest or deepest should be the first to be bedded on the roof as they will form the top line visually, and then the lower ones are bedded with slightly more mortar at their base in order to align them with the deeper stone ridges so that the top line appears straight.

Stone tile sizes
(See Appendix 3, p 38.)

Swept stone valley
This describes the tiled gulley where two pitched roofs meet – wings of a house, for example, or dormer windows in a roof. Lead flashing is used to waterproof a gulley in other types of roofing in other parts of the country, but traditionally a stone-tiled roof uses tiles and mortar in a very skilled technique. The swept valley needs a high degree of precision. The series of cut stone tiles are first of all laid out on the ground and checked before being laid on the roof. There are Bottomers, Slips, and Wings: stone tiles that round the bends with no unsightly breaks in the lines. The tiles must have the appearance of flowing continuously, and this can only be achieved if the whole construction has been planned on the ground first. The main reason that workers have moved away from using this technique is simply that they have not been taught how to do it. (See photograph on next page.)

Swept stone valley

Tile peg

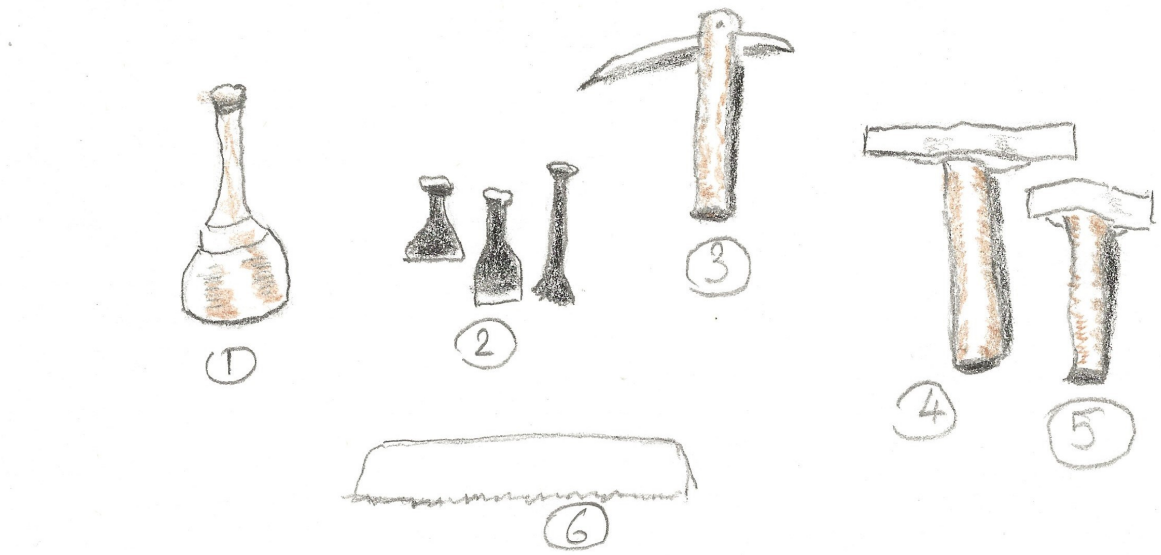
Each stone tile has a hole drilled in its upper end. A peg thrust through that hole is used to hang the tile from a batten. This fastening into position used to be done with a wooden peg, preferably oak, and was best for the long-term maintenance of the roof. Nowadays, however, pegs are made of galvanised steel (stainless steel is too expensive), or perhaps of aluminium. Over time, damaged tiles can be replaced easily, making the roof as good as when it was first laid. All perimeter tiles, however, should be copper-nailed.

Tiling

In earlier times tiling was laid on lime torching, which had animal hair mixed in it to bind it together. Then it was smoothed underneath, and this was to help keep the draught out of the cottages. Today roofing felt underlay is put on the roof before the battens are fixed.

Tools

Paul sketched his tools – see illustration on next page - which are particular to a stonemason's craft.



1. Wooden mallet 2. Chisels (see photograph below) 3. Stone tile peck 4. Mason's axe 5. Dry stone walling axe 6. Drag (see below)

APPENDIX 1. POINTING STONE IN THE RIGHT WAY FOR CONSERVATION

Approaching the pointing of stone in the correct way is more important than is generally imagined. In conservation it is essential to know the following facts.

