valuable paper read by Mr. Wickens and the discussion with a great deal of interest.

The question of smoke in a city like this is one of vital importance. One hears a good many kicks about the smoke by-law, but I think it is the duty of every engineer in a city like this to try and make Toronto a smokeless city. Smoke not only disfigures the buildings in our city, but it is a source of danger to the general health of the people, and I think it is a public duty to see that every engineer lives up to the by-law in regard to smoke.

Mr. Wickens rightly attaches much importance to the type of stokers employed. If we are going to prevent smoke, I am certainly of the opinion, after seeing many experiments tried, that the most satisfactory stoker was the one which gives a steady, constant stream of coal in very small quantities, and that coupled with chain grates on which the coal is evenly distributed. In that way you get as near as possible to total incandescence, which condition, I think, it is impossible to obtain in any other way.

Some figures were mentioned as to the relative cost of power. I think it would be impossible for anyone of us to go very much into the relative cost of power in one night. The main question to-night is the question of smoke. The question of the cost of K.W. hours per year is such a large subject that it would be quite impossible to begin to discuss it while any other subject is under discussion, there are so many points to be discussed in connection with it, anyone of which might alter the whole face of it.

The question of heating by exhaust steam is certainly a complex one, but I cannot say that I agree with some of the speakers. My whole experience goes in the direction laid down by yourself, Mr. Chairman, that is, that it is a mistake to suppose you can use exhaust steam for heating without an increase in the cost of fuel. Under proper conditions in either case it will be found that the cost of fuel will be the same.

It should be remembered that by sending your exhaust through your radiators you are putting a resistance in its path, the condition obtained being exactly the reverse of a vacuum condenser which relieves the back pressure and increases the efficiency of your engine.

I think Mr. Wickens slightly misunderstood the question in reference to volume. To my mind, that is where the mistake of the whole thing lies. We talk about steam containing a certain number of heat units. What is really meant is "heat units per unit of volume." Suppose you take steam at 100