

without bad results. In reality, the location for a producer plant should be selected with even greater care than for a steam engine, as the question of ventilation is of great importance. The exhaust is more troublesome than that from a steam engine, owing to the quantity of gas emitted and the noise. The gas plant is admitted to be less reliable, so far as continuity of service is concerned, than the steam engine.

"A small gas plant, however, has the advantages over steam, in so far that no black smoke is emitted, costs for fuel and attendance are less, and also the total yearly costs, and the plant may be started, everything being cold, more quickly than the steam plant.

"The gas plant may be used to good advantage where continuity of service is not of prime importance, and where electric power cannot be obtained or where the cost of such power is excessive. The costs of producer power are much greater than usually given. These costs are usually based on a test carefully made under full load conditions. Figures received from the users of producer power usually omit fixed and other important charges, and are almost invariably based on the assumption that the average yearly load is approximately equal to the maximum load carried."

The section of the report prepared by Mr. Emil Stern is more favorable to producer gas plants. Mr. Stern visited some twenty-four producer plants in the Eastern States, and, after referring to each plant, separately, he summarizes as follows:—

"In obtaining information the principal object was to find out what the users of producer plants are really doing, and also to allow the public to pass its own judgment on this question, enabling them to make proper comparisons between the figures offered by gas producer plant manufacturers and those offered by concerns supplying power by other means.

Producer Gas Not Total Failure.

"Up to the present time it is impossible to pass a final opinion regarding producer gas, gas producers and producer gas engines. Producer gas cannot be declared a complete success, because many plants do not give satisfaction, and are unreliable and expensive to operate, on account of high oil and water consumption, high wages, repairs, and capital cost. But producer gas cannot be considered a total failure, because many plants have been in successful operation for years, they are absolutely reliable, the attendance, repair, fuel, water and oil consumption being low.

Lack of Knowledge and Experience.

"The reason for the partial or total failure of producer gas plants will always be found due to a lack of knowledge and experience. This lack of knowledge and experience may generally be ascribed to ignorance in the design, building, installation, and operation. None of these instances have come down to a standard in Canada and the United States, and ignorance of one of these four points is sufficient, of course, to make a gas producer plant a failure. In most cases, where plants have been bought of and installed by a reliable concern, they will work satisfactorily, providing that an intelligent and reliable man is in charge of same. This last point is essential to the success of a producer gas plant.

"It is generally claimed by the manufacturer of gas producer plants and engines that no mechanic or licensed engineer is required to run the same. This is true to a certain extent, and I have found in several cases a plant in successful operation being run by a man who had no mechanical knowledge whatever. In one case a man was found in charge of the heating, boiler, gas and electric plant, who had changed from a horse driver to an engine driver over night. The manager of the factory stated that this man replaced a licensed steam engineer, who was not able to manage this plant at all, and in consequence of the change the fuel consumption had been reduced from six tons a week to three tons a week, for the reason that the steam engineer used to draw the fire as in a boiler, thus wasting half of the fuel. The fact that this firm had a

licensed engineer, who was a high salaried man, shows that this change was not due to any financial consideration; it simply shows that the right class of men are not generally available to run gas producer plants.

"General experience goes to show that in most cases a green man does better work than an old steam engineer.

"In many cases manufacturers have abused their customers by doing the experimenting for them at the customer's expense. This has certainly done harm, not only to the experimenting party, but to the whole trade. In other cases it is impossible to do all the experimenting at home, for instance, if a steel company orders a 2,000 horsepower engine for blast furnace gas, it is impossible to try it in the shop, and the manufacturer should not be blamed if it takes some time to get the engine into proper shape.

"Generally speaking, producer gas is being introduced slowly but steadily. Like every new thing, it requires time for development, and we may trust that it will shortly be allowed to take its part in Canada's power generation as it already does in England and other European countries, helping to increase the industry and manufacturing capacity of our country."

ELECTRIC HEADLIGHTS ON LOCOMOTIVE ENGINES.

Owing to the numerous reports the Board of Railway Commissioners has received from its inspectors relating to the poor condition of the headlights on a large number of locomotive engines in use on the different railway systems in Canada, the Board has had under consideration the advisability of requiring the railway companies subject to its jurisdiction to use an electric system of headlights, or some other good system that will give satisfactory light for the protection of life and property.

Through their secretary, Mr. A. D. Cartwright, the Board are requesting suggestions, in writing, in reference to such a proposal.

ENGINEERING SOCIETIES.

CANADIAN RAILWAY CLUB.—President, W. D. Robb, G.T.R.; secretary, James Powell, P.O. Box 7, St. Lambert, near Montreal, P.Q.

CANADIAN STREET RAILWAY ASSOCIATION.—President, E. A. Evans, Quebec; secretary, Acton Burrows, 157 Bay Street, Toronto.

CANADIAN INDEPENDENT TELEPHONE ASSOCIATION.—President, J. F. Demers, M.D., Levis, Que.; secretary, F. Page Wilson, Toronto.

CANADIAN SOCIETY OF CIVIL ENGINEERS.—413 Dorchester Street West, Montreal. President, J. Galbraith; Secretary, Prof. C. H. McLeod. Meetings will be held at Society Rooms each Thursday until May 1st, 1908.

QUEBEC BRANCH OF THE CANADIAN SOCIETY OF CIVIL ENGINEERS.—Chairman, E. A. Hoare; Secretary, P. E. Parent, P.O. Box 115, Quebec. Meetings held twice a month at Room 40, City Hall.

TORONTO BRANCH OF THE CANADIAN SOCIETY OF CIVIL ENGINEERS.—96 King Street West, Toronto. Chairman, C. H. Mitchell; Secretary, T. C. Irving, Jr., Traders Bank Building.

WINNIPEG BRANCH OF THE CANADIAN SOCIETY OF CIVIL ENGINEERS.—Chairman, H. N. Ruttan; Secretary, E. Brydone Jack. Meets first and third Friday of each month, October to April, in University of Manitoba.

ENGINEERS' CLUB OF TORONTO.—96 King Street West. President, J. G. Sing; secretary, R. B. Wolsey. Meeting every Thursday evening during the fall and winter months.

CANADIAN ELECTRICAL ASSOCIATION.—President, R. S. Kelsch, Montreal; secretary, T. S. Young, Canadian Electrical News, Toronto.

CANADIAN MINING INSTITUTE.—413 Dorchester Street West, Montreal. President, W. G. Miller, Toronto; secretary, H. Mortimer-Lamb, Montreal.