

of former races that inhabited the ancient seas; and strange indeed must be the construction of that mind, which can believe that all this order and method can have existed, without the direction and agency of some commanding and controlling Intelligence.

Theory of Von Buch.

Besides the uses we have attributed to the sinuous arrangement of the transverse septa of Ammonites, in giving strength to the shell to

plates, are converted into thin chalcedony, the pipe retaining in these empty chambers the exact form and position it held in the living shell.

The entire substance of the pipe, thus perfectly preserved in a state that rarely occurs, shews no kind of aperture through which any fluid could have passed to the interior of the air-chambers. The same continuity of the Siphuncle appears at Pl. 42, Fig. 3. and in Pl. 36, and in many other specimens. Hence we infer, that nothing could pass from its interior into the air-chambers, and that the office of the Siphuncle was to be more or less distended with a fluid, as in the Nautili, for the purpose of adjusting the specific gravity, so as to cause the animal to float or sink.

Dr. Prout has analyzed a portion of the black material of the Siphuncle, which is so frequently preserved in Ammonites, and finds it to consist of animal membrane penetrated by carbonate of lime. He explains the black colour of these pipes, by supposing that the process of decomposition, in which the oxygen and hydrogen of the animal membrane escaped, was favourable to the evolution of carbon, as happens when vegetables are converted into coal, under the process of mineralization. The lime has taken the place of the oxygen and hydrogen which existed in the pipe before decomposition.