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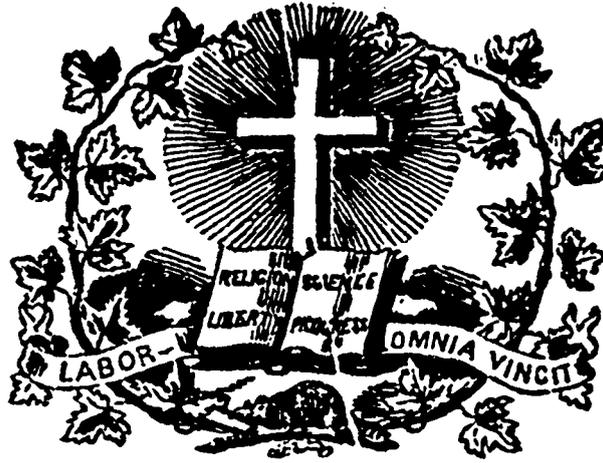
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JOURNAL OF EDUCATION.

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SUMMARY.—**LITERATURE**—Poetry: Twilight, Longfellow.—The Poet's College Life with his Departed Friend, Tennyson.—The Rivers St. Lawrence and Saguenay.—Japan and its Currency.—**CANADIAN HISTORY**: An Incident of the Battle of the Plains of Abraham.—Montreal in 1642-1644.—The Recollets in North America.—**SCIENCE**: The Functions of the Blood.—Du Chailia and the Gorilla.—**EDUCATION**: Drawing as an Aid to Observation.—Oral Instruction.—A Model Primary.—New and Useful Spelling Rules.—Anecdotes of Queen Victoria.—**OFFICIAL NOTICES**.—Appointments: School Commissioners.—Erections, &c. of School Municipalities.—Diplomas granted in Normal Schools: Jacques Cartier Normal School.—Diplomas granted by Boards of Examiners.—Situation wanted.—**EDITORIAL**: Education in Victoria.—Death of Archbishop Turgeon.—Convention of Teachers.—Examinations and distributions of Prizes.—Presentation of Diplomas.—Monument to an Historian of Canada: Hon. Mr. Chauveau's Oration.—Opening of the Session at Laval University.—Masson College.—Notices of Books, &c.—**Doutré**: *Les lois de la Procédure Civile*: The Metric System of Weights and Measures; *Souvenir decennal de l'Ecole Normal Laval*; *Laitour: Annuaire de Ville-Marie*—**MONTHLY SUMMARY**: Educational Intelligence.—Literary Intelligence.—Necrological Intelligence.—Miscellaneous Intelligence.—**ADVERTISEMENTS**: McGill Normal School.—McGill University.

THE POETS COLLEGE LIFE WITH HIS DEPARTED FRIEND.

I PART beside the reverend walls
In which of old I wore the gown;
I roved at random through the town,
And saw the tumult of the halls;

And heard once more in college fanes
The storm their high-built organs make,
And thunder-music, rolling, shake
The prophets blazon'd on the panes;

And caught once more the distant shout,
The measured pulse of racing oars
Among the willows; paced the shores
And many a bridge, and all about

The same gray flats again, and felt
The same, but not the same; and last
Up that long walk of limes I past
To see the rooms in which he dwelt.

Another name was on the door:
I linger'd; all within was noise
Of songs, and clapping hands, and boys
That crash'd the glass and beat the floor;

Where once we held debate, a band
Of youthful friends, on mind and art,
And labour, and the changing mart,
And all the framework of the land;

When one would aim an arrow fair,
But send it slackly from the string;
And one would pierce an outer ring,
And one an inner, here and there;

And last, the master-bowman, he
Would cleave the mark. A willing ear
We lent him. Who, but hung to hear
The rapt oration flowing free

From point to point with power and grace,
And music in the bounds of law,
To those conclusions when we saw
The God within him light his face,

And seem to lift the form, and glow
In azure orbits heavenly-wise;
And over those ethereal eyes
The bar of Michael Angelo.

LITERATURE

POETRY.

TWILIGHT.

The twilight is sad and cloudy,
The wind blows wild and free,
And like the wings of sea-birds
Flash the white caps of the sea.

But in the fisherman's cottage
There shines a ruddier light,
And a little face at the window
Peers out into the night.

Close, close it is pressed to the window,
As if those childish eyes
Were looking into the darkness,
To see some form arise.

And a woman's waving shadow
Is passing to and fro,
Now rising to the ceiling,
Now bowing and bending low

What tale do the roaring ocean,
And the night-wind, bleak and wild,
As they beat at the crazy casement,
Tell to that little child?

LONGFELLOW.

TENNYSON.

The Rivers St. Lawrence and Saguenay.

I shall not attempt to describe the beautiful scenery of the river below Kingston with the Thousand Islands, on a delightful sunny morning, casting their shadows on the clear and pleasant water; the grandeur of the rapids and the excitement of the passengers as the steamer slides down the foaming waters; nor the picturesque scenery between Montreal and Quebec, and the magnificent appearance presented to the tourist on approaching the ancient capital; nor, again, the pleasant trip from Quebec, on the steamer *Magnet*, down the Lower St. Lawrence and up the River Saguenay, where, no matter how great the heat is in Quebec, a cool and refreshing breeze is blowing, nor the grand, but rather monotonous scenery of the Saguenay. But I shall proceed to relate a few facts which may not be uninteresting to those purposing to visit our Canadian watering-places, where they will find the air pure, the scenery fine, plenty of salmon and trout fishing, and the privilege of enjoying healthy repose. The first place met with after leaving Quebec is Murray Bay, an unassumingly quiet little spot, where families wishing to live economically can enjoy themselves in a quiet sort of way. There are a larger number of Canadians staying there this summer than has ever been known before. The attractions of this place, however, are not at all numerous, and at present there is not good hotel accommodation, but families manage to bundle in together in rudely built cottages got up for temporary summer residences. The bathing there cannot be as good as at Cacouna or Tadousac, for the reason that the water is not very salt, but merely brackish. The next point touched at is Rivière du Loup, at the mouth of the Saguenay, where the passengers for Cacouna embark. The boat is due there about 5 o'clock P. M., and is met at the wharf by an innumerable company of hackmen offering to carry you to Cacouna for a dollar. The heat of the weather, the day before I arrived there, was almost insufferable in Montreal, but down the Lower St. Lawrence and near the approach to the Saguenay it was almost uncomfortably cold. Before arriving at Rivière du Loup, those of the tourists who had provided themselves with overcoats were only too glad to avail themselves of what was then a most acceptable piece of wearing apparel. The drive from the quaint little town of Rivière du Loup to Cacouna is about six miles and is very pretty, the river dotted with sailing craft, being visible on your left a large portion of the way. This fashionable resort has very much improved in appearance within the last two years. A pretty little Episcopal Church has been erected and Mr. Molson, of Montreal, has built himself a very handsome summer residence of Gothic style. The place has gained great reputation for salubrity, is thronged during the summer months with the prettiest of faces and the smartest of petticoat, to say nothing of the variety of hats nor the redundancy of the looks of the fair daughters of Canada as they sung themselves on the crowded beach of Cacouna. It is amusing to see the young ladies watching the approach of the tide, so eager are they for bathing. They absolutely take like ducks to the water, but I should say remain in too long for health's sake. After a good ducking in the water and getting well salted, they may be seen indulging in the manly game of rolling ten pins. Others enjoy a ride on horseback. No less than forty horses have been sent up from Quebec by some livery stable-keeper as a speculation. It is a matter of congratulation that the out-door sports which impart robust constitutions and ruddy countenances to the gentler sex of England are becoming yearly more popular among our Canadian women. The effeminate customs of other years are giving way to a fondness for horsemanship, croquet, &c., and as a result we witness a decided improvement in the constitutions of our women. They are becoming more and more convinced that physical delicacy, enervation, effeminacy, and hot-house drawing room confinement do not impart genuine beauty and attraction to them. They are learning that a pretty face is, in man's estimation, no compensation for a frail constitution and numberless doctors' bills. I have heard it stated that there are three or four thousand strangers at present in Cacouna, but should hardly have thought so unless it be that

they are scattered about or at great lengths apart. The St. Lawrence Hall Hotel, called after the unrivalled hotel of the same name in Montreal, is comfortably filled, and is managed by Mr. Chadwick, the polite and gentlemanly book-keeper for some years past at the St. Lawrence, Montreal. Under his excellent management the hotel is very popular, as those who have had the pleasure of patronising it speak in the highest terms of the attentions paid to them. The American tourists do not, I think, spend much time at our watering-places, which, I imagine, is a great mistake on their part. They appear to stay longer at Quebec and Montreal, which of course have many attractions for them. The drives around Quebec are unsurpassed on this continent. The town itself looks dull since the Government left. The population has materially decreased since the late great fire, and trade and business appear languishing. The same, I am happy to say, cannot be said of Montreal. That city appears to be a busy hive of industry. Old buildings are being razed to the ground and splendid substantial stone ones erected in their places. American visitors speak in terms of astonishment at its appearance and progress and openly aver that no city of the same population in the United States displays half the amount of enterprise that does Montreal.

On my return trip from Rivière du Loup to Quebec, I found the *Magnet* crowded with passengers, returning from Ha-Ha Bay and Tadousac. A large addition was made at that point and again at Murray Bay. The accommodation on the boat was not all adequate for the great number of persons on board. Tables were set for tea four successive times, and indeed I must say I think no one was sent away hungry, even at the last course. But as to obtaining a state room or any other kind of room, after leaving Tadousac, was sheer impossibility. The officers on board did their best, and succeeded in providing for the ladies in some way. But the unfortunate male portion of the passengers had to roam about in the most disconsolate manner. Some succeeded in getting a pillow and lay under the tables or on top of them, until at last it became dangerous lest those who were still left perambulating might walk over one's prostrate body. I noticed one gentleman of a swellish demeanour go to the purser's office and after a few minutes' confidential conversation, leave, looking very disconsolate and very disgusted. He had been supplicating for a bed, but was assured that there was not a bed left. He then laid his bones under the piano. I had made up mind to be happy under all difficulties and enjoyed the company of a very humorous gentleman, a member of the Quebec press. He kept, by his capital jokes and witticisms, those who were around him in good humor until a late hour, and then at length subsided under one of the tables in the saloon, singing, "Oh, let us be happy together, for where there's a will there's a way." The hour of six o'clock in the morning brought us to the ancient capital, where most of the passengers were transferred to the *Canada*, a splendid boat, built this year for the Richelieu Co. It runs between Montreal and Quebec by daylight, thus giving tourists an opportunity of witnessing the whole of the scenery of that part of the St. Lawrence. And next we arrive at Montreal, "the city especially admired by travellers," the majority of whom seek the St. Lawrence Hall Hotel. Upon the arrival of every train and boat, the omnibuses, three or four, drive up to the door filled with passengers. The Americans are essentially a travelling community, and the better classes of them seek the best hotels. They have heard that the St. Lawrence is not surpassed on this continent, and after they have spent one night there, they become satisfied that what they have heard is correct. In short, they find Mr. Hogan to be the very model of a hotel keeper. They cannot but appreciate the kind and gentlemanly manner with which he treats his guests. Every information they require is given with an accuracy and reliability by a gentleman specially detailed for that purpose, which it is admitted is rarely to be procured so satisfactorily elsewhere. Were it not for the American travel just now Montreal would look dull enough, for the

bon ton are out of town at the watering-places. The Churches are only half-filled on Sundays. Even the high church of which Mr. Wood is the priest, although very small, is at present poorly attended. I paid it a visit one Sunday morning and was a little astonished to find that although Mr. Wood does not carry ritualism quite so far as it is practised in England, he goes in his rule of conducting the services far beyond that which one is accustomed to witness in Upper Canada. The city of Montreal is well garrisoned by Britain's brave defenders, there being no less than four regiments of the line stationed there—the Rifle Brigade, the 29th, the 78th Highlanders, and 100th, besides artillery and a troop of hussars. The 78th Highlanders that were expected in Toronto are to remain in Montreal, and certainly a finer looking lot of men it would be difficult to see. Their dress is very attractive, and they would, I am sure, have caused quite a sensation here if they had come.—*Correspondence in the Leader.*

Japan, and Its Currency.

BY JOSEPH NEWTON, H. M. MINT.

It is highly probable, if it be not morally certain, that, ere many years shall have passed away, the thick veil of mystery which has so long, and so effectually concealed from us an exact knowledge of the laws which govern, and the peculiar habits which distinguish the inhabitants of Japan, will be removed. Such a consummation we believe must result from the more enlightened, and, it may also be said, far more rational mode of conducting negotiations with the authorities of that strange empire of islands which now prevails. This country, indeed, is particularly fortunate at present in having as its chief representative at the Court of the Tycoon so able a diplomatist, and so dispassionate a man as Sir Rutherford Alcock. If it be true that—

“A wise physician skilled our woes to heal,
Is more than armies for the public weal,”

it is equally certain that a talented and honest statesman may contribute largely to the promotion of the social and commercial intercourse, and the happiness of nations. In time past it has been too much the custom for ambassadors and others, while “dressed in a little brief authority,” to play very “fantastic tricks” indeed with those to whom they were accredited, and thus to create, or widen breaches instead of promoting peace and confidence. The fact, which is sustained by abundant evidence, has had the effect, in too many instances, of preventing instead of aiding the extension of commerce, and thereby arresting the progress of civilization and of Christianity itself.

The manner in which our intercommunication with the Japanese has been conducted during the last few years is happily not emenable to any such painful criticism. Confidence, it has been truly asserted, is a “plant of slow growth,” but it appears to be one in process of rapid cultivation between England and Japan, and we all know the value of the production when fully matured. At this moment, there are in this country many intelligent young Japanese, some of them of noble birth, and destined for future legislators, under course of educating and training in Great Britain, whilst several of the various vexatious restrictions which heretofore prevented the admission of English men into Japan have disappeared. In short, a quiet and gradual, yet sure and steady revolution in these directions is going on, and its course is fraught with advantage to the peoples of both countries.

In the magnificent exhibition of fruits and flowers of the world's industrial gardens, now in full display at Paris, a considerable section is devoted to the exposition of articles from Japan. This forms, indeed, one of the most interesting portions of the wondrous show, and the ingenuity and originality manifested by the artists and work-people who have prepared the articles are extraordinary. The fact of their transmitting so much valuable property to France, and taking so palpable an interest in the suc-

cess of the gigantic undertaking, is in itself a strong proof that the Japanese are becoming fully alive to the advantages of international traffic; as it certainly proves that the councils of the Tycoon are not now under the influence of the old spirit of exclusiveness. Taking this, with other signs and portents of a similar character into account, there can be little danger in predicting that closer and far more familiar relations between the states of Europe generally and Japan will soon exist. Such a result cannot but be productive of good to all, and we hail its approach as a certain guarantee of increasing commercial prosperity, for this country especially.

If, however, there are externally to Japan, as it were, symptoms of an increasing intercourse such as has been indicated, there are corresponding symptoms within its own limits. To one of these latter it is proposed now to invite attention, namely, that of a proposed reformation of the metallic currency, which subject is under discussion by the Japanese Government. On matters of trade and currency which, as we so well know, have the most direct and vital bearing upon each other, the people of Japan have been instructed to some extent by the Dutch, with whom their trading transactions have hitherto been almost exclusively carried on. The information thus gained nevertheless was of a limited kind, and was probably sought for the purpose of meeting the internal wants of the country, and the consequence was the establishment of a system of coinage by no means cosmopolitan in its application, but, on the contrary, most narrow and artificial. The coinage of Japan was, however, it must be admitted, carefully devised, from one point of view for its especial object, and its arrangement, though presenting startling anomalies to those unaccustomed to it, was not ill adapted to the daily necessities of the native population. The treaty which was completed in 1858, conjointly between Great Britain, America, and Japan, and which, to a very limited degree, opened up commerce between the three countries, first induced the Japanese to take into earnest consideration the nature and peculiarities of their own metallic currency, and its adaptability or otherwise to the purposes of foreign trade. This consideration was a fact forced upon them by pressure of the strongest influence which it is said can operate upon traders in general—that of self-interest. To make this point more clear and intelligible, let us describe the coinage of Japan, as it was arranged at the period just cited.

The principal coins circulating anterior to 1858, were the gold *kobang*, the gold *itzebu*, and the silver *itzebu*. The original *kobang* of gold was worth about 18s. 3 $\frac{3}{4}$ d. or 18s. 5d. British. The gold *itzebu* was worth one-third of the gold *kobang*, and the silver *itzebu* equalled in value 1s. 4d. English money. At the time of the partial opening up of foreign trading transactions, the *kobang* circulated in Japan at four *itzebuses*, although its European value was actually nearly fourteen *itzebuses*! The immediate consequence of this latter circumstance on the sharp traders of America and England, was to induce them to buy up all the *kobangs* that came in their way at the Japanese valuation. By this proceeding, which no doubt enlightened the poor natives, and revealed to them the truly commercial character of their new customers, the latter gained large sums of money. The lesson thus practically taught and forcibly illustrated, was speedily learnt by the Japanese, who set about purchasing the remaining *kobangs*. The result necessarily was a total disappearance of the *kobang* from the channels of general circulation.

At present, therefore, gold and silver *itzebuses* are the coins which mainly do duty as the circulating media of Japan. These are supplemented, however, by a silver coin known as the *itacune*, and which is equal in value to 12s. British. There are also in use among the humbler classes of the native population, subsidiary pieces of copper and of iron, and which are known individually as the *sen*, or cash. (1) Of these 376 are required to equal

(1) The coarsest specimens of mintage extant, and not equal to the Chinese “cash,” illustrated at page 121, vol. iii. of INTELLECTUAL OBSERVER.

in value an English shilling. The obsolete kobangs were thin and oval-shaped discs of flattened gold, two inches in length, and $1\frac{1}{2}$ inches in width. Their weight averaged 200 English grains, and their almost universal degree of fineness was $\frac{1}{1000}$. The ornamentation of the kobang was of the most primitive and simple nature. A kind of scroll like a floreated design at the top, and at the bottom of the obverse, was supposed to represent the coat of arms of the *Dairi*. Characters stamped in immediately beneath the upper coat of arms indicated the exact weight and value of the coin and the date of its production. Above the lower coat of arms was the name of the Master of the Mint at which it was minted, and who thus guaranteed and made himself responsible for its genuineness. (1) In the centre of the reverse was the official mark of the Director-general of the gold and silver coinages, and not unfrequently the names also of private individuals were imprinted on the same side to demonstrate that the coin had passed through their balances and not been "found wanting."

The gold itzebu, or, in the more vulgar tongue, the "itjib," weighs about 60 English troy grains, and its degree of fineness is $\frac{588}{1000}$. It is simply an oblong piece of gold plate metal, with rectangular ends admirably adapted for cutting holes in pockets. It is $\frac{3}{4}$ of an inch in width, and ornamented by a coat of arms, characters exemplifying its weight and value, and other official marks of the director of coins. The *itacune* is an oval-ended plate of silver, three inches in length, $1\frac{1}{2}$ inches in width, weighing 1160 English troy grains, and possessing a degree of fineness equal to $\frac{956}{1000}$. It is stamped with the Imperial arms, top and bottom, with declaration of current weight and value in the middle.

As has been stated, some of the consequences of the treaty were soon felt in a material sense. It was ascertained that one Mexican dollar was, approximately, equal in value to three itzebus. Foreign merchants were therefore entitled to demand three itzebus in exchange for a dollar, and as, by the provisions of the same treaty, permission was given for the free export of gold and silver, the gold coins could be obtained at the Mint price for the itzebus thus acquired, they were speedily bought up and exported. Is it surprising that the Japanese soon complained that they were being robbed under the actual conditions of the treaty which thus legalized fraud? Sir Rutherford Alcock, who was a witness of these evils, strenuously endeavoured to remove, or at least to mitigate them. He advised that the Government of the Tycoon should remodel its own currency laws, and his suggestions were partially adopted. Had they been wholly acted upon, greater good would have resulted. Timidity and prejudice prevented this and half measures, as usual, ended in disaster, or at any rate in failure.

