

## THE MONTREAL SEWAGE SYSTEM.

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"And the person made it his text that week, and he said likewise That a lie which is half the truth is ever the blackest of lies; That a lie which is all a lie may be met and fought with outright, But a lie which is part a truth is a harder matter to fight."

TENNISON.

The Montreal water-closet system is but half a truth—and the street drainage is a still smaller "part of a truth." The bath, or the water-closet, is considered by an intelligent house-holder as a safeguard as well as a comfort to his family, and he is generally willing to pay an extra rent for this supposed luxury. That is as it ought to be, but not as it is, for, alas! in nine cases out of ten, the water-closet in Montreal is a mere contrivance by which the filthy sewers are ventilated (especially during the night) into the bedchambers of the sick and dying, into the nurseries of the young, and into the apartments of the old, against which no amount of ventilation is sufficient.

It is possible, however, for the good Major-Domo, by good plumbing, by good ventilation, and by the use of disinfectants, to render his water-closet sweet and wholesome; he has oftentimes but to step up on the side-walk in front of his dwelling to have his olfactories offended, and to imbibe into his lungs the germs of Typhoid fever, Diphtheria or Cholera.

Sewage is at all times a very complex mixture—containing, besides human excrement, the external dirt and exuvia from the body, the products of the wash-basin and of the bath, the filth of kitchens and of laundries, drainage from stables and from cattle sheds, as well as the refuse liquors of trades and factories, slaughter-houses and public markets. When these come together fermentation or putrefaction rapidly ensues, resulting in the production of highly offensive and poisonous gases, prussic acid gas being one of the well-known products of this kind of fermentation.

These gaseous products have a tendency to rise in the sewers, and as the rush of water descends the incline and carries off the solid matter, so the rush of gaseous matter is upwards, and penetrates into bath-rooms and water-closets wherever imperfect traps exist, and these are the rule, and not the exception.

The outlet of the drainage from Griffintown is near the bottom of McGill Street, and when the water is low, this outlet is so exposed to the wind from off the water, that a current of foul air blows up the ramifications of the sewers, and rolls up Beaver Hall both above and below the surface. Thence into every water-closet, and every bath-room, and every wash-stand communicating therewith, carrying with it the seeds of disease.

The outlet from the northern and eastern district is nearly opposite the Custom House, and in like manner, in certain states of the wind and water, the whole of the poisonous vapour is thrown back upon the densely populated area of the mercantile community.

Should a room be on fire in this quarter, the City bell would toll, and an active staff would rush in from all quarters to the salvation of property, *property*, *property*; but as the only thing which could be saved by an intervention of *this* holocaust (from the sewers) would be *human life*, why—as Mr. Toots says—"It's of no consequence"—"thank you."

It is right that the community in Griffintown should know that when, in the spring floods, they are submitted to a deluge, they not only receive the water of the St. Lawrence into their cellars and their first floors; but also and chiefly the back water of the city sewers, the suspended matter of which must lie on the bottom and dry up, to be the lurking seeds of disease in the hot parched summer months following. We may assume that the "City Fathers" have done everything in their power to avert such disasters by lime-washing and carbolicizing these drowned dwellings of the poor. But even in such case 'Prevention' would be "better than cure." This is, however, but one phase, and an occasional phase of the general evil arising from bad sewers; and to paraphrase our text we might say that a sewer that is half a sewer, is ever the worst of sewers.

These city sewers need two remedies—trapping and ventilating—and until these remedies are applied every water closet and every open street grid is a pest chimney during one half the year. The proper mode of ventilation would be by a furnace and ventilating shaft on the mountain, where the gaseous products could be effectually consumed.

We see that a Special Committee of the Town Council has been appointed to consider certain proposals from a British "A B C" Company on the subject of the utilization of the sewage for purpose of manure. It might be well to consider (before we walk out of the frying-pan into the fire)—1st, the cost, before we begin to build; 2nd, to have some idea as to how the special circumstances of climate, population, and value of manurial products here may affect a scheme which still remains an A B C process in the old country, although it has had some few years' trial there.

At a recent meeting of the Metropolitan Association of the Medical Officers of Health, Dr. Lethby gave an able address on the general subject of the Utilization of Sewage; taking into account the importance of the information obtained by the "Rivers Pollution Committee," and acknowledging the powerful agency of oxidation in water upon the matters contained in sewage, he still arrives at the conclusion that the plan of spreading human excrement upon the soil is a fruit-

ful source of disease in various shapes, and he condemns the A B C plan on this ground: That the system offers on the one hand no great inducement to farmers by the manurial value of its products, and on the other hand no relief to society from febrile disease.

No doubt the Committee now appointed will give ample consideration to the discussions which have already taken place in England on this subject, and to the peculiarities presented by the severities of the climate of Montreal, with the additional difficulties of its sudden thaws, and also to the general scientific merits of the question.

