

the base nine. It lay in a nearly horizontal position, corresponding with the strata of sandstone in which it was imbedded. By polished transparent sections of the trunk, Mr. Witham was enabled to ascertain that this tree belonged to the coniferæ. A few years afterwards, another tree was found in this quarry. It was fifty-nine feet long, and lay at an angle of about  $40^{\circ}$ , traversing ten or twelve strata of sandstone. As is common in these fossils, the trunk was crusted with coal, probably the bark in a carbonized state.\* In this beautiful section of the stem, from Craigleith, presented to me by my lamented friend, the late Dr. Henry, of Manchester, the coniferous structure is clearly displayed; and from this fact alone, the botanist can delineate the general form and foliage of the original tree, in like manner as the anatomist, from a few fragments of teeth and bones, is able to determine the affinities of the animal to which they belonged.

20. MICROSCOPIC EXAMINATION OF FOSSIL TREES.—The discovery of a process by which the structure of fossil vegetables can be examined, with as much facility as that of recent plants, has shed an unexpected light on the ancient botany of our globe. On this plate of glass you perceive a thin film of a dark substance, apparently of varnish. It is a slice of the blackest jet, and if held between the eye and the light, is of a rich brown colour, and

\* This specimen is represented by Mr. Fairholme in the situation it occupied in the quarry.