Further counsel has been recently invoked from the English Government, and while we write, vigorous attempts are being made to effect a complete re-arrangement of the Japanese currency. It would be premature to adumbrate even the nature of the bases upon which the new system of currency will be placed, but it may be predicted with safety that decimilization will be one of them. At all events, it is undoubtedly true, that the experiences of the last few years have enlightened the minds of the ministers of the Tycoon in respect of the highly important matters of trade, currency, and coinage, and it is therefore more than probable that on these, as on other questions, ideas once reckoned as inadmissible, will be warmly entertained, if not willingly realized.

The currency system of Japan, during the isolation of that country for many centuries from the rest of the world, was constructed on principles and framed with views so entirely different from those adopted by other countries within the circle of general commerce, that it may well be regarded, like other institutions of that strange nation, as a puzzle. The Government was able to control the coinage as it pleased, and there were only two channels

by which it was attainable—the Dutch and the Chinese establishments at Nagasaki. Now all this is changed, or in process of transformation, and American coins are in partial circulation throughout Japan.

It will not astonish us very much to learn that a new Imperial Mint, fitted with the best machinery and most complete apparatus which England can furnish, is ordered, or that such an establishment is actually in course of construction at Nagasaki. In this respect, at least, Japan will presently be placed on an equal footing with America and the states of Europe. Who shall predict the future history of the mysterious nation in question, or guess even at the final extent of the moral, intellectual, and physical development of its people?—*Intellectual Observer*.

CANADIAN HISTORY

An Incident of the Battle of the Plains of Abraham.

Our correspondent L. sends us the following:—Of the several corps who served in 1759 under the immortal Wolfe, the 78th, or Fraser's Highlanders, is probably the one which left the most memories. About ten years after the battle of Culloden, which terminated the unlucky rising of 1745, Mr. Pitt, observing with a liberal and statesmanlike eye the spirit of loyalty towards those who placed confidence in them, which was the distinguishing characteristic of the Highland clans, resolved to employ them in the foreign service of Great Britain, under the command of officers chosen from the most esteemed Scottish families. He knew the chiefs could be depended upon where their faith was engaged; and he was aware of the devotion with which the clansmen followed the fortunes of their chieftain. The experiment succeeded to the fullest extent; and Mr. Pitt had the merit of drawing into the British service a hardy and intrepid race of men, who served the crown with fidelity, who fought with valour, and who conquered for England in every part of the world. Following up this enlightened policy, in 1757 the Hon. Simon Fraser, who had himself been engaged in the rebellion and whose father, Lord Lovat, had been beheaded for high treason on Tower Hill, was appointed Lieut. Col. Commandant of a battalion to be raised upon the forfeited estate of his own family, then vested in the Crown. Without estate, money, or influence, beyond the hereditary attachment of his clan, the Master of Lovat found himself in a few weeks at the head of 800 men, entirely recruited by himself. His kinsmen, officers of the regiment, and the gentlemen of the country around added 700 more. The battalion was thus formed of 13 companies of 105 men each, numbering in all 1,460 men, including 65 serjeants and 30 pipers and drummers—a splendid body of men, who afterwards carried the military reputation of the nation to the highest pitch. In all their movements they were attended by their chaplain, the Rev. Robert Macpherson, who was called by them *Caipal Mor*, from his large stature. They wore full Highland dress, with muskets and broad swords. Many of the soldiers added at their own expense the dirk and the purse of otter's skin. The bonnet was raised or cocked on one side, with a slight bend inclining down to the right ear, over which were suspended two or more black feathers. Eagle's or hawk's feathers were worn by the officers. During six years in North America, Fraser's Highlanders continued to wear the kilt both winter and summer. They, in fact refused to wear any other dress, and these men were more healthy than other regiments which wore breeches and warm clothing. At the battle of the Plains the loss of Fraser's Highlanders amounted to three officers, one serjeant, and fourteen rank and file killed—ten officers, seven serjeants, and one hundred and thirty-one rank and file wounded. It is a singular fact that Scotchmen were occupying high offices in both armies. General Levis' aide-de-camp was the Chevalier Johnstone. The French had also a Scotch officer in charge of one of the Sillery

(1) An arrangement existing in this country in the days of the Saxon Heptarchy.

outposts; his name was Douglass. It was one of the celebrated warriors of the master of Lovat who was the chief actor in the following incident; it has never appeared in print, a family tradition, carefully preserved amongst the lineal descendants of the other actor, the Panet family, of Quebec. During the last year of the French dominion in Canada, there was a celebrated French surgeon, Dr. P. Badilart, an army physician. On the memorable 13th of September, 1757, Dr. Badilart was in attendance on the Plains of Abraham; on the retreat being sounded, a powerful Highlander, of the name of Fraser, selected the French physician amongst the fugitives and attempted to capture him. The disciple of Esculapius immediately drew a pistol and attempted to shoot his captor, who succeeded in disarming him before any harm was done, after a struggle in which the *savage d'Ecossie*, as the Highlanders were then styled by the French, remained the victor. After the surrender of Quebec the French surgeon was released, and having accepted the new regime, he determined to continue the practice of his profession in Quebec. Fraser having also obtained, shortly after, his discharge, settled in Quebec, where he taught a school in the vicinity of the residence of Dr. Badilart, in Garden street, we believe. A good feeling sprung up between the doctor and the Highlander, who whenever he met the son of Hippocrates, used to familiarly greet him with the salutation, "Bon jour, mon prisonnier." Dr. Badilart, being a man of ability, was well treated, nay, honoured with appointments by the English Government. Thus we find him in 1785 charged by Government, as assistant military surgeon, to go and enquire and report on a new and dreadful disease then showing itself and known as *Le mal de la Bate St. Paul*. Relentless fate successively removed the valiant Highlander and his fiery friend "mon prisonnier," and the incident of the Plains might possibly have been lost and forgotten had not, on the 13th September, 1859 the centennial anniversary of the great battle, a descendant of Fraser unexpectedly presented and returned to a descendant of Dr. Badilart, the late John Panet, Coroner of Quebec, the identical pistols used a century before; they are now the property of Mr. Panet, of this city.—*Quebec Chronicle*.

Montreal in 1642-1644

Let us now ascend to the Island of Montreal. Here, as we have seen, an association of devout and zealous persons had essayed to found a mission-colony under the protection of the Holy Virgin; and we left the adventurers after their landing, bivouacked on the shore, on an evening in May. There was an altar in the open air, decorated with a taste that detokened no less of good nurture than of piety; and around it clustered the tents that sheltered the commandant, Maisonneuve, the two ladies, Madame de la Peltrie and Mademoiselle Mance, and the soldiers and laborers of the expedition.

In the morning they all fell to their work,—Maisonneuve hewing down the first tree,—and labored with such good-will that their tents were soon enclosed with a strong palisade, and their altar covered by a provisional chapel, built, in the Huron mode, of bark. Soon afterward, their canvas habitations were supplanted by solid structures of wood, and the feeble germ of a future city began to take root.

The Iroquois had not yet found them out; nor did they discover them till they had ample time to fortify themselves. Meanwhile on Sunday, they would stroll at their leisure over the adjacent meadow and in the shade of the bordering forest, where as the old chronicler tells us, the grass was gay with wild flowers, and the branches with the twitter and song of many strange birds.

The summer passed prosperously, but with the winter their faith was put to a rude test. In December, there was a rise of the St. Lawrence, threatening to sweep away in a night the results of all their labor. They fell to their prayers; and Maisonneuve planted a wooden cross in face of the advancing deluge first making a vow, that, should the perils be averted, he,

Maisonneuve, would bear another cross on his shoulders up the neighboring mountain, and place it on the summit. The vow seemed in vain. The flood still rose, filled the fort ditch, swept the foot of the palisade, and threatened to sap the magazine; but here it stopped and presently began to recede, till at length it had withdrawn within its lawful channel, and Villemarie was safe. (1)

Now it remained to fulfil the promise which such happy results had proceeded. Maisonneuve set his men at work to clear a path through the forest to the top of the mountain. A large cross was made, and solemnly blessed by the priest: then, on the sixth of January, the Jesuit Du Peron led the way, followed by Madame de la Peltrie, the artisans and soldiers to the destined spot. The commandant, who with all the ceremonies of the Church had been declared First Soldier of the Cross, walked behind the rest, bearing on his shoulders a cross so heavy that it needed his utmost strength to climb the steep and rugged path. They planted it on the highest crest, and all knelt in adoration before it. De Peltrie, always romantic and always devout, received the sacrament on the mountain-top, a spectacle to the virgin world stretched below. Sundry relics of saints had been set in the wood of the cross, which remained an object of pilgrimage to the pious colonists of Villemarie.

At the end of August, 1643, a vessel arrived at Villemarie with a reinforcement commanded by Louis d'Ailleboust de Coulonges, a pious gentleman of Champagne, and one of the Associates of Montreal.

Their vessel passed in safety the Iroquois who watched the St. Lawrence, and its arrival filled the colonists with joy. d'Ailleboust was a skilful soldier, specially versed in the arts of fortification; and, under his direction, the frail palisades which formed their sole defence were replaced by solid ramparts and bastions of earth. He brought news that the "unknown benefactress," as a certain generous member of the Association of Montreal was called, in ignorance of her name, had given funds to the amount, as afterwards appeared of forty-two thousand livres, for the building of a hospital at Villemarie. The source of the gift was kept secret, from a religious motive; but it soon became known that it proceeded from Madame de Bullion, a lady whose rank and wealth was exceeded only by her devotion. It is true that the hospital was not wanted, as no one was sick at Villemarie, and one or two chambers would have sufficed for every prospective necessity; but it will be remembered that a colony had been established in order that a hospital might be built, and Madame de Bullion would not hear of any other application of her money. (2)

Instead, therefore, of tilling the land to supply their own pressing needs, all the laborers of the settlement were set to this pious, though superfluous, task. There was no room in the fort, which, moreover, was in danger of inundation; and the hospital was accordingly built on higher ground adjacent. To leave it unprotected would be to abandon its inmates to the Iroquois; it was therefore surrounded by a strong palisade, and, in time of danger, a part of the garrison was detailed to defend it. Here Mademoiselle Mance took up her abode, and waited the day when wounds or disease should bring patients to her empty wards.

From Maisonneuve to the humblest laborer, these zealous colonists were bent on the work of conversion. To that end the ladies made pilgrimages to the cross on the mountain, sometimes for nine days in succession, to pray God to carry the

(1). A little MS. map in M. Jacques Viger's copy of *Le Petit Registre de la Cure de Montreal*, lays down the position and shape of the fort at this time, and shows the spot where Maisonneuve planted the cross.

(2) *Journal des Supérieurs des Jésuites*, MS. The hospital was sixty feet long and twenty-four feet wide, with a kitchen, a chamber for Mademoiselle Mance, others for the servants, and two large apartments for the patients. It was amply provided with furniture, linen, medicines, and all necessaries; and had also two oxen, three cows, and twenty sheep. A small oratory of stone was built adjoining it. The inclosure was four arpents in extent.—*Archives du Séminaire de Villemarie*, cited by Fallion.

heathen into His fold. The fatigue was great, nor was the danger less; and armed men always escorted them, as a precaution against the Iroquois. The male colonists were equally fervent; and sometimes as many as fifteen or sixteen persons would kneel at once before the cross with the same charitable petition. The ardour of their zeal may be inferred from the fact, that these pious expeditions consumed the greater part of the day, when time and labor were of a value past reckoning to the little colony. Besides their pilgrimage, they used other means, and very efficient ones, to attract and gain over the Indians. They housed, fed, and clothed them at every opportunity; and though they were subsisting chiefly on provisions brought at great cost from France, there was always a portion for the hungry savages who from time to time encamped near their fort. If they could persuade any of them to be nursed, they were consigned to the tender care of Mademoiselle Mance; and if a party went to war, their women and children were taken in charge till their return. As this attention to their bodies had for its object the profit of their souls, it was accompanied with incessant catechising. This, with the other influence of the place, had its effect; and some notable conversions were made. Among them was the renowned chief, Tessouat, or Le Borgne as the French called him,—a crafty and intractable savage, whom, to their own surprise, they succeeded in taming and winning to the Faith. (1) He was christened with the name of Paul, and his squaw with that of Madeleine. Maisonneuve rewarded him with a gun, and celebrated the day by a feast to all the Indians present. (2)

The French hoped to form an agricultural settlement of Indians in the neighborhood of Villemarie; and they spared no exertion to this end, giving them tools and aiding them to till the fields. They might have succeeded, but for that pest of the wilderness, the Iroquois, who hovered about them, harassed them with petty attacks, and again and again drove the Algonquins in terror from their camps. Some time had elapsed, as we have seen, before the Iroquois discovered Villemarie; but at length ten fugitive Algonquins, chased by a party of them, made for the friendly settlement as a safe asylum; and thus their astonished pursuers became aware of its existence. They reconnoitred the place, and went back to their towns with the news.

From that time forth the colonists had no peace: no more excursions for fishing and hunting; no more Sunday strolls in woods and meadows. The men went armed to their work and returned at the sound of a bell, marching in a compact body, prepared for an attack.

Early in June, 1643, sixty Hurons came down in canoes for traffic, and, on reaching the places now called Lachine, at the head of the rapids of St. Louis, and a few miles above Villemarie, they were amazed at finding a large Iroquois war-party in a fort hastily built of the trunks and boughs of trees. Surprise and fright seem to have infatuated them. They neither fought nor fled, but greeted their inveterate foes as if they were friends and allies, and, to gain their good graces, told them all they knew of the French settlement, urging them to attack it and promising an easy victory. Accordingly, the Iroquois detached forty of the warriors, who surprised six Frenchmen at work hewing timber within gunshot of the fort, killed three of them, took the remaining three prisoners, and returned in triumph. The captives were bound with the usual rigor; and the Hurons taunted and insulted them, to please their dangerous companions. Their baseness availed them little; for at night after a feast of a victory, when the Hurons were asleep or off their guard, their entertainers fell upon them, and killed or captured the

(1) Vimont, *Relation*, 1643, 54, 55. Tessouat was chief of Alouette Island in the Ottawa. His predecessor, of the same name, was Champlain's host in 1613.—See "Pioneers of France, Chap." xii.

(2) It was the usual practice to give guns to converts, "pour attirer leurs compatriotes à la Foi." They were never given to heathen Indians. "It seems," observes Vimont, "that our Lord wishes to make use of this method in order that Christianity may become acceptable in this country." *Relation*, 1643, 71.

greater part. The rest ran for Villemarie, where, as their treachery was as yet unknown, they were received with great kindness. (1)

The next morning the Iroquois decamped, carrying with them their prisoners, and the furs plundered from the Huron canoes. They had taken also, and probably destroyed, all the letters from the missionaries in the Huron country, as well as a copy of their *Relation* of the preceding year. Of the three French prisoners, one escaped and reached Montreal; the remaining two were burned alive.—*Parkman's Jesuits in North America*.

The Recollets in North America.

The destruction of the ancient edifice, so well known to all our readers as the Recollet Church, which is about to make way for commerce, has given occasion to Mr. L. S. Lesage to issue some account of the old Church, and of the order from which it has taken its name. The Recollets belonged to the order of religious mendicants founded by St. Thomas d'Assize. Their name indicates that they were meditative, and by 1621 they had five hundred convents, in twenty-two Provinces, of their order. They first arrived in Canada in May, 1615, up to which time no priest had yet appeared here, though Quebec had been founded for seven years, by a company, of whose objects, one was stated to be the conversion of the Indians. It was Champlain—who believed that religion should be the basis of his colony, and who, besides, was shocked at the depravation of morals which he witnessed—who persuaded the Recollets to come hither. A wooden chapel was soon erected in the present Lower Town of Quebec; two missionaries remained at that place, and two others proceeded with Champlain to the Sault St. Louis (Caughnawaga) in order to learn the language of the people. On the 25th of June 1615, mass was first celebrated in the Quebec chapel, with discharges of musketry and salvos of such small artillery as the colony then possessed. Father Obleau was the officiating priest and Father Leclercq conceived that now the vast solitudes of the country had become a "Paradise, all invoking the King of Heaven, and calling to their aid the tutelary angels of the great Province." Fathers Jamay and Caron, who accompanied Champlain, were the first who celebrated mass on this island, which they did at the east end, at the entrance of the Rivière des Prairies, very much to the admiration of the Indians, who apparently made the chief part of the congregation, and of course saw the rites of the church for the first time. Mass was first said at Three Rivers on the 15th July, 1615; and another Recollet, brother Duplessis, who assisted on the occasion, during the course of the succeeding year, opened a school for the instruction of the Indians, who then greatly frequented the place in order to trade in furs. This was the first school in Canada. The Recollets then, by the help of contributions from France, constructed on the River St. Charles, near Quebec, a stone chapel, monastery and fortification for defence. This was on the site of the present general hospital at Quebec, and there they established the chief house of their community. Acting as curés, these priests married Guillaume Couillard to Guillemette Hebert, and baptized Abraham Martin, *dît l'Écossais*,—from whom the plains of Abraham take their name,—in 1621.—These are the first marriage and baptism in Canada of which any record is preserved; but the register is not the original; but one composed from memory after the destruction of the first by fire in 1640. Father Segard relates as follows:—"Some good Frenchmen edified us greatly by their wise and worthy conduct; but others, living like brutes and atheists, hindered the conversion of this poor people." The Huguenots also gave the orthodox clergy some trouble, for while the latter said mass, the former, according to the same authority, would set up their

(1) I have followed Dollier de Casson. Vimont's account is different. He says that the Iroquois fell upon the Hurons at the outset, and took twenty-three prisoners, killing many others; after which they made the attack on Villemarie.—*Relation*, 1643, 62

canticles, and had a minister whosoever the Catholics had a priest, all of which was found to be somewhat confusing to the native mind. However, in 1625, Father de la Roche Daillon determined to proceed to the country of the Hurons, now Upper Canada, for the purpose of aiding Father Viel, who had been some time in that part of the country; but this was prevented by the death of the Father Viel, which has given the name forever to the well-known Sault au Recollet. The Hurons who were conveying the priest and a neophyte who accompanied him to the trading post Montreal, brought the canoe into the Rivière des Prairies, and to save the trouble of a portage, ran the rapid, and in doing so overturned the canoe and drowned the priest and his companion. It is doubtful if this affair did not arise from design rather than from accident, for the Hurons all saved their own lives, and carried off all the luggage of their passengers.

The Company by which Canada was *exploité*, did not do much to encourage the Recollets, probably finding that the presence of these reverend persons operated somewhat as a constraint, did not encourage their work, and Kerlk, the Huguenot, in 1629, seized Quebec for the English, who held it for three years, in the meantime driving out the Catholics and their clergy. On the restoration of the country, the Recollets could not obtain an authorization to return, Canada being handed over to the Jesuits, so far as its religious interests were concerned, to the great regret of Father Le Caron, who died soon afterwards, as it was supposed, in part from mortification at his exclusion from the scene of his former labors. However, in 1670, they were permitted to resume their mission, and obtained a return of the properties which they had formerly held, and, in 1692, Monseigneur de Laval purchased their convent on the St. Charles for the General Hospital, giving them in return the ground which now forms the Place d'Armes at Quebec, where they soon after built their convent. In 1680, they once more appeared in Montreal, and, in 1692, acquired the property which has since gone by their name, where they at once began to erect their convent and church. They, moreover, collected alms through the city, taught the catechism to the children, and set up primary schools. They also undertook the duty of nursing the sick, and burying the dead. Their establishment had, as a dependence, a large garden which extended to the fortification on McGill street. There was also a fine orchard, and, in front of the property in Notre Dame street, a row of noble elm trees.

