

exceptional fact to all coals, and placed this supposed origin of coal in a light so brilliant and attractive that he has been followed by many recent writers. The fact is, as stated in "Acadian Geology," that trunks of *Sigillaria* and similar trees constitute a great part of the denser portion of the coal, and that the cortical tissues of these rather than the wood remain as coal. But cortical or epidermal tissues in general, whether those of spore-cases or other parts of plants, are those which from their resistance to water-soakage and to decay, and from their highly carbonaceous character, are best suited to the production of coal. In point of fact, spore-cases, though often abundantly present, constitute only an infinitesimal part of the matter of the great coal-beds. In an article in "The American Journal of Science," which appeared shortly after that above referred to, I endeavoured to correct this error, though apparently without effect in so far as the majority of British geological writers are concerned. From this article I have taken with little change the following passages, as it is of importance in theoretical geology that such mistakes, involving as they do the whole theory of coal accumulation, should not continue to pass current. The early part of the paper is occupied with facts as to the occurrence of spores and spore-cases as partial ingredients in coal. Its conclusions are as follows :

It is not improbable that sporangites, or bodies resembling them, may be found in most coals; but it is most likely that their occurrence is accidental rather than essential to coal accumulation, and that they are more likely to have been abundant in shales and cannel coals, deposited in ponds or in shallow waters in the vicinity of lycopodiaceous forests, than in the swampy or peaty deposits which constitute the ordinary coals. It is to be observed, however, that the conspicuous appearance which these bodies, and also the strips and fragments of epidermal tissue, which resemble them in