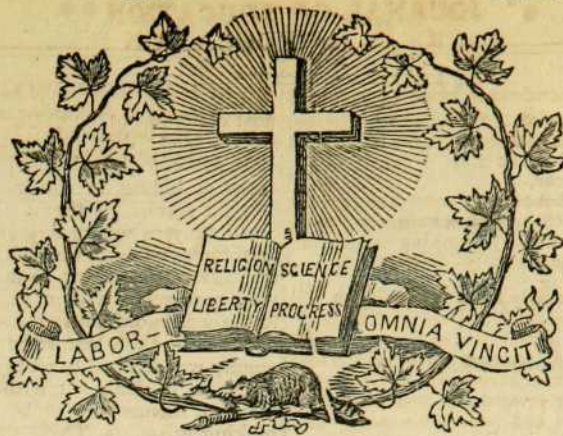




JOURNAL OF EDUCATION.

Volume VIII.

Montreal (Lower Canada), September & October, 1864.

Nos. 9 & 10.

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LITERATURE.

POETRY.

(Written for the *Journal of Education*.)

Our Woods in Early Autumn.

By MRS. LEPROHON.

I have passed the day mid the forest gay
In its gorgeous autumn dyes,
Its tints as bright and as fair to the sight
As the hues of our sunset skies,
And the sun's glad rays veiled by golden haze
Streamed down neath its arches grand,
And with magic power made scene and hour
Like a dream of Faerie Land.

The emerald sheen of the Maple green
Is now turned to deep rich red,
And the boughs entwine with the crimson vine
That is climbing overhead,
Whilst like golden sheaves, the broad saffron leaves
Of the Sycamore strew the ground,
Neath Birches old, clad in shimmering gold,
Or the Ash with red berries crowned.

Stately and tall—towering o'er all
Stands the Poplar, proud and lone,
Every silvery leaf in restless grief
Mourning o'er the summer flown,
Whilst each Oak and Elm of the sylvan realm
In brilliant garb arrayed,
Seem together to vie, though it be to die,
In beauty of colour and shade.

When wearied the gaze with the vivid blaze
Of rich tints before it spread,
Gay orange and gold with shades untold
Of glowing carmine and red,
It can turn mid the scene to the sombre green
Of the Fir, the Hemlock and Pine,
Ever keeping their hue and their freshness too
Mid the season's swift decline.

Though the bird's sweet song that the summer long
Hath thrilled melodious and clear,
Through the cool dim shades of our forest glades,
No longer entrances the ear,
As witching a spell that will charm as well
As his glad notes may be found
In the solemn hush, or the leaves' soft rush,
As they thickly fall to the ground.

Vainly they tell of bright Summer's farewell,
Or of coming decay and doom,
Of stormy wild cloud—of cold snowy shroud,
Of approaching winter's gloom,
The heart must yield to the charms that wield
Alike tender, soothing, gay,
The beauties that gleam and that reign supreme
In our woods of an autumn day.

WHAT DO WE LIVE FOR?

JENNIE E. HAIGHT.

What do we live for?
Is labor so lowly,
Toil so ignoble, we shrink from its stain?
Think it not—labor
Is Godlike and holy;
He that is idle is living in vain.

What do we live for?
Creation is groaning,
Her desolate places are yet to be built;
The voice of the years
Swell deeper the moaning,
As time rolls along the dark tide of guilt.

What do we live for?
The question is sounding
Low in the silence, and loud in the din,
And to each heart-ear,
With warm pulses bounding,
Answers come thronging, without and within.

What do we live for?
We live to be waging
Battle, unceasing, with indwelling sin;
We live to fight on,
In conflict engaging
Temptations without, and passions within.

What do we live for?
To sow, by all waters,
Fruit-bearing seeds of deeds for all years;
To toil in the ranks
With earth's sons and daughters,
Manfully striving with doubtings and fears.

What do we live for?
We live not to rust out,
Slothfully standing aloof from the strife;
A thousand times better,
More noble, to wear out,
Battered and burned in the hot forge of life.

WHIP-POOR-WILL.

ALEXANDER M'LACHLAN.

There is a lonely spirit
Which wanders thro' the wood,
And tells its mournful story
In every solitude;
It comes abroad at eventide
And bangs beside the rill,
And murmurs to the ear of night
"Whip-poor-will."

Oh 'tis a hapless spirit
In likeness of a bird,
A grief that cannot utter
Another woeful word,
A soul that seeks for sympathy,
A woe that won't be still,
A wandering sorrow murmuring
"Whip-poor-will."

CANADIAN HISTORY.

The Fort George Massacre.

(Continued.)

Having given vent to my feelings of compassion, and having solaced an unfortunate, I hastened to get my own little party on board of the boats, which was done instantly. The distance was short: two hours were sufficient to get to the end of our journey. The tent of the Chevalier de Lévi stood at the entrance to the camp. I took the liberty to pay my respects to this personage, whose name is synonymous with merit, and who is still better than his name. The conversation turned on the circumstance which had saved the life of the five English prisoners, whose perilous adventure I have just related. I was far from knowing the details, which are indeed startling, viz.: M. De Corbessé, a French colonial officer, had been ordered the night previous to cruise on Lake St. Sacrement. His detachment consisted of about fifty French and a little over three hundred savages. At dawn of day, he discovered, in boats, a detachment of three hundred English. These boats, being more lofty and stronger in build than birch canoes, more than compensated the superiority we had over them in numbers. Our men did not hesitate to attack them, and the enemy at first seemed ready to fight, but this resolve did not last. The French and savages, whose only chance of victory rested in their boarding the boats, and who fought at a disadvantage, being at a distance, closed in, in spite of the heavy fire poured on them. The British no sooner saw them drawing near, than terror disarmed them. It was not a fight: 'twas a rout. Of all alternatives, the

most dangerous, though the less honorable, was for the English to seek to land: they chose it. They made their way towards the shore accordingly. Some jumped in the water to swim ashore, in hopes of hiding in the woods: a bad plan, the folly of which brought sorrow on them. However swift their boats might be, could they expect to beat the birch canoes which fly through the liquid element with the swiftness of an arrow? Soon did the French and savages catch up to them. In the first heat of the fight all were massacred without quarter—torn to pieces. Those who took to the woods did not fare better. An Indian in the woods is in his own element; he can run through them as nimbly as a deer. The enemy was hacked to pieces. At last the Outaouacks, seeing that they had to deal, not with fighting men, but with beings who allowed themselves to be slaughtered without resisting, set to making prisoners. There were 157 prisoners taken and 131 killed; twelve only escaped captivity and death. The boats, equipments, provisions, all were taken and plundered. No doubt you fancy that such a victory cost us dear. The fight took place on the water, that is in an open place, where no ambush could be laid. The enemy had time to prepare; he had the advantage of attacking from boats with lofty sides, frail bark canoes which a little skill or coolness would have sunk with their crews. Well, this is all true, and still this success only cost us one Indian, disabled by a shot in the wrist.

Such was the fate of the British under the unfortunate Mr. Copperel, who, it was thought, was drowned. The English speak of this engagement in terms denoting as much sorrow as surprise at its results. They frankly admit the extent of their losses; it would, indeed, be difficult to deny the slightest detail: the corpses of their men floating on the waters of the lake or strewn its beaches, tell the fearful tale. As to those made prisoners, the greater portion are still in the dungeons of M. Le Chevalier de Lévi. I saw them flying off in detachments escorted by the victors, who, barbarously occupied with their triumph, thought little of softening the pangs of a defeat. In the space of a league which I had to walk before joining my Abenakis Indians, I met several small squads of these prisoners. More than one Indian stopped to exhibit to me, with pride, his capture, expecting I would applaud his success. The love of country certainly did not make me insensible to a triumph favorable to our nation. But misfortune commands respect, not only on behalf of religion, but even from nature. Moreover, these prisoners seemed in such a plight; their eyes swimming in tears, their faces covered with perspiration and blood, and a halter round their necks: in presence of such a spectacle, compassion and humanity asserted their rights. The rum, which the savages had freely imbibed, had gone to their heads and increased their natural ferocity. I feared to witness every minute, some of the prisoners slaughtered and falling at my feet, victims of cruelty and drunkenness; I scarcely dared to look up for fear of meeting the sorrowful glance of some captive. A spectacle more horrible than what I had yet seen was soon to take place.

My tent had been pitched in the centre of the Outaouack camp. The first thing I noticed on arriving there was a large fire: wooden stakes, stuck in the earth, announced a feast. It was one, but, good heavens! what a feast: the remains of an Englishman's corpse cut up and half eaten. I saw these fiends a short time after greedily devouring a human creature: they were helping themselves from the pot with large ladles to the reeking flesh as if they could never swallow enough. I heard that they had prepared themselves to this feed, by drinking brimful, out of the skulls, human blood; their smeared faces and gory lips confirmed the statement. What was still more awful, they had placed, close by, ten English prisoners to witness the abominable repast! The Outaouack nation resembles that of the Abenakis; I thought that by gently rebuking them for this act, I might make some impression on their mind. I erred: a young warrior said, "You speak and act like a Frenchman, but I am an Indian, human flesh is good for me." He then handed me a baked fragment cut from the English corpse. To his words I made no reply, but his offer I rejected with visible horror. Convinced, by what I had just witnessed, that I could do nothing to alter the state of things in respect to the dead, I thought I would see what I could do for those still living, whose fate was much more to be pitied. I walked up to the English, one of whom attracted my notice; by his uniform I saw he was an officer; I resolved to purchase him, and thereby save his life and liberty. I made up, with this object in view, to an old Outaouack, thinking that the ice of age would have tempered his ferocity, and that he would be more manageable; I extended my hand to him, bowing civilly at the same moment. It was not a man I had to deal with; it was a being even more ferocious than a wild beast, as wild animals often yield to kind-

ness. "No," he thundered out, in accents which might have awed me, had my heart, in that moment, been susceptible to harbour any other feeling but that of compassion and horror, "No! I do not want your friendship; *avaunt!*" I did not wait for a repetition of the threat. I withdrew to my tent, to brood over the thoughts which religion and humanity can inspire on such an occasion. It did not occur to me as necessary to dissuade my Abenakis Indians from committing such horrible excesses. However powerful example may be with all men in matters of customs and habits, they were incapable of perpetrating such acts; even before they were christianized, they never were cannibals. Their humane and tractable disposition, at that period, distinguished them from the greatest portion of the Indians of this continent. These thoughts kept me awake a considerable portion of the night.

Next morning, on rising, I had hoped no vestige would remain round my tent of the repast of the preceding day. I flattered myself that the fumes of rum and the fierce feelings they engender, having been dissipated, calmness and humanity would again return. I knew not the Outaouck's character and disposition. It was as a luxury, a *bonne bouche*, that they had banqueted on human flesh. At the dawn of day, their execrable repast had been resumed; they were only waiting for the moment to set to and devour the last remains of the English corpse. I have already said that we were three missionaries attached to this mission. During the entire campaign, we lodged, thought, and acted together on all points; this community of feelings rendered our duties more bearable during the fatigues of warfare. We came to the conclusion that it would not be proper to celebrate our holy mysteries in the head-quarters of barbarism, inasmuch as these superstitious tribes might use the holy vases to assist them in, and to decorate their juggleries. For this reason we left a spot polluted by so many abominations, and dived into the depths of the forest. This could not be effected, however, without separating myself a little from my Abenakis. It had, however, to be done. This step was in the end productive of regret, as you will see by the sequel. I had not been long in my new abode before I witnessed with what new fervor my neophytes drew towards the tribunal of repentance.

Whilst many of my Abenakis sought the succour of religion, others strived to irritate Heaven, and by their acts to call down punishment from above. Ardent spirits are the favorite drink, the universal passion of the savage tribes, and unfortunately, despite of laws human and divine, too many furnish them with this curse. Unquestionably however the missionary, by his character, by the influence he exerts, prevents much disorderly conduct. I lived close to my flock, a small wood alone intervening. I could not, however, after night-fall visit the encampment, without running the risk of hostile attacks not only on the part of the allies of the English, the Iroquois, who had, a few days previously, scalped one of our grenadiers, but also at the hands of the idolatrous portion of our own savages, to whom experience had taught me not to trust. Some young Abenakis, together with Indians of several tribes, took advantage of my absence and of darkness, to go and steal some ardent spirits from the French tents, whilst the inmates were asleep. Once in possession of the liquor, they used it freely and soon felt its influence. Drunkenness amongst Indians makes itself known seldom by silence, generally by noise. They commenced to sing, to dance, to cry out, and then set to fighting. At the dawn of day, disorder was at its height; I then learned of it and hastened to where trouble existed; alarm and confusion everywhere—caused by intoxication. My Indians soon were calmed. I took each of them by the hand in succession and conducted them to their tents, bidding them to lie down. This scandalous scene seemed ended, when a Moravian Indian, naturalized amongst the Abenakis and adopted by the tribe, re-enacted it in a still more serious manner. After having had words with a drunken comrade, an Iroquois, they came to blows. The first, a more powerful man, having thrown his opponent, was belaboring him unmercifully, and what was worse, lacerating his shoulder with his teeth. The combat was at its height when I drew near them. I could only use my own strength to separate them. Indians fear one another too much to interfere, no matter for what reason, into one another's quarrels. I was unable to cope with them, and the victor was too infuriated to quit his victim so readily. I was tempted to leave these demons chastise one another for their own excesses, but I feared the death of one of them would be the *finale*. I increased my efforts; by dint of pulling at the Abenakis, he felt some one shaking him; turning his head round: he had trouble in recognizing me; he was still excited, but gradually became calm, when he allowed the Iroquois liberty to escape, of which the latter was not slow to avail himself.

[Further on the good missionary relates the

trouble he experienced in preventing his Indians from blowing up the boats containing the powder, a feat they had undertaken for mere amusement's sake.]

The forced inactivity of our Christian Indians, together with the presence of so many idolatrous nations, made me tremble, not for the sake of religion itself, but on account of their future conduct. I longed for the day when the preparations for the expedition would allow us to start. When the mind is engaged the heart is less liable to err. That day at last came, and on the 29th of July the Chevalier de Lévis, with 3,000 men, marched overland to protect the arrival of the army which was to proceed by water conveyance. His march was not accompanied with any of those facilities which high roads in Europe, built with princely magnificence, offer. Impenetrable forests, rugged mountains, slimy bogs, such was the route composed of. Three leagues a day was a good performance; we took five days to travel twelve leagues. These obstacles had been foreseen, and hence why this detachment had, in marching, started a few days before the other. On Sunday we embarked with the Indians, only about 1,200 at that time, the rest having gone by land.

We had scarcely made four or five leagues on the lake before we noticed evident traces of our last victory in the shape of abandoned English boats which, after being buffeted a long while with the winds and tide, had floated ashore on the beach. The most striking spectacle was a tolerable large quantity of English corpses strewn the shore or scattered here and there in the woods. Some were hacked to pieces, and mostly all were mutilated in a most horrible way. What an awful visitation war then seemed to me! It would have been highly agreeable to me to have the remains of our enemies buried, but we had only landed by accident in this cove. Duty and necessity compelled us to journey on, in conformity with orders; we had to lose no time. It was night when we reached the spot marked out as a camping ground—a locality overrun with wild thorns and alive with rattlesnakes; our Indians brought us several they had caught. This venomous reptile, if ever there was one, has a head much too small in proportion to its body; the skin is sometimes regularly spotted with a dark black and a pale yellow colour. He has no sting, but very sharp teeth, a bright sparkling eye; he carries under his tail several small scales which he can inflate prodigiously, and which he rattles violently one against the other when irritated: hence his name. His virus after being exposed to smoke is a specific against toothache; his flesh when smoked and pulverised is also a good cure for fever. Salt is applied as a cure on the part affected by his bite, which otherwise proves fatal in less than an hour.

The next day about 4 p. m., M. de Montcalm arrived with the remainder of the forces; we had to start in spite of the rain which fell in torrents; we marched on the greater portion of the night until we discovered M. de Lévis' camp, by three fires lighted in a triangle on the crest of the mountain. We halted there; a general council was held; and then we started for Lake George, distant twelve miles. At twelve o'clock, noon, we took to the canoes to ascend, paddling slowly in order to allow the boats bearing our artillery to come up, but they could not do it, and at night they were more than three miles astern. Having arrived at an indenture, the point of which we could not pass without revealing ourselves to the enemy, we resolved, until we received fresh orders, to pass the night there. It was marked by a small incident which was the prelude to the siege.

About eleven, two boats from the fort appeared on the lake; they soon had reason to alter their calm and measured movements. A neighbor of mine, who kept watch for the benefit of all, noticed them at a fair distance. All the Indians were apprised of the fact, and preparations made to receive them, in haste but in silence. I was ordered to seek safety by going ashore and concealing myself in the woods. It was not through mistaken bravery, unsuited to a minister of religion, that I disregarded the mandate. I thought the order was not serious, having reason to doubt the statement about the boats. It was not likely that our lynxeyed enemies had failed to notice the presence, since two days, on the waters of the lake, of our four hundred boats; on this hypothesis I could scarcely persuade myself that two boats would have the foolhardiness to appear in our presence, much less to engage in combat forces so much superior. A friend of mine who had seen all, reprimanded me in strong terms for not being where I ought to be: he was right; a boat tolerably large held all the missionaries; a tent was spread over it to protect them against the inclemency of the weather during the cool nights. This white pavilion, under which we took shelter, was visible at a distance by moonlight, and the English were curious to find out what it was. To come towards us or to run straight to destruction was one and the same thing.

Few could have escaped, if, fortunately for them, a small incident had not warned them a few minutes too soon for the success of our plans. One of the sheep forming part of the army supplies began to bleat; this sound, which presaged an ambuscade, caused the enemy to stop short, face about, and urge on their boats double quick, in order to escape, favored by darkness and the woods.

What then remained to be done? Twelve hundred savages pursued the fugitives, with yells as loud as they were incessant. Both parties seemed to hesitate; not a shot was fired. The assailants not having had time to form regularly, were afraid to fire lest they should hit one another; moreover they wished to make prisoners. The fugitives struggled hard to get away, and were in the act of doing so, when the Indians fired. The British, being too close to the first canoes, returned the fire, and soon an ominous silence succeeded to all the noise. We were hoping for victory, when a pseudo-brave, who was not in the *mêlée*, shouted that the Abanakis Indians had met with severe loss. Immediately, seizing hold of the religious vases wherewith to administer the last rites, I hurriedly jumped into a canoe to get to where the fight had taken place. I was however not wanted, as I learned from another Indian who had been in the thick of it; none of our forces had been struck except a Nipissingue who was killed, and another Indian warrior wounded, whilst boarding the enemy. I did not wait for the end of his narrative, but hastened back to our people, leaving the matter in the hands of the Nipissingue missionary, Mr. Mathaveh. I arrived by water and met M. de Montcalm, who, on hearing the firing, had landed lower down and made his way through the woods; an Abanakis Indian, at my request, related to him what had taken place in a very few words. The darkness of the night prevented the number of dead being known; the enemies' boats had been captured and also three prisoners; the remainder strayed through the forest. M. de Montcalm, pleased with the success, then withdrew to ponder over, with his usual sagacity, the operations of the morrow.

Day had scarcely dawned, when the warriors of the Nipissingue nation present, proceeded with the funeral of their dead warrior (a pagan) killed in the engagement of the previous night.

The funeral was accompanied with all the pomp and show customary with savages. The body was decked out, or rather completely covered, with all the grotesque ornaments which vanity could devise for such a melancholy occasion; porcelain necklace, silver bracelets, rings in the ears and nose, sumptuous dresses, all was brought into requisition; paint and vermilion was resorted to in order to replace, by freshness and appearance of life, the palor of death. The wearing apparel of an Indian warrior was also used;—a fiery red ribbon tied upon his breast; a gorget; his gun rested on his arm; a tomahawk in his girdle; his pipe in his mouth; his lance in his hand; a well-filled can at his side. Thus grandly attired as a warrior, he was seated on a grassy mound as on a couch. Ranged in a circle round this corpse, the Indians observed a solemn silence, as if oppressed with grief. The orator interrupted it by pronouncing the funeral oration on the dead; to this succeeded war songs and dances, with the noise of tambourines and bells for music: a deathlike solemnity, in keeping with the occasion, reigned throughout. The pageant ended by the burial of the Indian warrior with a large quantity of eatables deposited in the grave, no doubt to prevent the possibility of his dying a second time for want of food. I cannot, as to this ceremony, speak as an eye witness; the presence of a missionary would indeed be out of place at a pageant dictated by superstition and adopted by stupid credulity. I had these facts from spectators.

