
A VIEW FROM THE TOP

Lothar Respondek

*Note: The numbers in brackets are the Ordnance Survey grid references of the places mentioned.
Fig.1 is a map showing the approximate locations of major features mentioned in text.*

White Horse Hill (898 515) just above Westbury, (see Fig. 2), on the edge of Salisbury Plain affords a magnificent and varied view to the North of contrasting, undulating relief across the Clay Vale and the entrance to the Vale of Pewsey. The vista appears to go on and on with the many features blending effortlessly into each other to finally culminate gently into the irregular skyline of the Cotswolds in the very far distance.

But standing on the edge of the Marlborough Downs on Milk Hill, (102 638) the highest elevation in Wiltshire, and looking south over the two vales from the opposite side towards Salisbury Plain there is no such apparently infinite never-ending landscape. Instead the Chalk escarpment with White Horse Hill has the appearance of a solid wall-like feature.

Clumps of beech trees and the odd hawthorn bush scattered randomly along its length are the only breaks on the skyline. The ever-present smoke and steam of the 122m high chimney of the Blue Circle Cement Works near the foot of the scarp and the famous Westbury White Horse carved into the slopes add a welcome variation to the apparent monotony of the Chalk hills. Being useful landmarks, which can be seen from far away, both features seem to compete with each other for the most attention.

However, on further investigation the Chalk escarpment of White Horse Hill and its surrounds are not quite so uniform, compact and uninteresting as the distant view might suggest at first sight. Close inspection reveals a rugged, steep terrain sculptured by nature into a multitude of hollows, drainage channels and combs criss-crossed by soilslip terracettes and ridges.

The work of man is also much in evidence. The underlying geology dictated his way of life. Pastures and fields cover the foot of the scarp and strip farming terraces cling precariously to some of the slopes. Past and present he has always skilfully exploited the countryside around him for his own existence and survival. Whatever there is and was on his doorstep he used to full advantage.

The geology of this small part of Wiltshire appears to be relatively straight forward. Ripples of the Alpine Orogeny during the Pliocene folded the geological structure of Southern England into a gentle anticline causing the rocks to dip slightly to the South. In consequence ongoing erosional processes exposed the older Jurassic rocks and the younger Cretaceous rocks.

Not only is the relatively flat topography of the high Chalk-lands in stark contrast with the lower ground of the Vales but a journey from Salisbury Plain across to the Cotswold Hills, which are roughly at the same elevation, bridges a time span of some 125 my of geological evolution. From the younger Chalk rocks, Greensand and Gault Clay of the Cretaceous in the South, to the Kimmeridge Clay, Corallian and Oxford Clay, Cornbrash and older Oolitic Limestones of the Middle Jurassic in the North. Convenient and visible stepping stones through two major geological periods.

The same erosional forces which have shaped the Wiltshire topography as we see it to-day have also left their mark on the Chalk escarpment in the Westbury area and on the high ground of the adjacent Plain. Combes and dry valleys are the most prominent features in the Chalk scenery. The word Combe is sometimes spelt as Coomb or Coombe, but they all have the same meaning.