At the same time let them not overlook the merits of some other schemes, such as Monk's "Dry Earth Closet System," and other modes which have been adopted in England and Scotland, for the purification and utilization of sewage—plans which would relieve the poor, as well as those who can well afford to pay for water-cisterns and water-closets.

"In the multitude of counsellors there is safety."

## THE FULFORD MEMORIAL—MONTREAL.

Immediately after the death of the late Metropolitan of Canada, Dr. Fulford, a movement was made among the Episcopal community to erect some suitable memorial to his memory. Subscriptions were raised for this purpose, and his lordship's family were consulted, but as they had reserved to themselves the privilege of erecting a monument over his grave in Mount Royal Cemetery, it was decided that the memorial should take the form of a suitable monument to stand near the scene of the late Bishop's labours. A committee was accordingly appointed to choose a design and to fix upon a site. Tenders were advertised for, that of Mr. C.P. Thomas, architect, of this city, being accepted, and the site was fixed on the west side of the Cathedral grounds, in close proximity to the chapter-house. The execution of the design was entrusted to Messrs. Mavor & Reid, of Montreal, who, it will be remembered, executed the beautiful monument erected in the Queen's Park at Toronto, to the memory of the volunteers who fell at Ridgeway.

The monument, as will be seen by our illustration, is of the type known as the "Eleanor's Cross," a class resembling and taking its name from the memorial crosses raised by Edward I., when transporting the remains of his queen to London, at the various places where the cortège stopped on the journey. Good modern examples of this kind of structure are to be found in the "Martyrs' Monument" at Oxford, the cross at Waltham, and the recently restored cross at Charing, in front of the Charing Cross terminus in London.

The cross in the Montreal Cathedral grounds is hexagonal in plan, and stands 47 feet in height from the surface of the ground to the apex of the terminal cross. It is executed throughout in Ohio sandstone, of a grey colour, and stands upon two bases of Montreal limestone. The whole is divided into three stages. The lower one consists of a hexagonal pedestal, with buttresses at the angles. Three sides of the hexagon face the east, and three the west. The die between the buttresses on each face contains a richly moulded arched panel, between double columns with carved caps, surmounted by a crocketed canopy with carved finial. The cornice of this storey has an inscribed frieze, and moulded and embattled capping. On the centre panel of the three facing eastwards are the late Bishop's arms carved in relief; the panel to the left of this bears the inscription:—

FRANCIS FULFORD,  
D. D.  
LORD BISHOP  
OF  
MONTREAL  
AND  
FIRST METROPOLITAN  
OF  
CANADA.

The right-hand panel contains the following:—

BORN  
3rd June, 1803;  
DIED  
9th September, 1868.

The western panels are filled with foliated scroll-work. That facing north bears the text,

A WISE MASTER-BUILDER;

and the opposite one,

ONE SOWETH, ANOTHER REAPETH.

The centre of these three panels has not yet been filled in, but will bear a text, the selection of which is left to His Lordship Bishop Oxenden.

The second stage of the monument has triple columns at the angles of the hexagon, with richly carved caps, the spaces above being arched and canopied with crockets and finials, and divided by pinnacles. The spaces between the columns are occupied by carved scroll-work, interlaced with foliage. The uppermost stage also has buttresses at the angles, with arches, canopies, etc., to match the lower storeys, the whole being terminated by a richly decorated cross.

The monument, which cost some \$5,000, is one of the richest and most elegant of its kind to be met with in Canada. Occupying a conspicuous position in the Cathedral enclosure, it forms a handsome addition to the beautiful main building, against which it stands out in bold relief, its dark grey stone contrasting well with the light stone of the Cathedral.

## STRASBURG.

The city of Strasburg, the oldest on the Rhine, has perhaps changed masters more frequently than any of the numerous places along the French frontier that have belonged alternately to France and Germany. Situated on the left bank of the Rhine, it appears to have been destined by nature to be a border-town of France; but, like most border-towns, it has continually been the object of contention between rival powers. The city was founded by the Romans as a barrier against the excursions of the Germans; but it soon fell into

the hands of the latter, and remained a German possession, under its Roman name of Argentoratum, until Clovis defeated the German troops at Tolbiac, drove them across the Rhine, and annexed to his kingdom the territory now known as Rhenish-Prussia. In the sixth century the city took the name of Strasburg, and early in the tenth century became subject to the emperors of Germany. It afterwards became a free town and was governed by a republic. In 1681 it was annexed to France, and has since been the great French fortress on the Rhine. It was formerly capital of the province of Alsace, but since the division of France into departments, it has been the chief town of the department of Bas-Rhin.

The city is situated on the left bank of the Ill, at a mile's distance from the left bank of the Rhine. It is a strongly fortified place, ranking as a first-class fortress, and is enclosed by bastioned ramparts, strengthened by numerous outworks. The length of the town proper, which is of triangular form, is four kilometres, with a width, in its broadest part, of two kilometres. The citadel, composed of five bastions, is situated at the extreme east of the city, overlooking the road to Kehl. It is the handiwork of Vauban, the great military engineer of Louis XIV's time. At the south-east the river Ill enters the city through a huge lock, by means of which it is possible to inundate the whole surrounding country—a measure which the besieged army have hitherto been unwilling to take, as the besiegers would be able to defeat the manoeuvre by diverting the stream further up, and thus taking away the water from the moat inside the walls.

