

bituminous coal has undergone a complete liquefaction, and if any portions of organization remain, they appear as if imbedded in a pure bituminous mass. The slaty coal generally preserves traces of cellular or vascular tissue, and the spiral vessels, and the dotted cells, indicating coniferous structure, may readily be detected by the aid of the microscope, in chips or slices, prepared in the manner previously pointed out. In many examples the cells are filled with an amber-coloured resinous substance; in others the organization is so well preserved, that on the surface exposed by cracking from heat, vascular tissue, spiral vessels, and cells studded with glands may be detected. Even in the white ashes left after the combustion of coal, traces of the spiral vessels are discernible by a high magnifying power. Some beds of coal appear to be wholly composed of minute leaves, or disintegrated foliage; for if a mass be recently extracted from the mine, and split asunder, the exposed surfaces are found covered with delicate pellicles of carbonized leaves and fibres, matted together; and flake after flake may be peeled off through a thickness of many inches, and the same structure be apparent. Rarely are any large trunks or branches observable in the coal, but the appearance is that of an immense deposit of delicate foliage, shed and accumulated in a forest, (as may be observable in existing pine districts,) and consolidated by great pressure, while undergoing that peculiar fermenta-