31. PLANTS IN AGATES, &c.—While treating of the silicification of organic remains, I must not omit to notice the occasional occurrence of the most delicate vegetables in those beautiful modifications of silex, or flint, called agate and chalcedony. The *mocha stones*, as they are termed by the lapidaries, frequently contain arborescent stains and markings produced by metallic oxides, as iron, manganese, &c.; and the mineral called *chlorite*, which is of a green colour, often assumes an appearance so like a plant as to deceive the inexperienced observer. But Dr. MacCulloch, M. Daubenton, and others, have proved that some of the arborescent appearances in chalcedonies are

and annular ducts. A comparison of the ashes of coal with those of recent plants, would doubtless afford some further insight into the nature of fossil vegetables. To mention only one instance—I have ascertained that the lumps of carbonized matter, which occur abundantly in the upper sandstone near the Spa at Scarborough, are, in all probability, portions of the stems of some arundinaceous or gramineous plants. The structure of the epidermis is precisely similar to that of the oat, consisting of parallel columns, set with fine teeth, dove-tailing, as it were, into each other, while the underlying tissue consists of cubical cells, a thin horizontal section exhibiting a series of squares. From these facts it is evident, that the true framework and basis of vegetable structure in the plants of coal, is not only entirely independent of carbon, but that it has also resisted the bituminous decomposition, which has converted all the carbonaceous materials into a highly inflammable substance."—*Rev. J. B. Reade, F.R.S. on the Structure of the Solid Materials found in the Ashes of Recent and Fossil Plants.* Journal of Science, vol. ii. p. 413.