

mountainous tract, we find that they constitute the superstrata throughout it, the subjacent beds of limestone appearing only where exposed towards the middle or lower regions of the valleys, or by the slope of the great western escarpment; while the lower beds of this series, as detailed in the section before given, form the summit of the lofty Cross Fell and all the neighbouring eminences.

Here the strata appear to dip  $2^{\circ} 15'$  to the north-east, so that, on crossing the range from east to west, they will be seen cropping out, one after the other, and forming parallel ridges extending from south-east to north-west.\* The principal disturbance which interferes with this regularity of position, is occasioned by a thick metalliferous vein called Burtreeford Dyke, which crosses the strata near the head of Weardale, elevating them in some places to above 80 fathoms on the eastern side, and in others greatly depressing them. Contiguous to this dyke the strata rise at an angle of  $45^{\circ}$ .

The same constitution continues to prevail through the mountains of the north of Yorkshire. The beds of the formation at present described, composing their higher regions, and the subjacent limestones appearing in their vallies and towards their base, as may be seen to the greatest advantage in the neighbourhood of Ingleborough, and as far south as Clitheroe; beyond which, the shale and millstone-grit constitute the entire mass of the mountains, (the lower formations being entirely concealed through an interval of near 50 miles), until they again emerge in Derbyshire. Concerning this interval, we have less precise information than with respect to any other part of the chain; but it is also from its uniformity, far less interesting, presenting the rocks of this single formation exclusively, in strata which generally appear to dip from the central ridge towards the east on the one side, and the west on the other. About Pendle hill, however, which rests upon the limestone of Clitheroe, it is said that the stratification is more disturbed, and near this point the mountains extend more to the westward than usual, forming the heights of Bolland forést, which appear to consist entirely of the beds of the present formation. The copper mine of Anglezark near Chorley, long but falsely celebrated as the only one in England producing carbonate of barytes, is situated in this district. And here we have again to lament that the details of the geology of Lancashire are less

\* Mr. Winch states the dip to be to the south-east and the line of bearing from south-west to north-east. But as such a direction is altogether inconsistent with the ascertained position of the places where the same strata are worked, I have ventured to correct it as above, supposing an error of the press.