

which derive their form from echinites, &c., are familiar examples of this process.

In genuine petrifications a transmutation of the parts of an organized body into mineral matter takes place. Patrin, Brongniart, and other philosophers, suppose that petrification has frequently been effected suddenly, by the combination of gaseous fluids with the constituent principles of organic structure. It appears, indeed, certain, that the conversion into silex both of animal and vegetable substances, must, in the majority of instances, have been almost instantaneous, for the most delicate parts, those which would undergo decomposition with the greatest rapidity, are often preserved; such, for instance, as the capsule of the eye, the membranes of the stomach, the soft bodies of mollusca; and in plants, the cellular and vascular tissue. The fact of the silicification of trees in loose sand, and of the bodies of mollusca in their shells, as in these fossil oysters from the chalk at Brighton, while neither the sand nor the shells are impregnated with silex, cannot be explained by the infiltration of a silicious fluid into cavities left by the decomposition and removal of the animal substance. Von Buch has shown that the silicifying process never immediately attacks the calcareous shell, but develops itself only upon the organic substance of the animal; and that where such substance is not present, no silicification takes place. A combination of gaseous fluids, with the consti-