Fort George was a square, flanked by four bastions, with outer works and ditches eighteen to twenty feet deep; the scarp and counter scarp were sloped with moving sand; the walls consisted of large pine trunks supported by massive stakes, about fifteen to eighteen feet high, the interstices filled up solidly with sand. Four or five hundred men, with nineteen cannon, defended it. Two or three of these were thirty-six pounders, the others were of smaller calibre; there were also four or five mortars. The place was protected by no other external works than a fortified rock, surrounded by a palisade and piles of stone, the garrison of which consisted of 1700 men, which constantly sent reinforcements to the fort itself. The chief strength of this entrenchment consisted in its peculiar position, which commanded all surrounding objects, and which, on account of the mountains and swamps in its neighborhood, could only be attacked with artillery from the fort. Such was Fort George from what I saw and heard of it after its capitulation. It was impossible to invest and attack it on all sides. 6,000 French or Canadians and 1700 savages, our whole strength, were not enough to compass its surrender with any degree of success. 20,000 men would scarcely have sufficed. The enemy had always a kind of

back door, whereby they could retreat to the forest—a good plan—had they to evade enemies which were not Indians; but from such escape under cover of the woods is more than hazardous. The Indian warriors were encamped on the Lydis road, so close to the woods and in such numbers that this plan of evasion could scarcely avail them. On the heights of the land close by and within hail, were located the Canadians. Lastly, the French regulars—to whom, properly speaking, were confided the siege operations—were disposed on the edge of the wood, close to where the trench would open; then came the reserve camp, sufficiently strong to ward off assault.—*Maple Leaves.*

(To be concluded in our next.)

SCIENCE.

Leaves from Gosse's Romance of Natural History.

(Continued.)

DISCREPANCIES.

The researches of Sars, MacAndrew, and others, in the Norwegian seas, and those of Edward Forbes in the *Ægean*, have shewn that mollusca exist under two hundred fathoms of water. Dead shells, indeed, are continually dredged from far greater depths; but these may have been voided by the many fishes which feed on mollusca, and would, of course, fall to the bottom, whatever the depth of the sea in which the fish might happen to be swimming. *Dentalium entale*, *Leda pygmaea*, and *Cryptodon flexuosus* have been taken alive in the northern seas at two hundred fathoms' depth: in the *Ægean* Sea, *Kellia abyssicola* and *Nearea cuspidata*, two little bivalves, were dredged, the former in one hundred and eighty, the latter in one hundred and eighty-five fathoms; and *Arca imbricata* in two hundred and thirty fathoms.

Nor is the power of sustaining life at such immense depths confined to the molluscan tribes; zoophytes rival them in this respect. Great tree-like corals, *Primnoa* and *Oculina*, spring from the bottom-rocks, to which they are affixed, at a depth of a hundred fathoms and upwards: the magnificent *Ulocyathus arcticus*, a free coral, recently discovered by Sars, lives on the mud at two hundred fathoms; *Bolocera Tuedia*, *Tealia digitata*, and *Peachia Boeckii*, soft-bodied sea-anemones, reach to the same depth, while other species of the same race,—*Capnea sanguinea* and *Actinopsis flava* live at the amazing depth of from two hundred and fifty to three hundred fathoms.

It has been observed that the shells of mollusca which inhabit very deep water are almost entirely devoid of positive colour, and this has been supposed to be the inevitable result of the darkness in which they live; for it is assumed that all or nearly all the sun's light must be absorbed by so vast a mass of water. But yet most of these zoophytes are highly-coloured animals,—the *Actinopsis* being of a fine yellow, the *Bolocera*, *Tealia*, and *Capnea* of a red more or less intense, and the *Ulocyathus* of the most refulgent scarlet. The pressure of a column of sea-water, from twelve to eighteen hundred feet in height, must be quite inconceivable to us; and we are at a loss to imagine how the corporeal tissues can sustain it, and how the vital functions can be carried on. Yet the presence of these creatures implies the presence of others. The mollusca are mostly feeders on *infusoria* and *diatomacea*; therefore these minute animalcules and plants must habitually live there. The zoophytes are all carnivorous, and being all stationary, or nearly so, the prey on which they feed must be abundant there in proportion to their requirements. Perhaps this may partly consist of the mollusca; but it is highly probable that *crustacea* and *annelida* likewise abound. One species of the former class has, indeed, been discovered in the profound sea. A small kind of lobster, named *Calocaris Macandrewi*, about as large as a small prawn, was dredged by Mr. MacAndrew, (after whom it has been named,) in the Scottish seas, at a depth of one hundred and eighty fathoms.

Who would expect to find the expanse of everlasting snow in the Arctic regions, and at the summits of the Alps, the seat of abundant life, whether vegetable or animal? Yet such is the fact. Ross observed, in Baffin's Bay, a range of cliffs covered with snow which was tinged with a brilliant crimson colour for an extent of eight miles, the hue penetrating from the surface down to the very

rock, a depth of twelve feet. The same phenomenon has been observed in other parts of the Polar regions, on the glaciers of the Alps, and in other similar circumstances. Scientific investigation has proved this colour to be caused by the excessive abundance of minute organisms, mostly vegetable, of a very simple character, in the form, according to Dr. Greville, of a gelatinous layer, on which rest a vast number of minute globules, resembling, in brilliance and colour, fine garnets. Professor Agassiz, however, maintains that these globules are not vegetables, but the eggs of a minute though highly-organised animal, one of the *Rotifera*, named *Philodina roseola*, which animal he found in abundance, with the globules, in the glacier of the Aar. Other minute animals were also found in the snow.

In Canada I have found, in the depth of winter, living and active insects on the surface of the snow, which are seen nowhere else, and at no other season. Little hopping atoms, of singular structure, adapted to a mode of progression peculiarly their own, dance about on the unsullied bosom of the new-fallen snow. They belong to the genus *Podura*, and are distinguished by having at the extremity of their body two long, stiff bristles, ordinarily bent up under the belly, but which, at the pleasure of the insect, fly out straight with great force, and thus jerk it into the air, on the principle of a child's toy-frog. Other curious species,—two in particular, both belonging to winged families, yet both without wings, the one a sort of wingless gnat, the other something like a flea, but really one of the *Panorpade*.—I have found numerous in similar circumstances, and in no other.

As a curious incident, not altogether out of place in this connexion, though the parallelism of the cases is more apparent than real, we may notice the trees which Mr. Atkinson found growing, under very unusual circumstances, in the Valley of the Black Irkout, in Eastern Siberia, a romantic gorge, whose precipitous sides are formed of different marbles—one white, with deep purple spots and small veins, another a rich yellow kind, equal, if not superior, to the best Sienna, but wholly untouched by man. "We reached," he says, "a part of the ravine filled with snow and ice, where large poplars were growing, with only their tops above the icy mass; the branches were in full leaf, although the trunks were imbedded in the snow and ice to a depth of twenty-five feet. I dismounted, examined several, and found that there was a space around the stem, nine inches wide, filled with water, the only parts that appeared to be thawing. I have often seen flowers penetrating a thin bed of snow, but this was the first time I had found trees growing under such circumstances."

The burning, sandy deserts of Arabia and Africa seem at first sight to be utterly without organic life, and doubtless they are the most barren of all regions. But even there both animals and vegetables do exist. Several sorts of hard, thorny shrubs are scattered over the dreary waste, the chief of which is the *Hedysarum* of the Sahara, a plant about eighteen inches high, which is green throughout the year; it grows absolutely out of the arid sand, and is eagerly cropped by the camels of the caravans. There are also beetles, which burrow in the sand; and nimble lizards which shine, as they bask in the burning sun, like burnished brass, and bury themselves on being alarmed. The lizards probably live upon the beetles; but what the beetles live upon is not so clear.

The enormous plains of South Africa, called karroos, though not so absolutely barren wastes as the Sahara, are still great wildernesses of sand, exposed to periodical droughts of long duration. These regions are occupied by a most singular type of vegetation; fleshy, distorted, shapeless, and often leafless, tribes of euphorbias, stapelias, mesembryanthemums, crassulas, aloes, and similar succulent plants, maintain their hold of the sandy soil by the weak support of a single wiry root, and are fed rather by the dews of heaven than by the moisture of the soil. During the rainless months of the dry seasons, these plains are scarcely less arid than the sandy desert of the north; yet even then there are reservoirs beneath the surface. Livingstone speaks of a certain plant, named *leroshua*, which is a blessing to the inhabitants of this desert. "We see a small plant with linear leaves, and a stalk not thicker than a crow's quill; on digging down a foot or eighteen inches beneath, we come to a tuber, often as large as the head of a young child; when the rind is removed, we find it to be a mass of cellular tissue, filled with fluid much like that in a young turnip. Owing to the depth beneath the soil at which it is found, it is generally deliciously cool and refreshing. Another kind, named *mokuri*, is seen in other parts of the country, where long-continued heat parches the soil. This plant is a herbaceous creeper, and deposits underground a number of tubers, some as large as a man's head, at spots in a circle a yard or more, horizontally, from the stem. The natives strike the ground on the circumference of the circle with stones,

till, by hearing a difference of sound, they know the water-bearing tuber to be beneath. They then dig down a foot or so, and find it."

There are deserts on the Pacific coast of South America as horribly barren as any in Africa or Asia, if not so extensive. One of these is described by Mr. Darwin, who was all day riding across it, as "a complete and utter desert."

"The road," he says, "was strewn with the bones and dried skins of the many beasts of burden which had perished on it from fatigue. Excepting the *Vultur aura*, which preys on the carcasses, I saw neither bird, quadruped, reptile, nor insect. On the coast-mountains, at the height of about 2000 feet, where during this season the clouds generally hang, a very few *Cacti* were growing in the clefts of rock, and the loose sand was strewn over with a lichen, which lies on the surface quite unattached. This plant belongs to the genus *Cladonia*, and somewhat resembles the reindeer lichen. In some parts it was in sufficient quantity to tinge the sand, as seen from a distance, of a pale yellowish colour. Further inland, during the whole ride of fourteen leagues, I saw only one other vegetable production; and that was a most minute yellow lichen, growing on the bones of the dead mules."

The rugged desolation which characterises the interior of the crater of a volcano, even though the fiery torrent which formed it be at the time dormant, seems ill-suited for the smiling beauty of flowers; yet such occasionally exist there.

Sir Thomas Acland, who ascended to the summit of Schneehatten, the lofty volcano of Norway, describes the crater to be broken down on the northern side, surrounded on the others by perpendicular masses of black rock, rising out of, and high above, beds of snow that enveloped their bases. The interior sides of the crater descended in one vast sheet of snow to the bottom, where an icy lake closed the view, at the depth of 1500 feet from the highest ridge. "Almost at the top," he says, "and close to the snow, which had probably but a few days before covered them, were some very delicate and beautiful flowers, in their highest bloom, of the *Ranunculus glacialis*, growing most profusely; nor were they the only inhabitants: mosses, lichens, and a variety of small herbaceous plants were in the same neighbourhood; and, lower down, dwarf-birch, and a species of osier, formed a pretty kind of thicket. The traces of reindeer appeared on the very top-most snow."

The very dust of the air is found to be peopled with living plants and animals, and that where we should least have expected to find it so stocked; nay, where we should scarcely have looked for clouds of dust at all,—far out on the lone ocean, hundreds of miles from land. In Mr. Darwin's voyage, he noticed, as he approached the Cape Verd Islands, this curious phenomenon:—"Generally the atmosphere is hazy; and this is caused by the falling of impalpably fine dust, which was found to have slightly injured the astronomical instruments. The morning before we anchored at Porto Praya, I collected a little packet of this brown-coloured fine dust, which appeared to have been filtered from the wind by the gauze of the vane at the masthead. Mr. Lyell has also given me four packets of dust which fell on a vessel a few hundred miles northward of these islands. Professor Ehrenberg finds that this dust consists, in great part, of *infusoria* with siliceous shields, and of the siliceous tissue of plants. In five little packets which I sent him, he has ascertained no less than sixty-seven different organic forms! The *infusoria*, with the exception of two marine species, are all inhabitants of fresh water. I have found no less than fifteen different accounts of dust having fallen on vessels when far out in the Atlantic. From the direction of the wind whenever it has fallen, and from its having always fallen during those months when the harmattan is known to raise clouds of dust high into the atmosphere, we may feel sure that it all comes from Africa. It is, however, a very singular fact, that, although Professor Ehrenberg knows many species of *infusoria* peculiar to Africa, he finds none of these in the dust which I sent him; on the other hand, he finds in it two species which hitherto he knows as living only in South America. This dust falls in such quantities as to dirty everything on board, and to hurt people's eyes; vessels even have run on shore owing to the obscurity of the atmosphere. It has often fallen on ships when several hundred, and even more than a thousand miles from the coast of Africa, and at points sixteen hundred miles distant in a north and south direction. In some dust which was collected on a vessel three hundred miles from the land, I was much surprised to find particles of stone, about the thousandth of an inch square, mixed with finer matter. After this fact, one need not be surprised at the diffusion of the far lighter and smaller spores of cryptogamic plants."

In all these situations, in which we have seen organic existence

maintained, we must admit that there is nothing actually hostile to life. The snow, the hot sand, the calcined lava, the dust, seem ungenial spheres for living beings, offer but little encouragement to them, as we should have supposed, but are not actually destructive. What shall we say, however, to animals disporting themselves, by myriads, in brine so strong as to contain two pounds of salt to the gallon? A solution so concentrated is sufficient in general to destroy all life. Yet, in the salt-works at Lymington, in Hampshire, the reservoirs of concentrated brine are always peopled by immense numbers of an elegant little animal, quite peculiar to such situations, which sport about in all the enjoyment of existence. The little creature is a sort of shrimp, and is commonly known as the brine shrimp. It is nearly half an inch in length, and is furnished with eleven pairs of leaf-shaped limbs. "There is nothing," says M. Joly, "more elegant than the form of this little crustacean; nothing more graceful than its movements. It swims almost always on its back, and moves rapidly through the element. The feet are in constant motion, and their undulations have a softness difficult to describe." Besides these animals, the brine is inhabited by incalculable multitudes of a microscopic animalcule of a crimson hue, on which the brine-shrimp feeds, and which impart to its translucent body their own roseate colour.

A similar creature, but of another species, distinguished by a broad crescent-shaped shield over the head, inhabits lakes, highly charged with nitre and common salt, in North Africa. The animals are so numerous that they are caught with muslin nets, and dried in the sun in the form of a red paste or cake, which is highly esteemed as an article of food, having the flavour of red herring.

Mr. Darwin found, near Buenos Ayres, a shallow lake of brine, which in summer is converted into a field of snow-white salt. The border of the lake is a fetid, black mud, in which are imbedded large crystals of gypsum, three inches long, and of sulphate of soda. "The mud, in many places, was thrown up by numbers of some kind of worm. How surprising is it that any creatures should be able to exist in brine, and that they should be crawling among crystals of sulphate of soda and lime! And what becomes of these worms when, during the long summer, the surface is hardened into a solid layer of salt?" Exactly similar lakes, similarly peopled occur in Siberia also.

Perhaps even stranger still is the circumstance that fishes—vertebrate animals far higher in the organic scale than shrimps or worms—can subsist, apparently in health, in water sufficiently heated to boil them if dead. Broussonet found, by experiments, that several species of fresh-water fishes lived many days in water so hot that the human hand could not be held in it for a single minute. Saussure found living eels in the hot springs of Aix, in Savoy, in which the temperature is pretty regularly 113 deg. of Fahrenheit. But still more extraordinary are the facts recorded by Humboldt and Bonpland, who saw living fishes, apparently in health and vigour, thrown up from the crater of a volcano in South America, with water and hot vapour that raised the thermometer to 210 deg. Fahrenheit, a heat less, by only two degrees, than that of boiling water.

The same accomplished travellers visited hot springs in Venezuela, the temperature of which was above 194 deg., and which boiled eggs in less than four minutes. The vegetation around seemed to rejoice in the heat, being unusually luxuriant, the mimosas and fig-trees spreading their branches far over the hot water, and actually pushing their roots into it.

(To be continued.)

The Census of Canada for 1861.

(An extract from a paper read before the Literary and Historical Society of Quebec by John Langton Esq. M. A. 2d March 1864.)

Irrespective of the proportions between births and deaths, with regard to which the Census affords us such doubtful data, there are some other sources from which we may obtain an approximation to the natural increase of the population—of Lower Canada especially. The population of French origin is absolutely unaffected by immigration, what change there has been being in the opposite direction, but if we compare the Census of 1852 and 1861, the numbers of French origin in Lower Canada have increased at the average annual rate of 2.651 per cent., irrespective of those who have left the country in the meantime, which is double the rate in Great Britain, and 40 per cent. more than in Norway, which shews the highest natural increase of any European country, and seems to keep up its character as an *officina gentium*. We may even push our researches to a much earlier period. A Census of Canada was

taken with great care just before the conquest. It is frequently referred to in the official correspondence of the day as in progress, but I am not aware that the exact result has been preserved. We have, however, a despatch of Montcalm, of the date, April, 1759, in which he says, that the great Census is at last complete, that he has not as yet seen it, but that it shews a population of 82,000. A Census was again taken by the British authorities in 1765. It was contained in two large folio volumes, preserved in our own library, the first of which was lost in the fire, but the second, which was saved, fortunately contains a recapitulation, shewing the population of the rural districts, exclusive of Quebec and Montreal, to have been 54,275. There is also a note to the effect that including the towns, and making an allowance for the people absent in the woods, the whole population is estimated to be 80,000. This, taken in connection with Montcalm's despatch, appears to afford us a pretty secure basis. Since that time there has been no immigration, except of a few Acadians, whilst there has been a considerable loss to the United States. But if we take the population of French origin in both sections of the Province, we shall have a pretty fair representation, though somewhat understated, of the descendants of the 80,000 Frenchmen who inhabited Canada in 1765. The French Canadians must, therefore, have increased during the 96 years, at least at the rate of 2.53 per annum.

We have also a system of registration in Lower Canada, much more perfect than anything in Upper Canada, although there is still great room for improvement. The Prothonotaries' return for 1861 are much more complete than those for 1860, the year for which the births and deaths are given in the Census. Taking then the returns of 1861, and leaving out of account many of the counties from which no returns have been received, and others which are on the face of them imperfect, leaving out of account, also, Montreal and Quebec, I find forty-one counties with an aggregate population of 626,830, the returns from which appear to be tolerably perfect, and they shew 26,954 baptisms and 9,939 burials, which represent

Births.....	4.300	per cent.	on the population.
Deaths.....	1.586	"	"

Natural Increase.....	2.714	"	"	"
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These numbers, I have no doubt are rather understated for the counties, in consequence of the imperfection of some of the returns, but the greater mortality of the cities will reduce the rate for the whole Province. To approximate to this we may estimate the remaining counties from the forty-one from which we have returns and then add the cities. Upon this principle I have included the towns of Three Rivers and Sherbrooke, amongst the counties, and I have taken the county of Quebec with the city, as they cannot be clearly distinguished in the returns. The result shews, for all Lower Canada,

Births.....	4.034	per cent.
Deaths.....	1.755	"

Natural Increase.....	2.279	"
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With a view of still further testing the subject, I analysed, with great care, the Prothonotaries' returns from 1851 to 1857, inclusive, since which latter date they have not been published. The returns for 1853 are also missing. With the exception of Rimouski, Kamouraska, Ottawa and Pontiac, the returns of the Roman Catholic Clergy seem very perfect, but those of the Protestant denominations, except in the cities, are often wanting, and when they do appear, they are obviously imperfect. I therefore only took the Catholic baptisms and burials, and the Catholic population, leaving out those counties or parishes, from which no returns were given, and rectifying the population to the date of each return by the average annual rate of increase from 1852 to 1861. This calculation, which does not seem liable to any serious objection, gives the following result for the Roman Catholic population of Lower Canada:

COUNTIES FROM WHICH RETURNS WERE RECEIVED.

	Births.	Deaths.	Nat. Increase.
1851.....	4.688	1.738	2.960
1852.....	4.827	1.778	3.049
1854.....	4.411	2.007	2.404
1855.....	4.269	2.037	2.232
1856.....	4.496	1.758	2.738
1857.....	4.256	1.698	2.558
Average.....	4.491	1.836	2.655

QUEBEC AND MONTREAL, INCLUDING COUNTIES.

	Births.	Deaths.	Nat. Increase.
1851.....	5.023	3.566	1.457
1852.....	5.168	3.219	1.951
1854.....	5.435	5.442	
1855.....	5.080	3.234	1.846
1856.....	4.920	3.054	1.866
1857.....	5.066	3.086	1.980
Average.....	5.115	3.600	1.515

ALL LOWER CANADA—assuming the Counties and Parishes from which there are no returns to have the same average rates as other Counties.

	Births.	Deaths.	Nat. Increase.
1851.....	4.736	2.004	2.732
1852.....	4.877	1.988	2.889
1854.....	4.560	2.507	2.053
1855.....	4.395	2.223	2.172
1856.....	4.562	1.959	2.603
1857.....	4.382	1.713	2.469
Average.....	4.585	2.099	2.486

It will be observed that the rate of natural increase, as deduced from 1861, is quite within the limits of the variations in this respect in different years. But making every allowance for the imperfection of the returns of 1861 the smaller rate for both births and deaths in that year is very remarkable. As I before observed, the deaths naturally rise and fall with the births, from the great mortality in infancy, but this nearly constant decrease of births since 1851, seems to point to a large emigration of persons in the prime of life. Nevertheless the rate of increase is very high as compared with other nations, and it is confirmed by the growth of the French population from 1852 to 1861, and during the much longer period since the conquest.

