

# The Canadian Engineer

## An Engineering Weekly

### CANADIAN PEAT FUEL INDUSTRY.

The forward movement begun by the Mines Branch in June, 1906, to solve the problem of providing a cheap domestic fuel for the middle provinces: Quebec, Ontario, and Manitoba—where there is no coal, but very extensive peat bogs—has made considerable progress, and owing to recent new fields for peat fuel there would appear to be ample grounds on which to investigate the various peat deposits in the above mentioned provinces.

During the autumn of 1910, some 500 tons of peat fuel, manufactured at the Alfred plant, Ottawa, were sold at \$3.25 to \$3.50 per ton to private individuals in Ottawa, for domestic use. The reports coming in from the consumers—showing that the peat has given great satisfaction as a fuel for open fire grates, cooking stoves, and even in furnaces for heating the house; and the numerous inquiries from business men and capitalists are so encouraging, that, with the advent of spring it is confidently anticipated there will be a marked revival of interest in the peat industry throughout the provinces where there is no coal.

Since 1907, according to a report published by the Department of Mines, ten peat bogs have been investigated, delimited, and plants made thereof. In 1910, only one was investigated, viz., the Holland peat bog, situated in Simcoe county, Province of Ontario. This is the largest peat bog so far examined and delimited by the Mines Branch. It covers over 16,000 acres, and should produce over 9,000,000 tons of peat fuel. The report of Mr. Anrep shows that the surface of this immense bed of peat is free from trees, hence can be worked economically by labor-saving machinery; while the quality as regards ash, and calorific value is satisfactory.

In 1909 the Dominion Government erected an experimental and fuel testing plant at Alfred, Prescott county, Ont. The equipment, exclusive of storage bins, etc., includes a Körting peat gas producer, with the necessary attachments, a 60 h.p. gas engine of the same make, a 50 kw. dynamo (Westinghouse) portable resistance of 60 kw. capacity, used in load absorption when testing, and a switchboard with suitable complements of measuring and testing instruments, etc.

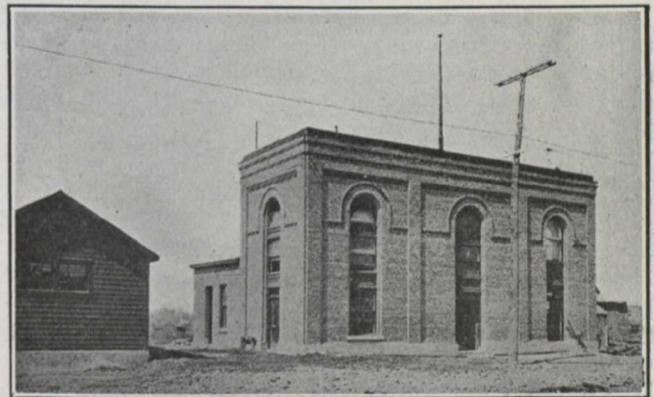
The main building, shown in Fig. 1, is divided into two portions, one containing the peat gas producer and auxiliaries; the other housing the engine and dynamo, also an ore dressing laboratory concentrating machinery and gas testing equipment.

It has been possible to utilize the by-products of peat fuel manufacture as material for fruit packing, etc. In fact, the manufacture of this "litter" and its by-product "great mull" has become a well established industry in Sweden, Holland and Germany. As Canada is taking a prominent position among fruit growing countries, doubtless this article would find a ready market. Several shipments of this moss-litter have been made from Holland to the United States at an average cost of \$6.00 per ton.

The equipment of the laboratory was begun in July, 1910, but it was not until September that the laboratory benches were installed, and that it was possible to begin chemical

work there. The equipment includes the pieces of apparatus which were originally purchased for the coal tests carried out for the Mines Branch at McGill University, but which have now been installed in this laboratory.

The work which has been done in connection with the laboratory, in addition to the considerable work of equipment, has included: tests on Blaugas; tests on Fisher's fuel economizer; tests of peat tar; micro-photography of coal dust taken from the mine at Bellevue, Alta., after the explosion on December 9, 1910; 30 determinations of the calorific value of peat and coal; 65 determinations of the calorific value of gas; 65 analyses of gas; 20 determinations of tar and dust in producer gas; and a number of determinations of moisture, ash, volatile matter, etc., in peat, coal, and coke. The samples tested include: 21 samples of peat from the Government peat bog at Alfred, Ont.; 11 from the Holland peat bog at Bradford, Ont.; 4 from Walkerton, Ont.; and 4 sundry peat samples; 12 samples of coal from Edmonton; 1 from Pittsburg; and 1 sample each of cannel and anthracite coal; 1



Fuel Testing Station, Ottawa.

sample of gas coke. The work of this laboratory has been seriously hampered, owing to being housed in a room 17 ft. by 11 ft., the only room available, and will be, until it is possible to provide suitable accommodation. Gas analyses and calorimetry—which require a room of constant temperature; furnace work, and all general chemical work in which heat is generated; weighing, etc.—which ought to be done in a clean room, free from chemical fumes liable to attack the balances; chemical work and the preparation of samples, which causes dirt, have all to be done in the same room.

Three tests—to determine the consumption of peat per B.H.P. hour—were made with peat manufactured at Victoria Road peat bog. This peat had been manufactured some two years previous to the erection of the machinery at the fuel testing plant, and during this period was stored in a shed fully protected from the weather. It was consequently very dry, containing only 13 per cent. moisture. But inasmuch as the producer was designed to gasify peat containing from 25 to 30 per cent. moisture, the results of the tests with this peat