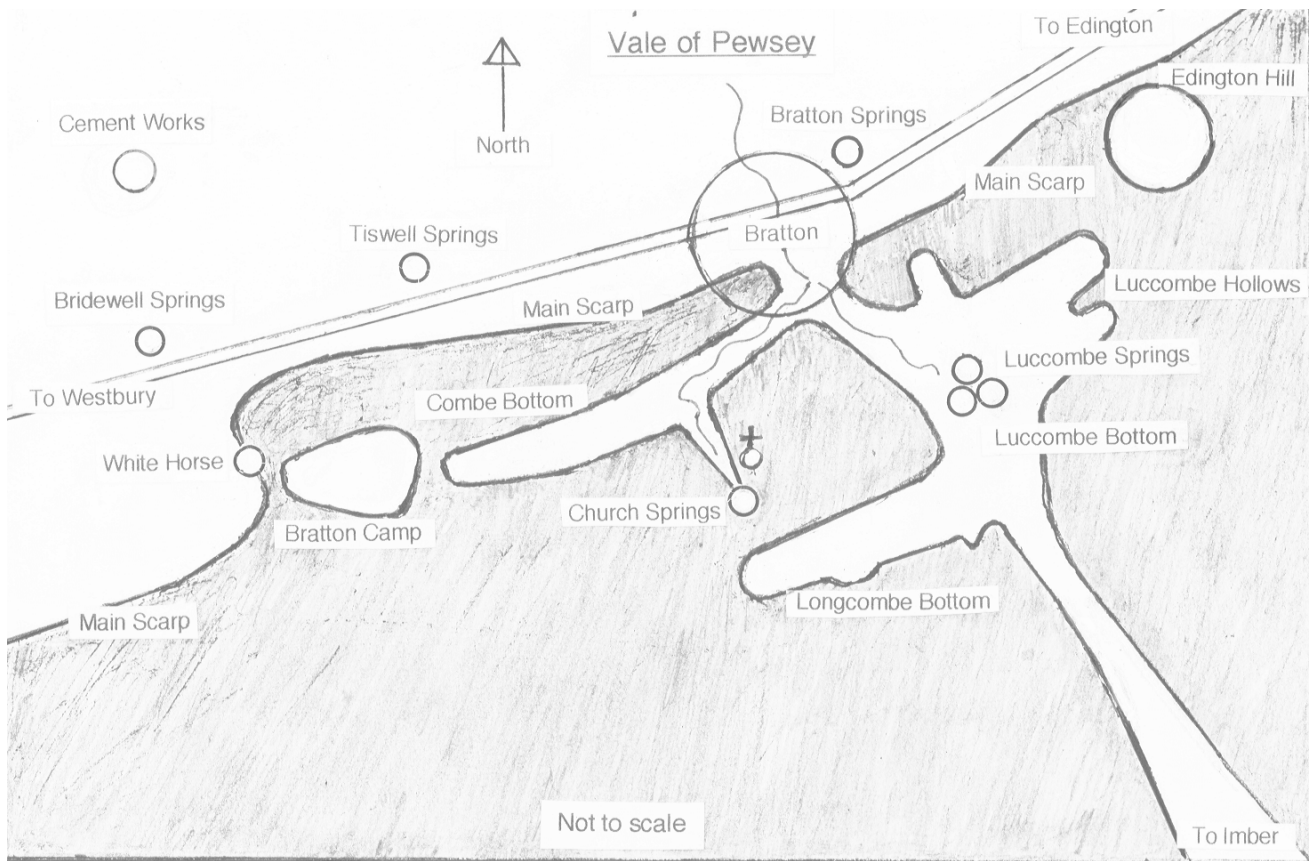


Fig. 1 Map showing the approximate location of major features mentioned in the text.



*Fig. 2 White Horse Hill.
The proliferation of shrubs points to water seepage from the slopes and the field in the deep hollow in the middle of the picture is prone to flooding during wet periods*

Perhaps more confusing is the actual use of the words valley, hollow, gully, combe and dry valley since all of these are sometimes used to describe similar surface features in the Chalk scenery.

A valley is defined as a linear, narrow surface depression bordered on both sides by higher land. A combe is a hollow or short valley in the side of a hill, whereas a dry valley is a valley currently without a river. But whichever word is used to describe certain aspects within the Chalk landscape, in the end they are all surface features of various dimensions carved out by erosional processes normally orientated towards lower ground or away from the escarpment slope.

However a distinction should be made as to the formation of dry valleys. Those on higher ground are the result of periglacial conditions during permafrost periods rendering the underlying rock structures completely impermeable. Water had to drain off along the surface and thus cutting a valley like feature. Once the climate changed, these valleys were left high and dry on top of the Chalk Plain.

A valley on lower ground, however, was cut by spring sapping and running water. When the watertable lowered due to climatic or other changes the stream which flowed in it then disappeared and this too is now a dry valley.