Rate of increase of French from 1765 to 1861.....	2.53 per ann.
Rate of increase of French from 1852 to 1861.....	2.651 per ann.
Rate of increase of Catholics in Counties (mostly French) from 1851 to 1857.....	2.655 per ann.
Rate of increase of Catholics in all Lower Canada from 1851 to 1857.....	2.486 per ann.

The near correspondence of the numbers arrived at by such very different methods, inspires great confidence in their general accuracy, and appears to place Lower Canada amongst the most rapidly increasing nations in the world.

In Upper Canada it is not possible to form any similar conclusion. The clergy are required there also to make returns to the Clerks of the Peace, but very few of them reach the Government. The only county, from which I can find anything approaching to systematic returns, is Haldimand, and they are not perfect enough to serve as the basis for any conclusion, even if a single county were sufficient to yield a trustworthy average. But if we cannot arrive at any such satisfactory result, as in Lower Canada, we may make some comparisons as between the two sections, as far as regards the number of births, which forms one important element of their relative rates of increase. The births, as corrected from the number living under one, according to the Census, do not differ very materially from those shewn in the Prothonotaries' returns. In the 41 counties of Lower Canada, in which we can institute a comparison, the number living under one, called births in the Census, is 23,353, and if we add to it a proportion of the deaths, as before explained, the number becomes 24,653; but as the Prothonotaries' returns relate to a year later than that for which the Census was taken, the whole population, and consequently the births, would have to be increased at the average rate of about $2\frac{1}{2}$ per cent. The numbers, as corrected to the same period, would therefore be 25,279 against 26,954. The main difference is in the deaths, the Prothonotaries' returns giving 9,939 and the Census only 6,498. We may, therefore, for the purpose of comparison between the two sections, take as approximately correct, the births as above deduced from the Census, viz: Upper Canada, 4,031; Lower Canada, 3,892. This greater proportion of births to the whole population is what one would *a priori* expect from the greater number of the people in Upper Canada at the reproductive ages; but if we take the percentage on the number of married women under forty, which appears to be the truest criterion of the prolificacy of the two sections, the proportions are reversed. With a view of testing the generally received opinion

of the greater prolificacy of the French race, I classified the counties in Lower Canada according to their French element, omitting the cities altogether, and I found that in those counties, containing 80 per cent. and upwards of French, the percentage of births to married women was 45.629, whilst in the rest of Lower Canada it was only 40.352, and for all the counties in Upper Canada, also omitting the cities, it was 42.772. The difference is so great and so uniform, even if smaller divisions are taken, that I am inclined to believe that it is truly characteristic, if not of the races, at least of the habits of society amongst them. How far the greater fecundity of the French may be modified by a different rate of mortality, we have no means of judging at present.

If we endeavour to discover the effect of immigration upon Lower Canada, it is observable that the general increase during the nine years since the former Census was taken, has been at the average rate of 2.498 per annum, which is almost exactly the same as 2.486, the percentage of natural increase on the average of the several years from 1851 to 1857. The inference seems to be, that there has been no sensible difference between the numbers who have left Canada and the new importations. If we consider separately the population as classed under its origins, taking the figures as we find them, it would not appear that there has been any considerable emigration of the French population, for its rate of increase has been almost as great as the natural increase of the counties, and there is rather a larger proportion of French than in 1852, about 76 per cent. against 75 per cent. It is difficult to reconcile this conclusion with the general belief in a large emigration of French. Our loss in this respect may have been overrated, or the difference may be owing to the imperfection of the Census of 1852; or if it can be attributed to neither of these sources, it would follow that the natural increase must have been even higher than I have estimated it. The numbers of foreign births are almost the same at both periods, 96,668 in 1861, against 95,153 in 1852, showing that the importations have more than counterbalanced the deaths during the interval. The principal change is in the natives of other origin than the French, whose average annual increase, 2.019, has been much less than the annual natural increase, indicating some considerable emigration of this class, or a much lower natural increase than of the French population.

In Upper Canada, from our ignorance of the rate of mortality, it is not very easy to estimate the effect of immigration, but some important indications may be obtained from a comparison with former Censuses. The first enumeration of the people in Upper Canada with which I am acquainted, was in 1811, when the numbers are stated as 77,000. Up to 1824, when the population was 151,097, the annual increase was at the rate of 5.32 per cent. From that date until the Union, we had a tolerably correct enumeration almost annually, and we may exhibit the successive additions at nearly equal intervals.

Date.	Population.	Rate of Annual Increase.
1824.....	151,097	
1832.....	261,060	8.77
1842.....	486,055	6.41
1852.....	952,004	5.62
1861.....	1,396,091	4.35

The last rate, which is the average for nine years, is less than the lowest recorded for any previous year, with the single exception of 1826, when it was 3.59. The greatest increase recorded is that from 1832 to 1834, the average for the two years being 10.73. This constant decrease of accessions from without, point to a rapidly approaching period, when we must mainly depend for increase of strength upon the natural growth of the people already settled to in the country. A large proportion of the increase is, however still to be attributed to immigration, and it is an interesting enquiry what that proportion may be, and how much is due to natural growth. The data are very imperfect, but we may arrive at a very rough approximation, or at least ascertain the limits within which the additions from immigration and from natural increase must have been.

If we assume the natural increase of Upper Canada to be at the annual rate of $2\frac{1}{2}$ per cent., which is nearly the rate arrived at for the whole of Lower Canada, from the Prothonotaries' returns, there would remain an addition of 207,170 to the population unaccounted for, and which, on this supposition, must have arisen from immigration. The returns of the Emigration Office shew, that from 1852 to 1860, both years inclusive, 225,865 steerage passengers arrived at the ports of Quebec and Montreal, and 123,631 appear to have come through the United States, during the same period. Of these, 181,741 are returned by the local agents as

being settled in Upper Canada. Allowing for the natural increase of these at the same rate, for the mean period of $4\frac{1}{2}$ years, the number would be raised to about 200,000. This appears to be the extreme possible limit to which immigration can have swelled the population, and it would require a natural increase of rather more than we have taken for Lower Canada, to account for the remainder.

But the numbers who are supposed to have permanently settled in the country, are probably stated too high, and there has notoriously been an emigration of persons living in Upper Canada before 1852, which must have most materially reduced the balance. The numbers of foreign birth living in Upper Canada in 1852, were 399,494, which in 1861, had become 493,212, making an increase of 93,718. All of these must have been immigrants, and there must have been as many more as would replace those of the 399,494 who had died. As a great number of them would be in the prime of life, we can hardly estimate the rate of mortality as high as 1 per cent, but even on this estimate, the numbers of new emigrants would only be about 128,000, or with their natural increase as above, about 140,000, so that the increase based on the Emigrant Agents' returns, would appear to be overestimated. But, on the other hand, the United States Census shews that the natives of British America had increased from 147,700 in 1850 to 249,970 in 1860. The several provinces are not distinguished in the United States returns, but in the State of New York, in 1855 the Canadians were rather more than nine-tenths of those from all British America. Even allowing that in Maine and other Eastern States, a larger proportion may have been from New Brunswick and Nova Scotia, and there were certainly many Lower Canadians amongst them, it is hardly too much to assume that of the 102,000 added to the population of the United States, one-half were from Upper Canada. This would leave a very small balance in favor of Upper Canada, certainly not as much as 100,000. If we estimate the whole accession due to immigration at that amount, it would require an average rate of natural increase to account for the whole number, of at least $3\frac{1}{2}$, which appears much higher than is probable. The truth probably lies between the two limits as thus arrived at, but it seems certain that the natural growth of the population in Upper Canada must be more rapid than that of Lower Canada.

EDUCATION.

ARITHMETIC

(Continued.)

Fractional exercises should now be more fully given from halves up to twelfths. In these, a suitable gradation should be observed, to enable you with more certainty to carry their understanding with you at every step of advance. Begin with numbers from 2 to 12; and with these, divide numbers which will have no remainders, as follows:

- 2) 12, 20, 24, 30, 36, 44, 50, 60, 80
 6, 10, 12, 15, 18, 22, 25, 30, 40 = $\frac{1}{2}$ of each.
- 3) 9, 15, 24, 45, 51, 63, 39, 48, 93
 3, 5, 8, 15, 17, 21, 13, 16, 31 = $\frac{1}{3}$ do
- 4) 16, 32, 44, 52, 56, 76, 88, 28, 96
 4, 8, 11, 13, 14, 19, 22, 7, 24 = $\frac{1}{4}$ do

And so on to 12. Make them master each exercise of halves, thirds, fourths, &c., before they pass to another, thus:—why is 15 the half of 30; 17 the third of 51; 14 the fourth of 56? Tell me how many threes are in 39; in 48; in 52, and how you know? Of what number would 15 be the fourth; 31 the third; 24 the fourth, &c.?

Continue and extend these exercises till their answers and explanations make it evident that they have a correct idea of the principle of aliquots.

In the next step of advance give them numbers of which to take parts by more than one aliquot part; thus:

24	36	72
$4 = \frac{1}{6} \times 4 = 24$	$12 = \frac{1}{3} \times 12 = 36$	$36 = \frac{1}{2} \times 36 = 72$
$12 = \frac{1}{2} \times 12 = 24$	$9 = \frac{1}{4} \times 6 = 36$	$18 = \frac{1}{2} \times 18 = 72$
$8 = \frac{1}{3} \times 8 = 24$	$6 = \frac{1}{6} \times 6 = 36$	$9 = \frac{1}{8} \times 9 = 72$
—	$6 = \frac{1}{6} \times 6 = 36$	$6 = \frac{1}{12} \times 6 = 72$
24	$3 = \frac{1}{12} \times 3 = 36$	$3 = \frac{1}{24} \times 3 = 72$
	36	72

Sufficiently question them on such exercises as these till your object is gained, and you are sure that a thorough knowledge of parts thus taken is acquired. Then vary the exercise by taking parts of parts, as follows:

20	39
$10 = \frac{1}{2} \times 10 = 20$	$18 = \frac{1}{2} \times 18 = 36$
$5 = \frac{1}{2} \times 5 = 10$	$9 = \frac{1}{2} \times 9 = 18$
$5 = \frac{1}{2} \times 5 = 10$	$6 = \frac{1}{3} \times 6 = 18$
—	$3 = \frac{1}{2} \times 3 = 6$
26	36
48	65
$24 = \frac{1}{2} \times 24 = 48$	$30 = \frac{1}{2} \times 30 = 60$
$12 = \frac{1}{2} \times 12 = 24$	$15 = \frac{1}{2} \times 15 = 30$
$6 = \frac{1}{2} \times 6 = 12$	$10 = \frac{1}{2} \times 10 = 20$
$4 = \frac{1}{3} \times 4 = 12$	$5 = \frac{1}{3} \times 5 = 10$
$2 = \frac{1}{2} \times 2 = 4$	—
—	60
48	

Suppose not that I am dwelling too much and too long on these elementary exercises—They have a high subservient value. A correct knowledge of numbers in all their varied combinations lies at the very foundation of arithmetical knowledge. Such antecedent training serves the double purpose of *strengthening and developing* the faculties of the mind, and especially the faculty of *acquisition*. The more a child's mind is improved and invigorated, the more is he prepared to speed onward and multiply his acquisitions. His preliminary training should, therefore, be of the very soundest kind.

Another profitable exercise at this stage is, showing them how to throw numbers into fractional forms of each other, first of 10, 20, 30, 40, &c., up to 100; then, intervening numbers, as follows:

Numbers as parts of 10.	Numbers as parts of 50.	Numbers as parts of 70.	Numbers as parts of 100.
$1 = \frac{1}{10}$ or 1 of 10	$15 = \frac{15}{50}$	$21 = \frac{21}{70}$	$14 = \frac{14}{100}$
$2 = \frac{2}{10}$ or 2 of 10	$16 = \frac{16}{50}$	$35 = \frac{35}{70}$	$38 = \frac{38}{100}$
$3 = \frac{3}{10}$ or 3 of 10	$24 = \frac{24}{50}$	$37 = \frac{37}{70}$	$47 = \frac{47}{100}$
$4 = \frac{4}{10}$ or 4 of 10	$27 = \frac{27}{50}$	$58 = \frac{58}{70}$	$77 = \frac{77}{100}$
$5 = \frac{5}{10}$ or 5 of 10	$41 = \frac{41}{50}$	$70 = \frac{70}{70}$	$88 = \frac{88}{100}$
$6 = \frac{6}{10}$ or 6 of 10	$50 = \frac{50}{50}$		
$7 = \frac{7}{10}$ or 7 of 10			
$8 = \frac{8}{10}$ or 8 of 10			
$9 = \frac{9}{10}$ or 9 of 10			
$10 = \frac{10}{10}$ or 10 of 10			

First make them go over these fractional forms, reading them rapidly; then questioning them, thus,—3, what part of 10? ans. $\frac{3}{10}$ ths., or 3 ones of 10 ones. What parts of 50 are 24 units? ans. Of 50 units, they are 24—wanting 26 ones of the 50. Throw 21 and 70 into a fractional form; and tell the difference: $\frac{21}{70}$ and $\frac{70}{70}$.

When this exercise is well understood show them the difference between aliquot and aliquant parts of numbers.

Any portion or part of a given number, which, being multiplied, will amount to that number exactly, as 4, being multiplied by 3, makes 12, is an aliquot part, or $\frac{1}{3}$; 5 multiplied by 4, makes 20, is an aliquot part, or $\frac{1}{4}$ of 20, &c.—Preceding exercises must have fully explained to them numbers which measure each other exactly without a remainder. But they need a sufficient amount of practice to make them expert in, at sight, giving even parts of numbers. Therefore, never pass any thing taught just because understood by them: they can never acquire a *masterly* knowledge of any thing but by practice.

Aliquants are proportions of numbers, which, however repeated will never make up these numbers exactly, as 3 is an aliquant of 10; 3 times 3 being 9,—1 is wanting; or 4 times 3 making 12,—2 more than 10.

Exercises.

Find the measuring numbers of 15, 18, 24, 36; of 14, 28, 42, 35; of 10, 50, 75, 60; of 82, 56, 54, and 49: and explain, as, how 5 is the $\frac{1}{3}$ of 15, or 3 is $\frac{1}{5}$ of it, and so on. Give other numbers yourselves that have aliquot parts.

Give the nearest aliquant parts, under or above, of the following numbers: 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, and 59.

N. B.—As such exercises directly tend to develop the whole system, specially of mercantile and all ordinary calculations, too much attention can scarcely be given to them. They will admirably prepare pupils, when they come to the applicative parts of arithmetic, for working sums with intelligent dexterity.

Longer and more complex processes can now be given.—I give a few examples, and show how, on such, they should be trained.

1st Example.

3	7	8	5	6	4	9	
21	49	56	35	42	28	63	7
21 + 5	49 + 5	56 + 3	35 + 4	42 + 3	28 + 9	3	3
26	54	59	39	45	34	3	3
26	4	9	9	5	4	3	Ans.

2nd Example.

4	5	7	8	9	3	6	
					5	8	
32	45	56	64	72	24	48	1st training.
32 + 4	40 + 6	56 + 7	64 + 7	72 + 2	24 + 4	8	8
36	46	63	71	74	28	8	8
3	6	6	3	1	4	8	8—Product of eight times.
20	25	35	40	45	15	30	—Training on individual products.
22	25 + 3	35 + 4	40 + 4	45 + 1	15 + 3	0	
22	28	39	44	46	18	0	—Products to be rapidly given with the figures carried.
22	8	9	4	6	8	0	—Product of 50.
26	5	5	7	8	2	8	8—Products of 50 and 8 = 58.

I have in these examples endeavoured to show how step after step pupils may be trained in multiplying numbers, from the products of each individual figure in the multiplicand to the ultimate results,—carrying forward, tens, hundreds, thousands, &c.,—of the whole multiplying process.

3rd Example.

765894	765894	765864
487	30	2
306357600 = 400	61271520 = 80	5361258 = 7 times.

5361258 = 7 times
61271520 = 80 times
306357600 = 400 times

372990378 = 487 times the multiplicand.

Keeping the multiplication of each figure of the multiplier separate will help in showing pupils at first how products should be placed under each other, with reference to their relative value, for being added. From the local position of the multiplier 8, it is in reality 80,—requiring a *nought* to give the whole line its proper value; and the multiplier 4 is, from its position, 400—requiring, therefore, two *noughts* to give the whole line its relative value. When the three product lines are placed under each other to be added, the *noughts* added will show the relative value of each figure in each line.

I here recommend a great number of examples to be given, to be worked as directed under the preceding 1st, 2nd, and 3rd examples, till they are complete masters of multiplying processes. You may now give more variety to the work—showing how the same results can be variously obtained, thus, giving them by little and little farther insight into the science of numbers. I give one example variously worked.

Example.

2647 × 356

2	6	4	7	2	6	4	7
			6				5
12 + 5	36 + 2	24 + 4	42	10 + 3	30 + 2	20 + 3	35
15	38	28	2	13	32	23	35
14	8	8	2	13	2	3	2
		2	6	4	7		
					3		
6 + 1	18 + 1	12 + 2	21				
7	19	14	21				
7	9	4	1				

To be read thus: 42, put down 2; 24, 28, put down 8; 36, 38, put down 8; 12, 15, put down 15. When they can go over processes rapidly in this way, omit as many words and figures as possible. This will make them more dexterous in going over processes, and less liable to make mistakes: the product of the 6, in this example, might be read thus: 42—2; 28—8; 38—8; 15,—and so of other products.

Product of units..... 15882 = 6 times }
Product of tens..... 132355 = 50 times } the multiplicand.
Product of hundreds... 794100 = 300 times }

Complete products 942332 = 356 times

2642
356

Partial products.. { 15882 = 6 times } the multiplicand,
 { 132350 = 50 times } ciphers understood.
 { 794100 = 356 times }

Complete products 942332 = 356 times the multiplicand.

2647 × 356

356
2647

Product of units. 2492 = 7 times }
Product of tens..... 14240 = 40 times } the multiplicand.
Product of hundreds. 213600 = 600 times }
Product of thousands 712000 = 2000 times }

Ans..... 942332 = 2647 times the multiplicand.

2647
300

Aliquot parts of 56 { 50 = $\frac{1}{2}$ } 794100 = product of 300
 { 5 = $\frac{1}{10}$ } 132350 = product of 50
 { 1 = $\frac{1}{5}$ } 13225 = " 5
 2647 = " 1

Ans..... 942332 = product of 356

2647
400

1058800 = Product of 400, exceeding
the product of 356 by 44.

Aliquot parts { 20 = $\frac{1}{5}$ = 52940 = Product of 20
of 44 { 20 = $\frac{1}{5}$ = 52940 = " 20
 { 4 = $\frac{1}{5}$ = 10588 = " 4

Subt..... 116468 = " 44 over 356

Ans 942332

N. B.—Here let me put you on your guard against using any word not understood, or but ill understood, when teaching or drilling. One word used conveying no clear idea to children, may mystify the whole of your elucidations on a subject. Every teacher should have a table for every branch he teaches, on which are explained and applied in appropriate sentences, the particular words and terms used in teaching each branch placed before the children—to be consulted when required.

2647 × 356

2647000 = product of 1000 times the
multiplicand.

Aliquot parts { 200 = $\frac{1}{5}$ } 529400 = product of 200 times
of 356. { 100 = $\frac{1}{5}$ } 264700 = " 100 "
 { 50 = $\frac{1}{5}$ } 132350 = " 50 "
 { 5 = $\frac{1}{10}$ } 13235 = " 5 "
 { 1 = $\frac{1}{5}$ } 2647 = " 1 "

Ans..... 942332 = " 356 "

2657
178 = $\frac{356}{2}$ = 178

Product of units..... 21176 = 8 times }
Product of tens..... 185290 = 70 times } the mul-
Product of hundreds 264700 = 100 times } tiplicand

Product of half the multiplier... 471166 = 178 times
2 2

Complete product..... 942332 = 356 times the mult.

2647
39 = $\frac{356}{4}$ = 89

Product of units..... 23823 = 8 times the mult.
Product of tens..... 211760 = 80 " "

Product of $\frac{1}{4}$ the multiplier..... 235583 89 " "
4 4

Complete product..... 942332 = 356 " "

These different ways to work out the same result, are of great value in giving scholars enlarged views of the powers of numbers, of the multifarious ways by which they can be employed in calculating,—and how, by different processes, the same answer or solution can be worked out. Without giving variety to the working of sums it is not possible to give pupils clear and comprehensive ideas of the manifold application of calculating principles. Diversity of method, based upon sound principles, never fails to give expansion to the student's mind, and, under intelligent teaching, clear views of principles and their multiform applications.

JOHN BRUCE,
Inspector of Schools.

(To be continued.)

A hint on teaching Geography.

The efforts made in teaching Geography, are, for the most part, prodigious; the results, really and practically, infinitesimal, and generally useless. The memory of the pupil is overtasked in attempts to learn everything, with very little natural system or method; while a knowledge of the few general principles and facts which are sufficient with which to begin life, is seldom or never acquired. Take a single point: The relative position of places. Few pupils, or adult persons, have even the most important localities of our own country so accurately mapped out in the picture of the mind, as to be able to give their relative position and direction correctly. Ask any school-boy in the "first class," or man of business, which is situated farthest north, Boston, or Columbus, Ohio; Philadelphia, or San Francisco; or which is farthest west, Charlestown or Pittsburg; and the answer will more likely be a Yankee guess than positive knowledge. Not long since a gentleman, who has been considerably connected with commercial affairs, was asked the longitude of Havana compared with Boston. His reply was, that it was "about the same; possibly a little farther east;"—when told that Detroit and Havana were nearly on the same meridian, his incredulity was amusing.

