

LETTERS TO THE EDITOR.

The Sewage Question.

Sir,—In a former communication in reference to sewage wells I submitted the question for serious consideration:

"If deep sinks and blind wells or surface drainage are safe conduits to carry off defecated water and other waste from houses why do corporations in the world ever find it necessary to expend thousands and millions of dollars in the construction of various systems of sewerage?"

Since then the blind well system of drainage has been pretty fully discussed pro and con in your columns. Notably in its advocacy Dr. F. P. Taylor is a prominent pleader.

In his first communication, over his proper signature, it is stated that "these wells always extend to a running stream." He abandons that theory in his last as untenable; and defines, briefly within inverted commas, the ground water and its movements,—a step in advance toward light and knowledge.

This ground water, according to the best authorities (for here let me say he does not claim originality) is not a stream, nor is it anything resembling a stream. It is a great subterranean lake or sea at varying distances from the surface having a motion both horizontal and vertical. This movement is exceedingly slow, being governed by the nature of the strata through which it permeates. Geologists inform us that this movement is sometimes scarcely perceptible and that in some places it is null. When in its course it meets a barrier such as impervious rock, stiff clay or shale it accumulates, sometimes near the surface and sometimes at considerable depths, according to the nature of the impervious substratum, and that under certain conditions it collects as reservoirs, pools or ponds.

At the supply well this was evident. Here a natural reservoir was met without a stream as erroneously supposed by Dr. Taylor in his first letter.

Immediately west of this well is a bed of stiff brick clay, impervious to water,—hence the reservoir. The water on being tapped immediately overflowed the tube, rushing up to the surface from a depth of about 20 feet, with great force, conclusive evidence that it was pent up there, and under hydrostatic pressure. I only mention this to show how liable is ground water to stagnate. The "natural drainage" there was, fortunately for the city, very bad. All geologists are agreed as to the extreme slowness of the movement of the body of ground-water, varying from 3 to 15 feet per day. Our own Bin, recognizing this fact, says in his article in your Saturday's issue: "There is a belt running diagonally across the city from the foundry to the gas works, known for its flat and ill-drained character."

That will include the greater part of the city. I may here say that, in conversation recently with that gentleman, I asked him what he thought of the method of disposal of sewage to the ground water, and he unhesitatingly replied that it would result in making it a cesspool. This was before he had read "J. M.'s" letter, in which it was declared "that the persistent use of blind wells would render the ground water a vast cesspool." Mr. Bin repudiated the idea of underground streams, and said that in all his researches he had failed to discover such, and he was satisfied they could not be found underlying the rock formation of the site of this city.

Dr. Taylor, having abandoned the theory of subterranean streams as sewage carriers, emphasizes this dogma: "The waste wells should be dug down to the underground water." "What scientific experimenter," may I ask, "worked up this theory?" But we are reminded not to be "too particular." The blind well system of drainage may yet commend itself to sanitarians. So far, however, I am not aware that it meets the approval of any of them, either in Europe or America. Parkes, whose name he quotes in one of his letters, mentions them only to condemn them.

A sink, says Dr. Taylor, may be regarded as a blind well of larger dimensions." Not at all. A properly constructed sink has the advantage of being impervious in order to prevent the pollution of soil and water, but a blind well is a deep cesspool which cannot be cleaned; and, with regard to which Colonel Waring, an eminent American sanitary engineer, says: "There is nothing to be said in its favor save what may be based on the old adage that 'what is out of sight is out of mind.' There is everything to be said in its condemnation, whether we regard its contents as a great mass of putrifying and infecting filth, as a source of oozings which travel through crevices of rock, through layers of gravel, through seams in clay, or through lighter soils under and into cellars and into drinking water wells and defectively-constructed cisterns, or as an ever-active gas retort supplying the pipes of the house with foulest products of putrefaction. It is in all respects and under all circumstances a curse, unless placed far away from the possibility of tainting the air we breathe or the soil over which we live, or from which we or others take our drinking water." And again he further says: "The simple drainage of the soil involves a question of the greatest importance. If the ground under the house or about it is at any time saturated with moisture, we have to apprehend a condition of insubriety more or less serious in proportion to the degree of saturation and the degree of foulness with which this is associated. The drainage requirements of land outside of the house are less easily determined, but it requires nothing more than a casual examination of the cellar in ordinarily wet weather to determine whether or not an improvement of its soil water drainage is demanded; and it is only necessary to say that this should be secured by some process which can, under no circumstances, bring the air of the cellar into communication with the air of a sewer or food drain.