After the conquest, their property fell to the British Government and they were not allowed to recruit their numbers. Individually, however, they accepted the curacies of different parishes, and thus becoming subjects of the new sovereign obtained the advantages of the treaty. The last of the Recollet schools, were those of Montreal, Quebec, Three Rivers, and Verchères. Their property was used as a barrack, and the church was in part, occupied by the Scotch, as a place for Presbyterian worship. The last of the Recollets, Father Louis Jean Demers, died on the 2nd September, 1613. A brother of the house, though not a priest, must have been seen by many of the present generation of Montrealers, at an advanced age, bare footed, and with the cord of the order for a girdle. He died in 1848. He had taught at the Recollet School, had been beadle to Father Louis, and died in the office of Sacristan at the Cathedral. At Quebec the monastery of the order was destroyed by fire, and the Anglican Cathedral and the Court House were built on the site. The monks dispersed through the colony; those who were sufficiently instructed becoming priests, or directing the schools, and the others undertaking the duties of country life. The Three Rivers establishment falling to the British Government became at first a Court House and Jail; but in 1810 was converted into an Anglican Church, the monastery proper becoming the parsonage. As to the buildings now in course of demolition, they were exchanged by the Government with the Hon. Baron Grant, of Longueuil, in 1818 for St. Helen's Island, which was thus acquired for the purpose of

fortifying it. The new acquirer laid it out in building lots, which form the street called St. Helens, after the Island; Lemoine in honor of his wife's family, and Recollet in memory of the ancient proprietors. The church was still untouched, and as the Catholics of Montreal had a natural feeling in favour of that venerable pile, the Fabrique acquired it from Mr. Grant for £4,500. An extract from a notice in the *Abeille Canadienne*, published in 1818, mentioning these latter changes, implores from the Fabrique their protection for the elms which adorned the front of the property. The trees, however, died one after the other. The front of the church, as many of our citizens may have remarked, bore the inscription of 1725. This front of cut stone had, however, been fitted to the Recollet church from the old Parish church, when that made way for the present edifice, and had been adapted to that on the year of which it bore the date. We may add that by the terms of the sale the Fabrique has reserved the right to retain the front of the church and its interior. The bodies which have been buried beneath it are being exhumed, those of the Recollets being distinguished by having been buried without coffins and merely in the gowns of their order.—*Montreal Herald*.

SCIENCE

The Functions of the Blood.

BY C. W. HEATON,

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Every one who has looked through a microscope at a drop of blood, knows that the red or purple colour is confined to certain minute discs, which resemble pieces of money in form, and which float in a clear yellow liquid. The discs are known to physiologists as the *blood corpuscles*, and the liquid as *liquorsanguinis*. Both these constituents of the blood have their own specific functions to fulfil in the operations of life, and both have been the subject of numberless researches. Very much still remains to be done; but it is not too much to assert that this most wonderful of liquids is slowly yielding up its secrets to the patient workers who have so long sought for them in vain, and that "the blood, which is the life" of the animal, is no longer the utter, hopeless mystery which it has for ages remained.

Careful microscopic measurements have been made of the size of the corpuscles in the blood of different animals, and it is now generally agreed that in the human subject their average length is 1-3200th of an inch, and their thickness 1-12400th of an inch. Hence it would be possible, if they were packed close together, for 8,126,464 to lie in the compass of one cubic millimetre—a space not larger than a good-sized pin's head. Now the corpuscles occupy, in the aggregate, about one half of the volume of the blood, (1) and we are, therefore, able to form a good guess at their probable number. Vierordt and Welker have, indeed, gone through the laborious process of counting them; and the former fixes their number at 5,069,000, and the latter at 4,600,000, in the cubic millimetre. It will be seen that these figures agree tolerably well with the rough calculation founded on the size of the corpuscles, and we are, therefore, forced to admit that the tiny red drop obtained from the finger by the prick of a needle, may contain four or five millions of these curious bodies. Such figures, however, give but vague ideas to the mind. A more distinct one is, perhaps, conveyed in the fact, that a room sixty feet long, thirty feet wide, and fifteen feet high, could not contain as many grains of corn as there are corpuscles in a single teaspoonful of human blood, the number being, approximately, eighteen thousand millions!

It is still doubtful whether the corpuscles consist of red liquid, enclosed by a membrane, or whether they are semisolid,

(1) This is, of course, only a rough approximation. Their quantity varies extremely in different parts of the body, and even at different times of the day.

and of uniform structure throughout. Two of the latest investigators, Max Schultze and Osiannikof, assert directly opposite opinions upon this point. Whatever they be, however, it is at least certain that they possess a definite term of life. They are incessantly being formed in the chyle and lymph, and also probably in the liver and some other glands. And after the completion of their work, they disappear or are destroyed, this destruction being seen most remarkably in the liver, and in the blood which has traversed muscular tissue.

The chief function of the blood-corpuscles in the body has long been known, or, at any rate, strongly suspected. They are the carriers of oxygen, the agents of oxidation, in the animal body. During its passage through the lungs, the blood, as every one knows, loses carbonic acid and takes up oxygen. Every 100 volumes of the blood which enters the lungs is capable, according to Claude Bernard, of absorbing twenty-one volumes of oxygen. This is about seven times as much as an equal quantity of water could dissolve, and Berzelius, long ago, showed that serum which differs but slightly from liquor-sanguinis, was hardly superior to water in this respect. Consequently, it is evident that the great mass of the oxygen must be attracted by the blood-corpuscles. The corpuscles, as before mentioned, constitute about one-half of the bulk of the blood, and, therefore, allowing for the small quantity dissolved by the liquor-sanguinis, we find that they absorb thirty-nine per cent., or thirteen times as much oxygen as water could. That this oxygen is combined in, and not merely dissolved by, the corpuscles, is indicated by the fact observed by Bernard, that pyrogallic acid, a substance that combines eagerly with free oxygen, when it is injected into the veins, will pass out of the body of the animal without undergoing oxidation. It has, therefore, been generally assumed, although upon imperfect proof, that the colouring matter of the corpuscles was capable of combining with oxygen in the lungs, and afterwards of giving that oxygen out again—in small doses, as it were—to the substances to be oxidized. This notion has been recently raised to the dignity of a theory by some beautiful experiments which physiology owes to a physicist—Professor Stokes, of Cambridge. Stokes's researches appear hardly to have received from physiologists the attention they deserve, and I, therefore, venture to present a brief description of them here. Hoppe-Seyler had previously recorded the curious fact, that when a ray of white light passes through a weak solution of blood, and is afterwards decomposed by a prism, two dark bands make their appearance in the green portion of the spectrum. Stokes repeated and verified the fact, and it soon became in his hands the starting point of a new train of research.

He treated a solution of blood-corpuscles with an alkaline reducing agent, and observed that its colour almost instantly changed from scarlet to purple-red, the hue of venous blood. On examining the spectrum, he now found that the two dark lines had disappeared, and that a single line, intermediate in position between them, had become visible. On shaking the tube with air, the scarlet colour and the two lines at once returned, but after a few minutes, again disappeared; and this could be repeated many times. Hence it was evident that the scarlet arterial blood lost its oxygen to the reducing agent, and subsequently recovered it again, when shaken, from the air. The fact is so important that I prefer to give it in Stokes's own words. He says.

"The colouring matter of blood, like indigo, is capable of existing in two states of oxidation, distinguishable by a difference of colour, and a fundamental difference in the action on the spectrum. It may be made to pass from the more to the less oxidized state, by the action of suitable reducing agents and recovers its oxygen by absorption from the air."

Hoppe-Seyler had shown that this colouring matter is different from the so-called *hæmatin*, which is obtainable by artificial means from the blood, and Dr. Sharpey therefore suggested that the true colouring matter should be named *cruorine*. The name is a good one, and does not, like "*hæmato-globulin*," which is adopted by Hoppe-Seyler, involve any hypothesis. In the oxidized—the scarlet state—it is distinguished as *scarlet cruorine*, and in the reduced state as *purple cruorine*. It is hardly necessary

to point out how intelligible an explanation these facts afford of the oxygen carrying power of the blood-corpuscles. In the lungs the purple cruorine of venous blood takes up oxygen, and becomes scarlet cruorine; and in the whole of the general circulation, but more particularly in the capillaries, oxidation is effected by means of this oxygen, and the cruorine, to a great extent, passes back to the purple state. Hoppe-Seyler has since found that the blood of a rabbit which has been killed by drowning, exhibits the spectrum of purple cruorine. In ordinary states, however, even venous blood retains enough unreduced cruorine to give the two-line spectrum.

But Stokes has discovered another fact which is of extreme importance in regard to the question of animal oxidation. He found that a solution of the blood-corpuscles from arterial blood—a solution, that is, consisting mainly of scarlet cruorine—when excluded from the air, slowly *reduced itself*, and showed, after a time, the purple colour and the one-line spectrum of purple cruorine. On opening the tube and shaking it with air the scarlet colour returned, and with it the two-line spectrum. Hence it is clear that scarlet cruorine is capable of oxidizing a portion either of its own substance or else of the serum, from which it is impossible wholly to free it in the experiment. Whichever it be, it certainly is a part of the blood itself which is oxidized by the cruorine; and this fact is, as we shall presently see, in perfect accord with the theory to which we are led by other considerations.

These curious optical experiments, apart from their physiological interest, have already yielded some practical results of considerable importance. Soon after the publication of Stokes's memoir, Mr. H. C. Sorby contrived an ingenious adaptation of the spectroscope to the microscope, and by its means succeeded not only in repeating all Stokes's experiments, but also in furnishing medical jurisprudence with a new and most valuable means of identifying blood-stains. The spectrum-microscope has since but somewhat improved in construction, and many readers of this journal have no doubt seen it, and the beautiful experiments which its inventor performs with it at some one of the recent scientific *soirées*. It is described in detail in a paper by Mr. Sorby, read before the Royal Society, April 11, 1867. A scrap of blood-stained fabric, 1-10th of an inch square, containing possibly not more than 1-100th of a grain of colouring matter, may be experimented upon by its means, and the most certain evidence of the nature of the colour obtained. It has already been found useful in criminal trials.

Another interesting application of the spectroscopic examination of blood was made by Hoppe-Seyler. Claude Bernard discovered, some years ago, that the poisonous action of carbonic oxide gas was due to the circumstance that it had the power of displacing all the loosely-combined oxygen from the corpuscles, and of occupying its place in a somewhat more stable form of combination. All blood, venous as well as arterial, after treatment with carbonic oxide, acquires a uniform red tint, which it retains with singular persistency, being, in fact, as Bernard expressed it, *mineralized* by the gas. Hoppe-Seyler submitted some of the blood so treated to optical examination, and found that it gave a spectrum very similar to, but not identical with, that of scarlet cruorine. But when excluded from the air, instead of reducing itself like scarlet cruorine does, it remained unchanged for an indefinite period of time. Hence the process indicated a delicate and certain test for use in cases of suspected poisoning by carbonic oxide. I myself, in ignorance of Hoppe-Seyler's experiments, made the same observations. I have by me now a sealed tube, which has for more than a year contained a solution of blood through which carbonic oxide had been passed. The spectrum has not altered in the slightest degree (1).

(1) I believe reduced cruorine to be the most delicate, as it certainly is one of the simplest, qualitative tests for oxygen known. If a weak solution of blood is inverted in a test tube over mercury, it reduces itself in a day or two, and a small prism will then show the one-line spectrum. The minutest trace of oxygen will now restore the original spectrum; a single drop of distilled water will often contain enough. I obtained inci-

To return from this digression, it is clear that we are now acquainted with the mode in which oxidation is effected in the body, as far as the earlier stages go. Oxygen is absorbed in the lungs, combines with the cruorine, and is afterwards given out again. But at this point we are compelled to pause to consider two more complex and exceedingly important questions. These are, firstly, what is oxidized? and, secondly, where is the oxidation effected? Liebig, as everybody knows, divided the substances oxidized in the body into great classes, corresponding with the chief constituents of food. These were the non-nitrogenous, or "respiratory" elements, and the nitrogenous, albuminous, or "plastic" elements. The former embraced fat, sugar, starch, etc., and all its members were supposed by him to be oxidized in the blood, and to evolve no force but heat as the result of their combustion. The latter consisted of the organized tissues, and in particular the muscular tissue, the oxidation of which chiefly resulted in the production of mechanical work. It is an obvious corollary from this hypothesis, that the oxidation of a solid tissue must be effected in the tissue itself, outside the walls of the capillaries, and we are therefore compelled to believe in two distinct modes of oxidation. Substances in the blood are in direct contact with the corpuscles, and may therefore be supposed to unite directly with the oxygen of the scarlet cruorine; whereas, for the direct oxidation of a tissue, it is necessary to assume that some of the oxygen leaves the corpuscles, traverses the walls of the blood-vessels, and arrives at the comparatively distant fibres in a state of solution, but in an uncombined condition. In its extreme form, Liebig's hypothesis has long been known to be untenable, for it cannot be doubted that nitrogenous substances, as well as non-nitrogenous ones, are oxidized in the blood, and contribute to the animal heat; and it has recently been demonstrated by the conjoined efforts of Traube, Heidenhain, and Donders, and still more distinctly by Fick and Wislicenus, Frankland and Parkes, that the oxidation of nitrogenous substances cannot account for nearly all the work done in the body. Traube, indeed, has started a rival hypothesis, which has been accepted by Fick and Wislicenus in their celebrated memoir; namely, that the oxidation of muscle contributes nothing whatever to muscular power, but that the whole of the latter is derived from the oxidation of non-nitrogenous bodies, such as fats and the so-called hydrates of carbon. But as they agree with Liebig in placing the seat of this oxidation in the tissue, there is no great difference, as far as the blood is concerned, between the two views.

But are there, indeed, two distinct kinds of oxidation going on in the body, one inside and one outside the walls of the blood vessels? Is it probable, or indeed possible, that sufficient oxygen can pass out through the thin walls of the capillaries to account for enormous force exerted by the body in twenty-four hours? Mayer thought not, and argued against the notion in his immortal treatise, "Organic Motion in its connection with Change of Matter," published more than twenty years ago. I believe he was right in this, as in so many other things, and I have elsewhere drawn attention to his arguments, and endeavoured to add others to them. The question is one of immense theoretical and practical importance, and I will therefore enter into it in some detail.

To begin with, it is necessary to bear in mind another well-known and most important function of the blood. All the tissues of the body, the muscles among the number, are subject to a ceaseless process of disintegration and destruction. The elementary parts of which a tissue consists, have a definite term of life. They are born, grow, decay, and die, having previously developed new germinal matter from which their successors arise.

There is no doubt about this, and it is equally certain that the nutrient matter, the *pabulum*, from which the new parts are formed and nourished, is derived from the blood, some portion of which must travel through the thin walls of the capillaries,

dentally in the above experiments a confirmation of the previously known fact, that carbonic oxide is disengaged during the absorption of oxygen by potassic pyrogallate. Air from which the oxygen had been removed by this re-agent, when added to reduced cruorine, caused the latter to give a two-line spectrum, which lasted for weeks.

and irrigate the tissue. Extreme uncertainty exists as to the mode in which this exudation takes place. At first sight it would appear to be simply a question of liquid diffusion; but, apart from the colloidal nature of the albuminous bodies of the blood, there are some striking points of difference between the composition of the blood and that of the muscular juice, in respect even of some of the most diffusible substances. Thus common salt, an extremely diffusible compound, is found in large quantity in the blood, but is almost entirely absent in muscular juice, and the blood, is invariably and necessarily alkaline; whereas the liquid of the tissue is acid, and may even contain, as Liebig has remarked, enough acid to neutralize the blood. Probably the pressure under which the blood flows, influences in some manner the exudation, but it would be vain to pretend that it explains it. (1)

The excess of the nutrient fluid, together with the products of the disintegration of the tissues, returns to the blood, a portion perhaps direct to the capillaries, but the great bulk, in all probability, through the lymphatics, which seem to act as overflow-pipes to the tissues. Mayer therefore suggested that the quantity of lymph might be taken as a measure of the quantity of fluid exuded in a given time. Bidder and Schmidt estimate the lymph returned to the blood in twenty-four hours at 22 lbs., but it is safer to assume it to be at least 30 lbs. It would hardly do, however, to take even this quantity as a representation of the average exudation through the capillary walls in twenty-four hours, and I have thought it right to treble it, so as to have a decided over-statement of its probable quantity. We thus get 90 lbs. a day, or about 40 litres. Now if oxygen leaves the blood and passes into the tissues, it is evident that it must pass in solution in this 40 litres of exudate. How much oxygen could possibly be dissolved by this 40 litres? There is every reason to believe that the exudate does not differ materially from liquor-sanguinis in composition, and we have before seen that liquor-sanguinis is about equal to water in its power of dissolving oxygen. 40 litres of water would dissolve less than two grammes of oxygen; and this quantity of oxygen, whether it were employed in the oxidation of muscle, of fat, or of sugar, could not yield as much as 3000 metre-kilogrammes (2) of force. But it may be urged that, though unlikely, it is still possible that the exuding fluid may be able to carry with it a larger proportion of oxygen than this. Be it so. Let us make the absurd assumption that every hundred volumes of exudate contains more oxygen than the arterial corpuscles themselves do, when saturated with the gas. If each hundred volumes of exudate contained forty volumes of oxygen, 40 litres would still only contain about 23 grammes, and this, in uniting with oxidizable materials, could only yield about 30,000 metre-kilogrammes of force.

Now the daily work of the heart alone is estimated by Donders at 86,000 metre-kilogrammes, and it is an extreme under-statement to assert that the total daily work of the body in health is 100,000 metre-kilogrammes. To do even this quantity of work, twice the quantity, or 200,000 metre-kilogrammes of force must, as Heidenhain has proved, be provided; so that even taking the highest possible calculation of the quantity of oxygen which could pass into the tissues, we see that it cannot account for one-sixth of the work done in them. It is more probable, indeed, that it cannot account for one-sixtieth. To supply the minimum force per diem exerted in the body, there must be a daily exudation of about 264 litres, or $\frac{1}{4}$ -ton, if the exudate contains as much oxygen as arterial corpuscles; or, 3500 litres, or $3\frac{1}{2}$ -tons, on the more probable supposition that it will not dissolve more than water will.

These figures appear to me to furnish a complete answer to the current theory of tissue-oxidation, and to force us inevitably to the conclusion so clearly pointed out by Mayer, namely, that

(1) Some of these arguments were suggested to me by Dr. Marcet, F. R. S., who has studied the bearings of dialysis on pathology with great care and success.

(2) A metre-kilogramme is the force required to raise one kilogramme one metre. It is equal to about 7 $\frac{1}{2}$ foot-pounds, and is now almost universally employed as the measure of force.

the whole, or nearly the whole, of the animal oxidation, is effected in the blood itself, and consequently that there must exist some provision by which chemical force set free inside a capillary is converted into mechanical work in the tissues outside of it.

This view of the nature of animal oxidation tends to define more clearly our knowledge of the functions of the blood. Nutrition is one of its functions. It carries with it in its course the appropriate *pabulum* for the repair of all the tissues of the body. Bones, nerves, glands, and muscles, all alike reproduce their elementary parts at the expense of material derived from its fertilizing stream. And as these elementary parts attain their term of life they decompose and liquefy, passing again into the blood, for the most part through the same lymphatic vessels which take back the excess of the nutritive fluid. In the lymphatic vessels and glands much of the lymph is once more organized into blood, but the products of the disintegration of tissue are probably incapable of this renewal, and, in the absence of evidence must be supposed to return into the blood in an enorganized condition.