The true meaning of latitude and longitude on the curved surface of the earth, is not generally understood by pupils. Teachers know very well that it is quite possible that all the definitions of those terms, usually given in geographies, may be learned and recited, and yet the learner may not have a correct understanding of them. It is observed that such pupils generally regard all places in range of a straight line east and west, as having the same latitude, instead of following the curve of a parallel; and in longitude the margin of the map, instead of a meridian, is often taken as a guide. Longitude is also spoken of as distance east or west of a place, instead of the meridian of a place. Tell them that the difference in longitude between Boston and Liverpool, is sixty-eight degrees (nearly,) and that the length of a degree of longitude, on the parallel of Boston, is forty-four and a half miles; and they will tell you that the product of sixty-eight by forty-four and a half, will give you the sailing distance of a vessel between the two places. Few

pupils would detect the error in such calculation, unless their attention is specially called to it. They will understand it, however, if meridians and parallels are drawn upon the blackboard, and they are shown that the real distance between those places would be represented by the hypotenuse of a triangle, the base of which is parallel, or line extending from Boston due east until it reached the meridian which passes through Liverpool; and the altitude of the triangle, that portion of the meridian between Liverpool and the eastern extremity of the base; which is equivalent to the difference in latitude between Boston and Liverpool.

Learners should not be allowed to advance far in the study of geography until the subject of latitude and longitude is thoroughly mastered. When that is done, the relative position of places becomes a matter comparatively easy of acquisition. It is not to be accomplished, however, by committing to memory the latitude and longitude of a large number of places. Far from it. A few leading points and facts, judiciously selected, should be learned, and made guides for the association of others. To illustrate our meaning, let us suppose we are studying this branch of the subject in connection with north America.

Select as *guide points*, Boston, Philadelphia, Washington, Charleston, Havana, New Orleans, and San Francisco. The list need not be extended; and were the lesson any other than our own country, it might be less. Let the exact latitude and longitude of these places be made so familiar that they can be recalled without hesitation.

Observe, now, that the southern boundary of North America is near the parallel of ten degrees north; take, next, some of the most important parallels usually drawn upon maps of this continent, trace them across the map, and observe the principal States, cities, and bodies of water, through which, or near which, they pass. These are to be committed to memory, in connection with the parallels—not a difficult task, for they are so related that the laws of association will come to the aid of memory. They will be found to be substantially as follows:

The parallel of *twenty degrees* passes through the south-eastern part of the Island of Cuba, Yucatan, and near the city of Mexico; and, if extended into the Pacific Ocean, would pass through the Sandwich Islands; *twenty-five degrees*, near the southern point of Florida; *thirty degrees*, through Northern Florida, near New Orleans, through Texas, and Northern Mexico, cutting the Gulf of California in its northern part; *thirty-five degrees*, through south-eastern North Carolina, the extreme northern part of South Carolina, forming the northern boundary of Georgia, Alabama, and Mississippi, through Arkansas, Indian Territory, New Mexico, Arizona, and Southern California; *forty degrees*, through the middle of New Jersey, Southern Pennsylvania, and near the cities of Philadelphia, Columbus, Indianapolis, and Springfield, Ill., through Northern Missouri, forming the boundary line between Kansas and Nebraska, through Northern Colorado, Utah, Nevada, and Northern Carolina; *forty-five degrees*, through the middle of Maine, the extreme northern part of New Hampshire, forming the north boundary line of Vermont, and North-eastern New York, through Canada West, Lake Huron, Michigan, Lake Michigan, Wisconsin, Minnesota, Near St. Paul's, Dakota, Idaho, and Northern Oregon; *sixty degrees*, through Cape Farewell, the southern point of Greenland, Hudson's Bay, the middle of British America, and Southern Russian America.

With the longitude of the guide points above-mentioned already in the mind, it will not be necessary to learn the course of many of the meridians. But we can now group together, for the purpose of association, places whose latitude or longitude is the same, or nearly the same. There will, of course, be an advantage in such groups in taking one or more of the guide points whose position is already known, when it can be done. They should be places whose importance or prominence renders them worthy of having their position retained in the mind, as a part of the pupil's permanent stock of geographical knowledge.

Among the places of the same or similar latitude, are: Washington and St. Louis; Boston, Albany, Detroit, Lansing, and Chicago (nearly); Augusta, Me., the White Mountains, and Montpelier, Vt.; Concord, N. H., Toronto, and Milwaukee; San Francisco, and Richmond, Va.; Hartford, Ct., and Cleveland. Places of similar longitude: New Orleans and St. Louis; Havana and Detroit; Milwaukee and Mobile; Charleston and Pittsburgh; Cleveland and Savannah; Philadelphia and Eastern Cuba; and Boston and the middle of the Island of St. Domingo, or Hayti. (1)

The difference in the latitude or longitude of the places thus

grouped, is in no instance great, and would not, in any case, amount to more than a few miles. Where points cannot be taken on precisely the same parallel or meridian, similarity of position is sufficient for all practical purposes. The number of places selected should not be large; and it should not be understood that the latitude and longitude of all those places must be committed to memory; for those not already included among the guide points, are so situated with reference to those points, that their position can be readily inferred from them. The same is true of intermediate places whose situation it is desirable to retain in the memory.

By a similar system of grouping, the relative position of places on the two continents, and the grand divisions of the globe, may be learned and remembered. Thus: Washington corresponds very nearly in latitude with Lisbon; New Orleans with Cairo in Egypt; Richmond, with Athens; New York, with Madrid and Peking, China; Providence, R. I., with Rome; Newfoundland, with Paris; London, with the Straits of Bell Isle and Southern Labrador; and the parallel of sixty degrees, spoken of above as passing near Cape Farewell, if extended to the other continent, would pass very near three European capitals—Christiania, Stockholm, and Saint Petersburg. The parallel of the middle of Cuba passes through the Great Desert of Africa, the Red Sea, and near Calcutta; Rio Janeiro corresponds with the southern part of Madagascar, and the middle of Australia; and the meridian of seventy degrees west passes near the capital of Maine, through the Island of Hayti, and the western part of South America, rising, as it were, the Andes mountains for several hundred miles between Chili and La Plata.

The reader will please remember that we have selected these places principally for the purpose of illustration. The teacher's judgment must decide what particular places, and how many of them, are to be used in practice.

We have great confidence that the hints here suggested will accomplish something for the learner, if judiciously carried out. One thing, however, is absolutely necessary for their success: Too much must not be attempted. And in closing we can do the teacher no greater favor than to observe, that the same remark applies, with great emphasis, to all that is done, or attempted to be done, in teaching the much abused science of Geography.—A. P. S., in *Mass. Teacher*.

Physical Culture.

BY M. L. HOLBROOK, M. D.

In the May number of the *Monthly* I made some statements in regard to physical culture, which called out the following criticism: your article puts the conditions of gymnastic culture entirely out of the reach of seven-eighths of the schools of the State. If they must wait for hall, dress, music, etc., gymnastics will have a small place in our school exercises; and the following question, "Can not something be done in all our schools at least to undo the mischief of their discipline and duties?" I will simply remark that I merely state the conditions of *thorough* gymnastic culture, and while I know this is out of the reach of most schools at present, it is easily attainable whenever we take hold of the matter in earnest. It does not follow, however, because *thorough* gymnastic training is not possible until the necessary requirements are complied with, that nothing can be done to counteract the evil of the duties and discipline of the school room. Physical culture has a wider range than the performance of certain muscular movements; it embraces everything that relates to the normal care and development of the body. Securing proper positions of pupils at the desk—in standing or walking; the supply of abundance of fresh air; the temperature of the school room; its cleanliness, recesses, etc., etc., all belong to the department of physical culture. They will form the subject of this and future articles.

The *position* which pupils should assume at the desk is an *erect* one. If the shoulders droop, though it be slightly, the head falls and the spinal column curves forward, some muscles are required to do more than their duty, others are so relaxed as to be inactive, and respiration is to a certain extent prevented. Several hours a day for several years so fixes this attitude that it is almost impossible to overcome it. The round shoulders and stooping forms into which pupils grow as certainly as a young tree becomes bent if curved during the period of growth, detract from a fine personal appearance, and make men and women much less effective in any profession which they may follow, than they otherwise would be. If the "bearing" of the body is not correct, the pupil wears himself out to support it in the unnatural position. The boy or girl who sits erect in writing or studying can accomplish more mental work, and with greater ease, than the one who bends over the

(1) Similar landmarks can be easily taken by the Canadian teacher and adapted to the geography of our own country.—Ed. J. E.

desk. This all teachers know perfectly well. Now, what is to be done to secure erectness? I believe it should be made a part of the discipline of the school, and that the pupil who will not sit upright should be subject to the same penalties that he is subject to if he communicates, or is not correct in his deportment, or fails in his recitations. I would also at appropriate times give special training in the art of sitting, and at those times point out the correct mode, and criticise and call attention to any deviation from it, however slight, just as I would to any errors of pronunciation in reading, or incorrect construction of sentences in grammar. A good deal of enthusiasm might be created by this means, if properly conducted.

In standing, the same upright position should be required. Suppose a pupil rises to read. Now if he stands on one foot, or with his toes turned in, or with his head and shoulders drooping as if he was about to fall to pieces, let him be disciplined for it, in just the same way as if he had mispronounced a word, or committed some other blunder. If he goes to the blackboard to perform an example in mathematics, do not allow the pupil to work it low on the board, but as high as is possible. The habit pupils sometimes have of standing on one foot, if habitual, is a bad one, and should not be countenanced. It is indicative of a want of balance in the strength of the muscles of the two sides, and helps to produce spinal curvature. The habit of separating the feet so that the heels are far from each other is very ungraceful, and can easily be broken up. It was only a few months ago that I heard a young clergyman, a graduate of one of the first colleges of the country, preach, and, in standing, his heels were more than a foot from each other. Now I do not see why such a position should not be criticised as much as a boorish pronunciation. It certainly shows want of physical culture.

The erect position in walking should receive some attention, though this, more than the others, requires the hall.

I will now give a few exercises — perfectly simple ones — that may be introduced into the common school room, the object of which is to counteract the effects of stooping, and make discipline in the points spoken of less difficult. I take it for granted that the teacher has perfect control of the pupils. Sometimes it is more difficult to secure order in schools in giving lessons in physical culture than in the same schools at other times; at least this is true until the novelty wears off.

The position should be, heels together or nearly so, and feet at right angles; the head, shoulders and hips being well drawn back. The standing room should be in the aisles and spaces not occupied by seats and desks. The windows and doors should be open sufficiently to allow a good supply of air.

Exercise 1. For want of anything better, let each pupil place on the top of the head a small book, and be required so to balance the body that the book shall not fall off in going through the following movements: First, with hands on the hips, thumbs forward, rise on the toes as high as possible, five times; second, on the toes of the right foot, five times; third, left do.; fourth, alternately, that is, first right foot and then left, five times. The advantage derived from the book is that unless the pupil stands erect he cannot retain it in this position. The movements should be to signals given on any musical instrument in the room, or what will do very well in the absence of an instrument, signals given on a drum or triangle.

Second: With hands on the back of the neck endeavor to go through the operation of walking in position, first, on the feet; second, on the toes; third, on the heels; fourth on right heel and left toe, and the reverse; fifth, toes turned in; sixth, toes turned out.

Third: With hands folded high on the back, let the pupil sit down and rise three times. It requires great skill to do this without letting the book fall. It should not be attempted until there has been considerable training on the less difficult feats.

Fourth: Without book, with hands clasped on the back of the neck, thrust them up as high as possible and return ten times, holding the head so far back that the eyes instead of being turned toward the floor shall be turned toward the ceiling over-head.

Fifth: With hands on the shoulders, the right foot placed diagonally back about eighteen inches, and the knee of that leg bent so as to allow the body to fall diagonally backward several degrees, thrust the right hand up and back four times; the left, do.; alternately do.; simultaneously the same. Same with left foot back.

Another set. Divide the school into couples, the boys by themselves, girls do. First: Pupils face each other. At a signal of the drum, the row of pupils on the right inflate their lungs, while the teacher counts ten. Immediately after the number ten is pronounced, pupils on the left beat gently with the palms of the hands and fingers the upper part of the chest of his or her partner

while the breath is held, the teacher counting five slowly for the performance. Now change, and repeat.

Second: Pupils face the same way, and about eighteen inches apart. At the signal the pupil back, beats the shoulders of his partner while the teacher counts ten. Face the other way and repeat.

Third: Pupil forward raises the right hand high, while partner beats the right side. Reverse and repeat.

Fourth: Left hand raised, and same repeated.

These beating exercises are very valuable to call the circulation of the blood to the muscles of the sides, shoulders and chest. It requires some skill to manage them just right. If there is a musical instrument in the school room, it may be used for giving signals, and the beating may continue during one strain of music.

Everything should be done in concert, with precision, and the teacher must insist on *spirit and dash* on the part of the pupils in performing them. Let there be no lagging behind.

There are many more exercises calculated to counteract the ill effects of sitting, but this article is already long. Teachers are apt to think they must have a great number of exercises, but a few well adapted for certain ends and well done, are better than many poorly done. The teacher should cultivate his own eye in determining positions, and call the attention of pupils to the best models.

A short recess at the end of every hour in which the pupils can change their position, and relieve the weariness of long sitting, ought to be allowed.

This article would be incomplete did it not speak of the defects of most of our school furniture, and how they help to produce stooping. Nearly all our school desks are very much too low, none less than six inches, and many of them twice that. Everybody who has any interest in schools should seek when new houses are being erected in their vicinity to have this evil remedied. So again, hard-bottomed chairs for pupils to sit on for hours are abominable. The seats of all chairs in schoolhouses should be cane-bottomed. It will prevent much of the uneasiness of sitting, and the pupil will be enabled to sit upright on them with much less difficulty. The seat should slant back so that the front is about an inch the highest. The backs of the seats should not be made to fit round and stooping forms, but upright ones.

OFFICIAL NOTICES.



ERLECTIONS, &c., OF SCHOOL MUNICIPALITIES.

His Excellency the Governor General in Council was pleased, on the 23rd of August last:

1st. To detach from the School Municipality of St. Ours, in the County of Richelieu, that portion of territory hereinafter described, and to erect the same into a distinct School Municipality under the name of the *School Municipality of the Village of St. Ours*, to wit:

Comprising the whole of the Village of St. Ours as at present constituted for municipal purposes, and including also that portion of the first range of the Parish of St. Ours which is bounded as follows:—On the north-east, by the land belonging to J. B. Potvin, inclusive; on the south-east, by the land belonging to François Grenier, inclusive; on the north, by the River Chambly; on the south, by the lands of the Ruisseau Laplaute range and by those of the Basse range.

On the 14th September:

2nd. To divide the Township of Harrington, in the County of Argenteuil, into two distinct School Municipalities, to be called the *School Municipality of Harrington No. One* and the *School Municipality of Harrington No. Two*, respectively.

The School Municipality of Harrington No. Two to comprise the following tract of territory, to wit:

Commencing at the eastern part of the Township of Harrington, to comprise the first Eleven lots, from Lot No. One to Lot No. Eleven, inclusive, along the ten concessions forming the depth of the said township.

The School Municipality of Harrington No. One to comprise the remainder of the said township, from Lot No. Eleven to the Twenty-eighth and last Lot.

On the 21st September:

3rd. To detach from the School Municipality of the Town of Lévis all that portion of the locality known as *Petite Route*, forming a part of the

said Town of Lévis, and comprised within the following limits, to wit: Bounded on the north by the River St. Lawrence at forty feet of low water; on the south, by a depth of forty arpents; on the west, by the north-east boundary of the land belonging to Thomas Fraser, Esquire; and on the east, by the present western boundary line of the Village of Bienville, and to annex the same for school purposes to the School Municipality of the said Village of Bienville.

On the 17th October:

4th. To alter the limits assigned to the School Municipality of the Parish of St. André of Acton, in the County of Bagot, by an Order in Council bearing date the 26th July last; and to give the said School Municipality the same limits as the Parish of St. André of Acton, as erected civilly on the 6th April, 1862, less the Lots numbered 32, 33 and 34 in the third range of the Township of Acton, and also less the western half of the Lot numbered 32, and the entire Lots 33 and 34, in the fourth range of the said Township of Acton.

5th. To give the name of *The School Municipality of the Village of Acton* to that portion of territory herein described, to wit:

Comprising the Lots numbered 32, 33 and 34 in the third range of the Township of Acton, and the western half of the Lot numbered 32 and the whole of the Lots 33 and 34, in the fourth range of the said Township of Acton.

APPOINTMENTS:

EXAMINERS.

His Excellency the Governor General in Council was pleased, on the 26th August last, to appoint Philippe Vibert, Esquire, senior, member of the Gaspé Board of Examiners *vice* Léandre Dagneault, Esq., resigned.

SCHOOL COMMISSIONERS.

His Excellency the Governor General in Council was pleased, on the 29th August last, to approve of the following appointments of School Commissioners:

County of Montmagny.—Grosse-Isle: Anthony Von Iffland, Esquire, M. D., Messrs. Charles Langlois, Eusébe Langlois, Auguste Langlois, François-Xavier Turcotte.

County of Maskinongé.—Parish of Rivière-du-Loup: Mr. François Pâquin.

County of Laval.—Village of St. Martin: Mr. Nicolas Cléroux.

County of Vaudreuil.—Newton: Messrs. Antoine Gauthier, Duncan C. McIntosh.

County of Verchères.—St. Antoine: Messrs. Joseph Coderre, Jr., Antoine Gendron, Jr.

County of Yamaska.—Ste. Brigitte: John Portell, Esquire, Messrs. George Jutras dit Lavallée, Ignace Blanchette, Michael O'Shaughnessy, Thomas O'Meara.

County of Quebec.—St. Gabriel West: Messrs. William Clerk, John Clerk, Jr., Samuel Stewart, Michael Murphy, Sr., John Goodfellow.

County of Two Mountains.—St. Canut No. 2: Messrs. François Bertrand, Michel Gratton, Jr.

County of Iberville.—St. Athanase: Mr. Etienne David.

On the 13th September last:

County of Bagot.—Parish of St. André of Acton: Messrs. Edouard Leclerc, Charles Ledoux, Louis Buck, Sr., Magloire Dion, Eusébe Benoit.

County of Richelieu.—Village of St. Ours: Magloire Turcotte, Esquire, M. D., Messrs. Samuel David, Théotime Marchesseault, François Anger, Tréflé Potvin.

Same county.—Parish of St. Ours: Messrs. Jules Lebœuf, Louis Mongeon, Pierre Commeau.

County of Champlain.—St. Tite: Messrs. Pierre Mercure, André Dupuis, Jacques Hardy, Marcellin Désy, Bellarmin Chaillé.

County of Drummond.—St. Fulgence: Messrs. Fulgence Préfontaine, Richardson Clampt, Jean Bte. Faucher, Alexander Montgomery, Ephrem Blake.

County of Temisconata.—Notre-Dame-du-Portage: Reverend Ulric Rousseau, Curé, and Mr. Antoine Langelier.

County of Chateauguay.—Ste. Martine: Mr. Louis Primeau, fils de Louis.

County of Argenteuil.—Harrington, No. Two: Messrs. Duncan McRae, Farquhar McCrimmon, Murdoch Beaton, Donald Campbell, Donald Cameron.

On the 26th September last:

County of Lévis.—Village of Bienville: Reverend Joseph D. Déziel, Curé, Joseph Bégin, Esquire, Messrs. Pierre Duclos, Germain Michaud, Louis Bégin, Jr.

His Excellency the Governor General in Council was pleased, on the 3rd October to approve of the following appointments of School Commissioners:

County of Arthabaska.—Chénier: Messrs. George Perrault and Denis O'Brien.

City of Quebec (Catholics).—Revs. Zéphirin Charest, Bernard McGauran and James Murphy.

County of Saguenay.—Tadousac: Messrs. Paschal Perron, Sr., and Epiphane Brisson.

County of St. Maurice.—Forges St. Maurice: Messrs. Jean-Baptiste Carrier, Sr., Zéphirin Mailloux, Thomas Mailloux, Guillaume Charrette and Norbert Landry.

County of Bonaventure.—Paspébiac: Messrs. Jean Loisel, Abraham Castilloux.

Banlieue of Three Rivers: Mr. Joseph Pâquin.

County of Quebec—Valcartier: Mr. John Martin.

County of Arthabaska.—Warwick: Mr. Prosper Beauchêne.

His Excellency the Governor General in Council was pleased, on the 7th October, to approve of the following appointments of School Commissioners:

County of l'Islet.—Ste. Louise: Messrs. Prosper Italien and Amable Castonguay.

County of Kamouraska.—St. Onésime: Mr. Joachim Sirois *vice* Mr. François Ouellet, resigned.

County of Lotbinière.—South St. Sylvester: Messrs. John Stocken and Edouard Côté.

