

of a substitute for coal from peat, which they expected to sell at six shillings per ton. No money was spared in trying to make the experiments a success, and most expensive machinery was put down. Experts were brought from Germany to look after the work under the superintendence of Captain Verey, R.E. Large shipping companies on the strength of samples submitted, and representations made to them, promised some very large contracts for fuel, but the company, at the end of over one year's experimentation, found that their process was a failure. The peat made by them looked like coal and burned well, but was hygroscopic, and after a short time crumbled to powder. All efforts to overcome this defect failed, and the project was permanently abandoned in June last.

The Ekenberg process of the wet carbonization of peat is exceedingly ingenious, and has aroused great expectations, but is still in the experimental stage after the expenditure of 200,000 kronor in Sweden to place it upon a commercial basis.

The endeavor to accomplish economically by artificial means in a short time, what has been accomplished by nature in exceedingly long periods of time, namely the change of peat into a substance similar to coal, has so far apparently not been attended with success. I would not like to say that it cannot be done, since it is unsafe to make any statements regarding the possibilities of future achievement, but at present the outlook in this direction is certainly not encouraging.

In view of these facts, the only proper course for us in Canada to follow, if we desire to establish a peat industry and render ourselves at least to some extent independent of outside sources for our fuel, is to introduce such processes and such machinery as have proven successful and are now in actual commercial operation in Europe.

We may safely leave experimentation and the development of new ideas to the future, when our peat industry is on a secure basis and peat fuel in abundance on the market. We will then have gained in the manufacture of peat fuel along lines which are at present commercial, the necessary experience to warrant the hope that proposals for modifications and improvements of present processes will be based upon a thorough and practical understanding of the nature of peat and the principles upon which future economy may reasonably be expected. This is a safe proceeding for our country, and above criticism. It will give us the required fuel and prevent waste of capital in experimentation. Departure from this principle has led to failure and the creation of a pronounced distrust in everything connected with peat and the utilization of our peat bogs.

To re-establish the confidence of the people of Canada in the value of peat as a domestic and industrial fuel, and to stimulate renewed activity in the development of our peat resources, the Government has acquired 300 acres of peat bog, with an average depth of 9 feet, for the purpose of manufacturing peat fuel on a commercial scale, and by a method which has proven successful in European practice. At this plant interested parties will have an opportunity of ascertaining for themselves the working of the bog as well as the suitability of the peat fuel produced. The capacity of our plant is a production of 30 tons per day. For a large commercial plant, mechanical excavators should replace the manual labor employed at our plant, if the bog to be exploited is suitable for this class of labor-saving machinery.

The plant at Alfred is to serve as a model of a successful process, and not for the production of peat fuel on an extensive scale. We expect, however, to manufacture during this season, about 2,000 tons of peat fuel, part of which is to be used in our peat-gas producer at Ottawa.

There is nothing artistic about the appearance of the fuel produced at our bog. It has not the regular geometric

form of briquettes nor their smooth exterior, but it serves the purpose for which fuel is intended as well as briquettes, and has the advantage of being low in cost of manufacture.

Allowing 140 days for a season's operation, the cost per ton of air-dried machine peat, including interest on capital invested, amortization, oil and repairs is as follows:

Cost of fuel on the field	\$1.40
Cost of fuel stored in shed	1.65
Cost of fuel loaded on car	1.65
Cost of fuel in stack	1.70

By the employment of mechanical excavators and the manufacture of peat on a large scale, the cost of production per ton should be considerably less than the figures here given.

The objection to the air-drying process, practised at our plant, is that it is not a continuous process, that it can be worked only during the summer months, and that the amount of fuel which can be produced during one season is dependent upon weather conditions.

These statements are quite true, and yet Sweden, Finland, Denmark, Germany, Holland, Austria and Russia, depend for a large part of their fuel supply on the simple process of pulping the peat, forming it into bricks upon the field and harvesting it as air-dried fuel. The weather conditions in Canada are as favorable, if not more so, for the production of air-dried machine peat as in the countries mentioned. To prevent shortage of peat fuel on account of unfavorable weather conditions during a season's work, a year's supply of peat fuel should always be kept in storage.

Russia is the largest producer of peat fuel in the world. In 1902, the production was 4,000,000 tons of peat fuel, and the annual increase of production has since then amounted to nearly 200,000 tons. Many private plants exist in Russia in connection with cotton mills for the production for their own use of 200,000 tons of peat fuel annually. 1,300 plants making machine peat are now in operation in Russia.

I admit that the hardness of anthracite permitting long hauls without much waste—the small volume it occupies requiring a minimum of space for storage—and the small amount of volatile matter it contains insuring a nearly smokeless flame are such valuable properties of this fuel that so long as it can be obtained, it will be used by those who can afford to pay for it. Peat fuel is, however, admirably adapted for use in grates during the late fall and early spring, when our heating furnaces are not in operation. This fuel will compete in price and cleanliness with soft coal for the purpose stated in our most luxurious homes. For the inhabitants of our rural districts, villages, and certain parts of our cities, whose homes are not supplied with hot air, hot water, and steam systems of heating but require the use of stoves, peat fuel will prove a cheap and excellent fuel, far superior to wood, and far more convenient to handle.

Although peat can be used in any of the common stoves now in use in Canada, a stove of excellent design, specially constructed for peat fuel, has been brought out in Sweden by the Aktiebolaget Ankarsrums bruk. These stoves—a model of which may be seen at our peat plant at Alfred, are tasteful in appearance, and very convenient in operation.

The economy, which may be effected by the use of peat is readily understood, when it is stated that in Ontario and Quebec the average price of anthracite with a high percentage of ash is \$7.50, and in Manitoba \$10.00 per ton, whereas air-dried machine peat, containing only about 5% of ash can be manufactured at a cost of considerably under \$3.00 for an amount having the same calorific value as a ton of the anthracite we import. This could be sold at places conveniently situated as regards transportation facilities and not too far