Equally important with the foregoing is the function of oxidation, to which the force as well as the heat of the body is due. Nitrogenous as well as non-nitrogenous bodies are oxidized in the blood, and though we do not yet know the precise conditions of the precise mode in which the oxidation is effected, we are justified in inferring that it is by the direct agency of the corpuscles. There is on this view no ground for the assumption that either force or heat is due exclusively to the oxidation of one or the other class of organic compounds. Both are oxidized, and one is as likely as the other to be the motive power. Even the muscle itself, inasmuch as it is finally oxidized in the blood, may give rise to muscular work, and we must therefore conclude that Traube's hypothesis is as much an over-statement on the one side as Liebig's was on the other.

The changes effected by the blood in the exercise of its functions are subject, to a most remarkable extent, to the control of the nerves; and little as we know of this the most obscure region of physiology, we cannot avoid the conclusion that they are directly concerned in the transformation of chemical force into mechanical effect. The muscular currents of electricity, which have been so carefully studied by Du Bois-Reymond, Helmholtz, Heidenhain, and many others, are, no doubt, closely connected with this conversion; but I will abstain from speculations which are apt to degenerate into bare guesses. Dim foreshadowing of great discoveries lie before us, and it is better, after clearly stating to ourselves the truths already established, or made probable, to wait with humility, watching till diligent and patient search shall have been rewarded with fresh unveilings. If we can clear a point or two in the intricate forest of knowledge which lies before us, we shall have done truer work than by any amount of speculation. *Intellectual Observer.*

Monsieur Du Chaillu and the Gorilla.

Monsieur P. B. Du Chaillu, the famous traveller, has been lecturing to immense audiences in this city on the subject of his exploration in Equatorial Africa. He is an undersized, delicate looking man of middle age. The sun has left its tan upon his face, which is rather serious and thoughtful, and as he wears a white necktie and black coat, he has the appearance of a returned missionary. In glancing at his slender body, which bears the scars of poisoned arrows, and which has been often prostrated by fatigue and fever and exposure among savages in an inhospitable climate, one would not be impressed with the idea of great endurance, and perseverance that scorns obstacles, and physical courage, which faces danger with a soul of fire and nerves of steel.

Yet that small, quiet, modest man, with scarcely strength enough to hold a musket at arm's length, has spent eight years among the untutored natives of Africa, and penetrated regions which no other white man has ventured to visit. Under a tropical sun—in malarious districts—he has waded swamps, climbed mountains, threaded jungles and woods, crossed deserts, sometimes unattended, and sometimes accompanied by savages, and always

exposed to the dangers incident to the journey he made. This brave and intelligent explorer ran the risk of sickness, starvation, and death, that he might gratify a laudable ambition and add something to the stock of scientific discovery. We are indebted to him for the discovery of the "man ape," or the "gorilla," as it is more generally called.

Like all lion-hearted men, who have courage to strike out a path for themselves, our traveler met with opposition when he announced the result of his tour in Africa. There were wiseacres who said he was "a humbug," there were no such animals as apes of such gigantic stature." "He had seen ourang-outangs through the magnifying spectacles of fancy." Some learned men and naturalists disputed his reports, and reviewers took up the question until his book was impaled with criticism, so he carried the war into Africa a second time, and now returns in triumph to vindicate his former account of his wonderful discoveries.

What is this curious creature about which he writes and speaks with so much unction and interest. Is it half-human and half-brute? Is it a deteriorated savage waiting for the missionary and the light of civilization to bring it up to a higher standard? Has it a head to think, a heart to feel, a hand to execute, a tongue to explain, and a soul to save—a grand destiny to achieve?

Can science and culture and physical training sculpture it into better shape and bring it to a nearer approximation to an accountable and responsible being. The natives seem to be impressed with the idea that it is a beast animated with a human soul. It runs on all fours like a beast, it stands erect and fights like a man in self-defense. It is gallant, sleeping as a guard at the foot of a tree while its "wife and child," that is the language of the discoverer, sleep in the branches. It is gregarious often, going in companies of six or ten pairs. It is a vegetarian, eating berries, plantains, and the various fruits of the tropics. The Africans use as an argument why they should get drunk on palm and other wines, that the "gorilla drinks water." We may add here that this vegetarian and water-drinker affords a strong argument in favor of vegetable diet. Although it has canine teeth, it never uses them in tearing or masticating flesh, and its great physical strength shows that animal food is not absolutely necessary to great strength and vigor of body. This animal can bend a gun-barrel with its hands as though it were a piece of wire. It can knock down an ox with a blow of its fist. It is more than a match for a score of unarmed men. An adult gorilla has never been captured alive. This powerful creature sometimes attains the height of six feet, and a girth of six feet around the chest. It is an immense hairy monster, whose face and hands are intensely black, and when alarmed it beats its breast with its hands, so that it sounds like a drum, while it barks, growls, and roars as it approaches its assailant. Its eyes are of a grayish color and deeply sunken, and it looks you squarely in the face; its lips are sharply cut; its ears are smaller than those of a man, its nose is rather flat, although it has the beginning of a nose bone.

The gorilla differs from man in the following particulars: In the length of its arms, and the shortness of its legs; it moves on all fours, standing erect only when defending itself; man has twelve pair of ribs, the gorilla has thirteen; man has five lumbar vertebræ, the gorilla has three; man has five sacral vertebræ, the gorilla has six; the arms of a man reach to the middle of the thighs, the arms of the gorilla reach nearly to the knee; the shape and size of the head also differ from that of a man.

It is undoubtedly a mere animal, and incapable of intellectual improvement beyond that shown by the monkey in its imitations of the creatures about it. It is a dumb animal, incapable of speech, and the shape of its skull shows that it is not susceptible of mental growth and expansion.

Will some of our scientific men account for the facts, that notwithstanding its canine teeth it never eats animal food? or will they give up the argument, that canine teeth indicate a design on the part of the Creator that man should eat animal food?

Will those who oppose vegetarian diet account for the fact that the gorilla has such great muscular power? —*Exchange.*

EDUCATION

Drawing as an Aid to Observation.

BY PHILOMATH.

Drawing deserves to be regarded as something more than a mere accomplishment. It is because educators have so regarded it that one of the most important aids to mental discipline has not held its rightful rank as a branch of school study. The same may be said of music. Now that the tide in education is in the direction of disciplinary means, instead of the acquisition of facts we may hope that the truly practical side of human nature, its expressive powers, will receive due attention. As yet, very little has been done in this direction. Much has been said, and the so called new method by object-lessons is urged upon the public notice on account of its efficiency in training the observing faculties. We can not do less than sympathize with this natural method, but at the same time we feel that it is quite liable to abuses which would, in prevailing, defeat the end aimed at, and that too by the very means adopted. The evil of the old methods which object teaching would supplant, consisted in imposing upon the mind, in ways having but little regard to time, order, or faculty, too many unrelated facts, which, at the time they were inculcated, were supposed to be knowledge, but which a too frequent experience has taught us were at best but disjointed skeletons.

Now, we fear that the new method comes too richly laden and with stores too promiscuous. Its efficiency is thought to be adequate to the doing of much greater things than can be done in the old ways. The mind of the young learners must not only be trained naturally, which, of course, always means correctly, but it can now be charged with a vast number of facts,—facts, too, of importance, of scientific character. It is true that the senses are often appealed to by the presentation of many facts important to possess, but in a manner too frequently regardless of the arrangement of the qualities of individual objects, so generally without reference to any sequence of governing principle to form an intelligible bond of union between the objects in mass, that we feel free to criticise this method of object-lessons. The mind must be regulated, and to attain its full efficiency, must be built up, and must itself work by uniform impulses and movements. If it be an organization, it has its chief tendencies through which its life progresses from strength to strength on to maturity. These tendencies provide the reason with channels for long continued efforts. It can not be too often said to educators that the peculiar something which is worthy of the name character, is the product only of persistent cultural means applied day after day, year after year, along but few lines of advancement until all the forces of human nature become feeders of these main currents. It is also a law of mind, the importance of which cannot be overestimated, that in proportion to the intensity of effort on the part of any mental force, is the aid afforded by all the other intellectual powers in the individual. Strictly speaking, no faculty can be exercised apart and to the exclusion of the others. The least mental effort engages, in some degree, every power of thought. The truly great intellect, makes every special task a crucible to all elements and forces that bear any relation to the one thing in hand. Is it not plain then that most of our instruction tends to distraction, rather than concentration of efforts? Is object-teaching, as we now understand it by virtue of its great merit, above the criticism?

We venture to affirm that object-teaching, in its present phase, does not train the mental powers to close and concentrated labor. Indeed, the general tendency of education seems to be toward diffuseness. In abandoning classical training for something that is doubtful as yet, the advanced student loses much, for the present, at least, that was valuable as discipline. Teachers of primary schools, in their haste to anticipate the new movement in education, readily fall in with what seem to be natural methods, forgetting that there are not a few things in nature that are transitory in character and influence. To meet the demands of the times branches of study are multiplied; text-books are

changed from year to year to get the latest and best. Now, all these irregularities are detrimental, in some measure, to the steady, onward progress of the average mind.

But there are avenues, lines of pursuit, means of culture, or branches of study, so to speak, along which the chief tendencies of mind may find free play and ever move forward with increasing strength. Among these are the art of speech (not taught in our schools at present), music and drawing. These can have no conflict with nature, because they rely upon nature and human nature for their expression.

But we must now speak of drawing, particularly. This subject holds definite and fixed relations to both mind and nature. It introduces the former to the most pleasing aspects of the latter by routes not difficult, if the journey be begun in time. It acquaints the mind with some of the prominent qualities of objects, and, at the same time, lays a foundation for the geometrical sciences. It addresses the sense of sight, the faculty of observation *par excellence* and tests the quality of observation by at once securing the expression of what is perceived. As words on the tongue acquaint us with the subtle movements of the mind within, which, unuttered, soon escape from consciousness, so drawing imparts intelligible forms to the images of objects formed in the sensorium, and made to stand out anew before the eye.

This subject possesses many of the best qualities of a good method of instruction. To make a correct picture, one must see the object to be drawn. To see well, implies much more than is common to the ordinary eye. It is not seldom that we are ignorant of many things near at hand, although we have seemed to look at the same objects with wide open eyes. This is often true of objects we have attempted to describe to others.

Now, to draw an object we must attend closely to all its features. The attention must be minute and long continued. The color of the object is first perceived. There are many eyes that need to be educated carefully, that they may distinguish colors. The prevalence of color-blindness is but little understood among teachers. Now, although drawing does not set forth the colors of objects, yet the correctness of outline in a pencil sketch will depend very much upon the impressions which the colors of the object make upon the eye, for colors determine the boundaries of outlines. The outlines having been fixed, the eye is next led to observe the relations of parts to the whole and to each other. The harmonies and contrasts of light and shade are finally discovered and expressed.

To be able to see all these things, is to be highly qualified to observe what passes before our eyes, and one thus qualified possesses a prime quality of an educated character. The artist sees more than other men.

Thus understood, drawing assumes a very important place in a course of study. It does what object-lessons aim to do. Habits of patient attention and accurate observation are required by no uncertain means. The exercise of the powers engaged is consistent and continuous. Combine patient endeavor and close observation in one person, and you have the fundamental characteristics of genius.

But there is still another quality of drawing to recommend it as a means of culture, and this is the highest possible virtue in whatever may be applied to the development of the forces of human nature, viz: *it enforces the expression of what is acquired.* — *Educational Monthly.*

Oral Instruction.

Perhaps the people who had the brightest minds in proportion to their stock of knowledge, and who gave to mankind the most thought, were the Greeks. It still remains the greatest problem of intellectual history, how the Greek mind came to have this special characteristic of vivid thought, and this ability in the diffusion of ideas. When we notice not only the philosophy of Plato and the dialectics of Aristotle, but the brilliant geometers, the scientific grammarians, and the architects of Greece, we see

at once that there was some method of exciting the mind to unusual activity and of easy communication of ideas. When we go further and seek the cause of this, we find it could not have been books, and specially such serial books as we have; for there were no printed books, and a volume of any author cost an enormous sum. Yet there were schools there, and other schools than the celebrated academy. These schools also were far-famed. The most illustrious of Romans went to the schools of Athens. What, then, was the cause of the Greek success in teaching? There were two great causes of success in the teaching of Greece and the great predominance of the Greek literature in the after history of the world. These were: Oral Instruction, and Intellectual Philosophy. We shall only speak of *oral teaching*.

If a teacher were to sit down with a pupil to teach him upon any subject, his first thought ought to be, How can I interest him enough to make him *think* upon this subject? How can I impart ideas to him, so that they shall be *his property*? And how can I impart them in such a way that his mind shall acquire a *method* in thinking? In one word, if this teacher thinks at all of his business, and especially that he may be distinguished by the success of his pupil, he will seek to give that pupil *thought, knowledge, and discipline*; for all are necessary to the development and furniture of the pupil-mind. Then he will say, How can this best be done? Here he will meet his first temptation.

We can not get out of the atmosphere of our own times, and we can not avoid falling into the usages and fashions of the day. Hence the first thing this teacher will be tempted with, will be to get a lot of serial school books. He will get readers from No. 1 to No. 5. He will get Mr. Already's arithmetic, with an extensive "key" solving every problem in the minutest manner; and he will get a geography, every page of which has enormous cuts of a lion, or a volcano, or a temple,—a book which is to exhibit the face of the earth by the most incredible pictures. This he will be tempted to do, if he has one pupil: and will be certain to do if he has twenty; and can do nothing else if he has fifty, which are not uncommonly crowded upon the public-school teacher. But we are supposing a case in which he has some little choice in his mode of proceeding. Now is it really best that he should adopt this mechanical mode of teaching wholly and entirely? Let us see, first, how he is most likely to succeed.

First, we lay it down as an elementary principle, that the first of all things is to teach the pupil *how to think*. It is possible for the mind to be stored with an immense amount of knowledge, without being able to use it with any profit. Many persons have powerful memories. Their acquisition of knowledge is very easy, and their minds become storehouses. But mere knowledge in the head without reason, is like grain in a crib and never taken out. *Thought* is necessary to reason, and reason to the use of knowledge. But in the case of a pupil not gifted with strong memory, thought is necessary to the acquisition of knowledge, as well as to its use and its retention. Hence the first thing a successful teacher does, is to make his pupil *think*. How is he to do it? It is possible to read every lesson in a book, and not think of it at all. It is possible to solve every problem in an arithmetic, and not know how one of them was done. It is possible to learn geography enough for an examination, and have a vivid impression of the pictures, and yet have the facts and ideas so disconnected in the head that, in a month, the pupil can not trace a river, or have the least idea of where any country is. For this utter waste of time and labor, there is no remedy but *oral teaching*. It must be recollected that, while our serial school books are great helps to the teacher, and render it easy for the pupil to learn, it also renders it very easy to pass slipshod and superficially over all instruction. There is just one way and only one way, to *make* a pupil learn, or to discover whether he can learn at all—and the last is very important. This is to put the teacher's mind and the pupil's mind side by side, without a book, a picture, or a formula of any kind between them. Let it be recollected that there are some minds that can study and learn *in no other way*. Suppose the teacher finds a boy in school who has a poor memory, or will not attend to books, and is appar-

ently stupid,—it may be after all that he is not stupid, but the very reverse,—now how are we to know this? The only way is to take that boy, without book, paper, or rule, sit down by his side, and *talk to him*. Interest him in any thing for the moment, and you will soon find out whether he can think, and if he can think, he can learn. The perfection of all instruction is, that the pupil can *make a text-book on the subject taught*. Suppose, for example, he was to learn grammar, and the teacher gave him a blank book, pen and ink.—Then told him to write the *article* with its meaning, the *noun*, the *adjective*, the *verb*, the *tenses* of the verb, etc. Thus, from day to day, the pupil would go on writing only what he had first learned and thought of, and so on to the end, when grammar would be as familiar to him as his mother tongue, and his manuscript book a treatise on the subject. It is true this would be a difficult thing for an entire class, and it would be, perhaps, impossible for a large school. But this would be *oral instruction*, and it would be effective. A pupil would either have to stop short, or would acquire the subject thoroughly. We knew a young lady who wrote out the entire French grammar in this way without seeing a book.

We do not mean to say that this kind of teaching is possible in our crowded public schools; but we are pointing it out as a *dernier resort*, when the teacher can apply it; and it must be recollected that the dullest boy in school is entitled to a *trial* of this plan, if the teacher can possibly find time.

So also in regard to the actual *knowledge* acquired. Is there a single teacher, or a single educated man, who does not know how much better he retained knowledge when he was compelled to think of it than when he retained it only by memory? If it be possible for the pupil to think upon any given fact, problem, or subject, so as fully to understand it, there is no memory equal to that memory.

So also in regard to *discipline*, there is no mode of disciplining the mind but through steady, self-controlled thought; and it is only the *habit* of such thought which can discipline the mind. Now when we have taken out the geniuses of a school, and those who would rather study than do anything else, it is only by oral teaching that we can make the others think or know whether they acquire anything or not. It might be supposed that geometry could not be recited without understanding it, but it can be and is well recited to the teacher without any other aid than memory. The only test of knowledge and understanding on any subject is to take the pupil without a book or aid of any kind. A geometry taught on the blackboard without a book or aid of any sort from without, would be remembered for a life time. We learned descriptive geometry before there was a text-book in the country, and never learned anything better***.—*Ohio Educational Monthly*.

E. D. M.

A Model Primary.

Go with me into a school kept by one of these meritorious teachers. Observe the condition of the room,—its neatness, order and cleanliness; look into the happy faces of the pupils, reflecting the intelligence and love beaming from the countenance of their teacher. They have evidently come from homes of extreme poverty, but notice their tidiness, and especially the good condition of their heads and hands; and see their position in their seats,—neither stiff and restrained, nor careless and lounging, but easy and natural. The temperature, you will perceive, is what it should be; and the atmosphere uncommonly wholesome for a school-room,—no children roasting by stoves, or shivering in chilling drafts of air. What skill and care and patience, on the part of the teacher, have been employed to produce this state of things! Now witness the operations going on. The windows are opened more or less according to the weather. The bell is struck, and the pupils are brought to their feet; they perform some brisk physical exercises with hands and arms, or march to music, or take a lively vocal drill according to Professor Monroe's instruc-

tions. In five minutes the scene changes; the windows are closed, half the pupils take their slates with simultaneous movement, place them in position, and proceed to print, draw or write exactly what has been indicated and illustrated for them as a copy. The rest stand, ranged soldier-like, in a compact line with book in hand, and take their reading-lesson. Not one is listless or inattentive. Sometimes they read in turn, and sometimes they are called promiscuously, or they are permitted to volunteer; or the teacher reads a sentence or two, and the whole class read in concert after her; or they are allowed to read a paragraph silently. Now a hard word is spelled by sounds: then there is thrown in a little drill on inflections or emphasis. Many judicious questions are asked about the meaning of what is read, and all needful illustrations and explanations are given with such vivacity and clearness that they are sure to be comprehended by every pupil, and remembered. The time for the lesson quickly glides away, every pupil wishing it would last longer. A stroke upon the bell brings the whole school to "position" in their seats; the slates are examined, and returned to their places; a general exercise on the tablets, or an object lesson, follows. If the latter, perhaps it is on colors, the teacher having prepared for this purpose little square cards worked with bright-hued worsteds, or the children have brought bits of ribbon or colored paper or water-color paints—very likely some one has brought a glass prism to show the colors of the rainbow. A verse or two of poetry on the rainbow is repeated. Now comes the music. A little girl takes the platform, and, with pointer in hand, conducts the exercise on Mr. Mason's charts. She asks about the staff and notes and bars and clefs. They sing the scale by letters, numbers and syllables; and close with a sweet song. They are next exercised on numbers, not in mere rote repetition or table, but by combinations with visible objects,—the ball-frame and marks on the blackboard,—writing figures on the slates being interspersed with oral construction. And thus goes on the whole session. You would gladly remain the whole day, such is the order, harmony and cheerfulness of the school. You see that the children are both pleased and instructed, that they are wisely cared for in all respects. Neither body, mind nor heart is neglected. The teacher is happy. She is happy, because she is successful; and she is successful, because her heart is in the work. She has the right disposition, and this qualification multiplies ten-fold all others. This is no fancy sketch, nor is it a flattering picture of some single school. It is only an imperfect outline of what may be seen daily in not a few schools. When I contemplate the excellences of these first-rate schools, I say to myself, All honor to the admirable teachers who have made them such.—*From a report of the Superintendent of Boston Public schools.*—*R. I. Schoolmaster.*

New and Useful Spelling Rules.

