

## CALCIUM CARBIDE IN CANADA.

In part 1 of the report of the Ontario Bureau of Mines for 1898 Director Blue has the following interesting report on calcium carbide:

In several previous reports the Bureau has devoted considerable space to the subject of calcium carbide and acetylene gas. The account given in the Report of 1894 of Willson's method of producing the carbide, patented in that year, led to a large degree of public interest in the new illuminant, which also held out so bewildering a range of possibilities as a foundation for many useful compounds.

In the report for last year some of the difficulties were enumerated which hindered the general adoption of acetylene gas for lighting purposes, but since that time much progress has been made. Continued study of the properties of the gas and experiment with it, have involved apparatus of various types for its generation and control, and the result has been that acetylene is now being rapidly introduced as a means of indoor lighting throughout the Province of Ontario. The field which seems specially open for it is that afforded by the smaller towns and villages, where gas plants are not already in existence and where the electric light is used, if at all, only in the form of the arc lamp for illuminating public streets. Here a system of lighting is welcomed which does not necessitate an expensive central plant or a costly equipment of mains, and which does not require a large number of consumers to ensure a reasonable low cost. The advantage possessed by acetylene in this regard is, that it provides an isolated method of lighting, which can be adopted by one person in a town or village, or even by a farmer on his homestead, without reference to any one else and without increase of cost. This feature of acetylene lighting has doubtless, in large measure, been the cause of the favorable reception it has had in Ontario during 1897.

There are now eight firms engaged in manufacturing acetylene generators in the province, as follows: J. Wallace & Sons,

Hamilton; The Niagara Falls Acetylene Gas Machine Company, Niagara Falls; Loishman & Maudrell, Woodstock; The Hamilton Acetylene Gas Machine Company, Hamilton; The Guelph Acetylene Gas Machine Company, Guelph; The Acetylene Lighting Company, St. Mary's; The Acetylene Lighting Company of London, Limited, London; and the Welland Acetylene Gas Machine Company of Welland. One of these firms reports having placed 94 of its machines since January, 1897, mostly in Ontario, but several also in the United States and Mexico. The plants range in size from 15 to 100 lights. They are used for the lighting of stores, churches, manufactories, rinks, and dwelling houses. Another firm mentions a few of their principal patrons, 35 in number; a third firm enumerates 55 places in which they have set up 186 machines, ranging in size from five to 150 lights, but having a total of 4,535 lights. The majority of these generators were put up in Ontario, mainly in the smaller towns, but a number of them went to other provinces of the Dominion, among them 41 to Winnipeg, while 10 are said to have found their way to Klondike. A fourth firm could give "an endless list" of their customers, if desired, but furnish 15 only, among whom are five churches and one Government institution; a fifth sends the names of 18 users of their machines. From the fact that acetylene has so far been introduced mainly outside of cities and towns having gas plants already in operation, it is probable that it has taken the place of coal oil in the majority of cases, and to a smaller extent that of the electric light.

As to the cost of installing the light, this varies with the style and capacity of generator employed. One of the firms named above quotes its prices for the several sizes as follows: 15-light \$40, 25-light \$45, 35-light \$50, 45-light \$55, 60-light \$70, 65-light \$85, 100-light \$115, 150-light \$145. On the other hand the Springfield Acetylene machine, made in Springfield, Mass., is advertised to sell at prices ranging from \$125 for a 10 light machine to \$450 for a 100-light one. This Springfield generator is situated wholly underground, which it is claimed reduces the danger and offensive

smell to minimum. Plants of other make are usually situated in the basement or collar of the building which they are intended to serve.

