

most susceptible of silicious petrification. In another specimen, in my museum, the oyster itself is turned into flint, while the shell is, as usual, carbonate of lime.* The shells of mollusca, the crustaceous skeletons of echini, and the bones of the belemnosepiæ, appear to have possessed too little animal matter, and to have been too much protected by calcareous earth, to have become silicified; they are changed into spar by water charged with carbonic acid gas, having insensibly effected the crystallization of their molecules.†

* See an interesting essay on this subject, by M. Alexandre Brongniart, "*Essai sur les Orbicules Siliceux, &c.*" Paris, 1831.

† Mr. Reade's highly important experiments and observations on the structure of plants, appear to throw a new light on the silicification of wood. Mr. Reade states that "by the agency of heat the surrounding silicious matter may be liquefied, and the carbon and gaseous products of the wood dispelled, while the essential characters of the fibrous and cellular structure are undisturbed. The unconsumed portions, which alone constitute the true vegetable frame-work, are thus, as it were, mounted in the fluid silica. This property of vegetable fibre of retaining its form, notwithstanding the action of a high temperature, suggested to me the probability of detecting structure in the ashes of coal; and upon examination, I found that the white ashes of 'slaty coal,' furnish most beautiful examples of vegetable remains." In a subsequent paper the author adds the following remarks:—"Having ascertained that the silicious organization of recent plants is not destructible, even under the blow-pipe, it appeared to me a natural inference, that the less intense heat of a common fire would not destroy this silicious tissue in the coal-plants; and my opinion has been confirmed, for I have detected in the white ashes of coal all the usual forms of vegetable structure, viz. cellular tissue, smooth and spiral fibre,