displays a ligneous structure, resembling that of deal or fir; it is, in fact, a thin section of fossil coniferous wood; for jet is nothing more than the wood of some species of fir or pine, that has undergone the process of bituminization, as I shall presently explain. When viewed under a microscope, the small glands, which I have mentioned as peculiar to the *coniferæ* (Tab. 122, fig. 2), are distinctly visible. The other specimens before us are silicified woods, prepared in the same manner. A few words, in explanation of the mode by which sections of such extreme thinness are obtained, may not be uninteresting. A slice is first cut from the fossil wood by the usual process of the lapidary; one surface is ground perfectly flat, and polished, and then cemented to a piece of plate glass by means of Canada balsam; the slice thus firmly attached to the glass is next ground down to the requisite degree of tenuity, so as to permit its structure to be seen by the aid of the microscope. My specimens, as you perceive, are reduced to mere films or pellicles.* It is by this ingenious process that the intricate structure of any fossil plant can now be investigated, and the nature of the original determined, with as much accuracy as if it were living.

21. NATURE OF COAL.—I advance to the examination of the substance called *coal*, which is vegetable matter, transmuted by chemical changes

* There are beautiful figures of these objects in Mr. Witham's work; and also in Dr. Buckland's Bridgewater Essay.