

ends, as if by attrition or decay; and yet one of these portions measures about six feet in diameter by sixty-one feet in length another four feet in diameter by seventy feet in length; and the others, of various thickness, but all bulky enough to equal the masts of large vessels, range in length from thirty-six to forty-seven feet. It seems strange to one who derives his supply of domestic fuel from the Dalkeith and Falkirk coal-fields, that the Carboniferous flora could ever have been described as devoid of trees. I can scarce take up a piece of coal from beside my study fire, without detecting in it fragments of carbonized wood, which almost always exhibit the characteristic longitudinal fibres, and not unfrequently the medullary rays. Even the trap-rocks of the district enclose, in some instances, their masses of lignite, which present in their transverse sections, when cut by the lapidary, the net-like reticulations of the coniferæ. The fossil botanist, who devoted himself chiefly to the study of microscopic structure, would have to decide, from the facts of the case, not that trees were absent during the Carboniferous period, but that, in consequence of their having been present in amazing numbers, their remains had entered more palpably and extensively into the composition of coal than those of any other vegetable.* So far as is yet known, they all belonged to the

* It is stated by Mr. Witham, that, "except in a few instances, he had ineffectually tried, with the aid of the microscope, to obtain some insight into the structure of coal. Owing," he adds, "to its great opacity, which is probably due to mechanical pressure, the action of chemical affinity, and the percolation of acidulous waters, all traces of organization appear to have been obliterated." I have heard the late Mr. Sanderson, who prepared for Mr. Witham most of the specimens figured in his well-known work on the "Internal Structure of Fossil Vegetables," and from whom the materials of his statement on