A common cause of stone decay in modern times is the use of hard cement. Cement harder than the stone it is fixing is also colder, and more brittle. After a wet period, the stone needs to dry. If it is still damp as the weather gets colder, it will be prone to freezing. When moisture that has been trapped by hard cement pointing freezes, it will be the softer stone that cracks, not the cement. This is the primary reason for stone decay. Another is that cement contains harmful salts, and these eat into the limestone, producing an unsightly erosive flaking – it is similar in appearance to onion peel and is known as 'spalling.'

It is therefore important to do any repointing of old walls with lime mortar. This is completely compatible with limestone and will not harm the building. Lime mixed with washed sand is known as 'hydraulic lime' and is used with ragstone. With softer freestone, lime putty should be used. It can be seen in most carved stone chimney stacks, for example, where lead (or these days stainless steel) cramps are bedded in the stone blocks.

Lime putty is made from heated quicklime – calcium oxide. When boiled to 900 degrees centigrade (a very dangerous process) the lime takes on a buttery consistency and can be poured. It is the correct substance to use on ashlar blocks and freestone, forming the tight joints (technically called 'water joints') that can be seen in the superior stone used in the construction of fine Cotswold stone churches and manor houses.

APPENDIX 2. DRY STONE WALLING

Dry stone walls vary around the different regions of Britain, according to the material available and the local building traditions. The limestone used in Cotswold dry stone walls is a type known as 'ragstone,' much harder than the freestone used for buildings. Dry stone walls are seldom less than 18in thick. They consist of a foundation made of large flat stones, on which two separate structures are built to form the outer faces of the wall. The stones used are 'face stones'. These are not round lumps, but flattish stones that can be laid securely on each other. The stones are roughly the same size, generally, and have a good vertical edge to form the face. Laying them in courses needs skill to ensure that the stones tilt slightly outwards from their 'back' so that rainwater is directed down the outer faces of the wall. Between these facing stones the centre is filled with broken rubble; and if water gets into this and freezes, it will expand and

destabilize the faces. If the frost lasts for weeks no change will be noticeable, but when the thaw comes then parts of the wall will fall down.

Dry stone walls should always be wider at the base than the top. When wall-building, I made a batten frame at each end, to which a string line could be attached. This helped me lay the stones exactly so that the slight lean could be maintained correctly along each course as the wall progressed upwards. The wall was topped with 'cow and calf' stones – high and low stones alternating. There are in fact many ways to finish. Some walls are topped with a curve of cement. Eastcombe Baptist Chapel graveyard walls, and those of Two Pillars and The Lamb nearby, have handsome apex carved large freestones.

A one-ton load of walling stone contains around three square yards of face stones, the rest being suitable only for infill.

APPENDIX 3. STONE TILE SIZES, AMOUNTS AND DETAILS

<u>Stone tiles 10ft by 10ft area: 100sq ft super</u>
25in = 100 tiles
24in = 120 tiles Long Sixteen, average 1 tile per foot run
23in = 125 tiles
22in = 130 tiles
21in = 135 tiles
20in = 141 tiles
19in = 150 tiles
18in = 160 tiles
17in = 171 tiles
16in = 190 tiles
15in = 300 tiles
14in = 330 tiles Long Wivutts 1.5 tiles per foot run
13in = 360 tiles
12in = 380 tiles
11.5in= 534 tiles Short Bachelor 2 tiles per foot run
11in = 565 tiles Long Becks
10.5in= 584 tiles
10in = 600 tiles
9.5in = 640 tiles
9in = 686 tiles
8.5in = 740 tiles
8in = 800 tiles
7.5in = ?
7in = 872 tiles

6.5in = 960 tiles All Ups

To go through one ton of stone tiles takes four man-hours (sorting, dressing and holing). To sort sizes and grade thickness also takes four man-hours per ton. A man-hour could be one man working for four hours, or two men working for two hours – for example.