Among the numerous orthographical difficulties which prove stumbling blocks to the young student of English, and too often, we are sorry to say to adults also, perhaps none is more perplexing than the position of the vowels *e* and *i* in a large class of words which contain them combined as a diphthong. The diphthong is almost invariably pronounced like *e* in *me*; but sometimes the *e* stands first as in *deceive*, and sometimes the *i*, as in *believe*; how are we to remember their correct position? The following rules, which have been found exceedingly useful in my class-room, will set the matter right. They cover every common word, in which the diphthong occurs.

RULE I. When the diphthong commences a word, or is preceded by an *s* sound—that is, *c* soft or *s*—*e* stands first; as in *either*, *conceive*, *seize*. Only exception *siege*—easily remembered, because derived from the French, *siège*.

RULE II. When the diphthong is not preceded by an *s* sound, *i* stands first; as in *chief*, *friend*, *piece*. Exceptions, *neither*, *obesance*, *obesant*.

Let these rules be taught in the class-room, and the rising

generation will be saved from a vast deal of trouble and thousands of blunders.—*American Educator.*

Anecdotes of Queen Victoria.

Grace Greenwood contributes to the first number of the *Weekly Advance* the following, among other anecdotes of Queen Victoria:

"Another little anecdote, which shews her simplicity of character and shrewdness of perception, was told me by a gentleman who once enjoyed the pleasure of a very informal interview with her under rather peculiar circumstances. My friend, Mr. W—, is a person of very artistic taste—a passionate picture lover. He had seen all the great paintings in the public galleries of London, and had a strong desire to see those of Buckingham palace, which, not being a "show house," were inaccessible to an ordinary connoisseur. Fortune favoured him at last. He was the brother of a London carpet merchant, who had an order to put down new carpets in the state apartments of the palace—and so it chanced that temptation came to my friend to put on a workman's blouse, and thus enter the royal precincts, while the flag indicating the presence of the family floated definitely over the roof. So he effected an entrance and when once within the royal halls, dropped his assumed character, and devoted himself to the pictures. It happened that he remained in one of the apartments after the workmen had left, and, while quite alone, the Queen came tripping in, wearing a plain white morning dress, and followed by two or three of her younger children, dressed with like simplicity. She approached the supposed workman, and said:

"Pray, can you tell me when the new carpet will be put down in the Privy Council chamber?"—and he, thinking he had no right to recognize the Queen under the circumstances, replied—'Really, madam—I cannot tell—but I will enquire.' 'Stay,' she said abruptly, but not unkindly, 'who are you? I perceive that you are not one of the workmen.'

"Mr. W—, blushing and stammering somewhat yet made a clean breast of it and told the simple truth. The Queen seemed much amused with his ruse, and for the sake of his love for art, forgave it; then added smiling 'I knew for all your dress that you were a gentleman, because you did not 'your majesty' me. Pray look at the pictures as long as you will. Good morning! Come chicks we must go.'

"Another anecdote, illustrating Victoria's admirable good sense and strict domestic discipline, came to me directly from one who witnessed the occurrence. One day, when the Queen was present in her carriage at a military review, the Princess Royal, than rather a wilful girl of about 13, sitting on the front seat, seemed rather coquettish with some young officers of the escort. Her Majesty gave several reproving looks without avail winked at her, but she wouldn't stay winked.' At length in flirting her handkerchief over the side of the carriage, she dropped it—too evidently not accidentally. Instantly two or three young heroes sprang from their saddles to return it to her fair hand—but the awful voice of royalty stayed them. 'Stop, gentlemen,' exclaimed the Queen, 'leave it just where it lies. Now, my daughter, get down from the carriage, and pick up your handkerchief.' There was no help for it. The royal footman let down the steps for the little royal lady, who proceeded to lift from the dust the pretty piece of cambric and lace.

She blushed a good deal, though she tossed her head saucily, and she was doubtless angry enough; but the mortifying lesson may have nipped in the bud her first impulse towards coquetry. It was hard, but it was wholesome. How many American mothers would be equal to such a piece of Spartan discipline?"

OFFICIAL NOTICES.



APPOINTMENTS.

SCHOOL COMMISSIONERS.

His Excellency the Governor-General in Council was pleased, on the 29th June, 1867, to appoint Messrs. Magloire Coulombe and François Coulombe School Commissioners for the municipality of Claridorme, in the County of Gaspé; and Mr. Barthelemy Roy School Commissioner for the municipality of Aylmer, in the County of Beauce.

ERECTIONS, &c., OF SCHOOL MUNICIPALITIES.

His Excellency the Lieutenant-Governor of the Province of Quebec was pleased, by an Order in Council of the 25th July, 1867,

1. To annex to the school municipality of St. Narcisse, in the County of Champlain, that portion of the municipality of St. Geneviève incorporated with it for religious and civil purposes.

2. To erect the place known by the name of "Rivière Ste. Marguerite," in the County of Saguenay, into a school municipality.

3. To divide the municipality of Wickham, in the County of Drummond, into two parts for school purposes, conformably to the division made by virtue of the 29th and 30th Vict., cap. 62, for other civil purposes.

4. To divide the municipality of St. Gilles, County of Lotbinière, into two parts, and erect the territory hereinafter described into a school municipality, namely: the concessions of Jericho, East and West, generally called *Petit St. Thomas*; St. Noël, Alexandrie, Fiddler Green South-East and Fiddler Green North-West, together with a certain tract of unconceded wild land; the said territory being bounded on the north-west by the Gallic Concession, on the south-east by River Le Bras, on the north-east partly by the Seigniorship of Lauzon and partly by the Seigniorship of St. Etienne, on the south by the Belfast Concession divided by a *grande ligne*, on the south-west by the north-east Concession of River Beauvillage, under the name of St. Gilles No. Two.

5. To erect the parish of Ste. Flore, in the County of Champlain, into a municipality for school purposes, bounded on the south by the River St. Maurice, on the north by the chain of lakes at which terminate the ranges A, B, C, D, E, F, within the Seigniorship of Cap de la Magdeleine; on the south-west by a line dividing the Township of Shawinigan from the said Seigniorship of Cap de la Magdeleine, and on the north-west by the River St. Maurice.

6. To detach from the municipality of St. Apollinaire, in the County of Lotbinière, that portion of territory which has been separated therefrom and annexed to the municipality of St. Agapit, in the said county.

7. To erect into a school municipality under the name of Ste. Angèle de Mercé, all that portion of territory in the County of Rimouski bounded on the north by the lands of the fifth range of the Lepage and Thivierge Concessions, in the municipality of Ste. Flavie; on the south by the unsurveyed lands of the Crown; on the north-east partly by the line running between the Lots 6 and 7 on the north side of River Métis, belonging to J. Bte. Gagnon and Rev. Mr. Duguay, in the said municipality of Ste. Flavie, and by the line running between Lots 27 and 28 on the south side of River Métis, belonging to Messrs. J. Bte. Poitras and Edouard Bélanger, in the municipality of St. Octave de Métis; and thence following the line at the end of the Lots at present divided along the River Métis, on the north-east of said river, said Lots lying N. E., S. W.; and following also in the said municipality a line corresponding with the line between Lots No. 19, ranges D, N, B, first range of "Canton Cabot" and comprising in part ranges 1, 2, 3, 4, 5, 6, 7, of said "Canton Cabot," and the Lots from No. 35 to No. 98 on the south-west of Kempt Road, and Lots from No. 35 to No. 91 on the north-east side of said road; on the south-west partly by the line between Lots 7 and 8 of the sixth range of the said seigniorship of Lepage and Thivierge, in the said municipality of Ste. Flavie, from the line between the fifth and sixth ranges, ascending to the River Neigette, partly by the line between Lots 34 and 35 of said sixth range, on the south of said River Neigette, said line running south-eastwardly and which is to be prolonged to the boundary line of the said seigniorship, and partly by the centre line of "Canton Florian," passing between Lots Nos. 33 and 34 of the third, fourth, fifth, and sixth ranges of said "Canton."

8. To divide the municipality of Notre-Dame de Bonsecours into two parts leaving under this name District No. 1 of said municipality, and erecting into a new municipality, under the name of Monte Bello, in the county of Ottawa, that portion of said municipality of Bonsecours commencing at the east line of Lot No. 25 fronting the River Ottawa to River aux Saumons; and thence, on the north of said river, bounded by the east line of Lot No. 28, A, on the side contiguous to the west line of Lot No.

21, in front, comprising all the territory in the parish of Notre-Dame de Bonsecours situated in front and to the west, including the village and domain, together with the conceded and unconceded lands in the ranges Ste. Angèle, Ezilda, and Azélie.

DIPLOMAS GRANTED IN THE NORMAL SCHOOLS,
FOR THE YEAR 1866-67.

JACQUES-CARTIER NORMAL SCHOOL.

Academies.—Raymond Savignac.

Model Schools.—Léon Charbonneau, Octave Pelletier, Pierre Gagnon, Prosper Marcoux, Napoléon Boire, Onézime Gauthier, Eusèbe Desormaux, Léandre Verrier, Alexis Fréchette, Edouard Croteau and Henri Tétrault.

Elementary Schools.—Philibert Demers, Aimé Lafêche, Cléophas Leblanc and Fernand Violetti.

DIPLOMAS GRANTED BY BOARDS OF EXAMINERS.

BOARD OF CATHOLIC EXAMINERS OF WATERLOO AND SWEETSBURG.

1st Class Elementary, F. and E.—Marie M. Giguère and Euphémie Tartre.

1st Class Elementary, F.—Louise Chagnon, Louise Dozois and Marie R. Sansoucy.

1st Class Elementary, E.—Ezra B. Combstock.
May, 1867.

J. F. LÉONARD,
Secretary.

BOARD OF PROTESTANT EXAMINERS OF WATERLOO AND SWEETSBURG.

1st Class Elementary, E.—Addie J. Carpenter and Mary Ann Draper.

2nd Class Elementary, E.—Bella Brown, Elizabeth Barnes, Mary Jane Clarke, Alla Clarke, Orclia Foisy, Prudence A. Gage, Emma J. Graves, Sarah L. Jones, Louisa P. Niblock, Emma Rix and Martha Stenson; and James A. Hill and Marvin G. Hanley.

May, 1867.

WM. GIBSON,
Secretary.

GASPÉ BOARD OF EXAMINERS.

1st Class Elementary, F.—Louis Zéphirin Joncas.
May, 1867.

PHILIP VIRET, JR.,
Secretary.

BOARD OF PROTESTANT EXAMINERS OF RICHMOND.

1st Class Elementary, E.—Mary Le Sarmitage, Carrie Armstrong, Eliza Beattie, Flavia Cleveland, Ada McCullough, Agnès A. McLean, Mary L. Philboic, Lucy Reed, Sarah Stenson, Isabella Rose, Lois A. Weed, Sarah Graham and Adda L. Goodhue.

2nd Class Elementary, E.—Charles Boisvert and Albert Champet.
May, 1867.

HENRY BURNHAM,
Secretary.

RICHMOND BOARD OF CATHOLIC EXAMINERS.

1st Class Elementary, F.—Marie Adélaïde Philomène Delisle, Marie Laliberté, Adéline Mercier and Victorie Poisson.

1st Class Elementary, E.—Jane Tuohy.

2nd Class Elementary, F.—Arline Champagne, Joséphine de Langis, Marie Elise Lorandean, Louise Leclerc and Eloïse Leclerc.
May 1867.

F. A. BRIEN,
Secretary.

BOARD OF EXAMINERS OF PONTIAC.

1st Class Elementary, E.—Jeremiah Sullivan and Archibald Carson.
February, 1867.

2nd Class Elementary, E.—Ellen Kennedy and Ann Stephens.
May, 1867.

OVIDE LEBLANC,
Secretary.

BOARD OF EXAMINERS OF CHARLEVOIX AND SAGUENAY.

1st Class Elementary, F.—Marie Dina Boivin, Malvina Brassard, Marie Calixte Gagnon, Valérie Harvey; *E. and F.*—Marie Céline Simard.

2nd Class Elementary, F.—Malvina Gôté; Ovide Tremblay and Françoise Fortin.

May, 1867.

CHR. BOIVIN,
Secretary.

CHICOUTIMI BOARD OF EXAMINERS.

1st Class Elementary, F.—Marie Boulianno and Marie Robitaille.
May, 1867.

THS. N. CLOUTIER,
Secretary.

SHERBROOKE BOARD OF EXAMINERS.

1st Class Model School, E.—Edith W. Bompas.
1st Class Elementary, E.—Ellen Bailey, Emily A. Bailey, Elvira S. Caswell, Lelia M. Curtis, Emeline S. Stevens and Lenora Williams.
2nd Class Elementary, E.—Phebe Jane Roderick, Adelaide S. Bompas, Florence M. Bompas, Elizabeth Moo and Emma L. Simpson.

S. A. HURD,
Secretary.

BOARD OF CATHOLIC EXAMINERS OF MONTREAL.

1st Class Elementary, F.—Marteleine Barrey, Marie Eléonore Bayard, Alphonsine Bergeron, Exilie Boucher, Philomène Bourque, Marcelline Brien Desrochers, Hermine Adéline Brodeur, Marie Louise Brunette, Adèle Chabot, Julie Chagnon, Céline Charbonneau, Elnaire Cartier, Joséphine Valérie Coutlée, Marie Couturier, Zoé Danjoux, Alix Daoust, Sophie Eugénie Defond, Célanire Dubé, Vitaline Dupras, Elisabeth Emma Dupuis, Elmire Fortin, Mme S. Gencieux née Desanges-Lavoie, Vitaline Guilbault, Marie Martine Hébert, Eulalie Laberge, Joséphine Laferrrière, Azilda Lalanne, Obéline Lalonde, Clémence Leduc, Malvina Lemieux, Emma Leriche, Sophronie Massé, Hélène Eugénie Rosalie Morin, L. Nadeau, née Adélaïde Noiseux, Rosalie Pepin, Ovide Exulma Ard-wilda Pepin, Adéline Perrault, Agnès Perrier, Herméline Renaud, Adéline Richer, Marguerite Riendeau, Elisabeth Robert, Marie Arzélle Roy, Domitilde Tessier, Julie Henriette Thèberge, Odile Trahan, Joséphine Trudeau.

1st Class Elementary, F. and E.—Elmire Lefavre, Octavie Marsan dit Lapiere.

1st Class Elementary, E.—Margaret McDonald.

2nd Class Elementary, F.—David Hémond; Alphonsine Blanchard, Hermine Boudrias, Domitilde Chartier, Laure Filiatrault, Edwidge Gaguon, Marie Parent, Julie Adélaïde Roussin, Martine Soucheau.

1st Class Elementary, F.—Aquila Duplessis; Philomène Allard, Marie Odile Barry, Valérie Adéline Beauchamp, Marie Emma Beaudin, Philomène Brault, Virginie Brault, Emélie Bruneau, Célanire Charroux, Marie Lucie Chatel, Edwidge Clément, Victoire Comeau, Elizabeth Connell, Emélie Côté, Elmina David, Céline Délima Desroches, Caroline Desrosiers, Poméla Duplessis, Virginie Ethier, Rose de Lima Falardeau, Elmire Fournier, Alphonsine Fournier, Anne Louise Gagnon, Emélie Gagnon, Euphémie Gareau, Julie Giraud, Caroline Joyal, Marie Edélise Kertson, Georgina Lauzière, Adéline Lecavalier, Marie Marguerite Legault, Emélie Lefebvre, Mrs. Lehoullier, widow André, (née Aurélie Duparé) Herménégilde Lepage, Elizabeth Maillé alias Mayé, Marie Ezilda Marquette, Marie Céline Meunier, Marguerite Emélie Murphy, Caroline Payette, Mathilde Richer, Marie Ezilda Roberge, Aurélie St. Germain, Esther Cordélie Trudeau, Marie Vinclette, Martine Vermet, Henriette Marie Lukin.

1st Class Elementary, F. and E.—Mary Catherine Walsh.

1st Class Elementary, E.—Patrick Leech; Mary McGee and Mary Wright.

2nd Class Elementary, F.—Louis Fremault, Noël Ambroise Géline Lacousse, Patrick Leech, Alphonse Pelletier; M. Philomène Barrette, Azilda Beaudry, Marie Octavie Beauregard (Jarret), Aurélie Bélanger, Marie Joseph Bibeau, Virginie Brault, Azilda Brodeur, Anna Brunet, Rachel Branchaud, Virginie Charpentier, Marie Adélaïde Côté, Mrs. Alexandre Duchaine, (née Edwidge Quintal), Octave Dorothée Dufresne, Zoé Dumoulin, Marie Louise Duguay, Léa Gariépy, Alphonsine Gladu, Léonide Joyal, Julie Euphrosine Emélie Labelle, Marie Mélanie Marcoux, Léontine Talham, Herméline Tremblay, Eugénie Varin, Philomène Vegiard dit Labonté.

2nd Class Elementary, F. and E.—Juliana Carrey.

2nd Class Elementary, E.—Elizabeth Connell, Caroline Joyal and Georgina Lauzière.

F. X. VALADE,
Secretary.

BOARD OF PROTESTANT EXAMINERS OF MONTREAL.

1st Class Model School, E.—I. William John Crothers.
2nd Class Model School, E.—Morgan Lane and Jane Ross.
1st Class Elementary, E.—George H. Macdonell and Wm. Smith; Elizabeth Connelley, Lizzie Pollica and Sarah Elizabeth Stocks.
2nd Class Elementary, E.—Elizabeth Blaik, Luzena M. Dairs, Louisa Ann Douglas and Mary J. Waterson.

August, 1867.

T. A. GIBSON,
Secretary.

BOARD OF CATHOLIC EXAMINERS OF QUEBEC.

1st Class Elementary, F, and 2nd Class, E.—Clarisse Adélaïde Zénaïde Noël.

1st Class Elementary, F.—Marino Chalifoux and Sophie Démeriso Ringuet.

2nd Class Elementary, F.—Antoinette Joséphine Bernier, Delphine Philomène Fournier, Virginie Fournier, Malvina Giasson, Joséphine Arthémise Gosselin, Delvina Gosselin, Elizabeth Jobin, Rose de Lima Lavoie, Alvine Legros, Eugénie Mercier and Arceline Perrault.

August 1867.

2nd Class Elementary, F.—Elise Arcand, Diase Bazin, and Archange Vitaline Bouffard.

2nd Class Elementary, E.—Alvine LaRue and Sedulie Ratté.
June, 1867.

N. LACASSE,
Secretary.

BOARD OF PROTESTANT EXAMINERS OF BEDFORD.

1st Class Elementary, F.—Marie Lassonde.

1st Class Elementary, E.—Charles A. Nutting; Mary E. Flanders and Ellen H. Whitcomb.

2nd Class Elementary, E.—Phylyn Babcock; Elizabeth M. Codd, Mary Jane Crothers, Susan F. Gilman, Elizabeth Hill, Maria B. Newton, Ada J. Oliver, Elizabeth A. Levett and Therese A. Woodbury.

August, 1867.

WM. GIBSON,
Secretary.

GASPÉ BOARD OF EXAMINERS.

2nd Class Elementary, E.—James Phelan.

August, 1867.

PHILIP VIBERT, JR.,
Secretary.

BOARD OF PROTESTANT EXAMINERS OF QUEBEC.

