

CITY GAS WORKS.

Recent Improvements—Buildings and Apparatus Renewed.

HOW GAS IS OBTAINED FROM COAL.

CITIZENS cannot fail to have noticed the greatly improved appearance of the City Gas Works. A high substantial fence has been erected around them; a new house has been provided for the new gas holder; the old buildings have been repaired; the whole establishment has been fresh painted. In a word, the Gas Works have been renewed.

Nor can those of the citizens, who use gas, have failed to remark how much better the gas has lately been, not only in quality, but also in the way it is supplied. The satisfactory change is due to the improved apparatus with which the works have recently been provided. Let us take a look at the Gas Works and see what has been done. While we are doing so we may, perhaps, gain a clearer idea than we now possess of the extremely interesting process by which the hard, heavy, black lumps of coal furnish the elastic aeriform fluid which is conveyed through our streets, and brought into our shops and houses, and (in the absence of the sun) gives us light.

As we enter the gate, we note the long building, skirting the southern boundary, in which a large quantity of coal is every year stored, and in compartments of which the blacksmiths and gas-fitters of the "Works" perform the duties required of them; and, passing the immense heap of coke in the yard, go directly to the

RETORT HOUSE.

We may, however, remark, in general terms, that the series of operations connected with the preparation of gas embraces the several processes of "distillation," "condensation," "purification," and "storing." Now, the Retort House is devoted to "distillation"—the coal from which the gas is to be distilled being brought from the storehouse before noted. Imagine a huge fireplace, or furnace, such as is seen under a large steam boiler, with three, four or five "retorts" or ovens passing horizontally through it, and surrounded by an intensely hot fire. These retorts are in shape like a D, and are placed with the flat side down. They are made of fire clay, and are, of course, impervious to the flames of the furnace. The coal from which the gas is to be extracted is thrown from a wheelbarrow into them, and then they are sealed up tight. The fire, which plays freely all round the "retorts," soon disintegrates the coal, or, in other words, separates the elements of which it is composed. When this is fully accomplished, the "coke" is taken away to the yard and more coal supplied. The gases, tar, sulphur, etc., as they are let loose pass off through pipes leading from the retorts into the "hydraulic main"—a large tubular cast-iron pipe—closed up tight at one end—placed horizontally along the whole length of the "retort house." Formerly, this "hydraulic main" was laid upon the brick work at the top of the furnaces; but it was found that the expansion of the bricks by the heat, and their consequent movement, made it difficult to keep the "hydraulic main" from leaking. A glance shows that all this has been changed. The old furnaces have been replaced by new ones, new retorts have been put in, new pipes have been supplied, and the new hydraulic main rests upon cast iron columns, and is quite independent of the brick work and the furnaces. There are at present three new furnaces for five retorts each, and one new furnace for three retorts. A new steam boiler—made by Messrs. McKinnon & McLean—furnishes the steam by which the building is heated.

CONDENSING.

The elements of coal which pass from the retorts to the "hydraulic main" are of course exceedingly hot. But as they cool down the heavier ones separate from those which are lighter, and are deposited. The object of condensing is to cause them to separate quickly; and for this purpose they are carried from the hydraulic main and caused to travel through a great extent of pipes surrounded by cold water and winding through it like the worm of a still. During this operation the "tar," which is one of the component parts of coal, condenses, subsides, and falls through a pipe fitted for the purpose into a tank prepared for it in the basement of the building. The lighter parts pass on to

THE PURIFIERS.

to be relieved of the ammonia, sulphuretted hydrogen, and carbonic acid. This is accomplished by passing them successively through preparations of lime, etc.; by which the impurities named above are ab-

sorbed. The purifying room is now in the northwest corner of the building; but the Gas Company will ultimately include in it the large room formerly occupied by the old gas holder, and put in condensing and purifying appliances of the latest inventions. When this is done the purifying room will be one of the largest and best in the Maritime Provinces; and the quality of the gas will, no doubt, be still further improved.

THE GASHOLDER.

From the purifiers the gas is conveyed, fit for use, to the new gas holder, in the northwest corner of the grounds. The gas holder is inclosed in an octagon building—with a high, conical roof—sixty feet in diameter and twenty-five feet post. The roof is a marvel of simplicity and strength. There is but one span of sixty feet, supported by truss work; and radial bars of iron run from the rafters and the wall plate, to what is called a "king post" in the centre. Every bar is a brace; and the roof is held firm, let the wind blow never so strongly. The building is heated by means of steam pipes running entirely round it. A huge cast iron tank, fifty-three feet in diameter and twenty-one feet deep, strengthened by five large wrought iron hoops or girders, is kept nearly full of water, and in this tank, like an immense tub, or bucket, or bell, turned bottom up, the gas-holder floats. It is fifty two feet in diameter and twenty feet deep; and is capable of holding, at one time, forty-two thousand feet of gas. It is kept in position by means of chain girders and balance weights, which connect with it, and pass over cast iron columns resting on brick piers built from the foundation and running up to a height of twenty-two feet. As the gas comes from the purifiers into it, it rises up; as it goes out into the town it sinks. So that no matter what quantity of gas is in it the pressure remains the same. When gas is required in the town, it is allowed to pass out of the holder through

"THE GOVERNOR."

