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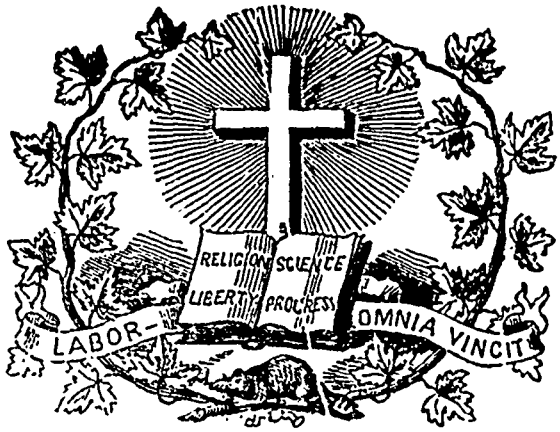

JOURNAL OF EDUCATION.

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LITERATURE.

POETRY.

AFTER THE BALL.

BY MRS. LEPROHON.

(Written for the *Journal of Education*.)

Silence now reigns in the corridors wide,
The stately rooms of that mansion of pride,
The music is hushed—the revellers gone,
The glittering ball-room deserted and lone,
Silence and gloom like a close clinging pall
O'er shadow the house—'tis after the ball.

Yet a light still gleams in a distant room
Where sits a girl in her 'first season's bloom';
Look at her closely—say, is she not fair
With exquisite features, rich silken hair
And the beautiful, child-like, trusting eyes
Of one in the world's ways still unwise.

The wreath late carefully placed on her brow
She has flung on a distant foot-stool now,
The bouquet exhaling still fragrance sweet,
Lies crushed and withering at her feet;
Gloves and tablets she has suffered to fall—
How weary she looks after the ball.

Ah, more than weary! Mark how still and white
With rose—tipped fingers entwined so tight,
The grieved pained look on that forehead fair,
One which it never was seen yet to wear,
And the soft eyes gleaming through a mist of tears,
Telling of secret misgivings and fears.

What is it all? Why some April care,
Or some childish trifle, baseless as air,
For the griefs that call forth girlhood's tears,
Would but win a smile in maturer years,
When the heart has learned mid pain and strife,
Far sterner lessons from the book of life.

Ah! far better for thee, poor child, I ween,
Had thy night been spent in some calmer scene—
Communing with heart or friend at will;
Or in innocent slumber calm and still,
Thou wouldst not feel so heart weary of all
As thou dost to-night, after the ball.

WHO SHALL ROLL AWAY THE STONE?

What poor weeping ones were saying
Eighteen hundred years ago
We, the same weak faith betraying,
Say in our sad hours of woe.
Looking at some trouble lying
In the dark and dread unknown,
We, too, often ask with sighing,
"Who shall roll away the stone?"

Thus with care our spirits crushing,
When they might from care be free,
And, in joyous song out-gushing,
Rise in rapture, Lord to Thee.
For, before the way was ended,
Oft, we've had with joy to own,
Angels have from Heaven descended,
And have rolled away the stone.

Many a storm-cloud sweeping o'er us
Never pours on us its rain;
Many a grief we see before us
Never comes to cause us pain.
Oft-times in the feared to-morrow
Sunshine comes—the cloud has flown,
Ask not, then, in foolish sorrow,
"Who shall roll away the stone?"

Burden not thy soul with sadness—
Make a wiser, better choice.
Drink the wine of life with gladness;
God doth bid the men, "Rejoice."
In to-day's bright sunlight basking.
Leave to-morrow's cares alone;
Spoil not present joys by asking,
"Who will roll away the stone?"

THE SONG OF THE SUGARING.

By John Fraser.

The sun has arisen, and crimsons the snow
On the top of the mountains and valleys below,
From his throne in the azure he smiles out with glee,
And is bidding the frozen up brooklets be free.

He peeps through the woodlands, all leafless and still,
And kisses with gladness the brow of the hill;
And the life blood is coursing, both rapid and free,
Through the bountiful veins of our own Maple Tree.

Grim winter's receding, and joy-giving spring
Sends red-breasted robin again on the wing.
Then up! to the labor give in your adhesion,
O! 'tis charming to reap the first fruits of the season.

Hie away to the forest! to sugaring away!
The time has arrived for the yearly foray;
We wound with intent, but no malice have we,
We love, prize and cherish our bountiful tree.

The blood of the Maple this day shall escape,
O! it's dearer to us than the blood of the grape:
In our homes it can ne'er be the mother of sorrow,
Nor cheer us to-day while it frets us to morrow.

Dear Maple of spring-tide the harbinger green,
Of summer the glory, of autumn the queen,
Enshrined in our homes it is meet thou should'st be
Of our country the emblem, O beautiful tree.

Then urge on the team, the work has begun,
The forest spreads out its rude limbs to the sun;
The woodpecker's tapping both eager and fast,
For insects to furnish his early repast.

We gather the sap amid sunshine and snow,
And while tailing and bailing our hearts overflow,
To think that we're free from vile slavery's stain,
And drain from the Maple instead of the cane.

Our wives and our children shall join in the sport,
And our young men and maidens attend Cupid's court
In the grove where the youthful affections shall glow,
While the young ones make candy on top of the snow.

Then let our rejoicings reach Heaven's high throne,
Who gave us to *reap* where we never have *sown;*
And though God in his infinite mercy doth reign,
We *here* are the lords of the forest and plain.

Montreal Transcript.

SCIENCE.

Leaves from Gosse's Romance of Natural History.

(Continued from our last number.)

TIMES AND SEASONS.

A friend who has resided in Burmah informs me that there at midnight the stranger is often startled by the loud voice of a species of gecko, which is frequently found in the houses. Its cry is exceedingly singular, and resembles the word "tooktay," pronounced clearly and distinctly as if spoken by a human tongue. It is a source of much alarm to the natives of India who accompany Europeans to that country; as they believe that the bite of the little lizard is invariably fatal.

None of these sounds can compare in terrible effect with the deafening howls that penetrate the forests of Guiana after night has fallen, — the extraordinary vocal performances of the alouattes or howling-monkeys. They go in troops, and utter their piercing cries, which Humboldt affirms can be heard in a clear atmosphere at the distance of two miles, in a strange concord, which seems the result of discipline, and incomparably augments the effect. The same traveller informs us that occasionally the voices of other animals are added to the concert; the roarings of the juguar and puma, and the shrill cries of alarmed birds. "It is not always in a fine moonlight, but more particularly at the time of storms and violent showers, that this tumult among the wild beasts occurs."

I linger on these tropical pictures, where nature appears under aspects so different from those of our clime. Here is another on the Amazon:—"No clouds obscured the sky, and the millions of starry lights, that in this clime render the moon's absence of little consequence, were shining upon us in their calm, still beauty. The stream where we were anchored was narrow; tall trees drooped over the water, or mangroves shot out their long finger-like branches into the mud below. Huge bats were skimming past; night-birds were calling in strange voices from the tree-tops; fire-flies darted their mimic lightnings; fishes leaped above the surface, flashing in the starlight; the deep, sonorous baying of frogs came up from distant marshes; and loud plashings inshore suggested all sorts of nocturnal monsters."

Yet another, by the same pleasant writer, on the banks of the same mighty river:—"The flowers that bloomed by day have closed their petals, and, nestled in their leafy beds, are dreaming of their loves. A sister host now take their place, making the breezes to intoxicate with perfume, and exacting homage from bright, starry eyes. A murmur, as of gentle voices, floats upon the air. The moon darts down her glittering rays, till the flower-enamelled plain glistens like a shield; but in vain she strives to penetrate the denseness, except some fallen tree betrays a passage. Below, the tall tree-trunk rises dimly through the darkness. Huge moths, those fairest of the insect world, have taken the places of the butterflies, and myriads of fire-flies never weary in their torch-light dance. Far down the road comes on a blaze, steady, streaming like a meteor. It whizzes past, and for an instant the space is illumined, and dewy jewels from the leaves throw back the radiance. It is the lantern-fly, seeking what he himself knows best, by the fiery guide upon his head. The air of the night-bird's wing fans your cheek, or you are startled by his mournful note, 'wac-o-row, wac-o-row,' sounding dolefully — by no means so pleasantly as our whip-poor-will. The armadillo creeps carelessly from his hole, and, at slow place, makes for his feeding ground; the opossum climbs stealthily up the tree, and the little ant-eater is out pitilessly marauding."

If the sounds of night possess a romantic interest for the naturalist, so do those animal flames with which it is illuminated,—

"Stars of the earth, and diamonds of the night."

Mr. Kirby, the most accomplished of entomologists, speaks in rapturous terms of our own homely little glow-worm. "If," says he, "living, like me, in a district where it is rarely met with, the first time you saw this insect chanced to be, as it was in my case, one of those delightful evenings which an English summer seldom yields, when not a breeze disturbs the balmy air, and 'every sense is joy,' and hundreds of these radiant worms, studding their mossy couch with wild effulgence, were presented to your wondering eye in the course of a quarter of a mile,—you could not help associating with the name of glow-worm the most pleasing recollections."

It is however, in America that these "diamonds of the night" are observed to advantage. In Canada I have seen the whole air, for a few yards above the surface of a large field, completely filled with fire-flies on the wing, thicker than stars on a winter's night. The light is redder, more candle-like, than that of our glow-worm, and, being in each individual alternately emitted and concealed, and each of the million tiny flames performing its part in mazy aerial dance, the spectacle was singularly beautiful.

A sight in every respect similar, though doubtless dependent on a different species, occurred to me in ascending the river Alabama from the Gulf of Mexico. As the steamer passed booming along under the shadow of night, the broad belt of reeds which margined the river was thronged with myriads of dancing gleams, and the air was filled with what looked like thousands of shooting stars.

Beautiful, however, as these spectacles were, I had not known what insects could effect in the way of illumination till I visited Jamaica. There, in the gorgeous night of a tropical forest, I saw them in their glory. In the glades and dells that open here and there from a winding mountain-road cut through the tall woods, I have delighted to linger and see the magnificent gloom lighted up by multitudes of fire-flies of various species, peculiarities in whose luminosity—of colour, intensity, and intermittence—enabled me to distinguish each from others. I delighted to watch and study their habits in these lonely spots, while the strange sounds, snorings, screeches, and ringings of nocturnal reptiles and insects, already described, were coming up from every part of the deep forest around, imparting to the scene a character which seemed as if it would suit the weird hunter of German fable.

There are two kinds in particular, of larger size than usual, which are very conspicuous. One of these is more vagrant than the other, shooting about with a headlong flight, and rarely observed in repose. Its light appears of a rich orange hue when seen abroad; but it frequently flies in at open windows, and, when examined under candle-light, its luminosity is yellow: when held in the fingers, the light is seen to fill the hinder part of the body with dazzling effulgence, which intermits its intensity. The other is more commonly noticed resting on a twig or leaf, where it gradually increases the intensity of its light till it glows like a torch; then as gradually, it allows it to fade to a spark, and become extinct; in about a minute, however, it begins to appear again, and gradually increases to its former blaze; then fades again: strongly reminding the beholder of a revolving light at sea. The hue of this is a rich yellow-green; and sometimes a rover of the former species will arrest its course, and, approaching one of these on a leaf, will play around it, when the intermingling of the orange and green lights has a most charming effect.

In the lowland pastures of the same beauteous island, there is another insect abundant, of much larger dimensions, which displays both red and green light. On the upper surface of the thorax, there are two oval tubercles, hard and transparent like "bull's-eye" lights let into a ship's deck; these are windows out of which shines a vivid green luminousness, which appears to fill the interior of the chest. Then on the under surface of the body, at the base of the abdomen, there is a transverse orifice in the shelly skin, covered with a delicate membrane, which glows with a strong ruddy light, visible, however, only when the wing-cases are expanded. During the dark nights it is most interesting to mark these large beetles flying along over the herbage at the edges of the woods and in the pastures: the red glare, like that of a lamp, alternately flashing upon the beholder and concealed, according as the insect turns its body in flight, but the ruddy reflection on the grass beneath being constantly visible, as the animal leisurely pursues its course. Now and then the green light from the upper "bull's-eye," which seems to be under the insect's control, is displayed, and then again the mingling of the two complementary colours, red and green, in the evolutions of flight, is indescribably beautiful.