County of Hochelaga.—Coteau St. Pierre: Mr. François-Xavier Jarry *vice* Mr. Archibald Ogilvie, resigned.

TRUSTEES OF DISSIDENT SCHOOLS.

His Excellency the Governor General in Council was pleased, on the 26th August last, to approve of the following appointments of Trustees of Dissident Schools:

County of Stanstead.—Hatley: Reverend François Z. Mondor, Curé, Messrs. Jean Bte. Grandmont, Pierre St. Jacques.

On the 13th of August last.

County of Arthabaska.—Tingwick: Messrs. Charles Thurber, Alexander Willey, Joseph H. McLean.

County of Hochelaga.—Coteau St. Pierre: John Monk, Esquire, and Mr. Daniel Hadley.

His Excellency the Governor General in Council was also pleased, on the 3rd October, to approve of the following appointments of Dissident School Trustees.

County of Bonaventure.—Hope: Messrs. Félix de la Rosbie, Eustache Laroque, and Félix Thériault.

NOTICE

TO THOSE CORRESPONDING WITH THE DEPARTMENT OF PUBLIC INSTRUCTION.

1. The Number upon letters from the Department of Education should be affixed to replies.

2. On all letters the name of the county should be added to that of the place from which they are addressed to this Office.

3. Signatures should always be written in a legible handwriting, but when this happens not to be the case, the name should be subjoined, so that it may be read with accuracy.

4. To avoid leading the Department into errors or omissions, one subject only should be presented in the same letter, as each particular case is entered in a separate Record.

5. Notes or postscripts ought never to be written on the inside of envelopes, but should be added to the letter itself.

6. In recommending any person for a situation, the Christian and family name or names, ought to be written in full, and the place of residence, profession or occupation should be given.

7. All matters purely personal ought to be carefully excluded from official letters. Should it be necessary to make any communication of this nature to the Superintendent, it should form the subject of a separate letter to be marked *Private* or *Confidential* on the envelope.

8. All official letters must be addressed to the Superintendent, even when written in answer to a letter signed by any other officer of the Department. The only exception to this rule will be in favor of the usual correspondence having reference to the payments of Teachers' Pensions and subscriptions to the *Journal of Education*, which may be addressed directly to A. de Lusignan, Esq., Clerk of Accounts and Statistics, Education Office.

DIPLOMAS GRANTED BY THE BOARDS OF EXAMINERS.

BOARD OF EXAMINERS OF THREE RIVERS.

1st Class Academy (E. & F.)—Miss Rose de Lima Gaillardetz; (F.) Miss Marie D. Laplante.

1st Class Model School (E. & F.)—Miss Clarisse Brassard.

1st Class Elementary (E. & F.)—Miss Louise M. El. P. de Courval; (F.) Misses Olive Vitaline Allard, Marie Eulalie Boucher, Reine Baril, Marie Jolin, Marie Séraphine Lamothe.

2nd Class Elementary (F.)—Misses Marie Engénie Bergeron, Adéline Hébert, Marie Sophie Aurore Pinaud, Louise Clorinde Rousseau, Monique Mathilde René.
Aug. 2, 1864.

J. M. DESILETS,
Secretary.

QUEBEC BOARD OF CATHOLIC EXAMINERS.

2nd Class Elementary (F.)—Mr. Bernard Boucher; Misses M. Delphine Blais, M. Céline Dion, Louise Gaumont, M. Delvina Leblanc *alias* George, M. Louise Lemieux, Adéline Naud *alias* Labrie.
Aug. 2, 1864.

SAME BOARD.

2nd Class Elementary (F.)—Misses Eulalie Baril, Céline Labrecque.
Sept. 16, 1864.

N. LACASSE,
Secretary.

MONTREAL BOARD OF CATHOLIC EXAMINERS.

1st Class Elementary (F.)—Misses Angèle Virginie Foisy, Joséphine Mélina Loiseau.

2nd Class Elementary (F.)—Misses Rosalie Bouchard, Philomène Dubuc, Virginie Laberge, Aurélie Paré, Mathilde Raymond; (E.) Misses Ann McDonnell, Alphonsine Payette.
May 6, 1864.

SAME BOARD.

1st Class Elementary (F.)—Messrs. Damase Champagne, Honoré Napoléon Charpentier, Désiré Drainville, Romuald Fiset, Gustave Martin; Misses Julie Barret, Domitilde Bousquet, Esilda Chagron, Henriette Charron, Marie Castello, Marie Côté, Marie Deveau dit Jolicoeur, Marie Rachel Emma Drapeau, Marie Flavie Dufresne, Philomène Hamel, Catherine Langevin, Marie Lapierre, Adélaïde Lebeau, Philomène Limoges, Marie Emilie Philomène Limoges, Eliza Montpetit, Marie Claire Perras, Magaëe Payette, Elise Thersile Poirier, Philomène Racicot, Domitilde Scott, Emilie Sylvestre.

2nd Class Elementary (F.)—Misses Marie Alix Bertrand, Elizabeth Brûlé, Angèle Cadienx, Céline Desmarais, Sophronie Gendron, Euphémie Girard, Philomène Laforce dit Pepin, Edesse Laframboise, Léocadie Léger, Marguerite Muir, Marie Osite Pâquette, Marie Thalite Renaud; (E.) Mr. Archibald Grant.
Aug. 2 and 3, 1864.

F. X. VALADE,
Secretary.

BOARD OF EXAMINERS OF RIMOUSKI.

2nd Class Elementary (F.)—Miss Luce Parant.
Aug. 2, 1864.

P. G. DUMAS,
Secretary.

BOARD OF EXAMINERS OF STANSTEAD.

1st Class Elementary (E.)—Miss Martha M. Sias.
2nd Class Elementary (E.)—Mrs. Lydia W. Lovering; Misses Lucinda M. Brown, Elsey L. Noyes.
Aug. 16, 1864.

C. A. RICHARDSON,
Secretary.

MONTREAL BOARD OF PROTESTANT EXAMINERS.

2nd Class Model School (E.)—Miss Sophia Lalanne.
Feb. 3, 1864.

1st Class Academy (E.)—Mr. John McIntosh.

1st Class Elementary (E.)—Messrs. William H. Naylor, John Rolston; Misses Isabella Anderson, Elizabeth Anthony, Annabella Campbell, Susan Campbell, Janet Dideridge, Elizabeth Fiddes, Elizabeth Greer, Jane Greer, Catharine McEwen, Mary Manchester, Elizabeth Maxwell, Janet Speak.

1st Class Elementary (F.)—Miss Emma L. Clément.

2nd Class Elementary (E.)—Mr. Wm. F. Eastwood.
Sept. 3, 1864.

T. A. GIBSON,
Secretary.

PROTESTANT BOARD OF EXMINERS OF QUEBEC.

First Class Elementary (E.)—Miss Elizabeth Hutchison.
Aug. 2, 1864.

D. WILKIE,
Secretary.

DONATIONS TO THE LIBRARY OF THE DEPARTMENT.

The Superintendent acknowledges with thanks the following donations:

From Messrs. McMillan & Co., London: *School Class Book of Arithmetic*; By Barnard Smith, M. A., Part. I. 1 vol.

From Messrs. Dawson & Bros., Montreal: *A Primary Arithmetic*; By G. P. Quackenbos, A. M., 1 vol. *An Elementary Arithmetic*; By the same author, 1 vol. *First Book in English Grammar*; By the same author, 1 vol. *Wilson's Larger Speller*, 1 vol. *Progressive Lessons in Greek*; By Wm. B. Silber, A. M., 1 vol. *A Latin Grammar for Schools and Colleges*; By Albert Harkness, Ph. D., 1 vol.

TEACHERS WANTED.

Wanted, for an Elementary School in the Municipality of Long Point, two Female Teachers, one of whom must be able to teach English and French, and the other Music. The teacher who will have charge of the school must be provided with a diploma. Both salaries together not to exceed \$200 or \$225. Apply at the Education Office.

Wanted for the Township of Mann, a teacher qualified to teach English and French—particularly English. Apply to the Secretary-Treasurer of the School Commissioners, Township of Mann.

SITUATIONS WANTED.

A Lady, a native of France, is desirous of obtaining a situation as preceptress in a family. Can give lessons in French, English, Music, &c. Apply at the Education Office.

A Teacher holding a Normal School Diploma, wishes to obtain a situation. He can teach French and English. His wife, who is competent to teach French, English, Music, &c., would accept of a situation as assistant teacher under her husband. Apply at the Education Office.

A Master of Arts would teach Latin, Greek, Mathematics, Book-keeping and the usual English branches as an equivalent for Board in some private family, or would give private lessons either at his residence or elsewhere, on reasonable terms. He can also teach French, German and Music if required. Unexceptionable references given as to character and scholarship. Please address A. M., Post Office.

JOURNAL OF EDUCATION.

MONTREAL (LOWER CANADA), SEPTEMBER & OCTOBER, 1864.

To Parties corresponding with the Education Office.

We beg to call attention to a notice in our official columns that concerns all persons corresponding with the Department. The notice to which we refer has already been published, but it was not generally acted upon. As the recommendations it contains are mainly in the interest of those to whom they are addressed, any one disregarding them should be prepared to accept the responsibility of any delays or oversights that may occur in consequence.

The necessity for a close observance of the directions laid down, is daily becoming more urgent as the volume of correspondence increases. During the year 1863, 3,300 Records accumulated, each containing on an average the drafts of 3 letters; besides which many letters were entered among the Records of previous years. In 1862, the number of letters and documents despatched was 11,738, and of those received 8,275; while the figures for 1863 stood at 14,500 and 8,761 respectively.

To our Subscribers.

To avoid the loss of time and expense incidental to the making out and transmission of accounts, we beg to request that our subscribers who have not yet paid their subscription for the present year will remit the amount of their respective indebtedness to A. de Lusignan, Esq., Clerk of Accounts and Statistics, Education Office.

The price of subscription is so low that our patrons will see the necessity of sparing us all extra expense in the cost of collection; and, as the publication of this periodical is not a speculation, the policy here advocated will, if adhered to, promote their own interest, the profits that may be realized being destined for the immediate improvement of the paper.

Meeting at Montreal and Formation of an Association for the promotion and protection of the Educational interests of Protestants in Lower Canada.

A meeting for the above objects was held in the Mechanics' Hall at Montreal, on the 27th of September. It was presided over by Wm. Lunn, Esquire, the Revd. Mr. Irving acting as secretary. The report published in the City papers states that the attendance was fair, though the hall was not filled. Revd. Mr. McVicar read a report in which it was stated that on the 30th of May, the Chairman issued to Protestant Ministers, School Commissioners and others specially interested in Protestant education, a printed circular containing the following queries:

1st. In what respects are legislative enactments in your opinion adverse to the interests of Protestants in Lower Canada?

2nd. What facts can you furnish to show that the carrying out of the educational laws is prejudicial to Protestant interests in your locality?

3rd. What amendments would you suggest for the promotion and protection of the educational interests of Protestant families?

A considerable number of answers to this circular was received from various parts of the country, and these having been carefully reviewed, the material part of the information thus obtained, was submitted in the Report.

The Report having been read, on motion of Mr. B. Lyman, it was immediately and unanimously resolved: that it be "adopted, printed and extensively circulated."

On motion of Mr. T. M. Taylor, it was resolved: "that an association be now formed to be called 'the Protestant Educational Association' for the promotion and protection of the educational interests of Protestants in Lower Canada, and that the following gentlemen be the officers and committee with power to add to their number—Wm. Lunn, Esq., Chairman; James Ferrier, Jr., Esq., Treasurer; Secretaries, Revd. Messrs. Irving and McVicar. Committee, Revd. Drs. Wilkes, Taylor, Bancroft, Hamilton, Kempt, Bonner, Cordner, Elliott, Douglass, Alexander and Bland; and Messrs. C. Alexander, E. Atwater, T. M. Bryson, J. Becket, J. Court, W. H. A. Davies, George Frothingham, John Greenshields, W. King, B. Lyman, H. Lyman, G. Moffatt, Jr., Wm. Murray, George B. Muir, James Milne, T. M. Taylor, Hugh Taylor, John Torrance, Jr., Joseph Watson, Revd. L. C. Wurtele, Acton Vale; Revd. W. Merrick, Acton Vale; E. S. Humming, Esq., Drummondville; D. Bain, Belle-Rivière; W. Morrison, Esq., St. Eustache; Dr. Cattinach, Alexandria; Principal Graham, Richmond; N. Bothwell, Esq., Wickham; Jeffrey Hale, Esq., Quebec; C. L. Burroughs, Esq., Lachute."

Proceedings were terminated with prayer by Revd. Dr. Snodgrass, who also addressed the meeting "commenting upon the backwardness hitherto of Protestants, imputing to themselves alone all the blame for the unfavourable position of their schools and educational system; and making an eloquent appeal in behalf of the two protestant model schools of Montreal, urging Protestants to greater zeal and liberality in support of their educational institutions."

We have as a strict rule abstained in this paper from any thing which could savour of polemics, and have allowed all attacks on the Educational Department and on the paper itself to pass unnoticed. We believe, however, that we would be wanting in our duties to ourselves and the public, did we not offer a few remarks on the proceedings at the recent meeting and on the assertions contained in the Report.

We will first call the attention of our readers to the nature of the enquiries made by the Committee. Their correspondents were not asked to inform them *how the school laws operated*, but "to furnish the Committee with facts to show that the carrying out of the Educational Laws is prejudicial to Protestant interests." All the facts thus advertised for and reported accordingly, were not indiscriminately published, but after a careful review, what had been

deemed the material part of the information was embodied in the report. It would be but natural to suppose that these facts, thus carefully selected, are those which have been judged the most likely to support the proposition *quod erat demonstrandum, id est*, "that the working of the school laws is prejudicial to Protestant interests."

It is also to be remarked that no enquiry was ever made by the Committee at the Education Office to test the correctness of the several allegations contained in the Report before submitting it to the meeting, which, also without further enquiry, immediately upon its being read, ordered it to be printed and extensively circulated, thus accepting as well founded all the assertions put forth.

We will also observe that in the Report, and in most of the speeches made on the occasion, it was implicitly assumed that the law relating to dissentient schools affects Protestants alone, the fact that there are Catholic dissentients and dissentient schools, and that their interests are identical with those of Protestants in the matter, was altogether ignored. In fact, almost every sentence in the Report in which the word *Protestant* occurs might be very properly amended by adding the words *and Catholic* immediately after.

According to the last Report of the Superintendent there are 50 schools under the control of Catholic Dissentient Trustees, with an attendance of 1,874 pupils; and 128 schools under Protestant Dissentient Trustees, with 4,263 pupils.

When it is asserted that the property of Protestants is taxed to support Catholic schools it should in common fairness be added that, the property of Catholics is, also, in the same manner taxed to support Protestant schools. But, it may be asked, is it not possible that a law could be framed so that the property of Catholics should never be taxed for Protestant schools and *vice versa*? This has not been as yet attempted, either in Upper or Lower Canada. The laws in both sections of the country only facilitate the establishing of separate schools by allowing persons of a different religious persuasion from that of the majority to pay their taxes towards the support of separate schools *where they can be established*.

In Lower Canada a difficulty arose as to the interpretation of the word *inhabitant*. Judge Coursol (a Catholic) decided that under that name a non-resident might pay his taxes to the Dissentients. Judge Short (a Protestant) decided that the word *inhabitant* could only mean a resident. The Attorney General, Hon. Mr. Sicotte, brought in a bill containing the following clause:

"And whereas doubts have existed respecting the payment of the school Assessments by non-resident proprietors, be it enacted that in future all non-resident proprietors in any municipality where there shall exist a Dissentient school shall have it in their power to declare, in writing, in the same manner as all other ratepayers, that they intend to support the Dissentient schools within such municipality, and on their doing so, they shall be liable to be assessed for their lands situated therein by the Trustees of the Dissentient schools only; and the lands belonging to non-resident proprietors who shall not have made such declaration as provided by law, shall be assessed by the School Commissioners and for the benefit of the Corporation of School Commissioners alone; and be it also enacted that no action shall lie against the School Commissioners or against the School Trustees for the recovery of moneys which, before the passage of this act, shall have been paid to them by non-resident proprietors, nor against non-resident proprietors by the School Commissioners for arrears of assessment which they may have paid to the School Trustees, and *vice versa*."

That clause was made a matter of reproach not only to Mr. Sicotte, but to the Superintendent, who was supposed to have recommended it, and the *Montreal Witness* published the following remarks:

"The Superintendent himself knows well enough that the law is not at all decisive on this point, that it settles nothing about non residents, and this is the very reason why a year ago he had entrusted to Mr. Sicotte a bill to put in the law the very thing which the judge imagines to have been already found there."

On this the *Montreal Gazette* said:

"This is so like an unblushing untruth that we scarcely know how otherwise to characterize it. The clause does just what all men of common sense see ought to be done,—it puts the non resident rate-payer upon the same footing as the resident in respect to the appropriation of his taxes for the support of the schools. It does not therefore support Judge Short's decision for the future, but abrogates it."

We still believe that the passing of the clause above alluded to would set this matter at rest. The question of taxes paid by incor-

porated companies is one of greater difficulty. It cannot be said that such companies belong to one religion or to another, and it would be impossible to discriminate between the proportion of shares held by Protestants and by Catholics respectively; perhaps the easiest and most equitable manner would be to divide taxes levied on companies or public bodies between the Commissioners and the Dissident Trustees, where Dissident schools are established, in the same proportion as the Government grant.

After this, the most important subject discussed at the meeting was that of the formation of school municipalities. Much misunderstanding seems to exist on this subject. It has been frequently stated that Dissidents were not allowed to establish their own school districts. Now there is nothing in the law which prevents Dissidents from dividing the municipality for their own purposes into as many school districts as they require, and this has actually been done repeatedly without any interference on the part of the School Commissioners or of the Department. The only difficulty of this kind that we have heard of was in a case in which Protestant Dissidents complained of the division made by the Catholic School Commissioners of their own school districts, because they thought that division might prove injurious to them in case they should abandon their dissent and return to the School Commissioners. The fact is that the Law says expressly "That the said trustees may constitute their own school districts independently of the school districts of the School Commissioners," (4th subsection of the 57th section.)

The real difficulty consists in the fact that in some instances small scattered bodies of the minority (Catholic as well as Protestant) living on the borders of different municipalities can not combine to have a school in common. This restriction, or rather want of power to organize, is more severely felt, it is alleged, from the fact that the division of old municipalities into new, when brought about either by act of Parliament, or under the Municipal Act, or the law for the establishment of parishes, or by a Proclamation from the Governor, often breaks up Dissident school districts.

On this head we need hardly repel as a most infamous calumny the assertion made in several newspapers that the power of thus changing the limits of municipalities has been used by the Education Department with a view to breaking up Protestant school districts. It is equally unjust and still more absurd to say that the law was framed with that object. The great difficulty which was at first felt in organizing municipalities was the evident motive of that discretionary power left to the executive. When there was great opposition to school assessment it was only by organizing such portions of parishes as were prepared and could be induced to work out the school law that the system could be put in operation. It was thus that sections of parishes were furnished with schools one after another until the operation of the school law was extended over the whole. Other reasons, of practical convenience, also required that certain portions of a parish or township, as constituted for municipal purposes, should be detached for school purposes; in fact that provision is itself a protection to minorities, Catholic as well as Protestant, and has been used as such in the readjustment of the limits of parishes and townships.

We also deny that the changes effected through the Governor General's Proclamations are made without notifying the parties interested. On the first instance of a complaint of this nature, the present Superintendent made it a standing rule that, in all cases, notice should be sent to the School Commissioners and Trustees of all the municipalities concerned whenever an application was made to the Department; and no action is ever taken until an answer has been received, or a sufficient time has elapsed to show that there is no desire to offer any objection. If any party objects however, the matter is referred to the Inspector for report.

The printed form of notice sent in such cases has been in use in the Education Office for several years past.

Although the law does not warrant any ratepayer residing within the limits of one municipality in sending his children and paying taxes to the Dissident School of another municipality, yet in cases of hardship the Superintendent has advised the School Commissioners to grant this privilege, although he could not of course compel them to follow his advice.

In numerous instances, the Dissidents, Protestant as well as Catholic, are paid their share of the grant although they cannot bring together the required number of children. In other cases the Dissidents of two adjoining municipalities have been allowed to have but one *united school* for the two municipalities, although to legalize their proceedings they have been advised to elect School Trustees in each parish. Such is the case, for instance, of the Protestant Dissidents at St. Joseph and St. Eustache, in the County

of Two Mountains, and at St. Grégoire and Ste. Marie de Monroir, in the County of Rouville.

We state these facts, not with a view of opposing any change in the law that would provide increased facilities for Dissidents, but in order to show that this grievance has been misunderstood and misstated; and that far from having been aggravated by the action of the Education Department it has been palliated as much as possible.

In legislating to remove this cause of complaint it would be in the interest of the establishment of Dissident schools, both Catholic and Protestant, to impose such restrictions as would prevent the immunities granted from being taken advantage of for the purpose of evading all school taxes. We have no doubt that such an amendment would be approved of by Catholics, for the very good reason, among others, that they have the same interest as Protestants in the law affecting Dissidents; and we see no reason why it should not become law, unless indeed it be opposed by Protestants themselves, as in the case of Mr. Sicotte's bill which was opposed in the press and actually petitioned against.