2nd Class Elementary, E.—Susan Graham.

June, 1867.

D. WILKIE,
Secretary.

BEAUCE BOARD OF EXAMINERS.

1st Class Elementary, F.—Céline Rhéaume, Philomène Charpentier, Marie Lessard, Marie Rodrigue, Delphine Hamel, Virginie Letourneux, Céline Mathieu, Marie Louise Breton and Henriette Breton.

2nd Class Elementary, F.—Sara Landry and Marie Bolduc.

June, 1867.

J. T. P. PROULX,
Secretary.

RIMOUSKI BOARD OF EXAMINERS.

1st Class Elementary, F.—Elizabeth Parent and Marie Truchon.

1st Class Elementary, E.—Mary Leton.

2nd Class Elementary, F.—Emma Dutremble and Gracieuse Guay.

August, 1867.

P. G. DUMAS,
Secretary.

PONTIAC BOARD OF EXAMINERS.

1st Class Elementary, E.—Lois D. Thomson.

2nd Class Elementary, E.—Annie Tucker, Mary Ann Grier and Annie Strutt.

August, 1867.

OVIDE LEBLANC,
Secretary.

BOARD OF EXAMINERS OF CHARLEVOIX AND SAGUENAY.

1st Class Elementary, F.—Héloïse Bready and Virginie Lépine.

1st Class Elementary, E.—Catherine Dorah Gorman.

2nd Class Elementary, F.—Héloïse Aly, Emilie Grégoire and Azilda Richard.

August, 1867.

F. A. BRIEN,
Secretary.

SAME BOARD.

1st Class Elementary, F.—Priscille Lafort.
1st Class Elementary, F. and E.—Clarisse Tremblay.
August, 1867.

O. BOIVIN,
Secretary.

SHERBROOKE BOARD OF EXAMINERS.

2nd Class Academy, E.—Charles W. Bastable.
2nd Class Elementary, F.—Maria L. Dubois.
2nd Class Elementary, E.—Helen M. Caswell, Mary Varney and Ann Jane Young.
August, 1867.

S. A. HURD,
Secretary.

STANSTEAD BOARD OF EXAMINERS.

1st Class Elementary, E.—Helen LeBaron, Lucy A. Thomas, Francina A. Wacleigh, Lucy A. Reed.
2nd Class Elementary, E.—Rosetta M. Kinney, Mathilda Waite, Emma E. Cushing, Alice G. Talbot, Emma Demers, Marietta Bacon, Agnes Slater and Eugeno O. Clarke.
May, 1867.

1st Class Elementary, E.—Philena Cutter, June Holihon, Maria Ball, Cornelia A. Webster and Ada E. Perkins.
August, 1867.

C. A. RICHARDSON,
Secretary.

SITUATION WANTED.

A gentleman, duly qualified by diploma and who has been distinguished in Trinity College, Dublin, wishes for an engagement as master in a country academy. Subscriber is a member of the Church of England, is married, and would wish to obtain an academy to which he could devote himself steadily for some years.

All information required and references may be had on application to A. B., box 42, Lennoxville, P. O., P. Q.

JOURNAL OF EDUCATION.

MONTREAL, PROVINCE OF QUEBEC, AUGUST & SEPTEMBER, 1867.

Education in Victoria.

From a Report of the Commissioners appointed to enquire into the state of public instruction in Victoria and the voluminous evidence taken before them, which have just reached us in the form of a heavy folio, it would appear that the question of Education has of late years deeply engaged the public mind in that distant colony.

When the Commissioners began their labours, they found that under the system established by the Common School law which came into operation in September 1862, public instruction had not made much progress. Of 121,661 children within the age of instruction (1) in 1862, only 56,473 were on the rolls; and of 170,000 children within the age in 1865, the number on the rolls had only risen to 64,926, with an actual attendance, as averaged during the last quarter, of 49,218. To this must be added however, the number of pupils at private schools, amounting to 11,378, and which swelled the actual attendance to 60,536.

From these figures the Commissioners draw a comparison between the colony and the mother country which is somewhat unfavourable to the first. In England, they say, so far back as 1861, one person out of every six or seven was receiving instruction; whereas in Victoria, at the date of the report, one

1 Between the ages of three and fifteen years.

out of eight only participated in the benefit of the schools; and this proportion, unsatisfactory as it was, would fall still lower if applied exclusively to the rural districts, where the deficiencies of the system of instruction were most severely felt.

Among the various means proposed for the diffusion of primary instruction in localities remote from the great centres of civilization, the following are noticed by the Commissioners: 1st The establishment of large industrial schools at convenient places in which children residing in the country could be collected together and boarded while receiving instruction. 2nd The payment of a capitation grant to parents or other persons who could prove that they had imparted elementary instruction to a child. 3rd The establishment of schools in the country, which would be opened and closed at alternate periods and conducted by itinerant teachers. Of these schemes, the Commissioners recommend the last in preference to the others, though they are also disposed to give the plan of capitation grants a cautious trial experimentally.

As regards compulsory education, the Commissioners, after having examined a great number of witnesses and in view of the prevailing neglect of all instruction by the poorer classes in the towns, have arrived at the conclusion that it should be adopted. It was thought that the system would not be so strongly objected to in Victoria as it has been by some persons in England, on the ground that the principle involved, as well as the policy, was wrong.

The wants of the Chinese inhabitants are next considered. These orientals, who numbered about 24,500 souls in the colony, were for the most part ignorant of the English language; and a proposal had been made to levy a special tax upon them to provide for the establishment and maintenance of evening schools for their instruction, but the Commissioners after mature deliberation have only felt justified in recommending that the "State should assist such voluntary efforts as may be shown to possess an educational value."

As in Canada, the subject of denominational schools seems to have caused much embarrassment and perplexity; and of the recommendations embodied in the Report, several have in view the summary removal of this persistent cause of trouble. What success these recommendations might meet with in practice or how far they could be adopted without causing dissatisfaction, remained to be seen; but we, who have had experience here, are inclined to question the unanimity of any action resulting from coercive measures. As it was, it appears from the testimony of sir James F. Palmer, the President of the Legislative Council and Chairman of the Board of Education, who gave evidence before the Commission, that a large part of the population declined to take any part in the vested schools, while others had "accustomed themselves to rely a good deal" on the ascendant clergy.

The Commissioners also express their conviction that a large number of the teachers employed in the Common Schools did not possess the qualification necessary to a proper discharge of their important duties; and they very properly remark that the efficiency of any system of public instruction depends ultimately on the teacher, who is brought into immediate contact with the child. The establishment of a training school is therefore warmly advocated, on a plan which the Commissioners recommend.

The Report concludes with a recapitulation of the recommendations submitted, the result of the labours of the Commission, as follows :

1st. The enactment of a law making the instruction of children compulsory on parents. 2nd. The appointment of a Minister of Public Instruction responsible to Parliament, with a general superintendence over the interests of education. 3rd. The establishment of public schools, from which sectarian teaching shall be excluded by express legislative enactment, and in which religious teaching shall be in like manner sanctioned and encouraged. 4th. Public schools to be under the superintendence and management, subject to the Minister of Public Instruction, of local committees to be partly nominated by ratepayers and parents. 5th. The teachers in public schools to be admitted to the public service upon passing a prescribed examination ; to be under the direction of local committees, subject to the authority of the minister of Public Instruction ; and to be entitled to receive their salaries, and, after a certain period of actual service, an augmentation allowance and a retiring allowance from the State. 6th. The principles of individual examination of children and part payment by result to be retained ; but modifications to be made in the mode of examination. 7th. The establishment of a training school for teachers. 8th. Annual exhibitions at the grammar schools, Queen's scholarships in the training school, and appointments in the civil service, to be given to pupils of public schools. 9th. A capitation grant to be conditionally given for a period of five years to non-vested schools now on the rolls of the Board of Education. 10. Encouragement to be given to the denominations, by means of a grant of increased powers, to part with their school lands, to surrender their schools and contribute to the establishment of public schools. 11th. A separate grant to be made for the purpose of aiding instruction in the rural districts, and in missionary educational settlements for the aborigines and the instruction of the Chinese, and for the purpose of aiding ragged Schools. 12th. The levying of a rate in aid of public instruction upon lands in Victoria.

Thus it will be seen that our sister colony is not slow to appreciate the advantages that flow from an efficient system of popular instruction, and we heartily wish her every success in the work she has undertaken.

Death of Archbishop Turgeon.

The death of the venerable Archbishop of Quebec, which occurred in the night between the 24th and 25th of September, spread a deep gloom over the ancient capital, and as the sad intelligence became known, afforded a universal theme of regret throughout the new Dominion. Mgr. Turgeon had been invalidated during many years, having, so early as the month of February 1855, while assisting at the obsequies of a Sister of Charity, experienced the first shock of a fatal illness from the effects of which he had never recovered sufficiently to take a very active part in the service of the church.

Pierre Flavien Turgeon was the son of a respectable merchant of Quebec, and was born in that town on the 12th November 1787. He entered the Seminary there in 1800, and soon elicited the attention of the professors. 'It is not without interest,' says a contemporary, 'that we read the class certificate of this charming little member of the seventh, destined one day to

occupy the highest ecclesiastical dignity of his country. Here are the terms in which his annual bulletin appreciates his merit : "*Adolescens rapidus, suavis et citra omne supercilium functus est omnibus exercitus festine et diligenter.*" In 1804, having attained a place in the third class, he merited that it should be written of him : "*quo sapientior in schola nullus exstitit.*" Happy the boy who does not betray the hopes his teachers found upon him, and who does not wither away the laurels gathered in his earlier college years. It was the fortune of young Flavien to sustain, during the whole period of his studies, that reputation which he had conquered for himself—even at the threshold of the Quebec Seminary—of remarkable success joined to the most tender piety.'

Admitted to minor orders on the completion of a course of rhetoric, the young scholar was selected by Mgr. Plessis as his private secretary. Having also followed the courses in philosophy and theology, he was, in 1810, ordained a priest, and received a professorship in the Seminary the following year. Here he remained during the long term of twenty-two years, acting now as Director, now as Assistant-Superior, now as *Procureur*.

Soon after the death of Mgr. Panet in 1833, Rev. Mr. Turgeon was consecrated Bishop of Sydime, and on the death of Mgr. Signay, nearly seventeen years later, ascended the archiepiscopal seat. The simple enumeration of all the important works consummated by this venerable prelate would exceed the limits of our space ; let it suffice to say that to his instrumentality was the foundation of Laval University chiefly due. Distinguished for mother wit and great urbanity of manners, Archbishop Turgeon was universally beloved by those that knew him. In works of charity and self devotion he had ever been foremost ; and when a dreadful fire had spread desolation among his flock, or typhus fever had thrown 400 helpless orphans upon his bounty, the exertions he made to alleviate so much misery and bring consolation and comfort to the suffering were beyond all praise.

Convention of Teachers.

The annual convention of the Provincial Association of Protestant Teachers will meet at McGill Normal School on the 18th and 19th October next. The following are the subjects proposed for discussion : 1. The length of time daily, during which pupils may profitably receive instruction ; 2. The number of studies which may be profitably undertaken, in connection with each other, by any pupil ; 3. Home lessons ; 4. Education out of school ; 5. Means of improving school attendance ; 6. Official gradation of schools ; 7. How far the pupils should be engaged in aiding the Teacher in general school management ; 8. The teaching of rudimentary arithmetic ; 9. Teachers' Institutes for mutual improvement ; 10. The Education of Taste. Teachers and friends of Education are invited to attend.

Examinations and Distribution of Prizes.

Three graduates obtained the degree of M. D. at Laval University this year, six received that of Licentiate in Medicine, and twenty-one the B. M. The students that followed the courses were thus distributed among the respective Faculties :

Faculty of Law 22, Faculty of Medicine 24, Faculty of Arts 5. The following are the names of the gentlemen who took the degree of M. D. : Messrs L. Conrad Gill, David L. Larose and L. F. Eugene Rousseau.

The distribution of prizes at the Quebec Seminary took place after the usual examination on the 8th July, and was very well attended, as were also the examinations held on the following day at the college of Ste. Anne Lapocatière.

At the College of Montreal, a numerous assembly gathered from all parts of the country to witness the examination held on the 2nd July, and all present appear to have been very favourably impressed with the high standard of education imparted in this old institution of learning. The examinations held at St. Mary's College, Montreal, were also very successful. The colleges of St. Thérèse and St. Hyacinthe, in the vicinity of Montreal, also distributed prizes before numerous public assemblies.

Hon. Mr. Chauveau, Premier and Minister of Public Instruction, attended the distribution of prizes at the convent school of *Jesus-Marie*, Quebec, and congratulated the pupils on the proficiency they had attained. At the Ursulines convent, Lady Monck and the Misses Monck witnessed the examinations and assisted in the award of honours. Among the many distinguished persons who were also present on the occasion we notice the names of the Consul General for France and the Vice-Consul for Spain, who appear to have taken a deep interest in the proceedings. At the *Congrégation de Notre-Dame*, Quebec, and at the Ladies of the *Congregation*, Villa-Maria, as well as at the convents of *Jesus et Marie* and Mont Ste. Marie, and St. Anne, Lachine, brilliant examinations were held.

The St. Denis Ladies' Academy, Montreal, the Commercial Academies at Montreal and Quebec, and the Brothers' schools throughout the country also held annual examinations with very satisfactory results.

Presentation of Diplomas.

A full report of the presentation of diplomas at McGill Normal School having appeared in our last, it now only remains to notice the proceedings which took place at the two other provincial training schools.

In both departments of the Laval Normal School, diplomas were presented to very large graduating classes, and the usual prizes conferred on the more deserving among the younger pupil-teachers. The annexed model schools also held the customary examinations and they exhibit long lists of successful competitors who struggled for honours in the French and English classes.

At the Jacques-Cartier Normal School, the death of Mr. Dostaler, Professor of Chemistry, which had taken place quite recently, invested the proceedings with a mournful interest that called forth a display of touching eloquence from the learned Principal. Addresses were also delivered by Mr. Regnaud, Associate Professor, and by C. S. Cherrier, Esq. Q. C., which were listened to with marked approbation; after which the prizes were awarded and the teachers-in-training dismissed to their homes.

Monument to an Historian of Canada.

HON. MR. CHAUVEAU'S ORATION.

The monument recently erected by public subscription to the late Mr. Garneau, the well-known historian of Canada, was

inaugurated on the 15th September, under the auspices of the Lieut-Governor, and in the presence of a large and brilliant assembly. As the occasion had been eagerly anticipated, an announcement by Mr. Lemoine, acting president of the committee, drew together fully three thousand persons, among whom, besides His Excellency's staff, were the Premier of the Province, members of the cabinet, judges, barristers, and many leading citizens of the old capital.

The ceremony was opened with a burial service, conducted by Rev. Mr. Auclair, curé of Quebec; after which a funeral oration was pronounced by Hon. Mr. Chauveau.

Deep and unusual were the emotions called forth when in the tranquil sunshine of a Sunday afternoon, surrounded by a thousand historic associations, the Premier, who had snatched a moment from the cares and turmoil of political life, stood uncovered in the presence of a vast and attentive multitude, about to review the touching incidents of a past friendship, on the tomb of his old friend. Hon. Mr. Chauveau spoke in French, and we translate as follows :

Your Excellency and Gentlemen,

We are assembled at the grave of a friend, a fellow-citizen, a writer of whom any country might well have been proud — of a man who was devoted heart and soul to his country. In bidding a last farewell to these mortal remains, it seems as if we were discharging a sacred duty, not for ourselves only, but for the whole community.

To honour the name of one who had wrought for the glory of our hearths was a noble and patriotic thought, at whose execution you, sir, had presided even before you were called to the highest civil dignity in this new province. François-Xavier Garneau is a name as widely known as that of Canada itself; it is bound up indissolubly with the fame of this country. How, painful, then, would have been the reflexion, if he that had raised the noblest of monuments to his native land had now slept without a gravestone on its soil — a soil whose beauties he had sung as a bard, whose heroes he had rendered famous as a chronicler!

A poet, a traveller and an historian, François-Xavier Garneau, ever disinterested and self-sacrificing, was also a man of action, endowed with courage, heroic perseverance and indomitable will. A fixed idea, or rather the consciousness of a noble mission, had taken possession of his whole being; and to its fulfilment he devoted all—heart, mind, repose, fortune, health. A chief task, a life-long work, a nation's monument to erect, to perfect, to re-touch, to grace with ornaments — such was his life as he himself contemplated it.

And all this, gentlemen, was accomplished at the cost of the 'midnight oil,' and in the midst of humbler occupations. There were in him, in fact, two distinct natures: one entirely absorbed in the modest though earnest and difficult duties necessary to the maintenance of his family; the other, a patriotic votary of the Muses, devoted to letters, history, and song; and strange as it may appear, these two distinct beings had been moulded to perfection one from the other, without extraneous assistance. Armed with the simplest rudiments of primary instruction, he had found means to acquire, perfect and retain both the practical education indispensable to the bank clerk, the notary, and the municipal functionary, and that higher literary and philosophical training which belongs to the thinker and the writer. What loftier example have we of the power of human will! what lesson more elevating! what teaching more impressive for the youth of Canada! Mr Garneau had ardently desired to follow a collegiate course, but his wishes were not to be gratified in this respect; and yet, how many that have enjoyed this vast advantage over him have undertaken and brought to a successful issue a task of equal magnitude? He was, undoubtedly, gifted with rare

talents, and genius of a high order; but is there not too much reason to fear that many intellects not inferior to his, and which have gathered vital force from regular and opportune discipline are lost to society through inertness and unmanly pandering to those vulgar passions whose devastating effects are so wide spread around us?

Considered in this light, the work over which Your Excellency has been pleased to preside is at once a good deed and a noble example. To the young we would say: Intellectual labour is beginning to be appreciated in Canada as in other countries; and let us hope that very soon, as our historian has himself expressed it in one of his eloquent pages, 'The time will come when full justice will be rendered those who have made sacrifices to the noblest cause that can engage the attention of communities.' Meanwhile, we do not ask that every body should make so great an effort; but we would say to all, do him justice by reading his admirable book and meditating upon it. You will see unfolded to your eyes, the story of the birth and growth of a nation that, step by step, is advancing to its place at the 'banquet of humanity.' You will see the cross, wreathed in *fleurs-de-lis*, planted by Cartier on the banks of the river that flows yonder at our feet. You will see as a troop of horrid and bleeding phantoms, the nomad tribes that were to make room for us passing away forever. You will see Champlain pitching his tent beneath those trees of which, until recently, a few still shaded some portions of the great historic city we have just left; Laval sowing within this enclosure, the precious seed that has ripened since into so many blessings; Marie de l'Incarnation, with her companions, singing pious chants in the midst of her neophytes, beneath the doubly-vaulted majesty of the primeval forest and the blue Canadian sky; Maisonneuve and his intrepid followers founding the wondrous colony of Montreal in the heart of the Iroquois country; Mademoiselle Mance and la Sœur Bourgeois penetrating with equal intrepidity into the same inhospitable regions; Frontenac striking terror at last into those barbarous hordes, and bravely repulsing the ships of Admiral Phipps. You will also behold, passing in review, the long line of *gerillhommes* and French peasants who were our sires, hardy pioneers ever ready to relinquish the spade and the plough for the sword and the musket, gay and brave adventurers that could profess savagism with savages, glide as they did in their swift canoes and vie with them in daring and address; those undaunted missionaries, heroic martyrs, pious women and heroines of our history; those Canadian Joans of Arc—the de Verchères and Drocourts. You will hear the recital of the great expeditions of our ancestors: La Salle and Joliette discovering the Mississippi; Bienville founding New-Orleans at the other extremity of North America; Rouville and his bands laying New England waste; Nicolet and La Veyranderie exploring the boundless territory of the West; de Beaujeu perishing with Braddock on the field of the Monongahela, as Wolfe and Montcalm were fated to perish at a later period beneath our ramparts; Iberville bearing our victorious flag from Mexico to Hudson's Bay, and you will exclaim: 'The whole continent was but a vast field for the exploits of our forefathers!' And, after these prolonged contests, this ever recurring warfare, this endless series of multifarious trials—famines, epidemics, conflagrations, massacres, misrule, insufficient immigration, unredeemed promises of succour, checks borne patiently but too often renewed for the honour of France and the success of the colony—a memorable day will be reached: the day of a last anguish, of a final catastrophe when, invaded on all sides, by land and by sea, by armies and fleets ever vanquished but ever reappearing, exhausted in men, provisions and munitions of war, New France in vain holds out her arms imploringly to Old France. It is then that the historian, rising with his theme, has known how to paint the last misfortunes and the last glories of that old white standard with golden *fleurs-de-lis*, on the banks of the St. Lawrence. He will relate the gallant deeds of the Acadians, their long-protracted struggles and their dispersion on the old continent; he will describe the determined resistance of Louisbourg (the Quebec of the gulf) to Wolfe's superior force, and its fall through an error not

unlike that which entailed the loss of our own fortress; he will depict Montcalm, (so gloriously victorious at Carillon with inferior forces), as he stood only a few weeks before the surrender of Quebec, on the Beauport cliff, his gallant efforts seconded by Lévis, Juchereau, and Bourlamarque. And, at length, after the great battle that quenched the life of the two heroes, the Frenchman and the Briton, when Quebec, bombarded, is transformed into a heap of ruins, he will trace with legitimate pride the victory won over General Murray by the Chevalier de Lévis, on the very spot on which we now stand, the last triumph of the French and of our ancestors—final picture in the conquest that he was the first to sketch in relief and consecrate through posterity.