I have gazed upon these changing lights, flitting here and there in the openings of the dense forest, during the stillness of the night, till I could scarcely divest myself of the persuasion that human intelligence and human will were concerned in their production. Thoughts of the once happy Indians, that enjoyed a simple life in these charming glades before Columbus discovered their retreats, would then crowd up: and it required but little imagination to fancy myself surrounded by hundreds of the aborigines, holding their revels under the coolness of the night-season, as of old.

HARMONIES.

Modern science has shown that animals and plants are not scattered promiscuously over the world, but placed in spheres according to well-defined laws. A few kinds seem, indeed, cosmopolitan, but the great majority have a limited range, each inhabiting its own region, and each, in very many cases, replaced in other similar regions by species more or less closely allied and yet distinct. And more than this; that there are predominant forms of life in every region, so entirely governing the physiognomy of the landscape, that an accomplished naturalist, on being suddenly set down in any part of the earth's surface, would instantly tell in what region he was, by an examination of a few plants or animals.

The statistics on which this science of the geographical distribution of life is built up do not come within my present scope, which is to present the poetic side of nature; but there is a collateral aspect of the same truths worthy of consideration, namely, the harmony which subsists between all the parts of a natural-history picture. If we look with interest on the lion, the jaguar, the zebra, the python, at the Zoological Gardens, or the palms, and bananas, and bamboos in the conservatories at Kew; how vastly more interesting would it be to behold each in its own home; surrounded by all the accessories of surface-form, of atmospheric phenomena, of vegetation, of animal life, which properly belong to it, and without which it is merely an isolated object. Let us select a few examples.

To see the ariel gazelle, accompany a troop of Bedouin Arabs across the great Syrian desert. Grand and awe-inspiring in its boundless immensity, unearthly and ocean-like, the eye shrinks from contemplating the empty, cheerless solitude, and vainly wanders round for some object which may relieve the sense of utter loneliness and desolation. Across the plain, far away towards the west, where the fiery glow of the setting sun brings out their forms in dark relief, a long interrupted line of columns is seen stretching away below the horizon; while, as the troop approaches, prostrate heaps of ruins appear, groups of broken shafts and bases of columns, huge platforms of stone, and fallen capitals, while here and there a solitary monumental pillar rears itself above the rest in solemn majesty. At the end of the sandy plain, the eye at length rests upon the lofty colonnades of the Temple of the Sun, encompassed by a dark elevated mass of ruined buildings; but beyond, all around, right and left, as far as the eye can reach, extends the vast level naked flat of the great Desert, over which the eye runs in every direction, exploring the boundless horizon, without discovering a human being, or a vestige that tells of existing human life. Naked, solitary, unlimited space extends around, where man never enjoys the refreshment of a shadow, or rests his limbs under cover of a dwelling. There is a deep blue aeriel haze spread over the surface, but the distant horizon is nevertheless clear and sharply defined: not an eminence rises to break the monotonous flat, higher than the slight hillocks of sand sprinkled with a withered herbage, which are undiscerned except in their immediate proximity, while along the edge extends a large district covered with salt, distinguished from the rest by its peculiar colour.

Suddenly a herd of gazelles is seen playfully bounding over the sandy mounds, and displaying their elegant forms, and striking though simple colours, and the inimitable grace and beauty of all their actions. The Bedouins seize their lances, the travellers draw their pistols, and, distributing themselves into a wide circle, endeavour to encompass the herd. They seem heedless and unconscious for a time, and then, as the intruders approach, they hold up their beautiful heads, toss their curved and taper horns, and trot up into a closer group. Then, seeing their enemies spurring their steeds from behind the sandy hillocks all round them, they suddenly shoot away with the rapidity of the wind, easily dash through the loosely-formed circle, and, though lances are cast, and pistol-shots resound, unharmed they quickly distance the fleetest of their pursuers; turn and gaze, as if in mingled curiosity and contempt, and then away again, bounding over the tawny sand with an agility that seems rather that of flight than of running.

Or would you see the hyena, where he feels most at home, surrounded by scenes and circumstances most congenial to his habits? Then plod your weary way still further across the sands, and pause not till you encamp amid the gorgeous remains of that ancient City of the Wilderness,

> "Whose temples, palaces,—a wondrous dream,
> That passes not away,—for many a league
> Illumine yet the desert."

There sit down alone amid the ruined fanes lighted up by the setting sun, and watch the approach of night, just at the breaking up of the long dry season. Everywhere around are the remains of the glorious city; walls, and gateways, and columns of polished granite of rosy hue, or of marble that gleams like snow in the bright moonlight; many standing in their desolateness, but many more prostrate and half-buried in the drifted sand. Some of the pillars are but dimly seen in the gloomy shadow of the lofty walls, others stand out boldly and brightly in the soft moonbeams, while here and there a brilliant gleam slants down through the windows of a ruined edifice, and illumines the deep and delicate sculpture of a fallen capital, or spreads over a heap of disjointed stones. Under yon dark and gloomy portal the eye wanders over distant funereal towers crowning the eminences, the noble gateway of the grand avenue, and lines of columns gradually lost in the distance.

But while you gaze, there is a change. The breeze, which had lifted the sand in playful eddies, drops to perfect calmness. Black clouds are collecting over the mountain range that forms the distant horizon. The moon is obscured, and the whole heaven becomes black with tempest. A hurricane suddenly sweeps through the ruined palaces, and fills the whole air with a dense fog of blinding sand. Then a flash of forked lightning shoots between the columns, illuminating them for an instant, and is instantaneously followed by a bursting crash of thunder, which makes the tottering fanes tremble, and huge drops of warm rain, like blood-drops, are spattering the stones. The rain now comes down in one universal deluge, flooding the floors, and pouring off from the old marble platforms in cataracts. Flash follows flash in one continuous blaze of blinding light, bringing out the grim marble towers and pillars against the black clouds of midnight with an awfully sublime distinctness; and crash after crash, and peal after peal of thunder are blending into one uninterrupted roll.

But amidst the deep roar rises from the gaunt heaps of stone an unearthly sound, like the laugh of a demon. Again, the cackling mirth echoes along the ruined halls, as if exulting in the wild war

of the elements, and in the desolation around. Lo! from out of yon low arch, in the Place of Tombs, gleam two fiery eyes, and forth stalks into the lightning the fell hyena. With bristling mane and grinning teeth, the obscene monster glares at you, and warns you to secure a timely retreat. Another appears, bearing in its jaws a loathsome human skull, which it has found in the caravan track. You shudder as you hear the bones crack and grind between the powerful teeth, and gladly shrink away from the repulsive vicinity.

The home of the great Siberian stag is among the most magnificent scenery in the world. Search for him amidst the bold precipices of the Altaian chain, where enormous mountains of primeval formation are split and cleft into the wildest ravines, and where cascades fall in snowy foam down the terrible gorges bounded by sheer cliffs that almost meet far overhead, and shut out the light of heaven. Here is a little dell, embosomed in the mountains, as full of flowers as an English garden,—irises and columbines, primroses and peonies, of many rich hues and of kinds unfamiliar to us, and of a luxuriant growth which reaches up to a man's shoulders;—then a tiny basin of clear water, intensely black from its unruffled stillness and its fathomless depth. Now the traveller crosses a sharp ridge, crowned with colossal needles of naked granite, where the furious gale, shrieking and howling through the crevices, threatens to hurl horse and man a thousand fathoms down;—then he passes into a forest where not a breath waves the tops of the ancient cedars.

It is a region where animal life is not very abundant, but where the framework of the solid earth itself stands revealed in unrivalled gorgeousness. The cliffs are here of crimson or purple porphyry, as brilliant as the dyed products of the loom, there of dark-red granite seamed with thick veins of pure rose-coloured quartz, transparent as glass. Here a vast, uncouth column of black basalt rears its fused cylinders from the midst of a narrow ravine; and here a vast precipice appears of white marble, as pure as that of Paros. Rocks of all hues, bright red, purple, yellow, green; of all combinations of colours, white with purple spots, white with blue veins, brown with pale green streaks, pale crimson with veins of black and yellow, are scattered about in unheeded confusion; while, above all, the rich and splendid jasper rises in enormous masses, as if it were the vilest rock, yet glittering in gorgeous beauty,—mountains of gems. Here is one of a dark sea-green, with cream-coloured veins; there a mass of deep violet; and here a ribbon-stripe, marked irregularly with alternate bands of red, brown and green; and yonder is a huge heap of shattered blocks of the richest plum-purple, transmitting the light in sparkling lustre through their translucent substance, as they lie where they have been tumbled down from their beds by the force of the torrent, and presenting the most agreeable contrasts between their own deep, rich, imperial hue, and that of the yellow-green moss that springs in cushion-like tufts from their angles and crevices.

(To be continued.)

The Geology of Canada.

(From the London Saturday Review.)

The Provincial Government of Canada has lately issued a volume embodying, with much new matter, the condensed substance, of all the previous annual reports which from time to time have been published by the authority of the Colonial Legislature since the establishment of the Geological Survey of Canada in 1843. The preparation of this bulky octavo of nearly a thousand pages has been carried out by the indefatigable director of the Survey, Sir William Logan; and the style in which the work has been got up, the precision of the drawings, and the accuracy of the wood-cuts, may almost challenge comparsion with the execution of similar scientific productions on this side of the Atlantic. There has been a steady persistence in the conduct of this remarkable Survey, honourable alike to the successive Governments that have encouraged it and to the officers who have carried out the work. No other Colonial Survey has ever yet assumed the same truly national character, and the day may come—if ever the "Imperial Colony" shall claim and attain independence—when the scientific public of a great nation, looking back upon the earlier dawnings of science in their land, shall regard the name of Logan, a native born, with the same affectionate interest with which English geologists now regard the names of our great geological map-makers, William Smith and De la Beche.

Neither practical men, in the vulgar sense of the term, nor men of science will ever doubt the value of this anatomizing of the physical structure of Canada. But if, in the colony or elsewhere, there is any one so shortsighted as to doubt the wisdom of spending money on researches which do not always suddenly tell on the pockets of the community, let him consider that, in addition to positive benefits, the more negative results of such a Survey have a distinct practical utility; for many a hopeful and unwary speculator, if he will but believe what is expressed by the colours on a geological map, will save himself from the prosecution of undertakings which end in disappointment and ruin to himself and his associates. But on higher grounds than these, the effect of the encouragement of science in a rising country is surely not to be despised. The foundation of such a Survey is like the foundation of those noble Universities which have already arisen in the colony, elevating the tone of society by the admixture of a learned and scientific element, commanding the respect of the intellect of their own population, of those "at home" in the old country, and of foreign *savans* all over Europe. That far-seeing Government which knows how worthily to execute so great an undertaking may also well command respect. The following are among the more important results set forth in the recently published volume.

When Sir William Logan commenced his investigations in Canadian geology, nothing was definitely known in that country with regard to the rocks underlying the older palæozoic or Silurian series. The granitic and gneissoid rocks, both in Europe and America, had been studied lithologically rather than geologically; and though, from the days of Hutton downwards, the theory of metamorphism has been gradually establishing itself, yet even now there are men called geologists who cannot persuade themselves that almost all the gneissic rocks of the Scottish Highlands are merely metamorphosed Lower Silurian strata, and that similar masses in the Alps are the altered representatives of the secondary rocks of the Jura, and some of them even of the Eocene Age. As early as 1844, Sir William recognised a great system of altered strata, forming the oldest known rocks of Canada, and perhaps of the world, unless those of the Lewis and the extreme north-west of Scotland may be in part their equivalents. These in Canada had previously been regarded as unstratified, and Sir William was the first who successfully applied himself to the study of their structure. Extending from the coasts of Labrador into the regions of the Far West, contorted and disturbed in the extremest degree, a very wilderness of dreary swamps, forests, rivers, and innumerable lakes, the difficulties to be overcome in the examination of the Laurentian rocks were very great. They have nevertheless been described, and their constitution has been analysed over great areas, and Sir William has discovered—what will be new to most geologists—that these antique rocks include two great series, with an aggregate thickness of probably not less than from 40 to 50,000 feet. Of these, interbedded with the gneiss and quartzite, the oldest includes at least three bands of limestone, equal in extent and thickness to many of the separate formations of more recent periods, one band alone attaining a thickness of more than 1,000 feet. In old times, when geologists drew upon their imaginations for their facts, so-called primary limestones such as these were necessarily considered to be unfossiliferous; but of late, since the metamorphic theory of rocks has taken root, sound reasoners have begun to surmise that all stratified limestones of great extent and thickness must have been formed from the life and death of organic bodies, and a few geologists were therefore more pleased than surprised when the Director of the Canadian Survey announced the discovery of forms in the Laurentian limestone resembling corals of the genus *Stromatopora*. No one who has thoroughly realized the geological meaning of metamorphism will be surprised at the rarity of organic remains in the altered limestone, when it is remembered that, even if originally entirely formed, like our own Carboniferous limestone of organic bodies that lived in the seas of the time, yet if these organisms "retained their calcareous character," their organic structure would "be almost certainly obliterated by crystallization, and it would be through the replacement of the original carbonate of lime by a different mineral substance that there would be any chance of the forms being preserved." In the fossils discovered, the layers of the possible Stromatopora "are composed of crystalline pyroxene, while the interstices are filled with crystalline carbonate of lime."