These two changes, that in relation to the taxes of absentees and of incorporated companies, and the one just now adverted to, are asked for on the ground that the same thing exists in Upper Canada. Such is not the case. In Upper Canada the property of absentees in any *school section or division* (which is more than in any parish or township) is liable to be rated to support the schools of the majority; and although a Roman Catholic who gives the legal notice that he is a Roman Catholic and a supporter of a separate school is exempt from the payment of all public school taxes or school rates provided he resides within three miles in a direct line of the school of which he professes to be a supporter, he is *not exempt*, whether he resides within the section or district, from taxes on property that he may own in other *school sections*, whether there are separate schools in such sections or districts or not. School districts are quite different from municipalities, and the restriction in some respects is much more stringent than it is even now in Lower Canada.

It is true that the dissentients of two municipalities are allowed to have a united school for both; but we have already seen that the same facility exists in Lower Canada.

The argument that the schools of the majority in Lower Canada are not *non sectarian* is hardly fair when a comparison is established between the two sections. Separate schools are allowed on the ground of the conscientious views of those who do not find themselves at liberty to send their children to the schools of the majority, and to make the two cases parallel, it is enough to say that Catholics are as much forbidden to send their children to what are called *non sectarian* schools as to Protestant schools.

It is also urged that the law ought to be amended so that the school moneys could be paid directly to Dissidents, and not through the hands of the School Commissioners. This is simply asking for that which already exists. Such are the provisions in the law (Sub-sec. 3rd, sec. 57th, chap. 15, Consolidated Statutes), and such is the uniform practice of the Department, with the following exception. Inasmuch as the share paid to Dissidents is to be divided in the same proportion to the whole sum granted to the municipality, as the entire number of children attending the Dissidents' schools bears to the entire number of children attending school in the municipality, it is necessary, in order to make the division, that the reports, both of the majority and of the Dissidents, be received at the Education Office. Now it sometimes happens that the latter neglect to transmit their returns, and as it is absolutely out of the question to compel the majority to wait for an indefinite space of time in the expectation that the dissentients may find leisure to attend to their duty, the only practical solution of the difficulty that has offered was the transferring of the local grant to the majority, subject to the condition of paying over the Dissidents' share on receiving the necessary instructions from the Department, which would of course be issued afterwards if a return were received. Thus it will be seen that if the Dissidents have met with difficulties or delays they have none to blame but themselves. The Department, in fact, has been so indulgent as to pay, in advance, the sums to which the Dissidents were entitled in such cases, out of the following semi-annual grant accruing to the School Commissioners when the money had been retained by the latter. Such has been the case with Catholic as well as with Protestant Dissidents, and Mr. Burrowes, of Lachute, was remarkably unfortunate in his statement that "Where Protestants were in the minority they had to receive their money through the secretary of the majority, while in St. Andrews, with a Protestant majority, the minority drew their grant direct from the Superintendent of Education." The fact is that Protestant as well as Catholic Dissidents draw their share of the grant direct from the Superintendent when-

ever they send in their returns within a reasonable time; and as to the Catholic Dissentients of St. Andrews, they not having sent in their return in due time for the second half year of 1862, the whole grant was paid to the Protestant School Commissioners on the 22nd January, 1863, which is precisely the reverse of the statement made by Mr. Burrows.

(To be concluded in our next.)

Twenty-third Conference of the Teachers' Association in connection with the Laval Normal School.

The first sitting was opened on the 26th August, at 7 o'clock P. M.

The minutes of the last meeting having been read and adopted, Messrs. Lafrance and Létourneau lectured on botany and the reforms needed to improve the condition of teachers, and after a lively discussion on the last mentioned topic the meeting adjourned to the following day.

At 9 o'clock A. M. on the 27th, the teachers assembled were called to order, and the Treasurer submitted a statement of the finances, as approved by the Council, which was adopted.

It appears by this statement that the Association is clear of debt, and that the Treasurer has a balance of \$66.07 on hand.

Moved by Mr. Létourneau, seconded by Mr. Lafrance, and

Resolved,—That a committee be named to ascertain what changes are required in the school law, with instructions to report at the next meeting to the end that the matter may be laid before the Legislature during the ensuing session.

The following office-bearers were then elected for the ensuing year:

President: Mr. Thibault; *Vice-President*: Mr. Cloutier; *Secretary*: Mr. Carrier; *Treasurer*: Mr. Gauvin; *Council*: Messrs. Dufresne, Lacasse, Lafrance, Létourneau, Lefebvre, Dion, Gilbert, Gagné, and Ryan.

Mr. Carrier read an essay on *Electricity*; after which three prizes for the best specimens of penmanship were awarded as follows:

1st Prize, Andrew Miller; 2nd Prize, John Newton; 3rd Prize, Louis Dion and F. X. Dion.

The winners of these prizes were all pupils of the Laval Normal School. A long discussion then arose on the subject proposed at the last meeting, viz.: *Conditions necessary to form a good reader*; after which a vote of thanks was, on motion of Mr. Lacombe, tendered to the retiring officers of the Association.

Moved by Mr. Lacasse, seconded by Mr. Cloutier, and

Resolved,—That this Association would respectfully represent to the School Commissioners within the circumscription of the Laval Normal School that, as it is much to be desired that all teachers engaged in the schools should receive *le Journal de l'Instruction Publique*, the price of subscription be added to the salaries of their respective teachers, with the understanding that the Journal shall remain as the property of the school; that the Inspectors of Schools be requested to use their influence with the School Commissioners to secure the object which this Association has in view; and that a list of the municipalities that shall have complied with the request herein expressed be submitted at the next meeting of the Association.

The School Inspectors present acquiesced in the views laid down in the above resolution and expressed their willingness to carry them into effect.

Messrs. Bardy and Juneau, School Inspectors, and Messrs. Thibault, Lafrance, Ahern, and several other members promised lectures on divers subjects for the next meeting.

It was then announced that the subject for future discussion would be *The Amendments to be proposed in the School Law*, and the meeting adjourned to the last Friday in January next.

the Municipal Council—a plan which works well in this municipality. Nearly enough is raised in this way, with the Government grant, to pay the teachers; and in nearly all the districts the teachers are paid at or before the expiration of their term. 17 districts are now reckoned, No. 15 having been, this year, united with No. 1. I may remark that I think Nos. 14 and 16 should be united, as they are both too small to sustain efficient schools.

Danville Academy has continued in successful operation under the same teacher as last year, S. M. Pearl, A. B. Under the thorough and efficient tuition of the present teacher, this school is of great service.

All the schools in Shipton are English. I think that there are not enough French children in any section to render it advisable to establish a French school, though I have brought the matter before the commissioners.

21. *Melbourne and Brompton Gore*.—This municipality has the same number of districts as last year, though more schools have been kept. The number of actual districts is 15, though 18 are numbered. There has, I think, been a fair degree of improvement in the schools generally. The funds are not as promptly provided, nor teachers as promptly paid as they should be. I saw no reason for finding fault with the accounts, except want of promptness in collecting. The application of funds is, perhaps, judicious, though not strictly legal. (The same remark should have been made with reference to Shipton and a few other municipalities.) A change is, I think needed in the management of Districts 1, 2, and 8. No. 18 (French school)—This school has also improved since last year; the house is comfortable, and the children are doing well. It is taught by a male teacher in winter, and by a female in summer. The school houses are generally rather poor, though numerous and respectable.

The Female Seminary has been kept in operation during the year, under good teachers, and with increased attendance.

22. *Village of Melbourne*.—I regret that I am unable to report any improvement in the school affairs of this municipality. The commissioners, last year, very tardily effected an organization, levied a light assessment, and partly collected it. No one seems inclined to incur the cost and risk of a suit against the commissioners. No school has been kept in the municipality during the year, except, perhaps, a short private school.

23. *Cleveland and dissentients*.—In this municipality there are still ten districts under the commissioners, and one dissentient. Schools have been kept, for some part of the year, in all the districts under the commissioners, and for all the year except in three districts. I am unable to report as much improvement in this municipality as I could wish. There seems to be a want of efficiency on the part of the commissioners in seeing that suitable teachers are employed, and the school-houses properly cared for: an evil which, I am sorry to say, is not confined to this township. The funds are tolerably well received and appropriated, and the accounts well kept. I have strongly urged upon the commissioners the necessity of more care and attention in the selection and employment of teachers. It is true that the schools are mostly backward, but they will always remain so as long as incompetent and inefficient teachers are employed.

The dissentient school has not been in operation during the year, as the district has been engaged in building a school-house. This is now completed, and the school is opening under, I believe, a very competent teacher. The trustees seem to be getting their affairs into a better way, and will, I hope, go on well. This school will teach both English and French.

St. Francis College and Preparatory Department has been well sustained, though the attendance has not, I think, been quite equal to that of the previous year. The instruction in both departments has been very thorough, and the progress of the students very commendable, as appeared at the annual examination.

24. *Brompton*.—There has been no particular change in the school affairs of this municipality. The five districts have all sustained good schools, and the affairs are very well managed by the commissioners. Competent teachers, with diplomas, are secured at a fair salary, and promptly paid. The funds are well provided and judiciously appropriated.

25. *Windsor*.—This municipality, since the separation from it of St. George de Windsor, retains four districts, though one of them is so small and poor that it has not yet built a school-house nor established a school. One of the others, No. 2, has been established as a model school, though the municipality is too small to afford it an extra allowance from the grant of funds. A nominal

Extracts from the Reports of the School Inspectors, for the years 1861 and 1862.

Extract from the Report of Mr. Inspector HUBBARD.

(Concluded.)

COUNTIES OF RICHMOND AND WOLFE.

20. *Shipton*.—This municipality sustains a good character as to its schools; though it does not stand among the first class in my district in all respects, it is ahead of others in this division. The commissioners manage the affairs well, and the accounts are well kept. A good assessment is levied and promptly collected through

model school has been sustained in it during the year, though the teacher has only an elementary diploma. A teacher with a model school diploma has been engaged for the coming year.

26. St. George de Windsor.—This new municipality elected commissioners in July last. The Commissioners seemed disposed to go to work with efficiency in arranging districts, levying assessment, starting schools, &c. I think that three or four will be opened in the course of the year. The schools here will be entirely French.

27. Dudswell.—The affairs are managed with tolerable efficiency, though with less, in some respects, than could be desired. The commissioners do not carry out the law as fully as I think desirable. I urged upon them the desirableness of more care and attention in the oversight of the schools, and hope that my suggestions may be of service.

Four female teachers had diplomas, two are without them. The teachers are promptly paid.

28. Weedon has sustained three schools in its four districts, the funds being insufficient to keep the four in operation. Owing to the poverty of the people and want of interest, the rates are collected slowly. The Council, too, has been remiss in collecting the assessment, and arrears are due to the teachers. The commissioners seem disposed to carry out the law faithfully. Altogether, I may say that the affairs of this municipality are in an encouraging condition rather than otherwise. They have four comfortable school-houses, and good progress has been made in some of the schools.

An English school is needed in a settlement joining Lingwick; perhaps it would be better to annex that settlement to Lingwick for school purposes, or have them establish a dissentient school.

29. Wotton.—There are encouraging indications of improvement in this municipality. Until this year the commissioners have tried the voluntary system, but with poor success; with much difficulty sustaining sometimes one, sometimes two and three schools. Three were in operation when I visited last winter, but with very scanty funds. I have from the first advised an assessment, and this year the commissioners have levied a good amount. They have also re-modeled the districts, making nine, and have arranged for opening schools in six of them at once; and they are now opened, though one or two houses are not quite completed. Others will be opened as soon as practicable. I strongly hope that affairs will prosper well.

The schools in winter had a fair attendance. The village school, taught by the same teacher as last year, has made the best progress; the others are coming on well; one, a new school, is only beginning.

The share of supplementary aid given to this municipality last year enabled the commissioners to bring up arrears and come out free from debt.

30. St. Camille.—This municipality is making a beginning in regard to schools; commissioners were elected last year, but nothing further was done. Since the election last year the commissioners have divided the municipality into four districts, and have taken steps to have schools soon started in three of them. The people are putting up log school-houses, and they hope to get some schools opened in the coming winter. The settlements are a good deal scattered and rather new, and the people feel unable to contribute much as yet for schools. The commissioners have not levied an assessment, thinking it better to try the voluntary system for the present. I hope to find schools in operation at my next visit.

31. South Ham.—There is no change in this municipality. There are two districts, but one of them feebly supports its schools. What few inhabitants there are, are very much scattered, and it is difficult to do anything with schools. The commissioners have had to sue, in some cases, for arrears of their small assessment. Several of the people are so remote from the others that they can get no benefit from a school. There are a few settlers near Weedon, which might in time be erected into a district with a portion of Weedon. The school-house in the district keeping a school is old and small. I was told that the school was well taught, for though I was twice at the place I found the school temporarily closed each time. The funds are very small.

32. Wolfestown has done nothing yet for schools, and I cannot say that the prospect is very encouraging. Until this year, there has been no organization of any kind in the township, on account of the detrimental opposition to everything involving assessment;

but a Municipal Council has at last been established, and I have some hopes that with care and patience, a school organization may be worked in before long. I shall try to have something done the coming year, if possible.

33. St. Gabriel de Stratford.—Owing to the difficulty alluded to in my last report, nothing was done here until late in the present year, and I have not been able since the new establishment to visit it. I am unable to state what has been done, but shall visit the place as soon as at all convenient.

Recapitulation.—Of the 69 schools in these two counties, 52 are in Richmond and 17 in Wolfe; 56 are English, 13 French. I hope to be able to report a good increase next year, though a rapid growth cannot be expected. A large proportion of the children of Richmond County attend school; but this cannot, of course, be said for Wolfe County.

COUNTIES OF DRUMMOND AND ARTHABASKA.

34. Kingsey.—I regret to say that there is not the enterprise, zeal and interest manifested in behalf of schools in this municipality which I could wish, or which is necessary to the success of education. The school-houses are poor, and the supervision of the schools inefficient, the commissioners hardly visiting them at all. Matters are left almost entirely in the hands of managers chosen by the districts. The books and accounts are well kept, but the law is not carried out at all closely.

35. Durham No. 1.—There are encouraging signs of life and interest in school affairs in this large municipality, though the schools are yet far from being what could be desired. The school commissioners seem to have a commendable degree of zeal and interest for the advancement of education; and the parents have sent their children very generally to the schools. Many of the school-houses are, however, very poor, and the scholars backward; but I have as strong hopes of improvement in this municipality as of any other in my district. The commissioners are manifesting an anxiety to improve the class of teachers, and making efforts to that end. They seem, also, determined to improve the class of school-houses as far as circumstances will permit.

There are 18 districts, numbering from 1 to 19, 13 and 14 being united; and No. 3 is taught in connection with the Academy. The teachers are all female, about half having diplomas; the commissioners will insist on all having diplomas in future. The teachers are promptly paid and receive fair salaries.

The academy is spoken of by all as doing good service, under the instruction of a female teacher with model school diploma from the McGill Normal School. Unfortunately she was away at both my visits. I hope to see the school this fall.

36. Durham No. 2.—I find but little to report respecting the school affairs of this small municipality. There are two districts which come under my inspection; schools have been kept in both. The school-houses are poor, and the schools small and backward.

37. Lingwick.—The schools of which I have the oversight in this municipality are under the control of dissentient trustees. They have now four districts, and have schools in all of them. The schools are backward, but I think that due pains is taken to get competent and good teachers, and I have seen no particular reason for finding fault with the conduct of the schools this year. The accounts are well kept, but it is difficult to collect the rates; the ratepayers are rather poor and scattered, and not properly interested in the success of the schools. I regard it as unfortunate that the schools of this municipality are separate.

In reviewing my circuit, it will be seen that I have at present under my inspection 39 school municipalities, 9 of which, however do not stand reported as being districted, or having established schools for the year past, but several of them are now commencing, and will doubtless appear on my tables in next report. I now report 286 school districts, 257 school-houses belonging to commissioners or trustees, 261 schools operating under control of commissioners, 6 under control of trustees, and 9 independent schools. The number of elementary schools, including those under commissioners, trustees and independent, is 271: No. of pupils 8,451: No. of model or superior schools (for boys or mixed) 4; pupils 198: superior girls' schools 2; pupils 70; No. of academies 12; students 808: No. of colleges 3, students 154; No. of teaching nunneries 1, pupils 154: Educational institutions of all kinds 293, pupils 9,793.

It appears also that about five-sixths of the teachers are females, there being 48 male and 293 female teachers; 33 of the male and 222 of the female teachers are reported with diplomas. Our teachers are nearly all hired by the month, at wages varying from

\$8 to \$20 per month for males, and \$5 to \$12 for females, and board. It is difficult under these circumstances, to make an exact estimate of salary, as the varying price of board as well as the number of months employed should be taken into account. The more usual price at which teachers are hired is \$12 to \$14 for males, and \$7 to \$8 for females (and board), per calendar month.

There are 7 public libraries, containing an aggregate of 2,881 volumes.

I have been able, during the year, to send you a few subscriptions for the Educational Journal, and hope to be able to obtain more; I shall do what I can in this respect to meet your wishes.

In conclusion, I may repeat that on the whole I find reason for encouragement in the indications of progress in the schools and in the municipalities under my direction; and I have full confidence that the next year will show a good increase in the number of schools, and I hope also in their progress. I shall do all in my power to aid in awakening an interest among the people, particularly in the new settlements, and to assist in rendering the working of the law efficient.

Extract from the Report of Mr. Inspector PARMELEE.

COUNTIES OF MISSISSQUOI, BROME, AND SHEFFORD.

The very unusual state of the weather and the roads the past winter have rendered it a task of no ordinary difficulty to make my tour of inspection; yet I am happy to report that I have succeeded in visiting every school in my district, with the exception of three independent schools in Ely, and two in South Stuckeley.

I have found a satisfactory state of management and prosperity existing generally.

The municipality of *Milton*, which has been pre-eminent for bad management, has but one school in operation this year under control of the commissioners, though there are six districts in which there might have been good schools constantly maintained with the funds that have been absorbed in law-suits that have had their origin solely in bad management and neglect of duty.

Their indebtedness since my last Report has been reduced from twelve hundred dollars to seven hundred dollars, and as their rates are now in the hands of the Municipal Council for collection, there is a prospect that, in the course of the present year, their debts may be wholly liquidated.

In the municipality of *Roxton*, I find some irregularities that I feel it my duty to bring under your special notice. In examining the register of the school commissioners, I find that in all their meetings for business, the trustees of the academy meet and act with them in managing the affairs that the law confides solely to the commissioners.

Again, in examining the accounts, I find various sums entered as paid to the teacher of the academy, and also to the contractor for building the academy, thus illegally mixing up the affairs of an incorporated academy and the school commissioners, which are two distinct corporations.

In the municipality of *St. Romuald* the ratepayers are still burthened with a heavy debt, for which a special assessment has been authorised and collected, but misappropriated by the Commissioners, the particulars of which I communicated to you last fall, in a special report.

There is still another grievance to which I must refer. A number of Irish Catholics, who send to the English school, have been sued for rates by the commissioners the past winter, and subjected to costs and much inconvenience, contrary to an express agreement made in my presence some years since, between the commissioners and the trustees of the dissentient schools, by which the former promised to allow the said Irish Catholics to pay their rates and scholar fees to the trustees, so long as they actually sent to the dissentient schools. This arrangement certainly was but a matter of strict justice, if not of law, since otherwise they would be subjected to double scholar fees, and I know not on what principle the commissioners can justify their conduct in contravening the above mutual arrangement.

The municipality of *Sutton* is still considerably indebted. I believe, however, they are making some progress in liquidating their debts, and, notwithstanding the above difficulties, they have kept their schools in successful operation.

From a recent change of Secretary-Treasurers, the one last appointed was not in a situation to show the exact amount of their indebtedness at my last visit.

The municipality of *Potton*, which has heretofore been in arrears,

I am happy to report as having discharged entirely their indebtedness, and, with the exception that they do not keep their schools up the full term of time required by law, and that they much need several new school-houses, they may be ranked among the municipalities that may justly be styled prosperous.

I deem it right also to direct attention to the management of the dissentient corporation of *Granby*, as it appears to me not calculated to subserve the best interests of the rate-payers, who, though generally poor, are nevertheless anxious to secure to their children the benefit of a common school education. The greatest good of the greatest number certainly is not promoted by devoting so large a proportion of their limited funds, as they do, to the support of a model school—the only one in my district of inspection—in which the whole number of pupils on the journal this year is only twelve, and last year was only nine, the average attendance being of course still less. This school is not needed, and the funds devoted to it are needed to support the other schools, any one of which is fully equal to this, and some of them decidedly superior to it in advancement. The only reason I have heard assigned for continuing this school is to secure the special grant made to it by Government. I would therefore respectfully recommend the discontinuance of this grant, as the funds might be much more profitably applied elsewhere.

As to the other portions of my district of inspection, there is nothing that calls for special remark, they being decidedly prosperous and praiseworthy.

