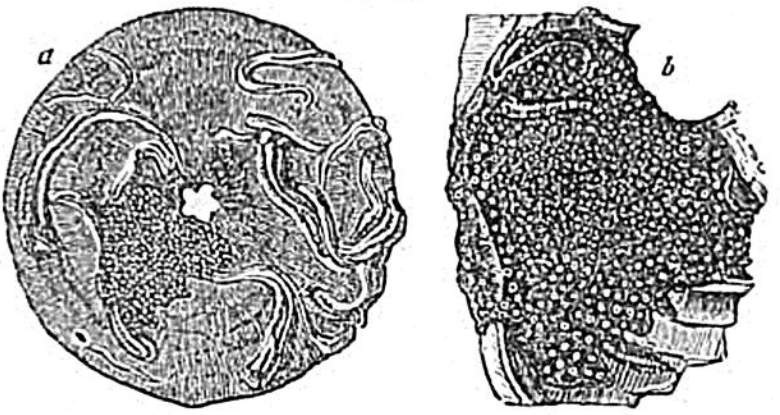
posit in which some now lie prostrate. These appearances are represented in the section *b*, fig. 365, where the darker strata represent the Bradford clay, which some geologists class with the Forest marble, others with the Great Oolite. The upper surface of the calcareous stone below is completely incrusted over with a continuous pavement, formed by the stony roots or attachments of the Crinoidea; and besides this evidence of the length of time they had lived on the spot, we find great numbers of single joints, or circular plates of the stem and body of the encrinite, covered over with *serpulæ*. Now these *serpulæ* could only have begun to grow after the death of some of the stone-lilies, parts of whose skeletons had been strewed over the floor of the ocean before the irruption of argillaceous mud. In some instances we find that, after the parasitic *serpulæ* were full grown, they had become incrusted over with a bryozoan, called *Berenicea diluviana;* and many generations of these mollusks had succeeded each other in the pure water before they became fossil.

Fig. 366.




*a*. Single plate or articulation of an Encrinite overgrown with *serpulæ* and *bryozoa*. Natural size. Bradford clay.
*b*. Portion of the same magnified, showing the bryozoan *Berenicea diluviana* covering one of the *serpulæ*.

We may, therefore, perceive distinctly that, as the pines and cycadeous plants of the ancient "dirt bed," or fossil forest, of the Lower Purbeck were killed by submergence under fresh water, and soon buried beneath muddy sediment, so an invasion of argillaceous matter put a sudden stop to the growth of the Bradford Encrinites, and led to their preservation in marine strata.*

Such differences in the fossils as distinguish the calcareous and argillaceous deposits from each other, would be described by naturalists as arising out of a difference in the *stations* of species; but besides these, there are variations in the fossils of the higher, middle, and lower part of the oolitic series, which must be ascribed to that great law of change in organic life by which distinct assemblages of species have been adapted, at successive geological periods, to the varying conditions of the habitable surface. In a single district it is difficult to decide how

* For a fuller account of these Encrinites, see Buckland's Bridgewater Treatise, vol. i. p. 429.