At an early period of the Canadian Survey, a great group of crystalline rocks was distinguished by the predominance of Labradorite and similar triclinic feldspars, and rumours are abroad among geologists (though not published in this volume) that the recent investigations of Sir William Logan have shown that they belong to a younger series, which rests unconformably upon the more ancient Laurentian gneiss, and attains a great but as yet unknown thickness. The suggestive significance of this fact will

be thoroughly appreciated by those who keep pace with the advance of geological theory, and *time*—for ever *time*—will be the burthen of their thoughts; for first comes unconformity, telling of upheaval, contortion, and long-continued waste and denudation of the lower formation before the commencement of the deposition of the overlying strata, and then comes the question of the metamorphism itself. Were the Lower Laurentian masses metamorphosed before the deposition of the uncomformable beds, or were they both subjected to metamorphic action together? If the former, then not only were the older rocks denuded before the commencement of the later epoch, but they must, after disturbance, and long before that denudation, have been buried deep towards the so-called central heat, under many thousands of feet of other strata; for if modern theory be good for anything, it is only far from the surface of the earth that heat, aided by alkaline waters, produces a widespread crystalline metamorphism. If, however, it happened that the metamorphosis of both series took place at once, where are the other formations under which they lay when the metamorphic action was going on? No man has seen them in all Lower Canada, for the whole Laurentian series had changed from common sediments into gneissic rocks and crystalline limestone, and had been bared and formed a most ancient land long before those Lingula beds (Potsdam sandstone) began to be deposited above them which have been fondly termed the Primordial Zone—primordial no more if the corals of the Lower Laurentian limestone are true.

There is another theoretical question that readily rises to the mind from the consideration of these phenomena. Most persons conversant with stratigraphical geology will incline to believe that both series of metamorphic rocks are altered marine strata. Their great thickness tends to this belief, and the corals, if proved, confirm it for the lower series. Neither, in any set of marine strata, is it easy to conceive how thick and wide-spreading bands of limestone could have been formed except as organic sediments; and, if this surmise be correct with regard to the metamorphic strata in question, then what relation is it likely that the fossils of the upper formation had to those of the lower, on which they rest quite unconformably? The answer is, that if inferences recently drawn from detailed examinations of British palæozoic and secondary formations are correct, then marked unconformity is always accompanied with a *break* in the succession of life; or, in other words, the species in the upper unconformable formation are to a great extent or altogether distinct from those found in the strata on which it rests. It requires little reflection to understand that time is the accompaniment of this change of species, especially if we adopt Darwin's theory of descent with the modification; for it is almost impossible to over-estimate the length of the period implied by the consolidation, disturbance, contortion, and denudation of an older set of strata before a newer set were fairly laid on their denuded edges. Where are the formations, and the fossils, if any, that represent the period when the old land stood for unknown epochs above these ancient seas and received no deposits on its surface? We do not know, for with us they are not represented by any strata, and the time thus unrepresented was of great but unknown duration. If so, then—from our experience of unconformable rocks in which fossils are common—the chances are overwhelming that the fossils, the remains of which formed the Laurentian limestones both of the lower and the upper series, were nearly, if not altogether, distinct; the old life having died out by slow gradations long before the beginning of the new. Deposits of graphite in the same series possibly point to the existence of vegetable life at the same early period.

A third series of rocks is found in Western Canada between the Laurentian and the base of the Lower Silurian strata. These, which have been termed the Huronian series, are the supposed equivalents of our Cambrian rocks, and spread out along the northern shores of Lake Huron and Lake Superior, and extend into the interior. Mapped by that veteran geologist Mr. Murray, they have been shown by him to consist of strata more than 10,000 feet thick, of quartzites, diorites, and slates, with interstratified limestones, and they are intersected by numerous and important copper-lodes; but the rocks in which these lodes occur are quite distinct from the formations on Lake Superior bearing native copper, which belong to the part of the Lower Silurian series which are known as the Quebec group.

We approach this Quebec group with something like awe, for since the name first reached this side of the Atlantic, it has been enveloped in a cloud of geological dust which, beginning in size like a man's hand, has spread from Montreal and Albany, through Paris all the way to Bohemia. Now, let us hope, that it has fairly settled down, we may venture to say that, lying above the Potsdam sandstone (on Lingula beds), they are considered by Mr. Billings, the palæontologist of the Canadian Survey, to be of an age between the first and second faunas of Barrande, or approximately equivalent to the Llandeilo rocks of Murchison. Consisting of the calciferous and Chazy subdivisions, this formation occurs in great force near Lake Champlain, and ranges through Eastern Canada all the way to Newfoundland, lying on the south-east side of a vast dislocation (perhaps the longest and greatest known fault in the world) that ranges all the way from Champlain along the shores of Gaspé, into regions yet only half explored. These strata in Eastern Canada form a fourth great metamorphic series, intersected by veins of quartz, and there is reason to suppose that the superficial detritus in which gold was found in considerable quantities has been derived from their waste; nor is it improbable that another great influx of gold from those regions may some day surprise us, if ever the country should be scientifically explored.

Space will not permit us at present to notice the Black River, Trenton, Utica, and Hudson River formations of the Lower Silurian series, nor all the other subdivisions that range through Middle and Upper Silurian and Devonian rocks to the Bonaventure formation that lies at the base of the Carboniferous strata. On a future occasion we may return to this subject, and at the same time discuss the careful studies of Mr. Sterry Hunt on the metamorphic rocks, the results of which are contained in this volume. But, before concluding this notice, we may mention, for the benefit of those interested in the subject, that half a chapter of the book has been devoted to the superficial formations of the country; and those who are versed in the progress of glacial geology within the last two years, or who have been accidentally attracted by a brisk correspondence that has lately been carried on in the pages of a literary contemporary, will be interested in learning that one who has been styled the first physical geologist in America has not ignored the subject of the excavation of rockbounded lake-basins by ice. This theory, early in 1862, was propounded by Professor Ramsay for the lakes, not only of Switzerland, but, including North America, for a great proportion of those parts of the Northern hemisphere the rocky surface of which had been moulded and ground by glacier ice; and any one who is attached to the hypothesis that such lake basins lie in great rents and fissures, or are caused by special subsidences, of disturbed strata, may perhaps be able to explain how it is that such disturbances occur by the thousand in those northern, but often far from montainous, regions in which ice has prevailed, while in warmer latitudes, or at lower levels uninvaded by ice, but in which the strata have been equally disturbed, these disturbances have failed to produce similar lake basins. In the meanwhile, the author of the theory need not, perhaps, quite despair. It was many a year before the glacial theory of Agassiz, to which this may be considered a mere pendant, made way; and if the author is too apathetic seriously to fight his own battles, it may afford him some satisfaction to find his views already advocated by such distinguished physical geologists as Sir William Logan and Dr. Newberry in America, and Professor Jukes and Mr. Geikie on this side the Atlantic.

EDUCATION.

ARITHMETIC.

I give one other example to show the less experienced teacher how to train and perfect his scholars in going over processes.

Repeat, repeat, repeat adding and subtracting till correctness and dexterity are acquired.	*First adding* up and down.		*Second adding* up and down.		Subtracting up and down.	
45675—	46		46		5	41
12347—	41	12			5	34
48789—	34	21		21	12	25
95724—	25		25		21	21
87474 }	21	29			25	17
78472 }			17	31	29	15
51327 }	15	38			31	8
65698 }		46		46	38	8
485506	46	46	46	46	46	46

Till they can as readily subtract as they can add, the process of subtracting may be gone over on slates or on the blackboard as under:

46	46
5	8
41	38
7	7
34	31
9	2
25	29
4	4
21	25
4	4
17	21
2	9
15	12
7	7
8	5
8	5
0	0

Explain how reversely the processes of adding and subtracting correspond.

Every step of every process has its answer; and as we train, we are training children to make every step, every result correct, whether in adding, subtracting, multiplying, or dividing; and to repeat, understandingly, the different steps of the operation till they are able to go over them with correctness, and with a degree of mastering skill. No process should be passed leaving any part in SHADE; and the *place* of every figure in a sum or process should be understood; and how and why each figure, as used, gives certain demonstrative results.

Many may consider it unnecessary to so repeatedly insist on thoroughness and skill at every step of a pupil's advance. But experience, and, I think, common sense, are altogether in favour of both. Ask the man of business, the clerk in the counting house, or even the scholar, troubled and annoyed by his blunders,—not well knowing whether to blame the book or the teacher, the puzzling nature of a question, his own liability to error, his want of sufficient capacity to comprehend, or of sufficient insight into the various steps of a process,—taking each in its proper place,—the difficulties and troubles, waste of time, of thought and mental effort, mistakes in computations are the cause of.

Let us now proceed to another stage of training. The principle of subtraction has already been explained and illustrated, and sufficiently, I think, to prepare your pupils to more extended and complex process-forms.

In beginning to teach a new rule, or work by new principles, be sure to adopt the simplest principles of graduation.

Subtraction.

1. Give examples requiring no borrowing;
2. Then examples requiring continued borrowing to the last figure or figures;
3. Then examples including both;
4. And until the subtractive principle is well understood, often lead them through processes analytically.

Example in which no borrowing is required.

34,768,954,236
12,515,413,224

22,253,541,012 dif.

The process of this example is plain enough; still there may be some things about it not well understood; and, therefore, there must be questioning.—Quest. Which line of figures is to be made less? How much less?—How many are to be taken from the ones, the tens, the hundreds, the thousands, &c. Read the answer—giving each figure its relative value. What would you subtract from the answer to leave nothing? &c.

2. Example.

80,000,000
20,000,000

60,000,000 dif.

From 60,000,000 subtract in succession 30,000,000, 20,000,000, and 10,000,000; tell the remainder?

60,000,000
30,000,000

30,000,000
20,000,000

10,000,000
10,000,000

Make 9876, less by 3214, 2531, 4111—what number remains?

9876
3214

6662
2531

4131
4111

20 remains.

Till the principle of subtraction in *borrowing*, (as it is learned), is well understood, illustrate much by analysis, as follows:

1. Numbers up to 100.—Example.

36 to be made less by 18 (36 — 18) = by analysis =

1		2		3
30		30		36
10 sub.		8 sub.		20 sub.
20 dif.		22 dif.		16 dif.
8 sub.	Or =	10 sub.	Or =	2 add
12 dif.		12		18 ans.
6 add.		6 add.		
18 ans.		18 ans.		

First, go over each step of the processes, explaining as you proceed, and making the class repeatedly *return* your explanations—your processive steps, till they become familiar with every part of the operation. Then question them on the whole,—thus: What number is to be made less?—36. By how many?—18. How have I proceeded in making it less by 18? You first take the 10 from the 30; which leaves 20; then the 8 from the 20; which leaves 12. To the 12 you add 6, as 36 is 6 more than 30. How do you know that to get the difference between 36 and 18, by the first analysis, 6 must be added to the second difference?—Because 36 is 6 more than 30, from which 10 and 8 were successively subtracted. How does the second process in obtaining the same result differ?—You first subtract from 30 the 8 digits, and from the remainder the 10? Why take the 30, and not the 36, as a minuend to make the subtraction planer. And so on,—always continuing the questioning, (accompanied with explanations, and suggestive hints, when required,) till convinced that every thing about the operation is understood. And study how to give *variety*, as well as *simplicity* to your exercises.

