(5) The presence of air as the source of oxygen is of course essential to oxidation, but a great excess of air, while facilitating oxidation of certain constituents, will also carry off the heat generated, and thus keep the coal cool and in this way prevent the coal from reaching the high temperature necessary for very rapid oxidation. It is thus possible to prevent oxidation altogether by absolutely excluding air, or to prevent undue heating by ensuring thorough ventilation. When, however, a limited, but sufficient, supply of air reaches the coal the destructive action is most rapid. In this connexion also, the physical condition of the coal is important, as dust, while it retards the passage of air, does not by any means prevent it.

(6) The way in which the coal is stored is of great importance in connexion with the last named points. A low thin pile ordinarily receives enough air to keep it cool; a high pile by its own weight compresses its lower portion and reduces the voids. There is thus a level or zone in any very high pile in which the conditions for heating are at a maximum while the deeper parts of the pile may get too little air and the portions near the surface too much for dangerous heating.

(7) The individuality of the coal is a factor of prime importance, for although certain types such as resinous lignite and bituminous coal are of course most easily oxidized, and other types such as anthracite and semi-bituminous are very slightly affected, yet chemical analyses and physical appearances alone do not always suffice to enable us to determine the relative susceptibility to weathering, and of any two coals which are apparently alike in composition and condition, one may prove to weather very much more rapidly than the other.