

wards beneath the scarp of the low oolite range of Lincolnshire, to the Wold hills on the borders of Nottingham and Leicester, and the celebrated quarries of Barton upon Soar, whence it continues still regularly accompanying the scarp of the hills formed by the inferior and great oolite through the counties of Nottingham, Warwick, and Gloucester. Its whole course throughout this extensive line to a few miles south of Gloucester* is remarkably regular, presenting an average breadth of about six miles, bounded on the south-west by the oolites, and on the north-west by the red marle; but beyond that point, its course becomes much more intricate; for while its eastern limit still continues to accompany the oolitic ranges through Somersetshire to the coast in Dorsetshire, being its line of junction with the superior formations, its western limit becomes very irregular, feathering in and out among the coal-fields which occur towards the æstuary of the Severn, and the upper part of the British channel, in Gloucestershire, Somersetshire, Monmouthshire, and Glamorganshire, and attended by

The encroachments made on the cliffs by the sea and by the weather is so great, that the Abbey, built near Whitby in 656, was then nearly one mile from it, but in 1810 the sea had approached to within 200 yards of it. (N. J. v. 25. p. 241.)

* The western, or exterior and lower, limit of this tract from the Humber to Gloucester, may be thus stated more particularly; it follows a line about two miles (on the average) east of the river Trent, as far as its junction with the Soar, and then pursues in a similar manner the right bank of the latter river; forming occasionally a low escarpment, which is most conspicuous near the junction of the two streams. From the head of the Soar, it crosses by the west of Rugby towards the Warwickshire Avon, and keeps at a variable distance (never exceeding four miles) from the left or east bank of that river, approaching closely to it at Evesham: there are also several outlying hills of this formation on the right bank of the river between Warwick and Alcester; the same is the case between the confluence of the Avon and Severn, where the lias stretches between the fork of those rivers opposite Tewkesbury. This ground is correctly given in Mr. Smith's Map, but inadvertently coloured as lias in Mr. Greenough's; in the latter also, the lias does not extend far enough on the west of Gloucester, by about two miles; it ought to include Lassington and Woodbridge and the hill marked *g* on the west of the Severn, which flows in a denudation of the red marle to about three miles north of Gloucester.

† In the midland counties, from the vale of Belvoir to the north of Oxfordshire, some peculiar beds of rubbly lias, often occurring as concretions, characterise the upper part of the lias marles, being separated however by about 50 feet of marle from the marly sandstones described in the preceding section: they contain a greater variety of shells than the regular lias beds; most of those figured in the Natural History of the vale of Belvoir in the first volume of Nichols' Leicestershire are from this part of the series; a thick *Unio*, and the *Pentacrinites tuberculatus*, are most characteristic. Shuckbrough hill in the south of Warwickshire, so well known for the occurrence of the star-like columnar joints of this fossil, is based on this bed.