To make them expeditious in subtracting numbers up to 100, exercise them as follows, and teach them how to drill themselves—giving them examples,—select numbers, as 100, 70, 55, 41, 20, &c., &c., and from the selected numbers, make them take away smaller numbers. Begin first with the nine digits, and prog essively, as they improve, make the exercises more and more complex, as follows:—Quest. Exhaust 20 of threes? = 20, 17, 14, 11, 8, 5, 2 remaining. Quest. Subtract 5 from 55, successively? = 55, 50, 45, 40, 35, 30, 25, 20, 15, 10, 5, 0 remains. Quest. Subtract 9 from 70 in series? = 70, 61, 52, 43, 34, 25, 16, 7 remaining. Make them then reverse the processes by adding; and continue these exercises till they can rapidly, and without mistakes give sums and differences, without any hesitation. Two things must ever be

kept in view, as you train, viz., deeply impressing on their minds, *totals* and *differences* of numbers, on the moment the figures are named or presented; and all *through* the *understanding*.

JOHN BRUCE,
Inspector of Schools.

(To be Continued.)

Love for the School.

The necessity of order and neatness in and about the school room, I have chosen as a subject, which has been explained by precept more than by practice. But few of the many teachers entrusted with the charge of training the youthful mind, ever consider that so much depends upon the attractiveness of the school room. For it is here that the student learns, not only the lessons taught from the books, but the habits which characterize him through life, are formed while attending school; and one who has been accustomed to an untidy and disorderly school room, will, in nine cases out of ten, ever be followed by habits of slothfulness.

Next to home, the student should love the school-room; as he wends his way thither, fancy pictures in glowing colors in his imaginative mind, the pleasure of reciting well those long and arduous lessons which, under the encouraging smile of a teacher, seem but an easy task; and it is with delight that he welcomes the smiling faces of his school-mates, who, like him, are striving to gain the unfading treasures of knowledge. Under the guidance of a teacher, whose motto is, "a place for every thing, and every thing in its place," he will acquire the habits of order and system, in whatever calling he may engage.

The influence which a teacher exerts over his pupils by the example he sets before them, is the influence which guides them through all the vicissitudes of those long years of patient and untiring study, in the intricate and obtuse parts of science; and though his precepts be good, yet if his example fail to demonstrate the same, it will be of little if any benefit to his pupils.

Man loves to labor amid the works of nature.—When contemplating them in their many and varied forms, he feels strengthened and invigorated to commence with renewed energy the task before him; and the mind too, expands more freely and drinks in deep draughts from the perennial springs of knowledge with ease and pleasure. The mind—most mysterious in its mechanism and wonderful in all its properties—is placed in the hands of the teacher to train in the way of knowledge, and imbue it with the principles of truth and justice, which shall ever prove a safeguard against the vice and temptations which beset its path. And if this daily association be, where the hand of nature has lavishly bestowed her bounties, will it not learn to love the beautiful flowers, forests and fields? Surely it can admire the order and regularity which characterize them, for all these seem to work together for good in perfect unison,—impressing upon it the important part sooner or later to be acted in the grand drama of life, actuating each to seize upon those means which time will call him to employ. And to do this, he must be familiar with scenes gone by: he must treasure up those important truths which history, the ever living language of the past, presents. But he sees this only in the distance; and now he resolves to persevere and conquer all the obstacles in the way of accomplishing his cherished hopes.

If, thus, delight in the beauties of nature, encourage the student in his studies, then certainly this is sufficient excuse for ornamenting the grounds attached to this often times rude and rustic temple of knowledge, where so many of childhood's happy hours are spent. He is but an indifferent observer who will not turn from nature up to nature's God. — *Pennsylvania School Journal.*

Obedience.

The School Room is the Rendezvous and *Camp of Instruction* of thousands of young Conscripts, who have been mustered for life in behalf of mental, moral, and social advancement and freedom. The Teacher is the *Drill Sergeant*, who is to impart to them thorough training in all the necessary evolutions in mind and body, that they may be skilfully prepared and nerved for the successful combat against ignorance, vice and superstition. How essential then to the officer's success, and to the thorough preparation of his soldiers for their great duty, that the latter should submit to the first and principal law of nature—*The Law of Obedience.*

By it the whole natural world is governed, and order and harmony preserved throughout the whole created universe. The planets *obey* the laws established for the government of the solar system; hence, the perfect regularity of their movements, and the entire absence of that jarring discord which is so often observable in the moral world. But obedience is also the first and principal rule of our moral being. When our first parents were placed in the garden of Eden, the only requisition of them was—*Obedience.* And to the *violation* of this law must be ascribed all the strife and discordant elements which mar the beauty of our world, and interrupt the happiness of the whole human family.

The inherent property and essential element to all governments —whether natural, civil, or divine—is *obedience*; in the absence of which, laws would prove a mere figment, and governments a farce.

Viewing this principle, therefore, as lying at the base of all civil law and social order, it becomes a matter of the gravest importance that the youth of our land should have their minds early imbued with the *spirit* of obedience, and that they should acquire the *habit* of submitting to all proper authority, by whom soever exercised; whether in the family, the *school*, the church, or the State. There has existed in the public mind, for years past, a feeling totally at variance with the principle we are endeavoring to discuss, and which, if fully persisted in and carried out, would prove subversive of *all* law and order; and this feeling, the very nature of our free institutions *seems* to foster.

How often have our ears been greeted by the expression, "I have a *right* to do as I please in a free country," thus making will, inclination, or passion the rule of action, irrespective of law or justice, and claiming this "*right*" by virtue of our free government. But it should be borne in mind that our free institutions confer upon no man the "right" to do wrong, to violate an established law, whether civil or moral. In communities, the development of this feeling is seen in the growing spirit of fault-finding with all who are vested with even the shodaw of authority, especially with the Teacher. We see it manifested, on a still larger scale, in the reckless abuse heaped upon all our public functionaries, by politicians and the press. In the school, which is a republic in miniature, unfortunately the same feeling is observable. Boys take pleasure in transgressing the rules, and setting at nought the authority of their teacher, and then call their disobedience a manly independence; and too often this false view of things is encouraged by parents, whose *blind* pride is flattered by this early indication of what they are pleased to call "Smartness," a "lofty spirit and a love of liberty," and whose partiality for their darlings will not permit them to reflect upon the unhappy consequences of allowing their children to grow up under the despotic rule of self-will and egotism.

Oh parents, guardians! Could you but realize the immense amount of sorrow and trouble you are heaping on your own heads by your indulgence, you would not object in the least, to having firmly pressed upon the minds of your children the great essentials of life—*obedience, order* and *system*. A spirit of obedience to law and submission to lawful authority, is equally promotive of social order and individual happiness; hence, the imperative duty of parents, guardians, and teachers, to instil into the minds of those under their care, correct views of the duties growing out of the relations they sustain to each other as social beings, and as citizens of the same great republic. What the *boy* is, such will be, to a great extent, the *man* and the *citizen*. The obedient child and scholar, will be the kind and faithful friend and the

order-loving and law-abiding citizen; while the disobedient child in the *family*— the *rebel* in the school, will become the tyrant of his neighborhood; the bane of his parents; the outlaw of his country; the inmate of those large and expensive edifices— penitentiaries, jails, etc., which have been spread broad cast throughout our land, for the protection of the *good* against the assaults of the lawless vagabond, once the indulged, petted, and "*smart*" child.

No calm, reflecting mind can view, without dread, the growing spirit of impertinent disregard for the feelings and rights of others, and the rapid strides of that false, blind independence which *assumes the right* to set at defiance all authority which interferes with the gratification of self, or selfish interests.

Since the law of obedience, being the first law given to man by his Creator, has become essentially the foundation of all human laws, the school room should be distinguished for its *order* and *system*.—Here, if any where, should "Heaven's first law" reign supreme. Disobedience and anarchy are twinborn, and the teacher who disregards this fact will himself reap the bitter consequences of his folly.—Hence the duty of the teacher, as the governor of a little republic, to enforce the fixed rules and laws of the school by a strict course of discipline; hence, also, the imperative duty of directors, as the representatives of this little republic, to sustain the teacher in his efforts *to enforce* law and order, and also in connection with the parents, to aid and encourage him in the discharge of his manifold and important duties and trials.

Cease then, fond and indulgent parents who have no control of your offspring at home, to incite in the minds of your reckless sons and daughters a *spirit of rebellion against the wishes* and authority of the teacher, and thus prepare them for rebelling against still higher authority, and becoming the instruments of their own ruin; but give your hearty co-operation to the teacher in inculcating the duty of obedience as a principle inherent in our relations to each other and to God. Then, the reason, gratitude, self-interest, and patriotism of the child will be enlisted, and the duty which is generally regarded with so much repugnance, will become easy and agreeable.

The present is a favorable time, while the fire of living patriotism glows in every breast, to make, by wise and well-directed efforts, deep and lasting impressions for good, which shall live long after our brave heroes of the battle field are forgotten.—*Pennsylvania School Journal.*

OFFICIAL NOTICES.

APPOINTMENTS.

SCHOOL COMMISSIONERS.

His Excellency the Governor General in Council was pleased, on the 5th March last, to approve of the following appointments of School Commissioners:

County of Arthabaska.—Tingwick: Messrs. William F. Welsh, André Vien, Edmund Adams, F. E. Cyprien Proulx and Charles Thurber.

City of Quebec, (Protestants): Rev. Henry Roe, Messrs. Andrew Thompson and John Laird.

County of Arthabaska.—Chénier. Rev. Ovide Beaubien, Curé, Messrs. Joseph Descoteau, jr, David Pore, John Gleason and George Perreault

County of Drummond.—Wendover and Simpson. Messrs. Robert James Millar, Guillaume Courchêne, Gilbert Massé, Moïse Martel and Guillaume Menut.

DIPLOMAS GRANTED.

CATHOLIC BOARD OF EXAMINERS OF QUEBEC.

2nd Class Elementary (*F*)—Mis Marie Caroline Trépanier. March, 1, 1864. (*Adjourned Meeting.*)

N. LACASSE.
Secretary.

SITUATIONS WANTED.

An experienced and able Teacher, whose term of engagement is about to expire, is desirous of obtaining employment either in a Model or Elementary School. Apply at this Office.

Mr. Alexander S. Robertson, who has had considerable experience in teaching in Scotland and Canada, and who can be well recommended, would accept of a situation as an Elementary Teacher. Inquire at this Office.

DONATIONS TO THE LIBRARY OF THE DEPARTMENT.

The Superintendent of Education acknowledges with thanks the following donations:

From M. Hector Bossange, Paris: "Dictionnaire des sciences médicales, *par une société de savants. 60 vols. A fine copy from* King Louis Philippe's Library.

From M. Alphonse Leroy, Professor in the University of Liege, Belgium: "Principes de grammaire générale, ou exposition raisonnée des éléments du langage," By P. Burggraff, 1 vol.

From the abbé Verreau, Principal of Jacques-Cartier Normal School "The Napoleon Medals," By Edward Edwards, 1 vol. "Atlas du voyage de la Troade;" By J. B. Lechevalier, 1 vol.

From Rev. M. Langevin, Secretary to His Grace the Archbishop of Quebec: *Grammaire de la langue des sauvages nommés Sauteux.*

From Messrs. Beauchemin & Valois, Booksellers, Montreal: "Analyse des lois d'enregistrement, suivie d'un appendice," &c., By J. A. Hervieux.

From R. Bellemare, Esq., Montreal. "*Historia de la Isla de Santo Domingo.*" 1 vol.

From Mr. James Hall, the author: "Report on the Geological Survey of the State of Wisconsin." 1 vol. "Contributions to the Paleontology of Iowa." 1 vol. Reports on the Museum of the Natural History Society of New York; with a Grammar of the Mohawk language.

JOURNAL OF EDUCATION.

MONTREAL (LOWER CANADA), APRIL, 1864.

The Military School at Quebec.

We learn with pleasure that many young men from the rural districts are in attendance at *the military school* recently established at Quebec under the auspices of the Government, and that many others intend to present themselves for admission very soon. The zeal with which the pupils of the Normal Schools and other institutions of learning have applied themselves to the acquisition of military knowledge, and the success which has attended their efforts in this direction, led us to expect that the study of the art of war would become popular with the youth of Canada, and we were not therefore unprepared for the result.

The following particulars touching the management of the school are gathered from the *Courrier du Canada.*

Candidates must be able to read and write, and on transmitting their application for admission to the Brigade Major of the Military District in which they shall reside, they shall produce testimonials from the clergyman, or mayor of the parish, or a Justice of the Peace, showing that they

bear a good moral character, and that they are British subjects. The age, place of residence and the rank held in the militia must also be stated in the application. Hitherto candidates coming from the country have been admitted in preference to those from the cities. The Brigade Majors answer the applications. The number of pupils is at present limited to sixty; but so soon as the new building intended for the use of the school shall have been completed the number will be augmented to 120 or 150.