Clearly visible from Bratton Camp, (902 516) an Iron Age Hill fort on the East side of White Horse Hill, is a group of combes known as Luccombe Bottom, (925 522) Luccombe Hollows, (925 523) Combe Bottom (910 515 and Bratton Church Spring Valley (913 518). And close-by to the South, but hidden from sight by a low ridge, lies Longcombe Bottom (920 514).

These combes, cut by very active springs past and present, form an intricate pattern immediately behind the edge of the Chalk and Greensand escarpments. They are all centred on Luccombe Bottom which is shaped like a kind of huge amphitheatre with several smaller features grouped around it. Luccombe Bottom is also the only drainage outlet into the Vale of Pewsey for the many springs which flow throughout the year from this group of combes.

Perhaps nothing is unusual about such an arrangement except that Combe Bottom, Luccombe Hollows, Longcombe Bottom and the drainage of the very active Bratton Church springs run parallel to and just inside of the Chalk escarpment.

Combe Bottom starts directly below the fortifications of Bratton Camp. Steep sides and the nearly vertical top of the valley are evidence of rapid back cutting by powerful springs in the past. *Fig.5*

The southern side of the combe maintains a severe steepness along its entire length. Whereas the opposite side, the main scarp, is gradually tapering off forming a narrow sloping ridge of Chalk, Greensand, Gault and Combe Rock towards the village of Bratton and the stream draining from Luccombe Bottom. A corresponding ridge can be seen sloping down from Edington Hill. *Fig.5* The high elevation of Bratton Camp and Edington Hill are ideal vantage points to view these particular features from opposite sides.

Both slopes of Combe Bottom display drainage channels and gullies the depth of which is determined by the area of run-off available on the top of either side and the distance of the watershed. The combe is now a completely dry valley. Corn is grown along its entire length. There are no signs of flooding or wet patches even during excessive rainfall.

Only a very narrow tongue of Chalk and Lower Cretaceous rocks divides the coombe from the edge of the scarp. On the face of it hardly a sufficient barrier to have prevented the spring waters from draining directly into the Vale of Pewsey at any point during the rapid spring sapping instead of flowing parallel with and just inside the scarp.



*Fig.3: Longcombe Bottom with Luccombe Bottom in the foreground.
 Note the changed topography with distinct cut-off features due to ploughing at the top and bottom of the drainage channels on left of picture and also the lynches and soil slip terracettes on same side. The row of beech trees across the middle of the coombe has arrested excessive soil slip down-valley.*



*Fig.4: Bratton church with Bratton church springs and valley on the right, in wooded area on bottom of slope.
 The flat, cultivated area in foreground is Combe Bottom.
 Luccombe Hollows can be seen in background on left above Bratton church.*

This is even the more surprising when a Greensand spring a short distance to the West and at a slightly higher level than the floor of Combe Bottom flows directly away from the escarpment and on to lower ground. That particular spring, just below the actual 'White Horse', is activated during wet periods with the fields below showing the scars of frequent flooding. The ready supply of moisture also supports patches of dense shrubland on the lower slopes. *Fig.2*

Although Greensand springs are found at various levels at the foot of the escarpment, the Bridewell, Tiswell and Bratton springs form the lowest springline in the area. *Fig.1*

The Bratton church springs (913 518) from the Lower Chalk flow throughout the year even during the driest periods. The proliferous drainage, although initially towards the lower ground of the Vale of Pewsey, is abruptly changing directions and joins the continuation of Combe Bottom at its lower reaches just inside of and parallel with the line of scarp.

The heavily wooded area around the springs prevented excessive soil movement resulting in an extremely narrow and steep sided short combe. The only access to the point where the water emerges from the Chalk is by walking along the streambed. *Fig.4* Another steep sided feature adjacent to the Bratton church springs is a sunken road created over time by the actions of man and surface drainage from the surrounding catchment area.

