fragments of tissues. Still later, some local facts in a French coal field have induced an eminent observer of that country to revive the drift theory of coal, in opposition to that of growth *in situ*. Views of this kind have also recently been advanced in England by some of those younger men who would earn distinction rather by overthrowing the work of their seniors than by building on it. These writers base their conclusions on a few exceptional facts, as the occasional occurrence of seams of coal without distinct underlays, and the occurrence of clay partings showing aquatic conditions in the substance of thick coals; and they fail to discern the broader facts which these exceptions confirm. Let us consider shortly the essential nature of coal, and some of the conditions necessary to its formation.

A block of the useful mineral which is so important an element in national wealth, and so essential to the comfort of our winter homes, may tell us much as to its history if properly interrogated, and what we cannot learn from it alone we may be taught by studying it in the mine whence it is obtained, and in the cliffs and cuttings where the edges of the coaly beds and their accompaniments are exposed.

Our block of coal, if anthracite, is almost pure carbon. If bituminous coal, it contains also a certain amount of hydrogen, which in combination with carbon enables it to yield gas and coal tar, and which causes it to burn with flame. If, again, we examine some of the more imperfect and more recent coals, the brown coals, so called, we shall find that in composition and texture they are intermediate between coal proper and hardened or compressed peat. Now such coaly rocks can, under the present constitution of nature, be produced only in one way, namely, by the accumulation of vegetable matter, for vegetation alone has the power of decomposing the carbonic acid of the atmosphere, and accumulating it as carbon. This we see in modern times in the vegetable soil, in peaty beds, and in