

various sizes, from eight or ten feet long and two feet in diameter, to the size of small branches. The knotty bark and the ligneous fibre, were very distinct; and they were frequently imbedded in masses of clay now indurated and in the state of an argillaceous rock.

Some parts of these trees were converted into iron-stone; and other parts consisted of a great variety of substances, being partly calcareous, ferruginous, pyritous, bituminous, and ligneous; and the whole exhibited a beautiful example of the astonishing processes of nature in converting vegetables into coal, and in filling their substance with solid rock. It is obvious that the lowest strata of the island are exhibited here and at Sandown foot.

Where the strata become horizontal along the line of the undercliff on the south of the island, the same succession of chalk, chalk marle, green sand, blue marle, and iron sand may be traced. The best section is afforded by the precipitous sides of Black gang chine. In the undercliff, the green sand contains distinct alternations of calcareous and cherty beds.'

Section VIII.

*Isle of Purbeck.**

On the eastern promontory of this peninsula, on the north of Swanwich, and directly opposite the western extremity of the Isle of Wight, to which we have already traced them, these formations re-appear together with, and underlying, the vertical chalk.

Mr. Webster thus describes the section presented at this point. 'The order was exactly the same as what I before observed in the Isle of Wight. Under the flinty chalk, was chalk without flints; then chalk marle; green sandstone, with limetone and chert; but a slight trace of blue marle; and lastly, ferruginous sand, sandstone slate, shale, &c. forming the bottom of the bay.

The lower chalk and chalk marle were, however, much indurated; and the limestone and chert, with many fossils, were mixed among the green sand in the most confused state imaginable; exhibiting the same knotted and lumpy appearance as I have before mentioned with respect to the chalk, but still more remarkably.

* By the Rev. W. D. Conybeare.