To lay an area of 100 sq ft – a stone tiler working with a labourer takes 16 man-hours – eight each. If working on a round roof with a net area of 100sq ft, 80 per cent of stone will be cut to waste and this would take 1.8 times 16 hours – 28.8 hours gross. A pinnacle with the same area means 100 per cent cut waste: 2 times 16 hours equals 32 hours.

Swept valley measuring should always be multiplied by 3 – for example a 20ft valley should be calculated as 60ft in order to have enough stone to make it.

<u>The weight of stone tiles per 100 sq ft</u>
Presents stone tiles = 1.25 tons (from Forest Marble vein)
Split stone tiles = 1 ton (from Great Oolite vein known as Stonefield Slate)

<u>Battens and counter laths</u>
The average length of battens needed to secure stone tiles = 300ft per 100ft sq
The average length of counter laths = 100ft per 100 sq ft

APPENDIX 4. LIFE AWAY FROM WORK

As mentioned in the main text, my life changed in the mid-1980s. Work was relentless, and after marriage and children I was divorced by 1987 and moving towards the big decision of setting up my own company. I began to use spare time for outings with friends, arguably still spending my life with stone but this time for leisure activities. In the mountainous areas of the United Kingdom and Ireland we went hiking and climbing and the combination of the two called 'scrambling.' This group with the same interests tackled between 150 and 180 mountains. On one occasion we had a good encounter with the renowned climber Alan Hinkes, who had a climbing equipment shop in Llanrwst. He was a Yorkshireman who became the first person to climb all 148,000 high mountains of the Himalayas – and who gave me some advice that later saved my life. Alan asked me how I would hold my ice axe in a sliding fall. So I showed him with my arm stretched out. 'No,' said Alan, 'you'll break your arm with that technique – or lose your axe.' He showed me how to hold the axe tight to the shoulder so that it has less chance of twisting, and is pointed firmly in the direction one wants it to grip the surface. He made me imitate him till I had got it right.

In 1991 Paul Taylor and I were in North Wales and our aim was to do three mountains. I always left details of our planned routes, and a list of the gear we had including food. We had reached the summit of Pen yr Ole Wen and were halfway to the next summit of Carnedd Dafydd when we were caught by a snow blizzard that had not been forecast. The snow was like having grit thrown in our faces – only those who have experienced it will understand what it is to be in a blizzard high up in the mountains. You cannot see anything in these conditions, and instructors would always give the advice to dig what is known as a snow hole. Snow at that sort of altitude piles up more quickly than one can imagine, so with precipices around us we followed the correct procedure. We dug a snow hole with the higher side facing the wind, then pulled on our 'bivvy' (survival) bags and got into them to sit out the storm. To continue would have been madness.

By 5am the main storm had passed, but there was still an icy wind which gave the snow a crusted frozen surface like the icing on a cake. By 6.30am it seemed clear and safe to start going down. We decided to rope together. Before being attached, however, I climbed out of the snow hole first with the ice axe at the ready. I slipped immediately and was sliding towards the precipice when the training came into play and I held the ice axe to my shoulder with the blade facing the crusted surface – and prayed it would stop me. At one point I hit a ledge that acted like a ramp and threw me upwards. Luckily I hit the surface of the ice again, and better still my ice axe dug into the crust – and stopped me about 15ft from the edge of a 1000ft fall.

Paul Taylor had seen it all happen so fast and had to be careful that it did not happen to him too. He called to see if I was ok and I shouted back that I was and couldn't believe it had happened when we were taking such care. I stayed put till he could drop a rope to me and once secured I then cut ice steps up till I reached him. We took turns cutting steps down until we reached more stable terrain – and that was a few hundred feet further below – where we were tired but safe. There it was less exposed to the icy winds. 'What a night, what an experience!' Paul Taylor said. Nobody thinks UK mountains can be as severe as this but we survived by following textbook safety advice. 'But my God!' said Paul Taylor, 'Your slide, Paul!' Yes, I survived thanks to Alan Hinkes and his ice axe technique...