Now this is one of the most ingenious contrivances about the works. At different times in the night different quantities of gas are used; and every one must in olden times have observed that if a number of lights in a room were suddenly turned off, the remaining lights, owing to the concentration of the pressure of gas upon them, would flare and make a spluttering noise. After the house lights were turned off it was formerly necessary to partially turn off the gas at the main pipe, in order to reduce its pressure upon the street lights. The governor affords a remedy for this. It controls the pressure of gas along the whole course of the pipes, from the gas holder to the point of consumption. Can we describe it. Let us try. First there is a small cylindrical case, partially filled with water. A pipe leads from the gas holder into this case till it comes to a point above the water line. Another pipe leads from above the water line in the case to the main pipe, whence the gas is distributed over the town. At the end of the first pipe there is a valve through which the gas must pass. A bell or miniature gas holder is placed on the water and makes a gas proof space over it. This bell or holder accommodates itself to the varying pressure of the gas. As the lights in the town are shut off, the pressure becomes heavier, raises the bell, which, as it rises, closes the valve and so reduces the quantity of gas passing into the main pipes leading to the streets.

MESSRS. BURRELL JOHNSTON & CO.

This firm deserve great credit for the workmanlike manner in which they made the improvements to the works. Their contract involved an expenditure, on the part of the Gas Company of over \$20,000; and the company are, we learn, exceedingly well pleased with the work done.

THE DIRECTORS.

Before leaving the Gas Works we cannot help remarking that the Directors of the Company have acted with rare good judgment in the matter of renewing their establishment. They had the work done at a time when it could be done at the cheapest rates, and when men were most in need of employment and money—thus benefiting the Company and the community. They selected a Canadian firm to do the work, in preference to getting persons in England or foreign countries to do it; and the way in which the improvements have been made has amply vindicated their choice. The Gas Company have, like other persons and institutions, had their ups and downs. They were incorporated in 1853—a Mr. McAnslan being manager of the Works. For the first few years it seemed that their venture must end in failure. When the present manager—Mr. Murphy, took charge, the Company's stock was literally worth nothing. The commercially-disastrous years of 1857 and 1858 followed. If there had not been pluck, and perseverance, and faith in the directorate the Company must have suspended. Gradually the prospects grew brighter. By degrees the stock increased in value, until now it is considered one of the best and safest investments in the Province.

CLEARING-OUT SALE.

The Balance of Stock AT JOHN KELLY & CO'S

WILL BE SOLD

This Evening, at 8 O'clock, WITHOUT RESERVE.

2 first-class Sewing Machines will be offered. Great bargains may be expected. W. D. STEWART, Auctioneer.

The Early Stages of Christianity in England.

REV. DR. O'BRIEN, D. D., will deliver a Lecture in the MARKET HALL,

Wednesday Evening, Feb. 25,

On "The Early Stages of Christianity in England."

Doors open at 7.30 p. m.; Lecture at 8 p. m. Admission—Reserved seats 20 cents; unreserved, 10 cents. As the proceeds of the Lecture will be given for the relief of the poor, the patronage of the public is respectfully solicited.

P. R. BOWERS, Secretary St. Vincent de Paul's Society. Feb. 20, 1880—f m tu, all papers

Hake. Hake. Hake.

500 QUINTALS very superior WHITE HAKE, pickled cured, equal to Codfish. For sale low for cash. B. WILSON HIGGS, 52 Queen Street. Charlottetown, Feb. 20, 1880—2w 4w

RE-OPENED!

McKAY'S Watch & Jewelry Store, NO. 57, GREAT GEORGE STREET, OPPOSITE WALKER'S CORNER.

Repairing Neatly Done. ALL WORK WARRANTED. Feb. 20, 1880—3w 2w

Bank of P. E. Island.

THE Annual Meeting of the Stockholders of this Bank will be held at their Banking House, in Charlottetown, on TUESDAY, the second day of March next, at 12 o'clock, noon, for the purpose of electing Directors for the ensuing year, and the transaction of such other business as may be laid before them.

Proxies for voting must be left with the Cashier at least one day previous to the meeting. J. R. BRECKEN, Cashier. Charlottetown, Feb. 20, 1880.

Meeting of Parliament.

ST. JAMES' KIRK BAZAAR!

THE Ladies in connection with St. James' Kirk will hold a Bazaar for the

Sale of Fancy and Useful Articles, —ALSO—

A Tea and Refreshment Table, On the 4th March Next,

—IN THE— MARKET HALL.

The proceeds to be applied to the liquidation of the debt on the Church edifice.

Doors open at 2 o'clock, p. m. Admission—Adults, 20 cents; children, half-price. Tickets to be had at the Drug Stores of W. R. Watson, Dr. Dodd, C. D. Rankin, and at the door.