The schools, both superior and elementary, are good; the teachers are competent, and the administration of matters pertaining to the scholars, by the different officers in charge, is prompt and efficient; excepting in Milton, above mentioned, the elementary schools are nearly all in successful operation, as are also the high schools or academies, excepting the one at West Brome.

You will see by the accompanying table of statistics, that comparatively few of the teachers are furnished with diplomas as required by law; still I can safely report, that those without diplomas are, in all respects, as well qualified for their vocation as those who have them, and so soon as Boards of Examiners shall be established that are reasonably accessible, this apparent anomaly of teachers without diplomas will no longer exist.

It remains only to subjoin a summary from the accompanying Table of Statistics, in order to give a full view of the state of education in my district of inspection.

The number of high schools or academies in operation is 13, attended by 707 pupils. Of superior girls' schools 2, with 76 pupils. Model school, 1, with 12 pupils. Of elementary schools, 235, with 6,675 pupils. Of the elementary schools, 24 are dissentient, with 747 pupils, and 10 are independent, in 5 of which there are 94 pupils; the number in the remaining 5 not known. The total number of scholars in all the above schools is 7470, of whom 4031 are boys, and 3439 girls; 5489 are of English origin, and 1981 of French origin; 5221 are Protestants, and 2249 Catholics; 1252 are learning their alphabet and spelling; 2831 read currently, and 3387 read well; 4161 are learning to write; 1752 simple arithmetic, and 2228 compound arithmetic; 120, book-keeping; 1497, geography; 437, orthography; 472, French grammar; 1195, English grammar; 1187, epistolary art or composition; 23, linear drawing; 27, instrumental music; 307, history; 211, algebra; 48, natural philosophy; 54, geometry, and 22 astronomy. 12 are learning the Greek language, 85 the Latin. 57 English scholars are learning French, and 219 French scholars are learning English.

The total number of male teachers in the elementary schools is 76, of whom 15 only have diplomas. The total number of female teachers is 154, of whom 29 have diplomas.

Extract from Inspector HUBERT's Report for 1862.

COUNTIES OF ST. MAURICE, MASKINONGÉ AND CHAMPLAIN.

In the three counties of Maskinongé, St. Maurice and Champlain, forming Mr. Hubert's district of inspection, there were 29 municipalities, subdivided into 128 school districts. The number of schools in operation under the control of Commissioners was 119, classified as follows: 108 elementary schools, 10 model schools, and 1 academy. There were also 2 dissentient schools, under the control of Trustees, the whole forming a total of 121 schools with an aggregate attendance of 6,321 pupils.

Besides these schools, this district of inspection maintained 1 college, 3 convents, 1 girls' academy, 3 boys' academies, and 2 mixed elementary schools, affording instruction to 679 additional

pupils, and swelling the total number of children attending school in the district to 7,000.

The number of schoolhouses in the district owned by the School Commissioners and Trustees was 91. These buildings were generally kept in good repair; but in several places they were left unprovided with the indispensable accessories; and a deficiency in the school material was also apparent.

The want of activity in collecting the school revenue is also animadverted upon by the Inspector, who observes that this is the cause of much embarrassment to the teachers.

There were 20 public libraries, containing 8,807 volumes. These collections were very useful in developing a taste for letters among the rural population.

Extract from Inspector BOURGEOIS' Report for 1862.

COUNTIES OF DRUMMOND AND ARTHABASKA, AND THE CATHOLIC SCHOOLS OF CHESTER, TINGWICK, KINGSLEY AND DURHAM.

The statistical tables accompanying Mr. Bourgeois' Report for 1862 may be summed up as follows: number of municipalities established, 24; school districts, 86; schools in operation, 84, of which 78 are under the supervision of School Commissioners and 6 under control of Trustees (two Catholic and four Protestant schools). Of these 84 schools, 80 are elementary, 1 is a model school, and 3 are academies. The number of pupils is 3,510; or an increase of 510 on the year preceding. Increase in the number of schools, 13. Sum levied \$11,055.38.

"If," says the Inspector, "this comparison between the last two years presents results so satisfactory, the progress will be much more striking by going further and noting the successes obtained during the last ten years.

"When I made my first Report to the Department in 1852, this district, which has been somewhat extended since, only contained 7 school municipalities, with 10 schools under control, many of which were of an inferior class, and an attendance of 425 pupils.

"At present there are within the same limits, 18 municipalities, with 62 schools, the greater number of which are very well conducted, and the attendance has increased to 2,776.

"Taking into account the fact that everything had to be created amidst the endless difficulties which invariably rise up to obstruct the organization of a new system, it must be admitted that more could not easily have been done during a period of ten years.

"The School Law, which met with so much opposition at first, is now in full operation in all parts of this district; and everyone seems to be desirous of availing himself of the advantages which it offers. Yet, I am compelled to add that in some localities, where the law has only recently been put in force, indecision and want of energy in the administration of school affairs is apparent, and it is only by constant supervision and active measures that success is ensured."

Mr. Bourgeois states that the children are withdrawn from school by their parents at the ages of 10 or 11, or just as they are getting sufficiently advanced to understand and digest the matter previously acquired.

"The embarrassment," continues the Inspector, "felt throughout the country during the year just ended, contributed to increase the difficulty usually experienced in the collection of the school revenue, and a longer delay than usual has occurred in consequence. Irregularity in paying the salaries of several teachers and failure to fulfil promptly the engagements entered into by several school corporations were the natural results. Here indeed is one of the most formidable causes tending to obstruct the working of our school system. Whenever it shall be possible to convince School Commissioners that school dues must be collected regularly, and the ratepayers that punctual payment will be insisted on, a great step in advance shall have been taken, and a pledge of success for the future obtained."

Extract from Mr. MAURALT's Report for 1862.

COUNTIES OF NICOLET AND YAMASKA.

A slight decrease in the number of children frequenting the schools has taken place during the year. The number of municipalities and school districts has, however, remained the same, i. e. 16 and 108 respectively. Three schoolhouses have been added.

Of the 108 schools in operation, 5 are academies (2 in the county of Nicolet, and 3 in the county of Yamaska), 2 are model schools (in the county of Nicolet), and 3 are girls' schools of a superior

class (in the same county). There are besides, a college in which the classics are taught, a convent, and two independent schools.

The number of male teachers is 10, of females, 101—all provided with diplomas. The salaries paid to male teachers range from \$100 to \$250, to females from \$72 to \$200.

The school dues arising from local sources amounted to \$9,874.30.

The inspector observes that nearly all the teachers in the district subscribed to the *Journal de l'Instruction Publique*, in which course they met with the entire approval of the school commissioners.

Extract from Inspector BARDY's Report for 1862.

COUNTIES OF QUEBEC, MONTMORENCY, AND PORTNEUF; AND R. C. SCHOOLS OF QUEBEC.

In his first Report for 1862, Mr. Bardy complains of a disposition on the part of several school commissioners to underpay the teachers employed by them; and that in some localities the schools are given to the lowest bidders.

In the districts inhabited by Irish settlers the system of voluntary contribution generally obtains. This method, as experience abundantly proves, is attended with many difficulties and its adoption is not desirable in any locality. No institution can be maintained on a secure basis if its support is made to depend entirely on the pleasure of this or that individual. Were the regular school tax substituted everywhere for this defective system, and its collection strictly enforced, the Inspector sincerely believes that the many difficulties which have hitherto beset the path of education would speedily disappear.

It is much to be desired that the contents of all circulars issued by the Department of Education be well considered by the Boards of School Commissioners for whose benefit they are intended; and that the duty of placing such matters promptly before them, at special meetings to be called for the purpose if necessary, be punctually attended to by their respective Secretaries. The *Journals of Education*, continues the Inspector, should also be in the hands of all teachers and other persons connected with the administration of the school system; and school Commissioners and Trustees, who receive these periodicals gratuitously, would derive especial benefit from an attentive perusal of their columns, in which much valuable information relative to the duties of their office is to be found.

In the second Report for 1862, Mr. Bardy speaks most approvingly of the diverse educational institutions of Quebec. He alludes to the recent establishment in that city of an English school under the auspices of the Rev. Mr. Auclair, and Rev. Mr. McGauran, of St. Patrick's. It is conducted by the *Brothers of the Christian Schools* and promises much for the future.

Extract from Mr. JUNEAU's Report for 1862.

COUNTIES OF DORCHESTER AND LÉVIS.

Mr. Juneau reports that the progress of the schools in this district of inspection during the year 1862, had continued to be satisfactory and that the law was generally carried out in an efficient manner.

The number of children attending the schools was 7879, showing an increase of 368 over the number reported for the previous term.

The accounts of the Secretary-Treasurers were generally well kept.

Extract from Mr. CRÉPAULT's Report for 1862.

COUNTIES OF BELLECHASSE, MONTMAGNY AND L'ISLET.

It appears by Mr. Crépault's report for 1862, that there was no locality, however poor, in this district of inspection that had not now one or more schools.

Two new settlements, Mailloux and Armagh, had opened several schools within the last few months. Competent teachers could more readily find employment here than formerly, and would in all probability supersede the incompetent, who had too long enjoyed the preference.

Many of the teachers employed in this district were from the Laval Normal school, and had without exception discharged their duties with zeal and success. Although the teachers in Model schools generally obtained a fair remuneration, the salaries given to those employed in the elementary schools were, says the Ins-

pector, still too low. This had the effect of deterring teachers possessing the Normal School diploma from teaching in the primary schools, which were thus left to the competition of the numerous female teachers who had so easily obtained diplomas from the Board of Examiners, and many of whom only received from \$40 to \$50 per annum.

On the other hand, the reductions taking place in the Legislative grant from time to time had a discouraging effect on rate-payers; and the Inspector thinks that an increase in the public appropriation is absolutely necessary to keep alive that zeal on the part of the inhabitants which is indispensable to the success of the schools.

Extract from Mr. MEAGHER'S Report for 1862.

COUNTY OF BONAVENTURE.

The reports for 1862 show that a considerable increase had taken place in the number of schools in operation and in the number of pupils attending them.

These schools, which in 1861 were only 27, numbered 42 at the date of the Report—increase 15. The number of pupils had risen from 1011 to 1653—increase 645. Of these 1653 children, 701 were boys and 952 girls. In the number of children learning French grammar, a marked increase had taken place, the figures returned in the Report being 123. The rapid increase in the number of pupils learning this branch was, no doubt, due to the presence of teachers from the Normal schools, a few of whom were employed in Mr. Meagher's district of inspection.

The county of Bonaventure contains 14 school municipalities, subdivided into 51 districts. There were for these districts, 41 schoolhouses, leaving ten districts to be provided for in this respect.

Finally, this county, which had been outstripped by Gaspé in the race for learning, seemed to have fairly entered upon a career of much promise for the future.

The Inspector adds that there were still several teachers without diplomas, but expresses the hope that the recent establishment of the Boards of Examiners for the counties of Bonaventure and Gaspé would cause this evil to be remedied.

(To be continued.)

Notices of Books and Publications.

ZENDER.—*Abécédaire Français-Anglais Illustré, suivi d'un vocabulaire pittoresque contenant environ 500 vignettes, à l'usage des deux nations.* By Rev. J. D. L. Zender. Lockwood, Publisher, New York; 1864.—12mo. 60 pp.

A very useful spelling-book in both languages for beginners, and a pleasant companion for children, who will be delighted with the large number of woodcuts. We copy from it the following tables of words which are the same, or nearly the same, in the two languages. More than nine tenths of these are of Latin or Greek etymology. The sound or accent is in many cases very different, although the orthography remains unaltered. These little tables will prove useful to teachers.

"DISSYLLABLES WITH FRENCH AND ENGLISH WORDS ALIKE.

"a-e. Da-me, chas-te, se-ge, Char-les, bar-ge, char-ge.
â-e. Mâ-le, câ-ble, sa-bre, ba-se, va-se, pha-se, phra-se.
i-e. Bi-le, î-le, vi-ce, gui-de, pi-le, fi-le, sty-le.
o-e. O-de, co-de, no-ble, stro-ge, for-ge, for-me.
ô-e. Pro-se, glo-se, do-se, po-le, pau-se, cau-se, clau-se.
u-e. Mu-se, cu-be, bru-te, du-pe, ru-de, mu-le.
am-e. Am-bre, cen-tre, tem-ple, chan-ge, am-ple, ran-ge.
ou-e. Trou-ble, rou-ge, cou-ple, dou-ble, grou-pe.
a-al. Fa-tal, na-sal, vas-sal, ca-nal, as-tral, pa-pal.
a-ant. Pa-rent, ab-sent, ta-lent, ac-cent, a-gent, ar-dent, sa-fran.
a-in. La-tin, sa-tin, la-rynx, cha-grin, bas-sin.
a-on. Ca-non, gal-lon, af-front, jar-gon, dra-gon.
é-al. Lé-gal, vé-nal, mé-tal, pé-nal.
é-ant. Fré-quent, clé-ment, ex-empt, pré-sent, ré-gent, pé-dant.
é-in. Cer-tain, rai-sin, Ber-lin.
i-al. Ri-val, fi-nal, si-gnal, fis-cal.
i-ant. Dis-tant, pi-quant, hy-men, pi-ment.
i-on. Pi-geon, pri-son, ci-tron, sy-phon.
o-a. Mo-ral, vo-cal, o-ral, to-tal, dol-lar, o-val, Tho-mas.
a-tion. Na-tion, ac-tion, pas-sion, frac-tion, fac-tion.
é and é-tion. Lé-gion, lé-sion, ré-gion, ques-tion, ces-sion.

"TRISSYLLABLES WITH FRENCH AND ENGLISH WORDS ALIKE.

"a-a-e. A-da-ge, ra-va-ge, car-na-ge, pas-sa-ge, ca-pa-ble.
a-a-a. Al-ma-nach, pa-la-tal, fal-ba-la, Ca-na-da.
a-i-al. A-ni-mal, car-di-nal, bap-tis-mal.
a-i-e. Sar-di-ne, ma-chi-ne, ma-ri-ne, rap-i-ne, fa-mi-ne.
a-u-e. Fac-tu-re, sta-tu-re, frac-tu-re.
é-a-e. Pré-fa-ce, pré-sa-ge.—é-é-a. Gé-né-ral, vé-gé-tal.
e-i-e. Ves-ti-ge, dé-bi-le, rep-ti-le.
e-u-e. Re-fu-ge, dé-lu-ge, ex-cu-se.
i-é-al. I-dé-al, li-bé-ral, mi-né-ral.
i-i-ant. Vi-gi-lant, di-li-gent, mi-li-tant.
i-a-e. I-ma-ge, vi-sa-ge, vil-la-ge, pil-la-ge, mi-ra-cle.
o-a-e. Por-ta-ble, pro-ba-ble, o-ra-cle, ob-sta-cle.
o-e-ant. Pro-tes-tant, to-lé-rant.—o-u-e. Glo-bu-le.
o-i-e. Doc-tri-ne, no-ti-ce, po-li-ce, of-fi-ce, no-vi-ce.
o-i-al. No-mi-nal, doc-tri-nal, or-di-nal.
an-i-e. Sen-si-ble, tan-gi-ble.
u-a-e. U-sa-ge, plu-ma-ge, suf-fra-ge, sur-fa-ce.
u-u-e. Struc-tu-re, cul-tu-re, rup-tu-re, su-tu-re.
in-o and u-ant. In-sol-vent, in-no-cent, ins-tru-ment.
ence. Sci-en-ce, si-len-ce, sen-ten-ce, ab-sen-ce.

"POLYSYLLABLES.—4, 5 & 6 SYLLAB.—POLYSYLLABLES.

"4. Religion, contrition, expression, lamentable, mémorable, excusable, accessible, invincible, combustible, ambuscade, sérénade, palissade, providence, tempérance, tolérance, multitude, solitude, longitude microscope, télescope, horoscope.

"5. Habitation, acquisition, occupation, récréation, satisfaction.

"6. Communication, capitulation, dénomination, interrogation.

"Words becoming English by changing the ending.

"Oire into ory.—Gloire, histoire, mémoire, territoire, oratoire.
Aire into ary.—Contraire, solitaire, militaire, commissaire.
Eux into ous.—Pieux, fém. pieuse, fameux, harmonieux.
Eur into or, our.—Faveur, erreur, honneur, splendeur, vapeur.
If into ive.—Actif, fém. active, captif, expressif, attentif, natif.
Ement or ment into ly.—Directement, secondement, rigide-ment.
Té into ty.—Beauté, charité, liberté, timidité, prospérité, prohibé.
Ie into y.—Furie, perfidie, énergie, anatomie, astronomie.
E into y.—Clémence, régence, décence, agence, tendance.
On into oon.—Dragon, salon, ballon.
Et into etc.—Complet, fém. complète, discret, replet.
At into ate.—Légat, prélat, climat.
Ir into ish, re into er.—Finir, polir, rendre, tendre.
Ateur into er.—Réformateur, importateur, observateur, admirateur.
El into al.—Éternel, universel, accidentel, sexuel.
Iser into ize.—Magnétiser, analyser, scandaliser, fertiliser.
Isme into ism.—Magnétisme, christianisme, paganisme.
Ique into ic or ick.—Magnétique, électrique, Pacifique.
Iste into ist.—Magnétiste, phrénologiste, janséniste, déiste.
Ien into ian.—Opticien, magicien, musicien, logicien, mathématicien.
E subtracted.—Calme, marche, charme, acte, pacte, presse, verbe.

TRANSACTIONS of the Literary and Historical Society of Quebec. New Series. Part II. Hunter, Rose & Co., Publishers, Quebec; 1864.—160 pp.

The President of the Society, Mr. Langton, takes up the greater portion of this number with an introductory essay in which he adroitly but cautiously combats Neibuh's System of historical criticism, a paper on Champlain's expedition to Lake Huron in 1615, and another on the last census. In another part of this number will be found an extract taken from the last mentioned article which will be read with peculiar interest at this moment.

The remainder of this number is devoted to articles on the following subjects: The Gold Mines of Nova Scotia, by Dr. Anderson, and those of Canada, by Rev. Dr. Douglas; Insects of Lower Canada, by Wm. Couper, Esq.; the Condition of our Jails, by E. A. Meredith, Esq., LL.D.; the Gyroscope, and Observations to determine the Latitude of Quebec, by Lient. Ashe, F.R.C.S.

MCGILL UNIVERSITY CALENDAR FOR 1864-65. Thos. Becket, Publisher, Montreal; 1864.—78 pp.

This Calendar contains all the information which intending students may wish to obtain relative to the courses followed in the Faculties and at the High School, also at the Normal and Model Schools of the University.

THE NORTHERN KINGDOM; By a Colonist. Dawson, Publisher, Montreal; 1864.—18 pp.

The author of this little pamphlet desires to see a legislative union of all the colonies of British North America, and anticipates the establishment of a monarchy with a Prince of the reigning family for its head.

SMALL.—*The Animals of North America*. First Series: Mammalia; By Beaumont Small. John Lovell, Publisher, Montreal; 1864.—8vo, 108 pp.

We have here the first work of a series intended to enlighten the youth on the Natural History of the country. It is embellished with woodcuts.

ANNUAIRE de l'Université Laval pour l'année académique 1864-65. Côté, Publisher, Quebec; 1864.—39 pp.

DRAPEAU.—*Coup-d'œil sur les ressources productives et la richesse du Canada, suivi d'un plan d'organisation complet et détaillé relatif à la colonisation, destiné à faire suite aux Études sur la Colonisation*; By Stanislas Drapeau. Brousseau, Publisher, Quebec; 1864.—8vo, 36 pp.

NESBITT.—*Directions de navigation pour l'île de Terre-Neuve et la côte du Labrador et pour le Golfe et le fleuve St. Laurent, compilées spécialement d'après les inspections faites par ordre des gouvernements anglais et français, traduit de l'anglais*; By Thomas T. Nesbitt. Elzéar Vincent, Publisher, Quebec; 1864.—Large 8vo, 203 pp.

LES URSULINES DE QUÉBEC. Volume II. Darveau, Publisher, Quebec; 1864.—362-xv-38 pp.

As the title implies, this is a chronicle of the Ursuline Convent of Quebec. It is to be completed in three volumes. The present portion of the work carries the narrative down to the taking of the city by the English, and will be read with interest by all students of early Canadian History.

LATOUR.—*Annuaire de Ville-Marie, origine, utilité et progrès des institutions catholiques de Montréal*; By H. Latour. 1st Year, 1863. E. Senécal, Publisher, Montreal; 1864.—8vo, 192 pp. Price, 25 c.

This is the first part of a work on the Roman Catholic Institutions of Canada, to be published annually. It will be principally descriptive of the churches, chapels, brotherhoods, charities, societies for mutual assistance, and educational, literary and national institutions. The historical, biographical, and statistical information which Mr. Latour has already compiled in this little book is very valuable, and its collection must have cost him much time and labor. It would appear from data which he has laid before his readers that the development of the religious communities of females established at Montreal, has been very great during the last decade, as the following figures, borrowed from his pages, will show:

In 1853 there were at the *Hôtel-Dieu*, 53 nuns and novices, and the number of patients admitted during the year was 2,946. In 1863 the figures had risen to 83 and 3,659 respectively.

The *Sœurs Grises* had, at the first mentioned period, besides their principal convent at Montreal, 4 missions, or branches, in other parts of America; in 1863 they were in possession of 16 establishments.