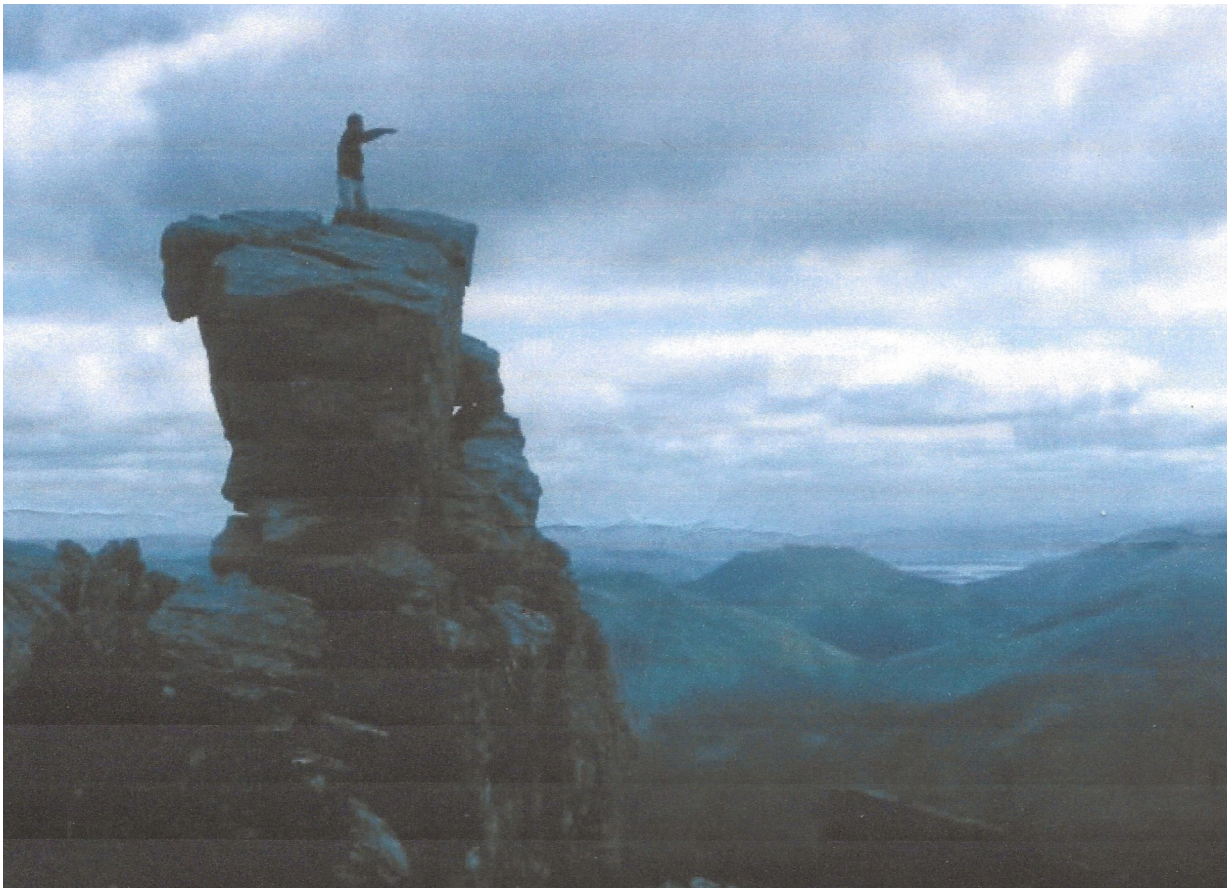
It was also with Paul Taylor that I climbed the Snowdon Horseshoe in winter conditions. I had been up Snowdon many times, and this time we had the summit completely to ourselves. This was when the original station still existed, and it was shuttered and had eight feet of snow over it. The snow and ice were over 18 inches thick at the eaves. This was before global warming became

obvious, and in those days Snowdon was topped with snow for three or four months of each year. Given the variable conditions in the mountains, one should never feel an overriding need to reach one's objective at any cost. So often hikers on limited time make this mistake and do not recognize when it is better to turn back. Paul and I had gone far from any roads to tackle Pillar Mountain – twice we hiked over the High Stile range of mountains, only on reaching the Blacksale hut to have to turn back. The winds were so powerful even at the head of the valley between the mountain ranges. We knew full well that to risk the Climbers Traverse, a narrow ledge about half a mile long, would be a huge gamble – so we turned around and left it for another time. At my age now I would find it impossible to cover those distances while carrying around 20Kg of gear. We knew it was 100 per cent necessary to turn back – but we managed the Pillar on the third attempt, I am pleased to say. Those mountains need respect: many times I crossed streams that on my return were chest-deep and had to be waded – I knew that to attempt a crossing further down would be even more dangerous.