The siege of Strasburg, it will be remembered, was commenced on the 10th August, four days after the defeat of the French at Woerth. Since that time the bombardment has been carried on with unceasing vigour. The besieged force, consisting almost entirely of Garde Mobile, under the command of General Uhrich, have made a most heroic resistance, but all their endeavours have been unavailing. The Prussian force have been advancing daily closer around the city; one outwork after another has fallen, and the capitulation of the city may be expected at any time. Serious damage has been inflicted upon the buildings of the city by the incessant fire of the besiegers. On the 24th the right side of the citadel was burnt down and the arsenal entirely gutted.

Strasburg, as everyone knows, is celebrated for two things, its *pâtés de foie gras*, and its magnificent cathedral, a masterpiece of Gothic architecture. The manufacture of *pâtés* is at present suspended, to the regret of many a *gourmand*, and its cathedral, to the regret of every lover of art, bids fair to suffer considerably, if it be not entirely destroyed by the fire of the Prussian besiegers. This magnificent building was founded by Clovis in the year 510. Charlemagne added a choir. In 1007 it was destroyed by lightning, and its rebuilding was commenced in 1015 under the direction of Erwin von Steinbach, of Baden, and terminated in 1439 by Johann Hultz, of Cologne. The material of which the present edifice is built is a brown stone, brought from Wassebonne, in the valley of the Couronne, a few miles from Strasburg. The height of the edifice is 466 feet, surpassing that of St. Peter's at Rome, and about equalling that of the Great Pyramid. The cathedral is in every part richly decorated with sculptures, and the western front, rising to a height of 230 feet, is, or was, particularly fine with its wealth of statues, ornamental carvings, and bas-reliefs. It has a circular window 48 feet in diameter;

The astronomical clock, the product of a German clock-maker, in about the year 1450, is a marvel of ingenuity and mechanical skill, and has no counterpart. It performs not only the ordinary service of a clock, but exhibits the days and months and the years; the process of the seasons; the signs of the zodiac, and the names and movements of the heavenly bodies. At each quarter of an hour an angel comes out and strikes one stroke on a bell; at every hour another angel comes out and strikes twice, and at 12, meridian, a figure of Christ appears, accompanied by the twelve apostles, all of whom move round a central point and pass in, out of sight, by another door; the stroke of 12 being given, a cock flaps his wings and crows. The cock is enormous in size, like everything else connected with the vast cathedral, and is invisible from the outside street—the spectators passing through the nave of the cathedral to see it. It has suffered from fire and violence before the present year, having been out of repair and motionless since the revolution of 1793, until 1852, when it was repaired by a watchmaker of Bas-Rhin; and it has been in operation since. It is to be hoped that this ingenious piece of mechanism has not been irreparably injured by the present bombardment.

The loss of the Strasburg library—a vast collection of eight hundred thousand volumes, including many collections of rare and curious monkish parchments—is total and irreparable. It can never be replaced by any collection hereafter made. It was the slow result of a thousand years; and its destruction by fire, caused by the Prussian hot shot, is like the burning of the Alexandrian library in this, that of a great number of the works destroyed no duplicates can ever be obtained.

## THE BATTLE OF SEDAN—RETREAT OF THE FRENCH INTO THE TOWN—THE BATTLE-FIELD.

It will be remembered that the fighting before the town of Sedan continued three days, and was terminated by the capitulation of McMahon's army, under Gen. Wimpfen, and the surrender of the Emperor. On Tuesday, the 30th of August, the attack was commenced by the Prussian army General Faily, who occupied the right bank of the Meuse, intended to move in the direction of Beaumont, not knowing that a Prussian corps occupied the ground across his line of march. As soon as he began to move, intending to form a junction with McMahon's main army at Mouzon, he was attacked by the 12th Saxon Army Corps, who had occupied a position on the French right. His right wing was driven in, and reinforcements, consisting of the 1st and 4th Prussian, and the Bavarian Corps, coming up, the attack was renewed and the French completely routed. His right thus turned McMahon was compelled to retreat. The next morning, (Wednesday) he was again attacked, but this time succeeded in driving off the enemy. On Thursday the decisive battle was fought. The number of Prussian troops engaged is estimated by Von Moltke at 240,000, and that of the French at 100,000. The Prussian, Bavarian and Saxon corps formed a crescent round the town with the horns towards the Belgian frontier. At six o'clock the fighting, which was chiefly confined to the artillery, commenced. Shortly after eleven the Bavarian and Saxon corps began to advance, under a heavy musketry fire, in order to complete the circle around the town. At twelve the circle was completed. The Prussian batteries had silenced