

EXPERIMENTS ON THE REMOVAL OF SULPHUR FROM ILLUMINATING GAS BY ACTIVATED CARBON: (ABSTRACT).—BY E. W. TODD, B. A., Department of Chemistry, Dalhousie University, Halifax, N. S.

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Two varieties of activated carbon, Norit and Rotite, were used in the experiments.

The amounts of sulphur in the gas were determined in the ordinary way by burning the gas.

A few of the results obtained with Rotite are given below.

Per 100 cu. ft. of gas measured at 62°F. and 30 inches pressure:

(a) Experiment without activated carbon: 48.6 grains of Sulphur.

(b) Experiment with activated carbon 5.6 grains.

(c) Experiment without activated carbon: 47.5 grains.

Average of (a) and (c) = 48.05 grains.

Sulphur remaining in the gas = 5.6 “

Therefore, the sulphur has been reduced to about one-eighth of its original value.

Other experiments gave similar results.

The weight of activated carbon used was about 125 grams. These experiments were sufficient to show that the amount of sulphur in the gas can be reduced considerably by the method used.

The 12 inch tower containing the carbon was next connected with the gas supply, and between three and four hundred cubic feet of gas passed through it, in order to see how soon the carbon would become “saturated” and, therefore, ineffective. Then, gas was again passed through the tower and burned, in order to see how much sulphur the carbon was now capable of removing.

The sulphur was found to be reduced, but not nearly to such an extent as before,—approximately to one half

of its value, as compared with one-eighth in the case of the fresh carbon.

Next, an attempt was made to "revivify" the carbon in the following manner: The carbon was removed from the tower, and heated in an open iron crucible, with occasional stirring, over an ordinary Bunsen flame for about two hours.

The carbon after cooling was then replaced in the tower, and tested for its ability to remove sulphur from the gas.

Per 100 Cubic Feet of Gas at N. T. P.

1st. experiment, with activated carbon,	2.97	grams
2nd " " "	2.69	" "
3rd. " " "	3.83	" "
4th " without activated carbon	15.38	" "

So that, in the first two experiments, about one-fifth or one-sixth, and in the third, about one-fourth of the sulphur was left in the gas.

Therefore, the carbon has been, to some extent, revived by the method adopted.

It is intended to try other methods of revivifying the carbon.

Other experiments, made with Norit, gave results in which the sulphur was reduced to about one-seventh of its original value—much the same reduction as with the Rotite.

Summary.

It has been found that the two forms of activated carbon tried were very effective in removing sulphur compounds from illuminating gas, and that the carbon could be revived to a considerable extent by heating it in a vessel open to the air.