Crossing Scottish river by cable wire

We went to Scotland in 1995 and did all the mountains of Glencoe, and then were hoping for a clear window of light or no wind so that we could do the

classic Aonach Eagach, a mountain bearing a warning sign 'Do not attempt this mountain in any winds'. It is like a series of many church steeples but a lot higher, being well above 3000ft for nearly a mile. It was perfect, it was now or never, the pinnacles were like nothing you see on most mountains. Only the Swiss Alps could match the scenery. We did it, and blessed the right conditions. If anyone is planning to go up Ben Nevis and has a head for heights, go up the north side. It has much more dramatic scenery across the arête than on the other, whaleback, side. In Scotland you can find real wilderness. There are many rivers with cable crossings (which are cheaper to erect than bridges and do not wash away in heavy storms). In 1995 we crossed rivers in this way and climbed all the 10 mountains of the Munroes.



Paul on the summit of The Cobbler

In 1998 life changed dramatically when my older son was hospitalized after meeting violence in the home. I was rung by his doctor who advised me not to react directly in any way, but he wished to recommend that Andrew should move to live with me. He wanted my consent, and although I was shocked I agreed at once. I could not immediately imagine how I could combine child care with my long working days, but my mother Pat gave her support straight away. Andrew went to my parents' place after school, had supper, and was ready to

return home with me when I called there after work. Just a few weeks later his younger brother Chris turned up asking whether he could join us.

So my life was changed. Shortly after Chris moved in he broke a glass milk bottle, and immediately cowered with his hands over his head. It demonstrated for me the sort of life the boys had been leading, and I was able to remain calm, said it was all right, and he could just help clear it up. I thought it good to organize things to look forward to, so to start with we went swimming in Cirencester pool every Monday evening. Before I knew it we had a car full of friends every time. I also got both boys into football and cricket.

My mother pointed out that Andrew in particular had a hearing problem. It was later confirmed that both his eardrums had been damaged and he was in fact lip-reading. His school work had been suffering and I had to go into school to explain. The teachers had not noticed his problem and assumed he did not want to learn... It took three operations to put his hearing right – a difficult period as I was working hard.

Later both boys had part-time jobs. Andrew did the 'sticking-up' for the skittles team, and later Peter Coup had him washing up at the pub, and doing bar work. Afterwards Chris took over the sticking-up for pocket money. He noticed that I had to work late into the night to keep up with the business paperwork. In fact, both boys were aware of the need for hard work.

After a few years the boys were making friends and having a more normal life. This included seeing my friends and listening to us talking about the mountains. They saw our pictures. So in 2006 I took them hiking. On a trip to the Lake District I tried to impress on them the importance of learning how to work with a map and compass. Chris was more interested than Andrew, who felt it was old-fashioned after seeing others use satnavs. I later made the mistake of thinking them ready for an upgrade to scrambling, that combination of climbing and hiking.

I took them both to Crib Goch, a mile-long mountain ridge where it was necessary to use hands as well as feet. It was fine till we reached a section like a knife edge at 3000ft. I saw that Chris had frozen and knew that I had pushed them too soon, too early. I assured him that he was safe and going to be all right, explained what I was going to do, and then climbed below him and began to move his feet to firm holds. I moved each foot – with both my arms hurting from holding on – until we had crossed the bad section and he was all right. This was a lesson for me. Never push. Don't over-persuade. I was a fool to take him and was annoyed with myself for doing so.

John Cave, David Apew and Paul Beer

Another time, we had been hiking up in the mountains when we came across a guy who was lost. His satnav had stopped working and he seemed very relieved to see us. I assured him that he would be fine if he tagged on to us. In our chat I discovered that he was from Yardley in Birmingham, confirming my belief that the vast majority of people have a love of nature and the great outdoors. I hoped that from then on Andrew would see the merits of a map and compass – Chris certainly did.

