Sigillaria in the coal-roofs equally testify to the accumulation of coal by the growth of successive forests, more especially of *Sigillariæ*. There is, on the other hand, no necessary connection of sporangite-beds with Stigmarian soils. Such beds are more likely to be accumulated in water, and consequently to constitute bituminous shales and cannels.

6. *Lepidodendron* and its allies, to which the spore-cases in question appear to belong, are evidently much less important to coal accumulation than *Sigillaria*, which cannot be affirmed to have produced spore-cases similar to those in question, even though the observation of Goldenberg as to their fruit can be relied on; the accuracy of which, however, I am inclined to doubt.

On the whole, then, while giving due credit to those who have advocated the spore-theory of coal, for directing attention to this curious and no doubt important constituent of mineral fuel, and admitting that I may possibly have given too little attention to it, I must maintain that sporangite-beds are exceptional among coals, and that cortical and woody matters are the most abundant ingredients in all the ordinary kinds; and to this I cannot think that the coals of England constitute an exception.

It is to be observed, in conclusion, that the spore-cases of plants, in their indestructibility and richly carbonaceous character, only partake of qualities common to most suberous and epidermal matters, as I have explained in the publications already referred to. Such epidermal and cortical substances are extremely rich in carbon and hydrogen, in this resembling bituminous coal. They are also very little liable to decay, and they resist more than other vegetable matters aqueous infiltration—properties which have caused them to remain unchanged, and to continue free from mineral additions more than other vegetable tissues. These qualities are well seen in the bark of our American white birch. It is no wonder that