vations on this specimen, but his statement of the different conditions in which fossil wood appears, is highly important. Sometimes, he observes, the most minute structure is preserved, as in the vessels of palms and coniferæ, which are as distinct in the fossil as in the recent trees. From this state of perfection, we have every degree of change, to the last stage of decay: the condition of the wood, therefore, had no influence on the process. The hardest wood, and the most tender and succulent, as for instance, the young leaves of the palm, are alike silicified. In some instances, the cellular tissue has been petrified, and the vessels have disappeared; here silicification must have taken place soon after the wood was exposed to the action of moisture, because the cellular structure would soon decay; the process was then suspended, and the vessels decomposed. In other examples, the vessels alone remain; a proof that petrifaction did not commence till the cellular tissue was destroyed. The specimens where both cells and vessels are silicified, show that the process began at an early period, and continued till the whole vegetable structure was transmuted into stone.* My lamented friend, Dr. Turner, in some admirable comments on the subject of petrifaction, remarks, that whenever the decomposition of an organic body has begun, the elements into which it is resolved are in a condition peculiarly favourable to their entering into

* Geological Transactions, vol. v. page 212.