Later I got Chris an ice axe as he wanted to experience the mountains in winter conditions. We went up Gyders to around 3270 feet, and we were well equipped. On the way up from the Ogwen Valley and past Lake Idwal, just below the Devil's Kitchen, Chris noticed poorly equipped people who were seemingly following the same route and drew my attention to them. I told him they would not make it past the col, where there was going to be a lot of snow and ice. I asked him to look up to the left where the snow made jutting edges, and explained that these were called cornices, probably jutting out as much as eight feet in places – very dangerous. We were the only two continuing to the summit over the ice-covered snow. I took Chris to a spot with fine mountain views and strange sounds made by the wind. The gusts there are called 'the Castle of Winds' and we had it to ourselves that day.

Glyder Fawr and Glyder Fach are classed as two separate mountains. Before continuing I gave Chris vital safety instructions, telling him to remember the deceptive cornices near the Devil's Kitchen. Many are killed even in good conditions as they go to the edge thinking it solid when it is in fact a trap of

hanging snow. I told Chris to remember this, and we set the compass away from this area. I told Chris that the time to reset a compass is at a known point like a summit, or a well known feature like the Castle of Winds. This guards against the fact that within seconds one can be shrouded in mist or cloud... So on we went to Glyder Fawr and then to the huge Cantilever Rock. He has to this day the photo I took of him standing on top of it.

Then we descended a gully to the col between Glyders and Tryfan mountain, thus was saving a mile. I knew from past experience that the gully filled with snow was safe, and thought he would find it fun going down. On reaching a rugged dry stone wall with a ladder stile one finds Llyn Bochlwyd, a beautiful lake at high level. From there we descended the Ogwen valley and went to Ogwen Cottage where one can get a hot chocolate drink from the window...

Tryfan

Chris had enjoyed himself so much that he asked whether we could do the scramble of the north face of Tryfan mountain next day, so we did. Chris could not wait to show his brother Andrew his pictures. He came over the Ghost of Crib Goch in 2008.

If going into the mountains you should have a bivvy [bivouac] bag, torch, map, compass, right footwear, waterproofs – and a whistle.

I am so grateful for my parents' help through those years, bringing up the boys would have felt impossible without them. They helped keep my children out of foster care, which was the plan of social services professionals. My mother Pat died in 2010, and my father Bill, after living in Eastcombe for most of his life (from 1960), passed away in February 2023.

These days Andrew works in stone with Chris Wood. Chris Beer works as a plumbing engineer for a Manchester company. Their sister Sally worked for Cirencester police for some time, but now works in mental health.

As for myself, I was diagnosed with polymyositis in 2005. The direct effect on my immune system meant that when I got an eye infection in 2018 it led to devastating sight loss with ongoing deterioration. Life has changed a great deal.

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Profile

A rare Cotswold breed

Stone roofs are a familiar sight in the Cotswolds but the number of people trained in traditional tiling methods is dwindling quickly. Cotswold Essence meets one of the last of a fast disappearing breed.

Words by **Sue Bradley**
Pictures by **Mark Watkins**

ROOFER Paul Beer is one of the few guardians of a language once common throughout the Cotswolds.

His speech is littered with words such as Wivutts, All Ups, Short Bachelors and Long Nines that were once common parlance for craftsmen in Gloucestershire.

But people like Paul, who learned his trade from a long line of stone tilers, are a fast disappearing breed.

Paul served his apprenticeship with Freeman's of Camp, one of the country's most renowned stone specialists that traded for 200 years before closing in 1977.

Freeman's trained its own masons, tilers and quarrymen who passed on their knowledge and craftsmanship from generation to generation.

"Stone tiling was once a very extensive industry in the Cotswolds: At the beginning of the last century it provided jobs for hundreds of men, of which 20 percent would have been stone roofers," said Paul.

"Back then the actual roofing was done in the spring and summer, with tilers working in the quarries during the winter when the weather was not so good, but now we have to lay roofs all year round."

Few people realise when they look at traditional Cotswold roofs that two very different types of stone tile are used.

Split stone tile, also known as Stonefield Slate after a village in Oxfordshire, uses a process that dates back to Roman times.