Then, bowing reverentially to the decrees of Providence as our forefathers themselves had bowed, he will enter with fortitude—with calmness almost—upon a narrative of fresh encounters, less sanguinary but not less interesting. He will show you Murray and Carleton practising the noble advice of Virgil: *parcere subjectis et debellare superbos*, acknowledging the virtues of the vanquished and shielding them from unworthy persecutors; Britain often hesitating between the clamourings of partiality and the dictates of justice; Dambourgès and the Canadians saving Quebec in 1774; Sallaberry repulsing Hampton in 1814, after Craig's long abuse of arbitrary powers: the loyalty of our compatriots placed beyond even suspicion; the great prelate, Plessis, teaching the victors to respect the rights of the faith and saying to the civil power, 'You must not go further'; he will in fine show you the constitutional liberties of 1791 gradually assuming development, despite the obstructive course of an oligarchy. With what love and veneration has he not portrayed the chief figures of this parliamentary contest—de Lotbinière, Panet, Bédard, Taschereau, the two Papineaus and the two Stuarts, Vallières, Viger, Bourdages, La Fontaine, Morin and the other defenders of our liberties!

And then, falling again upon evil times after another rule, with what patriotic fire has he not rehearsed the bloody issue of a resistance that was to usher in a legitimate prototype of the British Constitution, accorded under conditions to us so difficult and dangerous! And accordingly at this period, jealous of our nationality, what anxious glances does he not cast into the future!

This splendid work, in which 'a thrill of patriotism runs through every page' (to borrow from the graceful pen of its reviewer an expression that struck me), borders, more especially in the first volumes, on the highest inspiration. This is easily explained: our history is worthy of an epic and our first historian was above all, a poet.

It was the poet that produced the traveller, and the poet-traveller that merged into the historian. It was the poet that, dreaming of other skies, of other shores than those he had so much admired, longed to ramble over America and to see that old Europe, so far removed from us then. A glance at the entertaining account which he has himself given will convince us that he saw with noble envy the glory of the two great nations to which the inhabitants of Canada owe their origin; that he admired their monuments while meditating our past and future and said: 'I cannot, as they would do here, engrave the battles of our ancestors on bronze, but I will inscribe them on the page of history.' His literary and patriotic inspirations, already revealed to him, found expression when he came in contact with the great men and things of the old world; his love of country and the fears it occasioned—a love wrapt in dark forebodings and in melancholy—received a fresh impulse when he heard Nemcewicz sing the misfortunes of Poland, O'Connell thunder against the injustice done to Ireland.

Nor was his book written, as so many other books have been written, to gratify a whim, to make a reputation, or for the purpose of gain; his was a nobler enterprise: to rehabilitate a race in its own eyes and in the eyes of the world. First of all, he wished to remove those insulting epithets, 'conquered race,' 'vanquished people.' He desired to show that under the circumstances of the contest, our defeat was morally equivalent to a victory. Men of other races destined to dwell with us and

share as brothers this vast and magnificent domain will one day thank him for having set the truth in a proper light, obliterated unjust prejudices, restored us to equality with themselves in their estimation as in our own, and offered an additional, pledge for the harmony essential to the accomplishment of our common destinies.

Cemented in friendship with able and patriotic writers who had preceded him, with indefatigable enquirers devoted to our history and its antiquities, he was enabled to lay with them the foundation of our dawning literature, and soon found himself surrounded by emulators and by rivals even; but to him must be awarded the merit of inceptive action and the laurels of a first triumph.

At the sacrifice of sleep, of rest, of wealth that lay so easily within his reach, he has bestowed upon us immeasurable bounties, among which self respect, exalted love of our country and confidence in its future are not the least. Truly, our gratitude expressed in this monument, simple and touching in itself perhaps but still so entirely insufficient, had been a poor return if a grander, a more beautiful, a more imperishable offering did not live in the memory of a whole people.

We weep for the departed great; but after all, for these more than for others, is it not well that this poor life, with its perturbations, its trials, its injustice, its most hidden caprices, should one day have an end? for that day brings reparation!

Their fame, ever increasing, towers aloft like those marvellous structures which, as their surroundings fade from his view, the traveller sees looming above the city he has left. New generations learn their names and repeat them with love; and, truly, of the turmoils, the ambition, the pretensions and intrigues of society all that remain are a few unobtrusive but bright reputations that in life were as neglected as they have been prized after death.

But this, too, is human justice; posterity is capricious, forgetful, and disdains unjustly. The memory of nations, as of individuals, is at certain epochs clouded in night; and time rolls a sombre oblivion on the vast ocean of ages as a mist, dark and impenetrable.....

Ah! gentlemen, if a voice clothed in more authority than mine, if the voice of a minister of God were to address you now, it would speak of a higher immortality; it would tell of that immortality which is as far removed from all human glory as Heaven is above Earth!

It is true that we cannot unveil the mysteries of another life, but our faith teaches us that we may do something; that the holy prayers we pour forth with incense and tears on the tombs of loved ones are not in vain; that the grand fellowship of humanity does not end with the grave. The admirable trilogy of a militant, a suffering, and a triumphant church, were it not already a dogma, would be the most beautiful of philosophical conceptions, binding one world to the other, and at once dispelling gloomy terrors and shedding on a fearful path the sweet light of hope kindled by faith and fed by charity.

Our friend was benevolent, meek, upright, devoted. He died the peaceful death of a christian; may we not then, trusting in a better world, address our adieu to him there?

Farewell then, my friend, in the name of our old friendship! in remembrance of those sweet conversations in which you loved to speak of the future of our cherished home—farewell and thanks! Thanks for the noble sentiments you have instilled in all hearts; thanks for the blessings you have conferred on our youth; thanks for the noble, the sublime examples you have given!

For those, dearest to you, that inherit a name so glorious—those whom you have loved so fondly, farewell! For your country, farewell! In twofold immortality, oh peace be to your ashes! Canada, in its coming great destinies, shall not forget you; and the rival races that surround us, having learned to love our fathers in your works, will claim a share in our proud heritage.

Whate'er betides, be thy spirit not unquiet! Our country,

our cherished nationality shall not want defenders; the youth, the throng intent that press around your grave witness the promise. Heaven is surely not a prison, this homage to your memory is not unseen. The noble precepts you have inculcated, shall you not see them grown to maturity and, as a favouring angel, shall you not watch over our future from the seat of everlasting life? You, in the spirit, have been ere this, or will presently be, through the sanctity of prayer, received on high;—received also by a grandsire—a good old Canadian whose 'trembling hand', as you have told us, had 'pointed out the scene of our ancestors' last exploits'; by a father whose example had been of fortitude and toil, and a mother who had formed you to benignity, virtue, and wisdom; by the common parent of us all, Catholics, whose name, taught by a mother to your infant tongue, had so often returned to your lips in the sore trial of your last illness; by all the Canadian heroes whose fame you have rescued from oblivion.

The sacred delights of home, the austere pleasures of study, the peaceful triumphs of letters, were your only joys; your happiness, your glory should weigh down your sacrifices.

Here, under this stone, not far from a monument you had seen reared with pleasure to our heroes, your bones shall rest amidst the scenes of grandeur you had admired, on the battle field you have celebrated. The tall pines that surround them will wear a sombre livery in your honour; and from their branches will the birds of winter, themes of your song, utter their plaintive cries over your tomb.

The ever shifting lights of the North, which you have also sung, will meet in thousand-lustrated glories over your resting-place. The heroes that surround you may start at your shadow; the last of the tribes whose shriek you have echoed may hover round this spot; strange noises may assail you, and your harmonious verse recur again,

Perfidious illusion, adown the hill
The mower's steel! (1)

This assembly, so deeply impressed with reverential awe, will soon disperse, and silence and night shall reign in these abodes; but never in our hearts shall silence or night invade your memory. Farewell, once more! farewell!

Opening of the Session at Laval University.

The reassembling of the Faculties of Laval University on the 11th September, witnessed a ceremony of more than usual interest, and of course drew together a large concourse of distinguished persons, among whom were His Grace the Archbishop of Quebec, who presided on the occasion; Hon. Mr. Chauveau, Premier and Minister of Public Instruction; the Consul-General for France; Rev. Mr. Cazeau, V. G., and many of the Catholic clergy and citizens.

The presentation of an address by the Professors of the University, congratulating Mgr. Baillargeon on his succession to the Archiepiscopate, opened the proceedings. In reply to allusions contained in the address, His Grace disclaimed any merit for the defence of the University in which he had borne a part or for any effort he had made in its behalf, as in this he had done no more than attend to the call of duty—a duty, it was true, that the dearest wishes of his heart approved. He spoke feelingly of the attachment which he, in common with his most reverend predecessor, had ever entertained for that great and useful institution, and which he hoped to see perpetuated; he esteemed it an honour to walk in the glorious path that, after so many trials and severe exertions, had been at length successfully

(1) *Perfidie illusion, au pied de la colline,
C'est l'acier du faucheur!*

beaten out; and he assured his hearers that this Alma Mater would continue to be the object of his special care and liveliest solicitude.

The object of the meeting was then explained by the Rector, who, referring to the considerable number of students from the Seminary and affiliated Colleges that had presented themselves for the degree of B. A., took occasion to give some particulars touching the examination for this honour as now subdivided into *Bachelier ès-sciences* and *Bachelier ès-lettres*, and passed on to the great topic of the day — the recently instituted prizes for poetry, and the motives that had led the Faculty of Arts to throw them open to public competition.

On the conclusion of the rev. gentleman's address, the report of the jury chosen to adjudge the laurels was read, and, amidst deafening applause, the following competitors were declared the victors:

L. P. Lemay Esq., advocate, Lotbinière, gold medal; L. J. C. Fiset Esq., Deputy Prothonotary of Quebec, silver medal; B. Routier Esq., advocate, Kamouraska, bronze medal; Mr Prudhomme, law student, Montreal, honourable mention.

The general acclamations that greeted this announcement having at length subsided, the prizes were distributed with the usual ceremonies, and the poets-laureate invited to read aloud from their essays for the delectation of the auditory. In consequence of domestic sorrow, one of the medallists had been prevented from attending; but the others, Messrs Lemay and Routier, at once acceded to the request and very soon convinced their hearers that the favourable criticism of their Muse, as embodied in the report, had not been unworthily bestowed.

Thus ended the first of these public competitions for literary honours, so happily inaugurated by the Faculty of Arts, and we congratulate the university on a success that augurs well for the future. Curiously enough, one of the many poems sent in was an English composition — a significant hint to the patrons of English literature, and one that should not be suffered to pass by unheeded.

Masson College.

This institution, founded in 1847 by Rev. Mr. Théberge, curé of Terrebonne, and which is so largely indebted for protection and support to Madam Masson, widow of the late Hon. J. Masson, has just inaugurated an important change in its curriculum. The classical course followed since the establishment of the college has been abandoned, and a comprehensive commercial course will, at the beginning of the present year, replace it.

Masson College has occupied an enviable position in the list of educational institutions in this country and numbers many prominent men among those whom it has sent forth duly qualified for the duties of active life. It must not be inferred that the substitution of the ledger for the lexicon has been resolved upon in consequence of pressure such as want of means or of encouragement might have caused; on the contrary, as a classical school the success of this institution was well established and its usefulness generally acknowledged. The reasons that have led to the change, and which may be found stated at length in the *Prospectus* issued in view of the opening of the course, are briefly these:

It was felt that something should be done to check the current which draws the greater number of the educated youth of the country into the learned professions, already so over-crowded; and it was thought that if, by means of special preparatory studies, commercial and industrial pursuits could be rendered more attractive intellectually, the desired object would be secured. The importance of a high standard of education for the commercial classes cannot be overrated; it is one of the strongest moral guarantees for the integrity of those with whom are bound up almost the whole material interests of the country; and it is, therefore, the true basis of our future welfare and happiness as a people. Another advantage would be the relief of the professions and the promotion of the well-being of their members, of whom some, in a hard struggle for subsistence, bear up but indifferently against temptations that hold in jeopardy the credit of the bodies to which they belong.

The new course will extend over five years; but students will be admitted for one year or more, according to age, degree of proficiency, or other circumstances. The following are the branches comprised in the regular course of five years.

1ST DIVISION OF COMMERCIAL COURSE.

1st and 2nd years.—*Grammar classes.*

1. Reading, with declamation; 2, Elements of Syntax: French and English; 3, Arithmetic; Mental arithmetic; 4, Writing; 5, Reading manuscript; 6, Rudiments of book-keeping; 7, Summary of universal history.

2ND DIVISION COMMERCIAL COURSE.

3rd year.—*Business class.*

1. Book-keeping; 2, Commercial arithmetic; 3, Commercial correspondence; 4, Writing; 5, Commercial law; 6, Telegraphy; 7, Banking; 8, Assurance; 9, Stenography; 10, History of Canada (obligatory in complete course only).

3RD DIVISION COMMERCIAL COURSE.

4th year.—*Literature.*

1. Belles-Lettres; Rhetoric; 2, Contemporary History; 3, Commercial history; 4, Natural history; 5, Horticulture; 6, Architecture; 7, Domestic and political economy.

5th year.—*Sciences.*

1. Moral philosophy; 2, Civil law; 3, Civil and political constitution of the Dominion of Canada; 4, Experimental philosophy; 5, Applied chemistry; 6, Practical geometry.

Liberal Arts.

Academic and Linear Drawing; Vocal and Instrumental Music.

The *Business Course*, extending over the third year, forms in itself a complete course which may be followed independently of the others.

From the above, it will be seen that this college offers every facility to young men desirous of obtaining a practical education, a thorough knowledge of commercial principles, or of fitting themselves for any position in which, as successful merchants or otherwise, they may happen to be placed in after years. The terms of tuition and board have been fixed so low as \$100, with but few extras. We hope to see the commercial course largely attended.

Notices of Books and Recent Publications.

DOUÏRE.—*Les Lois de la Procédure Civile; savoir: Texte du Code, rapport des codificateurs, autorités par eux citées, lois de faillite, règles de pratique des différents tribunaux, principes et formules de procédure, etc., etc.*; By Gonzalve Doure, B.C.L., Advocate and Secretary to the Bar of the Province of Quebec; with a Preface by P. R. LaFrenaye, B.C.L., Law Professor in McGill University. Vol. I. Eusèbe Sénéca, Publisher, Montreal; 1867.—12mo, xcii-471 pp.

Legal procedure has been described as the instrument with which a man compels Authority to render him justice; it is the lever that sets in motion and directs the complicated machinery of the law. Without it, the law itself must remain inoperative and its 'long arm' be a paralyzed and useless member. Nor should the law of procedure be confounded with the rules of practice: the last properly extend to legal forms and matters of detail, while the first comprises the whole administration of public justice.

In addition to the Code of Civil Procedure, the indispensable auxiliary and necessary complement of the Civil Code of Lower Canada, the volume now before us contains all the marginal notes and references to the authorities consulted by the commission; an introduction by Mr. Doure in which the changes brought about in the law by the introduction of the Code are pointed out and fully explained; the report of the commissioners charged with the codification of the laws, indicating the amendments proposed by them and afterwards adopted by the legislature; the statute and the proclamations concerning the organization of the commission and its labours; an appendix containing the necessary legal forms, the rules of practice as now in force in the different tribunals, together with the forms of proceeding under the bankruptcy act, and a general index. Altogether the work promises to be very useful, and we congratulate our fellow townsman on his enterprising spirit, which has given it to the public. The second volume will, it is expected, be ready in a month or two.

THE METRIC SYSTEM OF WEIGHTS AND MEASURES, Combining many New and Practical Improvements in Arrangement, Notation, and Applications. Prepared for Robinson's Progressive Arithmetics; by Malcom M. Vicar, A. M., Principal of State Normal and Training School at Brockport, N. Y. Ivison, Phinney, Blakeman & Co., New York.—12 mo, 47 pp.

The question of a uniform system of weights and measures, as well as of a uniform currency, is every day forcing itself more and more on the attention of merchants and others; and there can be no doubt that before many years shall have elapsed, its adoption will be secured throughout the commercial world. In the little work before us, the subject is lucidly explained, though not so fully as to answer all the wants of the classroom. To persons engaged in trade, and business men generally, it will be found very acceptable.

SOUVENIR DÉCENNAL, de l'École Normal Laval; 1857-1867. C. Darveau, Québec; 1867.—Pamphlet 74 pp.

Besides a short historical sketch of the school and an enumeration of its accessories, the reader will find here complete lists of its professors and of pupil-teachers who have received diplomas during the last decade, or since its establishment.

LATOUR.—*Annuaire de Ville-Marie, suivi de recherches archéologiques et statistiques sur les institutions catholiques du Canada. Tome premier: Histoire des paroisses du diocèse de Montréal.* Par L. A. Huguët-Latour. Chapleau, Publisher, Montreal; 1867.—12mo, 128 pp.

In writing the history of the foundation of religious institutions in the parishes of Lower Canada, Mr. Latour, especially when dealing with the older settlements, has opened a page in the annals of the province over which the sentiment of pastoral poetry seems to diffuse itself. Written from that stand-point which places the author in complete accord with his subject, this little work is really an introduction to the humbler history of the people; and it would be difficult to convey a more vivid picture of the busy every-day life of a little community, with its struggles and vicissitudes, its transient joys and sorrows, than is here revealed by those trifling incidents that, peeping here and there unintentionally out of old parish registers, require but the amplification of local traditions to grow into historical romance. Those who wish to study the manners and customs of the country, as well the reader in quest of technical information, will know how to value the materials Mr. Latour has, at great pains, thrown together in a form at once convenient and readily accessible. The present volume is the first; it is intended to continue the publication of the work through several others, each to be complete in itself.

MONTHLY SUMMARY.

EDUCATIONAL INTELLIGENCE.

In Mr. Lowe's vehement speech on the occasion of the third reading of the Reform Bill, he thus points out the bearing of that measure upon our National Education.