The school is divided into two classes, answering to first and second class diplomas. The course consists of exercises and lectures by the professors, delivered in English and in French. Brigade Major Suzor is attached to the school as French interpreter for drill. The students of the first class have two holidays in the week—Wednesday and Saturday afternoons; those of the second class, one holiday, on Saturday afternoon. Government provides the uniforms, as also the Books, French and English, gratuitously. The students have the attendance of the surgeon of the 17th Regiment in case of illness. A prize of $50 is awarded, and travelling expenses are allowed on obtaining the diploma.

The director of the school presides at the examinations, which bear upon the different subjects expounded in the lectures. The pupils of the second class are required to put a company through company and battalion drill; and the pupils of the first class are required to manœuver a battalion.

Our contemporary states that a person who has some knowledge of squad and company drill can easily obtain a second class diploma after a fortnight's sojourn at the school, and mentions the fact that the two first candidates who obtained the diploma, Messrs. Nelson and Guilbault, obtained it within that time.

The staff of professors is composed of Col. Gordon, commanding the 17th Regiment, who is president of the school; Capt. Bradburne, Brigade Major Suzor, and eight Sergeants acting as Drill Instructors. "We must add," remarks the *Courrier*, "that the students speak in the highest terms of their teachers, who are extremely obliging, as is also our fellow-citizen Col. de Salaberry, Deputy Adjutant General, who with his usual complaisance uses his best endeavors to minister to their comfort."

Legal Decision.

We find the following in the *Défricheur*:

"In the case of the School Commissioners of the municipality of Drummondville against Dr. Godfrey, of Montreal, who allowed himself to be sued for his school taxes, the Court gave judgment in favor of the plaintiffs. The defendant alleged that he was not bound to pay as he had joined the Protestants of the locality, and signed a delaration notifying the Commissioners that he had left the majority to form part of the dissentients in virtue of the right conferred by the school law.

"His Honor Judge Short decided that absent proprietors could not separate themselves from the School Corporation" (the Commissioners); "that the right of dissent was accorded only to the inhabitants of the municipality, and that the word *inhabitants* implied that the dissentients must reside within the limits assigned to the corporation from which they desired to become separated."

A decision in a contrary sense was given some years ago by Judge Coursol in a suit brought against the Hon. John Young by the School Commissioners of the Tanneries. Hon. Mr. Sicotte's bill contained a clause expressly conferring the right of dissent on absent or non-resident proprietors.

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

(*Translated by order of the Legislative Assembly.*)

Extracts from the Reports of Mr. Inspector BARDY.

COUNTY OF MONTMORENCY. (*Continued.*)

1. *Chateau Richer.*—Mr. Girardin's school has produced some scholars, out of 53 little boys who attend it, very proficient in grammar and arithmetic. Writing and composition are taught there; 16 pupils learn English. School No. 2, kept by Miss Portelance, is well conducted and receives 51 little girls, a large number of whom learn grammar and composition successfully; 14 learn English. The two other schools are tolerably well conducted.

2. *Ste. Anne* has two schools with 116 children, who have learned more grammar and arithmetic than usual.

3. *St. Joachim* has 147 pupils in the two schools. The school in section No. 1 shews great signs of progress, particularly in grammar.

4. *St. Tite* has only one school, which the teacher conducts with zeal and success, although the pupils are very young.

5. *St. Féréol* has only one school, the pupils of which, 95 in number, are strictly supervised by their teacher, who succeeds admirably in bringing them forward.

6. *Ange Gardien.*—Mr. Tardif, who conducts the central school, keeps more of a model than an elementary school; some of the pupils are taught composition, book-keeping, geometry, and linear drawing; 11 also learn English. The two other schools are as well kept as possible.

7. *St. Laurent* has three schools, one of which in the first section is well conducted by Mr. Lapierre, who is successful in teaching all the necessary branches to 84 pupils. I think I have succeeded in obtaining the consent of the commissioners to the construction of a school-house in section No. 2, where the children have hitherto been inadequately provided for.

8. *St. John* has 200 pupils in its three schools. The school in section No. 2, kept by Miss Corbeille is progressing. Grammar, parsing, composition, and arithmetic are well taught there. The central academy, kept by Mr. Mignault, who teaches English to 32 and Latin to several scholars, is worthy of special notice for problems of arithmetic, grammar, analytical and logical parsing, the use of the globes, &c. The school in section No. 3 is not very good, owing to the indifferent attendance of the pupils.

9. *St. Francis* does not progress much with its two schools, because the children are not attentive, and are, moreover, withdrawn by their parents as soon as they have taken their first communion.

10. *St. Famille.*—The convent school, which receives 50 boarders and 25 day-scholars, is very good. The little girls who attend it learn arithmetic, grammar, composition, parsing, the use of the globes, drawing, vocal music, sewing, embroidery, &c., well; 25 pupils learn English. The model school in No. 1 is kept by Mr. Premont, who has done much for the advancement of his 50 pupils. The requisite branches are there taught with care.

11. *St. Pierre.*—The three schools of this municipality are in the same condition. I think, however, that they are kept with care, and produce good results.

COUNTY OF PORTNEUF.

12. *Cap Rouge.*—The only school established here is a model school; it is kept by Miss Paradis, who has been very successful as a teacher in another municipality. Progress will evidently be

the result under this talented teacher's direction. English is taught to 22 children.

13. *St. Augustin.*—Miss Tapin's school instructs 87 pupils with great success, and 29 of these learn English. School No. 4 is attended by 63 children, who receive excellent instruction from Miss Watters, who keeps her school in good order. Several children learn English. The school kept by Mr. Huot in No. 3 would be more progressive if the pupils were more attentive to their duties, I regret to be compelled to declare that the school in No. 1 is only a school in name, as we rarely find more than 10 pupils in attendance. The teacher is discouraged at meeting but four or five pupils during the greater part of the time. My remonstrances on this subject have hitherto produced no effect.

14. *Pointe-aux-Trembles.*—The central school kept by Mr. Lefebvre is making progress; the pupils learn grammar and parsing with success; composition, book-keeping, geometry, geography, the use of the globes, and English are taught with care. Mr. Vallière's school in No. 3 is very good; the pupils are making some progress in grammar, arithmetic, composition, and English. I cannot give a favorable report of sections 1 and 4, where but little progress is apparent. I have now to allude to the excellent school kept by the Ladies of the Congregation, whose pupils, 70 in number, learn with success more than is expected in an elementary school. In addition to grammar and parsing, arithmetic, the use of the globes, &c., they learn English, sewing, embroidery, and instrumental music.

15. *Ecureuils.*—There is only one school in this municipality. It is a model school, the teacher of which, Miss Vallières, shews indefatigable zeal in teaching 116 pupils, who have made great progress in reading, writing and English. I need scarcely say that grammar, parsing, composition, arithmetic, &c., are also successfully taught there.

16. *Cap Santé.*—Of the five schools in this municipality, that of No. 5, kept at Portneuf by Mr. Fecteau, is the best. This teacher, who receives 118 pupils, 19 of whom learn English, gives himself much trouble to teach everything required in an elementary school. The four other schools do not progress as I could desire. Of the three dissentient schools at Cap Santé, Mr. Miller's is the only one which deserves any commendation. He also keeps a model school at Portneuf with success; his pupils make extraordinary progress in arithmetic, geometry and algebra. He also teaches the use of the globes, mensuration, book-keeping, vocal music, &c.

17. *Deschambault* has five schools, exclusive of the convent lately opened to a large number of young girls, who have the advantage of obtaining there a solid and at the same time a religious education. This establishment, which is of stone, has been constructed under the able superintendence of the Curé of the parish, assisted by his parishioners, and reflects great credit upon this important parish. The model school, kept by Mr. Belleau, is progressive as usual, and the pupils display great emulation in the pursuit of their studies. The other schools, kept by female teachers, shew great application and assiduity on the part of those who have charge of them.

18. *St. Alban.*—There are four school sections in this municipality. The school kept by Miss Darveau in No. 1, and Mrs. Douville in No. 2, shew considerable progress. They are both good elementary schools. The children who attend the two other schools are not so far advanced, but then they have been more recently established.

19. *St. Casimir.*—The school in section No. 1 kept by Mr. Laquerre, who has charge of 102 pupils, would no doubt shew more progress if he had not such a large number under his care. The school in No. 2 is tolerably good.

20. *Grondines.*—This municipality has only four schools in operation, although there are five schools sections. The commissioners however, seem to be disposed to re-open the fifth school so soon as the ratepayers have constructed a school-house. In the four schools now in operation, the pupils have made considerable progress, particularly in sections 1 and 2. Generally speaking, arithmetic and grammar seem to be better cared for in these schools, and the teachers appear to devote their undivided attention to the instruction of their pupils.

21. *St. Basile.*—Four schools, three French and one English. They are well kept, particularly Nos. 4 and 1.

22. *St. Raymond* has three French Catholic schools and three English Protestant schools. The three French schools succeed tolerably well, and the pupils have made great progress, especially those under the direction of Miss Gravelle, of No. 3. Of the three English schools, I can only speak favorably of the school at Bourg-Louis, kept by Mrs. Widow Henry. In this school I remarked more emulation, and more assiduity in attendance on the part of the pupils.

23. *St. Catherine.*—I here found four schools in operation; the one kept in No. 2 by Miss Kenny, who teaches both French and English, is an excellent school, and the children make great progress. The school of No. 1, where the children are all Canadians, is well conducted by Miss John, whose exertions are rewarded by success.

COUNTY OF QUEBEC.

24. *Beauport.*—There are five schools which work well in this municipality. Miss Turgeon of No. 3 has 100 pupils. Among other branches, grammar, parsing, composition, geography, arithmetic and book-keeping are successfully taught; 15 pupils learn English. At No. 2, Miss McQuillan teaches 60 young girls. There is evident progress in grammar, arithmetic and English. Mr. Paquet, of the school in section No. 1, has 74 little boys under his care, a large number of whom learn grammar, parsing, composition, the rules of arithmetic and book-keeping; 15 pupils learn English. The school kept by Miss Vallée, of No. 5, receives 116 pupils, who nearly all shew improvement. This respectable mistress teaches rules, grammar, composition, parsing and English to about 20 children with great success.

25. *St. Michel de Beauport.*—There is one school in this parish, which is attended by more than 80 children, but they are not far advanced. They are instructed particularly in reading, writing, the rules of arithmetic and some grammar.

26. *Charlesbourg* has five schools under control, three of which succeed very well, because the children are attentive and the teachers display more zeal. Miss Stuart, the teacher of No. 4, has effected a complete reform in the school of that section the children of which had been neglected. I was agreeably surprised during my last visit to find that a number of these young pupils shewed great progress in grammatical exercises, composition and the rules of arithmetic. The model school in No. 1, kept by Miss Vallée, works well, considering the ability of the pupils. Grammar, composition, parsing, arithmetic, mensuration and linear drawing are taught with care; 18 pupils learn English, and seven are able to translate that language. In No. 2 there is an independent school with 81 pupils who are young and are not far advanced. Miss Clément keeps an elementary school in No. 3, and, as usual, with application and success; 66 children attend it.

27. *St Ambroise.*—The schools of this municipality are evidently progressing under the able superintendence of the Curé. The commissioners have established a new school in the St. Ignace range, where there are upwards of 50 pupils.

28. *Ancienne Lorette.*—The best school of this municipality is in No. 4. It is kept by Mr. Hamel, whose pupils shew great progress. The schools of Nos. 1 and 9 work very well, and I hope that the three others will be as successful as I have reason to hope. The commissioners of this municipality are about erecting a school-house in the centre of section No. 6. The want of this school-house has been for a long time felt, and I perceive with pleasure that the ratepayers are engaging seriously in the work, in spite of the opposition of several who wish to build on the old site, to the disadvantage of a large number of children who would be prevented from attending the school on account of the distance and their want of means.

29. *Stoneham* has only one Protestant school which does not progress as I could desire.

30 *St. Dunstan.*—Of the two schools in this municipality, the Protestant school has made the most progress, and the children are generally assiduous and talented. I regret that I cannot speak favorably of the other school, which changes its teacher too frequently. The trustees and ratepayers scarcely ever agree when a choice is required. The school is often closed, and the children remain in ignorance.

31. *Ste. Foye.*—The model school kept in this municipality by Mr. Letourneau works well, and the children learn grammar, parsing and composition. Several have completed their course of arithmetic, book-keeping, and the use of the globes. 25 learn English.

