nection with the facts in an interesting article on the "Calorific Value of Fuel," which we find in the *American Railway Times*, and which contains remarks so pertinent on this point that we quote as follows:—

"There are, in all, five important kinds of fuel only—these are, wood, peat, coal, charcoal and coke; the first three being natural, and the last two artificial fuels. The elements of which each of these is composed are practically identical—the difference of character being due to the proportion of those elements entering into the composition of each kind of fuel; and, according to those proportions, each fuel takes its relative position in the scale of value. Taking the comparative chemical composition of the various kinds of fuel, according to Dr. Machaltie, their percentage stands thus:—

	Carb.	Hyd.	Oxyd.	Nitr.	Sulp.	Ash.
Wood (dried at 280 deg. F.)	50.0	6.0	42.9	1.0		1.0
Peat (dried at 220 deg. F.)..	57.0	5.5	31.0	1.5		5.0
Coal	85.0	5.0	4.0		1.0	4.0
Charcoal	87.0	3.0	7.0			3.0
Coke	92.0				1.5	3.0

The *amount* of heat produced by fuels in their combustion does not always constitute their relative value. For some purposes, it is apparent that this would be the best criterion; but, as a rule, in metallurgic processes, the quantity of heat is of far less importance than the intensity, or power to raise substances to the highest temperature—and the fuel which affords the greatest quantity of heat is sometimes incapable of producing the greatest intensity.

In determining the intensity of the heat produced, it is necessary to know the available quantity of heat produced in the combustion of a pound of fuel, the weight of products of combustion, and the quantity or number of units of heat required to raise the products of the combustion of a pound of fuel, one degree Fahrenheit.

Where very high temperatures are required, the fuel which should be selected ought to approach as near as possible to pure carbon in its composition, and for the reason that carbon is the best substance for the purpose.

"We now see the reasons for making coal into coke, and wood into charcoal. Coal cannot produce a temperature equal to that obtained from coke, neither can the temperature of wood be compared with that of charcoal. And this results from the relative accession of carbon, and reduction of oxygen and hydrogen in them. This must be referred to the great difference between *quantity* and *intensity* of heat. If we cannot raise sufficient steam from a boiler by the use of one ton of coal, we can easily meet the point by burning two tons; but, if the fusing point of metal cannot be attained with one ton of coal, it by no means follows that any additional amount of fuel will insure the required result. The great distinction to be observed is between *quantity* and *intensity* of heat. The first of these two conditions depends upon the quantity of fuel, but the last is referred entirely to the quality of fuel.

"Twenty tons of coal will not give a temperature so great as that afforded by one ton of coke."

It should be observed, that in the above statement of comparative composition of fuels no mention is made of peat charcoal. Now it is an established fact, that peat charcoal is of greater density and calorific power than peat, or than wood charcoal, and, calculating the amount of carbon in peat charcoal at no more than the relative amount as between wood and charcoal in the above table, peat charcoal will be represented by 98, which exceeds any of the fuels mentioned in Dr. Machaltie's table.

The intense heat generated by peat fuel is a subject of frequent remark, and will eventually be dwelt upon, we think, as a very important consideration in estimating its value.

THE FOLLY AND DANGERS OF FREQUENT "STRIKES."

A correspondent of the *Scientific American*, in England, referring to the unusual stagnation in many of the leading and important trades, amongst other causes charges it "also to the folly of the workmen in striking for higher wages at a time when the state of business is such that to insist on these is simply to prohibit any work being done at all. The workingmen in many of the trades appear to think the masters can command an unlimited amount of money, and that this is wrongfully witheld from them, and their action is becoming such as seriously to interfere with business and to insure the success of foreign competition. If they could but see it, they are doing their best to deprive themselves of their means of support, which must always be dependant on the ability of the masters to compete successfully for orders with Continental manufacturers."

Another evil of "strikes" is, that a proper classification of workmen is seldom allowed. When men are scarce, the employer has to pay third or fourth class men first or second class wages; but when work is scarce and workmen abundant, then the third and fourth class workmen are immediately thrown out of employment, as no employer will retain such any longer than he is able to do so, at a proportionate rate of wages far higher than for first class workmen. It does often seem that these strikes are but combinations of first class workmen against third and fourth class men.

Another injustice of "strikes" is, that they generally take place while heavy contracts are in progress, and then bring either ruin or serious financial embarrassment upon the contractor, upon whom the workman depends for employment for himself and support for his family. In the summer of 1866, the journeymen builders of the City of Toronto struck for higher wages. The master builders met and formed an association also, and agreed to the rates of wages insisted on by the