CALENDAR FOR THE WEEK ENDING SATURDAY, OCT. 1, 1870.

SUNDAY, Sept. 25.—*Fifteenth Sunday after Trinity.* Columbus's second voyage, 1493.
MONDAY, " 26.—*St. Cyprian, Bp. & M.* Philadelphia captured, 1777.
TUESDAY, " 27.—Battle of Busaco, 1810. Steamer "Arctic" lost, 312 persons perished, 1854.
WEDNESDAY, " 28.—Lucknow taken, General Neill killed, 1857.
THURSDAY, " 29.—*St. Michael and All Angels.* Crystal Palace, Toronto, opened, 1858.
FRIDAY, " 30.—*St. Jerome, C.* Major-General Sir J. Brock, Pres. Can., 1811.
SATURDAY, October 1.—*St. Remigius.* Post Office Registration established between Canada and U. S., 1856.

THE CANADIAN ILLUSTRATED NEWS.

MONTREAL, SATURDAY, SEPTEMBER 24, 1870.

THE march of events in France has been comparatively slow since the surrender of the Emperor and the capitulation of Sedan. The Prussians have been moving steadily onward towards the investment of Paris, until at length this part of their programme has been all but completed. Diplomacy, invoked by the French Provisional Government, has busied itself, without success, in trying to stay the motion of the Prussian armies, or moderate the policy of the Prussian Cabinet. But the Prussians refuse to recognise any other Government in France than that of the Emperor, and claim that they can only negotiate when they have Paris in their hands and a French Government established capable of compelling respect to treaty stipulations. There is great plausibility in this plea. Why make terms with Jules Favre to-day, which some other self-constituted Republican magnate may set aside to-morrow? But on the other hand the Prussian declaration at the outbreak of hostilities, that Germany warred not against France but against the Empire, stands very much in the way of the world's acceptance of the present policy of the King as either consistent or honourable. Admitting that the Emperor declared war as a *dernier ressort* to save his dynasty, surely when that failed the object of the war was lost on the side of France, just as when the Empire collapsed the purpose for which Prussia entered the field had been achieved. Yet now it seems to be determined on the side of Prussia that Paris must be occupied, and on the part of France that it must and shall be defended to the last. These mutual resolves, bloody as the war so far has been, open up a prospect of horrors in the near future, compared to which all the reported atrocities and agonizing sufferings of the past few weeks will seem as nothing. The neutral powers can ill afford to interfere. When the Duc de Grammont menaced Prussia on the 15th July, the Governments of Europe did not venture to protest against the pretensions of France and warn the Emperor that his intended war policy would isolate his cause from the sympathies and support of the other powers. In fact, both France and Prussia were let alone as to the preliminaries of the war, and Prussia now claims the like immunity as to its conclusion. Diplomacy never appeared to greater disadvantage than it does at the present day by the light which the pending struggle has thrown upon its iniquities, and the proof it has furnished of its impotence.

And what means the Emperor's revocation of the powers of the Regency? Possibly the determination of King William to recognize no other power in France may explain it. The Empress has gone, and even before she left Paris the power had been taken from the hands of her Ministers. Now, it was to the Regent and her Ministers at Paris that the Emperor referred King William as to the seat of French authority, he being himself a prisoner; and in the conversation which took place between him and Count Bismarck on the morning of his surrender, he pointedly stated his inability to negotiate while the Imperial authority was transferred to the Regency and he himself a prisoner of war. By revoking the powers of the Regency, the Emperor reinvests the Imperial authority in his own person, thereby declaring his non-acquiescence in the existing French administration, and leaving the way open to him, should the opportunity occur, of setting all its acts aside. There is something adroit in the manner by which the Emperor has turned to the account of his own dynastic dreams the mishaps which befell McMahon's army at Sedan. By surrendering to King William he flattered the latter's vanity, while, at the same time, he precipitated the crisis in Paris which converted the Imperial battalions into citizen-soldiers of the French Republic. In thus forcing the Prussians to war against the Republic, or surrender the fruits of their orilliant victories, Napoleon really placed his antagonists in an awkward position, without losing any advantage that he could have gained for himself by a different line of policy. Meantime, the Republican spirit has crossed the Rhine into Baden, it has broken out with greater virulence in Italy; and even on the hither side of the Channel it is permitted to rave and bellow in Hyde Park and Trafalgar Square, but it has been allowed, because there its noise will prove harmless. Now, by the revocation of the regency, and the consequent re-assertion of his right to continue the exercise of Imperial authority, Napoleon has virtually declared war against the Republic, and thereby placed himself on the same side with the King of Prussia and the other crowned heads of Europe against the great democratic uprising with which the continent is at the present time threatened, and which the continuation of the war may rather hasten than delay. It would seem, however, an all but impossible combination of circumstances that could turn this last stroke of Napoleonic *finesse* to any practical effect, either for the Emperor's restoration, or his son's succession.