32. *St. Colomban.*—The commissioners of this municipality have made considerable repairs to the school-houses of the three sections. The schools work well.

33. *St. Roch and Banlieue.*—In this school municipality the Sisters of the Congregation of Notre Dame have opened at St. Sauveur two new classes, which are attended by 226 pupils. If we add to this number that furnished by the four formerly established, we have a total of 441 young girls. As to boys, four classes have lately been established at St. Sauveur, including a model school, kept by Mr. Plante, a graduate of the Laval Normal School; the number of pupils who attend it reaches 301. In this locality, the school commissioners very zealously second the exertions of Revd. Father Durocher, superior of the Oblat Fathers, who has succeeded in obtaining the erection of a good and spacious brick school-house, which is temporarily occupied by the nuns and which will soon be set apart for the use of the Christian Brothers for the education of boys, as soon as a new school-house, which is soon to be built, is ready for occupation by the nuns and their pupils.

CITY OF QUEBEC.

34. *Christian Brother's school and Nun's school under the control of the school commissioners.*—It will be sufficient to give the number of children who attend these valuable institutions, to avoid a repetition of the well-deserved praises which I have accorded to them in my former reports. Upwards of 1500 little boys are instructed at the Christian Brother's school, and 325 also receive instruction at their classes which are not under control. The nuns give instruction to nearly 1200 young girls.

Mr. Dugal in St. John's suburbs, and Mr. Dion in St. Roch's suburbs, keep elementary schools on a good footing, which are attended by a large number of boys. These two teachers do a great deal of good in their respective localities. They are attentive to the performance of their duties, and give general satisfaction.

INDEPENDENT SCHOOLS.

Among the numerous independent schools in the city, I shall only mention the academies kept by Mr. Sweeney in the Upper Town, Mr. Lafrance in St. John's suburbs, and Mr. Gauvin in St. Roch's, under the auspices of Mr. Inspector Juneau. They apply themselves particulary in these good schools to commercial instruction, which is so advantageous to the children who reside in a city, and I have the satisfaction, when I visit them, of admiring the progress they have made.

The number of independent Catholic elementary schools for both languages increases every year. We must conclude from this, that the benefits of primary and superior education are every year better appreciated by the Catholic population of Quebec.

Extract from Rev. M. Plees' Report.

CITY OF QUEBEC (PROTESTANTS).

I have the honor to report to you the results of the examinations recently held by me in my visits to the schools under my charge, and have sincere pleasure in stating the efficiency and progress which they all, more or less, exhibit.

1. *St. Louis District, School No.* 1, conducted by Mr. R. C. Geggie. From this school several of the more advanced pupils have been removed since the last semi-annual inspection, some having been placed at the high school and others bound to tradesmen or sent to earn a livelihood in various occupations; of the remainder, some have been very irregular in their attendance, and their progress at school has in consequence been much retarded. The proficiency shown by those whose attendance has been regular is creditable both to themselves and their teacher. In arithmetic, geography, and sacred history, the answers to my questions were in general prompt and correct; in arithmetic, several difficult questions were readily and correctly worked out. One exercise in English composition was particularly good. I distributed several prizes.

2. *St. Louis District, School for girls,* conducted by Miss Geggie, has much increased in number since the last examination, and is in a very efficient state. The elder children answer very creditably in geography, English grammar, and sacred history. One exercise in writing from dictation was without a mistake, the others of average correctness. The writing was of middling character. I saw one very good exercise in composition I distributed several prizes.

3. *St. Rochs Suburbs District, School No.* 1, kept by Mrs. McCord, is in a prosperous state, having an average attendance of 30 pupils of either sex. The results of my examination were very satisfactory as regards reading, orthography, writing, geography, and sacred history; the writing was particularly good. In English grammar, composition, and History of England, I hope to find greater proficiency at the next examination. I distributed prizes.

4. *St. Roch Suburbs District, School No.* 2, conducted by the Widow McLean and two daughters. I examined this school in the several branches taught in it, and found it in a satisfactory state. The answers in geography and sacred and English history were most creditable. In English and French grammar, and in writing from dictation, they were less so. I awarded prizes.

5. *Champlain Street District School,* kept by Mr. J. Lloyd, assisted by Miss Lloyd. There were present on the day of examination 52 children of either sex. They are making considerable advancement in reading, spelling, writing, English grammar and geography. In the last-named branch especially, the answers to my miscellaneous questions were such as to evidence the assiduity and system with which it is taught. I had much pleasure in awarding the prizes. The long felt want of a commodious and substantial school-house for this district will soon, there is reason to hope, be supplied—the foundation being already commenced. It is expected that the building will be ready for use next spring.

6. *Ste. Foye and Banlieue Dissentient School,* conducted by Mr. Purdie. Examined this school in reading, spelling, writing from dictation, sacred history, composition, English grammar, writing, geography, roots and definitions of words, arithmetic, history of England, book-keeping and mensuration, in all of which, except dictation, exercise and composition, the children acquitted themselves very satisfactorily. Some very creditable specimens of needlework, done by the girls under the direction of Mrs. Purdie, were exhibited; and at the close of the day's examination, a portion of a hymn was nicely sung.

7. *The Dissentient School, Municipality of St. Roch,* taught by Miss Gillespie, was examined in all the branches of instruction pursued in it: reading, spelling, writing, orthographical exercises from dictation, English grammar, history of England, sacred history, arithmetic, geography, roots and definitions of words, and French grammar. The results were highly satisfactory.

8. *The Dissentient School, St. Colomban de Sillery,* under the charge of Miss Sturock. The branches taught in this school are reading, spelling with definitions, writing, English grammar, geography, sacred history, and arithmetic; in these a very satisfactory progress has been made since the last examination.

The trustees of this school propose to erect for it a suitable building; I hope to be able to state in my next report that something has actually been done in furtherance of so desirable an object.

Extract from the Report of Mr. Inspector Hubert.

COUNTIES OF ST. MAURICE, MASKINONGÉ, AND CHAMPLAIN.

Our schools are generally successful, and I have reason to be well satisfied with the administration of the greater number of the commissioners.

The local contributions are notably on the increase; in nearly every locality they are double the amount of the legislative grant.

Relying no longer on the aid of the Department for the erection or repair of their school-houses, they have resolved to trust to local resources only, and have set themselves to work.

Particular attention has been paid to the selection of teachers, and care has been taken to engage none who are not provided with diplomas. The refusal of the grant with which you had threatened certain municipalities has produced the desired effect.

Since my general visit, begun in February and terminated in June last, several new municipalities have been formed. I shall refer to them in my next report, as I am about to visit them during the present winter.

I shall not enter into details respecting the municipalities, as I have reported to you at the time any circumstances of importance that have occurred.

In some localities I have had to encounter an obstinate refusal to submit to the requirements of the law and to the rules of the Department, those more particularly which relate to the system of distributing school moneys among the sections, and those relating to the levying of the assessments; but your authority has in all cases prevailed. The same spirit has been manifested by certain bodies of commissioners when I attempted to overcome their refusal to repair some school-houses which had become untenantable. These cases are not often met with.

In the course of last year I have been obliged to revise and correct the accounts and minutes of some of the Secretary-Treasurers, to make several enquiries into difficulties which had arisen respecting the sites for school-houses and complaints by or against teachers. Everything has been settled without disturbance; and, with the exception of the case of the *banlieue* of Three Rivers, a disposition to submit to the decision of the Department has been manifested.

It is evident that considerable progress has been made in education.

Notices of Books and Publications.

Roy.—History of Canada for the Use of Schools and Families; By J. Roy. Seventh edition, corrected and brought down to the present time, by Mr. Borthwick. C. Dagg, Publisher; Montreal, 1864. —12mo p. 279.

Johnson.—A Comprehensive System of Book-Keeping, by single and double entry, with a variety of useful rules, tables and calculations; By Thomas R. Johnson, accountant. Lovell, Publisher; Montreal, 1864.—12mo, pp. 106.

The Student and School Mate. Boston.—This is one of the best educational monthlies for children. It is well conducted; neatly got up and pleasantly illustrated. Having looked attentively over a few numbers, we have seen nothing in it indicative of national or religious prejudices.

Logan.—Geological Survey of Canada. Report of progress from its commencement to 1863; By Sir Wm. Logan and the other officers of the Survey.—xxiv 983 pp. royal 8vo. 498 woodcuts. —Montreal, Dawson Bros.—London, Paris and New York, Pullière.

We have to thank the publisher, Mr. Lovell, for a copy of this beautiful work, which is shortly to be followed by an Atlas of maps and sections. We copy from a London newspaper a review of the work. The officers of the survey who have contributed to this volume are, besides Sir W. Logan, Messrs. Alexander Murray, assistant geologist, T. Sterry Hunt, chemist and mineralogist, and E. Billings, palaeontologist.

Garneau.—*Abrégé de l'Histoire du Canada depuis sa découverte jusqu'à 1840, a l'usage des maisons d'education, par F. X. Garneau. Ouvrage approuvé par le conseil de l'instruction publique du Bas Canada, troisieme édition.* Quebec, Augustin Coté, 197 p. 12mo.

Ticknor.—Life of William Hickling Prescott; By George Ticknor. Ticknor & Fields, Publishers; Boston, 1864. 1 vol. small 4to, 491 pp. Sold for $6.

Of all the American authors Prescott is one of the best known abroad and most popular at home; and his life, written by George Ticknor, his friend and fellow-citizen, will be perused with lively interest. The volume has been got up with a beauty and elegance rivaling the productions of the best London publishers, and reflects much credit on the establishment of Messrs. Ticknor & Fields. It is embellished with a portrait and other engravings, fac-similes, &c. Biographies are one of the literary passions of the day. Each incident in the every-day life of an author is seized upon and devoured by the public. Partly to minister to this popular taste, but, probably, more through sheer love of their calling, biographers watch every gesture of their hero, and we find each particular set down with all the minutiæ. Mr. Ticknor, if he has not exceeded all his predecessors in this respect, is certainly not behind any of them.

Prescott wrote many of his works after he had become blind. He used a writing frame of recent invention known as a noctograph. The excellent memory he possessed was of great service to him in this, as without this faculty the instrument cannot be used with much advantage, it being difficult for the writer to make alterations or corrections in any part of what has been written. For a short sketch of Prescott's life see this *Journal* for January 1859.

Leach.—A Great Work left Undone, or a Lecture on Moral Instruction in the Common Schools; By the Rev. Canon Leach. 8vo, 32 pp.

The author is vice-president of McGill University and a member of the Council of Public Instruction. We have reprinted a part of his essay in our last number, but cannot admit that the work in which he, with reason, takes so deep an interest and which, in truth, is susceptible of being developed, remains entirely undone in our schools. It is true that his remarks, as he has taken care to inform the reader, are specially applicable to schools from which religious instruction is excluded, or reduced to its most simple form, so as to avoid giving offence to the different denominations which come in contact with each other. The *Duty of the Christian*, read in a great number of our schools is an excellent moral treatise founded on religion.

The views of the lecturer are very ably and vigorously set forth, and appear to be the result of long and deep meditation. The idea of teaching children their duties towards the state and society with especial reference to the particular usages of the community in which they live, apart from religious and moral education, is a very excellent one and should be acted upon.

La Revue Canadienne.—The numbers for February and March contain the continuation of Mr. de Boucherville's romance and of the essay on Rationalism by the Rev. Père Aubert; an article on the Reciprocity Treaty by Mr. Royal, and the first part of an essay by the Abbé Raymond, entitled, *Destinée Providentielle de Rome;* the commencement of a history of the *Coutume de Paris en Canada*, by Mr. D. H. Senécal; an article on English Art, by Mr. Bourassa; a hunting sketch by Mr. Lemoine, and book notices by Messrs. Tessier, A. Boucher and de Bellefeuille. Much ability is displayed throughout these numbers, and it appears as though a prosperous future were in store for this new Canadian monthly.

Brunet.—*Notice sur les Plantes de Michaux et son Voyage au Canada et a la Baie d'Hudson, d'après son journal manuscrit et autres documents inédits;* By Abbé Ovide Brunet. 44 pp. Quebec, 1864.