PRESIDENT—Mrs. McLennan. COMMITTEE—Mrs. McPherson, Mrs. Longworth, Mrs. A. Kennedy, Mrs. Stirling, Mrs. Lord, Mrs. Dunn, Mrs. McLaren, Mrs. A. Murray, Mrs. Cavanagh, Mrs. Rankin, Mrs. P. W. Hyndman, Mrs. Mackieson, Miss Owen, Mrs. Malcolm McLeod. T. A. STEWART, Secretary. Feb. 19, 1880.

VALUABLE PROPERTY FOR SALE.

THE Subscriber offers for Sale all that Valuable Property situated on corner of Grafton and West streets, and comprising Town Lots Nos. 15 and 16 in the third hundred of Town Lots in Charlottetown. Also, that Property on Kent Street, consisting of Town Lots Nos. 67 and one-half of 66, also in the third hundred. This property is a most desirable one for private residences, and will be sold low. If not disposed of by private sale, it will be offered at Auction about June 1st, next. Offers for part of the property will be received. For further particulars apply to Messrs. DAVIES & SUTHERLAND, or to the subscriber. F. MITCHELL, Trustee. Ch'town, Feb. 19, 1880—2w

JANUARY! 1880.

First Arrival this Year.

We have just received, ex Str. "Northern Light," several cases of

NEW GOODS

New Black Silk Velvets, New Colored Silk Velvets, New Colored Satins, New Black Satins, New Black Velveteens

Frillings, Edgings and Laces.

NEW LACE CURTAINS.

Berlin Wool and Yarns, Wool Damasks, Fringes and Curtain Holders.

SPECIAL.

The remainder of our

Fur Goods, Ladies' Cloth Jackets, Ladies' Ulsters, Knitted Wool Goods, and Blankets,

BIG DISCOUNT,

In order to clear them out before the season is over.

Cash customers in want of any of the above Goods will save money by giving us a call.

Perkins & Sterns. January 5, 1880.

CAUTION.

THE public are hereby cautioned not to pay to any person except the undersigned, debts due to the firm of McKinnon, Fraser & Co. WILLIAM JOHN FRASER, Feb. 19, 1880.



Canadian Pacific Railway.

TENDERS for a second 100 miles section WEST OF RED RIVER will be received by the undersigned until noon on MONDAY, the 29th of March next.

The section will extend from the end of the 48th Contract—near the western boundary of Manitoba—to a point on the west side of the valley of Bird-tail Creek.

Tenders must be on the printed form, which, with all other information, may be had at the Pacific Railway Engineer's Office, in Ottawa and Winnipeg, on and after the 1st day of March next.

By Order, F. BRAUN, Secretary.

DEPT. OF RAILWAYS & CANALS, Ottawa, 11th February, 1880. (fe 19, 2w till 27 mar.

LECTURE.

MR. E. J. HODGSON

Has consented to deliver his Lecture upon FRANCIS OF ASSISI,

Tuesday, 24th February Next,

St. Peter's Schoolroom,

AT EIGHT O'CLOCK.

Admission 15 cents. Tickets for admission can be obtained at W. R. Watson's. Feb. 18, 1880.

APPLES.

100 BARRELS BALDWIN'S & RUSSETTS. CARVELL BROS.

TEA.

170 CHESTS, 55 half-chests, } Strong and Excellent flavor. CARVELL BROS.

Molasses.

65 PUNS, 20 Bbls. } Bright Molasses. CARVELL BROS.

SUGAR.

78 PACKAGES (Hhds. and Bbls.) White Granulated, Bright Porto Rico, Barbadoes, Cuba. CARVELL BROS. Feb. 18, 1880—2w w

PEA SOUP.

PREPARED with Pea Flour and seasoned and flavored with the finest herbs and seasonings, to which is added Liebigs' Extract of Meat, making one of the most nutritious dishes that can be obtained. A 25 cent Tin will make 3 quarts of thick Soup.

For sale at BEER & GOFF'S. Feb. 18, 1880.

GOLDEN SYRUP.

Very Choice.

8 CTS. PER POUND, BEER & GOFF'S. Jan. 13, 1880.

Labrador Herring.

CHOICE CATCH OF 1879.

Smoked Salmon, Salt Trout, Herring, Shad, Halibut, Mackerel. At HALL'S FISH MARKET. Feb. 18, 1880—tf

Sole Leather.

700 SIDES LOGAN'S BEST, 50 Sides " No. 2. CARVELL BROS.

Valuable Property for Sale.

THAT FARM lately owned by John and Peter Meikle, situate on Lot 23, in Queen's County.

For further particulars apply at the office of Messrs. Hodgson & McLzon, Charlotte town. Jan. 9, 1880—cod

Valuable Property for Sale.

TO BE SOLD, all that part of Town Lot No. 74, in the first hundred of Town Lots in Charlottetown, having a front of 67 feet, Dorchester Street, and running back 80 feet, together with the buildings thereon erected. For further particulars apply to Messrs. Hodgson & McLzon, Charlottetown. Sept. 18, 1879.