THE MONTREAL WATER SUPPLY.

FILTRATION.

BY J. BAKER EDWARDS, PH. D., F. C. S.

"For every evil under the Sun
There's a remedy, or there's none.
If there's one—*He sure you find it;*
But if there's none—*Then never mind it.*"
OLD ENGLISH DISTICH.

For the evils pointed out in a former article, the immediate remedy is the "HOUSEHOLD FILTER."

Of these there are several varieties, any of which are quite efficient in removing from the water the living organisms and the decaying organic matter which are so hurtful in their character. It is necessary, however, to remind the householder, that whatever form of filter be adopted, in order to keep it sweet, clean, and in good working order, it should be constantly filled and the filtered water drawn off, whether it be required or not. It is quite inefficient when used irregularly; now full and now standing idle and drying up. This neglect will ruin any filter. Again, in the winter season, it must be protected against *frost*, or otherwise the ice will burst the filtering medium.

The filter, moreover, should be scrubbed and cleansed thoroughly about once a week—to prevent an accumulation of dirt.

Of the several varieties of household filters: first, the sandstone, is a good, cheap and efficient filter, but it is more liable than some others to become choked up with organic matter; secondly, the silicated filter, made of a porous artificial stone, which may be applied to the supply tap and every drop of water made to pass through it, is useful for large establishments; thirdly, the Animal Charcoal filter, patented by Kedzies, is very efficient, and takes every particle of organic and colouring matter out of the water. A similar filter, made by "Webb & Church," has been in use by the writer for the last three years with the most satisfactory results.

Mr. Joseph Walker, a well known citizen, has had a charcoal filter placed in his cistern, and has filtered all the water consumed in his house for the last seven years, by a syphon pipe, which has kept him, and occasionally his neighbours also, well supplied with brilliant, colourless aerated water, and which shows, as yet, no diminution of its power. 4th, unquestionably the best form of household filter now obtainable in Montreal, and probably the best, as well as the most economical and convenient which has yet been devised, is the "Silicated Carbon Filter," of the Battersea Company; of which Mr. J. Vaughan Morgan, Notre Dame Street, is the agent. In these filters the advantages of sand for rapid filtration, and of charcoal for perfect depuration, are secured, and the filter is excellent in every respect. It may be obtained of the ordinary form, or of the syphon form; or as a canvas bag for camping out, on marching or fishing expeditions, or as a pocket-filter for the tourist. It may be made to filter the whole consumption of a hotel, factory, or barracks; or, as in London, applied singly to the public drinking-fountains.

The Silicated Carbon filter may be obtained at the Agents' or at Messrs. Prowse Bros., and at most of the hardware stores.

The cost and trouble attending the use of these filters is far more than compensated for in the reduction of doctors' bills; or of an irregular outlay for worm medicines.

In Great Britain the subject of filtration has received the best attention of the foremost chemists in that country, and various schemes have been devised in which chemical skill has been brought to bear upon the peculiar exigencies of each case. The water which is raised from a lime or chalk bed requires a different mode of purification from that which is raised from a clay basin or sandstone rock; and that which contains the sewage of towns, however largely diluted, requires a special mode of treatment, in order to render it at all wholesome for public consumption; whilst that which contains chiefly impurities of a vegetable character is found to be most successfully purified by a particular ore of iron.

The well-known process of the late Dr. Clarke, of Aberdeen, is a most valuable mode of softening and purifying waters which are rendered hard by the presence of an excess of lime dissolved in carbonic acid. This excess is thrown out of solution by the addition of more lime, and the water becomes pure and clear. For many well-waters in this country this mode of purification would be applicable, but it would not benefit the waters of the Ottawa.