"I have been one who thought that our institutions in respect to the education of the people were as efficient as they could well be. I shrunk from the notion of forcing education on people. It seemed more in accordance with our institutions to allow the thing to work and freely to supplement the system. That whole question has now completely changed. All the opinions I held on that subject are scattered to the winds by this measure of the Government. It appears to me that before we had intrusted the masses—the great bulk of whom are uneducated—with the whole power of this country we should have taught them a little more, and not having done so, this rash and abrupt measure having been forced upon them, the only thing we can do is as far as possible to remedy the evil by the most universal measures of education that can be devised.

"It will not be unworthy of a Conservative Government, at any rate, to do what can be done in that direction. I was opposed to centralisation. I am ready to accept centralisation. I was opposed to an education rate. I am ready now to accept it. This question is no longer a religious question, it is a political one. From the moment that you entrust the masses with power their education becomes an absolute necessity, and I believe that the existing system is one which is much superior to the much vaunted Continental system. But we shall have to destroy it; it is not quality but quantity we shall require. You have placed the Government in the hands of the masses, and you must therefore give them education. You must take education up the very first question, and you must press it on without delay for the peace of the country."—*Papers for the Schoolmaster.*

—A petition of a curious kind has been presented to the Assembly at Melbourne, Australia, in reference to the Education Bill. It was from a number of Chinese, and was written in Chinese characters, accompanied by an English translation. It was addressed "to the honourable and universally respected gentlemen in Parliament assembled, deliberating on the honourable affairs of state in obedience to the dictates of heavenly reason, and for the furtherance of the well-being of the people." It then stated that the petitioners had heard that a proposal had been submitted for establishing among the Chinese schools for instructing them in their own and in English letters. They felt that the proposal indicated a benevolent heart and a philanthropic purpose; and approaching the presence of Parliament with "profound prostration," they hoped that it would give effect to this laudable project, "seeing that it is one that will help to show us, ignorant people that we are, how to reject the evil and prefer the good."—*Exchange.*

LITERARY INTELLIGENCE.

The London correspondent of the *Chicago Tribune*, who has been making researches among the daily newspapers of that city, gives some interesting statistics on the subject. Of the *Times*, he says, "I am informed that its circulation, morning and evening, is about 60,000, and that its net profits, last year, were not far from £50,000—\$250,000." The most popular paper in England, owing to its cheapness, and its powerful advocacy of the Reform question, is the *London Telegraph*. It is a morning paper only, and its circulation ranges from 155,000 to 160,000 daily, and its profits, last year, were within a fraction of \$260,000. The *Standard*, a cheap paper, somewhat similar to the last mentioned, circulates, in its morning and evening editions, about 85,000 copies, yielding a profit, last year, of not far from \$125,000. The *Herald*, the old Tory organ, has a daily circulation of 1,000 only, which pays, however, about \$10,000 profits. The *Morning Advertiser*, the victuallers' paper, has a circulation of 25,000, and cleared, last year, \$60,000. The *Morning Post*, the aristocratic organ, circulates even less than the *Herald*, and pays about the same. The *Daily News* gets credit, in well-informed circles, for a daily circulation of 5,000, and for a yearly net profit of \$25,000. The *Star*, John Bright's organ, in which he is an owner, and sometimes a contributor, has a morning and evening edition, and circulates about 30,000 copies daily, and the stockholders of the *Star* property divided among their own selves, on the first of last January, a little more than \$40,000.—*Exchange.*

SCIENTIFIC INTELLIGENCE.

—The Pneumatic despatch, as organized at Paris, differs in some points, and advantageously, from that used in this country. The motive power is compressed air, the compression being produced by means of the water supply, which, in Paris, is highly effective, the head of water being very considerable. Water being let into one tank, the air expelled from it by

the water is transmitted to an air tank, of which there is one at each extremity of the line. Each of the tanks is of iron plate, and holds about one thousand gallons. The time expended in filling the water tank is about three minutes, and the air thus expelled from it is more than enough to propel the waggon along the entire line, which is about two miles in length. The waggon is of a peculiar form, being a hollow piston about five and a half feet long, closed permanently at one end, and temporarily by a movable lid at the other. Leather washers placed around the closed end, fill up the space between it and the pneumatic tube, which is two and half feet in diameter. The signals between the stations are made by electric bells; the waggon announces its approach by the noise which it makes. When it is to be sent off, it is placed in the mouth of the tube, which is then put in connection with the compressed air, the other extremity being put in connection with the atmosphere, that the air in front of the waggon may have a means of escape. This system is very simple, economic, and effective, but it is applicable only where the head of water is great. In Paris it is very considerable, and a pressure is therefore produced by it which affords a motive power applicable to a great number of useful purposes.—*Id.*

—The brilliant light afforded by electricity naturally suggested, at a very early period, its application to the purposes of illumination. But every project for the purpose was practically impossible, until very great progress had been made in the modes of producing and manipulating that obtained by means of the pile, or the magnet. Galvanic electricity, which in its application preceded that derived from magnetism, appears not unlikely to maintain its ground as a convenient and economic source of light, notwithstanding the numerous and important discoveries that have been made in this department of science. This might fairly be expected: since, at least in those contrivances in which heat and light are the results of the transformation of motion—previously obtained directly from combustion—the effect must be more costly and complicated than when obtained directly from combustion as is the case with galvanic electricity. The effect produced by the latter is now so economic, and what is still more important, so reliable, that it is being introduced with excellent effect in France, as a means of diffusing to great distances a light so intense, that when it is used, collision at night is impossible. Also, during the intense frosts in January, the skaters in the Bois de Boulogne were enabled, by means of fifteen electric lights, suitably disposed, to enjoy their pastime by night, with at least as much convenience and security as by day. Each of the fifteen lights was produced by the electric current obtained from a Bunsen battery containing forty elements, and placed in a small closed pit, from which the vapours were conveyed away, so as to be the cause of no inconvenience to those in the vicinity. The carbon points lasted for several hours, affording a light practically uniform; and when they were nearly worn out, a fresh lamp, moving on rails provided for the purpose, was slid into the place of that which was exhausted. In taking its position, it lit of itself: and the displacement of its predecessor caused the worn out points to be extinguished, the change taking place so quietly, and so rapidly, that no interruption of the light was perceptible. A single additional lamp is sufficient to change the fifteen at the proper times, the points being so arranged as to become exhausted in succession.—*Id.*

—M. J. Rosenthal states, in *Comptes Rendus*, that by exciting artificial respiration, and maintaining it for three or four hours, it is possible to save the life of an animal to which a poisonous dose of strychnine has been administered.—*Id.*

M. Philipeaux has been repeating his curious experiments on the regeneration of limbs. In October last he operated on several specimens of that singular reptile the Mexican Axolotl. From one-half of the animals experimented on he removed the fore-limb completely, excising the shoulder-blade as well as the "extremity" attached to it. From the remainder of the specimens he merely nipped off the limb below the head of the bone, which was left undisturbed. Eight months have now elapsed since the experiments, and the following are the results:—In the first batch the wound has healed up, but no regeneration has taken place. In the second perfect limbs have appeared. These facts are another proof of M. Philipeaux's theory, that regeneration of the limbs depends on the presence of the basilar portion, shoulder-blade or hip-joint as the case may be.—*Educational Times.*

NECROLOGICAL INTELLIGENCE.

—It is with extreme regret that we have to record the death of Sir Frederick Bruce, British Minister at Washington, which occurred rather suddenly at Boston on the 19th September. Sir Frederick Bruce was the third son of the seventh Earl of Elgin, and brother to the Governor-General of the same name. He had at the time of his death attained to his fifty-second year; and, with few interruptions, had continued to discharge the functions of a diplomatic agent in various parts of the world since 1842, when he had first accompanied Lord Ashburton to Washington. He was appointed Colonial Secretary at Hong Kong in 1844; Lieutenant-Governor of Newfoundland in 1846; Consul-General in Bolivia during 1847; Chargé d'Affaires at Montevideo in 1851;

Diplomatic Agent in Egypt in 1853; Secretary to Lord Elgin in China in 1857; Envoy to China in 1858; Superintendent of Commerce in China in 1859, and Minister to Washington in 1865. His long and meritorious services had earned for him the civil title of Commander of the Bath, which was conferred on his return from China with the treaty in 1858, and, in 1862, the further distinction of K O B. An able diplomatist, his firm but forbearing conduct had enabled him to maintain amicable relations with the Government to which he was accredited throughout the most embarrassing complications.

—Professor Michael Faraday, the great authority for many years in the world of chemical science, was born in 1794, and was therefore seventy-three years old at the time of his death. He was the son of a poor blacksmith, and was apprenticed to the book-making business, at which he worked till he was twenty-two years of age. Even then he had made an electrical machine, and given other evidences of the bent of his genius. Through a friend he was enabled to attend some of the lectures of Sir Humphrey Davy, and a note to the latter was the means of procuring him a situation in his laboratory. He attended Davy on a travelling tour as his Secretary, and ultimately rose to a professorship. Prof. Faraday's experiments and profound observations have long had a world-wide celebrity. His investigations, particularly into the nature of heat, light, magnetism, and electricity, have been considered of the utmost importance. The University of Oxford made him a Doctor of Laws in 1832, and many other learned bodies recognized his merits. In private life, he was greatly beloved for the simplicity and kindness of his disposition and his character for integrity.—*Exchange.*

—Mr. Joseph Dennis was one of the earliest settlers in Upper Canada, having come here in 1792, when he was three years of age. His father, the late Mr. John Dennis, in common with many others of that sterling band known as the "United Empire Loyalists," suffered much in consequence of persecution at the hands of the Americans after the war of the revolution. His estates, now of immense value, were confiscated, and himself and family obliged to leave the country. He first settled on the Humber, and while there the seat of Government was moved over from Niagara to York—the latter place being then represented by an old fort and some two or three trading houses. Having been a ship-builder he was employed to superintend the building of some vessels for the government. Among others, he built at the Humber, one christened *The Toronto*, a yacht of some 60 or 70 tons, for Governor Simcoe. There are those now living who well remember this vessel, with her raking masts and beautiful model—no expense having been spared either in building or fitting her out—as she lay during the intervals of her cruises, anchored at her usual ground then opposite the village, now about abreast of where Crawford's spice factory stands. In those days the supplies had to be brought from Niagara, and it used to be hinted that the best time ever made by the beautiful vessel with her crew of eight men and two officers, was when sent across to Niagara for a few pounds of fresh butter for the Governor's table. Mr. Joseph Dennis served during the war of 1812, and was a prisoner in the States for some months till exchanged. After the war he turned his attention to trade on Lake Ontario, then ship-building, and finally retired from active business altogether, down upon the family property on the Humber about the year 1830, where he died at the ripe old age of 78. Mr. Dennis, whether as a magistrate or in his private relations, was of unblemished integrity and uprightness of character, and was respected accordingly. He was father of Brigade-Major Dennis, of this city.—*Exchange.*

The cable despatches mention the death of Sir Archibald Allison, the eminent historian, in the seventy-fifth year of his age. He was born in England of Scottish parents, and was educated at the University of Edinburgh where he had the advantage of studying under Leitch Stewart and other professors who then made that seat of learning so celebrated. He was called to the Scottish Bar in 1814, and was deputy-advocate during the Duke of Wellington's administration. Between 1830 and 1834 he wrote the work on "Criminal Law," which now bears such a high reputation in Europe and America. In 1834 he was appointed Sheriff of Lanarkshire by Sir Robert Peel, and in 1852 he was created a Baronet by Earl Derby. Previous to this he had been Lord Rector of Marischal College, Aberdeen, and of the University of Glasgow. Sir Archibald's chief work, "The History of Europe from the Commencement of the French Revolution to the battle of Waterloo," has been translated into three or four foreign languages, and has spread his fame as a historian throughout the world.—*Leader.*

MISCELLANEOUS INTELLIGENCE.

The Select Committee of the House of Commons appointed to consider and report on the advisability of making purchases from the Paris Exhibition, for the benefit of Schools of Science and Art in the United Kingdom, and any other means of making that Exhibition useful to the manufacturing industry of Great Britain and Ireland, report that—1. They are of opinion that it is desirable that purchases should be made at the Paris Exhibition of objects of art and science, especially of such as illustrate modern scientific inventions and discoveries, and the application of art to manufactures and that the exhibition of such objects in the museum of South

Kensington, and, by circulation, in local museums in different parts of the United Kingdom, would be useful to the manufacturing industry of the country, and for the artistic and scientific instruction of the schools in connection with the Science and Art Department. 2. That, as one of the principal objects of such purchases should be to show the progress made by other nations in manufactures, and in the application of art and science to practical purposes, examples of foreign origin should, in the first place, be secured in preference to those of British production. 3. That it is not desirable that pictures and modern statuary sculpture should be purchased. 4. That considering the importance of such purchases to the development of the manufactures and trades of the United Kingdom, they recommend that a liberal grant be asked from Parliament for the purpose of making them. They have not sufficient data before them to enable them to suggest the sum which might be advantageously expended, but they consider that under no circumstances should it exceed 25,000*l.* 5. Lastly, they are of opinion that no objects should be purchased at the Paris Exhibition, except such as shall be recommended by a commission consisting of gentlemen distinguished for their artistic and scientific attainments, who should consult with the two Art referees attached to the Department of Science and Art, and other competent persons. They further think it desirable that the referees should furnish written reports upon the objects recommended by them for purchase. — *Educational Times.*

— It is stated in *Cosmos* that the Californian opals are found in ancient decomposed lavas, and that the matrix of the gem is saturated with water, and the opals themselves soft enough to break between the fingers when first dug. Exposure to the sun for several days hardens them and brings out their lustre. The best are enveloped in a ferruginous crust, while those which are white and of feeble colour are without this covering. — *Intellectual Observer.*

OPENING OF NAVIGATION.

We have been favoured by Mr. Healy with the following interesting extract from the Log of the Quebec Observatory, relating to the opening of navigation, during the last twelve years:—

| Year. | River ice broke up. | First ship. |
|-----------|---------------------|-------------|
| 1855..... | 4th May..... | 6th May. |
| 1856..... | No bridge..... | 28th April. |
| 1857..... | 23rd April..... | 21st April. |
| 1858..... | No bridge..... | |
| 1859..... | 18th April..... | 28th April. |
| 1860..... | No bridge..... | 28th April. |
| 1861..... | "..... | 22nd April. |
| 1862..... | "..... | 22nd April. |
| 1863..... | 29th April..... | 3rd May. |
| 1864..... | No bridge..... | 24th April. |
| 1865..... | 15th April..... | 29th April. |
| 1866..... | 15th April..... | 28th April. |
| 1867..... | 1st May..... | 1st May. |

— *Quebec Gazette.*

— The Oriflamme (auri flamme, was already more than four hundred years old when it became the royal banner of France. King Dagobert, A. D. 630, gave a flag to the Abbott and Couvent of St. Denis. The spear which bore the flag was covered over with gold or copper gilt, and the flag itself was without device, long and narrow, ending in three swallow tails, and of a bright scarlet color. The color typified the blood of the martyrs, especially of St. Denis, to whose honor the flag was consecrated. This was the Oriflamme, the distinguishing flag of the Abbots of St. Denis, who, as *ex-officio* Barons of Vexin, caused it to be borne at the head of their vassals when rendering military service in the field. When Louis le Gros became possessed of the Barony of Vexin, he promised the Abbot to adopt the Oriflamme for the royal standard. It first appeared at the head of the French armies in 1124. In 1147 Louis VII took it from its resting-place over the altar of St. Denis, for the purpose of leading with it his immense army, then about to set forth on the second crusade. The last time mention is made of it as the Oriflamme is in the history of the battle of Agincourt. Among the heaps of the best of French chivalry who "larded the plain," was Guillaume Martel, the Oriflamme-bearer. The chronicles give no account of the manner of his death, but it may surely be concluded that he died like most valiant gentlemen in defence of his sacred trust. Since that eventful day the Oriflamme ceased to be borne in the French armies. It remained in the Tower of London till the year 1841, when it was unfortunately burnt in the fire which consumed so many of the national trophies of England. — *Exchange.*

— An earthquake and volcanic disturbance, similar to those at Santorin, have occurred in the two islands of Tercera and Graciosa, off the Portuguese coast. On the night of the 1st of June a volcano rose from the sea about nine miles north of Serrata, and has since been in a state of great activity. It has thrown up enormous masses of stone and lava, and has formed a new island, which is likely to be dangerous to navigation. Sulphur and other vapours are emitted in large quantity. The boats have not been able to approach the new deposit, because of its

incandescence and the dangerous character of the volcanic emanations. M. Saint-Claire Deville has asked the French Academy to appoint some geologist to inquire into and report upon the facts, as in the case of the Santorin volcano.

The Scientific Association of France, established by the Imperial Astronomer, M. Le Verrier, and the meetings of which are held at the Observatory of Paris, has rapidly grown into importance. It appears by a report just issued, that it has already applied the sum of 78,000 fr. in aid of important scientific experiments, and has, moreover, made a reserve of 17,000 fr. for the general purposes of the Association. The association now announces its intention of publishing its *Bulletin* weekly instead of monthly, as at present, and including in it notices of all scientific discoveries, accounts of new inventions, criticisms on scientific and other works, &c., and has issued the first number of the new series. — *Id.*

On Monday last, a little son of Mr. Archibald Crozier, of the township of Saltfleet, aged 11 years, while strolling through a field, disturbed a nest of humble-bees in the ground, and was attacked by the spiteful occupants with great fury. The lad received one sting in the back of the neck, just below the occipital bone, the effect of which was a rapid swelling and severe inflammation, which gradually extended over a greater part of the body, causing intense suffering. The attentions of skilful physicians were bestowed in vain, and the victim expired yesterday, after enduring great agony for twenty-four hours. Evidently the sting of the bee had been inserted in some extremely sensitive part of the body, and the effects pervaded the whole system, finally reaching a vital point. — *Hamilton Times.*

— The skeleton of Pharaoh Mykerimus, who reigned in Egypt before Abraham was born, is in the British Museum, encased in its original burial robes.

— The *Journal de Frankford* publishes the following:—A certificate of studies has been communicated to us, which was delivered at the expiration of the half-year 1821-22 to the future Emperor Napoleon III; who was at the time in the 5th class of the College of Sainte-Anne, at Augsburg. The document is as follows:—"No. 21 Prince Charles Louis Napoleon, son of the Duke de Sain-Leu, of Rome; born at Paris; belonging to the Catholic religion; aged 14 years and five months; gifted with many good qualities, in the development of which he had laboured with much zeal, so that he has made good advancement in the German language, in Latin, and in arithmetic, and pretty good in Greek and in history—in general, therefore, considerable progress. His quiet manner towards his fellow pupils is deserving of praise, as also the respect and gratefulness with which he has accepted even disagreeable tasks. He has the 4th place; the difficulties of the German language, of which he is not yet master, have prevented him from obtaining a higher rank. Besides, he is publicly commended, and he can pass into a superior class." The certificate for the preceding six months says:—"This pupil possesses an ardent feeling for all that is elevated, good, and beautiful; he would have made great progress if illness had not, on several occasions, prevented him from attending the class. — *Exchange.*

ADVERTISEMENTS

MCGILL NORMAL SCHOOL, MONTREAL.

The Classes in this school are now open; but teachers in training can still be received on passing the necessary entrance examination. Tuition and use of text-books are free to teachers in training, and aids towards board are given to those not resident in Montreal.

The Annual Announcement of the School, stating conditions of admission, &c., may be obtained by application, post-paid, to the undersigned.

W. C. BAYNES, B.A.,
Secretary.

MCGILL UNIVERSITY, MONTREAL.

FACULTY OF ARTS.

The Classes in this Faculty will commence on Monday, September 16th. Copies of the Calendar, containing all necessary information, may be obtained of the undersigned on application, post paid.

W. C. BAYNES, B.A.,
Secretary, McGill University.

McGill College, 5th September, 1867.

ESÈRE SÉNÉCAL, *Galeric Printing Presses*, 10, St. Vincent Street, Montreal.