

rods run down through the pile at frequent intervals; these can be seen in Plate II. They should be pulled out once or twice a week, their temperature being felt along their length, and then put back in a fresh place. If dangerous heat develops in a ventilated pile it is best treated by making extra ventilation holes; if this does not succeed, or in the case of an unventilated pile, it is well to dig away the hot coal and spread it out to cool. Digging out is also the best remedy in case of fire. It is well to begin by digging all round the heated spot to isolate it, as otherwise it may spread back into the rest of the pile as air gets to it.

Water is not found to be successful in extinguishing fires. In the first place the coal above the fire cokes and thus armour the fire over and the water cannot readily penetrate through. Cases have been known where in digging out ships' cargoes, hollow spaces were found near the bottom containing only ashes; a fire had begun, armoured itself over and burned out without its presence having been suspected. Secondly, water may cause the fire to spread, as the steam generated passing through the pile heats up fresh coal which also soon fires. Fayol showed that coal, even in small piles, soon fired if first heated to 100° C.

The subject of spontaneous combustion is a very large one and this paper comes far short of covering even the work already done; but it will at anyrate serve to indicate the incompleteness of our present information.

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