The assumption is also confidently made that no intelligent medical man will hesitate for a moment to accept the dictum that the site of the house must be dry, and that it and its neighborhood must be entirely exempt from the influence of organic decomposition." In the reports of Local Boards in Ontario I find that of 9 cities, 27 towns, and 33 villages heard from by the Central Board in Toronto, not one of all these has ever dreamed of adopting Dr. Taylor's blind well system of drainage. On the contrary, the least approach to any such method is universally condemned. Still there is a method, proposed by Dr. Taylor, which has been paid \$22 per well. One condition only

required and insisted upon, viz: The waste well should be dug down to the underground water. Once there "all fear may be abandoned." How about the large class who still derive their supplies from the city wells? Is it right that they should be poisoned? We should not be too precipitate in sinking sewage wells for their sake. And still further, what of those parts of the city where the ground water rises near to the surface under cellars in stagnant pools. All along the low-lying lands in the neighborhood of Hillsborough Square, for example, the wells in many instances are not over 15 feet in depth. In these cases the polluted water would be only from 7 to 8 feet from the cellar floor, and, in winter particularly, when the surface is frozen and covered with ice and snow. The cellars, as a rule, during this season, are the most accessible avenues through which foul gases can escape, and, when the houses are heated, the rarefied air ascends, while the vacuum, thus formed acts like a suction hose in drawing air, foul or otherwise, from great depths. How all important must it now be to prevent the pollution of both soil and water, whether near the surface or in the deeper strata. For, it must be remembered that "in all cases where air can pass organic matters can lodge and become a source of danger." The formation of foul gases requires the presence of heat and moisture. Now, heat is a relative term, and Colin has shown that disease germs and decomposition only cease to develop at or below freezing point. Some sanitarians contend that, as the air in the deeper strata contains less oxygen and more carbonic acid than the normal quantities putrefaction and germ life are more intense under such conditions, while others deny that the intensity is greater.

It has been said that the exclusion of human feces renders the blind well less objectionable. Mr. Gray, Chief Engineer of the city of Providence, after visiting the principal cities of Europe for information, says in speaking of the cost of sewers: "The cost of such a sewerage system would not be affected by the exclusion of fecal matters, their volume being relatively small. It has also been proved by chemical analysis that the exclusion of human feces from sewers has a very slight effect upon the composition of sewage." So that from whatever standpoint such wells may be regarded, candid and intelligent observers must be forced to the conclusion that they are dangerous in character, and that their continuance in use is, without doubt, in defiance of both moral and physical law.

Dec. 3, 1889. SANITAS.

Supreme Court.

DECEMBER 6.

On motion of Mr. Hodgson the hearing of the application of Louis H. Davies for mandamus to George Alley, Esq., Revising Officer, was postponed till Monday next.

David Cole, Jr., vs. Charles Bigger.—Action of ejectment. Tried Hilary term last. Verdict for plaintiff. A rule nisi was granted for a non suit or new trial same term and is now being argued. Peters & Peters for plaintiff; Davies, J. C. and Morsion for defendant.

New Glasgow, Nova Scotia, has now a population of 5,000, and the grit organ of the place is demanding a police force. Sad result of the operation of the N. P.!

The tone of the President's message at the opening of Congress was temperate. This is particularly noticeable in respect to Great Britain and Canada. The President admitted that Canada has apparently tried to administer the fishery laws with as little friction as possible, and expresses the hope that "all existing causes of difference may be equitably adjusted." Proceeding, he recommended that provision be made by an international agreement for visibly marking the water boundary between the United States and Canada in the narrow channels that join the great lakes, and urges the enlargement of the list of extraditable offences between the United States and Great Britain so that the territory of neither can become a secure harbor for evil-doers of the other. He touched very lightly upon the recent troubles over the seal fisheries, merely calling attention to his recent proclamation on that subject, and to the fact that a revenue vessel was despatched to protect the interests of the United States. As to the reduction of the surplus, he is in favor of carrying out Cleveland's policy of reducing the tariff and maintaining the protective principle as in Canada, by the extension of the free list to articles not competing with home products. We shall see what Congress has to say about it.

ARRESTED FOR PERJURY.—Michael Doran is under arrest at Fredericton on a charge of perjury. In the recent Scott Act election he swore that his name was Thomas Doran, and voted as such. The real Thomas Doran was the next voter. The prisoner is 50 years old, and has a family. He will likely spend a few years at Dorchester penitentiary.