Longcombe Bottom, the top of which lies very close to the Church springs but at a higher level, joins the upper reaches of Luccombe Bottom at a very distinct right angle. *Fig.3* Longcombe Bottom too is now a dry valley, even though the entrance to same becomes waterlogged during heavy rainfall due to a thin veneer of brickearth and sticky Chalk mixed with Clay.

Drainage channels are only on the southern side of Longcombe Bottom. The top of the northern side, although very limited in area, drains along the local dip slope away from the edge of the combe. The lack of drainage has also preserved the steepness on that side resulting in a slightly asymmetrical valley. The combe is neatly divided by a row of beech trees planted across the middle thus arresting excessive soil creep down the valley. The undulating top part has been left for grazing and strip farming terraces whereas the steep sided bottom part has been actively cultivated past and present. *Fig.3*

To obtain a reasonably flat floor and fill in the slightly U-shaped drainage profile, the land would always be ploughed towards the middle, leaving in time nearly vertical steps at each side of the combe. And the fields on top would always be ploughed towards the edge of the combe to fill in and level the many shallow drainage channels reaching out into the chalklands. *Fig.3*

Soil creep, soilslip terracettes, solifluction processes and drainage channel erosion are much in evidence in Longcombe Bottom as indeed it is in the other combes within the group. Worthy of mention are the fan shaped erosion deposits at the foot of the gullies which have draped over some of the steep banks on the side of the coombe, showing that soil movement is an ever ongoing process of nature and belongs as much to the present as it does to the past.

Luccombe Bottom *Fig.6* is central to the combes just described and serves and has served as the only drainage outlet into the Vale of Pewsey. The vast catchment area feeding into Luccombe Bottom stretches far out into Salisbury Plain towards the abandoned village of Imber (965 485) on Ministry of Defence land which is of course out of bounds for closer inspection.

But what makes Luccombe Bottom so special are the many springs which emerge from three different horizons within the combe. Although the Water Company is extracting large volumes of water, the top springs emerging from hard bands in the Middle Chalk cascade down to a stream in a most spectacular manner after periods of high rainfall.



Fig.5: View along Combe Bottom and Bratton church springs to Luccombe Hollows and Edington Hill in far background. Separating the narrow, sloping bands of the main chalk scarp on the left is Luccombe Bottom, the only outlet into the Vale of Pewsey for the many springs past and present described in text.



Fig.6: Luccombe Bottom with Luccombe springs in wooded area in middle of picture. In background from left to right are the outlines of Longcombe Bottom. The feature on bottom right of picture is one of the Luccombe Hollows which has been eroded by spring-sapping from the inside towards the edge of the main escarpment.

The middle springs emerge from the Lower Chalk and Greensand whilst the overflow drains directly into the upper reaches of the stream. But the surface flow diminishes during dry periods. The bottom springs, however, flow throughout the year and drain into the lower part of the stream from the junction of the Gault and Greensand.

Luccombe Hollows, *Fig.4*, extremely steep crescent shaped features carved into the Chalk on the periphery of the huge Luccombe Bottom amphitheatre, were also cut by very powerful springs. To-day they too are dry valleys, or to be more precise, dry hollows, one of which is occupied by a large Sarsen boulder locally known as The Bloodstone probably on account of its iron staining. The name and location of same is associated with the Battle of Edington in 878 AD when King Alfred fought and defeated the invading Danes.

Defying the normally accepted order of spring sapping, another of these Hollows (923 522) has actually been eroded by past spring flow from the inside towards the edge of the main escarpment leaving only a narrow band of Chalk between it and the edges of the hollow. *Fig.6* Another result of the hard bands of rock forming a barrier along the foot of the scarp.

It is interesting to note that the setting of Combe Bottom, Bratton Church Spring Valley, Luccombe Bottom and Longcombe Bottom nearly form a closed square. All things being equal, combe capture by the Bratton Church Spring at some future stage would then leave the area in between completely isolated in the Chalk scenery. *Fig.1*

Such particular configuration of combes, springs and streams may also give a clue to the creation of some Chalk outliers like Etchilhampton Hill, Woodborough Hill and Picked Hill in the middle of the Vale of Pewsey. Stranded there they stand, the long forgotten guardians of an ancient landscape.