Mr. Brunet published in 1861, another pamphlet called *Voyage d'André Michaux en Canada*, which we noticed at some length in this journal. At that period, however, he had neither seen the specimens collected by Michaux nor had access to his notes of travel; and it will readily be understood that the materials gathered from these sources add much to the interest of his former work. This new pamphlet is therefore supplementary to Michaux's *Flora Boreali Americana*, and will be useful to the Canadian botanist or to any one seeking for the plants described in that work, or in quest of facts connected with botanical geography. The author also gives very interesting details on the country lying between Lake St. John and Hudson's Bay — a vast region whose topography is almost unknown. Prof. Gray notices this little work very favorably in the last number of *Silliman's American Journal of Science*, and highly compliments his young confrère of the Laval University on his *début*.

MONTHLY SUMMARY.

EDUCATIONAL INTELLIGENCE.

— The Normal Schools at present existing are distributed as follows Maine has provided for two, which are not yet in operation; Massachusetts has four, Connecticut one; Rhode Island one; New York one, New Jersey two, Pennsylvania one; Michigan one; Illinois one; Wisconsin one, and Iowa one. The number in existence in these States is yet by far too small to supply the public demand for trained, professional teachers. A State like New York ought to have at least ten, equal to that at Albany, to meet home demand for competent instructors. Pennsylvania needs as many more, and other States in proportion. In the twenty-four remaining States no provision has been made for these teachers' seminaries, if we except South Carolina. In that State there was, before the advent of the rebellion, such an institution at Charles-

ton. We have no means of knowing whether it is now in existence, and hence have not included it in the roll of *Normal States*.

The experience of those communities in which these schools have had a fair trial is in all respects satisfactory. They have awakened a new interest in popular education; they have raised the standard of qualification; they have improved the methods of instruction and discipline; they have aroused a healthful emulation, by generating the true *esprit de corps* among teachers; and they are gradually elevating their calling to the rank and dignity of a learned profession.—*American Educational Monthly.*

—By a decree of the 4th September last, the Emperor of the French has directed that the sum of 100,000 francs, taken annually from the Fund set apart to assist the communes in building and repairing their schoolhouses, be applied to the purchase of moveable property for the teachers, provided the communes defray half the cost of such property, which shall remain in their possession permanently. The pupil-teachers, who, under a decree of the 19th April, 1862, already receive 100 frs. on leaving the normal schools, will derive especial benefit from this new provision. The decree of the 4th September also elevates the minimum salaries of the head masters in normal schools from 2,000 frs. to 2,400 frs., and the maximum from 3,000 frs. to 3,600 frs.; while the minimum salaries of assistant teachers in the same institutions are to be increased from 1,200 frs. to 1,400 frs., and the maximum from 1,800 to 2,000 frs.

Notwithstanding all that has been done to advance elementary education in France, there are still 1,018 communes without schools or the proper means of conveying instruction, 10,110 communes keep their schools in buildings rented for the purpose, or of which the ownership is *not* vested in them. The number of children who receive no instruction is 600 000; and the number of communes possessing libraries is 5,000.

The number of elementary schools, in 1863, was 82,135, showing an increase of 16,136 over that returned for 1848; and the pupils in 1862 numbered 4,731,946 against 3,771,597 in 1848, or an increase of 25 per cent in 14 years. To these figures may be added the number of pupils in the colleges and lyceums or high schools, viz: 62,762, making a total of 4,794,708.

The mean salary of a common school teacher was 665 frs. and 33 centimes; and 4,736 teachers received salaries less than 400 francs.

Attaching great importance to an effective system of inspection, the French government will ask, in the budget for 1865, an additional sum of 10,000 frs. to be devoted to this branch of the service.

"The country should thoroughly understand," says the official report from which we extract the foregoing, "that the money spent in the schools will be saved in the prisons. Two important facts are developed in our community, viz: the progressive increase of the school going population, which has reached a million of children since 1848, and the decrease of crime."

SCIENTIFIC INTELLIGENCE.

— Dealers in philosophical and optical instruments sell simple storm-glasses which are used for the purpose of indicating approaching storms. One of these consists of a glass tube, about ten inches in length and three-fourths of an inch in diameter, filled with a liquid containing camphor, and having its mouth covered with a piece of bladder perforated with a needle. A tall phial will answer the purpose as well as the ten-inch tube. The composition placed within the tube consists of two drachms of camphor, half a drachm of pure saltpetre and half a drachm of muriate of ammonia, pulverized and mixed with about two ounces of proof spirits. The tube is usually suspended by a thread near a window, and the functions of its contents are as follows:—If the atmosphere is dry and the weather promises to be settled, the solid parts of the camphor in the liquid contained in the tube will remain at the bottom, and the liquid above will be quite clear; but on the approach of a change to rain, the solid matter will gradually rise, and small crystalline stars will float about in the liquid. On the approach of high winds, the solid parts of the camphor will rise in the form of leaves and appear near the surface in a state resembling fermentation. These indications are sometimes manifested *twenty-four hours* before a storm breaks out! After some experience in observing the motions of the camphor matter in the tube, the magnitude of a coming storm may be estimated; also its direction, inasmuch as the particles lie closer together on that side of the tube that is *opposite* to that from which the coming storm will approach. The cause of some of these indications is as yet unknown; but the leading principle is the solubility of camphor in alcohol, and its insolubility in water, combined with the fact that the drier the atmosphere the more aqueous vapor does it take up, and *vice versa*.— *Upper Canada Journal of Arts and Manufactures.*

— At a late meeting of the Natural History Society, a communication was read from Rev. Mr. Constabell of Clarenceville, describing the ravages of an insect whose larva burrows in the maple leaves, cutting out circular pieces, which are used as coverings to protect the larva while eating the parenchyma of the leaf.

From the specimens exhibited, it appeared that the insect is a little moth, *Ornix acerifoliella* of Fitch, well known in the State of New York, though apparently not hitherto recorded in Canada. Fitch states that it is not ordinarily very destructive, but that in some seasons it appears in great numbers, and inflicts considerable ravages, especially on detached maple groves. He recommends that cattle should be turned into the affected groves in autumn, in the hope that their treading would destroy the pupæ, which at that season are lying on the ground, wrapped in their coverlets of cut leaves.—*Canadian Naturalist.*

— M. J. Duboscq has contrived for the French theatre a method of imitating the rainbow, of which *Cosmos* speaks very highly. He employs an electric light, obtained with the aid of 100 Bunsen elements. The first lenses of his optical apparatus render the rays from this source parallel, and transmit them through a rainbow-shaped hole in a screen to a double convex lens of very short focus, from which they pass to a prism, and emerge with sufficient divergence to make an effective rainbow on a screen about six yards off. This rainbow is said to be brilliant even when the whole scene is lit up.—*Intellectual Observer.*

STATISTICAL INTELLIGENCE.

— By the census of the United States for 1860, it appears that of 27,489,461, — the total population of *free citizens* — 4,136,175 are of foreign birth. The numbers in 1850 were 19.987,571, and 961,719. It is therefore plain that the immigration has increased in an astonishing ratio. The population of German birth who, in 1850, numbered only one-half that of Irish birth, is almost as numerous now. The following is a list of the different nationalities in the order in which they are represented: Natives of Ireland, 1,611,304, Germany, 1,301,136, England, 431,692, British America, 249,978, France, 109,870, Scotland, 108,518; Switzerland, Wales, Norway, China, 35,563, the remainder of the population of foreign birth being divided between Holland, Mexico, Sweden, and Italy. The greatest number of foreigners reside in the State of New York; the smallest in Delaware The State of New York has in round numbers a million of foreigners, that is one-fourth of the whole. The States where the greatest number of Germans are found are New York, Ohio, Pennsylvania, Illinois, Wisconsin, and Missouri.

— In Great Britain and Ireland, there are 877,000 more females than males in a population of 29,000,000, while in the United States of a total population of 31,000,000, there are 730,000 more males than females.

— Immigration from all foreign countries to the United States has been as follows, for the decennial periods ending in June.

1840.....	552,000
1850.....	1,558,300
1860.....	2,707,624

OFFICIAL DOCUMENTS.

TABLE of the Apportionment of the Superior Education Fund for 1863, under the Act 18th Vic., Cap. 54.

LIST No. 1.—UNIVERSITIES.

NAME OF INSTITUTION.	Number of pupils.	Annual grant for 1862.	Annual grant for 1863.
McGill College.....	296	2532 90	2407 00
To the same for one year's salary of the Secretary to the Royal Institution, the salary of the Messenger, and for contingent expenses.....		671 07	671 00
Bishop's College.....	163	1812 03	1500 00
Total.....	....	5016 00	4578 00

List No. 2.—Classical Colleges.

NAME OF INSTITUTION.	Number of pupils.	Annual grant for 1862.	Annual grant for 1863.
Nicolet	210	1812 03	1721 00
St. Hyacinthe	252	1812 03	1721 00
Ste. Thérèse	191	1449 64	1377 00
Ste. Anne de la Pocatière	248	1812 03	1721 00
L'Assomption	195	1449 64	1377 00
Ste. Marie, (Montreal)	235	1449 64	1377 00
High School of McGill College	262	1128 00	1128 00
" " of Quebec, for the education of 30 pupils named by Government	127	1128 00	1128 00
St. Francis, Richmond	102	1086 98	750 00
Three Rivers	107	381 23	600 00
Morrin	24		400 00
Total	....	13509 22	13300 00

List No. 3.—Industrial Colleges.

NAME OF INSTITUTION.	Number of pupils.	Annual grant for 1862.	Annual grant for 1863.
Joliette	158	889 79	845 00
Masson	313	*1289 79	1000 00
Notre-Dame de Lévis	106	889 79	845 00
St. Michel, Bellechasse	130	889 79	845 00
Laval	92	355 92	338 00
Rigaud	131	889 79	845 00
Ste. Marie de Monnoir	194	449 52	500 00
Ste. Marie de Beauce	120	355 92	338 00
Rimouski	142	355 92	500 00
Lachute	185	177 96	178 00
Verchères	147	355 92	338 00
Varennes	100	266 94	253 00
Sherbrooke	48	266 94	253 00
Longueuil	318	360 87	342 00
St. Laurent	194	* 880 49	500 00
Total	....	8675 35	7920 00

* These two institutions have received each $400 as a supplementary aid by Order in Council since the publication of the last year, which accounts for the difference in the figures published last year.

List No. 4.—Academies for Boys, or Mixed.

NAME OF INSTITUTION.	Number of pupils.	Annual grant for 1862.	Annual grant for 1863.
Aylmer, (Catholic)	68	240 27	228 00
Aylmer, (Protestant)	36	240 27	228 00
Beauharnais, St. Clément	233	240 27	228 00
Bonin, St. Andrews, Argenteuil	125	240 27	228 00
Baie du Febvre	118	160 18	152 00
Baie St. Paul	65	177 97	169 00
Barnston	160	160 18	152 00
Berthier	160	357 77	340 00
Buckingham	38	160 18	152 00
Belœil	83	357 77	340 00
Chambly	81	187 20	178 00
Cap Santé	21	160 18	152 00
Clarenceville	69	320 33	304 00
Clarendon	56	160 18	152 00
Coaticook	88	142 37	135 00
Cassville	70	160 18	152 00
Compton	84	160 18	152 00
Cookshire	35	160 18	152 00
St. Cyprien	145	160 18	152 00
Charleston	24		480 00
Danville	84	240 27	228 00
Dudswell	42	160 18	152 00
Dunham	81	320 33	304 00
Durham, No. 1	70	142 37	135 00
St. Eustache	80	240 27	228 00
Farnham, (Catholic)	233	213 56	203 00
Farnham, (Protestant)	65	240 27	228 00
Freleighsburg	74	213 56	203 00
St. Colomban de Sillery	113	160 18	152 00
Ste. Foye	50	160 18	152 00
Gentilly	90	160 18	152 00
Granby	59	320 33	304 00
Georgeville	37	160 18	152 00
St. Grégoire	114	160 18	152 00
Huntingdon	38	355 92	338 00
St. Johns, Dorchester, (Catholic)	167	320 33	304 00
St. Johns, Dorchester, (Protestant)	51	320 33	304 00
St. Jean, Isle d'Orléans	89	160 18	152 00
Knowlton	96	320 33	304 00
Kamouraska	80	355 92	338 00
Laprairie	150	213 56	203 00
Lotbinière	24	142 37	135 00
L'Islet	84	240 27	228 00
Montreal Catholic Commercial Academy	175	240 27	228 00
Montmagny	225	266 92	253 00
Ste. Marthe	80	160 18	152 00
Missisquoi	49	245 68	233 00
Pointe-aux-Trembles, Hochelaga	82	320 33	304 00
Phillipsburg	48	160 18	152 00
Sherbrooke	90	355 92	338 00
Sorel, (Catholic)	352	320 33	400 00
Sorel, (Protestant)	44	142 37	135 00
Stanbridge	121	240 27	228 00
Sutton	64		192 00
Shefford	82	320 33	304 00
Stanstead	175	560 56	542 00
St. Timothée	125	142 37	150 00
Three Rivers, (Catholic)	36	320 33	135 00
Three Rivers, (Protestant)	19	214 46	250 00
Vaudreuil	104	160 18	152 00
Yamachiche	130	240 27	228 00
Quebec Commercial and Literary Acad	66	160 18	152 00
St. Andrews, Argenteuil	120	93 60	93 00
Roxton	60	140 40	133 00
Total	....	14393 82	14031 00

List No. 5.—Academies for Girls.