The *Sisters of the Congregation* increased the number of their establishments from 25 to 35 during the decade, and of the members of their order from 149 to 383 during the same period. The number of children attending their schools in Montreal also increased from 1,820 to 3,958 (1). Total attendance at present at all the schools conducted by this community, 10,331.

LA REVUE CANADIENNE.—The character which this interesting review has already earned for itself is very well sustained in the numbers for June, July, and August, though we miss the continuation of several articles commenced in former numbers. Among the contents of the issues now at hand we may mention an article on the political career of the late Chief Justice LaFontaine, by Mr. Royal; another on the Church of England and Rationalism, by Mr. Lamarche; and two pretty little poems by Messrs. Lemay and D. H. Senécal. Mr. Garneau, also reproduces with corrections and additions, the conclusion of his History of Canada.

CARTWRIGHT.—*Remarks on the Militia of Canada*; By R. J. Cartwright, M.P.P. 1864.—46 pp.

Starting from the proposition that a distinct understanding is necessary between this and the mother country to fix the numerical force each would be called upon to furnish for the defence of

Canada in the event of hostilities, the author goes on to discuss the means available to bring our contingent creditably into the field.

The system which has hitherto been regarded with most favor in the efforts made to organize our militia, i. e., drilling as many men as possible for a few days in each year, is altogether discarded by the author, who recommends the more perfect disciplining of a comparatively small force annually. In the following propositions, set down in the pamphlet, the views of the author are presented in so concise a form that we reproduce them:

"1st. That, taking into consideration the peculiar position of Canada, it is indispensable to have a distinct understanding—most probably a formal convention, treaty if any like to call it so—with the Imperial Government, in which the contribution which Canada, as a Province of the Empire, ought to make towards her own defence, should be precisely defined.

2nd. That it should be laid down as a fundamental principle that the volunteers were to be regarded purely as an auxiliary body, and that the chief portion of our expenditure ought to be devoted to disciplining a certain proportion of the regular first class militia, the total number to be fixed by convention as above stated, but supposed likely to range from 50,000 to 100,000 men.

"3rd. That as the number required would probably be too large to admit of their being called out simultaneously—even were it desirable to do so—they should be drilled in annual instalments of so many thousand a year, each detachment to serve for say six months in open field.

"4th. That these militiamen, after having once received six months' instruction, should be thenceforward free from all further duty in time of peace, but should continue liable for actual service for a period of ten years, and thereafter be formed into a reserve, not to be called out except in extreme emergency.

"5th. It was further proposed—though not at all as part of the original system, which contemplates the formation of a well organized militia on a footing suited to the resources of the country, and so adjusted that it might be kept up by ourselves without any extraneous aid—that as Canada was very much in arrear, and a sudden emergency might arise before such a scheme could be fairly carried out, a special offer should be made to the English Government, agreeing to train a double or treble number of men in the first two or three years, provided they would assist us with a loan of money for that purpose at three per cent., and allow a portion of the troops in garrison here to be brigaded with and act as instructors to our militia—by which means, without any actual outlay on their part, we could probably afford to drill twice as many men as we could otherwise."

MONTHLY SUMMARY.

EDUCATIONAL INTELLIGENCE.

—The committee appointed by the Legislative Assembly to enquire into the means of promoting agricultural instruction, made a report which has recently been published. This committee was presided over by Mr. Perrault and composed of the following gentlemen: Messrs. Bourassa, Cornélius, Coupal, Daoust, Dorion (Arthabaska), Gaudet, Houde, Lajoie and Pinsonneault. After an elaborate sketch of the means employed in other countries to promote agricultural learning, and a review of what has been done in Canada in the same direction, the report proceeds with a long series of questions and answers, categorically arranged, and concludes as follows:

(Translation.)

Your committee having studied 1st, the progress and condition of agricultural instruction in other countries, and 2nd, the progress and condition of agricultural instruction in Canada, viz.: in our primary schools, colleges, universities and special agricultural schools, has come to the following conclusions.

1st. That agricultural instruction is imperatively demanded by our population, as all men who are in a position to form an opinion on the value of this important question have declared to your committee.

2nd. That to secure a broader diffusion of agricultural knowledge and to predispose a greater number of pupils in our colleges to its study, the Government should call the attention of all educational institutions receiving a grant from the Fund in aid of Superior Education, to the opportuneness of giving a more specially agricultural application to the courses in natural science followed by the advanced classes.

(1) The Report of the Superintendent of Education places the number at 4005.

3rd. That in order to encourage agricultural education in the universities and the addition of a complete course of agricultural training in the Faculties of Arts, your committee recommends that a certain number of bursaries, for the Faculties of Arts, be founded in favor of universities adopting this innovation in their curriculums; such bursaries to be conferred in preference on pupils coming from the special agricultural schools, or on those coming from colleges in which the course of natural science had special reference to agriculture.

4th. That to meet the expense of this agricultural training in the universities, a sufficient sum be taken from the Fund in aid of Superior Education in Lower Canada.

5th. That in order to open the agricultural schools of St. Anne and St. Thérèse to a greater number of pupils, a special grant should be placed at the disposal of the Board of Agriculture for the foundation of new bursaries for these schools; such bursaries to be distributed in preference among the pupils coming from colleges in which the course of natural sciences had special reference to agriculture. This recommendation was made in the last report of the Minister of Agriculture at the request of the Board of Agriculture.

6th. That the prizes distributed by the Department of Public Instruction in the primary schools should consist principally of elementary treatises on agriculture, the arts and practical sciences, so as to diffuse agricultural and industrial knowledge among the families of the cultivators of the soil.

—The ladies of the *Congrégation de Notre-Dame* have acquired for the sum of \$20,000, a fine property from Mr. Gibb, situated on the St. Foye road, near Quebec, and purpose to establish a seminary for young ladies on the same plan as that of Villa-Maria. This is one of the finest properties in Canada and is worth more than the sum above named; but Mr. Gibb wished to find a public institution for a purchaser. He had offered it to the Laval University as the site of a Botanical Garden, a purpose for which the magnificent conservatory erected at great cost by the proprietor rendered it peculiarly adapted.

—A girls' model school has been recently established at Chicoutimi, under the direction of the sisters of *le Bon Pasteur*. One of the ladies in charge is in possession of the Laval Normal School Diploma, and is a winner of the Prince of Wales' Prize. Several teachers from the Normal schools are at work in the county, the attendance at the schools is increasing rapidly and, altogether, education is making very satisfactory progress.

—Among the numerous institutions of learning springing up on all sides, we notice a college at St. Johns, county of Iberville, affiliated to that of St. Hyacinthe; another at the Village of Iberville, and a third at Montmagny. The latter was established, we understand, by Mr. Candide Dufresne, former Principal of the Industrial College of St. Michel, but it is now conducted by Mr. Laferrière, who is a trained pupil of the Jacques-Cartier Normal School and possessed of the Academy Diploma. Mr. Guérin, another pupil of the same school, is also employed as assistant teacher in the college.

—The chief feature of interest connected with the Educational Department of the Social Science Association at York, has been the Address of the President, the Archbishop of York. This Address, which we hope to be able to give *in extenso* in a future Number, entered into the whole question of Education, which the Archbishop divided into three heads—the highest education carried on in the public schools, the education of the middle classes, and the education of girls in the middle and highest schools—treating each with a degree of comprehensiveness and liberality which called forth the applause of all present. He disapproved of the University Examinations for females, who, he thought, had enough to do at home. He also touched upon the question of the grammar and other endowed schools, university reform, and the education of the poor. Several valuable papers have been contributed to the Department, a full account of which we hope to give in our next Number.—*Educational Times*.

—In a recently published Blue-book on the Army Medical Department an interesting account is given of the state of education among the recruits in the British Army, and a comparison instituted with that of the French Army, from which it appears, that of every 1000 recruits examined in English districts, 239 were unable to read and write, 37 able to read only, and 724 able to read and write. In Scotch districts the numbers were respectively 163, 157, and 680. In Irish districts, the result appears as 322, 104, and 578. Compared with the results for 1861, there is a decrease in the proportion of uneducated in England, but scarcely any difference in Scotland and Ireland. In the French army, taking the average of the five years ending in 1859, the state of education was found to be—out of 1000 recruits there were unable to write 318; able to read only, 32; able to read and write, 650; so that the proportion of wholly uneducated is higher than among the recruits for the British army.—*ib.*

—The Minister of Public Instruction in France, in order to encourage young people to continue their studies after leaving school, proposes to found a prize in every canton for youths between 15 and 18, who, while employed in manual or agricultural labour, have best retained or im-

proved the instruction they received at school. The prize is to consist of a deposit in the Savings Bank, and the expense is to be defrayed by the Minister of Public Instruction, or by the Department, if sufficient funds are not provided by private contribution.—*ib.*

—The Prince Imperial, says the *Paris Revue de l'Instruction Publique*, lately visited the college at Vanves, an establishment serving as the junior department of the Imperial Lycée of Louis le Grand. The Prince came without any previous announcement, and was accompanied by the Minister of Foreign Affairs and the Minister of Public Instruction. As the examination was going on at the time, the distinguished visitors had an opportunity of hearing some excellent recitations, one of which, a fable by LaFontaine, drew a very pretty compliment from the young Prince, followed on the same evening by a more substantial testimony in the form of a magnificent copy of the immortal fabulist.

—M. Penjon, the Blind Professor of Mathematics, says the *Paris Revue de l'Instruction Publique*, has just died at the age of eighty-two. Afflicted with blindness from his birth, it is surprising that he should have successfully followed so difficult a career as that of teaching the abstruse sciences. He was admitted to the Haüy Institute in 1797; and having shown great aptitude in mastering the difficulties of mathematics, he obtained permission to follow a special course in this branch at the Lycée Charlemagne. His progress here was so rapid that he obtained the first prize of the college for the first and second years, and the second and third prizes respectively, at the great general competition. He was soon afterwards appointed Professor of mathematics at the Institute for the Blind, and having solicited a chair in a university, commenced a public course of Algebra at l'Ecole des Mines to demonstrate his ability to teach. Success having crowned his efforts in this experiment he obtained a professorship at the Lycée of Angers in 1810. For 30 years he filled a university professorship; and having been created a Knight of the Legion of Honor as a reward for his services, he had, some time before his death, come to occupy the place reserved for him at the Quinze-Vingts. This extraordinary man spoke several languages, and up to his death devoted some portion of each day to the cultivation of letters and the sciences, though his favorite pursuit was the study of mathematics. He loved to recall the fact that Laplace had judged him competent to understand his great work *le Traité de la Mécanique céleste*, a copy of which he had received from the hands of the author.

—We have to record the destruction by fire of the Institute for the Deaf and Dumb, erected on the site given by Mr. Cherrier for the purpose, and which had only been completed a few days previously. The fire was first discovered issuing from the roof, in the immediate vicinity of the cupola, and the inmates had barely time to make their escape before the whole of the upper part of the building was enveloped in flames. By great exertions the firemen succeeded in arresting the progress of the conflagration, but not until a great deal of damage had also been done to the lower stories, though we believe the loss is covered by insurance. The cause of the accident is the same as in the case of the destruction of the Reformatory Prison at St. Vincent de Paul, viz.: the projection of the beams or rafters into the flues of the chimneys; and the recurrence of disaster through this cause ought to put builders on their guard against so radical a defect.

—The late Rev. H. Prévost, Curé of Montreal, was born at Terrebonne in 1822, and was consequently but 42 years of age when he died. The charge he so ably filled during half a score of years and which he held at the time of his death, was one involving immense labor and requiring all that ability and tact which the late incumbent possessed in so eminent a degree. His kind disposition and affability made all intercourse with him in the daily avocations of life easy and agreeable; and the services he rendered to the cause of education will long be remembered by those who take an active share in promoting the development of popular learning in Montreal.

SCIENTIFIC INTELLIGENCE.

—In the *Illustrated News* of 9th March, 1850, will be found the report of an address delivered by Sir Robert (?) Murchison before the Royal Institution. It is there stated that Sir Roderick gave as an axiom, that gold ore never occurs in any great quantity except under certain conditions of "constants," viz.: when the ancient stratified rocks, constituting the backbones of continents, or great islands, have been penetrated, and altered, and crystallized by the intrusion of igneous or eruptive matter. In the course of his address Sir Roderick repeatedly dwelt on the fact that the auriferous veins invariably deteriorated in the per centage of gold to the weight of quartz, the deeper they were traced. That all the rich portions are found at or near the surface; hence the powerful attrition which the surface has undergone in ancient times had disintegrated the greater quantity, and distributed the freed gold in heaps of gravel and sand over plateaus or in valleys. He showed that mining in the Ural Mountains and in Mexico proved that gold decreased according to depth, when it finally ceased and was replaced by silver.

Sir Roderick further remarked, that Job was a true and good geologist, when he said, "There is a mine for the silver, and the earth hath dust of gold." That it would be in vain to assign any limits to the product-

ive value of silver mines, when science had been fully applied to them, for they increase in value as in depth, whereas gold diminishes as we descend to seek it.

Sir Roderick inveighed strongly against the popular delusion, that the Californian gold regions, then recently discovered, would be all equally productive, basing his opinion on the presumption that there could be no variation from the constants, which he appeared to view as a law of nature.

In connection with Sir Roderick's allusions to Job, it is interesting to turn to Job himself; and as some points of connexion are evidently wanting in our common version, I have had recourse to that of Good, which certainly proves Job to have been an excellent geologist.

Good thus translates the 28th chapter of Job: "There is a mine for the silver, and a bed for the gold which men refine. Iron is dug from the earth and the rock poureth forth copper. Man delveth into the region of darkness, and examineth to the utmost limit, the stones of darkness and death shade; he breaketh up the veins from the matrix, which, though nothing thought of under foot, are drawn forth and brandished among mankind. The earth itself poureth forth bread, but below it windeth a fiery region; sapphires are its stones, and gold is its ground." "Man thrusteth his hand into the sparry ore; he upturneth the mountains from their roots; he cutteth out channels through the rocks, and his eye discerneth every precious gem. He restraineth the waters from oozing, and maketh the hidden gloom become radiance."

In a note to this chapter, Dr. Kitto gives an extract from Agatharchides, who lived in the first century before Christ, describing the mode in which the auriferous quartz mines of the Red Sea were worked by the ancient Egyptians,—all tending to prove that quartz mining and crushing, as well as washing gold from the sands of the beds of rivers, were about as well understood two thousand years ago as they are now.—Dr. Anderson, in the *Transactions of the Quebec Lit. and Hist. Society*.

—Professor Donati announces from Florence the discovery of a new comet, being the third of the present year, in the constellation of Leo Minor. Its motion is very slow, which leads to the supposition that it is approaching the earth and sun, and is therefore not unlikely to appear under much larger dimensions than at present. Its actual appearance through the telescope is that of a very weak nebula.

Father S. cchi, of Rome, has laid before the Academy of Sciences at Paris the results of his observations of the atmosphere of Jupiter by the spectrum apparatus, which confirm the existence of certain special lines differing from our own. The line C and its atmospheric band is totally absent in Jupiter's spectrum, and other lines are differently arranged.—*Educational Times*.

—The long discussion which has taken place over the human jaw-bone asserted to have been found at the quarry of Moulin-Quignon has given great interest to explorations at that place. At the meeting of the Academy of Sciences of July 18th, M. de Quatrefages presented the results of new discoveries of human remains in communications from M. Boucher de Perthes. From these communications it appears that on the 24th. of April last, Boucher de Perthes, along with Dr. Dabois, physician of the Hotel-Dieu at Abbeville, found in a yellowish-brown bed to the right of the quarry, a portion of a human sacrum, fragments of other bones, some of which were parts of a cranium, and a human molar tooth. On the first of May, they obtained, on further digging, three small fragments of a cranium and a part of a tooth. On the 12th of May, M. Boucher de Perthes was joined by M. H. Duval. They procured from the brownish-yellow bed, at a depth of six to seven feet portions of a cranium.

On the 11th of May, besides fragments of bones, a human jaw-bone was turned out, which was perfect, excepting the extremity of the right ramus and the teeth. The depth from which it was obtained was about fourteen feet. Boucher de Perthes, being occupied with investigations elsewhere at the time, was not himself present; but a person delegated by him superintended the digging. Fragments of bones and some cut flints also were found.

On the 7th of June, the Abbé Martin, Curate of St. Gilles, Professor of Geology in the Seminary of St. Riquier, continued the diggings during the temporary absence of M. de Perthes, and took out from the bed, at a place where it showed plainly by its regular stratification that it had not been disturbed since its first deposition, a human cranium, the frontal bone and the two parietals of which were nearly entire, and also two fragments of an upper jaw (perhaps of the same head with the cranium) and an iliac bone.

The number of specimens of bones collected amounts to 200, and they were all found within an extent of about 130 feet. Part are of animals, a catalogue of which is soon to be made out. The human remains apparently indicate a very small race of men.—*Les Mondes*, July 21.

—Mr. W. F. Barrett, Assistant in the Physical Laboratory of the Royal Institution, has recently published in the *Philosophical Magazine*, a new and extremely delicate method of determining the amount of carbonic acid in air expired from the lungs. The apparatus used by Mr. Barrett in this investigation, which has been made under the general direction of Professor Tyndall, is nearly the same as that employed by the Professor in his researches on the absorption of heat by gases.

Three suitable bags are filled with the human breath: No. 1 is filled before breakfast; No. 2, after breakfast; No. 3, after severe exertion.

The contents are then successively allowed to enter an exhausted brass cylinder, the ends of which are stopped air-tight by plates of rock-salt. Through the cylinder the radiation from a flame of carbonic oxide gas is passing. Immediately the breath, which has been deprived of its moisture, fills the brass cylinder, more than half the heat from the flame is cut off, or absorbed, and this entirely by the small quantity of carbonic acid present in the expired air. The amount of heat intercepted by the breath is, in each case accurately measured by means of a delicate thermo-multiplier. The per-centage of carbonic acid contained in the different specimens of breath is found by calculation and subsequent experiments, and is then compared with a chemical analysis of each specimen made by Dr. Frankland.

The close agreement between the methods of analysis is shown by the following numbers:—

By physical analysis.	By chemical analysis.
Bag 1.....4.00.....	4.31
Bag 2.....4.56.....	4.56
Bag 3.....5.33.....	5.22

Those numbers indicate the per-cent. of carbonic acid in breath and show that in these experiments the least amount of that gas was exhaled before breakfast.

Many other different samples of breath have been examined by Mr. Barrett; the results he has obtained prove the great delicacy of the new method of analysis in detecting small quantities of carbonic acid, or in discovering variations in the amount of this gas in the atmosphere or in the human breath. For this purpose its application in hospitals has already been suggested by eminent men.—*Intellectual Observer*.

STATISTICAL INTELLIGENCE.

—The press of Canada generally, that of Toronto particularly, continues with much industry to devote a goodly portion of its space to lengthy articles on the great subject of Confederation. The question is presented in every conceivable and inconceivable light. Many of the articles are interesting, many are not; several are valuable, others utterly worthless. The *Globe* of the 4th, however, publishes an article in which is compiled some returns of the relative value of the trade and commerce of the British American Colonies, and as the statistics are valuable and should be interesting, we condense a portion of the article for the benefit of our readers. The quantity of new shipping built in all the North American colonies, in 1863, was 645 vessels, measuring 219,763 tons register, of which New Brunswick built upwards of 38 per cent. The value of the new shipping in British North America last year, at £8 sterling per register ton, was £1,758,104 sterling, or \$8,439,000—a sum representing a very large industry, which must have given work and wages to a vast number of hands. The revenue of New Brunswick last year, was the largest ever collected in one year in the history of the Province, having been \$854,894, which was an increase of \$152,664 over 1862. The high tariffs in the United States put a stop to smuggling, and to that extent improved the Provincial revenue. That part of the revenue derived from customs was \$768,353, or about \$3 per head of the population. In Canada last year the customs revenue was \$5,169,173; excise, \$725,421; total, \$5,894,594, or about \$2.25 per head of the population. In Nova Scotia the customs and excise revenue, in 1863, was \$861,989, or about \$2.60 per head of the population. The customs and excise revenue of the five colonies of Canada, Nova Scotia, New Brunswick, Prince Edwards Island, and Newfoundland, in 1863, was £1,697,777 stg., or \$8,149,329 being \$2.47 per head of the population, against £1,465,111 stg., or \$7,032,532 in 1862. The imports into New Brunswick in 1863 amounted to £1,595,513 stg., or \$7,658,462, being \$1,458,763 in excess of the imports of 1862. The imports of Nova Scotia, in 1863, amounted to \$10,201,391, and of Canada in the same year to \$45,964,493. The export from New Brunswick in 1863 amounted to £1,029,320 stg., or \$4,940,736; being \$984,243 in excess of the exports of 1862. Including the value of the new ships, (£812,750 stg.) the total exports of 1863 were £1,842,079 stg., or \$8,841,936—being an excess over the imports, or a balance in favour of the Province, of \$1,183,474. The exports from Nova Scotia in 1863 were of the value of \$6,546,488; those from Canada, including the value of the new shipping exported, \$41,831,532.—*St. John's News, C. E.*

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