The process of Mr. Thos. Spencer, of London, has been successfully employed in many towns in England for the removal of peaty organic matter, and is especially adapted for the purification of lake and river waters. This consists of filtration through beds of carbonate of iron ore—"*Spathic Iron Ore*"—which completely removes the organic matter upon which the infusorial life germinates, exists, and multiplies.

Dr. Medlock has also patented a process for the use of scrap iron, which has been largely used in England for the same purpose.

After a due consideration and investigation of all these schemes, the Corporation of Liverpool, however, decided upon a plan of simple filtration through beds of rock, gravel and sand, which has proved very efficient and satisfactory to the community. The supply, which is, like the Ottawa water, *soft and peaty in character*, is conveyed to Liverpool from a lake at Rivington, a distance of twenty-five miles, in iron pipes. It is filtered in beds a little below the lake, at Rivington; and is stored in cisterns at Prescot (eight miles from Liverpool) and at Kensington, about three miles above the town—the two latter reservoirs break the fall and act as settling tanks for any debris carried over mechanically. Some trouble was experienced at first from the iron pipes, which gave an ochrey tinge to the water, but these difficulties have all yielded to experience, and the half million of inhabitants are now supplied with good soft and pure water in abundance at about one-fifth of the cost of the Montreal supply

The remedy might be easily applied either by a hydrant at the pumping station, or by a filtering reservoir placed at a level above the present one; which might also subserve the requirements of those houses which are above the reach of the present supply.

Difficulties which have been overcome in every direction for English communities would also vanish before any well directed determination to give the people of Montreal pure and wholesome water.

Another point of danger, which the author proclaimed to the people of Liverpool, is no less marked in Montreal—viz.: the dire effects of lead poisoning.

Water so soft and deficient in calcareous matter as that of the Ottawa river, should *never be stored in leaden cisterns*. This water slowly but certainly dissolves lead, and induces colic and paralysis, in some of the most painful and insidious forms known to the medical profession.

Even the use of such water for washing purposes has, within the writer's experience, caused illness of some years' duration, and he is fully convinced that for household purposes leaden cisterns should be totally abandoned when such a water is in use, and those of slate, iron, or cement, substituted.

It is satisfactory, however, to know that this impurity, as well as the organic matter, is entirely removed by the "Silicated Carbon Filter"

In the General Post Office in London in 1860, it was found that many of the employees were suffering from Lead Colic. An examination of the water proved it to be contaminated with lead from the lead cisterns. The "Carbon filter" was introduced when the total sickness was in 3 months reduced 33 per cent., and the filters were then adopted for the whole department

They have been also attached to every public drinking font in the metropolis.

A word of caution still remains for those suburban residents who may congratulate themselves upon the use of private wells of sparkling and delicious water.

Appearances are sometimes deceitful even in such cases Be sure that no drainage from your stables or outbuildings enters these wells. Avoid all surface water, for if your well be not sufficiently protected therefrom, cholera and diptheria may lurk in the most sparkling and brilliant draught. A filter is always a safe-guard both for town and country. The Charcoal filter is the best protection; it is, however, necessary that it should be used constantly and frequently cleaned. "To be forewarned is to be forearmed." *Verbum sapientiæ.*"

DORWIN FALLS.

To the Editor of the "CANADIAN ILLUSTRATED NEWS."

SIR.—In your issue of the 17th inst. you gave a very correct and, I may add, beautiful sketch of the Dorwin Falls on the river Lac Ouareau, in the township of Rawdon, province of Quebec, and as no description of the river or its source is given, perhaps a few words on that subject will be acceptable to some of your many readers.

The river Lac Ouareau takes its name from the lake of that name, which is about twenty miles in circumference, situated fifty miles north-east of Rawdon, and is the outlet of that lake. Its breadth is very uniform throughout, being about one hundred yards, and its current is very rapid. The lake is on the heights of the Laurentian range of mountains, and not less than two thousand feet above the level of the St Lawrence at the city of Montreal. The river winds its way through that great chain of mountains until it reaches the township of Rawdon, and then makes its last plunge at Dorwin Falls (as they are called) of one hundred feet, into the valley of the St. Lawrence, and mingles its waters, at the Parish of St. Pauls, with the river L'Assomption, eighteen miles from Bout de l'Isle, on the St. Lawrence river, fifteen miles from the city of Montreal.

It was from these falls that Mr. Lesage, the engineer of