

selenite, and lime: these are probably situated in the lower marly beds. Is not the Scarborough water, which contains carbonate of lime, sulphur, sea salt, and iron, situated in the upper part of this series?

Section VII.

LIAS.*

(a) *Chemical and external characters.* This formation consists of thick argillaceous deposits, constituting the base on which the whole oolitic series reposes. The upper portion of these deposits, including about two-thirds of their total depth, consists of beds of a deep blue marle containing only a few irregular and rubbly limestone beds. In the lower portion, the limestone beds increase in frequency, and assume the peculiar aspect which characterises the lias, presenting a series of thin stony beds separated by narrow argillaceous partings; so that quarries of this rock at a distance assume a striped and ribband-like appearance; in the lower beds of this limestone, the argillaceous partings often become very slight and almost disappear, as may be seen in the lias tract of South Wales: beds of blue marle with irregular calcareous masses, generally separate these strata from the red marle belonging to the subjacent new red sandstone formation.† The limestone

* Chiefly by the Rev. W. D. Conybeare.

† The subjoined sections will serve to convey an accurate idea of the detail of this formation as it exists in the neighbourhood of Bath; and afford a good type of its general arrangement, excepting that in the midland and north-eastern counties the thickness of these deposits must be at least double that here presented; and some of the stony beds, alternating in the marles which constitute the upper portion, assume occasionally a more decided character and importance. These local details will find their best place in pursuing the range and extent of this formation.

These sections are subdivided, as in the text, into the *Upper marles*, the *Stony or true lias beds*, and the *Lower marles* separating the lias from the new red sandstone formation.

The first section is from a fruitless trial for coal (abandoned in 1812) in the parish of Bath Easton; it begins in the very top of this formation, and extends through its lowest beds. The second also exhibits the whole formation, and is interesting as forming the upper part of the section afforded in the Paulton collieries, which include a greater geological depth (i. e. pass through a greater number of different formations) than has probably been ever actually verified in any other single point. The lower formations, ascertained in this section, will be given hereafter; the third section is given as exhibiting in greater detail the lowest members of the lias near their junction with the red marle.