The formation of combes and valleys in the area and the associated unusual drainage pattern provides food for thought as to their location and origination. But when trying to reconstruct past events one may be too much influenced by the 'Diagram Mentality' with everything in nice straight lines and with distinct cut-off points. In the real world nature does not conform to such precise pattern. The evidence is right here in Luccombe Bottom.

Ice ages and interglacial periods, extremely long stretches of permafrost and periglacial conditions have all left their marks on the Chalk Plain we see today. The general effects of such ongoing processes, although not in Chalk, can actually be observed and studied in great detail at the present time in the vast permafrost regions of Alaska.

Extreme climatic changes during the Pleistocene and subsequent periods imposed a distinct drainage pattern upon the Chalk landscape. The apparent random layout was entirely determined by the main dip slope, localised minor folding and faulting and hard bands within the Chalk and Greensand formations.

This in turn dictated not only the direction of surface drainage and the flow from the many springs in the area, but also in consequence the parallel orientation of the combes behind the edges of escarpments and high ridges as mentioned earlier.

Notwithstanding seasonal fluctuations the levels of the water table were also greatly influenced by the various hard bands within the underlying undulating rock structures.

Part of the high ridge and an exposure of hard Chalk can best be seen at the top of the path leading south to Bratton church from the main road. The steep sided feature leading down to Combe Bottom is another impressive example of a sunken road.

There is just a hint in the present topography, albeit very slight, which could suggest that surface drainage during permafrost conditions may have accumulated as a small meltwater lake just behind the high ridge at the foot of Lucombe Bottom before cascading into the Vale of Pewsey. Similar to 'Lake Trowbridge' which cut the Limpley Stoke Gorge, but here in Lucombe Bottom on a much, much smaller and less impressive scale. In time the waterfall migrated upstream through the hard bands of rock in the ridge and drained the lake. Progressive deepening of the valley opened up a series of springs at different horizons and from different directions in the Middle and Lower Chalk formations.

Those coming in at right angles cut Longcombe Bottom near the head of the combe and further down valley the springs cut Combe Bottom and the Lucombe Hollows. Others drained directly into Lucombe Bottom. As Combe Bottom migrated uphill to its present position the Bratton church springs were uncovered. The high ridge of hard Chalk and Greensand formations however forced the flow of water to drain into Combe Bottom and then into Lucombe Bottom resulting in the present drainage pattern with just one single stream flowing north into the Vale of Pewsey.

The current Lucombe stream only carries a trickle of water now. As already mentioned the Water Company has taken care of the main supply. However, the effects of torrents of water gushing down into the Vale of Pewsey in days gone by is shown by the size and depth of the lower reaches of Lucombe Bottom where the B3098 dips steeply from both sides into the former river bed.

The same ancient river also transported the vast amounts of eroded material from the group of combes into the Vale of Pewsey thus forming a huge fan-shaped outwash plain draping the Kimmeridge Clay as far as the Corallian ridge at Steeple Ashton. Many fields are a mixture of Greensand, Gault, Coombe Rock, Kimmeridge Clay and fingers of Corallian debris.

The combination of minor faulting and folding within the underlying rock formations, the emergence of springs from the top of the dip slope and the hard bands of rock within the Chalk and Greensand has shaped the scenery of just this one small part of Salisbury Plain.

One may compare the edge of the Chalk escarpment to a huge stage curtain hiding a diversity of scenery in its wings. The 'View from the Top' is merely an invitation to the more curious to open such curtain. Only then will the finer details be revealed and the full beauty and tranquillity of the Chalk landscape and associated features be fully appreciated.

Longcombe Bottom, the most spectacular of the combes, is locally known as 'Happy Valley'. A micro Shangri-la. Whoever passes this way, be it merely by chance or with intent, will find solitude, inner calm and peace in its surroundings and a strange, compelling closeness to nature far away from this fast moving life. Ample justification to venture forth and take a look behind the curtain.