Name of Institution.	Number of pupils.	Annual grant for 1862.	Annual grant for 1863.
Ste. Anne de Lapérade	160	142 37	135 00
St. Ambroise de Kildare	100	93 60	93 00
L'Assomption	180	142 37	135 00
St. Aimé	136	120 10	114 00
Baie St. Paul	112	120 10	114 00
Belœil	85	93 60	93 00
Boucherville	105	93 60	93 00
Cedars	61	93 60	93 00
Chambly	120	160 18	152 00
St. Césaire	157	133 48	127 00
Ste. Croix	79	160 18	152 00
Cowansville	40	160 18	152 00
St. Charles, Industry	326	213 56	203 00
Châteauguay	100	93 60	93 00
St. Clément	259	160 18	152 00
St. Cyprien	178	93 60	93 00
St. Denis	132	93 60	93 00
Ste. Elizabeth	122	213 56	203 00
St. Eustache	100	96 11	96 00
St. Grégoire	205	240 27	228 00
Ste. Geneviève	90	93 60	93 00
St. Henri de Mascouche	81	93 60	93 00
St. Hilaire	80	93 60	93 00
St. Hugues	76	320 33	304 00
St. Hyacinthe, Sœurs de la Charité	290	142 37	135 00
St. Hyacinthe, Sœurs de la Présentation	162	142 37	135 00
L'Islet	77	142 37	135 00
Ile Verte	70	140 40	133 00
St. Johns, Dorchester	400	240 27	228 00
St. Jacques de l'Achigan	155	213 56	203 00
St. Joseph de Lévis	262	320 33	304 00
Kakouna	80	177 97	169 00
Kamouraska	104	160 18	152 00
Laprairie	142	93 60	93 00
Longueuil	390	320 33	304 00
St. Lin	136	93 60	93 00
St. Laurent	130	213 56	203 00
Long Point	46	160 18	152 00
Montreal, board for 12 Deaf & Dumb Fem.		449 23	449 00
Ste. Marie de Monnoir	127	160 18	152 00
Ste. Marie de Beauce	113	177 97	169 00
St. Martin	90	93 60	93 00
St. Michel de Bellechasse	72	240 27	228 00
St. Nicolas	37	93 60	93 00
St. Paul de l'Industrie	66	93 60	93 00
Point Claire	78	93 60	93 00
Pointe-aux-Trembles, Hochelaga	100	213 56	203 00
Pointe-aux-Trembles, Portneuf	102	213 56	203 00
Rivière-Ouelle	78	183 69	174 00
Rimouski	142	240 27	228 00
Ste. Scholastique	134	106 78	101 00
Sherbrooke	134	320 33	304 00
Sorel	403	213 56	350 00
Ste. Thérèse	151	93 60	93 00
St. Thomas de Pierreville	60	160 18	152 00
St. Timothée	117	142 37	135 00
St. Thomas de Montmagny	192	240 27	228 00
Varennes	107	178 78	169 00
Yamachiche	109	160 18	152 00
St. Benoit	90	160 18	152 00
Three Rivers	223	240 27	228 00
Ste. Famille	82	205 77	195 00
Terrebonne	146	93 60	93 00
Trois Pistoles, No. 1	61	140 40	133 00
Vaudreuil	90	93 60	93 00
St. Denis Street Academy, Montreal	123		150 00
Total			10542 00

List No. 6.—Model Schools.

Name of Institution.	Number of pupils.	Annual grant for 1862.	Annual grant for 1863.
St. Andrew's School, Quebec	67	538 44	511 00
British and Canadian Sch. Soc., Montreal	150	711 83	676 00
Col. Church and School Soc., Sherbrooke	32	177 96	169 00
British and Canadian Sch. Soc., Quebec	282	779 22	740 00
National School, Quebec	155	395 46	375 00
Point St. Charles, Montreal	151	263 28	250 00
Society of Education, Quebec	510	996 57	946 00
" " Three Rivers	295	536 35	509 00
Free School in connection with the American Presbyterian Sch. Soc., Montreal	121	355 92	338 00
Col. Church and School Soc., Montreal	1125	711 83	676 00
Lorette, Girls' school	....	133 49	133 00
" Boys' "	....	133 49	133 00
Stanfold	25	56 16	56 00
St. Francis, Indian school	31	177 96	169 00
Quebec, Lower Town, Infant school	....	177 96	169 00
Quebec, Upper Town, Infant school	....	.....	308 00
St. Jacques, Montreal	604	889 80	845 00
To the Cath. Com. of the City of Quebec	485	355 92	338 00
Deschambault	58	160 17	152 00
St. Constant	113	120 11	114 00
St. Jacques le Mineur	155	120 11	114 00
Point Claire	62	160 17	152 00
Lachine	236	74 88	74 00
Côte des Neiges	83	74 88	74 00
St. Antoine de Tilly	38	74 88	74 00
St. Edouard de Napierville	122	74 88	74 00
Ste. Philomène	40	74 88	74 00
St. François du Lac	88	74 88	74 00
Laprairie	64	74 88	74 00
Lacolle	83	74 88	74 00
Côteau St. Louis	185	74 88	74 00
Rivière du Loup	45	74 88	74 00
Ste. Anne de Lapérade	76	74 88	74 00
St. Romuald de Lévis	149	74 88	74 00
St. Charles, St. Hyacinthe	135	74 88	74 00
St. Grégoire	65	74 88	74 00
St. Henri, Hochelaga	196	74 88	74 00
Beaumont	78	74 88	74 00
St. André, Kamouraska	61	74 88	74 00
Ste. Anne des Plaines	96	74 88	74 00
St. Césaire	152	74 88	74 00
St. Joachim, Two Mountains	80	74 88	74 00
Boucherville	110	74 88	74 00
Lachine, Dissentients	73	74 88	74 00
Malbaie	60	74 88	74 00
St. Hermas	48	74 88	74 00
Ste. Rose	79	74 88	74 00
St. Denis, Kamouraska	128	74 88	74 00
St. Hyacinthe	214	74 88	74 00
Chicoutimi	147	148 15	140 00
St. Sévère	80	74 88	74 00
St. Pierre, Rivière du Sud	31	74 88	74 00
Bury	52	74 88	74 00
Châteauguay	72	74 88	74 00
St. Hilaire	47	74 88	74 00
Ste. Sholastique	92	74 88	74 00
St. Joseph de Lévis	190	74 88	74 00
St. Michel Archange	161	74 88	74 00
St. Jean Deschaillons	67	74 88	74 00
St. Gervais	31	74 88	74 00
St. Nicolas, Lévis	30	74 88	74 00
St. Isidore	89	74 88	74 00
St. Heri de Lauzon	62	74 88	74 00
Grande Baie	97	74 88	74 00
Sommerset	47	160 07	152 00

List No. 6.—Model Schools.—(*Continued.*)

NAME OF INSTITUTION.	Number of pupils.	Annual grant for 1862.	Annual grant for 1863.
Ste. Geneviève de Batiscan	102	74 88	74 00
St. Valentin	81	56 16	56 00
St. Vincent de Paul	56	56 16	56 00
Ste. Martine, (boys	118	56 16	56 00
Bécancour	165	56 16	56 00
St. Hubert	62	56 16	56 00
St. Jérôme	55	56 16	56 00
Ste. Gertrude	43	74 88	74 00
St. Charles, Bellechasse, (boys)	86	74 88	74 00
St. George, Cacouna	94	56 16	56 00
Pointe-aux-Trembles, Portneuf	67	74 88	74 00
Ste. Cécile, Beauharnais	134	74 88	74 00
Eboulements	72	74 88	74 00
Prot. Model School, Panet Street, Montreal	269	74 88	74 00
St. Laurent, Montmorency	100	74 88	74 00
Rawdon	125	74 88	74 00
St. Gervais, (Co vent)	70	74 88	74 00
Notre-Dame-de-la Victoire, Lévis	182	74 88	74 00
Rigaud, (Convent)	112	74 88	74 00
St. Vincent-de-Paul, (Convent)	159	74 88	74 00
Sch. of Visitation St., Queb. Sub., Mont.	850	74 88	74 00
St. Jean Port Joly, girls' school	100	74 88	74 00
Lacolle, Dissentients	104	74 88	74 00
Ste. Anne No. 2, Kamouraska	77	56 16	56 00
Melbourne, girls' academy	20	74 88	74 00
German Protestant School of Montreal	83	56 16	56 00
Pointe du Lac	80	74 88	74 00
St. Edouard, Témiscouata, girls' school	130	74 88	74 00
Château-Richer	56	74 88	74 00
Lotbinière	45	74 88	74 00
Rivière-Ouelle	33	74 88	74 00
St. Narcisse	66	74 88	74 00
St. Paschal	65	74 88	74 00
Ste. Famille, Island of Orléans	56	74 88	74 00
Ste. Foye	108	74 88	74 00
St. Stanislas	71	74 88	74 00
Leeds	42	74 88	74 00
St. Henri de Mascouche	84	74 88	74 00
Ecureuils	118	56 88	56 00
St. Jean Chrysostôme No. 2	119	56 88	56 00
Rivière-des-Prairies	26	56 88	56 00
St. Louis de Gonzague	98	56 88	56 00
St. Léon	78	56 88	56 00
St. Aimé	125	74 88	74 00
Catholic Sch., Pont St. Charles, Montreal	63	74 88	74 00
St. John's Suburb, Quebec	90	74 88	74 00
St. André Avelin	84	74 88	74 00
St. Alexandre, Iberville	50	74 88	74 00
L'Acadie	126	74 88	74 00
Ste. Claire, D	105	74 88	74 00
St. Charles, Bellechasse, girls	102	74 88	74 00
Cap St. Ignace	90	74 88	74 00
St. Anselme, boys' school	35	74 88	74 00
Escoumins	30	74 88	74 00
St. Edouard, Témiscouata, boys	93	74 88	74 00
St Frederick, Drummond	70	74 88	74 00
Iberville	150	74 88	74 00
St. Irénée	65	74 88	74 00
St. Philippe	95	74 88	74 00
St. Calixte de Somerset	80	74 88	74 00
St. Sauveur, Quebec	....	74 88	74 00
St. Roch de l'Achigan	74	74 88	74 00
St. Régis	....	74 00	74 00
St. Henri, Dissentients	52	49 92	74 00
Henriville, Iberville	94	56 00	56 00
Arthabaskaville	116	.....	56 00

List No. 6.—Model Schools.—(*Continued.*)

NAME OF INSTITUTION.	Number of pupils.	Annual grant for 1862.	Annual grant for 1863.
St. Anselme, (Convent)	80	.....	56 00
Bagotville	....	.....	56 00
Carleton	88	.....	74 00
Coteau du Lac	41	.....	74 00
Deschambault, (Convent)	98	.....	56 00
St. Henri, Hochelaga	250	.....	56 00
Ste. Hélène, Kamouraska	110	.....	56 00
Inverness	104	.....	56 00
Ste. Julie, Megantic	50	.....	56 00
St. Luc	75	.....	74 00
St. Lambert, Lévis	64	.....	56 00
Matane	73	.....	56 00
Magog	....	.....	74 00
Maria, Bonaventure	60	.....	74 00
Ste. Martine, girls	106	.....	56 00
Nicolet	79	.....	56 00
St. Placide	88	.....	74 00
St. Ursule	107	.....	56 00
Sault-aux-Recollets	75	.....	74 00
Sherrington	118	.....	93 00
Huntingdon, (Convent)	45	.....	74 00
Henriville, "	110	.....	56 00
St. Etienne, Ottawa	35	.....	56 00
West Shefford	....	.....	75 00
Total	....	.....	17395 00

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