The pressure producer, as its name implies, is not dependent on the engine for draught, but air is forced in. These producers are simply cylinders lined with fire brick, into which air and steam is admitted in suitable quantities, and after the gas has been passed through scrubbers and washers to take out the tar, it is passed into a holder for use as and when required.

Many experiments have been made with lignite for gasmaking with this type of producer. A 250 horse-power gas producer of this type was installed by the United States Bureau of Mines, and it will be interesting to note what was done. A 235 barke horse-power gas engine was worked and this was connected by belting to a 200 kw. electric generator.

North Dakota, Texas, California, and other lignites were tried and a large number of ordinary coals. I shall take the results obtained with Pennsylvania coals for the purpose of comparison. With Dakota lignite they experienced no difficulty in keeping up full load, and they found that the gas had a calorific value equal to about one-fourth of ordinary coal-gas, that is, it had 145 to 164 B.t.u. per Texas lignite was very satisfactory, and they cubic foot. found that the heat value was greater than that obtained from ordinary coal.

The quantity of lignite used per electric horse-power

was as follows.		1hc
North Dakota lignite	2.20	105.
Taras lignite	1.99	
Texas lighte		
California lignite		"
Pennsylvania coal to to	1.50	
The quantity of gas consumed per electric host	rse-po	wer
was:		C
Dakota lignite	cubic	ieet
Bakota inginte 11	٠٠ .	"
lexas lignite		"
California lignite		"
Pennsylvania coal		
The calorific value of the gas was:-		

" " " " " 

Generally speaking, lignite used by means of gas producers gave 21/2 times the power if used with steam boilers and engines. Furthermore, the experiments showed that low-grade North Dakota lignite developed as much power when converted into gas as did the best Virginia bituminous coal when utilized under steam boilers.

Expressing the results in another way, the efficiency of the entire plant, based on the electric horse-power, made commercially available and the fuel consumed was :--

Dakota lignite 9.2	to	12.7%
Texas lignite 9.9	to	11.9%
Ohio coalII.I	to	14.3%
Pennsylvania coal10.8	to	15.0%

So, it will be seen that North Dakota lignite, which is a near relative of Saskatchewan lignite, gave exceedingly good results when converted into producer gas.

There is another type of producer, namely, the downdraft, but this will not permit me continuing the discussion. I may state, however, that the air is admitted at the top and not at the bottom, as in the other producers, and this is for the purpose of burning the tar.

On the basis of the tests made, it will be interesting to note the difference in the various gases made by producers and ordinary gas plant.

Good bituminous coal will yield about 11,000 cubic feet of gas, and almost 1,500 pounds of coke, besides tar and ammonia; the calorific value of the gas is about 650 B.t.u. per cubic foot.

Ordinary bituminous coal converted into producer gas will yield about 120,000 cubic feet, some tar and ammonia, and the calorific value of the gas is about 150 B.t.u. per cubic foot.

Lignite will yield about 11,000 cubic feet of gas, some tar and ammania, and half a ton of coke, which can be made into briquets. The calorific value of the gas is about 500 B.t.u.

Lignite converted into producer gas will yield about 70,000 cubic feet, some tar and ammonia. The calorific value of the gas is about 160 B.t.u. per cubic foot.

Some authorities are sanguine enough to state that in the near future producer gas will be supplied for all purposes at such a rate that might seem incredible. Mr. D. B. Dow ling, of the Canadian Geological Survey, in a paper read before the Canadian Mining Institute, wrote: "A town 10 the west supplied with lignite at from \$3.00 to \$4.00 per ton should have a producer gas plant to use lignite-heat the houses with gas at ten cents per 1,000, use the gas engine for electric lighting and water supply and run all the factories by the same means of producing power." am not at present in a position to express opinions on this phase of the subject, but that lignite can be used for various purposes cannot be gainsaid. Producer gas will require larger mains to carry it and larger fittings to consume it than with ordinary coal gas, but when this matter is care fully gone into it may be possible to find compensatory factors.

In conclusion, what will be the advantages of using lignite in the various forms mentioned to-night?

Cheap gas would constitute an excellent attraction to manufacturers; it would also be a great convenience to our womenfolk. Lignite briquets would be cheaper than any other form of fuel, and would be found satisfactory if proper grates were used. Lignite gas would reduce the smoke nuisance. It would be handy for various industrial operations-annealing, japanning, soldering, brazing, drying, evaporating, for stoves, boilers, bakers' ovens, etc. ducer gas is being largely used for brick, lime and cement kilns; gas can be so easily distributed from any centre and to any part. Twelve per cent. of the producers in the United States are operated with lignite. As natural gas cannot be duplicated by any known process, we should make the best possible use of our natural resources of fuel.

Producer gas can be made from wood, sawdust, tan bark, straw, hay, corn-cobs, and corn-stalks, and even leather scraps, but of course these fuels, with the exception of wood and sawdust, are not yet in extensive use.

The quantity of lignite mined in Saskatchewan appears to increase with the population; for instance in

		Tons
	Population.	lignite mined.
1891	40,520	20,000
1901	90,564	44,900
1906	257,763	170,582 ( bout)
1011	500,000	200,000 (about

I wish it to be clearly understood that the remarks made to-night are exceedingly rudimentary. The subject is so full of technicalities in full of technicalities that it is difficult to give expression to the essential facts with a side of the second state of the second state would to the essential facts without introducing terms which would require more time to cruter introducing terms which would require more time to explain than is available this evening. I hope, however, that when I hope, however, that what has been said will create a de-sire on behalf of the multisire on behalf of the public for more and fuller information and details. I understand the and details. I understand that the government proposes to make a full investigation into the government proposes matter, make a full investigation into this most important matter, and it can be safely said of and it can be safely said that there is ample room for