ON THE SUPPOSED ANTI-SEPTIC PROPERTIES OF PEAT CHARCOAL.

Mr. Jasper Rogers, some years since, suggested the application of peat charcoal to lining the coffins of the dead, so as to effect a partial embalmment of the corpse. The recent researches of Dr. Stenhouse and others, however, shew that wood and peat charcoal hasten the decomposition of the body, instead of preventing or retarding that process; the noxious gases evolved being absorbed and oxidised within the pores of the charcoal, where they are reduced to their elementary innocuous principles.—Vide "Economical Applications of Charcoal to Sanitary Purposes." By Dr. Stenhouse. Published by Highley, London, price Sixpence.

The application of charcoal to the use above-mentioned is, nevertheless, one of much importance, the general adoption of which would be attended with important sanitary results.

Mr. H. J. Traice, of Leeds, then read a Paper ON WILLIAMSON'S IMPROVED SYSTEM OF COLLIERY VENTILATION.

In order that the causes of danger of explosions in coal mines may be so dealt with as greatly to decrease the probabilities of accident, we must either dilute the explosive air in the mine till it has lost its explosive property, or we must remove it before it can mix with atmospheric air in the proportion which renders it explosive.

According to the system I propose, the ventilating arrangements are altogether different from the method ordinarily used. What would ordinarily be the main downcast windway, is made the main upcast windway, the roadway nearest the workings being the main downcast airway. Air passages passing overhead draw the foul air from the goaf to the upcast airway. The effect of this withdrawal is to cause a
current of air to pass up each of the branch roadways to the coal face, from whence it is drawn into the goaf, in the same proportion as the air is withdrawn from that waste by the action of the ventilator, which may be either a steam jet, a furnace, or a fan, as circumstances may dictate. It will be seen that by this plan of ventilation the upcast windway is an extension of the upcast shaft, drawing a portion of foul air from every goaf, and, indeed, every separate part of the mine, independent of any other. The quantity of air removed being regulated by the size of the opening of the overhead airways, the sum of the areas of the whole of which must not exceed the area of the upcast shaft.

The advantages of this plan are:—

1st. Should a blower occur opposite a goaf, the workmen can be withdrawn until it has exhausted itself, without the gas causing any injury to any other portion of the mine.

2nd. The gas would be immediately withdrawn from the lamps of the miners, for although the diffusion of gases goes on somewhat rapidly, still as there is the difference of specific gravity to be overcome, the probability of an explosion would be lessened.

3rd. When a change in the pressure of the atmosphere occurs, and the barometer falls, say from 30 to 29 inches, the atmosphere of the goaves expands in the inverse proportion, every 29,000 feet becoming 30,000 feet; but by the plan proposed it would escape by the upcast airway, instead of being driven into the workings, as in the old plan.

4th. Allowing of the possibility of an explosion, it would be entirely local in its effects, for the after-damp would not pass through the workings, but through the goaf to the upcast; the ventilation would not be disarranged as it now is by the blowing down of traps and stoppings, which frequently prevent any succour being given to those who, by
an explosion, are prevented from obtaining fresh air or the means of exit.

5th. A greater facility for working the mine, by the removal of a number of the traps; a great saving in the expense of working, by a less number of trappers being required, thus giving the children of the colliers a better opportunity of acquiring a school education, by removing the temptation of a few shillings per week, for which the poor children are consigned to a dark, solitary, and monotonous employment.

6th. A larger proportion of the foul air will be drawn off, as the opening being made in the upper parts of the mine will give the carburetted hydrogen the advantage of its lower specific gravity. I may here remark that where a quantity of carbonic acid gas is eliminated, I should place openings beneath the levels of the main airways, so as to give it the advantage of its higher specific gravity.

7th. By the circulation of air in the goaf, the spontaneous combustion of the coal dust, (a frequent occurrence in some districts abounding in iron pyrites,) causing accidents of serious consequence both to life and property, would be prevented.

It is possible that the free passage of air through the goaf may be impeded by the falling of the roof of the mine, in which case one of the branch roadways must be trapped and made an upcast roadway, the necessary communication being made overhead with the main upcast windway.

The plans I have thus endeavoured to explain do not involve any costly contrivances, they, indeed, have, I believe, claims to consideration on the ground of expense, as the process of insulation and circulation could be effected more economically than at present, the ventilation being carried on quite automatically so long as the upcast shaft has a rising current of sufficient strength. But even should I have mis-
calculated the cost of my plan; though I am at a loss to estimate any source of expense not attending the existing modes which mine would incur, I still solemnly believe that the practical solution it offers of one of the greatest difficulties in bringing to the surface our rich stores of fossil fuel, unattended with fearful loss of life, should commend it to the dispassionate consideration of every coal owner.

The Paper was illustrated by plans of the different modes of working coal pits in use, and a model of Mr. Williamson’s improvement.

A discussion ensued, in which Messrs. Briggs, Embleton, and Jebson took part, gentlemen conversant with the working of coal mines, who expressed considerable doubt of the practicability of carrying out the views of Mr. Williamson.