"This was the tile quarried by Freeman's in the Bisley area," said Paul.

"This type of stone was known to split when frosted and the tile seam was known as The Pendle by the quarry men.

"The stones came out of the quarry in slabs of anything from two to five inches thick.

"They would be stacked and frequently wetted which was vital so that its natural dampness, known as quarry sap, was not lost as this would have made the stone crusty.

"When the weather turned frosty the stone was laid on the ground and watered constantly. The water seeping into the laminations of the stone expanded after freezing and, with a few taps of the cleaving hammer, would separate down along the vein.

"All that remained to do was the final shaping, dressing and holing of the new tile, the most skilful part of the whole operation."

Other tiles used in the Cotswolds, commonly found in places such as Naunton and Tetbury, were known as 'Presents'.

"This stone comes from the Forest Marble Vein and had already been split naturally while in the ground. Except for holing and shaping these were ready to use and were therefore presents to the tiler," Paul explained.

"Presents are purer and more hard wearing than split tiles."

Before replacing a stone roof, Paul removes every existing tile, reshapes any broken ones that can be used again and carefully grades them using the 'Bisley and Miserden' measuring system of 26 different lengths.

Each tile is placed into a stack with others of the same size, with every one being counted and recorded in a written log.

This information enables the roofer to set his courses according to the materials he has to work with.

Tiles range from the 'Long Sixteen' and 'Short Sixteen', measuring 24 inches and 23 inches respectively, to 'All Ups' at six and a half inches.

Other names include Bachelors, Wivutts, Cocks, Becks and Muffetty, with their precise size denoted by the addition of the prefix long and short, and even middle in some cases.

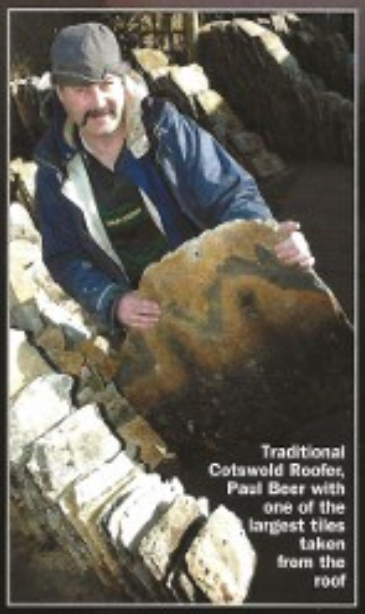
"The largest stones run from Long and Short Sixteens through to Long and Short Elevens, although there are no thirteens as it was reckoned to be bad luck," explained Paul.

"After Short Elevens we have Wivutts, Nines, Bachelors, Becks and so on.

"Wivutts should always be the tile you see in the middle of a traditional Cotswold roof. The largest stones lie over the eaves and the smallest just under the ridge."

Freshly quarried tiles are now in short supply and Paul has to rely on private sales and salvage yards to find sufficient stocks.

But with the number of traditional stone roofers dwindling quickly, there is never a time when he is not in demand.



Traditional Cotswold Roofer, Paul Beer with one of the largest tiles taken from the roof

Tiles sizes according to the Bisley & Miserden Wivutt Measuring Stick

All Ups: 6.5 inches
Short Cocks: 7 inches
Middle Cocks: 7.5 inches
Long Cocks: 8 inches
Short Cuttings: 8.5 inches
Long Cuttings: 9 inches
Muffetty: 9.5 inches
Short Becks: 10 inches
Middle Becks 10.5 inches
Long Becks: 11 inches
Short Bachelor: 11.5 inches
Long Bachelor: 12 inches
Short Nines: 12.5 inches
Long Nines: 13 inches
Short Wivutts: 13.5 inches
Long Wivutts: 14 inches
Short Elevens: 15 inches
Long Elevens: 16 inches
Short Twelves: 17 inches
Long Twelves: 17 inches
Short Fourteen: 19 inches
Long Fourteen: 20 inches
Short Fifteen: 21 inches
Long Fifteen: 22 inches
Short Sixteen: 23 inches
Long Sixteen: 24 inches

Paul Beer at the beginning and end of his career, 1973-2018

Two high-quality ashlar chimneys with differing styles of oversale (see p32)