DROWNED WHILE SKATING.—On Monday afternoon last, while two Mount Allison University students were skating over Morice's mill pond, Sackville, the ice broke and both fell through. One of them—Everett Carey—was rescued in an exhausted condition; but the other, Frank Hamilton, was drowned. The drowned man was a brother of the Rev. Chas. W. Hamilton, now stationed at Summerside, and was a young man of much promise.

POULTRY ON A DRUNK.—Tuesday's Fredericton Gleaner is responsible for the following story: A St. Mary's lady, who takes considerable interest in poultry raising, fed her hens the other day with corn that had been left over from some beer. Upon going out the yard some time after she found the hens flapping their wings and running at one another and flying about the yard in an unusual fashion. A little later they were staggering carelessly about and falling over on their sides, and it was not long before the whole lot were lying stretched out upon the ground.

A CURE FOR DIPHTHERIA.—The following remedy was discovered in Germany and it is said to be the best known: At the first indication of diphtheria in the throat of a child, make the room close; then take a tin cup and pour into it a quantity of tar and turpentine, equal parts. Then hold the cup over a fire so as to fill the room with fumes. The lute patient, on inhaling the fumes, will cough up and spit out all the membranous matter, and the diphtheria will pass off. The fumes of the tar and turpentine loosens the matter in the throat and thus affords the relief that has baffled the skill of physicians.

LONDON HOUSE.

DECEMBER.

DURING THIS MONTH WE WILL OFFER OUR STOCK OF

READY-MADE CLOTHING,

Overcoats, Reefers, Suits, Boys' Clothing,

ALL NEW GOODS IMPORTED THIS YEAR,

AT VERY LOW PRICES TO CLEAR.

It will Pay You to See Our Stock Before Buying.

HARRIS & STEWART.

Charlottetown, Dec. 6, 1889—eod & wky.

GEORGE E. FULL'S

Closing Out Sale

WILL BEGIN ON

Monday, December 9th.

- OVERCOATS, } Reduced 30 per cent. off.
- REEFERS, }
- SUITS, }
- PANTS and VESTS, reduced 20 per cent.
- SHIRTS and LINDERS, very low.
- DRESS GOODS, }
- ULSTERS, }
- WOOL GOODS, }
- HATS, RIBBONS and TRIMMINGS, } Reduced from
- CORSETS, } 20 to 35 Per Cent
- TABLE LINEN, }
- SHEETINGS, }

The whole stock of NEW WINTER GOODS must be sold, as the subscriber intends closing out the business.

Five Pounds of 28 Cent Tea for \$1.00—for Cash only.

GEORGE E. FULL.

Charlottetown, Dec. 6, 1889—6i eod wky

GRAND OPENING OF XMAS BAZAAR,

—ON—

Saturday Evening, December 7,

NORTON BROS. OLD STAND, QUEEN STREET.

Short Period and Great Bargains. Something for Everybody. Come and see.

XMAS BAZAAR CO.

December 6, 1889—2i

Charlottetown Markets.

The attendance at the market to-day was large. Following are the prices:

Beef (small) per lb.	\$.07 to .12
Beef (quarter) per lb.	0.06 to 0.09
Pests	0.03 to 0.09
Butter, fresh, per lb.	0.20 to 0.23
Butter, tub, per lb.	0.18 to 0.19
Brant, per pair	0.80 to 0.90
Celery (per head)	0.03 to 0.06
Cheese per lb.	0.15 to 0.17
Cabbage, per doz.	0.30 to 0.60
Carrots, per bush.	0.40 to 0.60
Chickens	0.30 to 0.40
Codfish, (corned) per doz.	0.30 to 0.40
Ducks, per pair	0.63 to 0.65
Eggs, per doz.	0.21 to 0.24
Flour, per cwt.	2.40 to 2.50
Flour	0.50 to 0.55
Geese	45.0 to 0.60
Ham, per lb.	0.15 to 0.16
Hay, per 100 lbs.	0.34 to 0.38
Lamb, per lb.	0.05 to 0.08
Lard per lb.	0.14 to 0.18
Mutton, per lb.	0.05 to 0.07
Oats (black) per bush.	0.32 to 0.33
Oatmeal, per cwt.	0.00 to 2.40
Oysters, per bush.	0.00 to 0.75
Pumpkins	0.08 to 0.14
Pork, small.	0.07 to 0.10
Sauces, per lb.	0.85 to 1.00
Pork (carcass), per lb.	0.05 to 0.55
Potatoes per bush.	0.18 to 0.20
Plover (land) per pair.	0.20 to 0.25
Partridge, per pair.	0.00 to 0.40
Rabbits per pair.	0.00 to 0.20
Radishes, per bunch.	0.15 to 0.00
Rhubarb, per bunch.	0.06 to 0.10
Squashes.	0.06 to 0.12
Sauces, per pair.	0.00 to 0.15
Straw, per load.	1.50 to 2.00
Suck-pelts.	0.50 to 0.55
Turkeys (each).	0.85 to 1.00
Furnips, per bush.	0.17 to 0.00
Wild Geese.	0.80 to 0.00
Wild Ducks (per pair).	0.50 to 0.00
Woodcock per pair.	0.40 to 0.00

Apples for Xmas.