As to the cost of operating the light plant, this is dependent almost wholly upon the cost of the carbide of calcium, as the only other ingredient used in producing the gas is water. The carbide used in Ontario is manufactured wholly by the Willson Carbide Works Company, of St. Catharines, and costs three cents per pound, or, allowing for freight about 3½ cents. Messrs J. Wallace & Son, of Hamilton, state that by actual experiment and photometric test with carbide at \$60 per ton, the cost of the acetylene gas has been found to be 12 cents per 1,000 candle power hours. The Niagara Falls Acetylene Gas Machine Company, state that in practice with carbide at 3½ cents per pound they find they can produce a full 36-candle power light at a cost of three-eighths of a cent per hour. The Acetylene Lighting Company, of London, write that in their experience acetylene gas costs about \$6 per 1,000 cubic feet, or one cent per hour for 85 candle power; while the Hamilton Acetylene Gas Machine Company quote the words of their agent at Whyoming: "We started a B. & J. machine on 30lb. of carbide and kept a close watch on it, finding as a result that it gave 160 hours' light of 50 candle power. This reduced to cost means 320 hours' light of 25 candle power, at a cost of 90 cents, or seven twenty-fifths of a cent per hour for 25 candle power light." These several estimates vary a little, but not much.

By the law of Canada (Consolidated Statutes, 1886, Chap. 101) the quality of illuminating gas must be such that the light produced by a standard burner consuming five cubic feet of gas per hour, shall be equal in

## The Acme Acetylene Gas Burners.

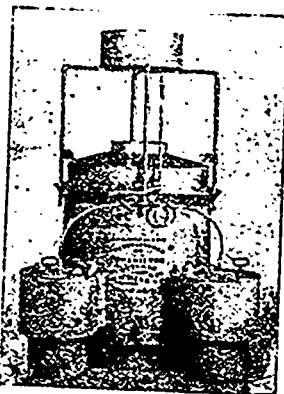
Only Multiple burner ever invented. Any number of flames, from one upward, on a single burner tip. **Will not Carbonize.** Samples—single flame, 25 cents; three flames, 50 cents.

THE STATE LINE TALC CO.,

Chattanooga, Tenn., U.S.A.

## Hamilton Acetylene Gas Machine.

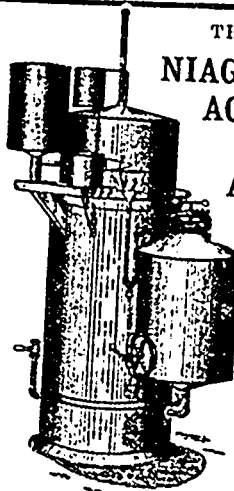
SIMPLE, ECONOMICAL, DURABLE AND SAFE.



Adapted for PRIVATE HOUSES, OFFICES, STORES, CHURCHES, or any building where a clear, bright and steady light is required.

300 in use in Dominion of Canada.

Address Communications to  
**HAMILTON ACETYLENE GAS MACHINE CO., Limited.**  
71 York Street, HAMILTON.

THE  
NIAGARA FALLS  
ACETYLENE  
GAS  
APPARATUS

Patented in  
Canada, United  
States and  
Great Britain.

This is the  
only machine  
perfectly auto-  
matic in its ac-  
tion, requiring  
little or no atten-  
tion. Machines  
made in 10 Sizes  
costing \$15 and  
upwards.

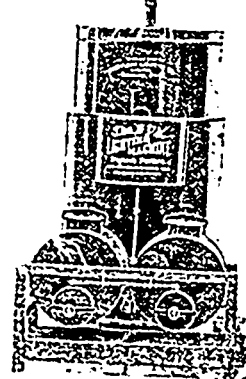
**Acetylene Gas the Coming Light.**  
CHEAPER THAN ELECTRIC LIGHT  
COAL GAS OR COAL OIL

For Private Dwellings, Business Houses  
Churches, Public Halls and Offices.

For particulars write to the  
**NIAGARA FALLS ACETYLENE GAS MACHINE CO.**  
NIAGARA FALLS, ONT. LIMITED.

## Sun Lighting Machine.

ACETYLENE GAS.



The  
Acme  
of  
Perfection  
in  
Lighting.

At the Mini-  
mum of Cost.

Suitable for any place where Artificial Light  
is required. Dwellings, Stores, Churches,  
Factories, Hotels, Street Lighting, etc.

Write for Catalogue.

THE

**Acetylene Lighting Co.**

(LIMITED).

LONDON, ONTARIO.