BY AUCTION, on SATURDAY, Dec. 7th, at 10.30 o'clock, a. m., 2 lots (5 barrels each) Extra Choice, 2 lots (10 barrels each) Northern Sycs, 20 barrels in single barrel lots. Last sale before Xmas. Also, 10 barrels and 20 bags Flour. This is the finest lot of Apples in the market. Sale inside if weather unfavorable.

E. H. NORTON & CO., Auctioneers.

HORSE AT AUCTION.

I WILL SELL AT PUBLIC AUCTION, on the Market Square, on TUESDAY, the 10th inst., at 12 o'clock noon, a Red Horse.

ARCHIBALD BINNS.

NOTICE.

CONSIGNEES having any claims against the Steamer of the Black Diamond Line, will please present same on or before the 12th inst., at the office of

PEAKE BROS. & CO., Agents.

BRAN.

IN STORE AND TO ARRIVE—Ontario Roller Mills Bran, excellent quality, selling low.

AULD BROS.,

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FOR SALE.—Two Buffalo Robes, nearly new. Also, one Double and one Single Sleigh. Apply at this office.

STANTLEY BROS., BROWN'S BLOOM.

DECEMBER!

JAS. PATON & CO.

Extensive Preparations

FOR THE SALE OF—

ONE OF THE LARGEST STOCKS

OF—

Christmas and New Year's Presents

Ever offered to the People of P. E. Island.

Handsome Dress Goods, Gloves,

Fur Jackets, Muffs, Bows, Black Silks, Wool Squares and Scarfs, Umbrellas, Waterproof Cloaks, Fur-Lined Circulars and Cloaks, Jackets and Dolmans.

1,000 Gentlemen's Silk Handkerchiefs in very beautiful colors and patterns, plain and hem-stitched.

100 Pairs Kid Mitts at a wonderful bargain, only 45c a pair.

MILLINERY.

Our MILLINERY DEPARTMENT is packed full of charming HATS. See our beautiful styles, at \$1.75, \$2.00 and \$2.50.

Fleecy Cottons.

Here is one of the Biggest Bargains ever offered to our friends. Come in and see this gigantic bargain. The goods are selling fast, and no wonder—they are so very cheap.

DRESS GOODS.

We can offer with the greatest amount of confidence the Largest Stock of DRESS GOODS in the City, at prices that will induce bargain-hunters to buy.

Gray Flannels Very Cheap

"Invention Hath No Nobler Aim Than to Make Home Like Heaven."

CARPETS.

JAMES PATON & CO. continue selling Carpets at the extremely low prices which they are noted for. We have a full range of the Newest Designs by the best makers, in SCOTCH, CANADIAN, BRUSSELS, TAPESTRY and VELVETS, ART SQUARES, LINOLEUMS and FLOOR CLOTHS, from 18 inches to 18 feet wide.

Window Curtains, Shades and Poles.

We have still about 20 Pairs of beautiful CRETONNE CURTAINS left, worth \$3.50, that we are selling for \$2.50.

LADIES' ROBES,

AT REDUCED PRICES.

HANDKERCHIEFS—Plain Hem-stitched, Colored Bordered Hem-stitched, Initials, &c. A lot of Men's White Handkerchiefs, large size, slightly damaged, only 4c each. A lot of Ladies' Handkerchiefs, 30c. a dozen.

Large buyers and small buyers of all kinds should devote considerable attention to the benefits that we so lavishly bestow during this month.

SHAWLS! SHAWLS!—A fine assortment to choose from. A job lot of 50 Shawls, suitable for a Wagon or Sleigh Wrap, worth \$1.30, for 85c.

To detail all the bargains we have would be impracticable. Customers will kindly bear in mind that, although many classes of goods are not specially advertised here, JAS. PATON & CO'S Store contains everything that a first-class Dry Goods Store may be expected to keep.

Remember our Clothing Department REEFERS and OVERCOATS as cheap as any in the city.

JAS. PATON & CO.,

MARKET SQUARE.

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